# MGTC Electrical Circuits
## EXU Supplement

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Revision Log
This is a working document, as such changes will be made as new information emerges, enhancement to improve the readability or errors are found. Below is a list of these updates.

January 4, 2019 – Version 1.0 Initial Issue
 MGTC Electrical Circuits
EXU Supplement

Introduction

Background
This is a supplement to the document titled "MGTC Electrical Circuits", covering just the 1949 MGTC EXU model. The TC was upgraded, electronically to comply with various country (mostly the United States) laws and regulations regarding automobiles. Among these were electrical turn signals, sealed headlights, and license plate illumination lights.

For ease of use, I've included all the circuits of the EXU in this document even if they are identical to the non-EXU model.

Circuits that Are the Same
➢ Charging and Auxiliary Power
➢ Ignition
➢ Ignition Warning Light
➢ Petrol Pump
➢ Screenwiper Motor

Circuits that New or Revised
➢ Headlights
➢ Side and Tail Lights
➢ Horn
➢ Dash / Panel Lights and Clock
➢ Petrol Warning Light
➢ Map Lights
➢ Directional Indicator Lights and Stop Lights

Circuits that Have Been Eliminated
➢ Fog Lamp
➢ Stop Lights (Now integrated in with the Directional Indicators)
➢ Inspection Sockets

Again, I do not profess to be any form of expert on electronics. All the information I am presenting here is extracted from numerous. Should you find an error, please let me know at TCStormer@comcast.net and I will update the document.
Nomenclatures
Some notes regarding labeling of item:
  ➢ In all cases “Left” is the passenger side, “Right” is driver’s side.
  ➢ LH is Left Hand, RH is Right Hand
  ➢ SW is Switch
  ➢ w/ stands for With
  ➢ The names Generator and Dynamo are interchangeable. I have chosen to use Generator
  ➢ Lamp and Light are interchangeable. I have chosen to use Light, except for the D-Lamp name.

References

No Author Listed. 1954, *The Instruction Manual for the MG Series “TC” Midget*

Ball, Kenneth. 1968, *MG Autobook One*

Multiple Circuit Components

Five of the components are used in multiple circuits. Since each circuit description only deals with the wiring that is used by just that circuit, I’m including an overall look of all the connections used by each of these components.

RF95 Control Box

What’s New or Changed: A4 to Indicator Flasher Unit, E to Panel Earthing Stud in lieu of Horn Push and Dipper Switch
Lighting & Ignition Switch
Power enters the switch at connection A (Input) and exits through IG (Ignition), H (Headlights) and T (Tail and Side Lights). Connection L (Lighting) is not used.

When the key is turned on a connection is made between A and IG, which then connects to terminal A3 on the RF95 Control Box. All “Ignition On” circuits are controlled by this connection.

Setting the switch to S (Side / Tail) will create a connection between A and T. When set to H (Headlights) this connects A to both H and T.

What’s New or Changed: T connection is now a single line to Front Side Lights
Horn Push & Dipper Switch

What’s New or Changed: Grounds directly to Panel, Horn connection (“P”) now Brown w/Black
Ammeter

Note the labeling of B and A is consistent in all the wiring diagrams.

What’s New or Changed: Elimination of connection B to Inspection Lamp Socket
Panel Earthing Stud

The Panel Earthing Stud is new to the EXU; it replaces the ground connections from the Inspection Light Socket.
Basic Circuits

The Charging and Auxiliary Power Circuits

Power Source: Battery and/or Generator

Ignition On or Off: On
Switch Settings: N/A

What’s New or Changed: None

Refer to the MGTC Electrical Circuits document for a detail description of this circuit.
The Ignition Warning Light Circuit

Power Source: Battery and/or Generator

Ignition On or Off: On
Switch Settings: N/A

What’s New or Changed: None

Refer to the MGTC Electrical Circuits document for a detail description of this circuit.
Ignition Circuit

Power Source:       Battery and/or Generator

Ignition On or Off: On
Switch Settings:    N/A

What’s New or Changed: None

Refer to the MGTC Electrical Circuits document for a detail description of this circuit.
### Headlights

**Power Source:** Battery and/or Generator

**Ignition On or Off:** Either

**Switch Settings:**
- Lighting & Ignition Switch: H
- Horn Push & Dipper Switch: D or H

**What's New or Changed:** Main Beam Warning Light, Panel Earth Stud
Side and Tail Lights

Power Source: Battery and/or Generator

Ignition On or Off: Either

Switch Settings: Lighting & Ignition Switch: S or H

What’s New or Changed: Multiple Tail Lights, Number Plate Light, Single wire from the Lighting & Ignition Switch to both Front Side Lights and Rear Tail Lights.
Horn

Power Source: Battery

Ignition On or Off: Either
Switch Settings: Horn Push & Dipper Switch: Horn Button Pushed

What’s New or Changed: Multiple Horns, New Color Scheme, Direct Connect to Battery, Fuse
Dash / Panel Lights and Clock

Power Source: 
Dash/Panel Lights: Battery and/or Generator
Clock: Battery

Ignition On or Off: Either
Switch Settings:
Dash / Panel Lights:  
Lighting & Ignition Switch: S or H
Dash Light Switch: On

Clock: N/A

What’s New or Changed: Removal of Inspection Sockets, Added Earth Stud

The wiring for the Clock is not shown on the general wiring diagram, so I’m assuming that it is the same as the Variation 3.
Petrol Warning Light

Power Source: Battery and/or Generator

Ignition On or Off: On
Switch Settings: N/A

What’s New or Changed: Removal of Fog Light Switch and Fog Light
Map Lights

Power Source: Battery

Ignition On or Off: Either
Switch Settings: Map Reading Light Switch: On

What’s New or Changed: Removal of Inspection Light Socket, added Earth Stud
**Petrol Pump**

Power Source: Battery and/or Generator

Ignition On or Off: On

Switch Settings: N/A

What’s New or Changed: None
Screenwiper Motor

Power Source: Battery and/or Generator

Ignition On or Off: On
Switch Settings: Screenwiper Switch: On

What’s New or Changed: None
Directional Indicator Lights and Stop Lights

Power Source: Battery and/or Generator

Ignition On or Off: On
Switch Settings: Directional Switch: Left or Right Turn and/or
Stop Light Switch: Brakes Applied

What's New or Changed: The entire circuit is new
# Appendix

## Used Wire Numbers and Colors by Wire Number

<table>
<thead>
<tr>
<th>Nbr</th>
<th>Color</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Blue</td>
</tr>
<tr>
<td>2</td>
<td>Blue w/Red</td>
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<tr>
<td>4</td>
<td>Blue w/White</td>
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<td>9</td>
<td>White</td>
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<td>White w/Black</td>
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<tr>
<td>17</td>
<td>Green</td>
</tr>
<tr>
<td>18</td>
<td>* Green w/Red</td>
</tr>
<tr>
<td>19</td>
<td>* Green w/Yellow</td>
</tr>
<tr>
<td>20</td>
<td>* Green w/Blue</td>
</tr>
<tr>
<td>21</td>
<td>* Green w/White</td>
</tr>
<tr>
<td>22</td>
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<td>24</td>
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<td>Yellow</td>
</tr>
<tr>
<td>29</td>
<td>Yellow w/Green</td>
</tr>
<tr>
<td>33</td>
<td>Brown</td>
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<tr>
<td>36</td>
<td>Brown w/Blue</td>
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<tr>
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<td>Brown w/White</td>
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<td>Red w/White</td>
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<td>49</td>
<td>Purple</td>
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<tr>
<td>56</td>
<td>Purple w/Black</td>
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<tr>
<td>57</td>
<td>Black</td>
</tr>
</tbody>
</table>

* New Colors Added – Directional Indicators
+ New Colors Added - Horn
# Existing Color used in new Circuit - Directional Indicators