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PROGRAM INFORMATION BULLETIN NO. P11-01



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SUBJECT: Redesign of the Emergency Stop Circuits on Model BHAC Joy Mining Machinery (formerly Stamler Corporation) Battery Coal Haulers

### **Scope**

This Program Information Bulletin (PIB) applies to mine operators, miners' representatives, Mine Safety and Health Administration (MSHA) enforcement personnel and other interested parties.

### **Purpose**

The purpose of this PIB is to inform the mining community that MSHA has approved a safety upgrade to the emergency stop switch circuit on the Joy Battery Coal Hauler (Approval No. 18-A060011-0). Additionally, this PIB includes recommendations concerning operation of the emergency stop switch.

### **Information**

Joy Mining Machinery has designed and received MSHA approval for a safety upgrade to the emergency stop switch circuit on the Joy Battery Coal Hauler (Approval No. 18-A060011-0). The upgrade ensures against inadvertent movement of the machine when the emergency stop switch is activated by providing a second shutdown circuit that prevents the pump from restarting on release of the emergency stop switch.

### **MSHA recommends that mine operators:**

- Remove the machine from service if any machine light stays on after hitting the emergency stop switch. This is an indication that the circuit breaker has not tripped and the machine is still energized.

- Verify the proper performance of the emergency stop switch as part of the pre-operation machine checks.

The second emergency stop circuit is designed and wired through the Programmable Logic Controller to ensure that the machine tram circuit is shut down and remains shut down when the emergency stop switch is activated. If the emergency stop switch is activated and any machine or display lights remain on, this indicates that the machine circuits remain energized and a problem exists. One of these problems could be failure of the circuit breaker to trip on activation of the emergency stop switch. Joy Mining has released a Service Bulletin (attached) that was distributed to all of its customers of equipment utilizing MSHA Approval No. 18-A060011-0. The Service Bulletin provides information about an upgrade kit and describes the wiring change to install the upgrade of the emergency stop switch circuit.

### **Background**

MSHA became aware of an incident where activation of the emergency stop switch on a Joy Hauler caused the machine to come to a stop, but did not deenergize the machine. It was noted that the lights were still on and when the emergency stop switch was released, the pump motor restarted, which released the brakes and enabled the machine to be trammed. This could have caused unintentional movement of the machine.

### **MSHA's authority for this PIB**

The Federal Mine Safety and Health Act of 1977, as amended, 30 U.S.C. § 801 et seq.; 30 CFR §§ 75.523

### **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 Compliance Info and Program Information Bulletins.

### **MSHA contact persons for this bulletin**

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### **Distribution**

Program Policy Manual Holders  
Underground Mine Operators



# GLOBAL SERVICE BULLETIN

Bulletin No.: **GSB0135**  
Page 1 of 2  
Date Issued: **13 JUL 2010**  
Product: **BH10, BH18, BH20 BATTERY  
HAULERS SHIPPED BETWEEN  
2003 and 2010**  
Type: **ALL**  
Initiated by: **B. HUGHES**  
Approved by: **RLB/RB/COH/LJL/MS/BGDS/RWW**

## **ADDITIONAL METHOD OF POWER REMOVAL ON EMERGENCY STOP ACTIVATION ON JOY-STAMLER BATTERY HAULERS**

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### **INTRODUCTION:**

The purpose of this Service Bulletin is to inform the industry of an additional method of power removal on emergency stop activation on all Joy-Stamler BH10, BH18, and BH20 Battery Haulers with a Programmable Logic Controller (PLC) that were shipped between 2003 and 2010.

### **DISCUSSION:**

MSHA became aware of an incident where activation of the emergency stop switch on a Joy-Stamler Battery Hauler de-energized the pump motor but did not de-energize the machine lights. When the emergency stop switch was released, the pump motor started back up and enabled other features of the machine to operate.

MSHA investigated the incident and determined that the shunt trip failed because the circuit breaker tip arm overheated, causing the coil of the circuit breaker's shunt trip to melt. The cause of the overheating is still being investigated by MSHA.

A design upgrade of the emergency stop switch de-energization system has been implemented, which provides a second shutdown circuit independent of the main machine circuit breaker.

Joy highly recommends that customers purchase the upgrade kits: Joy P/N 100441816 for BHAC machines, P/N 100441817 for Lionetics DC machines, and P/N 100441818 for A750 DC machines.

### **RECOMMENDED ACTIONS:**

- Mine operators must verify the proper performance of the emergency stop switch as part of the pre-operation machine checks.
- Remove the machine from service if the machine lights stay on after hitting the emergency stop switch. This is an indication that the circuit breaker has not tripped and the machine has not shut off.
- Only trained and competent personnel should be involved in the service and operation of these machines.

After receiving the kit, follow these step-by-step instructions to properly implement the enhancement:

#### Control Station

- 1 Add two terminal blocks to din rail and label 14A and 14B.
- 2 Install black wire in #3 pair from cable C17 to top of 14A.
- 3 Install white wire in #3 pair from cable C17 to top of 14B.
- 4 Label as #14A and install a #16 awg wire from bottom of terminal 14A to terminal #8 on e-stop aux relay base.  
Note: This will be terminal #3 if using drawing 98-013627.
- 5 Label as #14B and install a #16 awg wire from bottom of terminal 14B to terminal #6 on e-stop aux relay base.  
Note: This will be terminal #2 if using drawing 98-013627.

Operator Station

Note: Add one terminal block to din rail if using drawings 98-014525 or 98-013627

- 1 Remove existing jumper from left side terminals 14 to 14.
- 2 Remove purple 14 wire off of second number 14 terminal block to PLC and install black wire in #3 pair in C17 cable and label as (14A) install to left side of second terminal block.
- 3 Remove black #14 wire in C16 cable from top terminal block and install in second #14 terminal block.
- 4 Install #14 purple wire from PLC and label as 14C to left side of top #14 terminal block.
- 5 Install white wire in #3 pair out of C17 and label as 14B install to the right hand side of the top #14 terminal block.

The following checks must be made to ensure this project has been properly implemented:

- 1 Remove wire #48 located in machine breaker box to shunt trip.
- 2 Set breaker.
- 3 Start Pump.
- 4 Hit Panic Bar.
- 5 Confirm pump shuts down and does not restart when the panic bar is depressed and released.
- 6 Reconnect wire #48.

Contact your local Joy representative with any questions concerning this information.

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