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SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 9-2014 **BULLETIN NO:** 09-005A

TITLE: Grinding Head Control

RATING:

- ☐ **DIRECTIVE** (Action Is Required)
- ☐ **ALERT** (Potential Problem)
- ☒ **INFORMATION** (Action Is Optional)
- ☐ **PRODUCT IMPROVEMENT** (Enhance Product)

PRODUCT SERIES / MODEL: All RGH10 Series C Rail Grinders

SERIAL NO: N/A

SUMMARY: A potential control issue has been discovered in the grinding head control system for reaching and maintaining the target power as intended. An instance occurred that was brought about by a number of factors, but was enabled by a loophole in the software that eventually led to a control issue on some of the heads that would not correct itself.

OPERATIONAL IMPACT: Should this control issue arise, the result will be that the affected grinding head will no longer vary its PWM control over the feed cylinders and the target grinding power will only be achieved by chance.

ACTION: Verify the feed cylinders are being controlled normally by following the instructions in this Service Bulletin. If you should encounter this control issue behavior during the verification process or during actual machine operation, contact the Engineering Controls Department at Harsco Rail, Columbia, SC. facility to verify what software is installed and potentially acquire the relevant update.

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SAFETY INFORMATION

- **FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURES TO DISABLE ENERGY SOURCES WHEN PERFORMING MAINTENANCE, MAKING ADJUSTMENTS OR REPAIRS TO THE EQUIPMENT. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BODILY INJURY.**

Control Issue

1. The Grinding Head Control Issue appeared to be brought about by the following events:

   a. Grinding patterns with a low target power (50%).

   b. An adjusted setting of the MIN (Minimum) PWM feed cylinder solenoid that was much higher than the PWM required to achieve as low a grinding power as needed.

   c. The inclusion of the new Hydac feed control valves (older Hydraforce feed control valves may make this potential behavior even less likely).

2. The combination of these events eventually led to the control issue on some of the grinding heads that would not correct itself even after changing the MIN PWM back to its previous setting.

3. Should this control issue arise, the result will be that the affected grinding heads will no longer vary their PWM control over the feed cylinders and the target grinding power will only be achieved by chance.

4. The PWM on the feed control solenoid will be equal to either the MIN PWM (typically 15%) or the MAX (Maximum) PWM (often 100%) and never move, regardless of the difference between the target and actual grinding power percentage, as seen on the motor sliders.

5. Most machines have never experienced this control issue and probably never will, unless a similar series of events were to take place. The required software correction has already been installed on the recent RGH10 Series C2-36 / 37 and RGH10 Series C4-1 Rail Grinders.

6. Verify the feed cylinders are being controlled normally following the instructions in this Service Bulletin. See Verifying Machine Operation.

7. If you should encounter this control issue behavior during the verification process or during actual machine operation, contact the Engineering Controls Department at the Harsco Rail, Columbia, SC. facility to verify what software is installed and potentially acquire the relevant update.

Verifying Machine Operation - See Figure 1

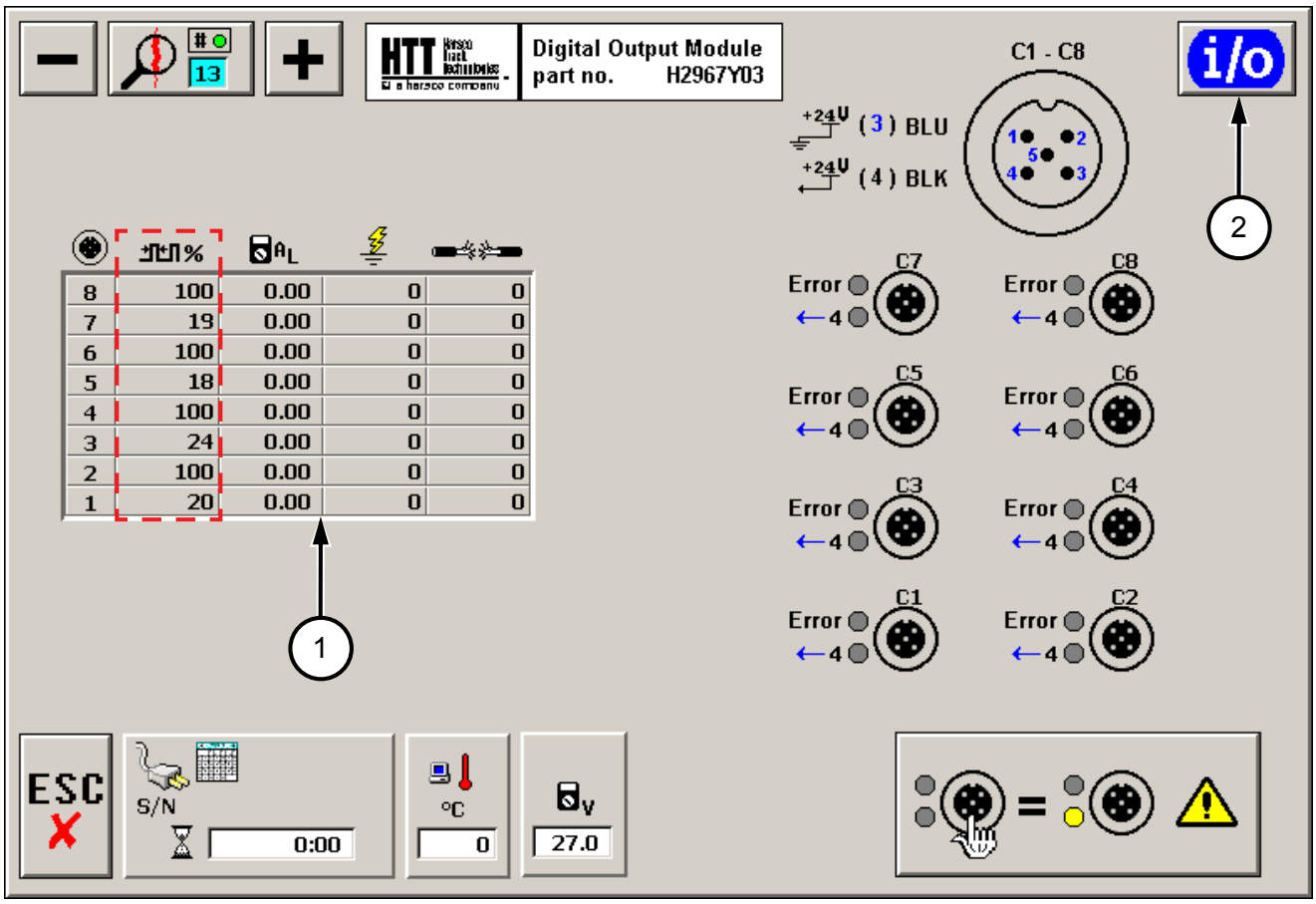
1. To verify that the feed cylinders are being controlled normally during machine operation, view the applicable Digital Output Module Diagnostic Screens that display the channel information for the Feed Cylinder Solenoids, outlined by a red dashed box, on the Information Table (1). Use the I/O Button (2) to confirm the function connected to each of the channels.

2. Select a grinding pattern that requires 70% - 80% power for each of the grinding heads. This % power should yield PWM values that will be noticeably adjusting while grinding.

3. While grinding, watch the PWM values, outlined by a red dashed box, on the Information Table (1) to determine if the values are adjusting. Do not confuse the “Enable” solenoids with the "Control" solenoids, as the Enable solenoids will always display a 100% value while grinding.

4. Note that it is possible that the grinding head may ramp down its PWM control to its MIN PWM value and stay there if the target power for the pattern is lower than can be achieved. Be sure to monitor all 10 "Control" solenoids per car.

FIGURE 1
DIGITAL OUTPUT MODULE - FEED CYLINDER SOLENOIDS



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