



***TECHNICAL GUIDE TO  
FUEL TRANSFER PUMP  
TROUBLESHOOTING***

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# SERVICING THE FASS OR HPFP FILTERS

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## RECOMMENDED SERVICE LIFE

### With a Fuel Pressure Gauge/Indicator Light (part # IL-1001)

- FASS 95 ..... No less than 7 psi (light will come on at 7psi)
- FASS 150 ..... No less than 7psi

### Without the Gauge or Light

- FASS 95 ..... 30,000 + miles
- FASS 150 ..... 50,000 + miles

### Water Separator

- HPFP Filter Screen ..... 10,000 – 15,000 miles
- FASS 95 ..... 30,000
- FASS 150 ..... 50,000 miles

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## PROCEDURES FOR SERVICING THE FILTER/SEPARATOR

### FASS Fuel Filter

- Remove filter
- Install new filters (Torque specs are in your owner's manual)
- Prime

### FASS Water Separator (may be cleaned or replaced)

- Remove separator while engine is off and pour its contents out
- Pour cleaning solvent into separator while “sloshing”
- Drain in the opposite direction of its normal flow
- Prime

### HPFP Filter Screen

- With engine off, loosen clamps on both sides of filter
- Remove filter
- Replace with new filter. Make sure material inside is a wire screen mesh (don't use paper or cellulose)
- Tighten clamps



# HOW TO PRIME THE FUEL PUMP

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- With engine off, crack the fuel filter (*not the water separator*)
- Turn unit on (*Dodge 24 valve may need to bump the starter more than once, so do this before the pump shuts off*)
- Allow it to run 30 – 60 seconds (*the tone of the motor should change once the fuel reaches the pump*)
- Once the tone has changed then tighten the filter

## WILL NOT PRIME

- LOOSEN FUEL FILTER (*not the water separator*) while only the pump is running. You will hear the air being released and the tone of the motor should change as the fuel loads the pump
- As soon as the tone changes immediately tighten the filter
- If filter is still not priming answer the following questions:
  - o Does unit have a serviceable brush motor? If yes, make sure you have the 5/8" Buna Ball (*serial #'s up to 4931 on FASS 150 series only*)
  - o Is the pump operating? How much fuel do you have? Do you have enough?
  - o Where the proper procedures followed?
  - o What is the condition of the water separator?
- Remove the water separator
- Turn system on
- Place your thumb over the separator's nipple (make sure the line is free of any obstructions and sharp bends)
- Perform the '5 Gallon Bucket Test' (*refer to Table of Contents*)

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## LOSES PRIME

- Make sure your pressure gauge is working properly then check the pressures at both the FASS unit and the injection pump (*or fuel pump*). If you have good pressure you are not losing prime. *Note: if Dodge 24-valve, refer to "Hard Starts"*
- Check all connections and fuel line for obvious air/pressure leaks (*a leaky unit can cause a break in the vacuum, allowing the fuel to drain back into the fuel tank*)
- Make sure the suction line is in good operating condition
- Perform the '5 Gallon Bucket Test'
- Perform the '5 Gallon Bucket Test' again
- Immediately after shutting the vehicle off, start the FASS unit again and allow it to run. With the proper type of locking pliers crimp-off the fuel line supplying the injection pump (*or engine's fuel pump*) with fuel from the FASS. Crimp the line close to the injection pump and turn the FASS off. Allow the vehicle to sit the same amount of time as it did to lose prime originally.
- After the vehicle has set for the proper amount of time, turn the FASS pump on. Check the fuel pressure.
  - o If the pressure is good, continue with the next step. If the pressure is low perform the '5 Gallon Bucket' test again. If the pressure is still low, call your dealer.
- With the FASS pump operating, remove the pliers and start the engine. If the engine starts fine then this indicates that the problem is a vacuum upstream of the FASS pump. Check the valve in the engines fuel system (*which is probably not seated properly*).



# **'5 GALLON BUCKET TEST'**

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- Under the following conditions perform this test
  - Low fuel pressure
  - Lower fuel pressure with different fuel levels in the fuel tank
  - Inconsistent fuel pressure
  - Loss of fuel pressure
  - Hard starts
  - Losing prime
  - Not priming properly
  - Noisy fuel pump
  - Fuel pump sounds like it is turning 'ON' & 'OFF'
  
- Add fuel to a 5 gallon bucket.
  - This test is referred to often throughout this manual. Performing the '5 Gallon Bucket Test' simply isolates the unit.
  - There are only 2 factors that can affect the units' performance while running the test
    - The water separator of the FASS (*or the HPFP/DDRP pre-screen filter located in the suction line*)
    - The suction line
  
- Put the return line of the FASS (*suction line of the HPFP/DDRP*) into the bucket
  - You may need to re-prime the FASS fuel pump
  
- With the suction line (*fuel line attached to the letter "T" on the HPFP/FASS, "IN" on the DDRP*) in the bucket of fuel, attempt to start the truck. If it starts the pump is operating normally.
  - If the fuel pump is pumping fuel and air before performing the '5 Gallon Bucket Test' Step #1, but the truck starts normally after performing Step #1, check for air entering the supply line through the components installed in the fuel tank.
  
- If the truck does not start using the previous check, disconnect the fuel line from the fuel pump to the filter housing (*95 Series models/DDRP*) or injection pump (*150 Series models*) and place it in the fuel bucket. If fuel flows out of the fuel bucket and back into the fuel bucket without any air bubbles, the fuel pump is operating normally.
  - If the fuel pump operates normally after performing the above step and the truck still will not start, ensure that all air is bled out of the fuel supply system up to the injection pump.
  
- If you have any questions in reference to diagnosing the FASS fuel pump operation, please call Geno's Garage Technical Support at (770) 886-2500.



# FASS FUEL PUMP

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## **FUEL PUMP SOUNDS LIKE IT IS TURNING 'OFF' AND 'ON'**

- Listen carefully while engine is 'OFF' and the FASS unit is 'ON'. The fuel pump will probably have a louder pitch and then get very quiet.
- Your fuel pump is working properly. It is normal for the pump to repeat this for as long as you listen. Due to the cavitation in the fuel caused by the air in it, the noises will not be consistent in the amount of time that they are quieter vs. louder. Air in fuel is not consistent and this will worsen as the fuel becomes hotter, lower and more agitated (from traveling). Another condition that creates more air/vapor is restriction on the fuel before it reaches the fuel pump. *(Not applicable to DDRP)*

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## **FUEL PUMP IS NOISY**

- Perform the '5 Gallon bucket Test'
  - o If the fuel pump noise is eliminated when testing from the bucket then the restriction problem is in the fuel tank
  - o If the fuel pump noise doesn't stop, make sure there is no obstruction in the fuel line and pre-filter or water separator.
  - o If the problem still occurs, call your dealer.

## **FUEL PUMP STOPS**

- Check to see if the motor makes any noise or humming
- FASS Series Solution:
  - o With the unit 'OFF', slightly loosen 3 of the 4 bolts of the upside down 'T' block. This should allow enough room for any debris to pass through.
  - o Start the unit.
  - o Slowly torque the three bolts diagonally to 110" lbs
- HPFP Series Solution:
  - o Slightly loosen 3 of the 4 bolts of the base of the motor while holding the motor to the base. Note: Your mounting configuration may require 4 nuts to be removed first.
  - o Start the unit.
  - o Slowly torque the three bolts diagonally to 110" lbs
- Does the fuse pop as soon as it's installed into the harness with power 'ON'? *(Not applicable to DDRP)*
- Does the motor run at all before fuse pops? *(Not applicable to DDRP)*
- Are there any melted or burned wires anywhere?
- Check all connections to the harness.
  - o Look for any direct shorts to ground in the harness. Perform wire wiggle test at motor. If the motor starts to run with no fuse pop, motor has a bad internal connection-contact dealer for warranty

FASS FUEL PUMP CONTINUED ON NEXT PAGE ➔



# FASS FUEL PUMP

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- Check the fuse. (*If you have a unit that is 200 GPH or higher make sure you have a 30 amp fuse in the truck harness.*) (*Not applicable to DDRP*)
  - o It's a good idea to scratch and clean the fuse surface by removing and reinstalling several times. Before installing for the final time, apply Di-Electric grease into the fuse holder to help prevent corrosion.
- Make sure there is proper power to the motor and a good ground.
  - o Check first on the fuel pump side of the male and female electrical connection. (*Grounding to the frame is not a good ground*) If there is not a proper power and ground, try the opposite side. If that has the same results, go to the source. Is there a relay in this harness?
  - o If there is proper power and ground go to next step.

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# ELECTRICAL

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## REPLACING A FUSE

- While replacing the fuse, it's a good idea to clean and scratch the surface by removing and re-installing the fuse several times.
- In order to help prevent corrosion, apply Di-Electric Grease into the fuse holder before the final installation of the fuse.
- Check for a short.
- Check for proper grounding (*Grounding to the frame is considered a poor ground*).

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## FUSE KEEPS POPPING

- Check all connections to the harness (*if 200 GPH or higher volume pump make sure you have a 30 amp fuse*)
  - o Wiggle wires to check for proper connection. If the wiggle test at the motor starts the motor without popping it suggest that there is a loose connection within the motor. Call you dealer for warranty information.
- Does the motor run at all before the fuse pops?
  - o Put your truck back to stock and call your FASS product dealer with the serial number – they will contact FASS manufacturers for warranty procedures

## WIRING HARNESS WH-1002

- Cut the red wire between the relay and engine harness.
- Splice a length of the same gauge wire to the red wire coming out of the relay.
- Relocate this wire to a fuse that is hot only in the 'RUN' position. An example is the power window or windshield wiper fuse.
  - o This will cut power to the FASS or HPFP when cranking.





# FUEL

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## LOSING FUEL PRESSURE OR RUNNING OUT OF FUEL

- Answer the following questions
  - How much fuel is in the tank? Is it enough?
  - Do you have a Dodge '98.5 – '04.5 with a pump in the tank? If yes, a STK-1001 or VULCAN Draw Straw is highly recommended. Was it used in the installation?
  - What, if any, is the condition of the fuel gauge? Remember gauges go bad!
  - Do you have a WH-1002 wiring harness? If yes, refer to "WH-1002" located in "Electrical".
  - What is the condition of the filter? Do they need to be serviced? Refer to "Servicing Your Filters"
  - Do you have a STOCK or AFTERMARKET pick-up module? If an aftermarket pick-up tube, how far is it from the bottom of the fuel tank? We have good results with about a 3/16" of gap from the bottom of the pick-up tube and the bottom of the fuel tank.
  - Is the fuel pump operating properly?
  - What is fuel pressure of the FASS system (*taken at the FASS in the port marked 'G' or upstream*)?
  - What is fuel pressure of the HPFP/DDRP (*taken at the outlet port of the pump*)?
- If upstream, can there be a restriction (*flapper valve*) in the fuel line or obstruction.
  - Refer to "Priming Issues" and/or "Motor". Be prepared to perform the '5 Gallon Bucket Test'

## HIGH FUEL PRESSURE AFTER INSTALLATION

- Answer the following questions
  - Is the gauge working correctly?
  - Is there return fuel flowing back into the tank via FASS return line?
  - Are lines hooked up correctly?
  - Confirm whether or not the unit sat for over a year. Call your FASS product dealer with purchase date and serial number.
- If 'YES', chances are that the ball has "stuck" due to not being run and needs to be dislodged:
- Remove the fitting in the port of the FASS base marked with the letter 'R'
- Remove spring
- Remove check ball
- Replace check ball
- Replace spring

## FUEL LEAK

- Answer the following questions
  - Do all of the fittings have thread sealant?
  - Have the proper filters been installed?
  - Do the filters need to be replaced?
- In order to determine where the leak is , the unit should be cleaned with break cleaner
- Run unit on level ground without movement.
- Once it is determined that there is a leak, contact your FASS product dealer for further instructions.



# **HARD STARTING (DODGE '98.5-'02)**

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➤ Answer the following questions

o Did the vehicle start fine without the FASS or HPFP/DDRP? Do you have high mileage on the VP44? If yes, have your VP44 checked. Has the VP44 been subjected to a PSI of 5 or less? Has the VP44 been subject to a failing lift pump? Does it occur more frequently when the conditions are warm? Have you recently replaced your VP44? Was it used?

➤ If yes to any of these questions, Start vehicle as soon as you enter the key  
(do not wait for the “wait to start” light to go out)

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➤ If the vehicle starts it suggest that the problem lies with the VP44.

o Is the fuel pressure where it should be?

o Has the truck had an ECM re-flash? If not, contact your local Dodge dealer to find the most current flash for your truck.

o Do you have a WH-1002? If yes, refer to the “WH-1002” section located in “Electrical”

