



## PRODUCT TECHNICAL BULLETIN 36296 ENGINE MANAGEMENT “BRAIN” BOX



**Date:** 08-03-2024  
**Issue:** A (release)  
**Prepared for:** Industry/ End Users

**Applicable machines:** Brain Boxes installed in MineCruiser and some re- powered machines.

REVISION:A



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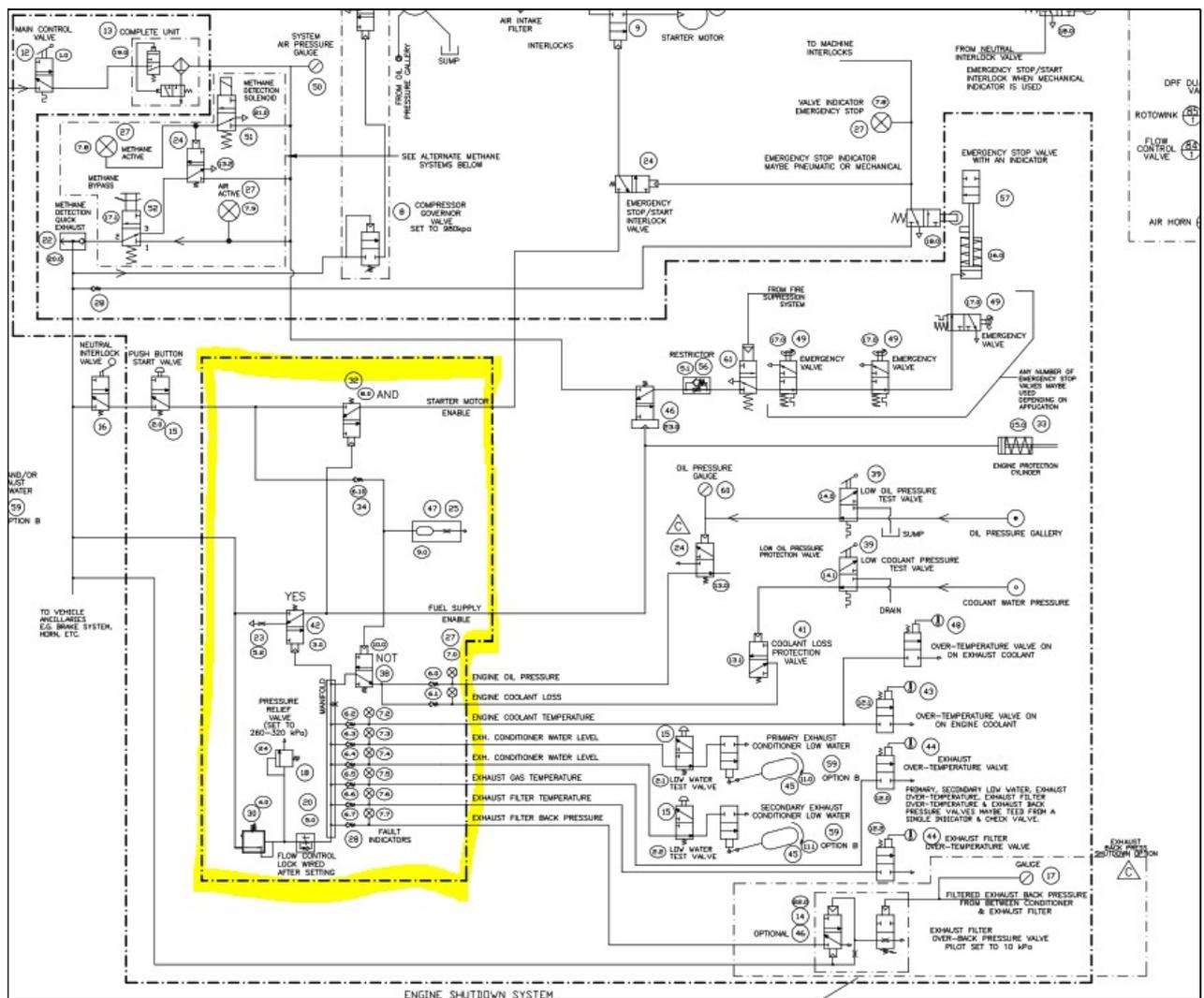
## Background:

The Engine Management Box – identified as GT 12801 or 7-121967-700 in later vehicles, controls the shutdown logic and indication for the Diesel Engine Control system on MineCruisers and other repowered vehicles sharing this component.

This communication seeks to clarify information regarding the maintenance, proper operation and testing of the Engine Management safety box, otherwise known as the 'Brain Box' particularly with regard to the fixed orifice restrictor, AR00676.

## Communication:

The Engine Management box is defined in two DES registrations;  
 MDR 076980 DES (MineCruiser, where installed on Myne Graders, PETs)  
 MDR 114056 DES (MineCruiser, where installed on Myne Graders, PETs)



**Shutdown Schematic indicating Engine Management Box location**

## Adjustment

The Brainbox should only be opened tested and adjusted by trained and competent persons. In-correct adjustment of the flow control valve or regulator can lead to the pneumatic system malfunctioning and a failure of the circuit to shutdown when required.

When issued from Cougar mining equipment, the following measures are taken to discourage tampering/adjustment.

- Anti-tamper screws installed on engine management box cover
- Sealing tape to indicate if the box has been opened since initial installation
- Lock wiring and lead sealing of the flow control and regulator adjustment screws.

If any of these items are removed or damaged it may indicate that an un-authorized adjustment has occurred.

### **Fixed orifice restrictor**

Contamination in the system can lead to blockage of the fixed orifice restrictor.

If blocked, the Diesel engine system may not shut down as required. A leading indicator of this failure is a delay in the time taken to shutdown during a coolant loss or low oil test.

Earlier versions of the brainbox had adjustable flow controllers instead of fixed orifices.

In alignment with good practice, these have been replaced with the fixed orifices in all new brain boxes.

### **Recommendations:**

- All due care should be taken to ensure the cleanliness of the pneumatic system to avoid contaminants entering during the removal and replacement of components.
  - Clean the area prior to removing the component
  - Plug or cover any open ports or hoses to avoid contamination entering the circuit
  - Ensure new components are clean prior to installation
- During a code D overhaul it is recommended that the 'yes' valve, 'not' valve as well as the 'and' valve are replaced as well as the fixed orifice restrictor (AR00676-75 lg) Item 23 above. Service Exchange or replacement Brainboxes may be ordered from Cougar Mining Equipment as well as individual components. However, it is highly recommended that the testing and adjustment be performed by Cougar Mining Equipment to ensure correct set up and adjustment.
- It is good practice to record the time taken to shutdown during the low oil and coolant loss testing. The nominal time taken is less than 10 seconds. If it takes longer than 10 seconds the fixed orifice restrictor may be partially blocked, remove and clean or replace the restrictor.
- Testing of all shutdown functions must be performed after replacement of a component or replacement of the engine management box.

Please distribute this bulletin to all relevant personnel

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