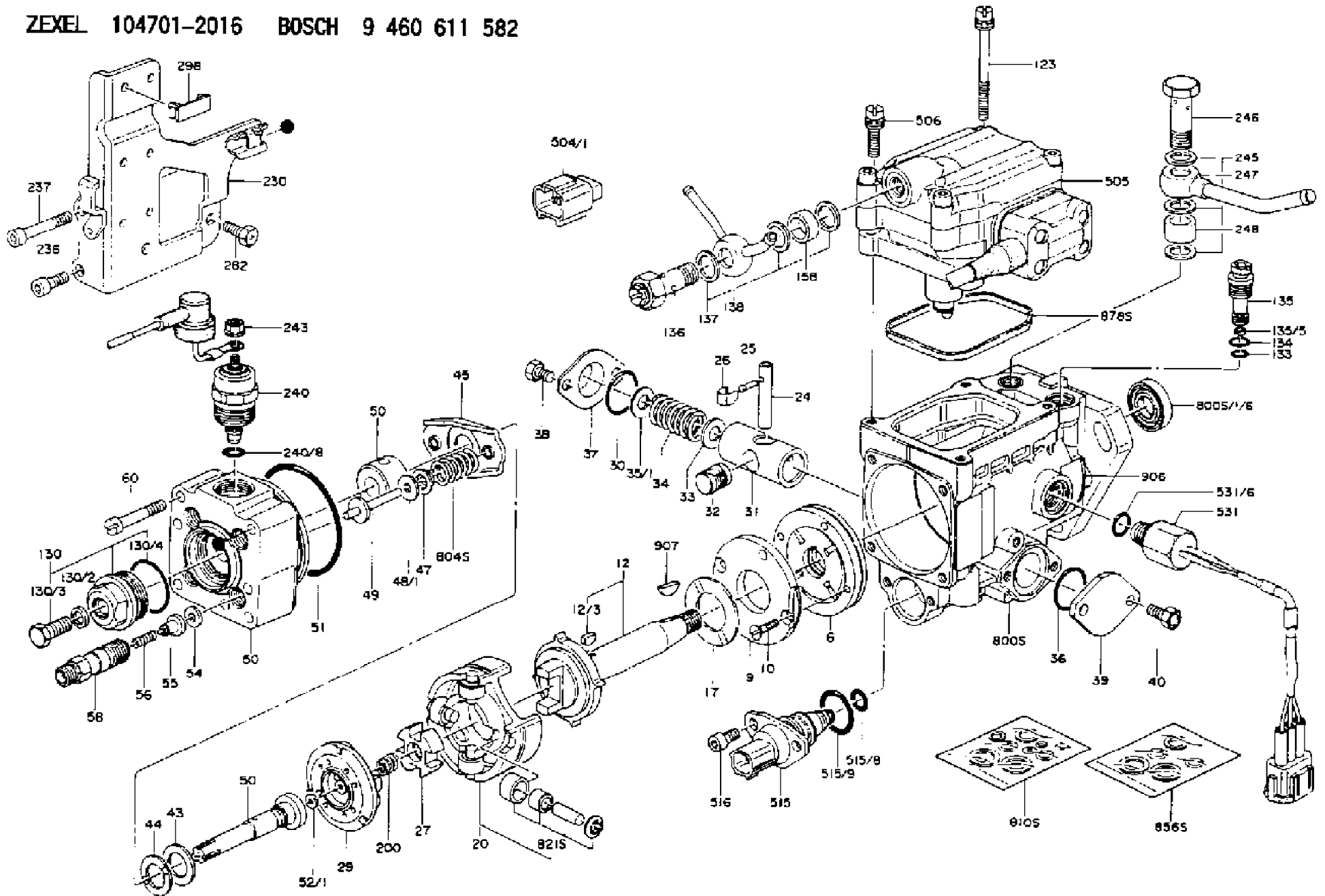


ZEXEL 104701-2016 BOSCH 9 460 611 582



104701-2016 9 460 611 582 1670065N00 INJECTION-PUMP ASSEMBLY

**ZEXEL
COMPONENTS**

Date: 11.03.15
Time: 20:30:43

+ INJECTION-PUMP ASSEMBLY	104701-2016	9 460 611 582	
Manufacturer No.:	1670065N00		
- FUEL-INJECTION PUMP	104601-2016	9 461 619 946	NP-VE4/11E2050RNP7
- NAMEPLATE	148633-4700	9 461 620 473	
-			
-			
- NOZZLE AND HOLDER ASSY.	105148-8003	9 443 611 769	0003
- NOZZLE AND HOLDER ASSY.	105148-1221	9 430 610 135	0050T
Nozzle and Holder:	16600-63G01		
Open Pre:MPa(Kgf/cm2):	9.8{100}		
- NOZZLE-HOLDER	105078-0050	9 430 615 042	
- NOZZLE	105007-1210	9 432 610 199	NP-DN0PDN121

**ZEXEL
SERVICE PARTS**

Product: 104701-2016 9 460 611 582 1670065N00 INJECTION-PUMP ASSEMBLY

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

48/1	146690-1600	9 461 611 331	A	1	SHIM:D17&5.2T1.3
48/1	146690-1700	9 461 611 332	A	1	SHIM:D17&5.2T1.4
48/1	146690-1800	9 461 611 333	A	1	SHIM:D17&5.2T1.6
48/1	146690-1900	9 461 611 334	A	1	SHIM:D17&5.2T1.7
48/1	146690-5800	9 461 619 110	A	1	SHIM
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	146403-6120	9 461 615 865		1	HYDRAULIC HEAD
51	146600-0000	9 461 610 413		1	O-RING
52/1	146420-0000	9 461 610 177	A	1	SHIM:D9.5&3.0T1.90
52/1	146420-0100	9 461 610 178	A	1	SHIM:D9.5&3.0T1.92
52/1	146420-0200	9 461 610 179	A	1	SHIM:D9.5&3.0T1.94
52/1	146420-0300	9 461 610 180	A	1	SHIM:D9.5&3.0T1.96
52/1	146420-0400	9 461 610 181	A	1	SHIM:D9.5&3.0T1.98
52/1	146420-0500	9 461 610 182	A	1	SHIM:D9.5&3.0T2.00
52/1	146420-0600	9 461 610 183	A	1	SHIM:D9.5&3.0T2.02
52/1	146420-0700	9 461 610 184	A	1	SHIM:D9.5&3.0T2.04
52/1	146420-0800	9 461 610 185	A	1	SHIM:D9.5&3.0T2.06
52/1	146420-0900	9 461 610 186	A	1	SHIM:D9.5&3.0T2.08
52/1	146420-1000	9 461 610 187	A	1	SHIM:D9.5&3.0T2.10
52/1	146420-1100	9 461 610 188	A	1	SHIM:D9.5&3.0T2.12
52/1	146420-1200	9 461 610 189	A	1	SHIM:D9.5&3.0T2.14
52/1	146420-1300	9 461 610 190	A	1	SHIM:D9.5&3.0T2.16
52/1	146420-1400	9 461 610 191	A	1	SHIM:D9.5&3.0T2.18
52/1	146420-1500	9 461 610 192	A	1	SHIM:D9.5&3.0T2.20
52/1	146420-1600	9 461 610 193	A	1	SHIM:D9.5&3.0T2.22
52/1	146420-1700	9 461 610 194	A	1	SHIM:D9.5&3.0T2.24
52/1	146420-1800	9 461 610 195	A	1	SHIM:D9.5&3.0T2.26
52/1	146420-1900	9 461 610 196	A	1	SHIM:D9.5&3.0T2.28
52/1	146420-2000	9 461 610 197	A	1	SHIM:D9.5&3.0T2.30
52/1	146420-2100	9 461 610 198	A	1	SHIM:D9.5&3.0T2.32
52/1	146420-2200	9 461 610 199	A	1	SHIM:D9.5&3.0T2.34

52/1	146420-2300	9 461 610 200	A	1	SHIM:D9.5&3.0T2.36
52/1	146420-2400	9 461 610 201	A	1	SHIM:D9.5&3.0T2.38
52/1	146420-2500	9 461 610 202	A	1	SHIM:D9.5&3.0T2.40
52/1	146420-2600	9 461 610 203	A	1	SHIM:D9.5&3.0T2.42
52/1	146420-2700	9 461 610 204	A	1	SHIM:D9.5&3.0T2.44
52/1	146420-2800	9 461 610 205	A	1	SHIM:D9.5&3.0T2.46
52/1	146420-2900	9 461 610 206	A	1	SHIM:D9.5&3.0T2.48
52/1	146420-3000	9 461 610 207	A	1	SHIM:D9.5&3.0T2.50
52/1	146420-3100	9 461 610 208	A	1	SHIM:D9.5&3.0T2.52
52/1	146420-3200	9 461 610 209	A	1	SHIM:D9.5&3.0T2.54
52/1	146420-3300	9 461 610 210	A	1	SHIM:D9.5&3.0T2.56
52/1	146420-3400	9 461 610 211	A	1	SHIM:D9.5&3.0T2.58
52/1	146420-3500	9 461 610 212	A	1	SHIM:D9.5&3.0T2.60
52/1	146420-3600	9 461 610 213	A	1	SHIM:D9.5&3.0T2.62
52/1	146420-3700	9 461 610 214	A	1	SHIM:D9.5&3.0T2.64
52/1	146420-3800	9 461 610 215	A	1	SHIM:D9.5&3.0T2.66
52/1	146420-3900	9 461 610 216	A	1	SHIM:D9.5&3.0T2.68
52/1	146420-4000	9 461 610 217	A	1	SHIM:D9.5&3.0T2.70
52/1	146420-4100	9 461 610 218	A	1	SHIM:D9.5&3.0T2.72
52/1	146420-4200	9 461 610 219	A	1	SHIM:D9.5&3.0T2.74
52/1	146420-4300	9 461 610 220	A	1	SHIM:D9.5&3.0T2.76
52/1	146420-4400	9 461 610 221	A	1	SHIM:D9.5&3.0T2.78
52/1	146420-4500	9 461 610 222	A	1	SHIM:D9.5&3.0T2.80
52/1	146420-4600	9 461 610 223	A	1	SHIM:D9.5&3.0T2.82
52/1	146420-4700	9 461 610 224	A	1	SHIM:D9.5&3.0T2.84
52/1	146420-4800	9 461 610 225	A	1	SHIM:D9.5&3.0T2.86
52/1	146420-4900	9 461 610 226	A	1	SHIM:D9.5&3.0T2.88
52/1	146420-5000	9 461 610 227	A	1	SHIM:D9.5&3.0T2.90
52/1	146420-5100	9 461 610 228	A	1	SHIM:D9.5&3.0T1.74
52/1	146420-5200	9 461 610 229	A	1	SHIM:D9.5&3.0T1.76
52/1	146420-5300	9 461 610 230	A	1	SHIM:D9.5&3.0T1.78
52/1	146420-5400	9 461 610 231	A	1	SHIM:D9.5&3.0T1.80
52/1	146420-5500	9 461 610 232	A	1	SHIM:D9.5&3.0T1.82
52/1	146420-5600	9 461 610 233	A	1	SHIM:D9.5&3.0T1.84
52/1	146420-5700	9 461 610 234	A	1	SHIM:D9.5&3.0T1.86
52/1	146420-5800	9 461 610 235	A	1	SHIM:D9.5&3.0T1.88
54	146433-0100	9 461 610 239		4	GASKET:D12&6.4T1.00
55	146430-5920	9 413 610 295		4	DELIVERY-VALVE ASSEMBLY
56	146432-0700	9 461 615 053		4	COMPRESSION SPRING
58	146440-2720	9 461 617 960		4	FITTING
60	139106-0100	9 411 610 051		3	FLAT-HEAD SCREW
123	146620-8800	9 461 615 877		1	FLAT-HEAD SCREW
130	146421-1020	9 461 615 867		1	# CAPSULE
130/2	139508-0200	9 411 610 839		1	GASKET:D11.4&8.2T1
130/3	146422-0300	9 461 612 322		1	BLEEDER SCREW
130/4	146600-0500	9 461 610 418		1	O-RING
133	146600-0600	9 461 610 419		1	O-RING
134	146600-0700	9 461 610 420		1	O-RING
135	146110-3220	9 461 615 857		1	# CONTROL VALVE

135/5	146114-0000	9 461 610 094	1	SPRING WASHER
136	148120-0020	9 461 615 942	1	OVER FLOW VALVE
137	139512-0200	9 411 610 074	3	GASKET:D18.5&12.2T1.00
138	146668-0420	9 461 616 869	1	INLET UNION
158	146614-6900	9 461 615 874	1	SPACER BUSHING
200	146206-0100	9 461 610 113	1	COILED SPRING
230	148613-1220	9 461 616 946	1	BRACKET
236	146620-2700	9 461 611 114	1	HEX-SOCKET-HEAD CAP SCREW
237	146620-0200	9 461 610 497	1	HEX-SOCKET-HEAD CAP SCREW
240	146688-0120	9 461 615 511	1	# PULLING ELECTROMAGNET
240/8	146600-1700	9 461 610 427	1	O-RING
243	146621-1000	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	146668-3020	9 461 616 871	1	INLET UNION
248	146614-0200	9 461 610 481	1	SPACER BUSHING
282	139006-4400	9 411 610 583	1	BLEEDER SCREW
298	146659-8000	9 461 615 892	3	CLAMPING BAND
504/1	146649-4500	9 461 615 879	A 1	RESISTER
504/1	146649-4600	9 461 615 880	A 1	RESISTER
504/1	146649-4700	9 461 615 881	A 1	RESISTER
504/1	146649-4800	9 461 615 882	A 1	RESISTER
504/1	146649-4900	9 461 615 883	A 1	RESISTER
504/1	146649-5000	9 461 615 884	A 1	RESISTER
504/1	146649-5100	9 461 615 885	A 1	RESISTER
504/1	146649-5200	9 461 615 886	A 1	RESISTER
504/1	146649-5300	9 461 615 887	A 1	RESISTER
504/1	146649-5400	9 461 615 888	A 1	RESISTER
504/1	146649-5500	9 461 615 889	A 1	RESISTER
504/1	146649-5600	9 461 615 890	A 1	RESISTER
504/1	146649-5700	9 461 615 891	A 1	RESISTER
505	148531-1721	9 461 620 451	1	GOVERNOR;ELECTRIC
506	146620-8900	9 461 615 878	3	FLAT-HEAD SCREW
515	106144-1061	9 443 611 859	1	# TIMING CONTROL VALVE
515/8	161440-3800	9 443 610 357	1	O-RING
515/9	161440-3700	9 443 610 356	1	O-RING
516	010206-1440	9 442 610 202	2	HEX-SOCKET-HEAD CAP SCREW:M6P1L14
531	479773-4522	9 443 610 359	1	# PULSE GENERATOR
531/6	479773-6500	9 443 610 377	1	O-RING
800S	148009-0320	9 461 615 938	1	PUMP HOUSING
800S/1/6	146601-0900	9 461 614 046	1	PACKING RING
804S	146232-0720	9 461 612 351	1	COMPRESSION SPRING
810S	146600-4620	9 461 617 567	1	REPAIR SET
821S	146210-5720	9 461 616 128	1	ROLLER SET
856S	146600-4920	9 461 617 879	1	REPAIR SET
878S	148600-1300	9 461 615 948	1	SEAL RING
906	148633-4700	9 461 620 473	1	NAMEPLATE

ZEXEL Ass'y No.	104701-2016
Bosch Ass'y No.	9 460 611 582
Bosch Typecode	
Engine Type	TD27-T
Manufacturer	NISSAN
Edition date	26.03.08

1 Adjustment conditions

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
	Test oil		ISO4113orSAEJ967 d				
		1404 Test oil					
P	Test oil temperature	degC	45	45	50		
	Nozzle		105780-0060				
	Bosch type code		NP-DN0SD1510				
	Nozzle holder		105780-2150				
P	Opening pressure	MPa	13	13	13.3		
P	Opening pressure	kgf/cm2	133	133	136		
	Injection pipe		157805-7320				
P	Injection pipe	mm	2-6-450				
		Inside diameter - outside diameter - length (mm)					
	Joint assembly		157641-4720				
	Tube assembly		157641-4020				
P	Transfer pump pressure	kPa	20	20	20		
P	Transfer pump pressure	kgf/cm2	0.2	0.2	0.2		
	Direction of rotation (viewed from drive side)		R				
		Right					

2 Adjustment specification**2.1 Compensation resistor, compensation voltage comparison**

Name	Comp. resistor/voltage																																							
	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C($\Delta U_{\alpha \text{ soll}}$)</th> </tr> <tr> <td></td> <td>kΩ</td> <td>V</td> </tr> </thead> <tbody> <tr><td>1</td><td>0.18</td><td>0.056</td></tr> <tr><td>2</td><td>0.30</td><td>0.045</td></tr> <tr><td>3</td><td>0.43</td><td>0.034</td></tr> <tr><td>4</td><td>0.62</td><td>0.023</td></tr> <tr><td>5</td><td>0.82</td><td>0.011</td></tr> <tr><td>6</td><td>1.10</td><td>0</td></tr> <tr><td>7</td><td>1.50</td><td>-0.011</td></tr> <tr><td>8</td><td>2.00</td><td>-0.023</td></tr> <tr><td>9</td><td>2.70</td><td>-0.034</td></tr> <tr><td>10</td><td>3.90</td><td>-0.045</td></tr> <tr><td>11</td><td>5.00</td><td>-0.056</td></tr> </tbody> </table>	A	B	C($\Delta U_{\alpha \text{ soll}}$)		k Ω	V	1	0.18	0.056	2	0.30	0.045	3	0.43	0.034	4	0.62	0.023	5	0.82	0.011	6	1.10	0	7	1.50	-0.011	8	2.00	-0.023	9	2.70	-0.034	10	3.90	-0.045	11	5.00	-0.056
A	B	C($\Delta U_{\alpha \text{ soll}}$)																																						
	k Ω	V																																						
1	0.18	0.056																																						
2	0.30	0.045																																						
3	0.43	0.034																																						
4	0.62	0.023																																						
5	0.82	0.011																																						
6	1.10	0																																						
7	1.50	-0.011																																						
8	2.00	-0.023																																						
9	2.70	-0.034																																						
10	3.90	-0.045																																						
11	5.00	-0.056																																						
	<p>Compensation resistance/compensation voltage comparison A = Compensation resistor number B= Compensation resistance C = Compensation voltage delta U alpha soll</p>																																							

2.2 Pump chamber pressure

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
S	Pump chamber pressure	kPa	617.5	588	647		
S	Pump chamber pressure	kgf/cm2	6.3	6	6.6		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	100	100	100		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Pump chamber pressure	kPa	294	294			
C	Pump chamber pressure	kgf/cm2	3	3			

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Pump chamber pressure	kPa	618	579	657		
C	Pump chamber pressure	kgf/cm2	6.3	5.9	6.7		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2000	2000	2000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Pump chamber pressure	kPa	755	706	804		
C	Pump chamber pressure	kgf/cm2	7.7	7.2	8.2		

2.3 Timer stroke

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	70	70	70		
P	U alpha soll	V	2.7	2.7	2.7		
S	Timer stroke	mm	4.1	3.9	4.3		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	500	500	500		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	7.4	5.4	9.4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	8.1	6.1	10.1		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	70	70	70		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	4.1	3.8	4.4		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	0	0	0		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	0	0	0		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1500	1500	1500		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Timer stroke	mm	9.75	9.3	10.2		

2.4 Overflow

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Overflow quantity	cm3/min	600	470	730		

2.5 Fuel injection quantities

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	U alpha soll + dU alpha soll	V	2.8	2.8	2.8		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
S	Average injection quantity	mm3/st.	80.5	80	81		
S	Difference in delivery	mm3/st.	5		5		
P	Basic		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	375	375	375		
P	U alpha soll + dU alpha soll	V	1.89	1.89	1.89		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
S	Average injection quantity	mm3/st.	7	4	10		
S	Difference in delivery	mm3/st.	2		2		
P	Basic		*				
	Remarks	Confirmation of difference in delivery					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
P	U alpha soll + dU alpha soll	V	1.66	1.66	1.66		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
S	Average injection quantity	mm3/st.	16.1	13.6	18.6		
S	Difference in delivery	mm3/st.	5		5		
P	Basic		*				
	Remarks	Confirmation of difference in delivery					

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	100	100	100		
P	U alpha soll + dU alpha soll	V	3.5	3.5	3.5		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	83.3	73.3	93.3		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT

P	Pump speed	r/min	375	375	375		
P	U alpha soll + dU alpha soll	V	1.89	1.89	1.89		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	7	4	10		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	500	500	500		
P	U alpha soll + dU alpha soll	V	2.49	2.49	2.49		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	50.1	48.1	52.1		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	800	800	800		
P	U alpha soll + dU alpha soll	V	1.86	1.86	1.86		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	15.4	13.4	17.4		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	800	800	800		
P	U alpha soll + dU alpha soll	V	2.62	2.62	2.62		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	64.4	62.4	66.4		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	U alpha soll + dU alpha soll	V	1.85	1.85	1.85		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	16.6	14.6	18.6		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	U alpha soll + dU alpha soll	V	2.8	2.8	2.8		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	80.5	79.5	81.5		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2000	2000	2000		
P	U alpha soll + dU alpha soll	V	2.58	2.58	2.58		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	63.7	61.7	65.7		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2250	2250	2250		
P	U alpha soll + dU alpha soll	V	2.43	2.43	2.43		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	54.3	51.8	56.8		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
P	U alpha soll + dU alpha soll	V	1.66	1.66	1.66		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm3/st.	16.1	13.6	18.6		
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2500	2500	2500		
P	U alpha soll + dU alpha soll	V	1	1	1		

P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	mm ³ /st.	3		3		

2.6 Magnet valve OFF

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	375	375	375		
P	U alpha soll + dU alpha soll	V	1.89	1.89	1.89		
P	TCV duty (%) F TCV 60Hz	%	0	0	0		
C	Average injection quantity	cm ³ /min	0	0	0		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	2250	2250	2250		
P	U alpha soll + dU alpha soll	V	2.43	2.43	2.43		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
C	Average injection quantity	cm ³ /min	0	0	0		

2.7 Confirming NP sensor output

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	200	200	200		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.7	2.7	2.7		
C	Speed output	r/min	N+8				
N=Measure the actual speed.							

2.8 Checking fuel temperature sensor

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
P	TCV duty (%) F TCV 60Hz	%	100	100	100		
P	U alpha soll	V	2.8	2.8	2.8		
C	Temperature output	degC	T+-5				
Measure T = actual output temperature							

2.9 Magnet

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

3 Assembly dimension

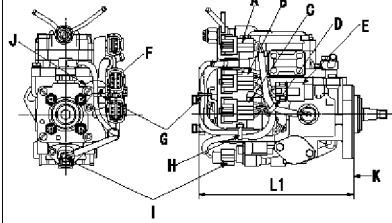
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
S	K dimension	mm	3.3	3.2	3.4		
S	KF dimension	mm	5.62	5.52	5.72		
S	Pre-stroke	mm	0.1	0.08	0.12		

4 Attachments' specification

4.1 Attachment specification 1

Name HARNESS & CONNECTOR

L1=Max.207mm



Connector and binder assembly specification

(1) Install the connector as shown in the figure.

(2) At the clip position at J (bracket's groove position), clip the F.C.V. harness and the G.E. harnesses together horizontally.

(3) After clipping, the GE harness and the FCV harness must be within L1 from the pump flange face.

A:P/U Connector

B:F.C.V. connector, Q adjustment connector

C:G.E. Connector

D:Binder

E:Q adjustment connector

F:Bracket groove

G:Clip position

H:Push type clip

I:T.C.V. Connector

J:Position the GE harness and the FCV harness together horizontally.

K:Pump flange face