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Coding Information

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Title: Updated Snow Valve Motor and Harness Installation Procedure

Applies To: All Units Utilizing Snow Valves

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

03/20/2014 - Initial Article Release
07/10/2015 - Medium duty and heavy duty part numbers transposed.

DESCRIPTION

This document will guide the user through:

- Identifying snow door components.
- Properly inspecting the air cleaner element and housing.
- How to properly install and route the new harness to motor.

This document replaces/retires: IK1200293 - Snow Valve Light Staying ON and Motor Running Constantly

SYMPTOM(s)

Noise heard when activating the valve, no door rotation, Check engine light on, loss of power and request for frequent regenerations. Snow valve light staying on at all times. Snow valve motor is running all of the time.

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
SPN 105 FMI 0 FCAP MIL light on	MAT above Maximum
SPN 1131 FMI 0 FCAP MIL light on	IAT2 Temp above Maximum
SPN 3242 FMI 7 FCAP MIL light on	EGT2 above Maximum Severe
SPN 3245 FMI 7 FCAP MIL light on	EGT3 above Maximum Severe

Customer Observations or Concerns:

Loss of Power, engine de-rate, overheating, snow valve indicator light staying on in dash.

SPECIAL TOOL(s) / SOFTWARE

Not Applicable

Tool Description	Tool Number	Comments	Instructions

SERVICE PARTS INFORMATION

Part Description	Part Number	Notes
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	Vehicle Models Affected.		Quantity Required	
Motor, Medium Duty I6	7300, 7400,7500	4058107C1	1	Order Through Navistar Parts System.
Motor, Big Bore Engine	7600	4058106C1	1	Order Through Navistar Parts System.
Harness, Big Bore and MD I6 platforms	all models	2514824C91	1	Order Through Navistar Parts System.
Cleaner, ASM (dual element 15")	7600	3765520C91*	1	As needed, order through Navistar parts system.
Cleaner, ASM (single element 15")	7600	3765519C91*	1	As needed, order through Navistar parts system.
Cleaner, ASM (single element 13")	7300, 7400, 7500	3765521C91*	1	As needed, order through Navistar parts system.
Cleaner, ASM (dual element 13")	7300, 7400, 7500	3765522C91*	1	As needed, order through Navistar parts system.

NOTE:

*If a complete assembly is ordered from the part numbers listed above, you do NOT need to order a new motor. The motor is part of the air cleaner housing assembly.

**The air cleaner assemblies listed above are only compatible with 2010 and newer emissions. If you have an older emission engine, refer to your parts catalog and order the proper service assembly.

***For 07 and older emission engines the air cleaner does not have the motor installed and you will need to order the motor and harness listed above depending on your engine size.

INSPECTION STEP(s)

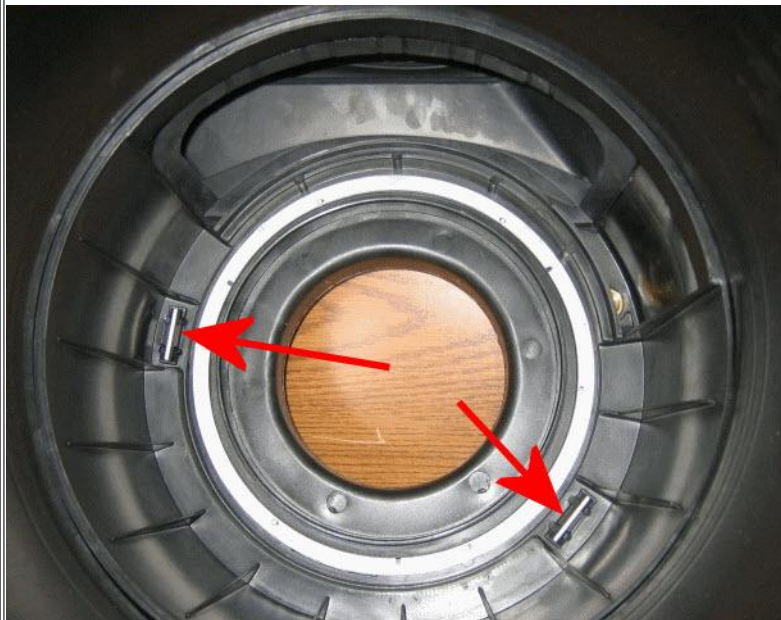
Step	Action	Decision
1	Inspection: Does the snow door rotate to full open and full close?	Yes: Inspect color of motor cover on air cleaner assembly. If the motor is blue or white it has already been replaced.
		No: Refer to inspection procedure for air cleaner housing and element.

Step	Action	Decision
2	Inspection: Remove air cleaner box and verify that the correct element has been installed and it has a good seal.	Yes: Continue with drum inspection.
		No: Advise customer to purchase and approved OEM filter and inform them that they could be liable if an engine fails due to dust ingestion.



It is important to inspect the air filter. When you remove the air filter housing cover and the air filter pops out, an incorrect filter has been installed. If the filter installed is a non-International element, or fleetguard product, there is a chance this filter will not seal well resulting in the possibility of dust ingestion. Notice the wider seal in the photo, this will allow dirt ingestion as well as potentially causing the air cleaner housing to bind.

Is an OEM air filter installed?

Step	Action	Decision
3	Inspection: With the element removed, verify both magnets are in place.  The image shows the interior of the air filter housing with the filter element removed. Two red arrows point to small, rectangular magnets located on the inner rim of the housing. The central opening is covered by a wooden board. Are both magnets in place?	Yes: Continue to inspect gear teeth. No: If magnets are loose, or lost, replace the assembly.

Step	Action	Decision
4		Yes:

	Gear is ok, proceed to removal / installation section		
	No: Replace air cleaner assembly due to damage.		
			
Item 1: Old style Big Bore Motor (Red)	Item 2: Updated Big Bore Motor (Blue)	Item 3: Updated Medium Duty Motor (White)	Item 4: Old Style Medium Duty Motor (Black)
Figure 1: Snow Door Motor Identification.			

REPAIR STEP(s)

Important note: This update requires either an air filter assembly, or motor and a harness. The new motors will not work with the old pigtail. With the new motor and harness installation indicator light operation will change.

Old indicator light operation: The snow valve warning light in the instrument cluster illuminates when the snow valve is turning or movement is blocked. The switch indicator will light when the valve is completely closed (winter position).

New indicator light operation: The instrument panel lamp now illuminates when the snow valve is traveling to the winter mode only. The switch indicator illuminates when the ignition is on and the switch is in winter mode.

Reminder: On 7600 workstars (units with big bore engines), the snow door is also monitored and controlled by the body controller. If you install the valve on a hot day and test drive your unit the body controller will probably override the switch and force it back into the summer position and turn the indicator lights off.

WARNING! To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in either direction.

WARNING! To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

REMOVAL PROCEDURE:

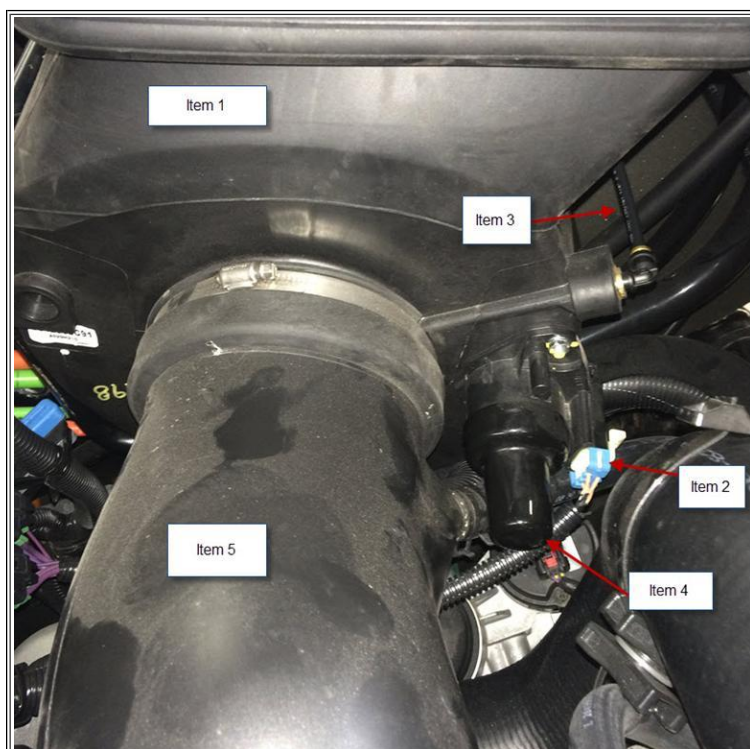


Figure 2: Component Identification

Item 1: Air box
Item 2: Harness connector
Item 3: Inlet Restriction hose
Item 4: Snow valve motor

1. Remove air cleaner cover and follow inspection procedure listed above if not previously done.
2. Disconnect the air restriction hose from the cleaner assembly.
3. Disconnect the harness from the motor.
4. Remove intake piping as needed for access. Note: Make sure to cover all open passages that lead to the engine intake.
5. Remove the two air cleaner housing mounting nuts with washers and remove air cleaner housing.

6. Remove the two snow valve motor nuts and motor.

INSTALLATION PROCEDURE:



Figure 3: Suggested Harness Routing for Big bore engines (15 " housing)

Item 1: Ground wire Installation point
Item 2: Typical route and clipping points.

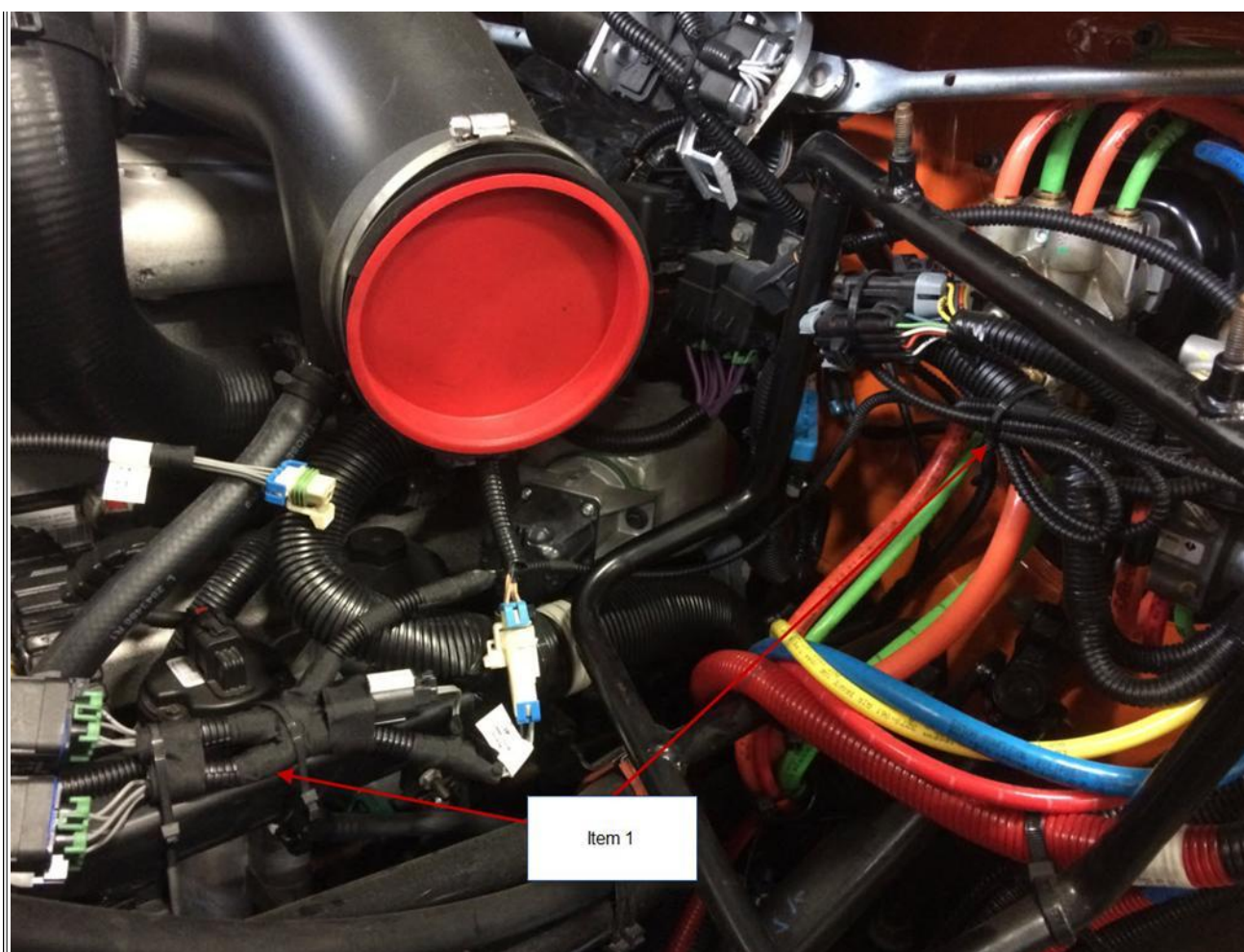


Figure 4: Suggested routing for medium duty engines (13" housing)

Item 1: Typical Routing and clipping points for medium duty.

1. Install the new snow valve motor, and torque nuts to standard torque while applying pressure to the motor to remove clearance between the snow valve motor teeth and snow valve baffle teeth.
2. Install the snow valve relay harness behind the air cleaner housing mounting bracket. Connect the female connector to the truck's original snow valve harness.
3. Route the ground wire to the cab left side ground stud (figure 3, item 1)
4. Secure the new harness to existing harnesses in the truck using zip ties (figures 3 and 4).
5. Reinstall the air cleaner housing, torque hold down nuts to standard torque.
6. Connect the male end of the harness to the snow valve motor.
7. Re-attach intake restriction hose.
8. Re-attach intake hose pipes.
9. Inspect for proper operation.
10. Reinstall air filter and housing cover.
11. Remove all wheel chocks, lower and secure hood.

WARRANTY INFORMATION

Warranty Claim Coding:

Group:	15010 - Air Cleaner
Noun:	140 - Motor, Air Cleaner Snow Valve

Standard Repair Time(s):

Step	Description	Chassis	Engine	SRT	Hours
All	Air Cleaner Snow Door Motor, Replace	All	All	A15-3255	0.5

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