

**INSTALLATION PROCEDURE****Installing a CTS CDS 4.8 into a Chevy Van**

Part Numbers Affected: Various

Date Changes Take Affect: August 2010

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

The following is a list of assemblies, kits and major components included in the CTS CDS (P/N 700-014-147) shipment:

<b><u>Part. No.</u></b>	<b><u>Description</u></b>	<b><u>Qty</u></b>
000-052-649	Elbow, 3"O.D. X 0.065 Wall	1
000-068-187	Hose, 3"X 30" Nitrile	1
000-068-200	Hose, CDS-L Blower Ex	1
000-068-459	Hose 3/4" I.D. Green Stripe	18
000-068-617	Hose, 3" Silicone	1
000-068-884	Hose, 3.0" X 13" Wire	1
000-078-430	Kit, 2008 -11 GM Throttle	1
000-078-892	Hose Kit, CTS CDS	1
000-078-893	Spare Parts, CTS CDS	1
000-093-030	Silencer, CDS	1
000-105-012	Plate, Machine Serial	1
601-015-014	Finish Package	1
601-020-008	Assembly, Cowling	1
601-021-132	Ch-8 CDS Front End	1
601-050-135	4.8 CTS CDS Blower	1
601-050-150	Assembly, Salsa Core	1
601-060-123	CTS CDS Tank	1
610-015-035	CTS CDS Chemical Tank	1

Tools and other items you will need include:

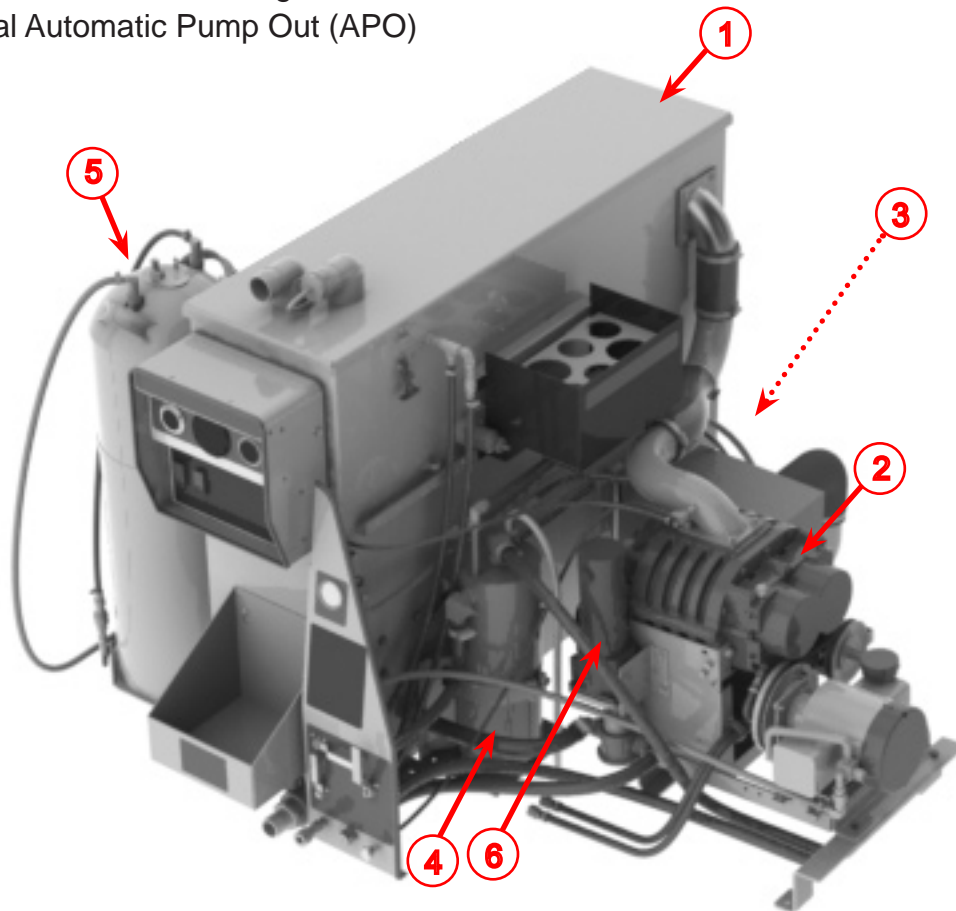
- 1-¼" Wrench
- 3-¼" Hole Saw
- 1-7/16" Wrench
- 1-7/8" Wrench
- Wire Strippers/Crimpers
- Loctite 242® or equivalent
- GM-approved antifreeze (Dex-Cool Extended Life, or equivalent)
- JB Weld or equivalent
- Common Metric and Standard Wrenches Sockets
- Reciprocating Saw
- Long 3/8" Drill Bit
- Torque Wrench
- Harmonic Pulley Puller

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 CTS CDS

Figure 1 shows most of the major components:

1. CDS Tank Assembly, which includes the instrumentation panel
2. CDS Blower Assembly
3. Salsa Heat Exchanger (hidden in this view)
4. Coolant Heat Exchanger Assembly
5. Solution Tank and Mounting Bracket
6. Optional Automatic Pump Out (APO)



**Figure 1. CTS CDS Cleaning System Shown with Optional Automatic Pump Out (APO)**

This is the order in which parts should be installed:

1. Blower Power Pack Assembly (with APO, if included in the configuration) and drive line.
2. CTS CDS into van
3. Salsa Heat Exchanger
4. Coolant Heat Exchanger
5. Solution Tank and Bracket
6. CTS CDS Pass Thru

Figure 2 - Figure 6 and Table 1, shown in the following pages, all refer to CTS CDS hose routings to and from various components.

After removing the components from the pallets and shipping cartons, refer to Figure 2 - Figure 6 and Table 1, and to the [Installing a CDS Unit into a Chevy Van \(INST-33144\)](#) document.

See Figure 3 for detailed view

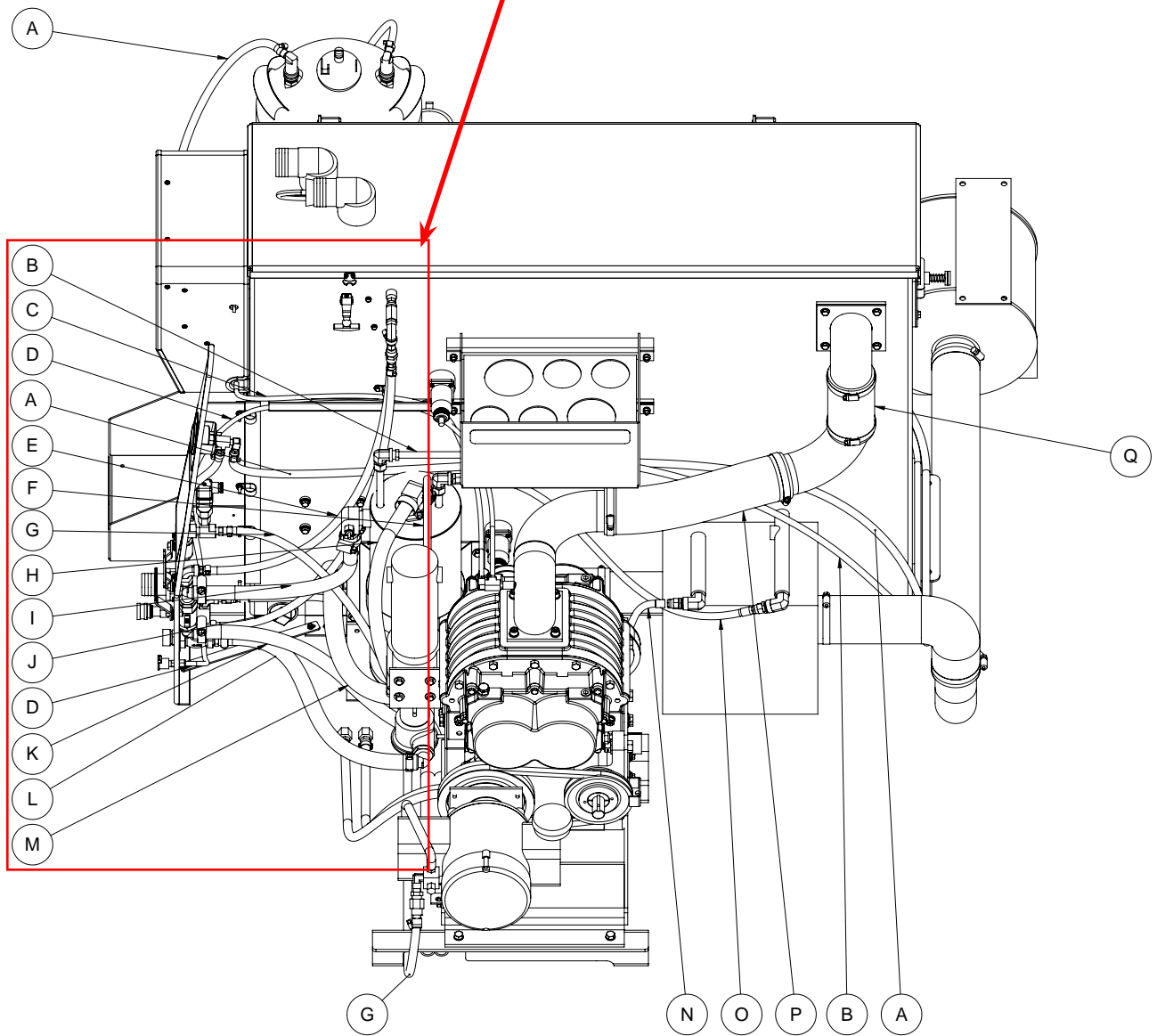
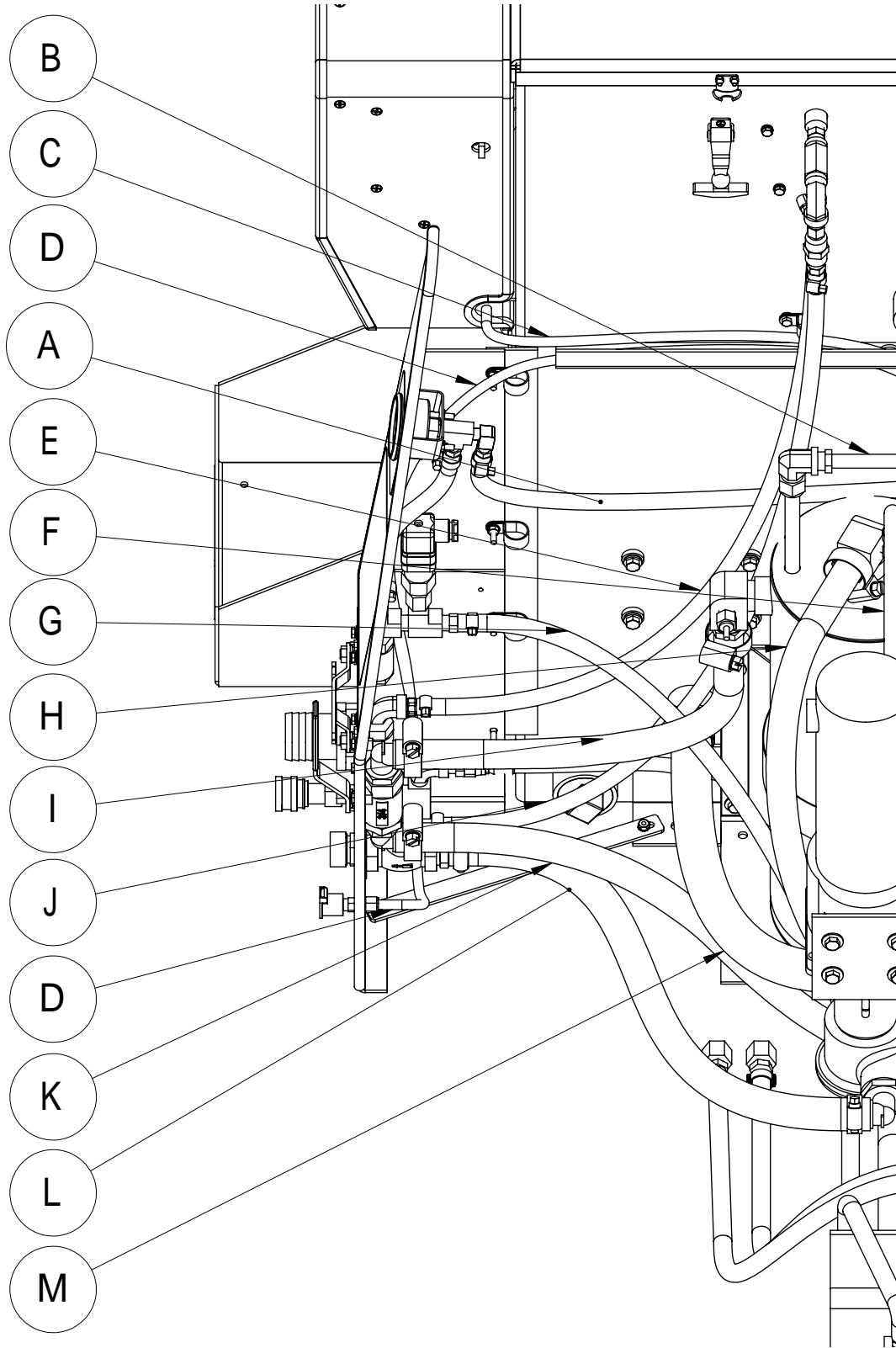
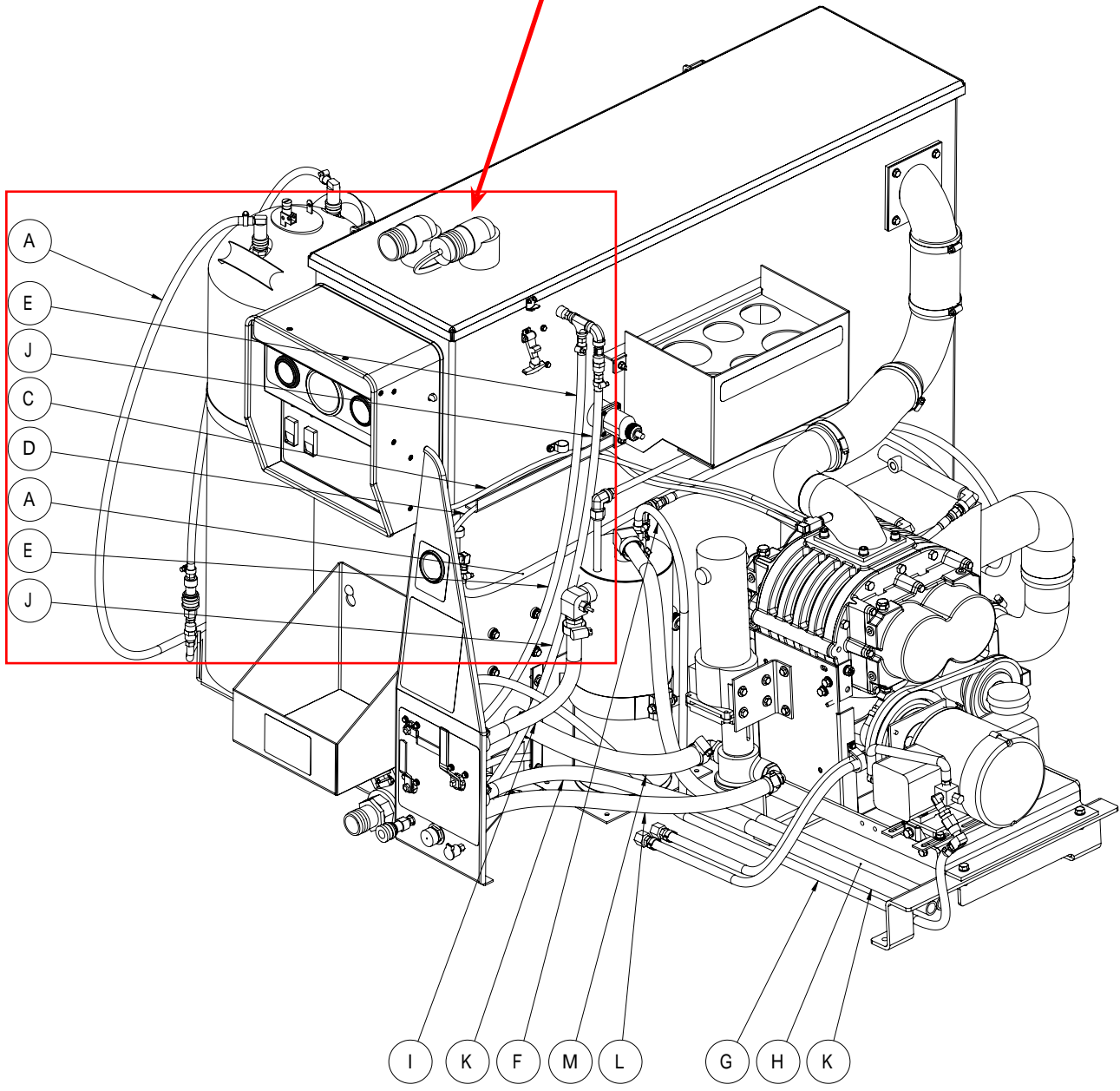


Figure 2. CTS CDS Hose Routings - View 1 of 5

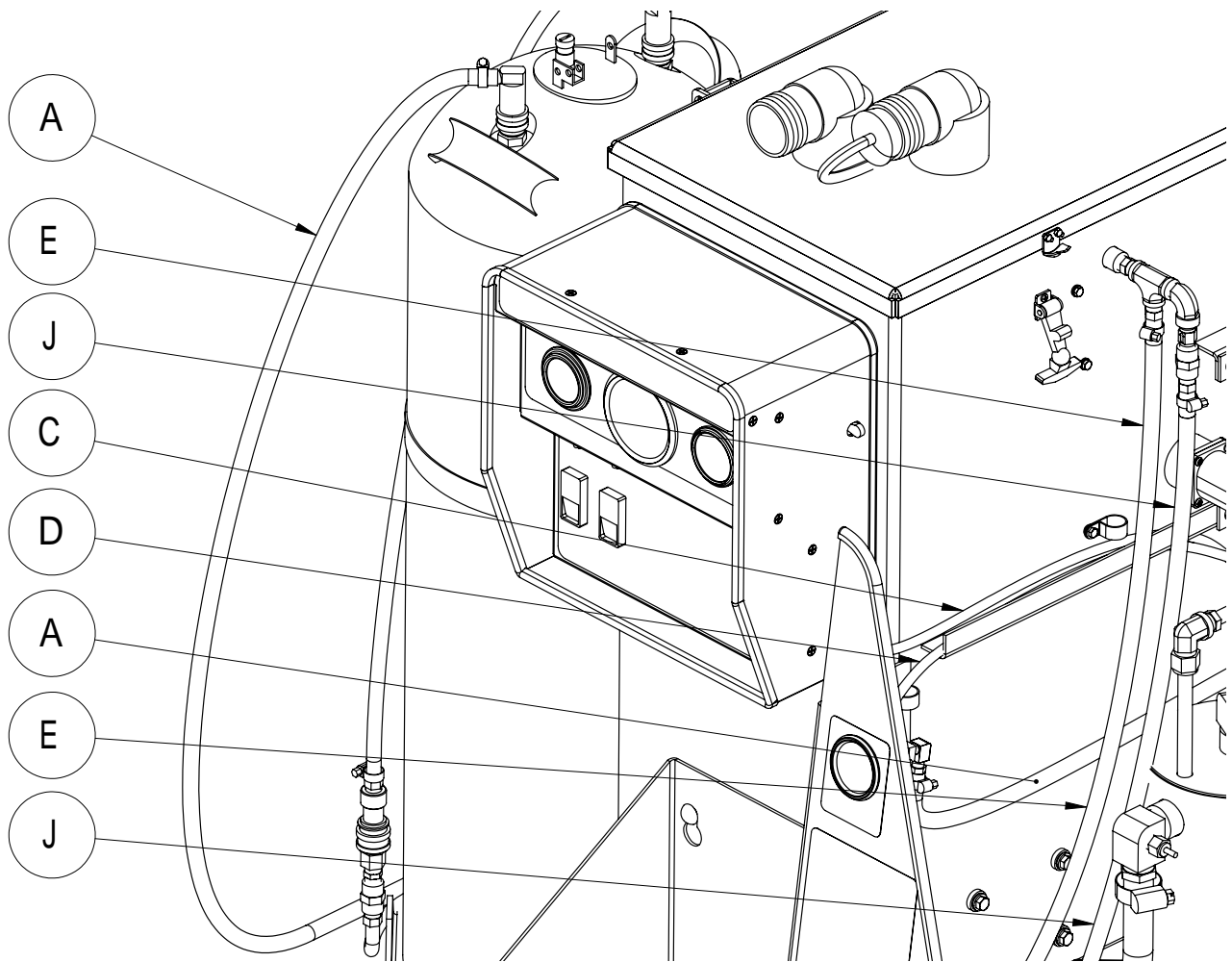


**Figure 3. Close Up of CTS CDS Hose Routings - View 2 of 5**

See Figure 5 for detailed view



**Figure 4. CTS CDS Hose Routings - View 3 of 5**



**Figure 5. CTS CDS Hose Routings - View 4 of 5**

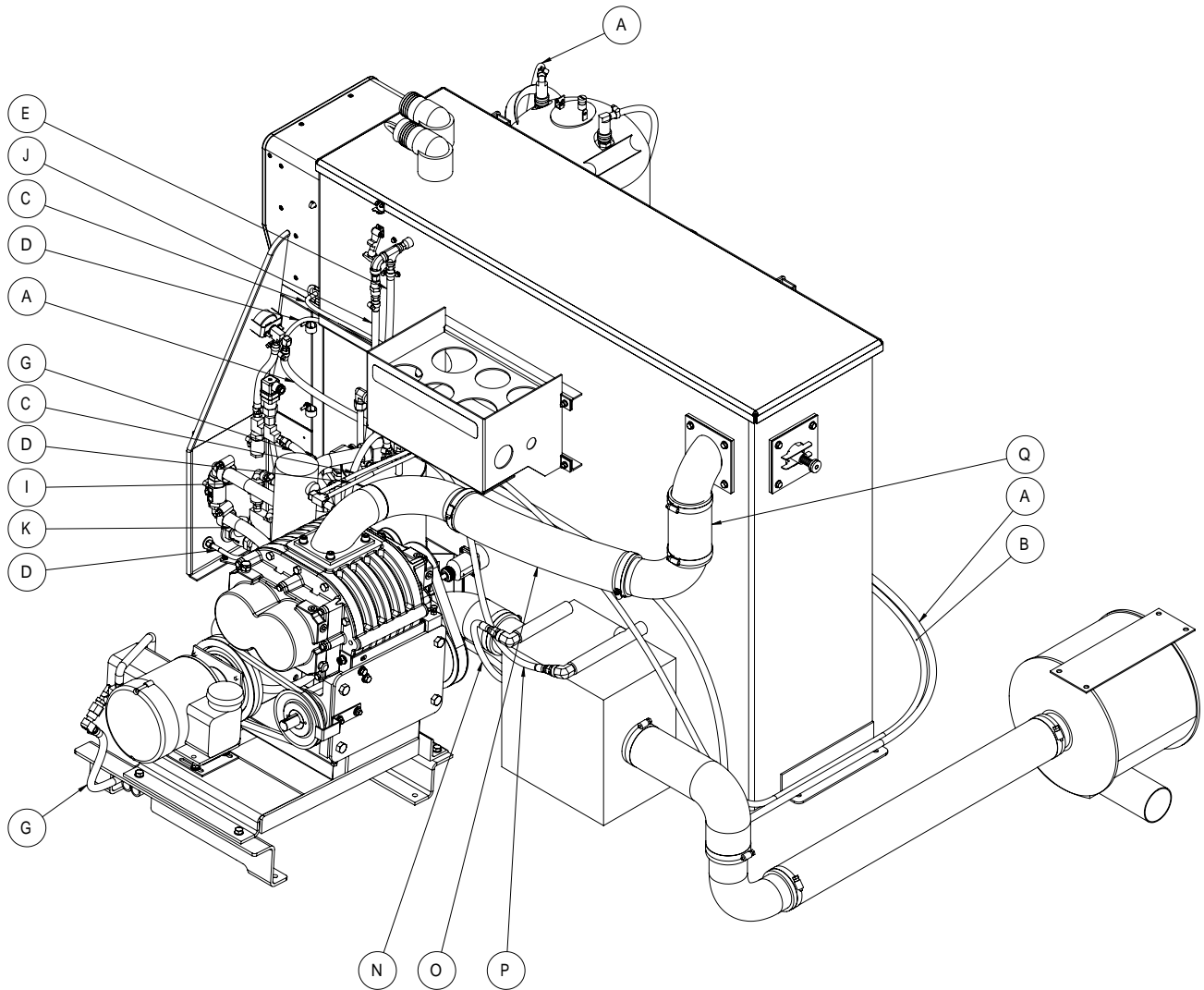


Figure 6. CTS CDS Hose Routings - View 5 of 5



**Table 1. CTS CDS Hose Routings List**

Hose	Part Number	Description	From	To
A	000-068-131	Hose, 1/4" I.D. High Temp	Air Pressure Gauge (Outside)	Solution Tank IN
B	000-068-015	Hose, 1/4" Rubber	Solution Filter Orifice	Coolant Heat Exchanger
C	000-068-030	Hose, 5/32" Rubber/Vacuum	Blower	Vacuum Gauge
D	000-068-030	Hose, 5/32" Rubber/Vacuum	Blower Lube Port	Blower
E	000-068-015	Hose, 1/4" Rubber	Top of Solution Manifold	Recovery Tank, Inside Branch Tee
F	000-068-091	Hose, 3/8" Clear	Coolant Heat Exchanger	Vented to Open Air
G	000-068-131	Hose, 1/4" I.D. High Temp	Compressor Pump	Prime Valve (Center)/ Pressure Switch
H	000-068-459	Hose, 3/4" I.D., Green Stripe	Van Radiator	Coolant Heat Exchanger
I	000-068-459	Hose, 3/4" I.D., Green Stripe	Temperature Control Valve	Coolant Heat Exchanger
J	000-068-015	Hose, 1/4" Rubber	Bottom of Solution Manifold	Recovery Tank High Pressure Check Valve
K	000-068-459	Hose, 3/4" I.D., Green Stripe	Temperature Control Valve	Van Engine
L	000-068-069	Hose, 3/4" I.D. Parker GST II	APO	Bottom of Instrument Panel
M	000-068-528	Hose, 1" I.D. Red 200 psi	APO	Recovery Tank
N	000-068-802	Hose, 3/8" X 42" Teflon w/ JIC Ends	Front of Salsa Heat Exchanger	Middle of Solution Manifold
O	000-068-755	Hose, 3/8" X 31" Teflon w/ 3/8" JIC	Coolant Heat Exchanger	Rear of Salsa Heat Exchanger
P	000-068-884	Hose, 3.0" X 13" Wire	Blower	Blower Exhaust
Q	000-068-200	Hose, CDS-L Blower Exhaust	Blower Exhaust	Recovery Tank

## INSTALLING CTS CDS CLEANING SYSTEM

### Blower Assembly and Salsa Heat Exchanger

1. Install and mount the blower power pack and the front end clutch mounting bracket and clutch (see Figure 7).
2. Install the drive line and DRY fit the recovery tank (DO NOT bolt the tank down during this step).

### NOTICE

Place the driver's seat in position before securing the Salsa heat exchanger.

3. Place the Salsa heat exchanger behind the driver's seat.
4. Position the Salsa heat exchanger with the fittings close to the tank. It is not necessary for the Salsa heat exchanger to touch the tank, but the fittings should be on the recovery tank side, away from the driver's seat and possible damage. Note that the recommended orientation of the Salsa heat exchanger is shown in Figure 7. This is different from the orientation shown in Figure 2 and Figure 6.



**Figure 7. Install Blower Power Pack, Clutch Mounting Bracket, Clutch and Position Salsa Heat Exchanger**

### Coolant Heat Exchanger and Recovery Tank

### NOTICE

Place the passenger's seat in position before securing the coolant heat exchanger or the recovery tank.

1. Position the coolant heat exchanger generally as illustrated in Figure 1, Figure 2 and Figure 4.
2. Mark the location of the four holes of the coolant heat exchanger bracket, drill holes through the van floor and secure the heat exchanger/bracket to the floor with four hex head bolts.

### 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.

3. Refer to Figure 8 and connect the hoses as indicated in Figure 2 - Figure 6 and Table 1.

## NOTICE

If the unit is not equipped with an Automatic Pump-Out (APO), be sure to leave enough room around the blower for the addition of an APO should future circumstances require.

4. Position the recovery tank to accommodate the maximum amount of cargo space in the van and the placement of the two heat exchangers, with some added room for service. When positioning the recovery tank, verify that the lid opens fully without interference from roof structural members.
5. Continue with the regular CDS installation instructions (INST-33144), positioning the silencer and floor pass thru for the Salsa heat exchanger, mounting the recovery tank, and cutting the engine cover.
6. Wire the CTS CDS throttle control exactly as a regular CDS requires. There is only one speed in the final set-up of the CTS CDS, but the wiring is the same as a regular unit.



**Figure 8. Connect Hoses to/from Coolant Heat Exchanger**

### **Solution Tank and Mounting Bracket**

1. Secure the solution tank and the mounting bracket in the cargo area of the van, allowing operator access to the solution tank, and protecting the air and solution lines from crimping and cutting. The
2. The final bracket mounting depends heavily on the operator's decision with some suggestions from the distributor in the case of a "first time owner" circumstance.
3. Mounting options are:
  - a. Mount the bracket long the driver's side wall between the recovery tank and the filler neck is one option if space is a key issue.
  - b. If access is more important, mounting toward the rear of the van on the driver's side might be preferable.
  - c. Another option that provides both cargo space and accessibility is mounting the bracket parallel to the recovery tank (see Figure 9).
4. Final hose routing to and from the solution tank is as follows:
  - a. Air Pressure gauge to the solution tank through the blue 1/4" silicon hose.
  - b. Solution tank through solution in-line check valve, to Coolant Heat Exchanger through black 1/4" rubber hose.



**Figure 9. Mount Bracket Parallel to Recovery Tank For Accessibility**

### **⚠ WARNING**

Ensure that the CTS CDS is well secured to the floor of the van with the hardware supplied. A sudden or crash stop will cause the machine to rocket forward. To prevent serious personal injury, ensure that the major components of the CTS CDS are well secured to the floor of the vehicle with the hardware supplied. Protect yourself and the machine. **SECURE IT!**