

### 3.3 "RAIL" WITH BRC INJECTOR

This is the element on which injectors are installed; it allows distributing gas in a suitable way to each injector at the pressure wished.

A patent covers BRC injectors protecting its details of construction.

It's a "bottom feed" injector (supplied from the bottom). Gas contained in the rail comes into the injector lower side and it's injected in the intake manifold when shutter, moved by the electromagnet, frees the passage section.

Tightness is assured by the rubber final part of the shutter that pushes on a frustum-of-cone-shaped component (called volcano).

Pressure differential acting on the shutter enables it remaining in the closure position when coil is not excited, and prevents gas from being discharged in the intake manifold.

The injector has been especially planned to have a long life in extreme conditions of use:

- Diaphragms insulate the delicate area of magnetic circuit, avoiding that any kind of gas deposit modifies its geometry.
- Operating temperature: from  $-40^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ .
- 15 g accelerations.
- Strong electromagnetic forces



Pict. 4  
Version with BRC injectors, gas pressure and temperature sensor.



Pict. 5  
"Normal", "Max" and "Super Max" BRC injectors

assure opening also if there are oils or waxes in the dirty gas that, not retained by the filter, tend to paste shutter to its seat.

It's a low impedance injector (2,04 ohm / 2,35 mH at  $20^{\circ}\text{C}$ ) and so it requires a peak & hold piloting. Shutter opens by applying all battery voltage during peak phase; then voltage with which injector is supplied becomes the keeping one (hold), enough to keep it open for

the wished time. Shutter opens in brief time, and this allows having a good control of gas, injected in small doses too, as at idle conditions. Gas passage sections, then, allow a right supply also for the most powerful vehicles into the current market.

In order to better satisfy needs of good idle control and good supply in high speed.