



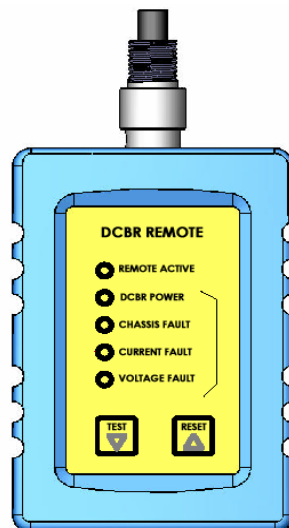
# MINING REPAIRS

MANUFACTURE & REPAIR FLAMEPROOF  
ALTERNATORS



*with integral circuit protection*

## FLAMEPROOF DIESEL MACHINERY ALTERNATOR SYSTEM



Now incorporating the DCBR  
Remote Reader (M161) for  
onsite external re-sets

## Introduction

Mining Repairs, a division of the Anderson Group of Companies is based in Wollongong, NSW which manufactures, repairs, and overhauls flameproof alternators for the underground coal industry.

It is a NATA Approved Workshop (No. 15216) accredited workplace to AS3800:2005 for the manufacture, repair, and overhaul of MR, Baldwin, and PJB flameproof alternators.

The Anderson Group of Companies operate under a Quality Management System which is accredited by NCS International to the AS/NZS ISO 9001:2000 Standard.

- The Mining Repair alternator was first approved for use in NSW on 17<sup>th</sup> May 1991 (MDA Ex d 2477) and QLD (QMD 92 7116X ) on 6<sup>th</sup> July 1992.
- The Mining Repair alternator has recently been issued with a Certificate of Conformity Number IECEx TSA 06.0041X issued by TestSafe Australia on 30/11/2006 to IEC Standards – IEC 60079-0 : 2004 Ed 4 Electrical Apparatus for Explosive Gas Atmospheres – Part 0: General Requirements; IEC 60079-1 : 2003 Ed 5 Electrical Apparatus for Explosive Gas Atmospheres – Part 1: Flameproof Enclosures ‘d.’
- The Remote Reader has a Certificate of Conformity Number IECEx ITA 06.0013x issued by ITA on 23/2/2007 to IEC Standards 60079-0 : 2000 Ed 3.1 Electrical Apparatus for Explosive Gas Atmospheres – Part 0 : General Requirements, and IEC 60079-11 : 1999 Ed 4 Electrical Apparatus for Explosive Gas Atmospheres – Part 11 : Intrinsic Safety “I”.

## Overview

The Mining Repairs flameproof 12V 30A alternator has been widely used throughout the Australian coal industry for over 15 years. This unit has traditionally used basic automotive technology in regards to voltage regulation, field switching and electrical protection.

Recent incidents in the coal industry have prompted a demand for alternator systems that minimise the risk of machine field wiring failures on low voltage vehicle systems, having the potential to cause a source of ignition in a hazardous environment.

Mining Repairs have developed the DCBR system that can be fitted internally to standard Mining Repairs alternators, replacing the original regulator circuit board.

The Mining Repairs alternator with the DCBR module ensures that any electrical faults on vehicle wiring circuits are detected, cleared, and latched out to prevent them from becoming a source of potential ignition.

The Mining Repairs alternator with DCBR module is a single package that combines

- Self excited alternator;
- Regulator/Data Logger;
- Circuit protection;
- Circuit interruption.

The DCBR module continuously monitors load circuits and provides the following protection features:

- Instantaneous overcurrent;
- Timed overcurrent;
- Insulation impedance (to both power rails);
- Overvoltage;
- Undervoltage.

The DCBR module has an integral test feature that confirms correct chassis protection operation. This feature utilises a primary test technique to ensure the test has high credibility. No simulation is involved.

A successful test temporarily disconnects the supply and only re-establishes supply if the test sequence is successful. A failed test will prevent re-supply of the load circuits.

The test may be conducted at any time by activation of the test button on the DCBR module.

The test feature is only active if the alternator is running and excited.

The Mining Repairs alternator fitted with DCBR protection fulfils the requirements of:

- NSW Mine Safety Report No SB07-02 dated 17/2/07;
- Qld National Resources and Mines Directive – Flameproof Diesel Vehicle Electrical Circuits dated 30/11/05;
- Draft Standard – AS/NZS 4871 Part 6 Diesel Powered Mobile Machinery.

## **DCBR Protection System Option 1**

The original concept for the DCBR module was to replace the older style regulators by retro fitment directly into the alternator housing. This was purely industry driven and fulfilled the requirement for the new technology to be available quickly; to fit in the available alternator without having to make major modifications, and to conform to the existing alternator certification.

This system has performed well, but with the inherent disadvantage of:

- Having to remove the alternator rear access cover to operate the chassis fault test/reset function;
- Inability to view diagnostic LEDs without removing alternator rear access cover.

## **DCBR Protection System Option 2**

To address the above inherent disadvantages, Mining Repairs has added to the DCBR system by developing an external IS reader that can be safely connected to the Mining Repairs alternator fitted with DCBR protection.

This reader can monitor the operation of the DCBR unit displaying the diagnostic LEDs and access the test/reset functions.

The reader is certified Ex ia to IEC Standards.

All IECEx certified alternators will be manufactured with two gland cable entries as a standard feature.

For a complete technical overview of the DCBR system please refer to the below listed documents:

- DCBR User Manual
- DCBR Remote Reader Manual

## Product Structure

### DCBR Protection System Option 1 – **MR110**

1. Upgrade of a standard Mining Repairs alternator (MR100) to DCBR protection with standard internal test/reset facility.

**Contact Mining Repairs for a priced quotation**

2. Outright purchase of a Mining Repairs alternator with DCBR protection system with standard internal test/reset facility complete with preferred pulley/coupling arrangement.(MR110)

**Contact Mining Repairs for a priced quotation**

### DCBR Protection System Option 2 – **MR111**

1. Upgrade of a standard Mining Repairs alternator (MR100) to DCBR protection with facility to connect to DCBR remote reader (M161).

**Contact Mining Repairs for a priced quotation**

2. Upgrade of a Mining Repairs alternator with DCBR internal test/reset system (MR110) to DCBR protection with facility to connect to DCBR remote reader (M161).

**Contact Mining Repairs for a priced quotation**

3. **MR111** - Outright purchase of a Mining Repairs alternator with DCBR protection with facility to connect to DCBR remote reader (M161), complete with preferred pulley/coupling arrangement. (Standard with two gland cable entries).

**Contact Mining Repairs for a priced quotation**

4. **M161** - DCBR Remote Reader Kit including reader, optical cables, manuals & certification documents in a timber case.

**Contact Mining Repairs for a priced quotation**

## Spare Parts

A full range of DCBR Remote Reader spare parts are available which includes:

PART NUMBER	DESCRIPTION	PRICE
M160	COMMUNICATIONS ADAPTER	P.O.A
M164	COMMUNICATIONS WINDOW	P.O.A
M166	FIBRE OPTIC CABLE	P.O.A
M169	COMMUNICATIONS WINDOW DUST CAP	P.O.A
M162	DCBRPROG3 WINDOWS APPLICATION	P.O.A

## Alternator Trade In

Mining Repairs offer a generous trade in per unit on all alternate approved flameproof alternators that are traded in on the purchase of any new Mining Repairs Alternator.

## Service Exchange

To assist in effecting an efficient upgrade of customer's alternators, Mining Repairs offer a service exchange system.

The service exchange system operates whereby the customer returns an unserviceable alternator to an Anderson Group workshop, and takes a fully overhauled service exchange unit to MR110 specifications in exchange.

The unserviceable unit will be fully overhauled, complete with Code D inspection and returned to service exchange stock. The cost for a service exchange unit is a fixed fee, plus the cost of repairs.

**Note:** The unserviceable unit must be returned to Mining Repairs within a two week period.

A penalty charge for late returns may be incurred. This is to ensure that stock is available for all sites.

Contacts for service exchange service are

- QLD – Mackay, David Mclean Ph. – 0749 526111
- NSW – Newcastle, Claudio Simone Ph. – 0249 494900
- NSW – Wollongong, Peter Channon Ph. – 0242 561177

## Warranty

Mining Repairs warrant all manufacture and repair alternator work for six months or 500 hours operation (which ever occurs first) against faulty workmanship or component failure.

## Validity

- All prices quoted are valid for 30 days from issue.
- Transport costs for a new Mining Repairs Alternator is free on transport (FOT) ex Wollongong NSW.

## **Summary**

Mining Repairs desire is to work with our customers in a “win win” relationship to assist in achieving their goals of safe, cost effective, reliable underground diesel machinery.

If any further information is required do not hesitate to contact the below listed persons.

### **In an after hours emergency situation, please contact:**

Mining Repairs Manager - Garry Parsons

Phone: 02 42561177

After Hours: 0414 774 213

### **All other enquiries (8 – 5 pm, Mon – Friday) please contact:**

Mining Repairs

151 Industrial Rd

OAK FLATS

NSW 2529

Phone: 02 4256 1177

Fax: 02 4257 1283

Email: [minrep@anderson-group.com.au](mailto:minrep@anderson-group.com.au)

**Further information on the products and services that Mining Repairs and the Anderson Group of Companies provide can be accessed at our web site:**

<http://www.anderson-group.com.au>