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PROGRAM INFORMATION BULLETIN NO. P09-18



FROM: LINDA F. ZEILER
Acting Director of Technical Support

SUBJECT: Re-Issue of P02-06 - Retrofit Program for Isuzu C240MA Diesel Engines

Who needs this information?

Underground coal mine operators using Isuzu C240MA diesel engines under Approval Number 7E-B038-0 and Mine Safety and Health Administration (MSHA) inspection personnel should have this information.

Why is MSHA issuing this bulletin?

This Program Information Bulletin (PIB) is to inform mine operators of an Isuzu retrofit program and of the importance of maintaining diesel engines in approved condition.

Why do Isuzu C240MA engines require retrofit?

Fuel rate settings are critical to efficiency of diesel engines. MSHA specifies a fuel setting and a fuel de-ration curve for each engine during the approval process. The fuel de-ration curve ensures the fuel rate should not exceed the maximum allowable at any altitude.

MSHA has found that some Isuzu C240MA engines were not properly de-rated and as a result are over-fueled when operated at altitudes above 1,000 feet. Over-fueling will not significantly increase the power output of the engine since engines can only utilize fuel in relation to the air available. Excess fuel is not efficiently burned in the combustion chambers of the engine creating an excessive amount of Diesel Particulate Matter (DPM), and Carbon Monoxide (CO). In addition, operation of engines at excessive fuel-to-air ratios causes engines to operate at higher temperatures, shortening their useful lives. Proper engine fuel settings convert fuel to power more efficiently resulting in less fuel usage for about the same amount of power. Most important, proper fuel settings result in cleaner exhaust emissions.

How can Isuzu C240MA engines be properly adjusted?

Mine operators should be aware of an on-going retrofit program for the Isuzu C240MA engine. Isuzu has committed to adjust engines as needed for high altitude operation. Isuzu has trained technicians at each of their distributors in performing the required adjustment. You should contact your servicing Isuzu representative or the Isuzu Corporate office at:

American Isuzu Motors, Inc. (AIMI)
Power Train Division
41280 Bridge Street
Novi, Michigan 48375-1301

The fuel pump used on Isuzu C240MA engines is typically adjusted in a pump shop on a flow bench. This requires the pump to be removed from the engine and shipped to the pump shop. Isuzu has developed a procedure to adjust the fuel pump on the engine. This procedure requires specially trained technicians. The on-engine adjustment procedure can **only** be used on engines that can be verified as adjusted per factory specifications. If the factory pump seal is broken or damaged, the pump must be sent to a pump shop for adjustment.

Which engines require retrofit?

All Isuzu C240MA engines labeled with MSHA Approval Number 7E-B038-0 must be retrofitted. Each engine must be re-tagged with MSHA Approval Number 7E-B085-0. This marking will indicate that the maximum altitude before de-ration is 1,000 feet or the maximum altitude for which that particular engine is adjusted.

Isuzu C240MA engines operated at altitudes above 1,000 feet will require fuel adjustment before being labeled with MSHA Approval 7E-B085-0.

You may contact MSHA's Approval and Certification Center with questions on which engines require fuel adjustment. Please contact Jeffrey Moninger (304) 547-2324, or via e-mail at moninger.jeffrey@dol.gov for assistance.

What happens to engines that are not retrofitted?

The MSHA Approval Number of 7E-B038-0 will be revoked at the conclusion of the retrofit program. The Isuzu C240MA engine has been issued a new MSHA Approval Number 7E-B085-0. An engine cannot be labeled with 7E-B085 until the required fuel setting adjustment is made. Any engine with Approval Number 7E-B038-0 needs to be taken out of service.

What is the background for this PIB?

MSHA received complaints from mine operators using the Isuzu C240MA engines at high altitudes. Complaints included hard starting, poor performance, and smoky

exhaust. Investigation revealed that the fuel de-ration specifications applied to the Isuzu C240MA engines were not acceptable. Revising the fuel adjustment of the engines will improve the emissions of the engines operated at high altitudes and bring the engines into compliance with the requirements of their approval.

What is MSHA's authority for this PIB?

The Federal Mine Safety and Health Act of 1977; 30 CFR Part 75.1909(1), 30 CFR Part 7.

Internet Availability

This information bulletin may be viewed on the Internet by accessing MSHA's home page at <http://www.msha.gov> and then choosing Statutory and Regulatory Information, Compliance Assistance Information, and Program Information Bulletins.

Who are the MSHA contact persons for this PIB?

Coal Mine Safety and Health, Safety Division

John Arrington, (202) 693-9549

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Technical Support, Approval and Certification Center

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Who will receive this PIB?

MSHA Program Policy Manual Holders

Miners' Representatives

Underground Mine Operators

Manufacturers of Mine Equipment and Mining Products

Owners of Isuzu Diesel Engines

Special Interest Groups