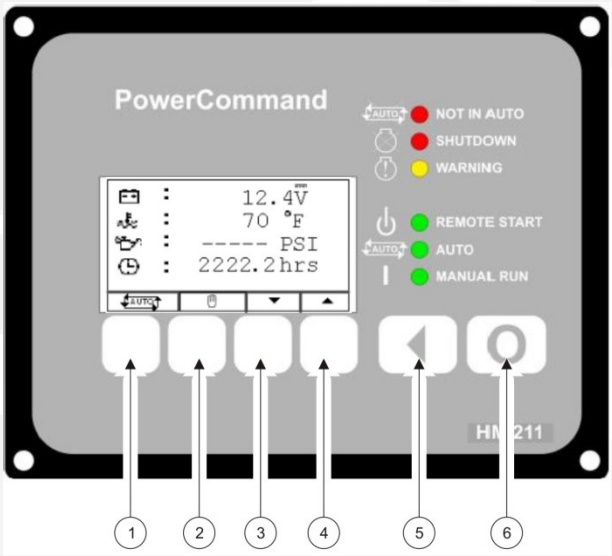
SAFETY PRECAUTIONS

Thorough understanding of the operator manual and health and safety manual is necessary before operating the generator set. Safe operation and proper performance can be obtained when the generator set is operated and maintained properly.

PRE-START CHECKLIST

	A safety check was performed just before starting.
	The generator set engine is properly serviced with oil and coolant.
	The battery is properly installed, serviced and charged.
	The battery charger and engine coolant heater are connected and operational, if applicable.
	All generator set covers and safety shields are installed correctly.
	The fuel supply is turned on.
	All fuel shutoff valves are operational.
	The date and time have been set in the generator set control (see the operator manual).
	The generator set operating mode has been selected (see below).

Standard Control Panel in Symbol Mode



No.	Description
1	Auto Mode Button
2	Manual Start Button
3	Down Arrow Button
4	Up Arrow Button
5	Back Button
6	Off Button

SELECTING AN OPERATING MODE

Note: When changing operating modes, the generator set can start or stop without warning (for example, if *Auto Mode* is selected and utility power is not connected, the generator set will attempt to start). Make sure there is no danger to personnel or equipment if the generator set starts or stops when changing modes.

Manual Run Mode

The generator set is started and stopped from the control panel on the generator set.

1. Make sure that it is safe to do so before proceeding to change the mode.
2. Press the *Manual Run* button on any of the *Operator* menus on the control panel.

To disable the *Manual Run* mode, press the *Off* button.

Auto Mode

The generator set is started and stopped by a remote device such as a transfer switch.

1. Make sure that it is safe to do so before proceeding to change the mode.
2. Press the *Auto* button on any of the *Operator* menus on the control panel.

To disable the *Auto* mode, press the *Off* button.

Note: Pressing the Off button at the generator set control will immediately turn off the generator set.

Note: Prior to starting, verify that the installation is compliant with state and local codes and regulations.

Additional Information

If you have any questions regarding the installation, contact your nearest authorized Cummins distributor or dealer. For additional information, refer to the A045R242 Operator Manual. For more information on Cummins products and services, go to www.power.cummins.com.

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STARTING THE GENERATOR SET

Starting the generator set from the generator set control panel.

1. Press and hold the *Manual Start* button until the generator set starts.
2. Check for fuel and exhaust leaks at the generator set. If leaks are found, stop the generator set immediately and have it serviced.

STOPPING THE GENERATOR SET

Press the *Off* button to stop the generator set.

BASIC SEQUENCE OF OPERATION

When the generator set is equipped with a transfer switch and the generator set is in *Auto* mode:

Utility power goes out:	1. After a short delay, the generator set starts. 2. After another short delay, the transfer switch puts electrical load on the generator set.
Utility power returns:	1. After a delay of about 5 minutes, the transfer switch puts electrical load back on the utility. 2. After another time delay of 5 minutes, the generator set shuts down.

EXERCISING THE GENERATOR SET

When in the *Auto Mode*, the generator set will exercise at the scheduled time for the duration set in the generator set control or transfer device. Please refer to the operator manual to understand and/or modify the settings for the exercising schedule.

THE LOAD ON THE GENERATOR SET

The amount of load that can be applied to the generator set depends upon its power rating. The generator set will shut down or its circuit breaker(s) will trip if the sum of the loads exceeds the rated generator set power.

OPERATING IN COLD WEATHER

Make sure engine oil viscosity is appropriate for the ambient temperatures. See the operator manual for temperature ratings and viscosity grades.

OPERATING IN HOT WEATHER

Pay particular attention to the following when operating the generator set in hot weather:

- Make sure nothing blocks airflow into and out of the generator set.
- Make sure engine oil viscosity is appropriate for the ambient temperatures. See the operator manual for temperature ratings and viscosity grades.

OPERATING IN DUSTY ENVIRONMENTS

Pay particular attention to the following items when operating the generator set in dusty environments:

- Do not let dirt and debris accumulate inside the generator set compartment. Keep the generator set clean.
- Perform air cleaner maintenance and change the engine oil more often.

CONDUCTING GENERAL INSPECTIONS

Inspect the generator set before the first start of the day and after every eight hours of operation.

Battery Connections	Check the battery terminals for clean, tight connections. Loose or corroded connections have high electrical resistance which makes starting of the generator set harder.
Engine Coolant System	Check the coolant level and look for coolant. Leaks should be serviced by a qualified service technician as soon as possible. Larger leaks are cause for shutting down the generator set until it can be serviced.
Lubrication Oil System	Check for oil leaks, leaks should be repaired immediately. Check engine oil level. If low, fill to proper level, with recommended oil.
Fuel System	Check for leaks at the hose, tube, and pipe fittings in the fuel supply system while the generator set is running and while it is stopped. Check flexible fuel hose sections for cuts, cracks, and abrasions. Make sure the fuel line is not rubbing against other parts. Replace worn or damaged fuel line parts before leaks occur.
Exhaust System	Look and listen for exhaust system leaks while the generator set is running. Shut down the generator set if a leak is found and have it serviced before operating the generator set again.
Mechanical	Start the generator set and check for unusual noises and vibrations. Check the generator set mounting bolts to make sure they are secure. Check to see that the generator set air inlet and outlet openings are not clogged with debris or blocked. Check the engine gauges from time to time while the generator set is running (if so equipped).

PERIODIC MAINTENANCE SCHEDULE TABLES

Note: Perform maintenance tasks as specified below using the periods of operation (whichever Daily or Hourly period occurs first).
Note: Items found to be worn, damaged, or malfunctioning during periodic maintenance inspections must be repaired or replaced.

Air Intake Maintenance		
Item	**Daily or After 24 Hours**	**100 Hours**
Check air cleaner restriction indicator (where fitted): If the service indicator shows red, replace air cleaner element and reset the service indicator.	■	
Check air intake system for leaks: Visually inspect the air intake system for signs of wear or damage.	■	
Replace air cleaner.		■

Control Maintenance		
Item	**Daily or After 24 Hours**	**Weekly or After 50 Hours**
Check operation of control panel: Check display (the system will perform a control panel test on initial activation).	■	
Check operation of Emergency Stop switch (where fitted): With the generator set running, press the **Emergency Stop** switch.		■

Cooling Maintenance			
Item	**Daily or After 24 Hours**	**12 Months or After 200 Hours**	**2 Years**
Check coolant level of radiator: If low, fill with Cummins recommended coolant mix.	■		
Check cooling fan blades: Visually inspect the fan blades through the guarding for signs of wear or damage.	■		
Check drive belt, condition and tension: Visually check belt for evidence of wear or slippage. Adjust tension as required.	■		
Check coolant lines and radiator hoses for leaks, wear, and cracks: Visually check for leaks, worn or damaged hoses.	■	■	
Check radiator air flow: Visually inspect the radiator through the guarding for blockage, build up of debris, signs of wear or damage. Clean if necessary.	■		
Clean radiator core.		■[1]	
Check aftercooler core (where fitted). Clean if necessary.		■	
Check water pump.		■	
Verify the coolant heater has power and is running (where fitted).	■		
Replace cooling system coolant.			■

[1]The cleaning schedule may be reduced depending on operating conditions/environment.

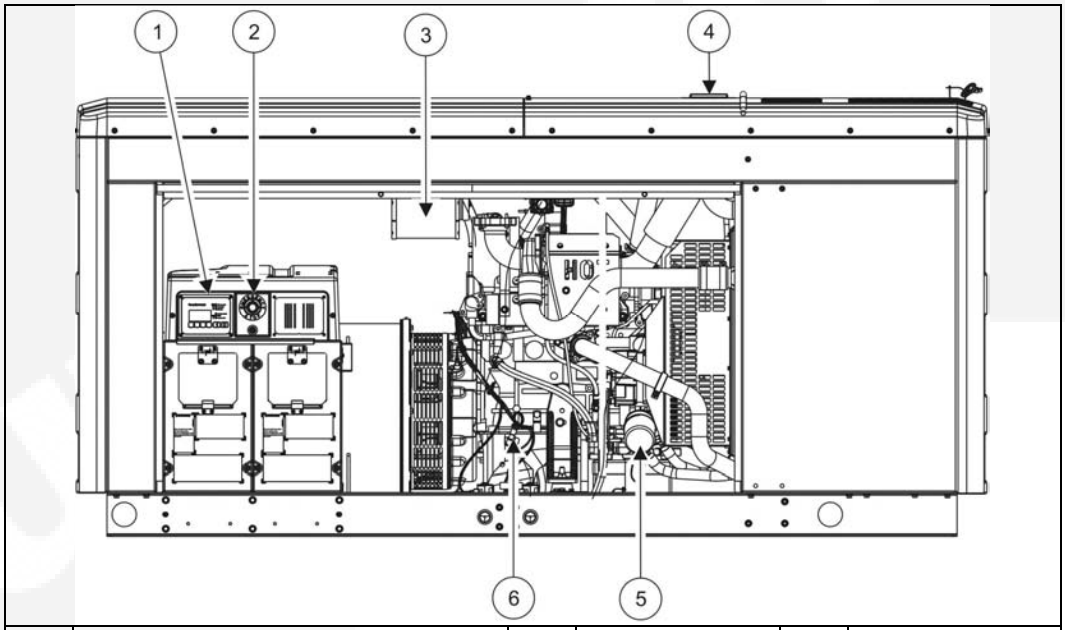
Engine Maintenance			
Item	**Daily or After 24 Hours**	**Weekly or After 50 Hours**	**12 Months or After 200 Hours**
Check engine oil level: If low, fill to proper level with recommended oil.	■		
Check fuel lines and hoses: Visually check for leaks, worn or damaged hoses.	■		
Check battery charging alternator: Check visually with generator set off, and then audibly when the generator set is running.	■		
Replace engine oil and filter.		■[1]	■[1]
Check engine ground. Clean as necessary.			■
Check engine mounts.			■
Check starting motor.			■
Check turbocharger (where fitted).			■
Check timing belt condition. Visually inspect.			■
Inspect spark plugs.			■

[1]Perform after the initial 50 hour interval and every 200 hours thereafter.

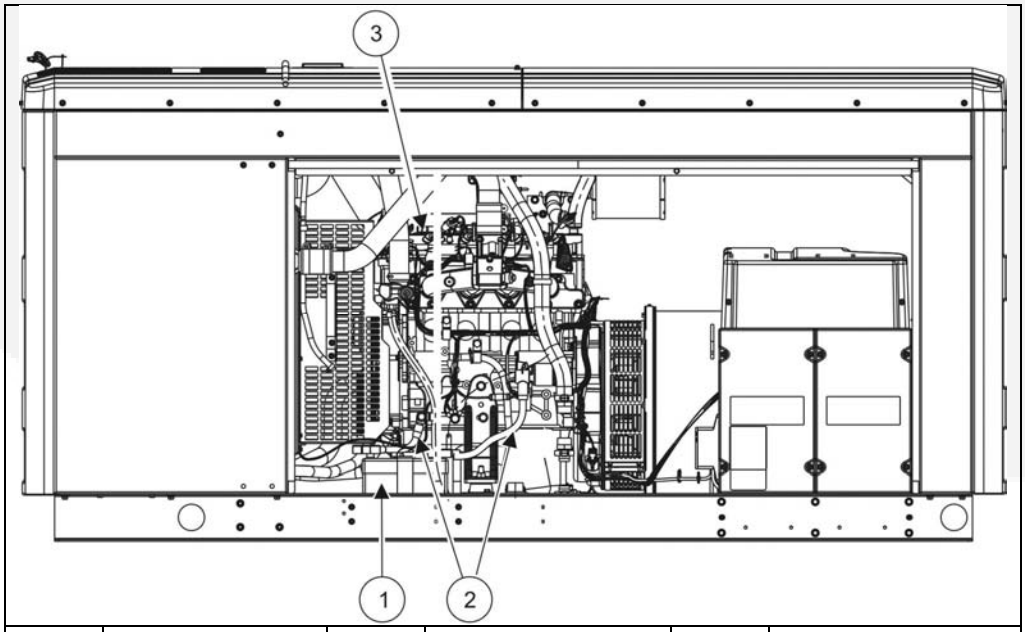
Exhaust Maintenance	
Item	**Daily or After 24 Hours**
Check all exhaust components, and hardware (fittings, clamps, fasteners, etc.): Visually inspect the exhaust system for signs of wear or damage with generator set off. Check audibly when the generator set is running.	■

Generator Set Maintenance			
Item	**Daily or After 24 Hours**	**Weekly or After 50 Hours**	**12 Months or After 200 Hours**
Check generator set enclosure: Visually check enclosure, walk around inspection of generator set. Make sure inlets and outlets are not covered or restricted; service access doors are operational; and safety systems are in place and operational.	■		
Verify that the battery area is free of tools and other items. Correct if necessary.		■	■
Check battery condition.			■
Check electrical connections (battery, starter motor, and alternator connections).			■

TYPICAL GENERATOR SET



No.	Description	No.	Description	No.	Description
1	Control Panel	3	Air Cleaner	5	Oil Filter
2	Emergency Stop Switch (if applicable)	4	Radiator Fill Cap	6	Dipstick Location



No.	Description	No.	Description	No.	Description
1	Battery	2	Battery Cables	3	Oil Fill Location