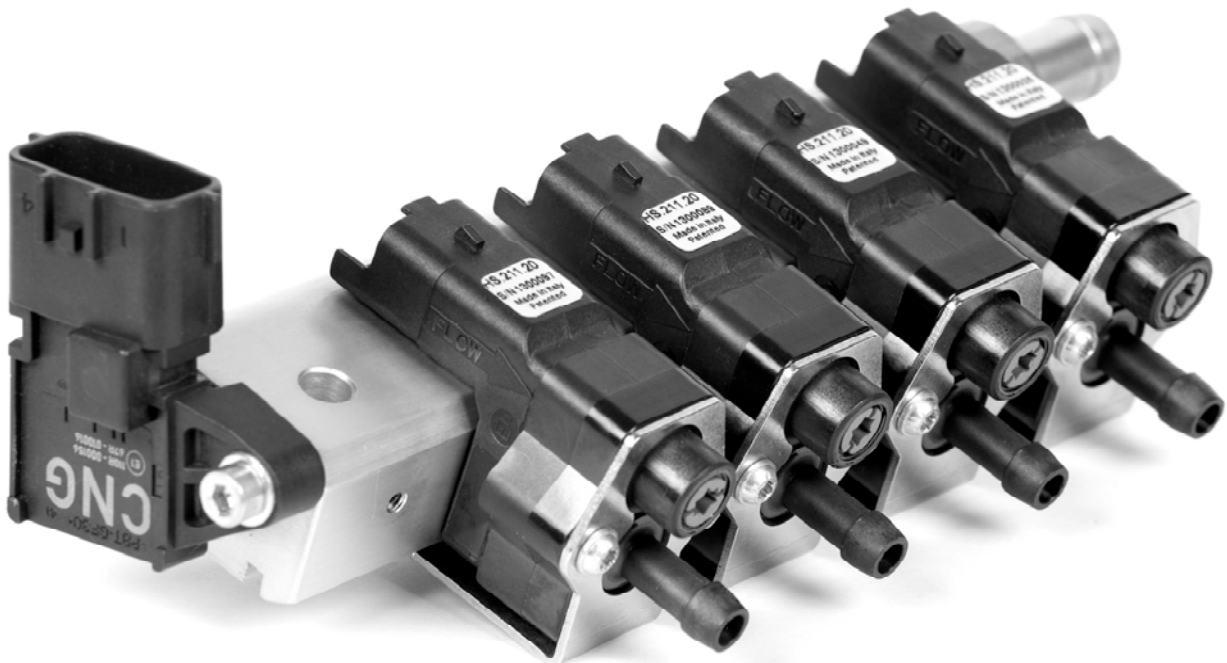


GAS Injection

LPG fuel injectors

CNG fuel injectors



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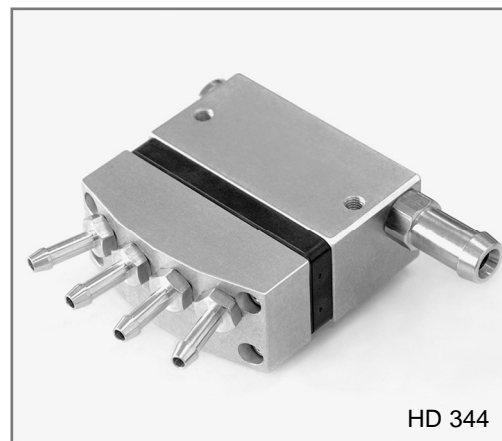
HD SERIES INJECTORS

In the alternative fuel injection industry, Matrix offers the most advanced and innovative solutions. The new injectors from series HD 300 offer top rank performance levels and are especially suited for the most demanding applications and for OEM installations. They are entirely compatible with injectors from the XJ series, with which they may share the same driver boards. Featuring extremely compact dimensions which ease installation in the most jammed environments, this new series of injectors has been sanctioned for functioning under extremely enduring temperature ranges (up to -40°C) and offers high compatibility with oily fluids which may be present in some fuels.

Under standard working conditions, the life cycle is of over 500 MI cycles, which is largely beyond the normal life of an automobile. During all its lifetime Matrix technology ensures constantly elevated efficiency with extraordinary repeatability.

In LPG field applications, HD 300 injectors ought to be equipped with XF 301 filters with interchangeable cartridges.

In CNG field applications HD 300 injectors may be equipped with XF 301 or XF 103 filters.



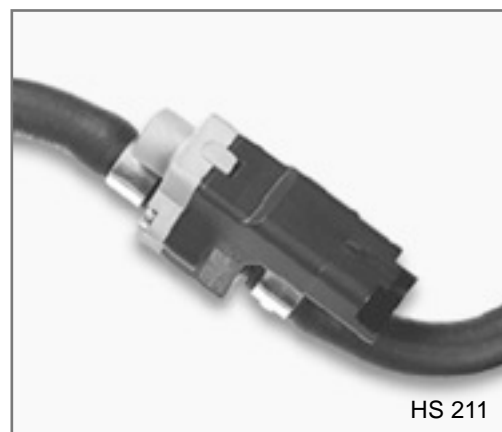
HS SERIES INJECTORS

Conceived with a different philosophical concept, although mixing the technical innovations of the HD series, this brand new HS series offers new and amazing application possibilities leading to believe it has been developed to satisfy after-market operator needs.

As a matter of fact these injectors, due to their reduced size, weight and shape, can be fitted directly on the fuelling tube.

The definition of "flying injectors" gives the right idea of this new component, which offers the remarkable possibility of being installed directly on the inlet manifold.

Regarding performance and reliability we are facing a product without compromises, in this case as well, according to the tradition of Matrix.

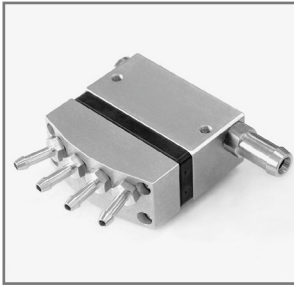


HS SERIES RAILS



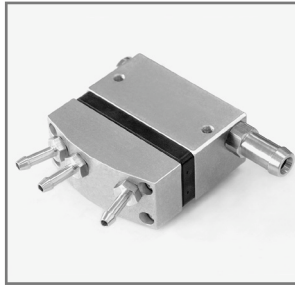
HD - HS - KJ SERIES SINGLE AND MULTI OUTLET INJECTORS FOR LPG AND CNG

Injector HD 344



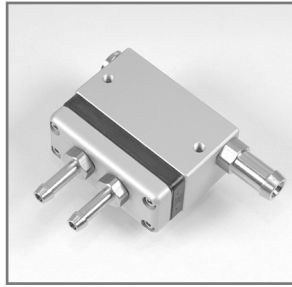
(1) 95 Nlm x 4 cyl

Injector HD 333



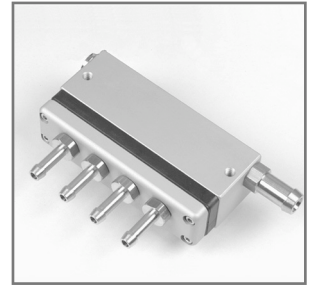
(1) 95 Nlm x 3 cyl

Injector HD 322



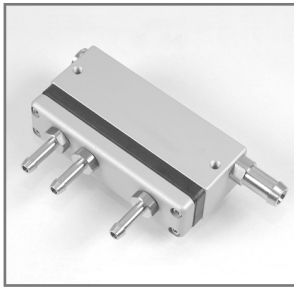
(1) 160 Nlm x 2 cyl
"High Power Engine"

Injector HD 544



(1) 160 Nlm x 4 cyl
"High Power Engine"

Injector HD 533



(1) 160 Nlm x 3 cyl
"High Power Engine"

Injector HS 211 Fly



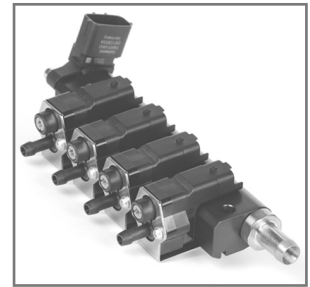
(1) 95 Nlm x 1 cyl

Injector HS 211 Snap-in



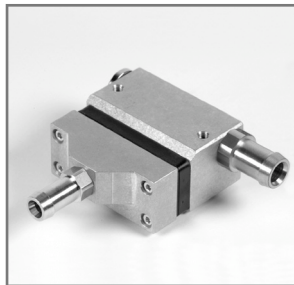
(1) 95 Nlm x 1 cyl

Injector HS 211 Rail



(1) 95 Nlm x 4 cyl

Injector KJ 341

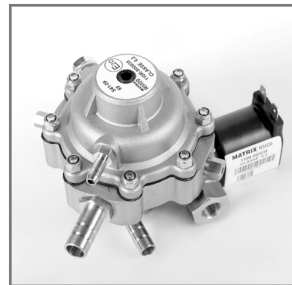


(2) 185 Nlm x 1 cyl
"Heavy Duty Engine"

Electronic Control Unit



CNG Pressure Reducers



LPG Pressure Reducers



Fuel Rails



Gaseous fuel filter XF 103



(1) 400 Nlm

Gaseous fuel filter XF 301



(1) 550 Nlm

Cartridge for XF 301 filter



Outlet gauged fittings



Inlet fittings



Temperature jack

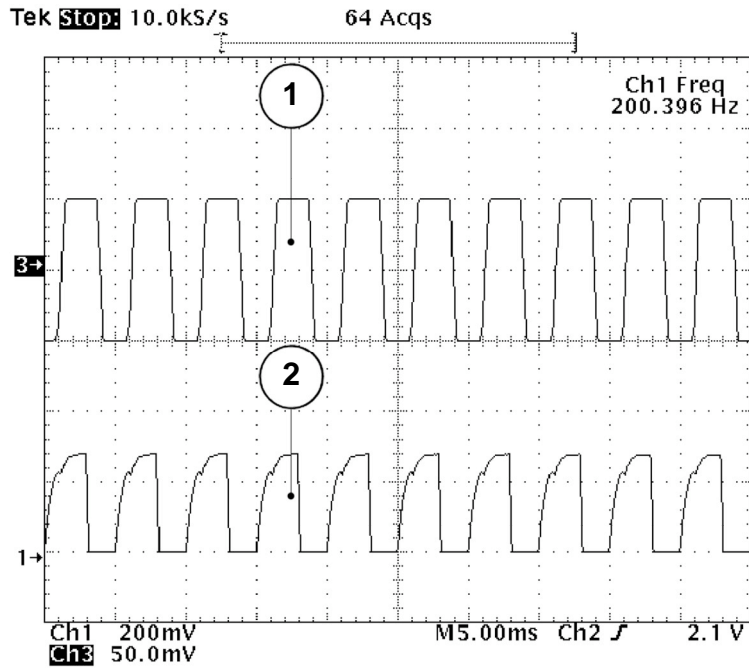


Pressure sensor nozzle



(1) Flow rate at 1 bar x outlet port (2) Flow rate at 6 bar x outlet port

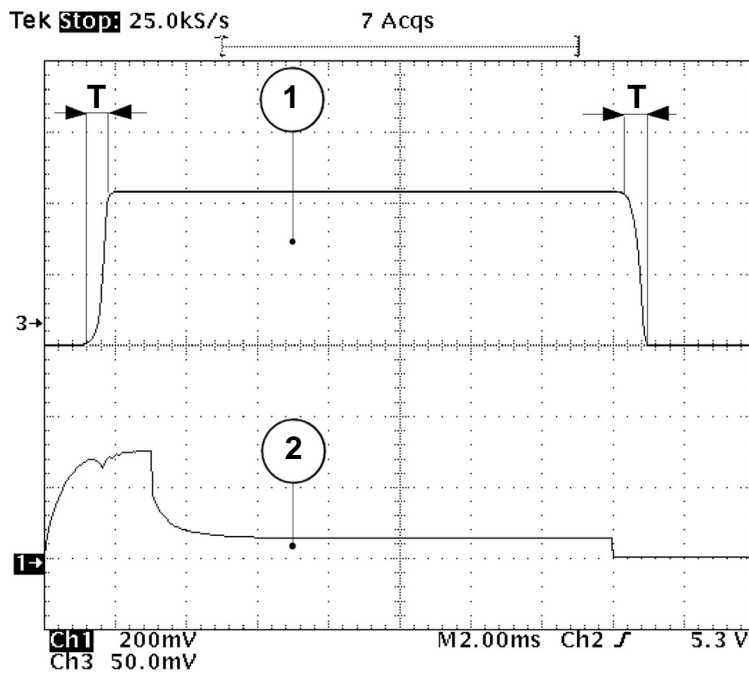
GAS INJECTORS HD - HS SERIES. MATRIX TECHNOLOGY APPLIED TO ALTERNATIVE FUEL INJECTION



FREQUENCY. The maximum frequency reached by Matrix injectors express the top-notch performance levels and the wide range of applications that this technology has to offer.

This means extreme reliability, combined with new and innovative application possibilities in the gas injection industry that until today were unthinkable of. The graph illustrates the pressure wave in the outlet fitting when associated to a 200 Hz electronic control frequency.

REPEATABILITY AND PRECISION. The graph also shows the high level of precision and of repeatability guaranteed by Matrix injectors. Fluctuation of response times are lower than measurable levels; such values, due to a functional principle which is void of friction, remain constantly unaltered in all environment conditions featured by product specifications.



RESPONSE TIMES. The extremely reduced value of 0,5 ms (500 microseconds) is the norm for HD and HS injectors no matter which version and relative flowrate is featured.

This ensures high quality performances and a simplification of the management software to which no corrections are required during the entire power curve even when applied to models with different flowrates.

LOW CONSUMPTION. The innovative functional principle that characterizes Matrix injectors allows a consistent energetic saving during functional phases. Typical current values during maintenance phases is of 0,5 Ampère (1,25 Watt) in HD models, and of 0,6 Ampère (1,44 Watt) in HS models. The graph illustrates the current wave that after the speed-up signal establishes itself on a very low level.

1 Outlet pressure wave 2 Current wave T = Opening - Closing response time

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