



**M-215-2-21**

Serial Numbers K6780, K6878, K6883 & Up

Supplement to :

M-213-12 and M-213-16 (Fixed Width Spread Hopper)

&

M-215-12R and M-215-16 (Variable Width Spread Hopper)

## Re-generation procedures for ChipSpreaders with Cummins Tier IV & Stage 5 engines



**Operation**



**Maintenance**



**Safety**



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# Safety Precautions, Hazard Seriousness Level

You will find safety information boxes throughout this manual. These boxes contain information alerting you to situations or actions to avoid.

Signal words (DANGER, WARNING and CAUTION) are used to identify levels of hazard seriousness. Their selection is based on the likely consequence of human interaction with a hazard. Definitions of hazard levels are as follows.

 **DANGER** - Immediate hazards which will result in severe personal injury or death.

 **WARNING** - Hazards or unsafe practices which could result in severe personal injury or death.

 **CAUTION** - Hazards or unsafe practices which could result in minor personal injury or product or property damage.

## CALIFORNIA

### Proposition 65 WARNING

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Please note this warning and remember -  
Always start and operate the engine in a well ventilated area;  
If in an enclosed area, vent the exhaust to the outside;  
Do not modify or tamper with the exhaust system.

## WARNING

Do not use this machine for any operation which is not described in this manual.

If you have any questions about operation of this machine, contact the Etnyre Service Department at  
1-800-995-2116 or 1-815-732-2116.

Operations that are not approved could cause serious injury or death.

## WARNING

### FLUROELASTOMER HANDLING

Some O-rings and seals used in this vehicle are made from fluoroelastomers. When used under design conditions, fluoroelastomers do not require special handling. However, when fluoroelastomers are heated to temperatures beyond their design temperature (around 600° Fahrenheit), decomposition may occur with the formation of hydrofluoric acid. Hydrofluoric acid can be extremely corrosive to human tissue if not handled properly.

A degraded seal may appear as a charred or black sticky mass, Do not touch either the seal or the surrounding equipment without wearing neoprene or PVC gloves if degradation is suspected. Wash parts and equipment with 10% lime water (calcium hydroxide solution) to neutralize any hydrofluoric acid.

If contact with the skin occurs, wash the affected areas immediately with water. Then rub a 2.5 calcium gluconate gel into the skin until there is no further irritation, while seeking prompt medical attention.

Note to Physicians: For advice or treatment of HF burns, call the DuPont Medical Emergency number, 1-800-441-3637

## INTRODUCTION

Cummins Tier IV engines have a re-generation feature. There are two types of re-generation events. The first is called “Active SCR/Exhaust System Cleaning”. This event happens automatically while the machine is in operation, and there is nothing that the operator needs to do. It is transparent and may not even be noticed while it is active.

The second type of event is a Manual or “Non Mission” Regeneration, and does require the operator to take action. This should happen very infrequently (a month or more in between). When this type of regeneration is required, the Engine Warning light will come on, and the Murphy Power View display will show an icon meaning a regeneraton is needed.



Figure 1. “Regeneration Needed” Icon

## PROCEDURES

### Active SCR/Exhaust System Cleaning

For active SCR/exhaust system cleaning to occur, the ECM **must** determine that the after-treatment timer or duty cycle-based algorithms have reached a specified limit. Once this limit is reached, the engine will alter its operation in order to create exhaust temperatures high enough to actively regenerate the aftertreatment system.

As mentioned, Active SCR/exhaust system cleaning is largely transparent to the equipment operator. The equipment operator may notice an increase in turbocharger noise during an active SCR/exhaust system cleaning event, and may notice that the high exhaust temperature lamp is illuminated.

### Manual “Non Mission” Regeneration

When the “Regeneration Needed” icon is displayed (Figure 1), the operator can either inhibit/delay the regeneration until a later time, or initiate the manual regeneration. Both of these commands are done using the Murphy Power View.

#### CAUTION

Select an appropriate location to park the equipment.

Choose a surface that will not burn or melt under high exhaust temperatures (such as clean concrete or gravel, not grass or asphalt).

Make sure there are no items within 2 ft [0.6m] of the exhaust outlet.

#### WARNING

Items that can burn, melt, or explode must be kept at least 5 ft [1.5 m] from the exhaust outlet (such as gasoline, paper, plastics, fabrics, compressed gas containers, hydraulic lines).

## Manual “Non-Mission” Regeneration (cont)

### **WARNING**

Make sure that there are no gases or vapors nearby that could burn, explode, or contribute to a fire (such as LP gas, gasoline vapors, oxygen, nitrous oxide).

### **CAUTION**

Park the vehicle securely.  
Place the hydraulic drive in neutral. Set wheel chocks at the front and rear of at least one tire.  
Set up a safe exhaust area. If bystanders might enter the area, set up barriers to keep people at least 5 ft [1.5 m] from the exhaust outlet during the manual (non-mission) SCR/exhaust system cleaning.

### **WARNING**

When indoors, attach an exhaust discharge pipe rated for at least 1500°F [816°C].  
Keep a fire extinguisher nearby.  
Check the exhaust system surfaces. Confirm that nothing is on or near the exhaust system surfaces (such as tools, rags, grease, or debris).

### Procedure

- 1.) Confirm that the brake pedal is released.
- 2.) Make sure the vehicle speed is 0 mph.

3.) Initiate the manual (non-mission) SCR/Exhaust System cleaning by toggling the equipment mounted manual (non-mission) SCR system cleaning switch or by using INSITE™ electronic service tool.

4.) Once the manual (non-mission) SCR/exhaust system cleaning is initiated, the engine speed may increase, the turbocharger noise will increase, the high exhaust system temperature lamp may illuminate, and the SCR system cleaning lamp will blink.

5.) When the engine ECM detects that the cleaning has been completed, the engine will automatically return to normal idle speed, if increased.

### **CAUTION**

Monitor the vehicle and surrounding area during the stationary (parked) SCR/exhaust system cleaning. If any unsafe condition occurs, shut off the engine immediately.

# Full-Color HMI Display Quick User Guide

## Part No. UCR045

Use this button to perform a manual regen.

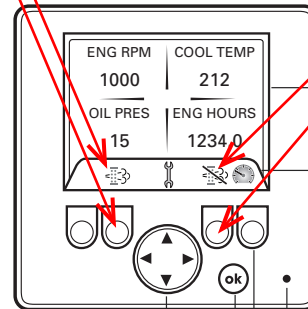
Use this button to allow the unit to regen.

ifm's ecomatmobile HMI display monitors information broadcast on the J1939 network of today's diesel engines. The robust, full-color display mounts easily inside the cab or on the exterior of a vehicle. The display can monitor more than 60 J1939 parameters. A full-color status icon panel displays crucial engine information.

Flexible and easy-to-use, ifm's HMI display can be configured offline eliminating the need to connect to the engine. The display features backlit soft keys that enable plug-and-play operation. For application simplicity, the display is pre-configured for common engine parameters and is Tier 4 Standard compliant.



### HMI Display Features



Full-color display

Engine status panel

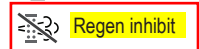
High exhaust temperature



Engine check

Maintenance reminder

Stop engine



RPM control

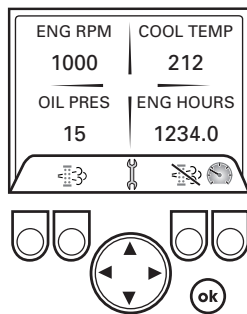
Arrow key

OK button / Escape

LED

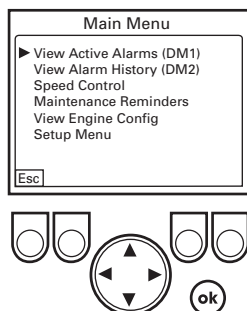
Soft keys

### 1. Start-up



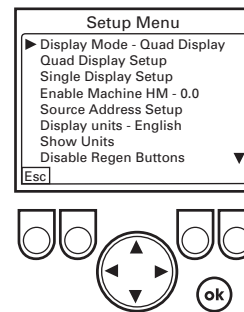
1. The display boots up as soon as power is applied. The HMI Display is preconfigured for a 4-quadrant menu screen.
2. Press the OK button to go to the main menu.

### 2. Navigation / Main Menu



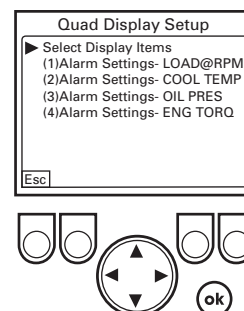
1. Use the up and down arrow keys to toggle through the main menu.
2. To select a menu item, press OK.
3. To return to the main 4-quadrant display, press the soft key below ESC.

### 3. Setup Menu



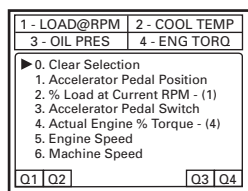
1. Press up / down arrow keys to select a Setup Item.
2. Press the OK key to edit each menu item.
3. The display screen can be changed from quad display to single display.
4. Languages may be changed.
5. Units may be changed.
6. Disable Regen Buttons – Can be enabled or disabled in the regeneration phase.

### 4. Quadrant Display Setup



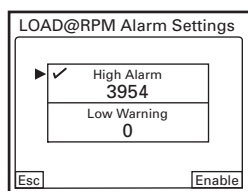
1. Use the up / down arrow keys and OK to make a selection.
2. Alarm settings for the selected quadrant parameter.

## 5. Quad Mode Select Display Items



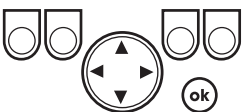
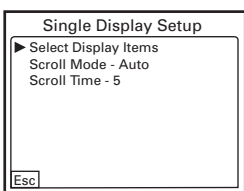
1. Press the Qx button to select the parameter for that quadrant.
2. Pressing OK will exit the screen.
3. If connected to the engine, parameters will be broadcast in white and those that are not available will be listed in red.
4. If not connected to an engine all parameters will display in red, but are still selectable off-line.

## 6. Quad Alarm Set points



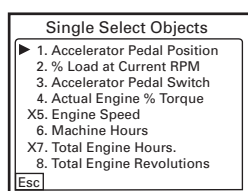
1. On the alarm screen, up / down selects the alarm, the enable button will enable / disable the alarm. Press OK to edit the selected alarm.
2. When alarm set points are selected from the quad setup menu, high / low alarms can be enabled as well as setting the trigger value.
3. If the parameter value is greater than the high alarm value and the alarm is enabled, the text will be red.
4. If the low alarm is enabled and the parameter value is less than the alarm value, the text will be yellow.

## 7. Single Display Setup



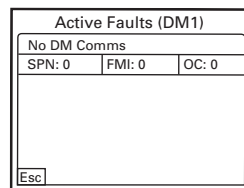
1. Selecting Scroll Mode and toggling between auto / manual will enable the display to automatically scroll through the selected items.
2. Scroll Time is the amount of time that each item is displayed before scrolling to the next item.
3. When in Single Item display mode, the left / right arrow keys are used to scroll through items.

## 8. Single Display Parameter Select



1. Use the up / down arrow keys and OK to make a selection
2. If connected to the engine, parameters will be broadcast in white and those that are not available will be listed in red.
3. If not connected to an engine all parameters will display in red, but are still selectable off-line.

## 9. Active Faults (DM1)

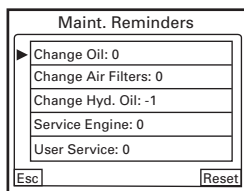


Indicates the various engine faults.

1. To scroll through listed faults, press the left / right arrow keys. Select OK.
2. Information includes: SPN, FM, OC.
3. To return to main menu, press the soft key below ESC.

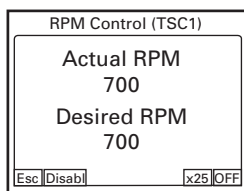
Many known fault codes will provide descriptive text. If text description is not available only the SPN, FMI and OC will be displayed.

## 10. Maintenance Reminders



1. Press up / down arrow keys to select a maintenance reminder.
2. Press the OK key to edit each menu item.
3. Use up / down arrow keys to change maintenance hours.
4. After hours are selected, press the OK key.

## 11. RPM Control (TSC1)



Indicates speed control with ability to enable or disable functionality.

1. Blinking green light indicates speed.
2. Enable key will enable functionality of RPM control.
3. After the enable key is pressed, the same key can be used to disable functionality of RPM control.

When enabled, RPM control is available from the main display screen.

## 12. Other Features

- Lock Display – Locks display from changes. To unlock, power up. Select F1, F4 and down key until splash screen disappears.
- Master / Slave Mode – To enable this mode, two HMI are required to enable. One HMI is a master; the other HMI is a slave.

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