

SUBJECT: 5.9 L Cummins® Engines Equipped with VP44 Injection Pumps – Fuel Transfer Pump | R-1

Since Dodge® dealers only offer an in-tank replacement fuel transfer pump for 5.9 L Cummins engines equipped with VP44 injection pumps, the option to install an external mounted replacement transfer pump is more popular than ever. Alliant Power now offers an improved transfer pump for 5.9 L engines. This reduces the risk of injection pump damage in the event of an inoperable transfer pump.

When troubleshooting, technicians will notice transfer pump pressure at full load with the AP4943048 pump is lower than the previous pumps (i.e., 3990105). This is normal. This coincides with what many technicians have observed following the installation of an in-tank replacement pump: transfer pump pressure at full load drops to near zero but flow is adequate to prevent damage to the injection pump. In fact, Chrysler® specifications for in-tank pumps call for minimum flow only – 430 ml/10 seconds – not pressure. Typical pressures, as well as Cummins specifications for minimum allowable pressures and maximum fuel inlet restrictions in various operating conditions are listed in the table below:



Operating Conditions	Typical pressure PSI	Minimum pressure PSI	Maximum restriction IN HG
Cranking	6-10	6	N/A
Idle	12-14	10	N/A
Full Load ¹	4-6	N/A	N/A
High Idle	7-8	N/A	6

¹Pressure will be less if vehicle has a performance module installed. The improvement to the pump results from the addition of two ball check valves (refer to the photo at right). In the event of a transfer pump motor failure, fuel flows past the check valves and through an internal annulus (not shown) to the pump outlet bypassing the vane pump assembly. To distinguish improved pumps from previous versions, effective with pumps shipped 06/08/07, we've added a part number label which can be found on the motor housing just above the electrical connector (photo at top).

R1- Added Ball Check Valve Detail and Pump Identification



For more information visit

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