

A.C. Charging Systems

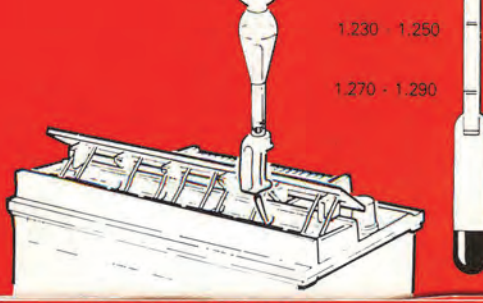
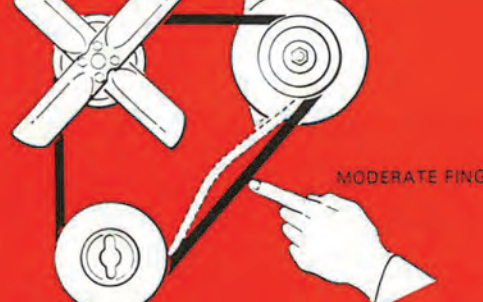
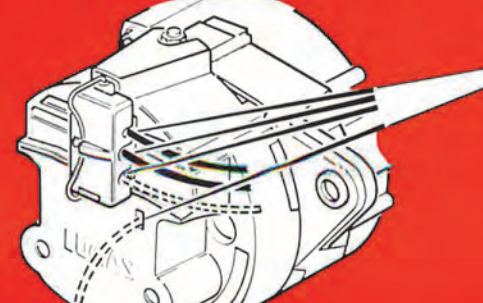
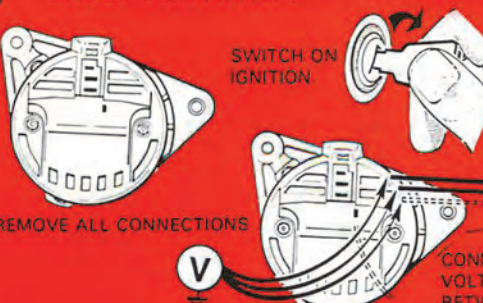
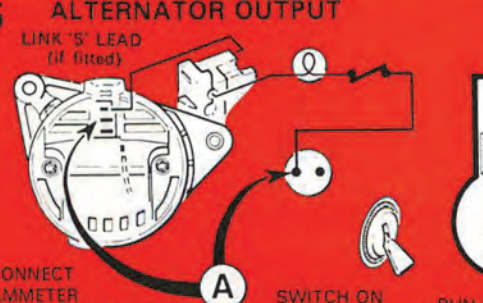
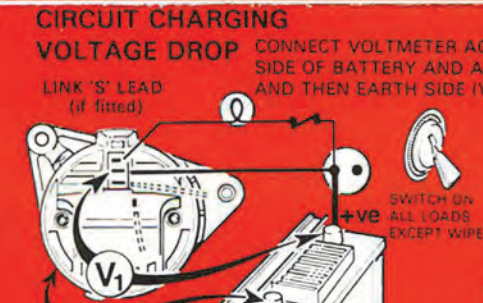
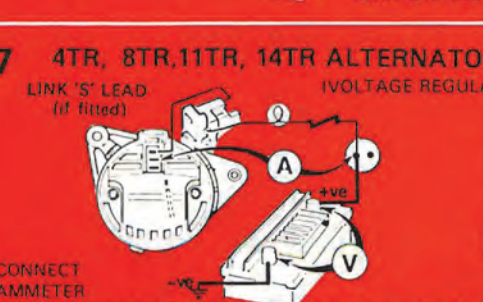
Lucas Electrical Limited Parts and Service Division
Great Hampton Street Birmingham B18 6AU

10p

RECOMMENDED TEST EQUIPMENT

D.C. Moving Coil Voltmeter Scale 0-20V
D.C. Moving Coil Ammeter Scale 5-0-100A
Hydrometer

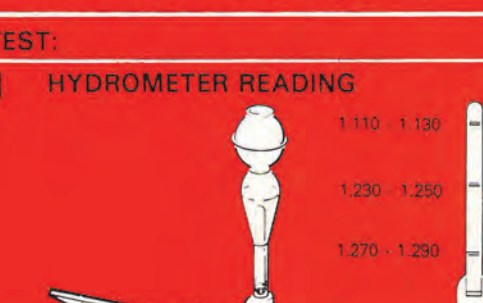
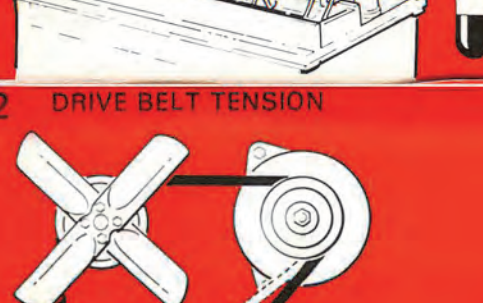
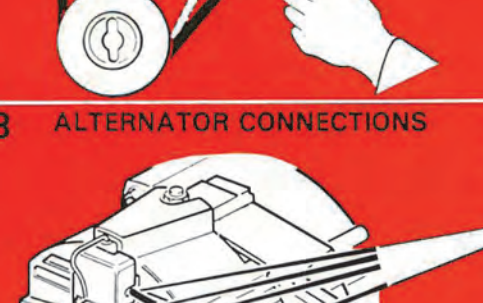

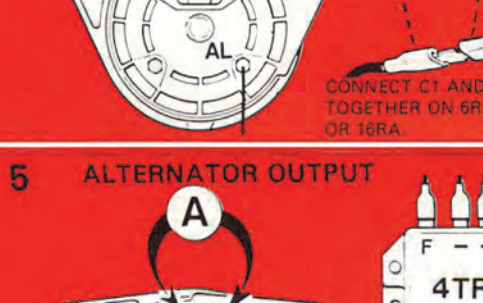
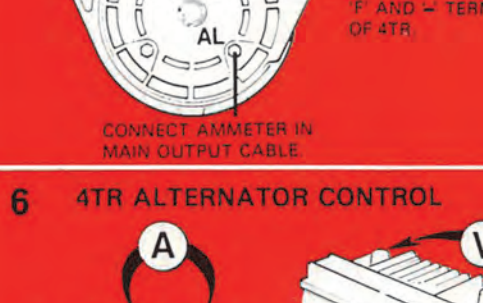
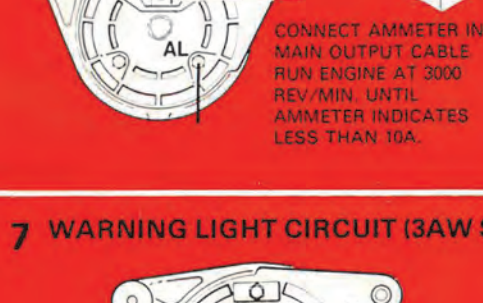
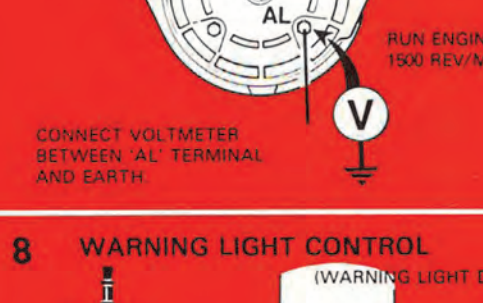
15/16 AC, 15/16/17/18/20/23/25 ACR SYSTEMS

TEST:	RESULT:
1 HYDROMETER READING 	Below 1.230 Recharge and then test \rightarrow TEST 2 1.230 - 1.290 \rightarrow TEST 2
2 DRIVE BELT TENSION 	6 mm (1/4") \rightarrow TEST 3 Loose and/or worn Rectify. \rightarrow TEST 3
3 ALTERNATOR CONNECTIONS 	Clean and tight \rightarrow TEST 4 Loose and/or dirty Rectify \rightarrow TEST 4
4 CABLE CONTINUITY 	Battery Voltage \rightarrow TEST 5 No reading (If no reading for 'Ind' lead, check warning light) Rectify \rightarrow TEST 5
5 ALTERNATOR OUTPUT 	AMMETER READING SHOULD EXCEED 15 AC/ACR 25A 16 AC/ACR 30A 17 ACR 33A 17 ACR (Combine Harvester) 24A 18 ACR 40A 20 ACR 60A 23 ACR 50A 25 ACR 60A Reading correct. \rightarrow TEST 6 If less than above remove and rectify. (If 15/16 AC short 'F' and '-' on 4TR and repeat. If satisfactory replace 4TR) \rightarrow TEST 6
6 CIRCUIT CHARGING VOLTAGE DROP 	V1 0.5V max. V2 0V max. \rightarrow TEST 7 If greater than above Rectify. \rightarrow TEST 7
7 4TR, 8TR, 11TR, 14TR ALTERNATOR CONTROL (VOLTAGE REGULATOR SETTING) 	Run until ammeter reads less than 10A. Voltmeter should read 13.6 - 14.4V. If reading incorrect, replace alternator control.

RECOMMENDED TEST EQUIPMENT

D.C. Moving Coil Voltmeter Scale 0-20V
D.C. Moving Coil Ammeter Scale 5-0-100A
Hydrometer

10/11 AC SYSTEMS

TEST:	RESULT:
1 HYDROMETER READING 	Below 1.230 Recharge and then test \rightarrow TEST 2 1.230 - 1.290 \rightarrow TEST 2
2 DRIVE BELT TENSION 	6 mm (1/4") \rightarrow TEST 3 Loose and/or worn Rectify. \rightarrow TEST 3
3 ALTERNATOR CONNECTIONS 	Clean and tight \rightarrow TEST 4 Loose and/or dirty Rectify \rightarrow TEST 4
4 6RA, 16RA RELAY (CONDITION NO CHARGE) 	If ammeter shows no charge check cables and connections to relay 'C' terminals. If satisfactory. \rightarrow TEST 5 If ammeter now shows charge, check cables and connections to 'W' terminals (6RA relay) or 'W' and 'R' terminals (16RA relay). 16RA only — measure voltage at alternator (see TEST 7) and if 6-8V, replace relay. If incorrect, replace alternator. \rightarrow TEST 5
5 ALTERNATOR OUTPUT 	Ammeter should read: 10 AC 35A 11 AC 12V 45A 11 AC 12V 60A (23567, 23580, 23633) 11 AC 24V 23A \rightarrow TEST 6 If less than above remove Alternator and rectify. \rightarrow TEST 6
6 4TR ALTERNATOR CONTROL 	12V. SYSTEMS 13.9 - 14.4V. 24V. SYSTEMS 27.9 - 28.3V. Voltmeter reading correct as above. \rightarrow TEST 7 Low or high reading, replace 4TR \rightarrow TEST 7 Unstable reading, high resistance in control circuit Rectify. \rightarrow TEST 7
7 WARNING LIGHT CIRCUIT (3AW SYSTEMS ONLY) 	Voltmeter 6-8V. (14-15V for 24 volt alternators) \rightarrow TEST 8 If incorrect reading, replace Alternator. \rightarrow TEST 8
8 WARNING LIGHT CONTROL (WARNING LIGHT DOES NOT ILLUMINATE) 	If warning light now illuminates replace 3AW. If warning light does not illuminate, check bulb and connections.