

PARTS & SERVICE NEWS

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| REF NO. | AA00215A |
| DATE | April 13, 2001 |

(C)

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This PARTS & SERVICE NEWS supercedes AA00215, dated November 3, 2000 which should be discarded.

SUBJECT: A/C LOW PRESSURE SWITCH CAMPAIGN PROCEDURE

PURPOSE: To correct premature failure problems associated with the low pressure switch of the A/C system.

APPLICATION: GD650A-2CY Motor Grader Serial Numbers 203921, 203923, 203926, 203927, 203934, 203935, 203939, 203941, 203951, 203961, 203967, 210430, 210436, 210441, 210466, 210467, 210471, 210472, 210475, 210477, 210437
 GD650AW-2CY Motor Grader Serial Number 203950
 GD650-2CY Motor Grader Serial Number 203963
 GD750A-1 Motor Grader Serial Numbers 7003, 7004, 7005, 7006, 7007, 7101, 7102, 7103, 7104, 7105, 7107, 7108, 7109, 7110, 7111
 GD530A-2CY Motor Grader Serial Numbers 203943, 203953, 203959, 210463, 210464, 210469, 210470
 850B Motor Grader Serial Numbers 203937, 203942, 203949, 203954, 203955, 203956, 203957, 203958, 203960, 210412, 210418, 210419, 210420, 210421, 210424, 210425, 210438, 210439, 210440, 210448, 210450, 210452, 210453, 210454, 210456, 210459
 870B Motor Grader Serial Numbers 203918, 203919, 203920, 203952
 870C Motor Grader Serial Numbers 210442, 210449
 830C Motor Grader Serial Number 210460
 850C Motor Grader Serial Numbers 203922, 203948, 210405, 210407, 210409

FAILURE CODE: 871L5C

DESCRIPTION: Evaluation of warranty components has revealed two potential failure modes of the A/C system. They are:

1. The low pressure switch operating ranges are resulting in rapid cycling of the compressor during moderate ambient air conditions. This combination of low ambient A/C operation and rapid pressure cycling results in low hour failures of the pressure switch and a possible failure of the compressor diode.
2. The second mode of failure is due to the Schrader valve core being improperly installed in the Schrader port. Low pressure switches have been claimed as the critically failed part but when examined they are functioning properly. The true cause has been that the Schrader valve core has been over-torqued resulting in the valve core being recessed below the port top surface. With the switch installed, the valve core may not be depressed adequately to allow refrigerant pressure to enter the Schrader port. This results in intermittent or no operation of the compressor clutch.

The following replacement part kit must be ordered:

| Part Number | Qty | Description |
|------------------------------|-----|-------------------------------------|
| 8100 612 H91 | 1 | Kit, A/C pressure switch components |
| Includes the following parts | | |
| 1439 682 H2 | 1 | Switch, Low Pressure |
| 1437 616 H1 | 1 | Diode |
| 1440 154 H1 | 1 | Valve, Schrader |
| 1440 153 H1 | 1 | O-ring (green) |



WARNING! Always wear eye and hand protection when working on the A/C system. Liquid A/C refrigerant can cause frostbite and/or blindness.



WARNING! Avoid breathing A/C refrigerant and lubricant vapor. Exposure may irritate eyes, nose and throat.



WARNING! Keep A/C refrigerant and oils away from open flame. Refrigerant can produce poisonous gases in the presence of a flame. Work in a well ventilated area.

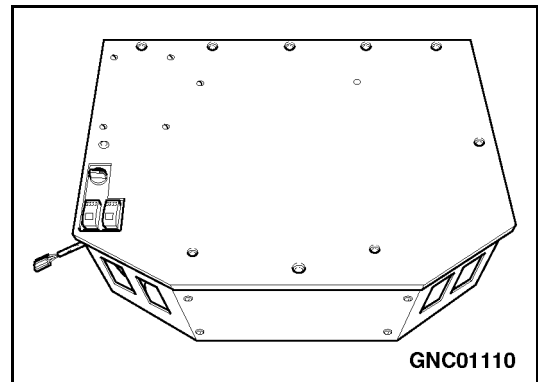


WARNING! Do not pressure test or leak test the A/C system with compressed air, some mixtures of air and refrigerant are explosive.

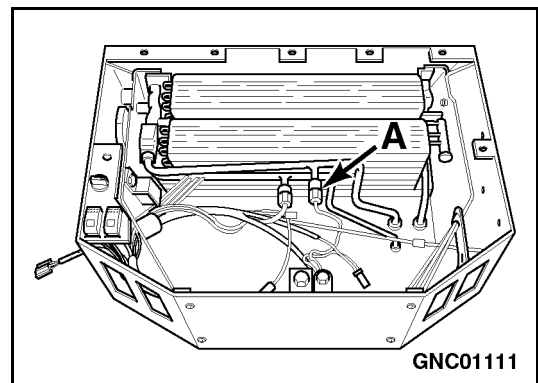
3. Remove the seat and necessary machine components for access to the top of the HVAC Unit.
4. Remove (8) cover bolts using 9/16" socket.



Re-installation bolt: 12.2 N·m (9 lbf ft)



5. Identify low pressure refrigerant tube (top, large diameter tube assembly) "A".
6. Disconnect Packard connector from low pressure switch "A".
7. Remove low pressure switch "A" from refrigerant tube assembly using a 9/16" wrench.

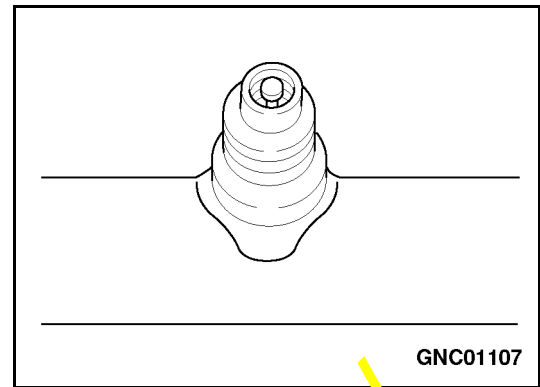


8. Inspect the Schrader valve core for proper insertion depth. Measure the valve core depth from the top of the Schrader port.




WARNING! If the valve core depth is greater than 1.5mm (0.059 in) it is necessary to evacuate the A/C system and replace the core.

9. If OK go to step 11.




10. Remove Schrader valve core from Schrader port assembly. Utilize a valve core tool to remove the valve core. Do not use pliers!

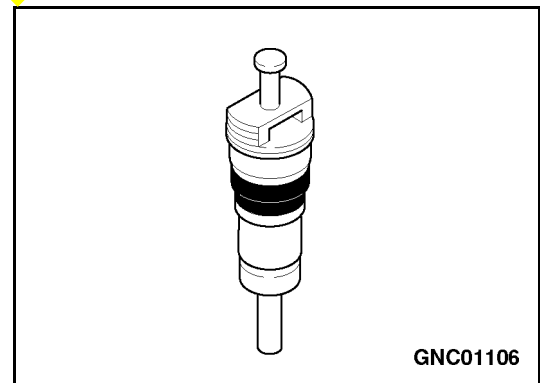
 **N·m** Re-installation torque, valve core
max of: 0.3389 Nm (3 lbf in)



11. Install valve core P/N 1440 154 H1.


 **N·m** Torque max: 0.3389 Nm (3 lbf in)

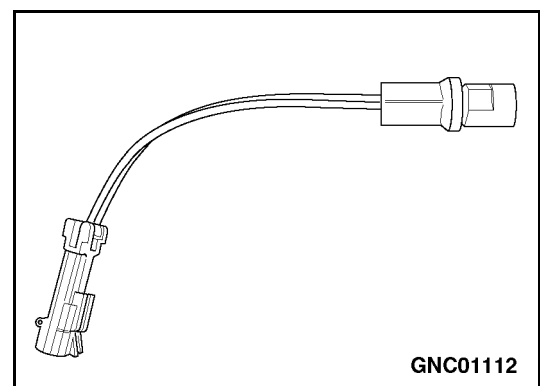
After re-assembly, check the top of the valve stem to insure it is no more than 1.5 mm (0.059 in.) below the top surface of the Schrader port.



12. Replace the O-ring seal between the pressure switch and tube port with P/N 1440 153 H1 (orange color). Also insure the outside orange o-ring has refrigerant oil (mineral oil) applied prior to the installation of the pressure switch.

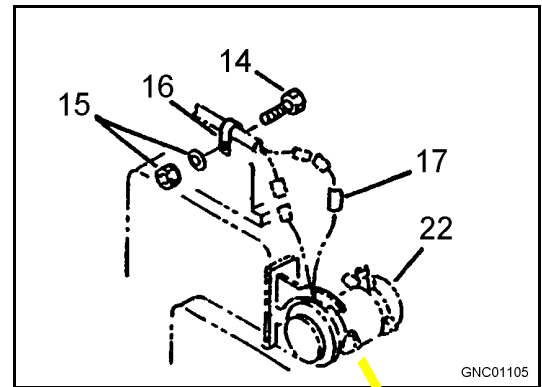
13. Re-install the new pressure, P/N 1439 682 H92, switch to the tube assembly. The new pressure switch is shown to the right.

 **N·m** Torque: 8.0219 Nm (71 lbf in)



H Follow the A/C charging procedure at step 1 following page.

14. Re-assemble HVAC unit.
15. Replace the diode for the compressor clutch. (Item 17)
P/N 1437 616 H1.



A/C CHARGING PROCEDURE:

Use only if it was necessary to replace Schrader valve core.

1. Check adjustment of V-belt tension initially to 121 ± 5 lb for a new belt. Check pulley alignment and adjust to no more than 0.060 in misalignment per 1 ft span between pulleys, Maximum deflection should be 0.25 in after run-in with the belt hot. Re-tension if below 50 lb. Re-tension the belt to 90 lb, if it is cold.
2. Set evacuation for 10 minutes with a 5 min. hold.
3. If there is no obvious leak indicated, evacuate for an additional 20 - 30 minutes. Warmer ambient conditions require longer evacuation times.
4. Charge system with R-134a to:

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|-------------|--------------------|
| 830/850/870 | - 3 lbs. 12 ounces |
| GD530 | - 3 lbs. 12 ounces |
| GD650 | - 3 lbs. 12 ounces |
| GD750 | - 4.4 lbs. |
5. Prior to operating, use the electronic leak detector to check for leaks at the following locations, O-ring connections, hose crimps, receiver dryer, sight glass moisture indicator, ports, high pressure pop-off valve and compressor front seal and rear gasket.
6. After checking above and easy leak check of the evaporator unit is to test for refrigerant at the condensate tubes.
7. Perform a preliminary electrical check. Turn ignition key to on. Do not start. Check for the proper fan operation in Heat and A/C mode. Check for clutch engagement in the A/C mode.
8. Start machine and run at idle. Monitor A/C pressures and louver temperatures with charging station. Recheck the dryer sight glass; Blue is good, Pink means replace dryer.
9. Turn off machine and remove charge station service connections from compressor.
10. Replace service port caps on compressor hoses.