

D.C. Charging Systems

Lucas Electrical Limited Parts and Service Division
Great Hampton Street Birmingham B18 6AU

10p

RECOMMENDED TEST EQUIPMENT

D.C. Moving Coil Voltmeter Scale 0-20V
D.C. Moving Coil Ammeter Scale 5-0-40A
Hydrometer,
Jumper Lead

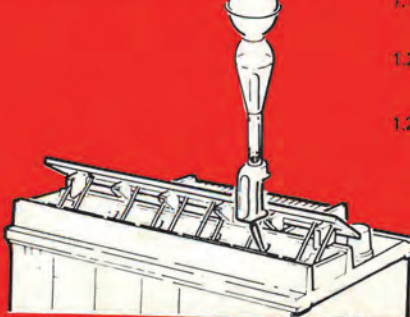
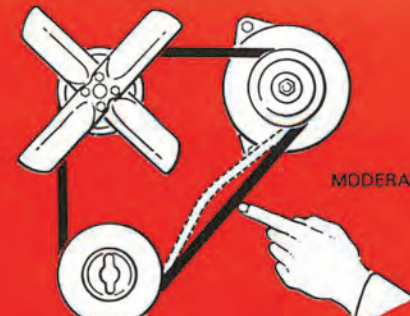
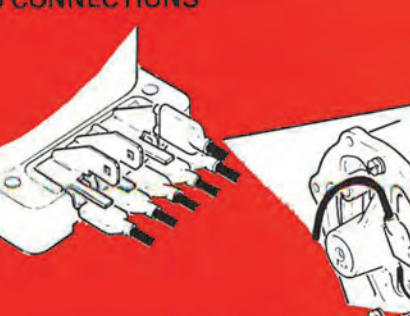
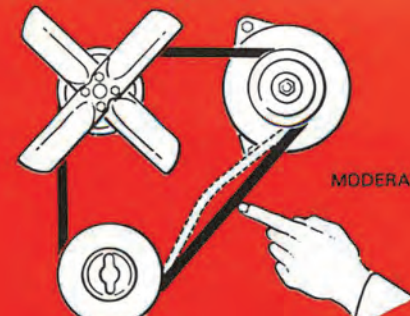
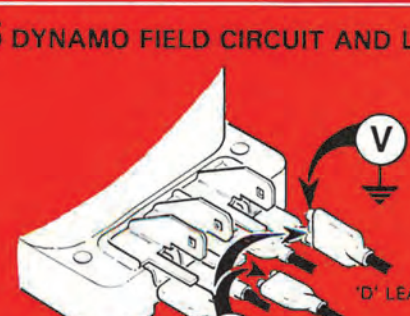
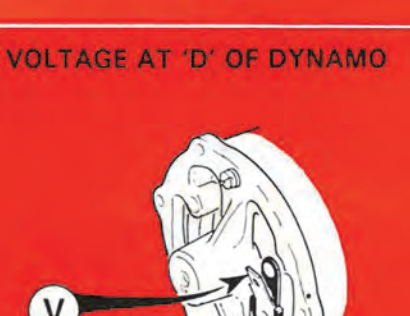
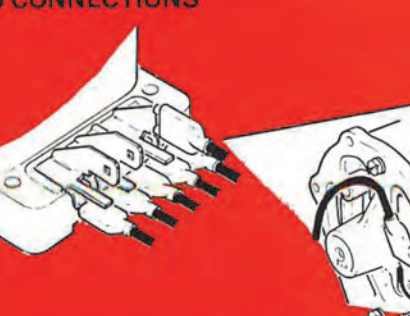
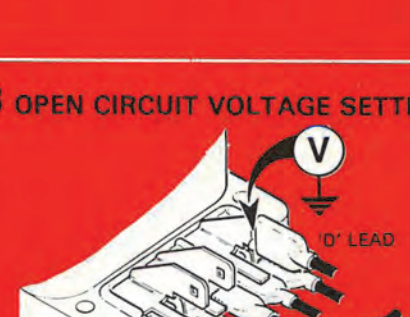

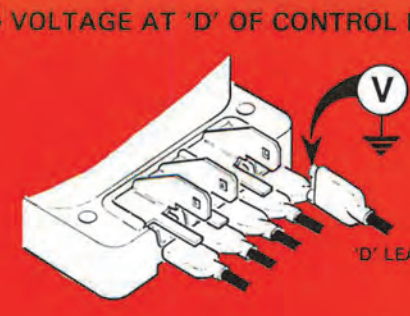
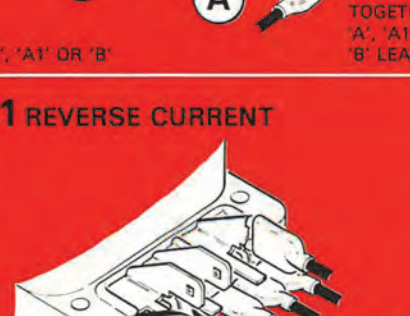
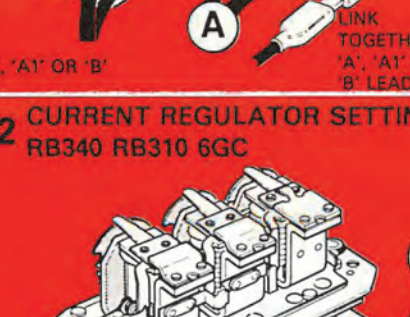
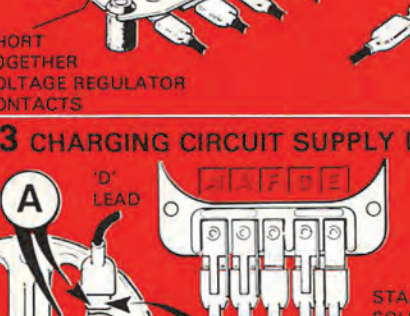
RB340 Adjusting Tool (Part No. 54381742)

Note: Control box bobbin identification, viewed from the terminals

LEFT HAND BOBBIN IS VOLTAGE REGULATOR

RIGHT HAND BOBBIN IS CUT-OUT

CENTRE BOBBIN (RB310, 340 & 6GC) IS CURRENT REGULATOR

TEST	RESULT																																	
1 HYDROMETER READING  <p>1.110-1.130 DISCHARGED 1.230-1.250 70% DISCHARGED 1.270-1.290 CHARGED</p>	<p>Below 1.230 Recharge and then test \rightarrow</p> <p>1.230-1.290 \rightarrow</p> <p>TEST 2</p>																																	
2 DRIVE BELT TENSION  <p>MODERATE FINGER PRESSURE</p>	<p>6mm (1/4") \rightarrow</p> <p>Loose and/or worn Rectify \rightarrow</p> <p>TEST 3</p>																																	
3 CONNECTIONS 	<p>Clean and tight \rightarrow</p> <p>Loose and/or dirty Rectify \rightarrow</p> <p>TEST 4</p>																																	
4 VOLTAGE AT 'D' OF CONTROL BOX  <p>'D' LEAD</p> <p>RUN ENGINE AT APPROX 1500 REV/MIN.</p>	<p>Voltmeter should show 1.5-3V \rightarrow</p> <p>Voltage outside limits \rightarrow</p> <p>TEST 5</p>																																	
5 DYNAMO FIELD CIRCUIT AND LEADS  <p>'D' LEAD 'F' LEAD</p> <p>ENGINE SPEED SLOWLY INCREASED</p>	<p>Ammeter should read 2-2.5A when voltmeter reads 12V \rightarrow</p> <p>Ammeter reading outside limits \rightarrow</p> <p>TEST 6</p>																																	
6 VOLTAGE AT 'D' OF DYNAMO  <p>RUN ENGINE AT APPROX 1500 REV/MIN</p>	<p>Voltmeter should show 1.5-3V If correct check 'D' lead for open circuit, or short between 'D' and 'F' leads. Rectify. \rightarrow</p> <p>If outside limits remove dynamo for repair. \rightarrow</p> <p>TEST 7</p>																																	
7 DYNAMO FIELD CIRCUIT  <p>RUN ENGINE AT APPROX 1500 REV/MIN</p>	<p>Ammeter should read 2-2.5A when voltmeter reads 12V If correct check 'F' lead for open circuit, or short between 'D' and 'F' leads. Rectify. \rightarrow</p> <p>If outside limits remove dynamo for repair. \rightarrow</p> <p>TEST 8</p>																																	
8 OPEN CIRCUIT VOLTAGE SETTING  <p>'D' LEAD</p> <p>LINK TOGETHER 'A', 'A1' OR 'B' LEADS</p> <p>RUN ENGINE AT APPROX 3000 REV/MIN.</p>	<p>LIMITS: RB106/108 16.0-16.5V RB310/6GC 15.0-15.5V Note 1 RB340 14.5-15.5V Notes 1&2 Note 1. Reduce settings by 0.25V for ambient temperatures above 20°C (68°F). Note 2. If setting is 0.5V above or below limit, reset to nearest limit. Correct reading \rightarrow</p> <p>If outside limits, adjust. \rightarrow</p> <p>If not adjustable proceed to \rightarrow</p> <p>TEST 9</p>																																	
9 CONTROL BOX EARTH  <p>JUMPER LEAD TO 'E' TERMINAL</p> <p>EARTH AT ENGINE</p> <p>LINK TOGETHER 'A', 'A1' OR 'B' LEADS</p> <p>RUN ENGINE AT APPROX 3000 REV/MIN.</p>	<p>Voltage regulator reading correct, clean or make new earth connection \rightarrow</p> <p>Reading still outside limits and not adjustable replace control box. \rightarrow</p> <p>TEST 10</p>																																	
10 CUTTING IN VOLTAGE  <p>'D' LEAD</p> <p>SWITCH ON HEADLAMPS</p> <p>LINK TOGETHER 'A', 'A1' OR 'B' LEADS</p> <p>ENGINE SPEED SLOWLY INCREASED</p>	<p>Cut out contacts should close, i.e. meter needle flicks back between 12.7-13.3V \rightarrow</p> <p>If outside limits adjust cut-out setting. If not adjustable replace control box. \rightarrow</p> <p>TEST 11</p>																																	
11 REVERSE CURRENT  <p>LINK TOGETHER 'A', 'A1' OR 'B' LEADS</p> <p>ENGINE SPEED SLOWLY DECREASED FROM CHARGING SPEED</p>	<p>Ammeter should read 2-7A when the contacts open. Ammeter needle must then rise to zero \rightarrow</p> <p>TEST 12 (For RB340, 310, 6GC)</p> <p>TEST 13 (For RB106, 108)</p>																																	
12 CURRENT REGULATOR SETTING RB340 RB310 6GC  <p>SHORT TOGETHER VOLTAGE REGULATOR CONTACTS</p> <p>LINK TOGETHER 'B' LEADS</p> <p>RUN ENGINE AT APPROX. 3000 REV/MIN.</p>	<table border="1"> <thead> <tr> <th>AMMETER READING \pm 1A.</th> <th>DYNAMO MODEL</th> <th>Output Current</th> </tr> </thead> <tbody> <tr> <td></td> <td>C40 (5" Fan)</td> <td>22A</td> </tr> <tr> <td></td> <td>C40 (4 1/2" Fan)</td> <td>20A</td> </tr> <tr> <td></td> <td>C40A</td> <td>10.5A</td> </tr> <tr> <td></td> <td>C40L</td> <td>25A</td> </tr> <tr> <td></td> <td>C40T</td> <td>22A</td> </tr> <tr> <td></td> <td>C40T 22762, 22769</td> <td>18A</td> </tr> <tr> <td></td> <td>C42</td> <td>30A</td> </tr> <tr> <td></td> <td>C45 PV6</td> <td>25A</td> </tr> <tr> <td></td> <td>C48</td> <td>35A</td> </tr> <tr> <td></td> <td>Reading correct</td> <td></td> </tr> </tbody> </table> <p>Reading too high or too low, adjust setting. If not adjustable replace control box. \rightarrow</p> <p>TEST 13</p>	AMMETER READING \pm 1A.	DYNAMO MODEL	Output Current		C40 (5" Fan)	22A		C40 (4 1/2" Fan)	20A		C40A	10.5A		C40L	25A		C40T	22A		C40T 22762, 22769	18A		C42	30A		C45 PV6	25A		C48	35A		Reading correct	
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13 CHARGING CIRCUIT SUPPLY LINE VOLTAGE DROP  <p>'D' LEAD</p> <p>'D' TERMINAL</p> <p>STARTER SOLENOID</p> <p>TO STARTER</p> <p>ENGINE SPEED SLOWLY INCREASED.</p>	<p>Voltmeter should read not more than 0.75V when ammeter shows 10A. \rightarrow</p> <p>If above 0.75V rectify poor connections etc. of insulated charging line. \rightarrow</p>																																	