Section C9

**Electrical Wiring Diagrams**

The electrical components related to the automatic air conditioning system are contained within Section C8 of Chapter C.

This section contains the following theoretical and practical wiring diagrams applicable to the automatic air conditioning system.

<table>
<thead>
<tr>
<th>Figure Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>C57</td>
<td>Theoretical wiring diagram (Automatic Air Conditioning System)</td>
</tr>
<tr>
<td>C58</td>
<td>Practical wiring diagram (Automatic Air Conditioning System)</td>
</tr>
<tr>
<td>C59</td>
<td>Interlock circuit</td>
</tr>
<tr>
<td>C60</td>
<td>Inhibit circuit</td>
</tr>
<tr>
<td>C61</td>
<td>Function switch</td>
</tr>
<tr>
<td>C62</td>
<td>Temperature sensors and selectors circuit</td>
</tr>
<tr>
<td>C63</td>
<td>Temperature sensors resistance values</td>
</tr>
<tr>
<td>C64</td>
<td>Recirculation actuators circuit</td>
</tr>
<tr>
<td>C65</td>
<td>Lower quantity flap actuator circuit</td>
</tr>
<tr>
<td>C66</td>
<td>Mode flap actuator circuit</td>
</tr>
<tr>
<td>C67</td>
<td>Voltage stabilizer wiring</td>
</tr>
<tr>
<td>C68</td>
<td>Fan motors circuit</td>
</tr>
</tbody>
</table>
Fig. C57

Theoretical Wiring Diagram

1. Electronics stabilizer
2. Upper servo stabilizer
3. Selector switch
4. Ignition fuse
5. Fan & compressor clutch fuse
6. Upper air ambient sensor
7. Upper air saloon sensor
8. Upper air selector
9. Lower air ambient sensor
10. Lower air saloon sensor
11. Lower air selector
12. Fan speed potentiometer
13. Lower quantity actuator relay
14. Fan & compressor relay
15. Fan module switch off relay
16. Isolation relay and fan delay thermostat
17. Servo motor
18. Upper mode change actuator
19. Recirculation relay
20. Lower quantity override
21. Compressor ambient thermostat
22. Compressor clutch solenoid
23. Upper servo module
24. Upper servo
25. Recirculation actuators
26. Servo isolation relay
27. Lower servo stabilizer
28. Lower servo module
29. Servo motor
30. Lower servo
31. Fan module
32. Fan motors

Wiring Diagram Colour Codes

R  - Black
R  - Red
Y  - Yellow
LG - Light Green
S  - Grey
K  - Pink
N  - Brown
O  - Orange
G  - Green
P  - Purple
W  - White
U  - Blue

Note  First letter denotes the base or main colour.
       Second letter denotes the tracer colour.
Fig. C58

Practical Wiring Diagram

1 Blower motor
2 A.C.U. diode board
3 Fan speed module and voltage stabiliser
4 Lower quantity actuator relay
5 Fan switch-off relay
6 Lower saloon temperature sensor
7 Oil pressure switch
8 Compressor
9 Compressor ambient thermostat
10 Servo unit
11 Starter motor solenoid
12 Fan delay thermostat
13 Fan and compressor fuse
14 Lower quantity flap micro-switch
15 Lower quantity flap actuator
16 Mode change flap actuator
17 Servo isolation relay
18 Fan delay relay
19 Fan and compressor relay
20 Blower motor
21 Right-hand recirculation actuator
22 Fuel filler door solenoid
23 Rear window demister relay
24 A.C.U. ambient temperature sensor
25 Upper system temperature sensor (top roll)
26 A.C.U. function switch
27 A.C.U. upper temperature switch
28 A.C.U. lower temperature switch
29 Rear window demister
30 Fuseboard
31 Upper system temperature sensor (cntrall)
32 Recirculation relay
33 Left-hand recirculation actuator

Wiring Diagram Colour Codes

B  - Black
R  - Red
Y  - Yellow
LG - Light Green
S  - Grey
K  - Pink
N  - Brown
O  - Orange'
G  - Green
P  - Purple
W  - White
U  - Blue

Note: First letter denotes the base or main colour.
Second letter denotes the tracer colour.
Fig. C59

Interlock Circuit

Theoretical
Fig. C59

Interlock Circuit

Practical

- Starter Motor
- Compressor Clutch
- Compressor Ambient Switch
- Servo Isolation Relay
- Fan & Compr Relay
- Fan & Compressor Fuse
- Oil Pressure Switch
- Oil Pressure Warning Lamp
- Fan Speed Module
- Voltage Stabiliser
- Fan Switch off Relay
- Function Switch
- Air Conditioning Diode Board
- Toeboard Sockets
- Servos
- Section C9
Inhibit Circuit

Theoretical
Inhibit Circuit

Practical

Fig. C60

Coolant Temperature Switch

Oil Pressure Switch

Compressor Clutch

Comp. Ambient Switch

Fan Delay Relay

Serve Isolation Relay

Fan & Compressor Relay

Fan & Compressor Fuse

Air Conditioning Diode Board

Function Switch

Upper Servo Micro-Switches

Tunnel Earth

R.H.A-post Earth

Lower Quantity Actuator

GK

Fuseboard A

Fan Speed Module

Fan Switch Off Relay

Lower Relay

44YB 14YB UB

Section C9
Fig. C61

Function Switch

Connection Chart

<table>
<thead>
<tr>
<th>Wire Colours</th>
<th>9UG/9UR</th>
<th>9OB/9RN</th>
<th>14B/90</th>
<th>9RN/14NK</th>
<th>14YB/14UN</th>
<th>9OY/14UN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Closed</td>
<td>Open</td>
<td>Closed</td>
<td>Open</td>
<td>Open</td>
<td>Open</td>
</tr>
<tr>
<td>Low</td>
<td>Closed</td>
<td>Open</td>
<td>Closed</td>
<td>Closed</td>
<td>36 K</td>
<td>Open</td>
</tr>
<tr>
<td>Auto</td>
<td>Closed</td>
<td>Open</td>
<td>Closed</td>
<td>Closed</td>
<td>Open</td>
<td>6.8 K</td>
</tr>
<tr>
<td>High</td>
<td>Closed</td>
<td>Open</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Open</td>
</tr>
<tr>
<td>DEF</td>
<td>Open</td>
<td>Closed</td>
<td>Open</td>
<td>Closed</td>
<td>Closed</td>
<td>Open</td>
</tr>
</tbody>
</table>

Section C9
## Function Switch Operation

<table>
<thead>
<tr>
<th>Function Switch Control Position</th>
<th>Off</th>
<th>Low</th>
<th>Auto</th>
<th>High</th>
<th>Def</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fan Speed</strong></td>
<td>Fans Off</td>
<td>Fixed Low</td>
<td>Infinitely Variable Automatically</td>
<td>High</td>
<td>Fixed High</td>
</tr>
<tr>
<td><strong>Temperature Control</strong></td>
<td>Both temp flaps are fixed at the position they occupied when switched off</td>
<td>Both upper and lower temperature flaps move automatically and independently</td>
<td></td>
<td>Both temp flaps move to and remain at full heat</td>
<td></td>
</tr>
<tr>
<td><strong>Heater Tap</strong></td>
<td></td>
<td>Automatically controlled by lower servo</td>
<td></td>
<td>Controlled by lower servo hence fully open</td>
<td></td>
</tr>
<tr>
<td><strong>Mode Position</strong></td>
<td></td>
<td>Facia when upper servo is at 0-25</td>
<td></td>
<td>Windscreen</td>
<td></td>
</tr>
<tr>
<td><strong>Rear Window Demister</strong></td>
<td>Off</td>
<td></td>
<td></td>
<td>On</td>
<td></td>
</tr>
<tr>
<td><strong>Lower Quantity Flap</strong></td>
<td>Closed</td>
<td></td>
<td></td>
<td>Closed</td>
<td></td>
</tr>
<tr>
<td><strong>Recirculation Flap</strong></td>
<td>Recirculation</td>
<td></td>
<td></td>
<td>Fresh</td>
<td></td>
</tr>
<tr>
<td><strong>Refrigeration Compressor</strong></td>
<td>Off</td>
<td></td>
<td></td>
<td>Fans start immediately engine is running</td>
<td></td>
</tr>
<tr>
<td><strong>Fan Delay</strong></td>
<td>Not applicable</td>
<td></td>
<td></td>
<td>1. 13 second delay after engine is running 2. Delayed for upper servo position of 25-100 until engine temperature reaches 40°C</td>
<td></td>
</tr>
</tbody>
</table>
Fig. C62

Temperature Sensor and Selector Circuit

Sensors Theoretical

Upper System

- Ambient Sensor
- Cantrail Sensor
- Located in Servo trim cover socket
- Temperature Selector 910Ω
- Trimming Potentiometer 1kΩ
- Range Resistor 750Ω
- Located in Servo module

Lower System

- Ambient Sensor
- Knee Roll Sensor
- Located in Servo trim cover socket
- Temperature Selector 1300Ω
- Trimming Potentiometer 1kΩ
- Range Resistor 750Ω
- Located in Servo module

+9 Volts

- OA

- OB

- OC

- OZ

- OY

- P923

Section C9
Fig. C63

Temperature Sensor Resistances Value

Sensor Resistances against Temperature

<table>
<thead>
<tr>
<th>Resistance Ω</th>
<th>1</th>
<th>Total resistance of lower sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>Resistance of top roll sensor</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Resistance of knee roll or cantrail sensor</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Total resistance of upper sensors</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Resistance of lower ambient sensor</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Resistance of upper ambient sensor</td>
</tr>
</tbody>
</table>
Recirculation Actuator Circuit

Theoretical/Practical Diagram

Fig. C64
Fig. C65

Lower Quantity Flap Actuator Circuit

Theoretical/Practical

65 NW 44V
Fan and Compressor
Fuse

Coolant Temperature Switch

14 YB
Fan and Compressor
Relay

9 K
Servo Isolation
Relay

Right Hand 'To'board
Socket 'D'

Fuseboard
A

To Fan
Speed Module

9RN

Upper Servo

Cold
Hot
10% Micro Switch

Function Switch

9GK 14 YN

9OW 14 UW
14 UB

Lower Quantity
Flap Micro Sw.

R.H.A Post
Earth

Lower Quantity
Flap Actuator

14 UW
14 UB

Section C9
Mode Flap Actuator Circuit
Theoretical/Practical
Fig. C67

Voltage Stabiliser Wiring

- **9KR**: 9.1 volt servo module supply (both modules)
- **9KB, 9KN**: 7.0 volt lower supply, depending on direction of servo motor
- **9KP, 9KY**: 7.0 volt upper supply, depending on direction of servo motor
Fig. C68

Fan Motors Circuit

Theoretical/Practical