FOREWORD

This wiring diagram has been prepared to provide information on the electrical system of the TOYOTA COROLLA FR series.

All information in the manual is based on the latest product information at the time of publication. However, specifications and procedures are subject to change without notice.

TOYOTA MOTOR CORPORATION

Name of your TOYOTA

COROLLA: except in Australia
SPRINTER: in Australia
A INTRODUCTION

As shown in the index, the entire electrical system is composed of 25 systems, including the power source and ground points.

The power source illustrations show how battery power is distributed to each fuse and which loads in the system the fuses protect.

Most systems are drawn from the fuse location. Joining the power source with any system will result in the complete system.

All ground points are illustrated along with the relationship between component grounds.

The wiring routings and relay locations can be found at the back of this manual.

The circuit, connectors, troubleshooting hints and component operation are illustrated for each system.

CONNECTORS

Connectors and connector pin numbers are indicated in each circuit. Wires and pins of the connectors are also clearly illustrated.

a. Connector to Component

Pin Number

Pin Number

RELAY

Single Connector to One Component

Connector

Pin Number

Pin Number

STARTER

Multiple Connectors to One Component
These connector locations can be found in the wiring routing at the back of this manual.

The connectors are illustrated in relation to the wiring side and not the component side, and these are seen from the open end. Connector colors are shown to assist in location.

Connector pins are numbered in each connector. Female connectors are numbered from left to right and from top to bottom. Male connectors are numbered from right to left and from top to bottom. (i.e., a male connector is numbered in relation to its female connector.)

**WIRE COLOR**

Wire colors are indicated by an alphabetical code.

- **B** = Black
- **V** = Violet
- **P** = Pink
- **LG** = Light Green
- **GR** = Grey
- **BR** = Brown
- **W** = White
- **R** = Red
- **O** = Orange
- **L** = Light Blue
- **G** = Green
- **Y** = Yellow

The first letter indicates the basic wire color and the second letter indicates the color of the stripe.

Example: **R—G** indicates a Red wire with a Green stripe.

**ABBREVIATIONS**

The following abbreviations are used in this manual.

- **A/C** = Air Conditioner
- **CB** = Circuit Breaker
- **ECU** = Electronic Control Unit
- **EFI** = Electronic Fuel Injection
- **EUR** = Europe
- **Ex.** = Except
- **FL** = Fusible Link
- **GEN** = General
- **J/B** = Junction Block
- **LHD** = Left-hand Drive Vehicle
- **RHD** = Right-hand Drive Vehicle
- **SV** = Vacuum Switching Valve

**TROUBLESHOOTING HINTS AND COMPONENT OPERATION**

For assistance in understanding the system and help in repair, voltage, resistance or operation of each component is shown in the box.
B TROUBLESHOOTING

TROUBLESHOOTING PROCEDURE

1. Determine what is wrong with the system.

2. First read the diagram so you understand the system. Refer to the component operation boxed within the system circuit.

3. Locate the cause of the problem.
   a. Determine whether the problem is with the common circuit (power source or ground) or individual circuit.
      Check other loads or switches which are in parallel with the problem component.
      If they are normal, the problem lies within the particular system itself.
      Refer to the POWER SOURCE or GROUND POINTS and check the related systems.
      (NOTE: Each component is grounded at 2 or 3 points.)
      If the related systems are normal, the common circuit (power source or ground points) is okay.
      The problem lies within the individual system.
   b. Locate the exact point of the problem by narrowing down the area with a voltmeter or test lamp.

4. Repair and re-check the circuit.
   If any wiring was disconnected for troubleshooting, reconnect it and check the related circuits.

VOLTAGE CHECK

1. Establish conditions in which voltage is present at the check point.
   (Refer to component operations.)

   Example:
   A — Ignition S/W on
   B — Ignition S/W and S/W 1 on
   C — Ignition S/W, S/W 1 and Relay on
   (S/W 2 off)

2. Using a voltmeter, connect the negative lead to a good ground point or negative battery terminal and the positive lead to the connector or component terminal. This check can be done with a test lamp instead of a voltmeter.
CONTINUITY AND RESISTANCE CHECK
1. Disconnect the battery terminal or wire so there is no voltage between the check points.
2. Contact the two leads of an ohmmeter to each of the check points.
   If the circuit has diodes, reverse the two leads and check again.
   When contacting the negative lead to the diode positive side and the positive lead to the negative side, there should be continuity.
   When contacting the two leads in reverse, there should be no continuity.

FINDING A SHORT CIRCUIT
1. Remove the blown fuse and disconnect all loads of the fuse.
2. Connect a test lamp in place of the fuse.
3. Establish conditions in which the test lamp comes on.
   (Refer to component operations.)
   Example:
   A — ignition S/W on
   B — Ignition S/W and S/W 1 on
   C — Ignition S/W, S/W 1 and Relay on
   (Connect the Relay) and S/W 2 off
   (or Disconnect S/W 2)
4. Disconnect and reconnect the connectors while watching the test lamp.
   The short lies between the connector where the test lamp stays lit and the connector where the lamp goes out.
5. Find the exact location of the short by lightly shaking the problem wire along the body.
### POWER SOURCE (Power—Load Reference)

<table>
<thead>
<tr>
<th>Power</th>
<th>Load</th>
<th>System No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5A</td>
<td><strong>DOME</strong> Digital Clock, Interior Lamp, Map Lamp, Door Warning Lamp,</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Luggage Room Lamp, Rear Fog Light Relay, Rear Fog Lamp</td>
<td></td>
</tr>
<tr>
<td>30A</td>
<td><strong>ECU-IG</strong> Sun Roof Motor</td>
<td>24</td>
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<tr>
<td>7.5A</td>
<td><strong>RADIO NO. 2</strong> Radio and Stereo Player</td>
<td>21</td>
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<tr>
<td>15A</td>
<td><strong>CIG</strong> Cigarette Lighter, Digital Clock</td>
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<td>7.5A</td>
<td><strong>TURN</strong> Turn Signal Flasher, Turn Signal Lamp, Turn Signal S/W</td>
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<td></td>
<td><strong>GAUGE</strong> Combination Meter, Chime, Back-up Light S/W, Back-up Lamp</td>
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<tr>
<td></td>
<td>Overdrive Relay</td>
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<td>Defogger S/W, Defogger Relay</td>
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<td></td>
<td>Heater Relay</td>
<td>23</td>
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<td></td>
<td>Seat Belt Warning Relay, Seat Belt Warning Lamp</td>
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<td>7.5A</td>
<td><strong>IGN</strong> Engine Main Relay, Charge Warning Lamp</td>
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<td></td>
<td>Wiper Motor, Wiper Motor</td>
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<td>20A</td>
<td><strong>WIPER</strong> Rear Washer Motor, Rear Wiper Motor, Washer Valve</td>
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<td>Headlight/Cleaner Relay (EUR LHD)</td>
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<td></td>
<td>15</td>
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<tr>
<td>15A</td>
<td><strong>STOP</strong> Stop Light S/W, Stop Lamp</td>
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<tr>
<td>10A</td>
<td><strong>RTR</strong> Retract Control Relay</td>
<td>8</td>
</tr>
<tr>
<td>10A</td>
<td><strong>TAIL LH</strong> (W. Germany) Clearance Lamp LH, Taillamp LH</td>
<td>10</td>
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<tr>
<td>10A</td>
<td><strong>TAIL RH</strong> (W. Germany) Clearance Lamp, Taillamp, Tribe Lamp, Radio</td>
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</tr>
<tr>
<td></td>
<td>Lamp, Cigarette Lighter Lamp, Heater Control Lamp, Combination</td>
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</tr>
<tr>
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<td>Meter Lamp, A/T Indicator Lamp, Overdrive S/W Lamp</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
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<tr>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>15A</td>
<td><strong>TAIL</strong> (Ex. W. Germany) Clearance Lamp, Taillamp, Licence Plate</td>
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</tr>
<tr>
<td></td>
<td>Lamp, Radio Lamp, Cigarette Lighter Lamp, Heater Control Lamp,</td>
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</tr>
<tr>
<td></td>
<td>Combination Meter Lamp, A/T Indicator Lamp</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>30A</td>
<td><strong>DEFOG CB (LHD)</strong> Rear Window Defogger</td>
<td>19</td>
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<tr>
<td>20A</td>
<td><strong>DEFOG CB (RHD)</strong> Rear Window Defogger, Defogger S/W</td>
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### J/B No.2

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<th>System No.</th>
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<td>HEAD LH (Ex. W. Germany)</td>
<td>Headlamp LH</td>
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<td>12A</td>
<td>HEAD RH (Ex. W. Germany)</td>
<td>Headlamp RH</td>
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<td>HEAD LH-UPR (W. Germany)</td>
<td>Headlamp LH (Upper), High Beam Indicator Lamp</td>
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<tr>
<td>10A</td>
<td>HEAD RH-UPR (W. Germany)</td>
<td>Headlamp RH (Upper)</td>
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<tr>
<td>10A</td>
<td>HEAD LH-LWR (W. Germany)</td>
<td>Headlamp LH (Lower)</td>
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<tr>
<td>10A</td>
<td>HEAD RH-LWR (W. Germany)</td>
<td>Headlamp RH (Lower)</td>
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<td>10A</td>
<td>ENGINE</td>
<td>Voltage Regulator</td>
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<tr>
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<td>Fuel Cut Solenoid</td>
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<tr>
<td>10A</td>
<td>RADIO NO. 1</td>
<td>Radio and Stereo Player</td>
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<td>10A</td>
<td>HAZ-HORN</td>
<td>Horn</td>
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<td></td>
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<td>Hazard S/W, Hazard Lamp</td>
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<td>7.5A</td>
<td>CHARGE</td>
<td>Charge Warning Lamp</td>
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<tr>
<td></td>
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<td>Choke Heater</td>
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<td>15A</td>
<td>EFI</td>
<td>EFI Main Relay</td>
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<td>30A</td>
<td>FL RTR</td>
<td>Retract Relay</td>
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### J/B No.4

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</thead>
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<td>10A</td>
<td>A/C</td>
<td>A/C S/W, A/C Amplifier</td>
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<tr>
<td>30A</td>
<td>HEATER CB</td>
<td>Heater Relay, Blower Motor</td>
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</table>

### Fusible Link Box

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<th>Load</th>
<th>System No.</th>
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</thead>
<tbody>
<tr>
<td>6CA</td>
<td>FL AM1</td>
<td>Engine Main Relay, Ignition S/W (AM1)</td>
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<tr>
<td></td>
<td></td>
<td>Alternator</td>
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<tr>
<td></td>
<td></td>
<td>Defogger Relay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Headlight Cleaner Relay (EUR LHD)</td>
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<tr>
<td></td>
<td></td>
<td>Taillight Relay</td>
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<tr>
<td>30A</td>
<td>FL AM2</td>
<td>Ignition S/W (AM2)</td>
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### Fusible Link (Near the Battery)

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<th>Load</th>
<th>System No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL 0.5G</td>
<td>Headlight Relay, Dimmer Relay (W. Germany)</td>
<td>8</td>
</tr>
</tbody>
</table>
FUSIBLE LINK BOX
- BX1: BBA EFI
- BX1: BBA EXCEPT EFI
- BX2: BBA

TAILLIGHT RELAY
Closed with light control S/W at tail or head position

ENGINE MAIN RELAY
Closed with ignition S/W at ID or ST position
Closed with light control S/W at head position
On dimmer S/W at flash position

DIMMER RELAY
Changed from head-light to head-up with dimmer S/W at flash position or with
headlight relay on and dimmer S/W at high position.

HEATER RELAY
4-5: Closed with ignition S/W on and blower S/W on

DEFROSTER RELAY
Closed with ignition S/W at N position
And defroster S/W on

IGNITION S/W

4-5: Closed with ignition key at ACC or ID position
4-5: Closed with ignition key at ON or ST position
5-7: Closed with ignition key at ID or ST position
<table>
<thead>
<tr>
<th>Fuse Box</th>
<th>Description</th>
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<tr>
<td>FUSIBLE LINK BOX</td>
<td>AMX BOX EF2 (BOX EXCEPT EF1) AMZ 512 BOX</td>
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</tbody>
</table>

**Tail Light Relay**
- Closed with light control S/W at tail or head position

**Engine Main Relay**
- Closed with ignition S/W at ID or ST position

**Headlight Relay**
- Closed with light control S/W at head position or dimmer S/W at flash position

**Heater Relay**
- 4-6 V closed with ignition S/W on and blower S/W on

**Ignition S/W**
- 4-V closed with ignition key at ACC or IG position
- 4-V closed with ignition key at ID or ST position
- 8-V closed with ignition key at ID or ST position

---

![Diagram](image)
3-1 CHARGING SYSTEM

Charge Warning Lamp:
- 5 (LH01, LH02) - Ground: Continuity with alternator hot running.
- 5 (LH01, LH02) - Ground: 12 Volts with alternator running.

Voltage Regulator:
- 4, 6: 12.8-14.0 Volts with engine running at 2,000 rpm.
- 4, 5: Closed with alternator charging.
- 12, 6: 6.6-7.4 Volts with alternator charging.
- 5-6: Closed with alternator not charging.

Battery:
- Black

Relay & Fuse Box:
- Black
- Blue
- Orange
FUEL CUT SOLENOID
1-GROUNDED: 12 VOLS WITH IGNITION S/W ON

CHOKER HEATER
2-GROUNDED: APPROX. 19-24°C, -10°C (65°F)

1. GREEN
2. ORANGE

- [Diagram of wiring connections and labels]
IDLE-UP (EFI)
ELECTRICAL IDLE-UP WIRING
1-2: APPROX. 64 K
1-GROUND 12 VOLT WITH TAIL LIGHTS ON
HEADING OFF OR BLINKER MOTOR ON
2-NEAR VISOR DEFOGGER ON OR STARTER
CHAINING AND R-12 SECONDS THEREAFTER

Diagram of electrical idle-up wiring with various connectors and labels.
HEADLIGHTS (EXCEPT WEST GERMANY AND SAUDI)

HEADLIGHT RELAY
Closed with light on head, 5/16 at head position or
several 5/16 at flash position

<table>
<thead>
<tr>
<th>OFF</th>
<th>TAIL</th>
<th>HEAD</th>
<th>LOW</th>
<th>HIGH</th>
<th>FLASH</th>
</tr>
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<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
HEADLIGHT RELAY
CLOSED WITH LIGHT CONTROL S/W AT HEAD POSITION ON
DIMMER S/W AT FLASH POSITION
DIMMER RELAY
CHANGE FROM HEAD (LOW) TO HEAD (HIGH) WITH
DIMMER S/W AT FLASH POSITION OR HEADLIGHT RELAY ON
AND DIMMER S/W AT HIGH POSITION.
TAIL LIGHT RELAY
CLOSED WITH LIGHT CONTROL S/W AT TAIL OR HEAD POSITION
④ LIGHT CONTROL S/W
②-⑧ CLOSED WITH LIGHT CONTROL S/W AT TAIL OR HEAD POSITION
BACK-UP LIGHTS
HEADLIGHT CLEANER (EUROPE LHD)

1. Ground 12 volts with ignition S/W on.
2. Ground continuity with washer S/W on.
3. Ground continuity for 2.5 seconds with ignition S/W.
4. Wiper on head position and washer S/W pressed twice.

Diagram showing connections and components related to headlight cleaner relay and ignition system.
SEAT BELT WARNING (MIDDLE EAST)  16

○ SEAT BELT WARNING RELAY
  2-GROUND 12VOLTS WITH IGNITION S/W AT IG POSITION
  6-HYSTER AND 6SEC IN BELL WARNING BUZZER FOR 4-8 SECONDS
  6-GROUND 12VOLTS FOR 4-8 SECONDS WITH IGNITION S/W ON AND
  6VOLTS THEREAFTER
  6-GROUND CONTINUITY UNLESS DRIVER'S LBP BELT IN USE
  6SECONDS BELT WARNING BUZZER

○ BUCKLE S/W
  1-2V OPEN WITH DRIVER'S LBP BELT IN USE
WIPER AND WASHER S/W (W/ INT)
3-GROND 12VOLTS WITH IGNITION S/W ON
7-GROND 12VOLTS EVERY 4 SECONDS INTERMITTENTLY
WITH WIPER S/W AT INT POSITION
2-GROND 12VOLTS WITH IGNITION S/W ON UNLESS WIPER
MOTOR AT STOP POSITION
7-GROND 12VOLTS WITH IGNITION S/W ON AND AFTER
WIPER S/W OFF UNTIL WIPER MOTOR STOPS.
WASHER VALVE

With battery voltage applied between terminals, washer flows from washer tank to rear washer hose.
- OIL PRESSURE S/W
  - Switch open with oil pressure below 0.45 kg/cm² (6.5 PSI)
- FUEL LEVEL SENDER
  - Switch open with fuel full
- WATER TEMP. SENDER
  - Switch open approx. 20°C at 60°F (122°F)
  - Switch open approx. 90°C at 180°F (230°F)
- VACUUM S/W
  - Switch open with a vacuum of approximately 0.64 mbar. M1 or above
- PARKING BRAKE S/W
  - Switch closed with parking brake lever pulled up
- BRAKE FLUID LEVEL S/W
  - Switch closed with float down
- CHIME S/W
  - Switch closed with speed above 120 km/h

- ECU-EX, SWITZERLAND
- IDER-SWITZERLAND

- BLUE
- BLACK
- GREEN
- (EX. EFT)
- (EURO)
22-1 COMBINATION METER (LHD)
22-2 COMBINATION METER (RHD)

- OIL PRESSURE S/N
  - Ground closed with oil pressure below 0.445 kg/cm² (5.75 psi)
- FUEL LEVEL SENDER
  - Approx. 32.3/3 with fuel full
  - Approx. 110/3 with fuel empty
- WATER TEMP. SENDER
  - Ground approx. 220°F at 80°C (122°F)
  - Approx. 115°F at 115°C (240°F)
- PARKING BRAKE S/N
  - Ground closed with parking brake lever pulled up
- BRAKE FLUID LEVEL S/N
  - Ground closed with float down
- BULB CHECK RELAY (AUSTRALIA)
  - Ground closed with ignition S/N at ST position

[Diagram of connection points]
<table>
<thead>
<tr>
<th>SYSTEMS</th>
<th>LOCATION</th>
<th>SYSTEMS</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>Air Conditioner, Cooler and Heater</td>
<td>2-1</td>
<td>Rear Fog Light</td>
<td>4-4</td>
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<tr>
<td>Back-up Light</td>
<td>2-6</td>
<td>Rear Wiper and Washer</td>
<td>3-1</td>
</tr>
<tr>
<td>Carburetor</td>
<td>1-8</td>
<td>Seat Belt</td>
<td>2-6</td>
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<tr>
<td>Charging</td>
<td>1-7</td>
<td>Starting</td>
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<tr>
<td>CIG. Lighter</td>
<td>4-6</td>
<td>Stop Light</td>
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<td>4-6</td>
<td>Sun Roof</td>
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<td>Combination Meter</td>
<td>2-3</td>
<td>Taillight and Illumination</td>
<td>3-4, 4-1</td>
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<td>Defogger</td>
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<td>Turn Signal and Hazard</td>
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<td>Windshield Wiper and Washer</td>
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<td>Horn</td>
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