

Engineering Instruction

No. MD / 321
ISSUE 3

TITLE
DMU POWER CARS FITTED WITH CAV AC824 ALTERNATORS.
STANDARDIZATION OF CAV RUG 10, 11, 14 AND 15 RECTIFIER/REGULATOR UNITS

LOCOMOTIVES, VEHICLES OR EQUIPMENT

Description	Serial Nos.	Lot Nos.
Class 101, 105, 107, 108, 110, 111, 115, 117, 118, 119, 120, 121, 122, 123, 124, 127, 128, and 131, DMU's		

LOCOMOTIVE, VEHICLE OR EQUIPMENT CODES
DMU 101, 105, 107, 108, 110, 111, 115, 117, 118, 119, 120, 121, 122, 123, 124, 127, 128, 131

COMPONENT CODES
0410. 0512

INSTRUCTION WORKS DEPOTS

This Instruction supersedes Engineering Instruction MD/321 Issue 2 dated 1-11-79, which shall be destroyed.

This Instruction supersedes Engineering Instruction MD/154 Issue 2 dated 22 Nov 74 which has been cancelled. No further orders are to be placed on BSB (Autec) for complete rectifier/regulator units but existing units considered repairable may still be returned for attention.

Application of this Instruction will extend the life and reduce maintenance and Works overhaul costs of the obsolete CAV RUG units during the phasing in period of the AC 203 Alternator, as laid down in Engineering Instruction MD/199.

The modified unit provides self excitation of the alternator thus giving a charge to the battery whenever the engine is running irrespective of the control key position. This will lead to an improvement in battery condition. The new diode assembly eliminates the DR24-7 alternator field relay and the two 321-15 protection relays, reducing the work content at Main Works overhaul and the periodic attention at Depots as laid down in the Standard Examination Schedule.

/Cont'd

Signed M. Whetton Date 15.10.82 Corres. Ref. TDP/177-260-302(JH)

Countersigned MVCasby D. of M & E.E. Telephone No. 056-3523

For B.R.E.L. HQ. USE ONLY

B.R.E.L. Eng. Inst. No.	Type of Instruction		Estimates of unit cost change are/are not required	
	Recurring	Non-Recurring	Recurring	Non-Recurring

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Redistribution Panel

To :- * Divisional / Works Manager -----
* Works / Depot -----
Please acknowledge receipt of this Engineering Instruction

Signed _____ Corres. Ref. _____ Date _____
for D.M. & E.E. / MD, B.R.E.L.

* Delete whichever is not applicable

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Adoption of the modified regulator on D.M.U.'s fitted with AC824 Alternators conforms to the system on refurbished vehicles fitted with toilet water heaters.

PROCEDURE MAIN WORKS

ALL RUG 10, 11, 14 and 15 rectifier/regulator units passing through Main Works for either programmed overhaul or unscheduled repair shall be rebuilt in accordance with BR Drg No C-A1-14881. Wiring details are shown on Wiring Diagram, C-A3-23225 and Schematic Diagram, C-A3-23226. Germanium rectifiers shall be converted to Silicon before implementing this Instruction. Silicon diodes MBDL Type SUR 3 are available under BR Cat No 15/11426 for this conversion and details of installation are contained in CEPS 48 (Part 4).

Rebuilt units shall be re-designated as follows:-

ORIGINAL RECTIFIER/REGULATOR UNIT			MODIFIED RECTIFIER/REGULATOR UNIT		
CAV TYPE	BR CAT NO	BATTERY TYPE	CAV TYPE	BR CAT NO	BATTERY TYPE
RUG 10	15/65643	NIFE	RUG 10A	15/11279	NIFE
RUG 11	14/94904	LEAD-ACID	RUG 11A	15/11281	LEAD-ACID
RUG 14	NONE	LEAD-ACID	RUG 14A	15/11285	LEAD-ACID
RUG 15	14/94812	NIFE	RUG 15A	15/11286	NIFE -

Setting up and testing is as laid down in CEPS 48 Part 4, omitting the sections dealing specifically with the DR24-7 and 312-15 relays.

DEPOTS

Rectifier/regulator units ordered under the new BR Catalogue Numbers are interchangeable with the original but if toilet water heaters are NOT fitted then the two incoming alternator field relay wires connected to terminals 1 and 2 between the B+ and B- at the DC terminal block situated beneath the regulator box MUST be disconnected and taped back.

The battery charge check remains as laid down in the Standard Examination Schedule Job No 530D.

If current is unobtainable following an alternator or regulator change, check that the relevant fuse is intact. If this is intact the alternator field must be externally energised by connecting a resistor of approximately 200 ohms, 6 W capacity between Terminals B+ and F+ for a few seconds while the engine is running. These terminals are accessible at the d.c. terminal block situated immediately beneath the regulators.

Note :

The Rectifier indicator lamp test Job No 527 D is not applicable with modified units.

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NEW ITEMS

<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>BR DRG NO. C-A1-14881</u> <u>ITEM NO.</u>	<u>BR CAT. NO.</u>
Base	1	1	15/11287
Insulation Plate	1	2	15/11288
Heat Sink	2	3	15/11289
Diode, BS9331 F052 (A.E.I. Type M16-800)	6 (3 per heat sink)		26/117400
Silicone Heat Sink Compound DC 340 Dow Corning			27/4044
M3 x 12 csk. Hd. Steel Screw	4		35/104544
M3 Hex. Nut	4		3/174015
M3 Spring Washer	4		3/195000
M3 x 20 Hex. Hd. Steel Screw	4		35/100210
M3 Hex. Nut	4		3/175006
M3 Spring Washer	4		3/195000

DISPLACED ITEMS

<u>DISPLACED ITEMS</u>	<u>CAV PART NO.</u>	<u>QUANTITY</u>
Charging Relay	DR24-7	1
Protection Relay	312-15	2