

- **Diagnostic Scan Tools**

- Ford IDS

- We recommend Ford IDS from Ford Rotunda SPX for reading Ford and ROUSH CleanTech diagnostic trouble codes (DTCs) and performing diagnostics on the Ford engine, Ford transmission and ROUSH CleanTech Propane Autogas Fuel System.

- Hardware: VCM II Kit

- Product ID: 164-R9807

- Software Licensing: Ford IDS

- Available at: <http://www.motorcraftservice.com>
 - A laptop is required

- ROUSH Diagnostic Tool (RDT)

- RDT is software offered by ROUSH CleanTech for fuel system diagnostics and module programming.

- Hardware: VCM I, VCM II, Puma II, Dashbridge, or other compatible J2534 passthrough device

- Software available at <http://www.roushcleantech.com/rdt/>

- A generic scan tool can also be used for most fuel system diagnostics.

- **0-400 PSI Fuel Pressure Gauge and -4 fitting Hose (same as R-12 A/C fitting)**

- There are many aftermarket fuel pressure tools available. An A/C gauge set is the best option as it is compatible with propane and A/C refrigerant, and many service centers will already have this tool in their possession.
 - An R-12 A/C gauge set can be purchased from a local tool supplier.

- **Mechanical Fuel Pressure Adaptor**

- Connects to the fuel rail to allow a manual gauge reading.
 - Available through ROUSH CleanTech – 800.59.ROUSH opt. 2

- **Jiffy-Tite Quick Connect Tools- 3/8” and 1/4” Sizes**

- 3/8” tool for Gen 3 fuel systems only
 - 1/4” tool for Gen 3 fuel lines and Gen 4 mechanical fuel pressure adapter
 - Available at: <http://alleganytoolco.com>

- **Fuel Evacuation / Transfer Systems**

- A fuel transfer system is recommended, but not required for service. See included document for more information on these systems.

PROPANE TRANSFER SYSTEMS

Recommended Options for ROUSH CleanTech Fuel Systems



**ROUSH CleanTech
Transfer System**



**Alliance Autogas
LPG Evacuation Pump**



**Sleegers Propane
Evacuation System**

PROFILE	● ————— PORTABILITY ————— ●		FUNCTIONALITY ————— ●
DESCRIPTION	Activates in-vehicle pumps to transfer liquid from one vehicle to another vehicle or storage tank.	Connects to shop air and uses a pneumatic pump to push liquid or vapor between tanks. Combine with the ROUSH CleanTech Transfer System to have all connections needed.	Stand-alone unit that can transfer fuel in and out of a tank. It pumps vapor to push liquid between tanks, then can draw out remaining vapor. An internal pump allows for refueling after the repair.
FITTINGS FOR GEN 3 & 4	✓	X	✓
BUILT-IN PUMP	X	✓	✓
STORAGE TANK	X	X	✓
FLARE TOWER CONNECTION	X	✓	✓
LIQUID TRANSFER	✓	✓	✓
VAPOR TRANSFER	X	✓	✓
PUMP TYPE	Vehicle in-tank pumps	Pneumatic	Electric vapor
COST	\$1,795	\$4,200	\$8,566
HOW TO PURCHASE	800.59.ROUSH	828.232.0910	519.685.7444

Propane Transfer Systems

Where can I purchase ROUSH CleanTech Gen 3 / 4 fittings?

Adapter fittings can be purchased from ROUSH CleanTech or a propane equipment supplier. Gen 3 requires a male 3/8" Jiffy-tite fitting to connect to the supply. Gen 4 requires a male -6 o-ring boss seal connection. That can also be used for Gen 3 if you remove the Jiffy-tite fitting from the supply valve.

How does the ROUSH CleanTech transfer system work?

The ROUSH CleanTech transfer system works by connecting a transfer line to the supply valve on the tank you want to empty, and the fill valve of the tank you want to transfer into. The included breakout box connects to the tank harness or component harnesses, and to battery power. When the switch on the breakout box is turned on, the supply valve opens and the fuel pumps turn on, pumping liquid to the storage tank. Once the liquid transfer is complete, the breakout box must be turned off immediately. The remaining vapor can then be vented or flared off.

Where can I pump fuel if I purchase one of the systems with no storage tank?

Fuel can be transferred to another propane vehicle, or adequately sized propane storage tank. Note: if using the ROUSH CleanTech transfer system and a non-vehicle storage tank you will need a way to refill the vehicle after the repair, as the transfer system requires an in-tank pump to transfer fuel. Transfer systems with an included pump will be able to pump fuel out of a storage tank.

What does liquid transfer mean?

Liquid transfer evacuates fuel out of the tank in a dense liquid form. This allows for quickly evacuating a tank. After all the liquid has been transferred out, the tank will still be pressurized with propane vapor.

What does vapor transfer mean?

If the evacuation system is capable of transferring vapor as well, that vapor can be pumped into the storage tank. If the evacuation system is not capable of vapor transfer, the remaining vapor must be vented or burned off before performing any tank service. Always consult your local laws and ordinances when venting or burning off propane.

What is the difference between the three types of pumps?

In-vehicle pump systems utilize the pumps already in the vehicle propane tank by supplying them with power during the transfer.

A pneumatic powered pump connects to an air compressor which powers the pump and does not require electricity.

An electric powered vapor pump uses an electric motor to power a compressor. The compressor creates pressure to force propane out of a fuel tank, then can be reversed to draw out the remaining vapor.

How long will it take to evacuate a tank with these systems?

For a full 67-gallon tank, the majority of the liquid can be transferred out in approximately one hour. If your system has vapor transfer capability, the remaining vapor can then be transferred out in an additional hour. Exact time will vary based on the system being used and other factors.

If your system cannot transfer vapor, venting the remaining pressure will take approximately two to four hours depending on temperature. Burning off the remaining vapor will take anywhere from a couple minutes to a few hours depending on your burner type.