Service Bulletin

Bulletin Number: **SB 24-367**

Release Date: **August 28, 2024**

Distribution: **Heil Dealers, Heil Technical Services, Heil Customer Care**

Subject: **CNG Solenoid Removal**

NOTE: READ THIS BULLETIN IN ITS ENTIRETY BEFORE BEGINNING ANY REPAIR WORK.

This Service Bulletin outlines the process to remove the CNG solenoid.

1. PLANNING INFORMATION

A. Products Affected

This Service Bulletin applies to Heil CNG tailgate system trucks as shown in **Table 1** and **Table 2**.

Table 1. Products Affected – Front End Loader

FRONT END LOADER SERIAL #					
HPE4969281	HPS4969200	HPS4969393	HPS4969605	HPS4969799	HPS5019357
HPE4969489	HPS4969206	HPS4969456	HPS4969610	HPS4969800	HPS5019358
HPE4969733	HPS4969211	HPS4969482	HPS4969631	HPS4969801	HPS5019359
HPE4969734	HPS4969255	HPS4969516	HPS4969632	HPS4969804	HPS5019360
HPE4969759	HPS4969256	HPS4969517	HPS4969638	HPS4969805	HPS5019361
HPE4969760	HPS4969257	HPS4969518	HPS4969646	HPS4969810	HPS5019362
HPE4969797	HPS4969261	HPS4969519	HPS4969664	HPS4969812	HPS5019363
HPE4969802	HPS4969262	HPS4969523	HPS4969665	HPS4969819	HPS5019364
HPE4969811	HPS4969272	HPS4969524	HPS4969666	HPS4969820	HPS5019365
HPE5019227	HPS4969280	HPS4969526	HPS4969673	HPS4969821	LRE6001279
HPS4968856	HPS4969284	HPS4969563	HPS4969677	HPS4969825	LRE6001280
HPS4968858	HPS4969285	HPS4969569	HPS4969678	HPS4969826	LRE6001285
HPS4968869	HPS4969292	HPS4969570	HPS4969705	HPS4969840	LRE6001291
HPS4968875	HPS4969293	HPS4969571	HPS4969707	HPS4969841	LRE6001301
HPS4968912	HPS4969303	HPS4969580	HPS4969741	HPS4969842	LRE6001305
HPS4968938	HPS4969304	HPS4969587	HPS4969773	HPS4969843	LRE6001316
HPS4968942	HPS4969331	HPS4969593	HPS4969774	HPS4969844	LRE6001317
HPS4968964	HPS4969332	HPS4969598	HPS4969778	HPS4969845	LRS6001289
HPS4968992	HPS4969356	HPS4969599	HPS4969793	HPS4969847	LRS6001294
HPS4969015	HPS4969366	HPS4969600	HPS4969794	HPS4969849	LRS6001304
HPS4969026	HPS4969367	HPS4969601	HPS4969795	HPS4969863	
HPS4969061	HPS4969377	HPS4969602	HPS4969796	HPS4969864	
HPS4969114	HPS4969391	HPS4969603	HPS4969798	HPS5019175	

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Table 2. Products Affected – Side Loader

SIDE LOADER SERIAL #					
7E7309738	7S7309712	7S7309754	7S7309839	7S7309896	DRS7001440
7E7309777	7S7309715	7S7309759	7S7309848	7S7309898	DRS7001441
7E7309859	7S7309716	7S7309763	7S7309849	7S7309917	DRS7001442
7E7309926	7S7309720	7S7309767	7S7309850	7S7309920	DRS7001443
7S7309427	7S7309721	7S7309769	7S7309851	7S7309922	DRS7001444
7S7309635	7S7309723	7S7309785	7S7309852	7S7309923	DRS7001445
7S7309673	7S7309736	7S7309809	7S7309853	7S7309927	DRS7001446
7S7309676	7S7309739	7S7309812	7S7309854	7S7309928	DRS7001447
7S7309677	7S7309741	7S7309828	7S7309856	7S7309929	DRS7001448
7S7309678	7S7309742	7S7309829	7S7309858	7S7309930	DRS7001449
7S7309683	7S7309743	7S7309831	7S7309864	7S7309947	DRS7001450
7S7309698	7S7309744	7S7309832	7S7309868	7S7309951	
7S7309699	7S7309745	7S7309833	7S7309869	7S7310038	
7S7309701	7S7309746	7S7309834	7S7309870	7S7310044	
7S7309702	7S7309747	7S7309835	7S7309871	DRE7001455	
7S7309711	7S7309753	7S7309836	7S7309887	DRS7001439	

B. Compliance

Only qualified CNG persons are authorized to perform this task. Refer to CGA 6.4 or NFPA 52 for guidance on what training / experience is needed to be defined as “qualified”.

C. Labor Hours

The labor effort required by one qualified technician to accomplish the tasks in this Service Bulletin is shown in **Table 3**.

Table 3. Labor Hours

TASK PERFORMED	LABOR HOURS PER UNIT
CNG Solenoid Removal	1.5 hours

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D. Tools, Materials and Parts Needed

The tools and parts necessary to perform the update are listed in **Table 4**.

Table 4. Tools and Materials

ITEM	PART NUMBER	ADDITIONAL INFORMATION
Impact power tool		Drive size compatible with socket sets
Standard hex tool set		Socket set
Standard hex tool set		Wrench set
Allen wrench tool set		Socket set preferred
Snoop		CNG leak test solution
Marking paste		Witness marking paste
Torque wrench		4 – 5 ft. lbs.
Ladder		
Connector	108-8493-102	Connector, 2-way male
Tube	354-5917-005	1/2" Tube, Swagelok NFSET CNG
Coupler	354-5250-002	1/2” to 1/2” Swagelok
Stauff clamp	036-1999-003	1/2” Stauff tube clamp
Flange nut	047-1727	1/4” 20 NC Threads
Bolt	FSP070732	NC 1/4" x 2 1/4"
Bracket	113-7750-001	Solenoid valve mount bracket

2. PREPARING THE UNIT AND WORK AREA

It is necessary to prepare the truck to be serviced. Initial focus while preparing the truck is **SAFETY**. Primary preparation for this task involves de-pressurizing the system (this does not include the CNG tanks) **BEFORE** performing any maintenance procedures on the truck. This task does not involve any hot work and the instructions outlined below are only applicable for the CNG solenoid removal.

DO NOT COMBINE ANY OTHER MAINTENANCE OR TASKS WITH THE INSTRUCTIONS BELOW, DOING SO MAY REQUIRE ADDITIONAL STEPS OR INVOLVE DEFUELING COMPLETE CNG SYSTEM, INCLUDING THE CNG TANKS!

Ensure that the unit is in Lock-Out/Tag-Out mode. Refer to and follow employer’s Lock-Out/Tag-Out policies and procedures. At a minimum, refer to and follow the Lock-Out/Tag-Out procedure found in your Heil Service Manual. Always wear appropriate Personal Protective Equipment as required by your employer (at a minimum, safety glasses, goggles, and OSHA approved hard-toed boots are recommended).

CAUTION: WHEN REPLACING CNG COMPONENTS, REPLACE WITH EQUAL OR HIGHER PRESSURE RATED COMPONENTS.

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AFTER FOLLOWING THE DE-PRESSURIZATION PROCEDURE, PRESSURE WILL STILL REMAIN INSIDE OF THE FUEL CYLINDER(S). USE CARE WHEN LOOSENING FITTINGS FOR THE FIRST TIME. DO NOT OPEN ANY CYLINDER MANUAL SHUT-OFF VALVES AFTER ANY CNG FITTINGS, CONNECTIONS, OR COMPONENTS ARE LOOSENED OR DISASSEMBLED.

NEVER WELD OR PERFORM ANY HOT WORK WITHIN 6 FT. OF ANY FUEL SYSTEM COMPONENTS WITHOUT COMPLETELY DEFUELING THE COMPONENTS AND PURGING THEM. IN ADDITION TO ABOVE INSTRUCTIONS, PROTECT FUEL SYSTEM COMPONENTS FROM HEAT DAMAGE BY EITHER REMOVING THE COMPONENTS OR COVERING THE COMPONENTS WITH A WELDING BLANKET OR OTHER APPROVED SHIELDING WHILE WORKING NEAR THE CNG FUEL SYSTEMS OR COMPONENTS. IF WELDING IS REQUIRED BEYOND 6 FT. OF ANY FUEL SYSTEM COMPONENTS, CHECK FOR GAS LEAKS AND ENSURE THAT THERE IS NO GAS PRESENT BEFORE WELDING. WELDING CAN IGNITE THE FUEL RESULTING IN AN EXPLOSION OR FIRE, CAUSING SERIOUS PERSONAL INJURY OR DEATH.

NEVER USE COMPRESSED AIR AS AN ALTERNATIVE TO INERT GAS WHEN PURGING CNG LINES OR CNG FUEL SYSTEMS.

A. The area around the unit should be clear of all unnecessary equipment and personnel. It is strongly recommended that the truck be quarantined from other units. Place barrier tape around the truck to keep anyone from walking into or under moving parts.

B. Ensure the truck is parked on level ground and set to **NEUTRAL**.

C. **APPLY the parking brake** and ensure the parking brake works properly.

D. Chock wheels.

E. Turn the engine off.

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3. CNG SOLENOID REMOVAL

With the unit prepared as described above, carefully proceed with the following steps in this section to remove the CNG solenoid for units included in **Section 1.A – Table 1 and Table 2**.

A. Shut off all tanks. See **Figure 1.**

Figure 1

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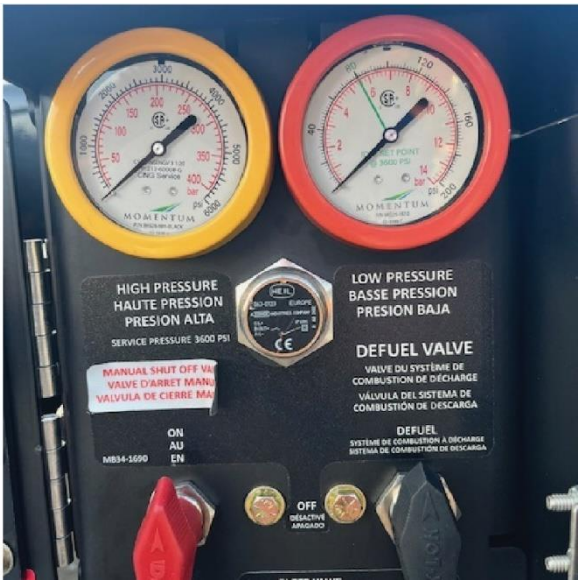
B. Verify that the FMM Manual Shut-off Valve is in the ON position.

Figure 2

C. Start the engine and allow the engine to run until fuel pressure drops and the unit shuts off.

D. Verify the high-pressure gauge at the FMM box and body side gauge read zero. See **Figure 3**.

Figure 3



E. Shut off ignition

F. Shut off the battery.

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G. Slowly relieve residual / remaining pressure in the CNG lines / components by turning the bleed valve cap on the FMM counterclockwise. See **Figure 4**.

Figure 4

H. After residual / remaining pressure have been relieved, close the bleed valve and torque it to 4-5 ft. lbs. (48-60 in. lbs.)

I. Slowly open the bleed / drain valve on Cummins low pressure filter(s). Close the FMM door to start the truck. Turn the ignition ON and crank the engine 2-3 times with the bleed / drain valve(s) open to bleed trapped gas in the low-pressure line.

NOTE: IF THERE ARE TWO CUMMINS LOW-PRESSURE FILTERS ON THE CHASSIS, BLEED / DRAIN BOTH FILTERS.

J. Close the bleed / drain valve(s) on Cummins low-pressure filter(s).

NOTE: IF THERE ARE TWO CUMMINS LOW-PRESSURE FILTERS ON THE CHASSIS, CLOSE THE VALVES ON BOTH FILTERS.

K. Ensure the high-pressure gauge and the low-pressure gauge in the FMM read 0 psi.

L. Turn the vehicle ignition switch OFF. Follow the vehicle manufacturer's recommended vehicle lock-out procedures. Remove the ignition key.

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M. Remove the body side CNG covers using a 7/32” wrench or bit. See **Figure 5**.

Figure 5

N. Remove the harness from the solenoid and cap it with connector **108-8493-102.** See **Figure 6.**

Figure 6

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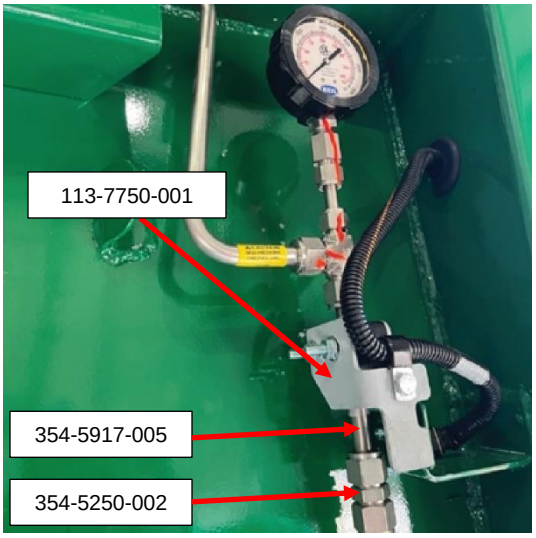
O. Disconnect, remove, and discard the short tube above the solenoid valve.

P. Disconnect the lower tubing from the solenoid, then remove the solenoid from the bracket using a 10mm wrench.

Q. Place the replacement tube **354-5917-005**, coupler **354-5250-002**, and hand tighten.

R. Install bracket **113-7750-001** on the existing solenoid bracket with proper hardware shown in **Figure 7**. Place the Stauff clamp **036-1999-003** on the **113-7750-001** bracket and line up the clamp with the tubing. Minor adjustments to the bracket may be necessary to achieve alignment. Verify the clamp does not interfere with Swagelok nut. See **Figure 7.**

Figure 7



S. For all Swagelok fittings, tubes, and hoses, see **Appendix A** for installation procedure. Using this procedure will tighten all fittings newly installed that were previously hand-tightened.

T. Open one tank slowly and allow CNG into the lines. Ensure the tank pressure gauge and the high-pressure gauge on the FMM reads the same pressure.

NOTE: IF THE PRESSURE IS NOT EQUAL, ALLOW ENOUGH TIME FOR THE PRESSURE TO EQUALIZE.

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U. Test for leaks by applying snoop. Once verified, apply witness paste. See **Figure 8**.

Figure 8

V. Open all remaining tanks.

W. See **Figure 9** for final product reference.

Figure 9

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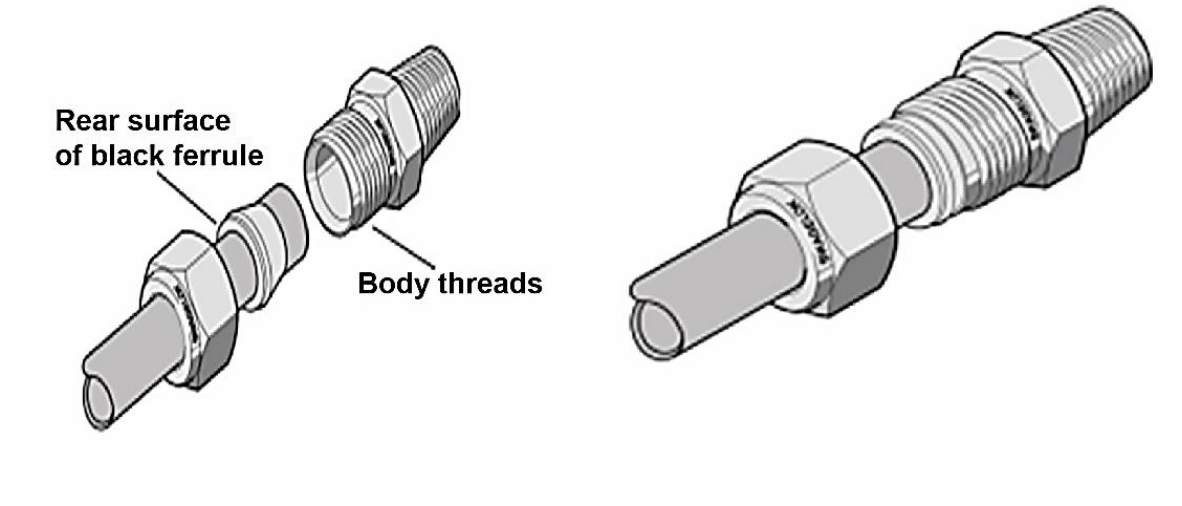
4. APPENDIX A

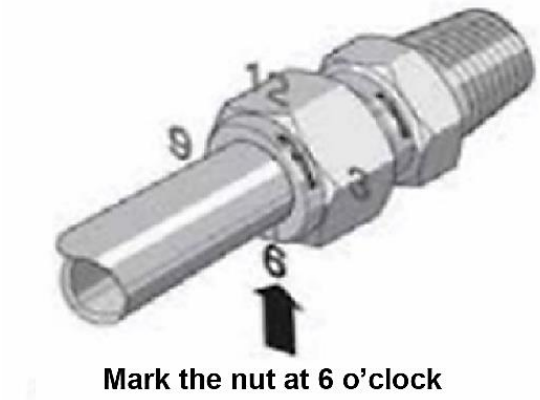
A. Install the pre-swaged assembly into the fitting body. Hand-tighten the nut on the fitting body. See **Figure 10**.

Figure 10



B. Mark the nut at the 6 o'clock position. See **Figure 11.**

Figure 11



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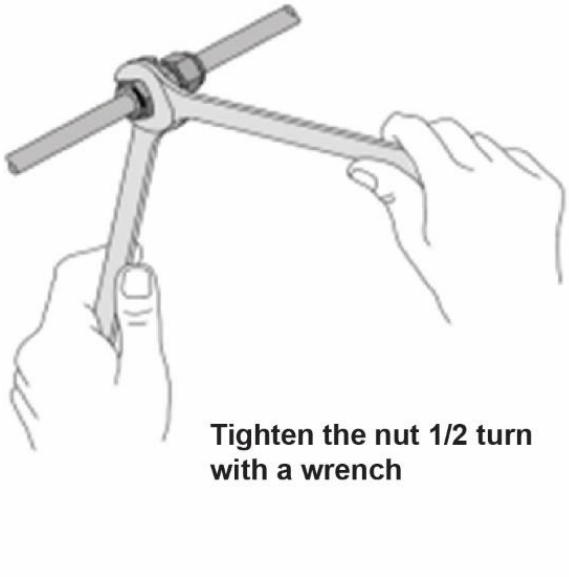
C. Hold the fitting body stable and tighten the nut 1/2 turn with a wrench. See **Figure 12**.

Figure 12



If you have any questions regarding the information detailed in this Bulletin, please contact Heil Technical Service at 866-310-4345.

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