
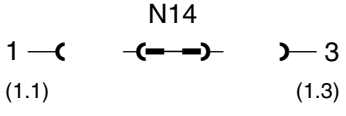
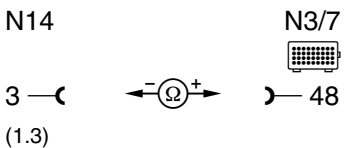
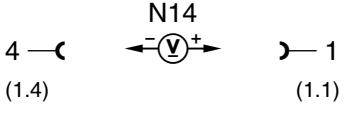
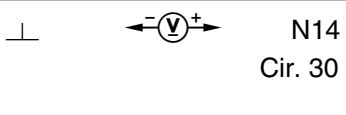
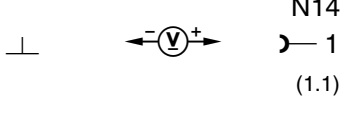










#### Electrical Test Program – Test (Preglow System)

Operation No. of Text description and Time Allowance ..... 15-4000



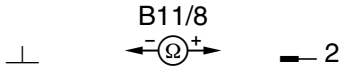
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	P1480 P0380	<b>Preglow indicator lamp (A1e16)</b>		Unplug preglow time-limit relay module (N14) Ignition: <b>ON</b>	Preglow indicator lamp (A1e16) lights	Light bulb, Wiring, ⇒ 1.1
1.1				Ignition: <b>OFF</b> Unplug preglow time-limit relay module (N14)	< 1 Ω	Wiring.
2.0	P1480 P0380	<b>Preglow time-limit relay module (N14)</b> Voltage supply		Unplug preglow time-limit relay module (N14) Ignition: <b>ON</b>	11 – 14 V	Fuse, Wiring, Ground, component compartment - left (W16/3), ⇒ 2.1
2.1		Circuit 30		Unplug preglow time-limit relay module (N14). Ignition: <b>OFF</b>	11 – 14 V	Wiring, ⇒ 2.2
2.2		Circuit 15		Unplug preglow time-limit relay module (N14). Ignition: <b>ON</b>	11 – 14 V	Fuse, Wiring, ⇒ 2.3

#### Electrical Test Program – Test (Preglow System)

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy	
2.3		Ground (output ground - component compartment - left) (W16/3)		N14 4 (1.4) Ignition: <b>OFF</b>	< 1 Ω	Wiring.	
3.0	P1480 P0380	<b>Glow plugs</b>	     	N14 1 (2.1) 2 (2.2) 3 (2.3) 4 (2.4) 5 (2.5) 6 (2.6)	Measure with DC current pickup. Remove windshield washer fluid container, remove cable cover and loosen cable ties, pull back protective sleeve. Turn ignition key for each measurement again to position 2.	8 – 15 A <sup>1)</sup>	Glow plugs (Figure 2), Wiring.

1) After 10 – 20 seconds the nominal value is obtained for a brief moment.

#### Electrical Test Program – Test (Preglow System)

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy																				
4.0	P1480 P0380	ECT sensor (B11/8)		Ignition: <b>OFF</b> Unplug preglow time-limit relay module (N14).	<table border="1"> <tr> <th>°C</th> <th>Ω</th> </tr> <tr> <td>20</td> <td>2500</td> </tr> <tr> <td>30</td> <td>1700</td> </tr> <tr> <td>40</td> <td>1170</td> </tr> <tr> <td>50</td> <td>830</td> </tr> <tr> <td>60</td> <td>600</td> </tr> <tr> <td>70</td> <td>435</td> </tr> <tr> <td>80</td> <td>325</td> </tr> <tr> <td>90</td> <td>245</td> </tr> <tr> <td colspan="2" style="text-align: center;">± 5%</td> </tr> </table>	°C	Ω	20	2500	30	1700	40	1170	50	830	60	600	70	435	80	325	90	245	± 5%		Engine coolant temperature sensor (B11/8, Figure 1), Wiring, ⇒ 4.1
°C	Ω																									
20	2500																									
30	1700																									
40	1170																									
50	830																									
60	600																									
70	435																									
80	325																									
90	245																									
± 5%																										
4.1		Engine coolant temperature sensor (B11/8)		Ignition: <b>OFF</b> Unplug connector on engine coolant temperature sensor (B11/8).	Nominal value see ⇒ 4.0	Engine coolant temperature sensor (B11/8) (Figure 1)																				

#### Electrical Test Program – Test (Preglow System)

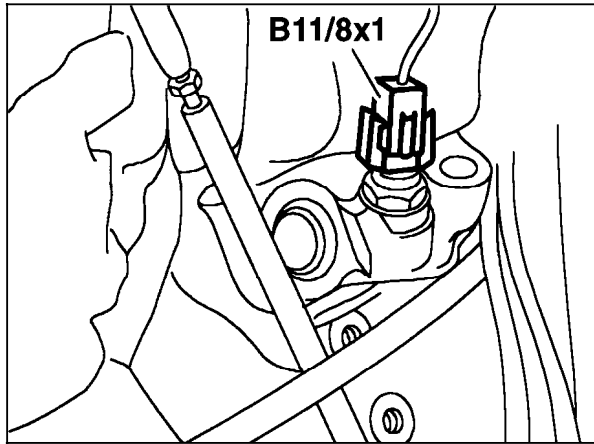


Figure 1  
B11/8x1 ECT sensor (preglow system) connector

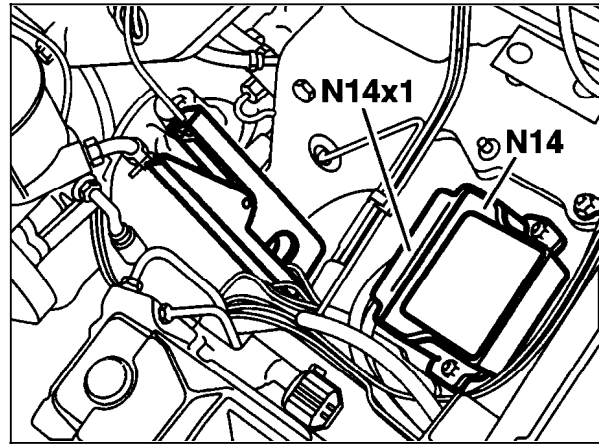


Figure 2  
Current pickup over wire to glow plug  
N14x1 Preglow time-limit relay module connector