

**ZEXEL
COMPONENTS**

Date: 21.05.12
Time: 08:52:58

| | | | |
|---------------------------|-------------|---------------|----------------------|
| + INJECTION-PUMP ASSEMBLY | 104740-9541 | 9 460 610 416 | |
| Manufacturer No.: | 1670002N70 | | |
| - FUEL-INJECTION PUMP | 104640-9541 | 9 461 614 058 | NP-VE4/10F2150RNP537 |
| - NAMEPLATE | 146901-6200 | 9 461 614 059 | |
| - | | | |
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| - | | | |
| - NOZZLE AND HOLDER ASSY. | 105148-1121 | 9 430 613 538 | 0050B |
| Nozzle and Holder: | 16600-43G03 | | |
| Open Pre:MPa(Kgf/cm2): | 9.8{100} | | |
| - NOZZLE-HOLDER | 105078-0050 | 9 430 615 042 | |
| - NOZZLE | 105007-1130 | 9 432 610 077 | NP-DN0PDN113 |

Product: 104740-9541 9 460 610 416 1670002N70 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 | 146303-0000 | 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 | 146220-0320 | 9 461 610 693 | | 1 | CAM PLATE |
| 30 | 146600-0800 | 9 461 610 421 | | 1 | O-RING |
| 31 | 146311-6120 | 9 461 612 065 | | 1 | PUMP PLUNGER |
| 32 | 146301-0000 | 9 461 610 138 | | 1 | SLIDING PIECE |
| 34 | 146312-1800 | 9 461 612 066 | | 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 |

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|------|-------------|---------------|---|---|---------------------|
| 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 | 146401-0520 | 9 461 612 068 | | 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 |

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| 55 | 146430-0120 | 9 413 610 008 | | 4 | DELIVERY-VALVE ASSEMBLY |
| 56 | 146432-0000 | 9 461 610 238 | | 4 | COMPRESSION SPRING |
| 58 | 146440-0220 | 9 461 610 241 | | 4 | FITTING |
| 60 | 139106-0100 | 9 411 610 051 | | 3 | FLAT-HEAD SCREW |
| 67 | 146500-8821 | 9 461 613 611 | | 1 | # GOVERNOR COVER |
| 67/1 | 146508-7721 | 9 461 613 258 | | 1 | GOVERNOR COVER |
| 67/2 | 146515-2820 | 9 461 611 437 | | 1 | CONTROL SHAFT |
| 67/3 | 146600-0100 | 9 461 610 414 | | 1 | O-RING |
| 67/4 | 139310-0200 | 9 411 610 065 | | 1 | PLAIN WASHER |
| 67/5 | 146537-4620 | 9 461 612 084 | | 1 | CONTROL LEVER |
| 67/6 | 014110-6440 | 9 442 610 020 | | 1 | LOCKING WASHER |
| 67/7 | 013020-6040 | 9 442 610 010 | | 1 | UNION NUT:M6P1H5 |
| 67/13 | 146621-1700 | 9 461 610 503 | | 1 | UNION NUT |
| 67/14 | 146621-1700 | 9 461 610 503 | | 1 | UNION NUT |
| 67/15 | 146526-6400 | 9 461 614 092 | | 1 | BLEEDER SCREW |
| 67/16 | 146526-3400 | 9 461 611 163 | | 1 | BLEEDER SCREW |
| 67/18 | 146587-8000 | 9 461 611 476 | | 1 | COILED SPRING |
| 67/19 | 146541-3000 | 9 461 610 319 | | 1 | BUSHING |
| 67/21 | 146587-9900 | 9 461 612 101 | | 1 | COILED SPRING |
| 67/22 | 146541-3100 | 9 461 610 320 | | 1 | SLOTTED WASHER |
| 67/78 | 146600-4400 | 9 461 615 663 | | 1 | SEAL RING |
| 67/89 | 146541-4900 | 9 461 610 829 | | 1 | PLAIN WASHER:D20&10T0.5 |
| 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 |
| 95 | 146551-0520 | 9 461 610 335 | | 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 | 146975-2500 | 9 461 615 832 | | 1 | SLIDING SLEEVE |
| 116 | 146576-0000 | 9 461 610 364 | | 1 | SEALING CAP |
| 117/1 | 146577-0000 | 9 461 610 365 | A | 1 | PLUG:L1.70 |
| 117/1 | 146577-0100 | 9 461 610 366 | A | 1 | PLUG:L1.90 |
| 117/1 | 146577-0200 | 9 461 610 367 | A | 1 | PLUG:L2.10 |
| 117/1 | 146577-0300 | 9 461 610 368 | A | 1 | PLUG:L2.30 |
| 117/1 | 146577-0400 | 9 461 610 369 | A | 1 | PLUG:L2.50 |
| 117/1 | 146577-0500 | 9 461 610 370 | A | 1 | PLUG:L2.70 |
| 117/1 | 146577-0600 | 9 461 610 371 | A | 1 | PLUG:L2.90 |
| 117/1 | 146577-0700 | 9 461 610 372 | A | 1 | PLUG:L3.10 |
| 117/1 | 146577-0800 | 9 461 610 373 | A | 1 | PLUG:L3.30 |
| 117/1 | 146577-0900 | 9 461 610 374 | A | 1 | PLUG:L3.50 |
| 117/1 | 146577-1000 | 9 461 610 375 | A | 1 | PLUG:L3.70 |
| 117/1 | 146577-1100 | 9 461 610 376 | A | 1 | PLUG:L3.90 |
| 117/1 | 146577-1200 | 9 461 610 377 | A | 1 | PLUG:L4.10 |
| 117/1 | 146577-1300 | 9 461 610 378 | A | 1 | PLUG:L4.30 |
| 117/1 | 146577-1400 | 9 461 610 379 | A | 1 | PLUG:L4.50 |
| 117/1 | 146577-1500 | 9 461 610 380 | A | 1 | PLUG:L4.70 |
| 117/1 | 146577-1600 | 9 461 610 381 | A | 1 | PLUG:L4.90 |
| 117/1 | 146577-1700 | 9 461 610 382 | A | 1 | PLUG:L5.10 |
| 117/1 | 146577-5000 | 9 461 611 384 | A | 1 | PLUG:L1.8 |
| 117/1 | 146577-5100 | 9 461 611 385 | A | 1 | PLUG:L2.0 |

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| 117/1 | 146577-5200 | 9 461 611 386 | A | 1 | PLUG:L2.2 |
| 117/1 | 146577-5300 | 9 461 611 387 | A | 1 | PLUG:L2.4 |
| 117/1 | 146577-5400 | 9 461 611 388 | A | 1 | PLUG:L2.6 |
| 117/1 | 146577-5500 | 9 461 611 389 | A | 1 | PLUG:L2.8 |
| 117/1 | 146577-5600 | 9 461 611 390 | A | 1 | PLUG:L3.0 |
| 117/1 | 146577-5700 | 9 461 611 391 | A | 1 | PLUG:L3.2 |
| 117/1 | 146577-5800 | 9 461 611 392 | A | 1 | PLUG:L3.4 |
| 117/1 | 146577-5900 | 9 461 611 393 | A | 1 | PLUG:L3.6 |
| 117/1 | 146577-6000 | 9 461 611 394 | A | 1 | PLUG:L3.8 |
| 117/1 | 146577-6100 | 9 461 611 395 | A | 1 | PLUG:L4.0 |
| 117/1 | 146577-6200 | 9 461 611 396 | A | 1 | PLUG:L4.2 |
| 117/1 | 146577-6300 | 9 461 611 397 | A | 1 | PLUG:L4.4 |
| 117/1 | 146577-6400 | 9 461 611 398 | A | 1 | PLUG:L4.6 |
| 117/1 | 146577-6500 | 9 461 611 399 | A | 1 | PLUG:L4.8 |
| 117/1 | 146577-6600 | 9 461 611 400 | A | 1 | PLUG:L5.0 |
| 117/1 | 146877-0400 | 9 461 615 002 | A | 1 | PLUG |
| 117/1 | 146877-0500 | 9 461 615 003 | A | 1 | PLUG |
| 117/1 | 146877-0600 | 9 461 615 004 | A | 1 | PLUG |
| 117/1 | 146877-0700 | 9 461 615 005 | A | 1 | PLUG |
| 117/1 | 146877-4300 | 9 461 616 280 | A | 1 | PLUG |
| 117/1 | 146877-4400 | 9 461 616 281 | A | 1 | PLUG |
| 117/1 | 146877-4500 | 9 461 616 282 | A | 1 | PLUG |
| 117/1 | 146877-4600 | 9 461 616 283 | A | 1 | PLUG |
| 120 | 146579-5020 | 9 461 610 399 | | 1 | RETAINING PIN |
| 122 | 146580-2000 | 9 461 611 470 | | 1 | GOVERNOR SPRING |
| 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 | 146650-3920 | 9 461 612 133 | | 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 |
| 230 | 146629-3520 | 9 461 612 122 | | 1 | BRACKET |
| 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 |
| 242 | 146658-6820 | 9 461 612 135 | | 1 | WIRE |
| 243 | 146621-1000 | 9 461 611 665 | | 1 | UNION NUT |
| 244 | 020118-1440 | 9 442 610 672 | | 1 | BLEEDER SCREW |
| 245 | 139512-0500 | 9 411 611 625 | | 2 | GASKET |
| 246 | 027412-2440 | 9 442 610 048 | | 1 | EYE BOLT |
| 247 | 146605-9120 | 9 461 612 107 | | 1 | PIPE |
| 251 | 014010-8140 | 9 442 610 015 | | 1 | PLAIN WASHER:D18&8.5T1.6 |
| 308 | 146659-5600 | 9 461 612 136 | | 1 | CLAMPING BAND |
| 800S | 146009-9220 | 9 461 612 061 | | 1 | PUMP HOUSING |
| 800S/1/6 | 146601-0900 | 9 461 614 046 | | 1 | PACKING RING |
| 804S | 146232-0220 | 9 461 610 126 | | 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 | 146901-6200 | 9 461 614 059 | | 1 | NAMEPLATE |

| | |
|-----------------|---------------|
| ZEXEL Ass'y No. | 104740-9540 |
| Bosch Ass'y No. | 9 460 610 243 |
| Bosch Typecode | |
| Engine Type | AD23 |
| Manufacturer | NISSAN DIESEL |
| Edition date | 25.07.03 (4) |

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) | | R | | | | |
| | | Right | | | | | |
| | (Solenoid timer adjustment condition) | | OFF | | | | |

2 Adjustment specification**2.1 Full load delivery**

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 1100 | 1100 | 1100 | | |
| S | Average injection quantity | mm3/st. | 44.6 | 44.1 | 45.1 | | |
| S | Difference in delivery | mm3/st. | 3 | | 3 | | |
| P | Basic | | * | | | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 2550 | 2550 | 2550 | | |
| C | Average injection quantity | mm3/st. | 8.85 | 5.3 | 12.4 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 2350 | 2350 | 2350 | | |
| C | Average injection quantity | mm3/st. | 30.3 | 27.8 | 32.8 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 2150 | 2150 | 2150 | | |
| C | Average injection quantity | mm3/st. | 38 | 35.9 | 40.1 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 1100 | 1100 | 1100 | | |
| C | Average injection quantity | mm3/st. | 44.6 | 43.6 | 45.6 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 600 | 600 | 600 | | |
| C | Average injection quantity | mm3/st. | 43.5 | 41.5 | 45.5 | | |

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 | mm3/st. | 30.3 | 28.3 | 32.3 | | |
| 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. | 5 | | 5 | | |

2.3 Idle

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 350 | 350 | 350 | | |
| S | Average injection quantity | mm3/st. | 6.5 | 4.5 | 8.5 | | |
| S | Difference in delivery | mm3/st. | 2 | | 2 | | |
| P | Basic | | * | | | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 350 | 350 | 350 | | |
| C | Average injection quantity | mm3/st. | 6.5 | 4.5 | 8.5 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|---------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 450 | 450 | 450 | | |
| C | Average injection quantity | mm3/st. | 2 | | 2 | | |

2.4 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. | 62.5 | 45 | 80 | | |
| P | Basic | | * | | | | |

2.5 Stop

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|----------------------------|----------------------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 350 | 350 | 350 | | |
| 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 | 1100 | 1100 | 1100 | | |
| C | Overflow quantity with S/T ON | cm ³ /min | 390 | 258 | 522 | | |

2.7 Pump chamber pressure

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|-----------------------|---------------------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 1100 | 1100 | 1100 | | |
| S | Pressure with S/T OFF | kPa | 372.5 | 343 | 402 | | |
| S | Pressure with S/T OFF | 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 | 1100 | 1100 | 1100 | | |
| C | Pressure with S/T OFF | kPa | 372.5 | 343 | 402 | | |
| C | Pressure with S/T OFF | kgf/cm ² | 3.8 | 3.5 | 4.1 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|-----------------------|---------------------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 1700 | 1700 | 1700 | | |
| C | Pressure with S/T OFF | kPa | 510 | 481 | 539 | | |
| C | Pressure with S/T OFF | kgf/cm ² | 5.2 | 4.9 | 5.5 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|-----------------------|---------------------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 2150 | 2150 | 2150 | | |
| C | Pressure with S/T OFF | kPa | 598.5 | 569 | 628 | | |
| C | Pressure with S/T OFF | kgf/cm ² | 6.1 | 5.8 | 6.4 | | |

2.8 Timer

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|---------------------------|-------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 1100 | 1100 | 1100 | | |
| S | Timer stroke with S/T OFF | mm | 2.5 | 2.3 | 2.7 | | |
| P | Basic | | * | | | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|---------------------------|-------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 1100 | 1100 | 1100 | | |
| C | Timer stroke with S/T ON | mm | 4.2 | 3.7 | 4.7 | | |
| C | Timer stroke with S/T OFF | mm | 2.5 | 2.2 | 2.8 | | |

| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|---------------------------|-------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 1700 | 1700 | 1700 | | |
| C | Timer stroke with S/T OFF | mm | 4.6 | 4.1 | 5.1 | | |

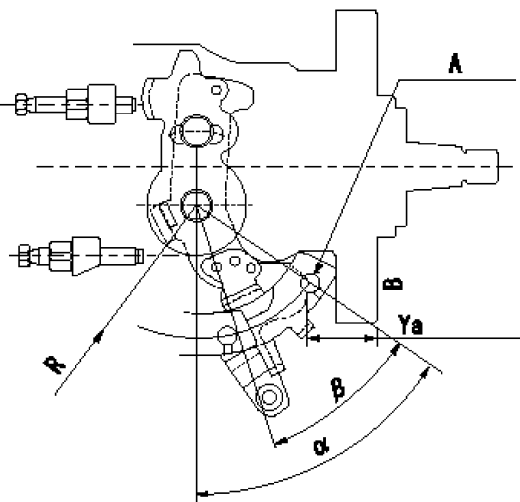
| CAT | Designation | Unit | Set value | min. | max. | Actual values | OT |
|-----|---------------------------|-------|-----------|------|------|---------------|----|
| P | Pump speed | r/min | 2550 | 2550 | 2550 | | |
| C | Timer stroke with S/T OFF | mm | 6.9 | 6.4 | 7.4 | | |

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 | CONTROL LEVER ANGLE |
|--------------------------|--|
| Ya=23.7~28.3mm R=49mm |  |
| Ya=23.7~28.3mm R=49mm | Control lever angle measurement 1. Measure dimension Ya between the end of the lever and the flange face. 2. Measure the lever angle from the pin hole R (plate). A = lever angle measuring position B = flange face |

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 | MS dimension | mm | 1 | 0.9 | 1.1 | | |
| S | Control lever angle alpha | deg. | 54 | 50 | 58 | | |
| S | Control lever angle beta | deg. | 42 | 37 | 47 | | |