

Fuel Pumps



VENOM™ SUPER COOL FUEL PUMPS

FUEL PUMP TYPES: DESIGN

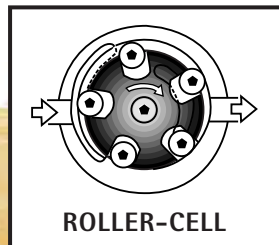
There are three basic types of electronic fuel pumps for fuel injection:

- 1) Roller-Cell
- 2) Internal Gear
- 3) Peripheral

The design indicates how fuel is moved through the pump to the fuel rail and ultimately through the injectors.

FUEL PUMPS

The electronic fuel pump is central to the fuel management system. It must deliver precisely pressurized fuel in exacting quantities at each and every level of performance.



ROLLER-CELL

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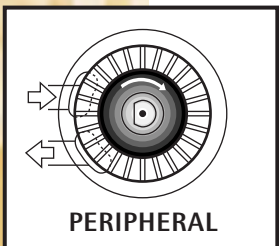
The ROLLER-CELL type was originally developed for externally mounted fuel pumps. In this design a star wheel is rotated which contains rollers. As the rollers glide along the pump race, vacuum is created drawing in fuel from the tank and pressure is created propelling the fuel out of the pump. This is the #1 preference of the import drag vehicles. The reason it is so popular is this design will support high pressure and high volume fuel delivery.



INTERNAL GEAR

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The INTERNAL-GEAR is another push/pull design similar to the roller except with limited pressure sustainability and flow volume. In this design an inner gear turns within a stationary outer gear creating the pulling/pushing of fuel. This design is most often used in "in-tank" fuel pumps.



PERIPHERAL

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The PERIPHERAL design is a plastic impeller which turns between two opposing aluminum facings, where the fuel is pulled in and then pushed out at points directly next to one another. This is the standard type of pump used on almost all vehicles today. Unlike prior types of pumps, these units are virtually pulse free where by the fuel delivery is continuous instead of pulsing like with the roller or gear. These pumps are much quieter than the other two types, but again have limited pressure and flow characteristics as compared to the roller type.





Fuel Pumps

FUEL PUMP ADVANCED REMANUFACTURING TECHNOLOGY

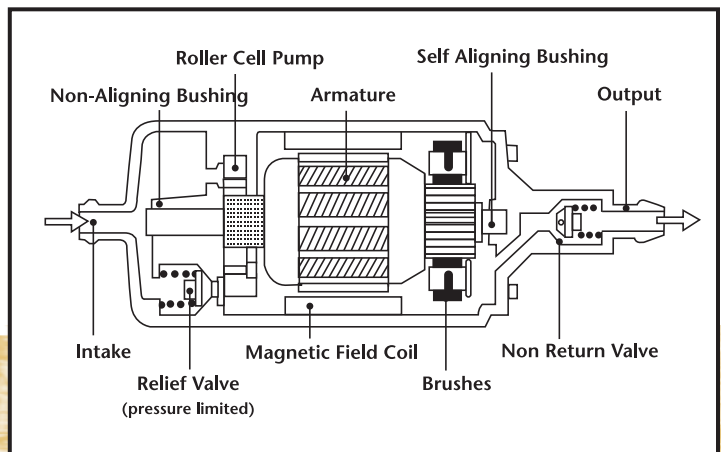
A) Electric Motor

1. Roller-cell fuel pumps have a full copper commutator to insure the high pressure/high flow requirements are maintained. This is a great improvement over pumps that have a layered copper or graphite commutator.
2. Every armature is fully load tested to insure that the manufactured part is free of air/layered shorts or opens.
3. All commutators/armatures are double wrapped and soldered to prevent separation during high rpm usage.

Innovative
RACE technology allows the
pump to run cooler, further
ENHANCING
PERFORMANCE.

B) Pump Section

1. Python uses Delrin race material which is effective against fuel debris and wear. OEM pumps have copper, single layered teflon inserts which are very susceptible to debris and wear.
2. Python uses 60 Rock-Well hardened elliptical shaped rollers to increase flow and pressure while maintaining reliability.



FUEL PUMP TESTING

1. Pressure limiter (relief valve) is tested to insure satisfactory relief at high pressures to insure against internal pump failure.
2. Non-return valve is tested to insure maintenance of line pressure during fuel pump off time.
3. VENOM™ Stage I pumps are tested to sustain high delivery rate at the OEM system operating pressure.
4. VENOM™ Stage II pumps are tested to sustain high delivery rates at pressures of 50psi and above.
5. Stage I pumps are tested for maintenance of the decibel noise level as specified by the OEM.
6. In addition to each pump being tested, a sample test for operation above 250psi and 10° F, as well as destructive testing is done.

