

INSTALLATION PROCEDURE

Installing a Zerorez CDS 4.8 with Dual Heat Exchangers into a 2010-2012 Chevy Van

Part Numbers Affected: Various

Date Changes Take Affect: 2012

****COMPLETELY READ ALL INSTRUCTIONS BEFORE STARTING INSTALLATION!****

The following is a list of assemblies, kits and major components included in the Zerorez CDS 4.8 (P/N 700-014-742) shipment.

<u>Part No.</u>	<u>Description</u>	<u>Qty</u>
000-052-649	Elbow, 3" O.D. X 0.065 Wall	1
000-068-187	Hose, 3" X 30" EPDM	1
000-068-200	Hose, 3" I.D. X 6" Lg	1
000-068-459	Hose 3/4" I.D. Greenstripe	28 ft
000-068-884	Hose, 3.0" X 13" Wire	1
000-078-056	Kit, CDS Parts	1
000-078-078	Kit, Vac Freeze Guard	1
000-078-228	Kit, Hose 250 ft	1
000-078-381	Kit, CDS Pass Through	1
000-078-430	Kit, GM Throttle 3 Speed	1
000-079-001	Kit, Dura-Flow APO	1
000-079-130	Kit, Yaw Sensor Cool	1
000-079-133	Kit, Coolant Heat Exchanger	1
000-081-057	Decal, H/M Equipped	1
000-093-030	Silencer, CDS .	1
000-100-021	Assembly, Panel Set	1
000-105-012	Plate, Machine Serial	1
000-154-147	Spacer, Power Pack, Rear	1
000-154-185	Spacer, Power Pack, Front	1
000-159-119	Tank, 110 Gal. Poly	1
000-163-015	Assembly, Furn Pad/Snap Block	1
000-163-038	Shelf, Custom 3-Tier	1
000-163-050	Shelf, Back Door	1
000-163-053	Tool, Pressure Washing	1
000-163-054	Wand, 2" Evolution S/S	1
000-163-610	Tank, Cradle	1
000-164-009	Chocks, CDS Wheel	1
601-004-741	Assembly, Power Pack	1
601-006-002	Assembly, Coolant Heat Exchanger.	1
601-015-014	Package, Finish	1
601-020-008	Assembly, Cowling	1
601-021-132	Assembly, CDS Front End	1
601-050-149	Assembly, CDS Salsa Heat Ex.	1
601-060-741	CDS Tank Assembly	1

Tools and other items you will need include:

1-¼" Wrench	Dex-cool Antifreeze
3-¼" Hole Saw	Common Metric & Standard Wrenches/sockets
1-7/16" Wrench	Reciprocating Saw
1-7/8" Wrench	Long 3/8" Drill Bit
Wire Strippers/Crimpers	Torque Wrench
Loctite 242® or equivalent	

The following is a list of reference documents that you will need to complete the installation:

- Installing a CDS Unit into a Chevy Van ([INST-33144](#))
- Instructions included in the kits that are shipped with the Zerorez CDS 4.8

Figure 1 shows the major components:

1. Zerorez CDS 4.8 Tank Assembly, which includes the instrumentation panel
2. Power Pack (Pump and Blower) Assembly with APO
3. Salsa Heat Exchanger (hidden from view in Figure 1)
4. 2 Coolant Heat Exchanger Assemblies
5. 110 Gallon Fresh Water Tank - shipped separately.
6. Additional 125 Gallon Fresh Water Tank with integrated multi-reel system, specially designed to fit Zerorez' specifications
7. 3 Tier Stainless Steel Shelf

This is the order in which parts should be dry fitted and then installed:

1. Yaw Sensor Cooling Assembly
2. Power Pack (Pump and Blower) Assembly with APO
3. Salsa Heat Exchanger (not shown in Figure 1)
4. CDS 4.8
5. 2 Coolant Heat Exchangers (rear heat exchanger not shown in Figure 1)
6. 125 Gallon HydraCradle Fresh Water Tank
7. 110 Gallon Fresh Water Tank
8. CDS Pass Through (not shown in Figure 1)
9. 3 Tier Stainless Steel Shelf

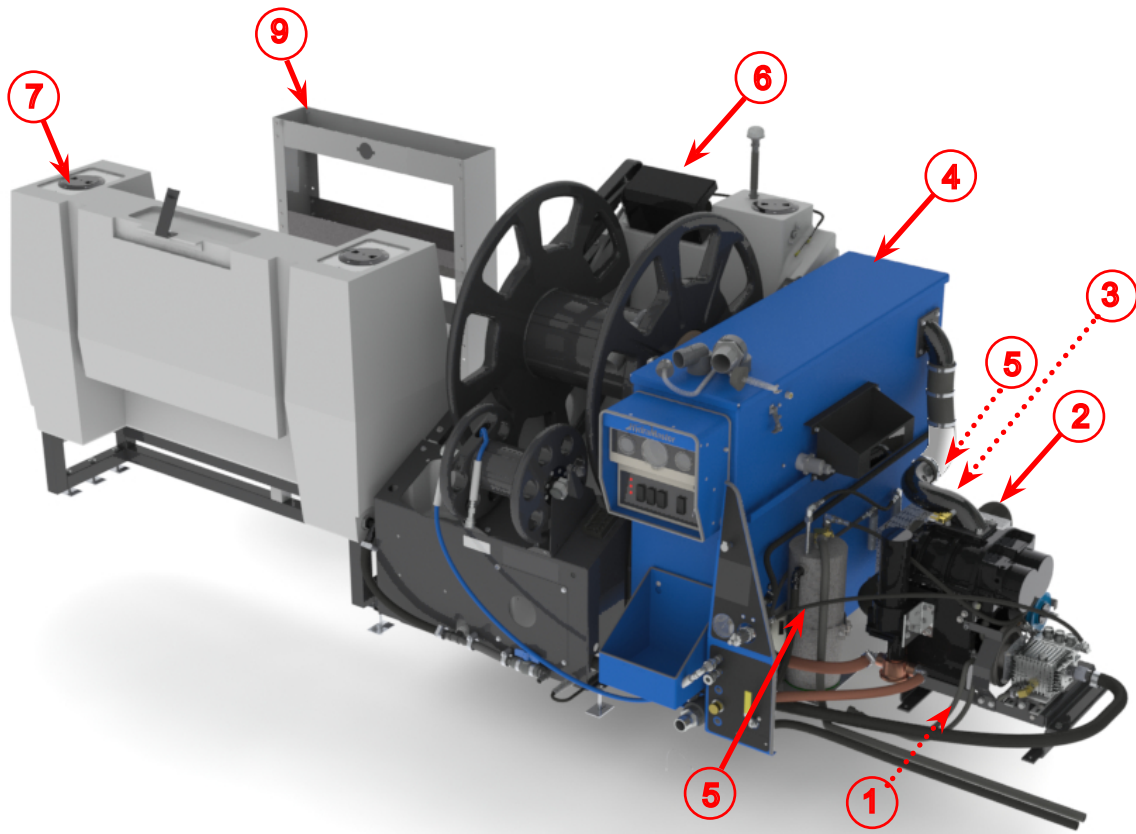


Figure 1. CDS 4.8 Cleaning System, Customized for Zerorez

NOTICE

The recommended location of the 3 Tier Stainless Steel and the 110 Gallon Fresh Water Tank is as shown in Figure 1.

NOTICE

Prior to installing any assembly or drilling holes, dry fit the assembly to ensure a proper fit.

INSTALLING CDS 4.8 CLEANING SYSTEM

Yaw Sensor Cooling Kit (P/N 000-079-130, INS-44267)

1. With the vans seats removed, carefully remove the floor mat. DO NOT disconnect any of the underlying wires or cables. Pay special attention to the areas around the air pressure bag sensor, lying directly behind the van electrical fuse box (which was under the driver's seat).
2. Locate the yaw center cover in the center of the floor, and between the seats (see Figure 2 and Figure 3).
3. Complete the pre-installation procedure, referring to INS-44267 which comes with the Yaw Sensor Cooling Kit, P/N 000-079-130. See page 13 for installation information.



Figure 2. Remove the Original Clear Plastic Cover

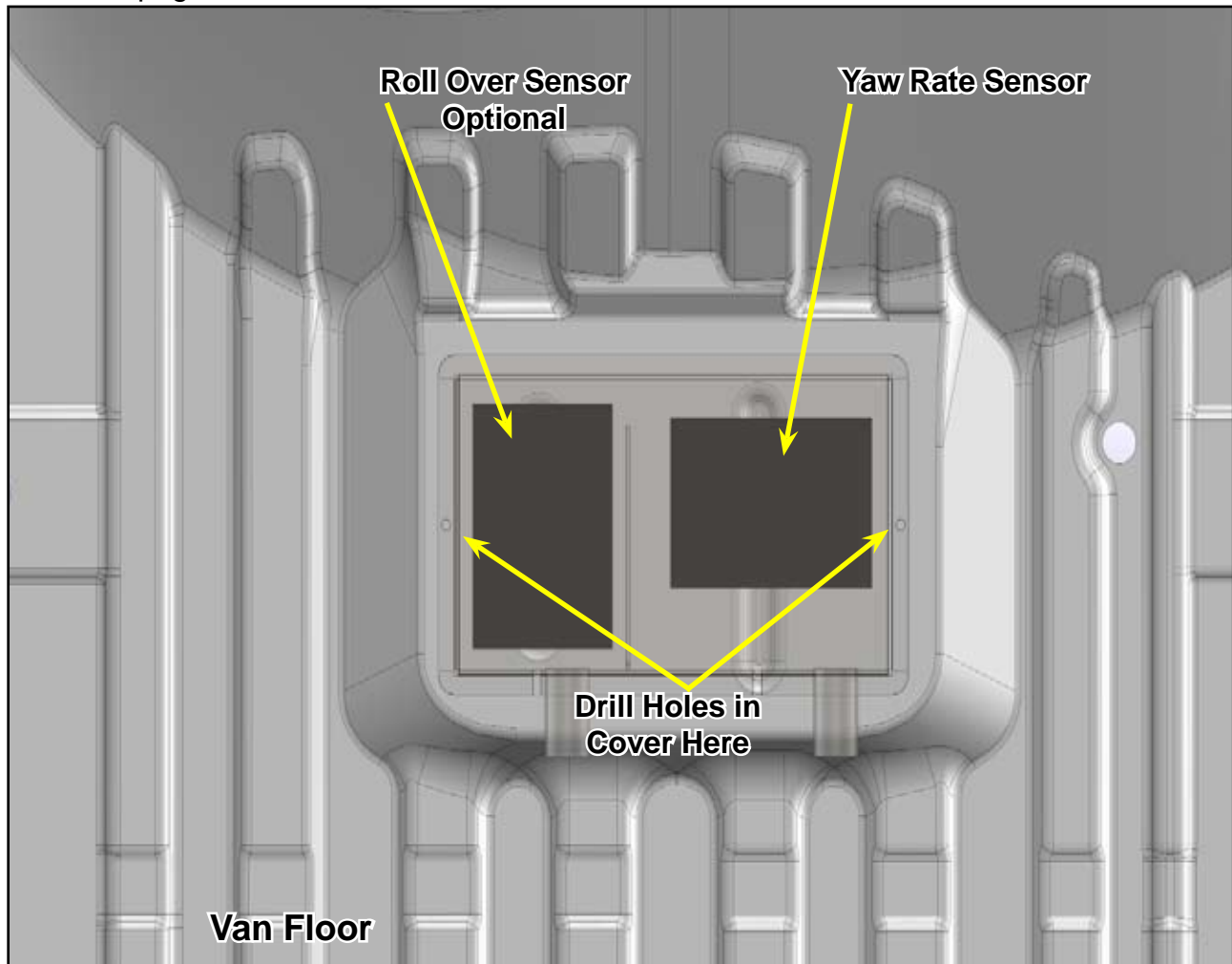


Figure 3. Top Down View of Van Floor - Mount New Cover Over Yaw Sensor

Front End Assembly, Power Pack Assembly and Salsa Heat Exchanger Assembly (P/N 601-021-132, P/N 601-004-741 and P/N 601-050-149, INST-33144)

After removing the components from the pallets and shipping cartons, refer to the Installing a CDS Unit into a Chevy Van (INST-33144) document.

Install the front end kit.

Then, dry fit the Power Pack (Pump and Blower) Assembly, finish kit and Salsa Heat Exchanger as indicated in Figure 4.

NOTICE

Prior to installing any assembly or drilling holes, dry fit the assembly to ensure a proper fit.



Figure 4. Dry Fit Zerorez CDS 4.8 Pump and Blower Assembly, and Salsa Heat Exchanger

Dura-Flow APO Assembly (P/N 000-079-001)

Next, dry fit the Automatic Pump Out (APO) onto the Power Pack Assembly.

1. Secure the APO to the Power Pack Assembly using two 1/4"-20UNC x 0.75" hex head bolts (P/N 000-143-001) and two 1/4" washers (P/N 000-174-002 - see Figure 5).
2. Locate the two hoses for the APO.
3. Later, you will connect one hose to the APO inlet from the connector located near the bottom of the recovery tank. Secure the hose on both ends by tightening the hose clamps.
4. You will then attach the other hose from the APO outlet to the bottom of the instrument panel. Secure both ends of the hose by tightening the hose clamps.
5. Locate the red wire within the split loom. Connect it to the inline fuse (with the 25 Amp fuse). Connect the fuse to the red APO motor wire.
6. Route the black APO wire to the ground lug on the Power Pack, under the pressure pump.



Figure 5. Install APO onto Power Pack

Zerorez CDS 4.8 Unit (P/N 601-060-741)

Load and dry fit the Zerorez CDS 4.8 in the midsection of the van, facing out, as indicated in Figure 6. Refer to Installing a CDS Unit into a Chevy Van ([INST-33144](#)).

CAUTION

Many vehicles have critical components mounted directly below the floor that can easily be damaged. Before drilling holes in the floor of the vehicle inspect the underside of the vehicle for critical components. Failure to do so may result in damage to the vehicle.



Figure 6. Dry Fit Zerorez CDS 4.8

Pass Through Assembly
(P/N 000-078-381)

1. Dry fit the Pass Through Assembly (from P/N 000-078-381) on the van's step to help locate the Pass Through hole.
2. The recommended location for the Pass Through is just to the left side of the CDS unit. Leave enough room so that the backside of the step does not interfere with the Pass Through.
3. Trace an outline around the Pass Through (see Figure 7).
4. Follow the directions in INS-23070, which is shipped with P/N 000-078-031, to drill out the hole and install the Pass Through assembly.

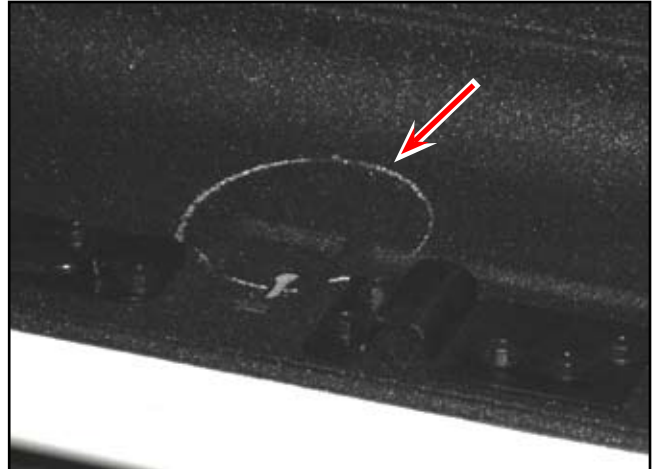


Figure 7. Trace an Outline Around Pass Through

Coolant Heat Exchanger Assemblies (P/N 601-006-002 and 000-079-133)

Dry fit the first Coolant Heat Exchanger (P/N 601-006-002) on the floor of the van next to the CDS 4.8 as shown in Figure 8.

5. Mark the location of the four holes of the Coolant Heat Exchanger Bracket.
6. Secure the Heat Exchanger/Bracket to the floor with four 1/4"-20 x 1" long self tapping screws (P/N 000-143-712).
7. Position the second Coolant Heat Exchanger (P/N 000-079-133) on the van floor as shown in Figure 9 and Figure 10.
8. Check the underside of the van to ensure that there is nothing in the way before installing the Coolant Heat Exchanger.
9. Mark the location of the four holes of the Coolant Heat Exchanger Bracket.
10. Secure the Heat Exchanger/Bracket to the floor with four 1/4"-20 x 1" long self tapping screws (P/N 000-143-712).
11. Install the clamp and washer from the Kit P/N

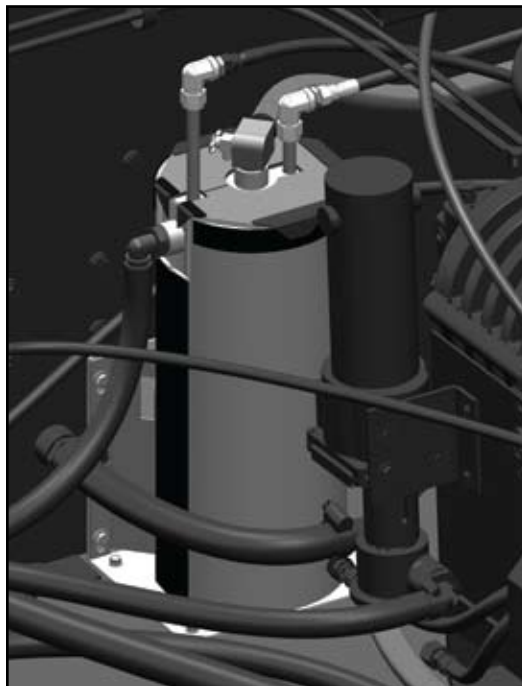


Figure 8. Dry Fit Coolant Heat Exchanger Assembly to Van Floor

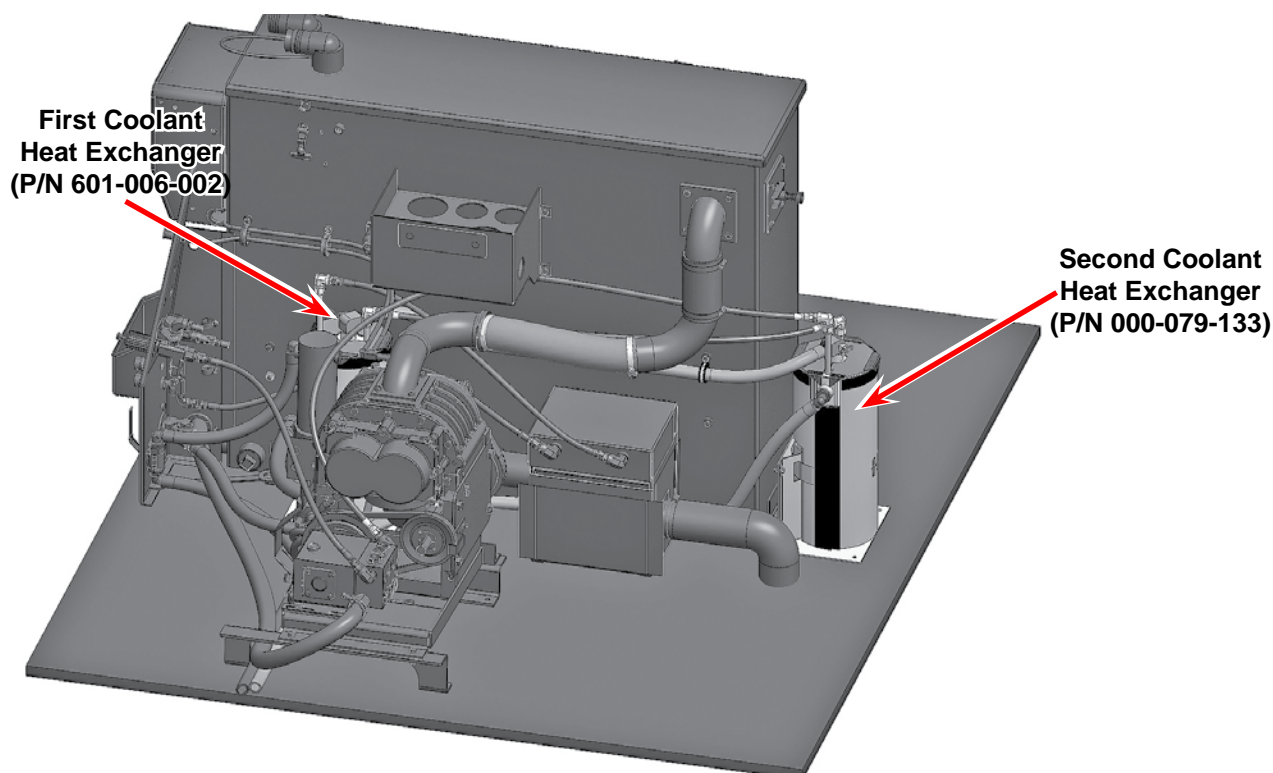


Figure 9. Position Second Coolant Heat Exchanger on Van Floor

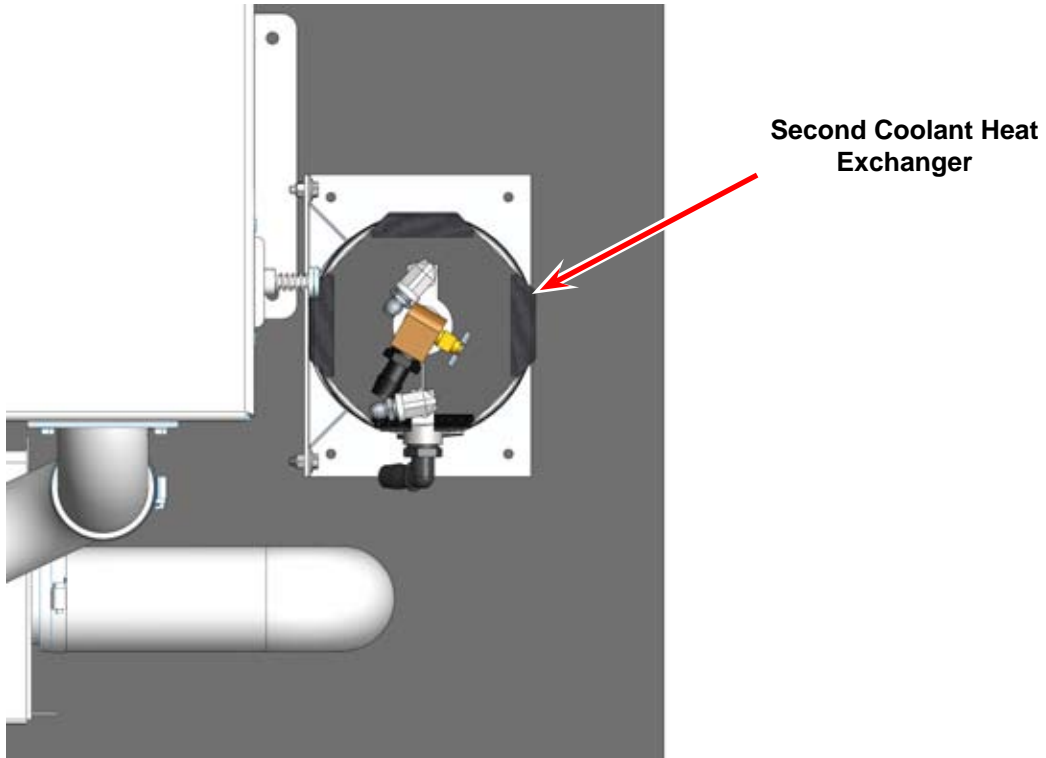


Figure 10. Top Down View of Second Coolant Heat Exchanger

000-079-133 as shown in Figure 11. Connect the longer solution hose (P/N 000-068-153) from Kit P/N 000-079-133 as shown in Figure 12.

12. Install the shorter solution hose .
13. Route the shorter hose through the cushion clamp which was installed in step 11 page 8.
14. Attach the shorter hose (P/N 000-068-644) between the first and second Coolant Heat Exchangers.

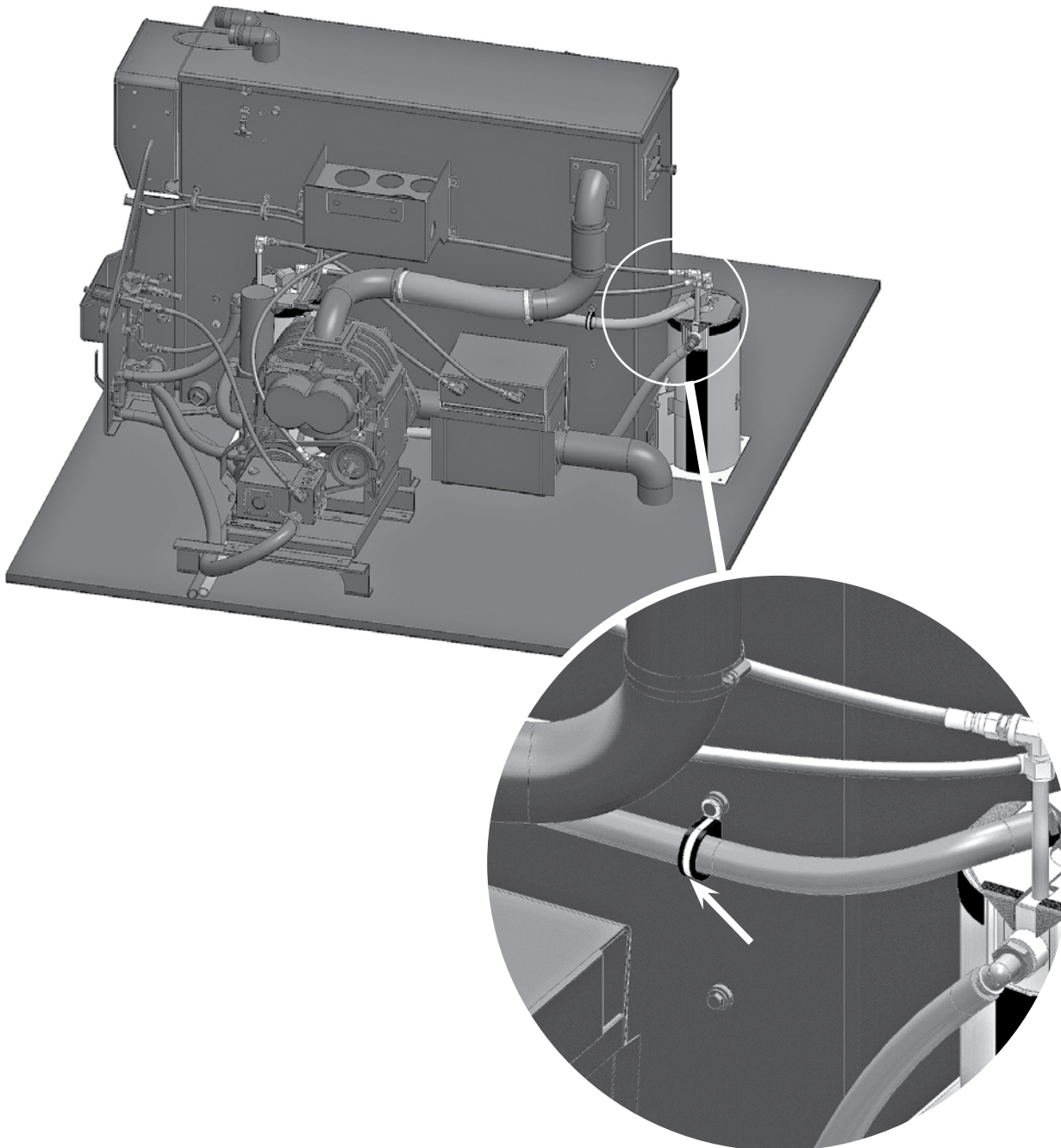


Figure 11. Install Clamp and Washer from Kit P/N 000-079-133

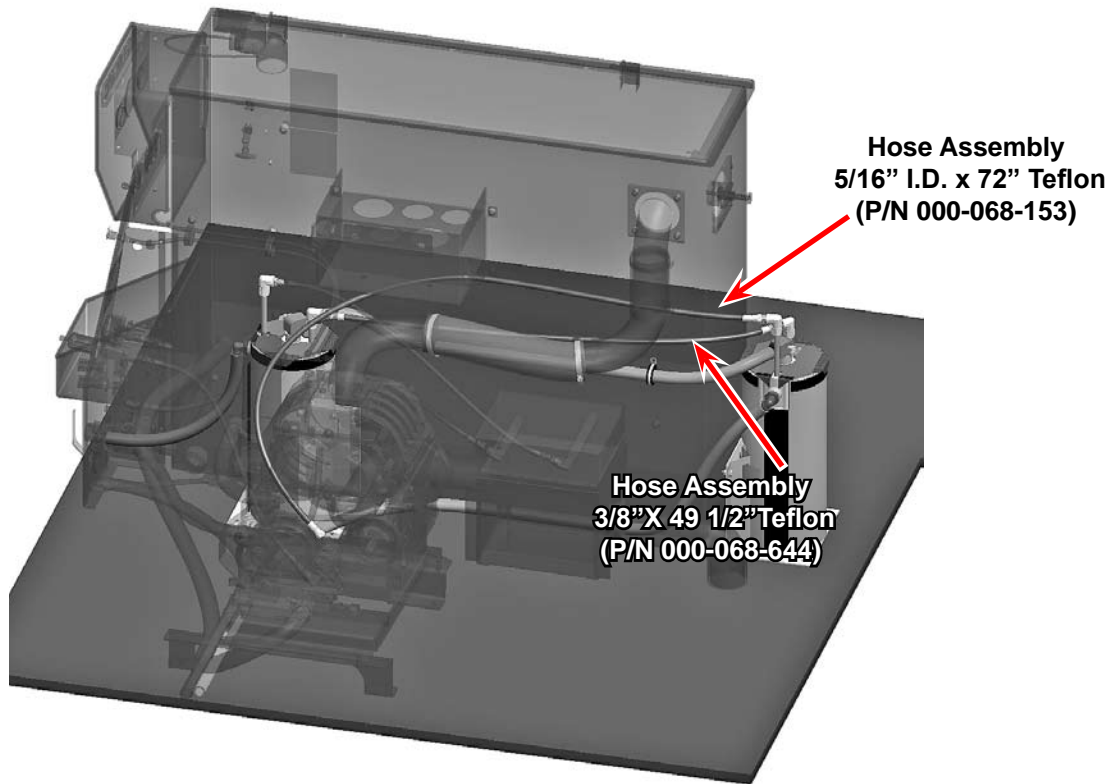


Figure 12. Connect Solution Hoses from Kit

15. The longer solution hose (P/N 000-068-153) attaches between the second Coolant Heat Exchange and the solution pump.
16. Install the additional green stripe coolant hoses, shown in Figure 13. They need to be cut to length. One of them attaches between the two Coolant Heat Exchangers. The other attaches between the second Coolant Heat Exchanger and the vehicle's radiator.

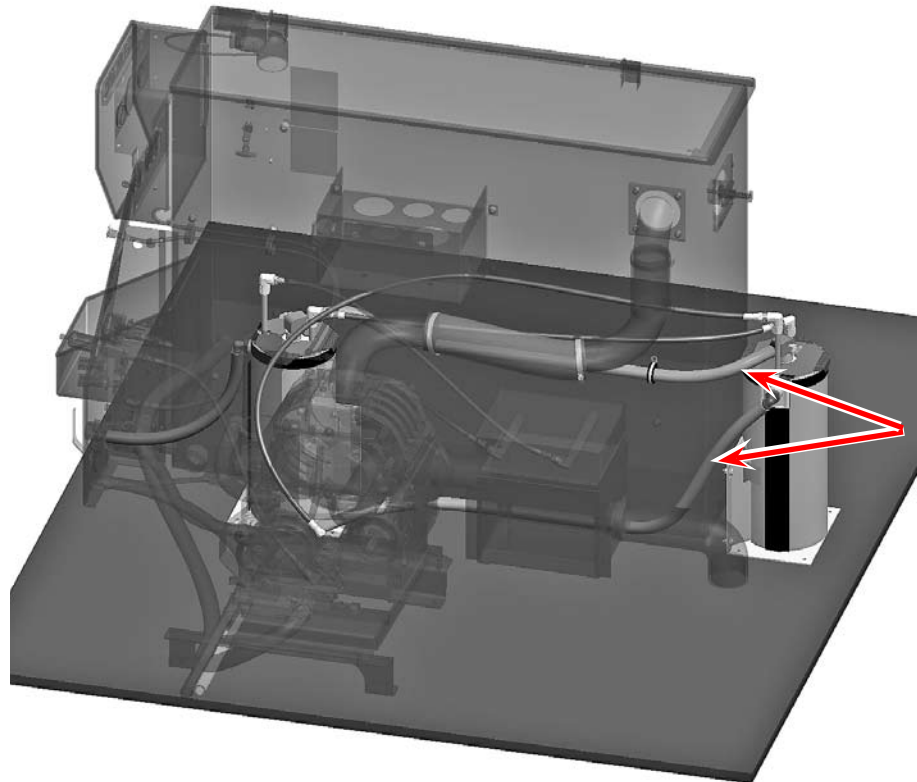


Figure 13. Install Green Stripe Coolant Hoses

Yaw Sensor Cooling Kit Assembly (P/N 000-079-130)

While the CDS 4.8 is still dry fitted in place, refer to the installation procedure in INS-44267 from P/N 000-079-130 Chevy CDS Yaw Sensor Cooling kit.

NOTICE

The Pre-Installation procedure should have already taken place, prior to the Power Pack being dry fitted (see page 4).

Connect the hoses and elbow as shown in Figure 14;

1. P/N 000-052-649 Elbow
2. P/N 000-068-200 Hose
3. P/N 000-068-884 Hose

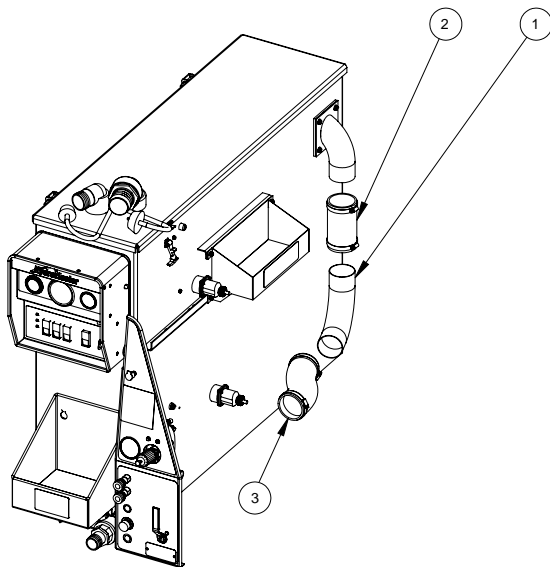


Figure 14. Install Hoses and Elbow onto Recovery Tank

Attach a 1" diameter hose to the blower elbow and a 1" diameter hose routed toward the front of the CDS side panel (see Figure 15).

Secure the hoses away from all rotating pulleys and off the blower using the nylon tie wraps and clamps as necessary.

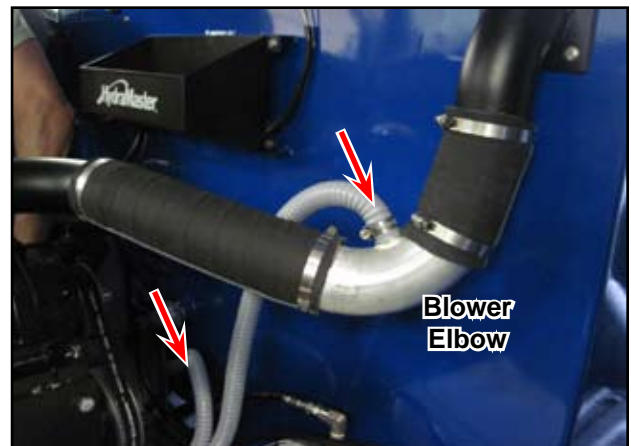


Figure 15. Attach Smaller Hoses onto Blower Elbow and CDS Side Panel

INSTALLING HYDRACRADLE TANK

Prior to loading the HydraCradle Tank into the van, you may find it more convenient to install the Solution Hose Reel, the Air Vent Assembly, and the Drain Valve and Hose Assembly (see Figure 16).

1. After receiving the palletized HydraCradle Tank, move it to the outside rear of the van, using a forklift.
2. Remove the packing and wrapping material.

Smaller components and fastening hardware are located in plastic bags which are attached to the tank.



Figure 16. Fully Assembled HydraCradle Tank

Installing Solution Hose Reel

Locate the Solution Hose Reel and the bracket, The handle and fastening hardware are located in the attached plastic bag (see Figure 17).

1. With the 4 screws found in the plastic bag, mount the bracket onto the top front panel of the tank, as indicated in Figure 18.
2. Attach the reel to the bracket and secure, and then attach the handle to the reel.



Figure 17. Hose Reel, Bracket, Handle and Fastening Hardware

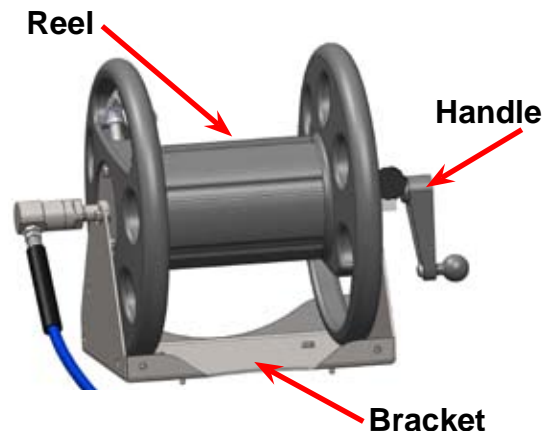


Figure 18. Install Bracket, Reel and Handle

Next, locate the swivel and bushing in one of the plastic bags (see Figure 19).

1. Attach the swivel to the hose reel (see Figure 19).

NOTICE

Apply pipe thread sealant on the threads of the reel, bushing and the short hose..

2. Install the 3/8" bushing onto the swivel (see Figure 19).
3. Connect one end of the short hose into the swivel and the other end into the CDS unit.

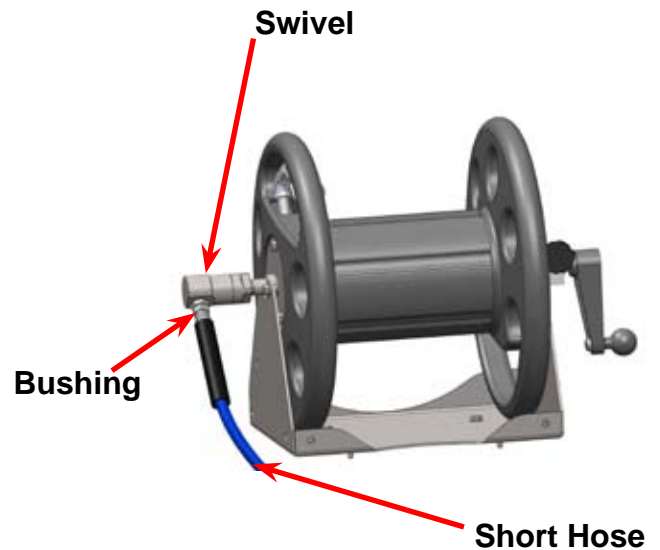


Figure 19. Attach Swivel onto Hose Reel

Installing Air Vent Assembly

Locate the Air Vent Assembly in one of the plastic bags which are attached to the tank (see Figure 20 and Figure 21).

Install the Air Vent Assembly on the top of the tank as indicated in Figure 21.



Figure 20. Air Vent Assembly and Drain Hose and Valve Assembly

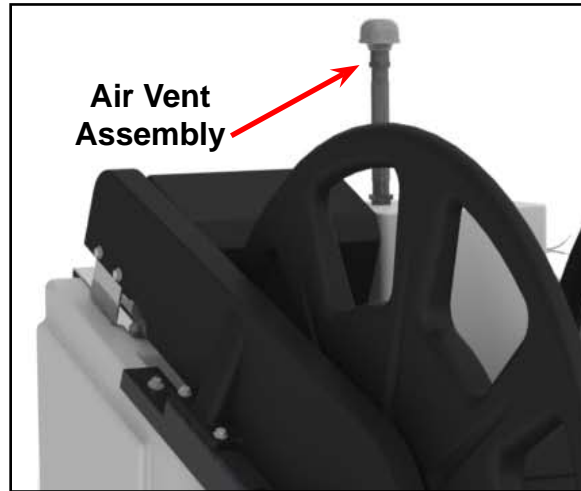


Figure 21. Air Vent Assembly Installed on Tank

Loading HydraCradle Tank into Van

⚠ WARNING

Use extreme caution when loading the HydraCradle Tank into the van. Always seek the assistance of a second person. If you attempt to load the HydraCradle Tank by yourself, personal injury could result.

1. Carefully angle the palletized HydraCradle Tank onto the rear of the van.
2. Unbolt the tank from the pallet.

CAUTION

Also, make sure high profile components such as the Air Vent Assembly are protected from damage when loading the tank into the van. Such damage may not be covered by warranty.

3. With the assistance of a second person, push the tank off of the pallet and into the van, positioning the tank at an angle.
4. With the assistance of the second person, carefully lift the tank from the shorter end of the tank, push the tank's front end into position first, and then swing the rear of the tank into position.
5. Dry fit the HydraCradle Tank, positioning it parallel to the carpet cleaning unit with a minimum of 2" of space between the tank and the CDS (see Figure 22).

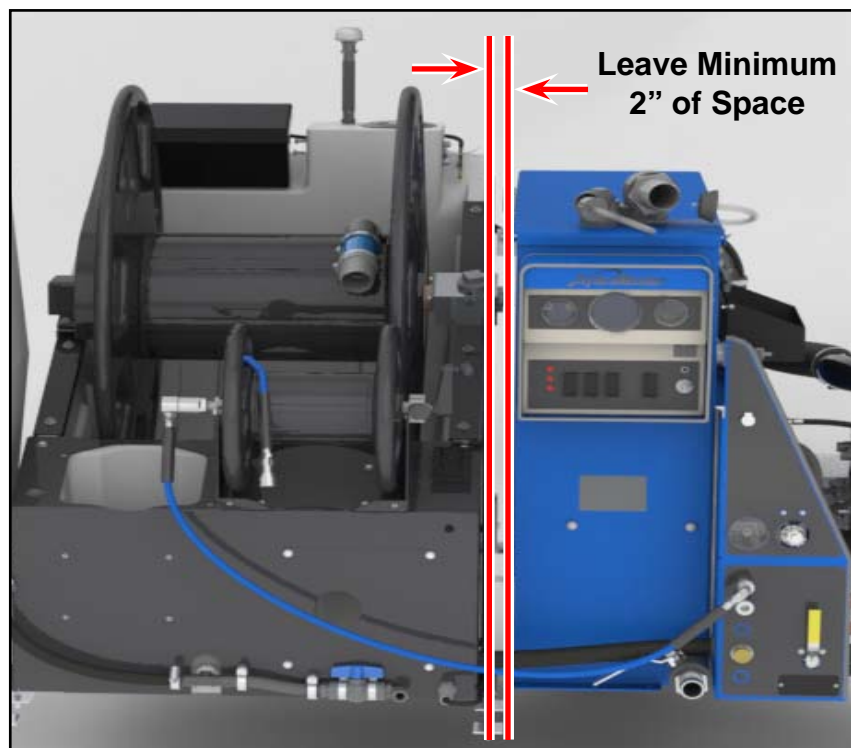
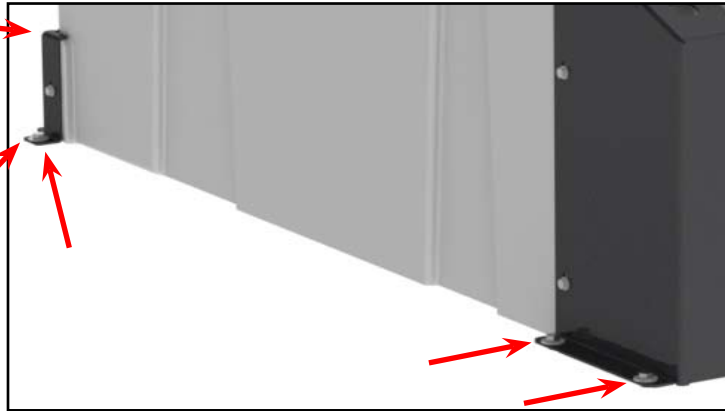


Figure 22. Leave a Minimum of 2" of Space Between Tank and CDS (Shown with Chemical Jug Storage Tray Removed)

- Referring to Figure 23, and Figure 24, locate the 6 holes in the brackets, at the base of the unit. There are 3 holes on each side of the tank.



Figure 23. Drill Only 1 Hole for Corner Bracket



**Figure 24. Mounting Holes on Each Side, Indicated by Arrows
(See Step 9 before Installing Tank)**

NOTICE

The corner bracket at the rear of the tank, shown in Figure 23, lets you select 1 of 2 tabs - you only need to use one, not both. To better accommodate the installation, you can cut off the unused tab of the corner bracket.

- Mark the location of the 6 holes, checking under the van to ensure that, when you drill through the van floor, you are not drilling through the fuel line or other components.

CAUTION

THROUGH-FLOOR DRILLING: Be careful when drilling holes through the van floor. Many vans have critical components mounted directly below the van floor which could be damaged by a misplaced drill bit.

- Using a 7/16" drill bit, drill the 6 preselected holes through the van floor (see Figure 24).

NOTICE

Prior to securing the tank to the van floor, you must first loosen the side bracket bolts on the tank as described in the next step.

9. Loosen, but do not remove, the 3 bracket bolts on each side of the HydraCradle Tank before securing the tank to the van floor (see circled bolts in Figure 25).
10. Secure the tank to the van floor with three 3/8" bolts on each side.
11. After tightening the 6 bolts that secure the tank to the floor, tighten the bracket bolts (3 on each side) as indicated in .Figure 25.
12. Install and tighten the 6 tie down cleat washers to the underside of the van (see Figure 26).

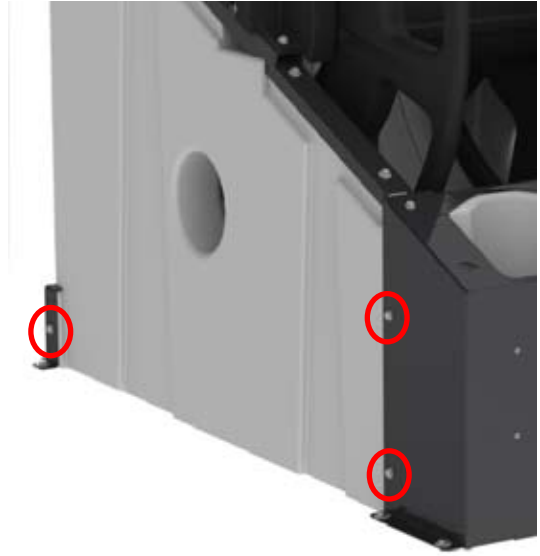
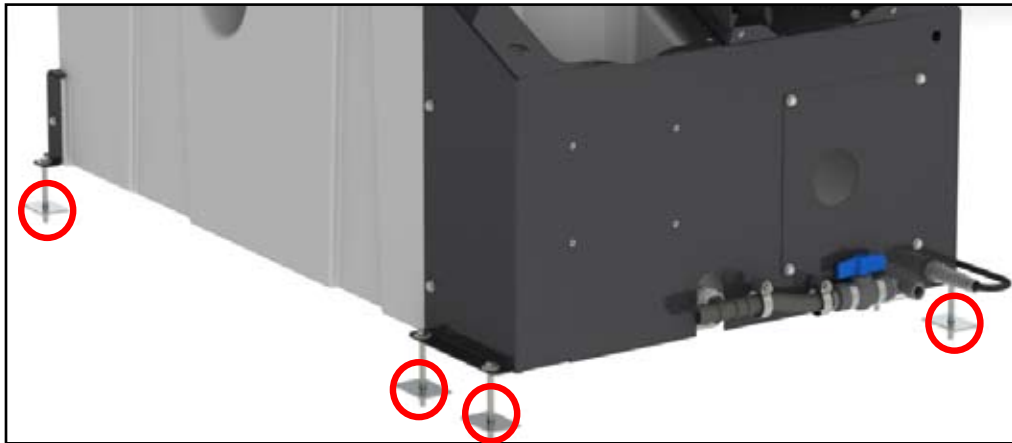


Figure 25. Loosen But Do Not Remove 3 Bracket Bolts



**Figure 26. Install and Tighten 6 Tie Down Cleat Washers
(2 Washers are Hidden from View in Illustration)**

Route Suction Hose

1. Route the suction hose from the water pump through the console of the CDS as shown in Figure 27 and into the front panel of the HydraCradle Tank.
2. Make sure the pump connectors are connected as shown in the right photo of Figure 27.



Figure 27. Route Hose from Water Pump through CDS Console

Installing Drain Hose and Valve.

Locate the Drain Hose and Valve (see Figure 20).

1. Install the PVC nipple (see number 21 in Figure 29) into the front of the tank as indicated.
2. Insert the valve (see number 20 in Figure 29) into the PVC nipple.

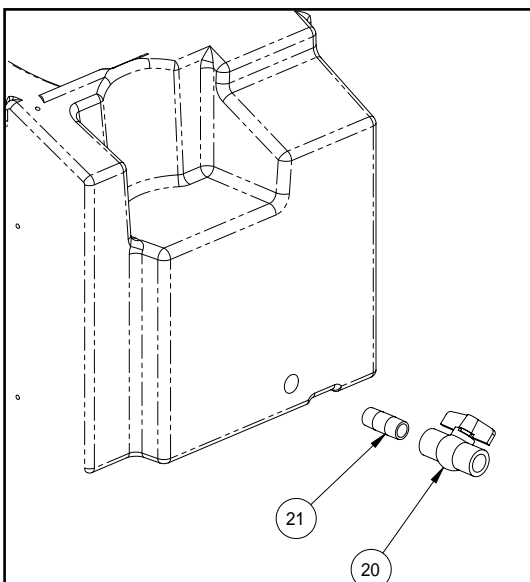


Figure 29. Install PVC Nipple and Valve



Figure 28. Install Drain Hose and Valve

Battery Cables and Float Wire Connectors

1. Locate the tank's battery cables in their loom (see Figure 30).
2. Cut the battery cables to length if necessary. Locate the 2 ring terminal connectors in the plastic bag, shipped with the HydraCradle Tank, and install the ring terminal connectors onto the battery cables, using pliers or similar tool.
3. Connect the battery cables to the van's battery or to a battery located inside the van.
4. Locate the float wire connectors at the rear of the tank (Figure 31).
5. Attach the float wire connectors to the CDS' Low Level Solution Switch connectors (see Figure 32).



Figure 30. Battery Cables without Connectors



Figure 31. Float Wire Connectors



Figure 32. Attach Float Wire Connectors from HydraCradle Tank to CDS' Low Level Solution Switch Connectors

Installing Hoses

1. Connect the vacuum hose sections with the hose couplers.
2. Load the vacuum hose onto the reel by pressing on the foot switch.
3. Guide the vacuum hose onto the reel hub so that the hose is evenly distributed on the hub.
4. Locate the hose connector on the Solution Hose Reel and connect the hose.
5. Turn the hand crank away from you to load the hose, guiding the hose onto the Solution Reel hub.

NOTICE

To set the brake on the Solution Hose Reel, gently turn the tension knob, located near the handle, to the right.

6. Remove the front access panel on the HydraCradle Tank (see Figure 33).
7. Route the pump hose from the CDS through the HydraCradle Tank (see Figure 33).
8. After you install the 110 Gallon Fresh Water Tank (next section), you will continue to route the pump hose from the HydraCradle Tank to the 110 Gallon Tank.



Figure 33. Remove Front Access Panel and Route Through Tank

INSTALLING THE 110 GALLON FRESH WATER TANK INTO THE VAN

Prior to loading the 110 Gallon Fresh Water Tank into the van, install the tank onto its frame with the hardware shipped with the HydraCradle Tank kit.

WARNING

Use extreme caution when loading the tank into the van. Always seek the assistance of a second person. If you attempt to load the tank by yourself, personal injury could result.

1. Load and position the tank in the van, as shown in Figure 34.
2. Secure the tank to the van floor and to the wall with the hardware and bracket supplied with the shipment.
3. Connect the pump hose that has been routed through the HydraCradle Tank to the 110 Gallon Fresh Water Tank (see Figure 35).



Figure 34. Location of 110 Gallon Tank in Van

CAUTION

Be careful when drilling holes through the van floor and the van walls. Many vans have critical components mounted directly below the van floor and in the walls which could be damaged by a misplaced drill bit.

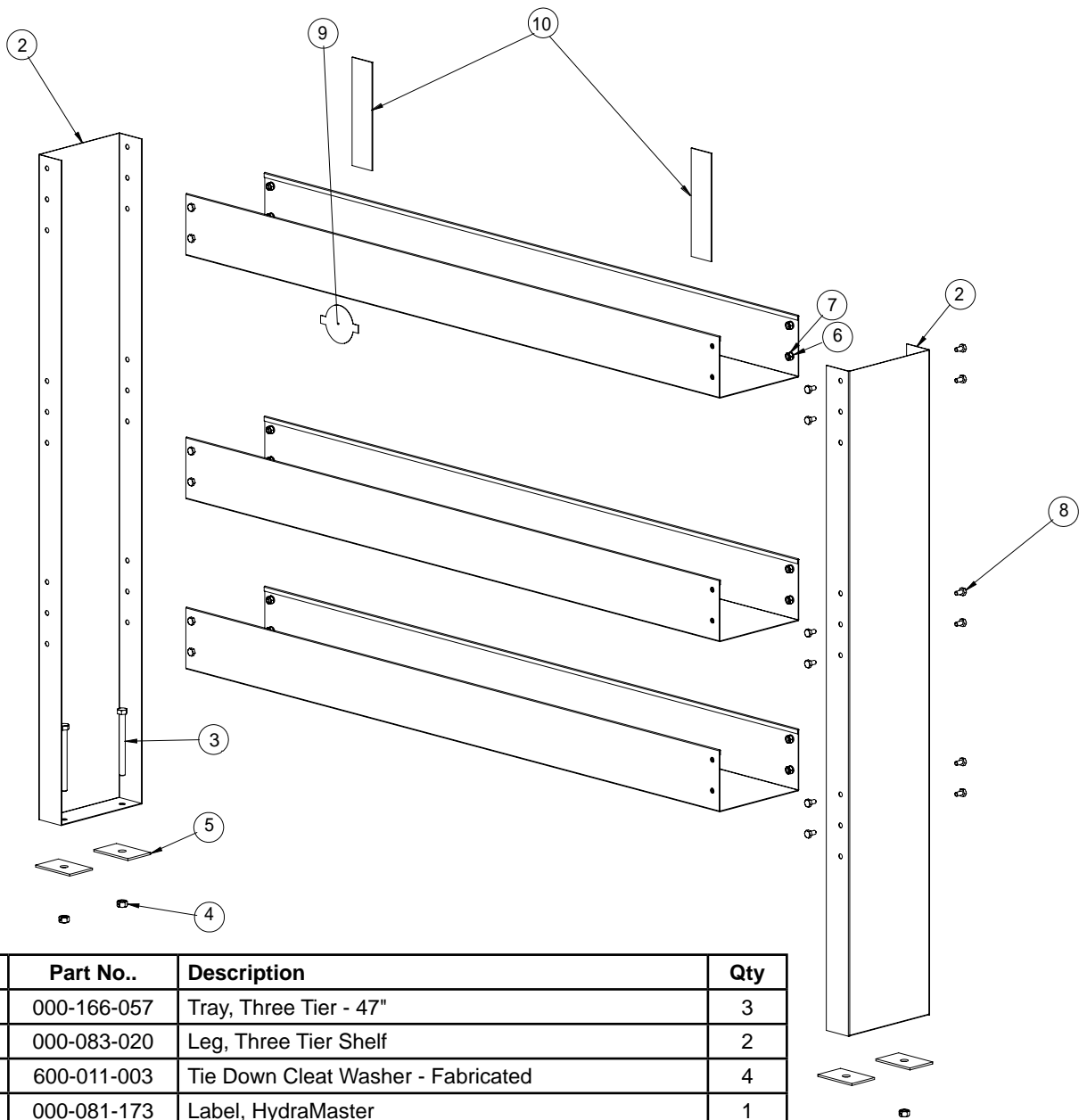
4. Next, install the CDS Pass Through Assembly, referring to the CDS Pass Through Kit instructions (INS-23070, shipped with P/N 000-078-381).



Figure 35. Connect Pump Hose to 110 Gallon Tank

INSTALLING THE 3 TIER STAINLESS STEEL SHELF

Prior to loading the stainless steel shelf into the van, assemble it as indicated in Figure 36 using the fastening hardware included in the shipment.



Item	Part No..	Description	Qty
1	000-166-057	Tray, Three Tier - 47"	3
2	000-083-020	Leg, Three Tier Shelf	2
3	600-011-003	Tie Down Cleat Washer - Fabricated	4
4	000-081-173	Label, HydraMaster	1
5	000-174-019	Washer, 1/4" Lock	24
6	000-094-010	Nut, 1/4"-20UNC Hex	24
7	000-143-333	Screw, 1/4"-20UNC X 0.50" Lg. Hex Head	24
8	000-143-198	Screw, 3/8"-16UNC X 4" Lg. Hex Head - Full Thread	4
9	000-094-015	Nut, 3/8"-16UNC Hex 2-Way Locking	4
10	000-015-024	Bracket, Shelf Mounting	2

Figure 36. Assemble 3 Tier Stainless Steel

Position the 3 Tier Stainless Steel Shelf in the rear of the van as shown in Figure 37.

Properly secure the shelf to the van's wall and floor with the fastening hardware provided.



Figure 37. Secure Stainless Steel Shelf to Van's Wall and Floor

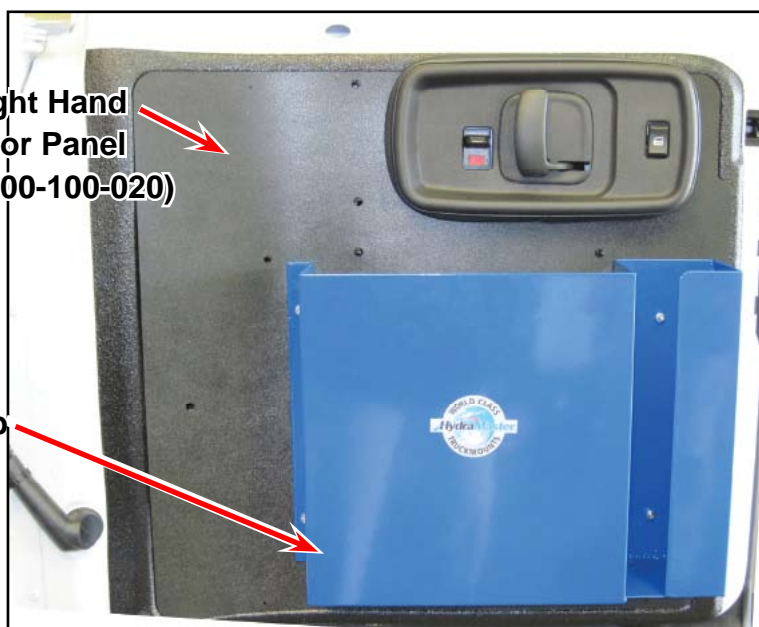
INSTALLING REAR DOOR KITS

1. Install the Rear Door Panel Set (P/N 000-100-021, INS-23094), the Back Door Shelf Kit (P/N 000-163-050, INS-44372 and the Furniture Pad/Snap Block Kit (P/N 000-163-015, INS-44371. Refer to these INS documents and Figure 38.



**Back Door Shelf Kit
(P/N 000-163-050)**

**Left Hand
Door Panel
(P/N 000-100-020)**



**Right Hand
Door Panel
(P/N 000-100-020)**

**Furniture Pad/Snap
Block Kit
(P/N 000-163-015)**

Figure 38. Location of Shelf and Furniture Pad/Snap Block on Back Doors