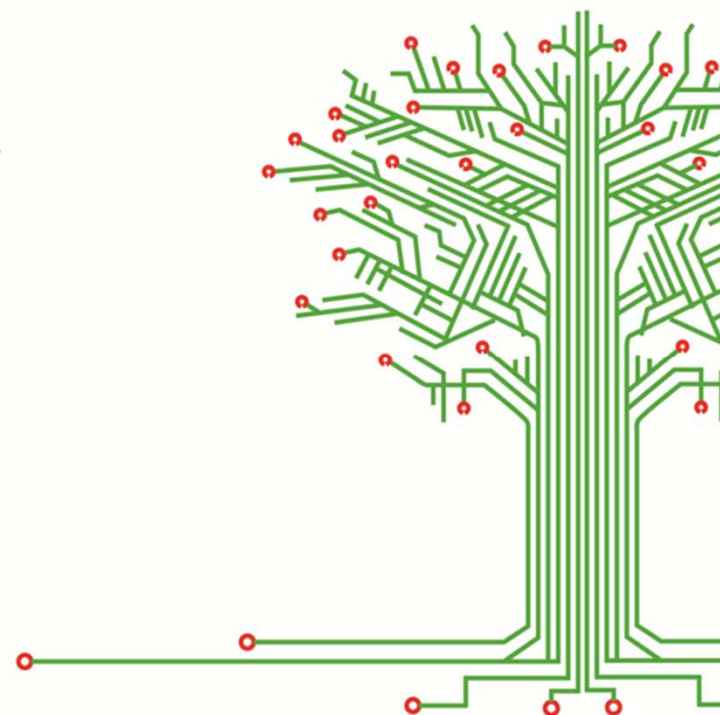


**A.E.B.**<sup>®</sup>

ALTERNATIVE FUEL ELECTRONICS

*Iniettori AEB*  
*AEB Injectors*





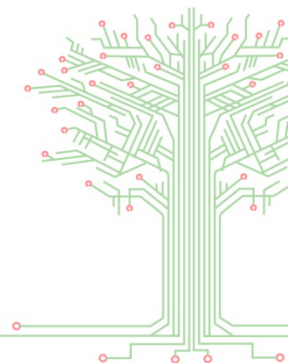
## Functional description

### Device practical aspects

The *electro-injector* is a device installed in the vehicle gas conversion system that is placed below the pressure reducer and before the engine intake manifolds. The *electro-injector* is a valve usually closed, so in normal conditions there's no gas flow. The fluid used arrives from the pressure reducer into the injector on gaseous stage and the injector has to measure out the right gas quantity to inject into the intake manifolds. When the spark coils are energized, the valve opens and let the gas enter through a gauged nozzle. The stroke done by the valve, the opening time and the nozzle diameter, are the features that most affect the engine carburation.

### Document goal

This document means to supply the reference technical data sheet for the *gas electro-injector* device in every possible configurations ( 4, 3, 2 and 1 cylinder).



# Product Range

**Aluminium  
Injectors  
Interchangeable  
nozzle**



- 2 Injectors rail
- 3 Injectors rail
- 4 Injectors rail



Intercha  
with foll  
Ø1.6 Ø1



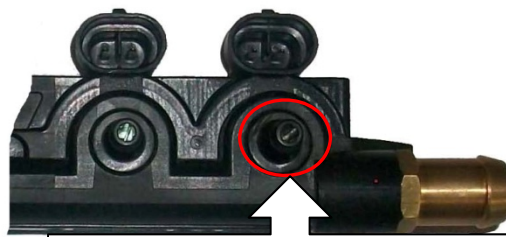
le  
2.8 Ø3.0

Ø1.6 Ø1.8 Ø2 Ø2.2 Ø2.4 Ø2.6 Ø2.8 Ø3.0

**Tecnopolimer  
Injectors  
Fix nozzle**



- 4 Injectors rail



Ø1.6 Ø1.8 Ø2 Ø2.2 Ø2.4 Ø2.6

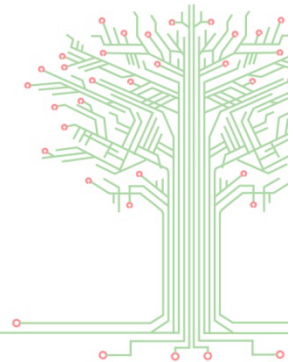
**Tecnopolimer  
Injectors  
Interchangeabl  
e nozzle**



- Rail 4 cilindri

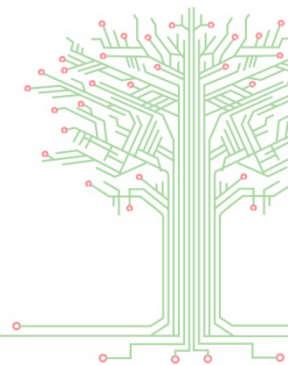
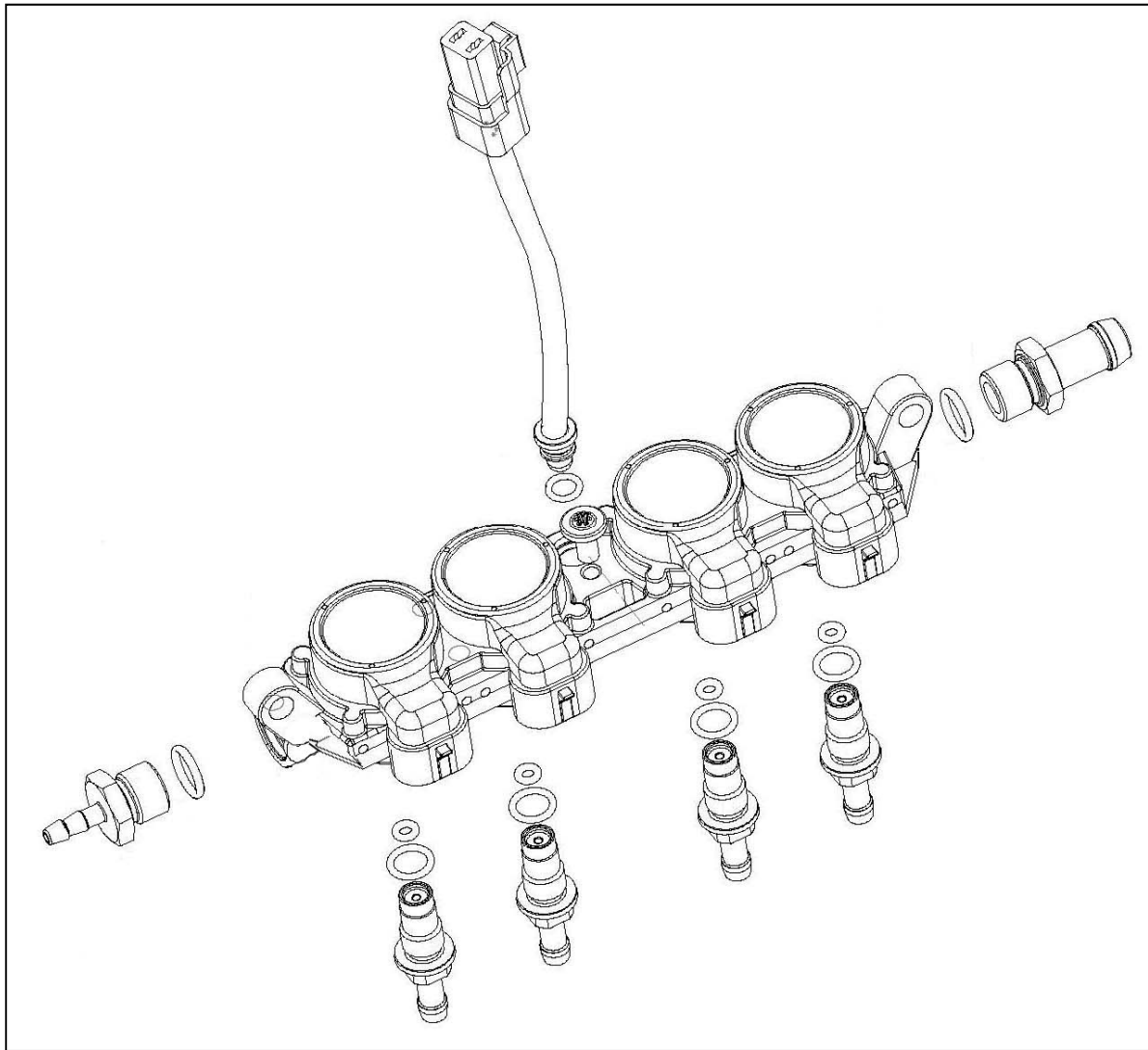


Ø1.6 Ø1.8 Ø2 Ø2.2 Ø2.4 Ø2.6



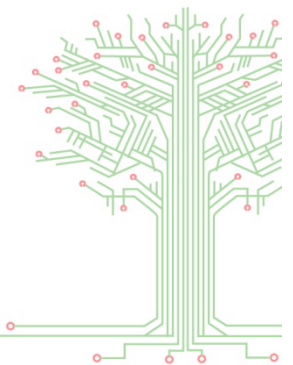
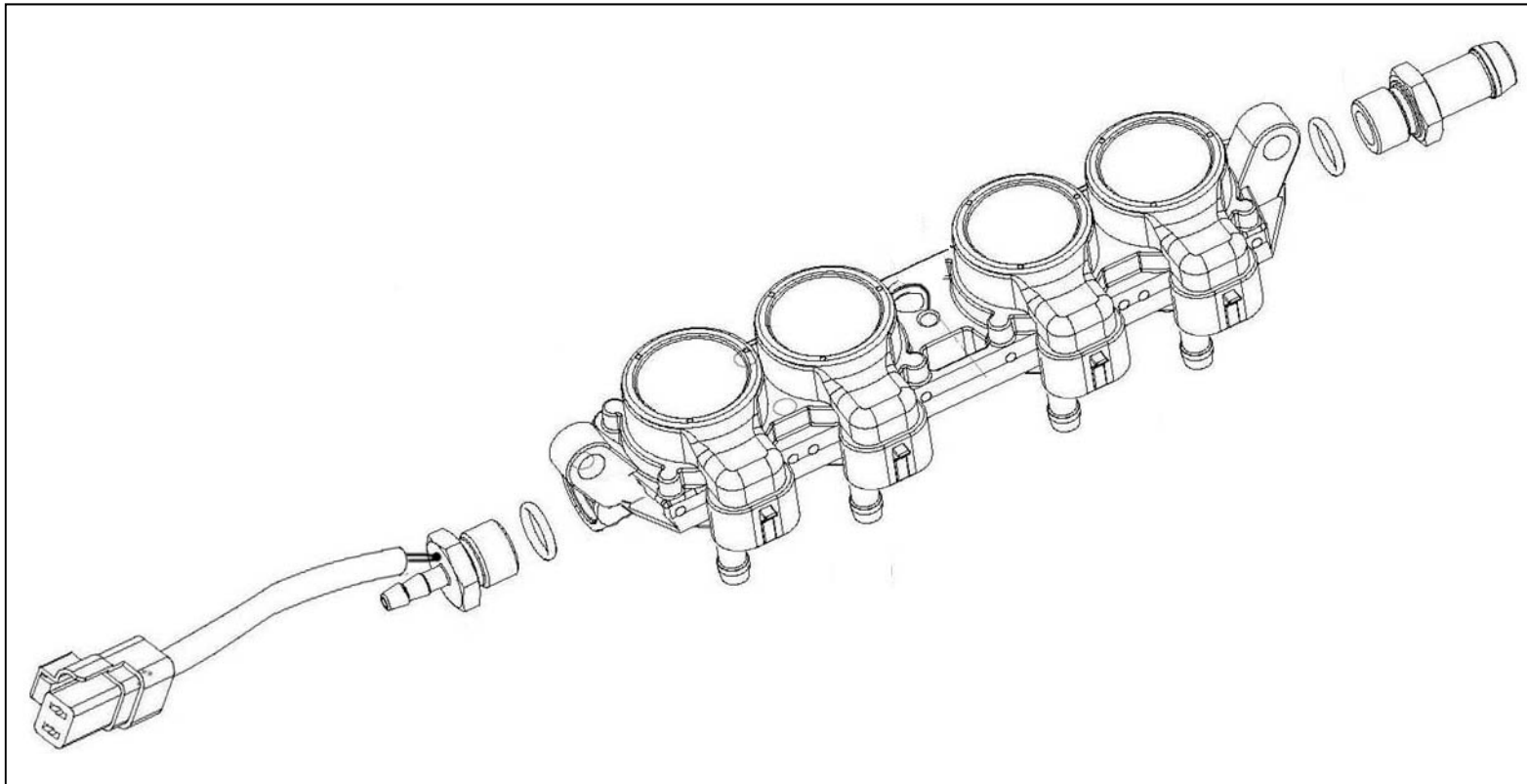
# Aluminium Injectors, Interchangeable nozzle

## Injector Assemblig



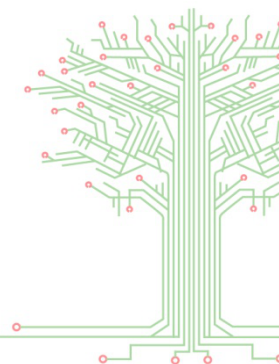
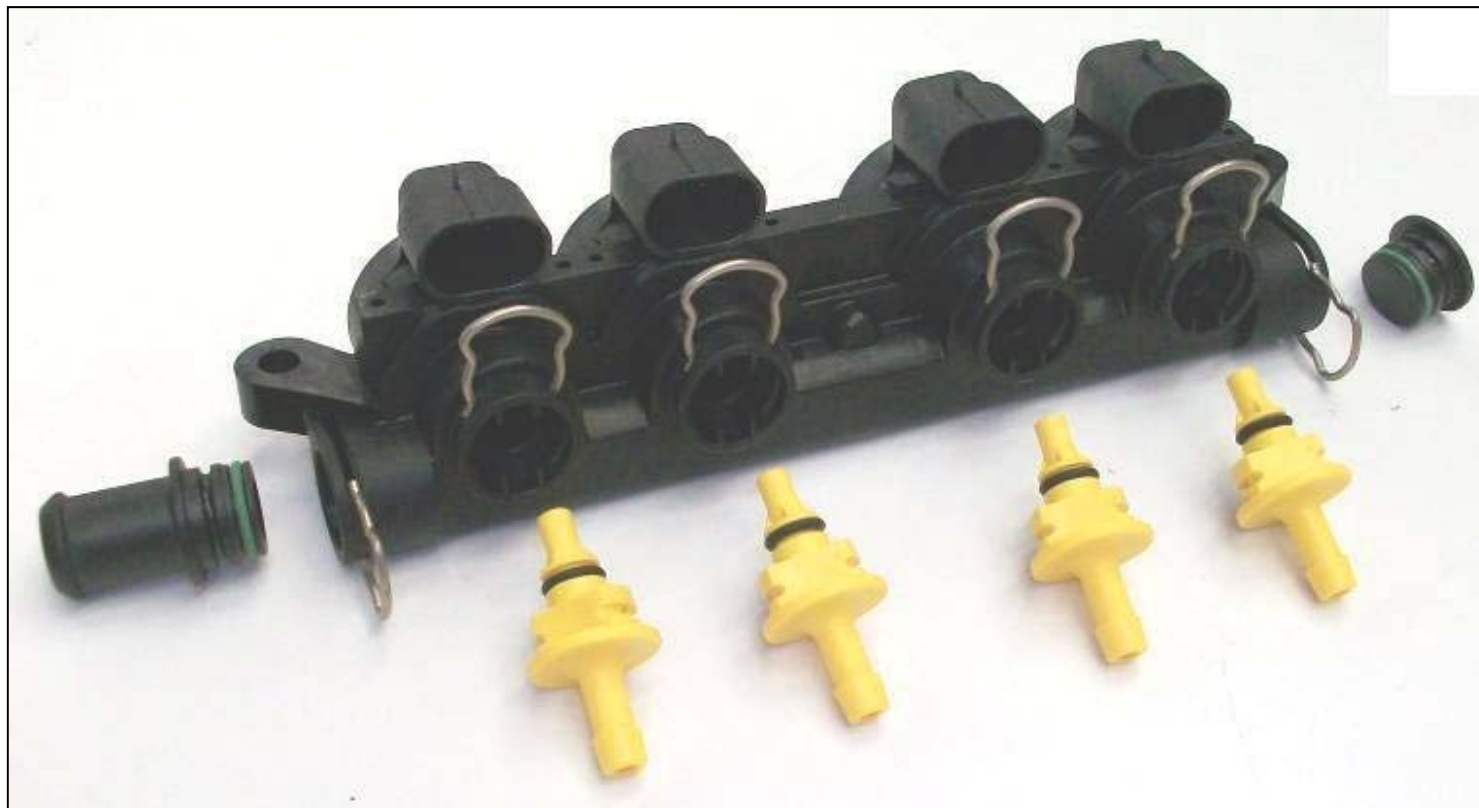
# Tecnopolimer Injectors, Fix nozzle

## Injector Assemblig

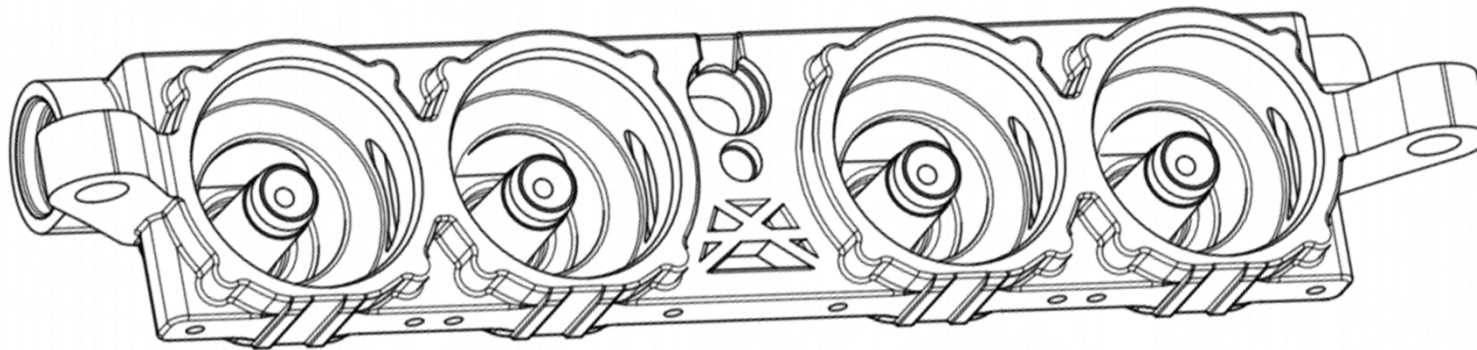
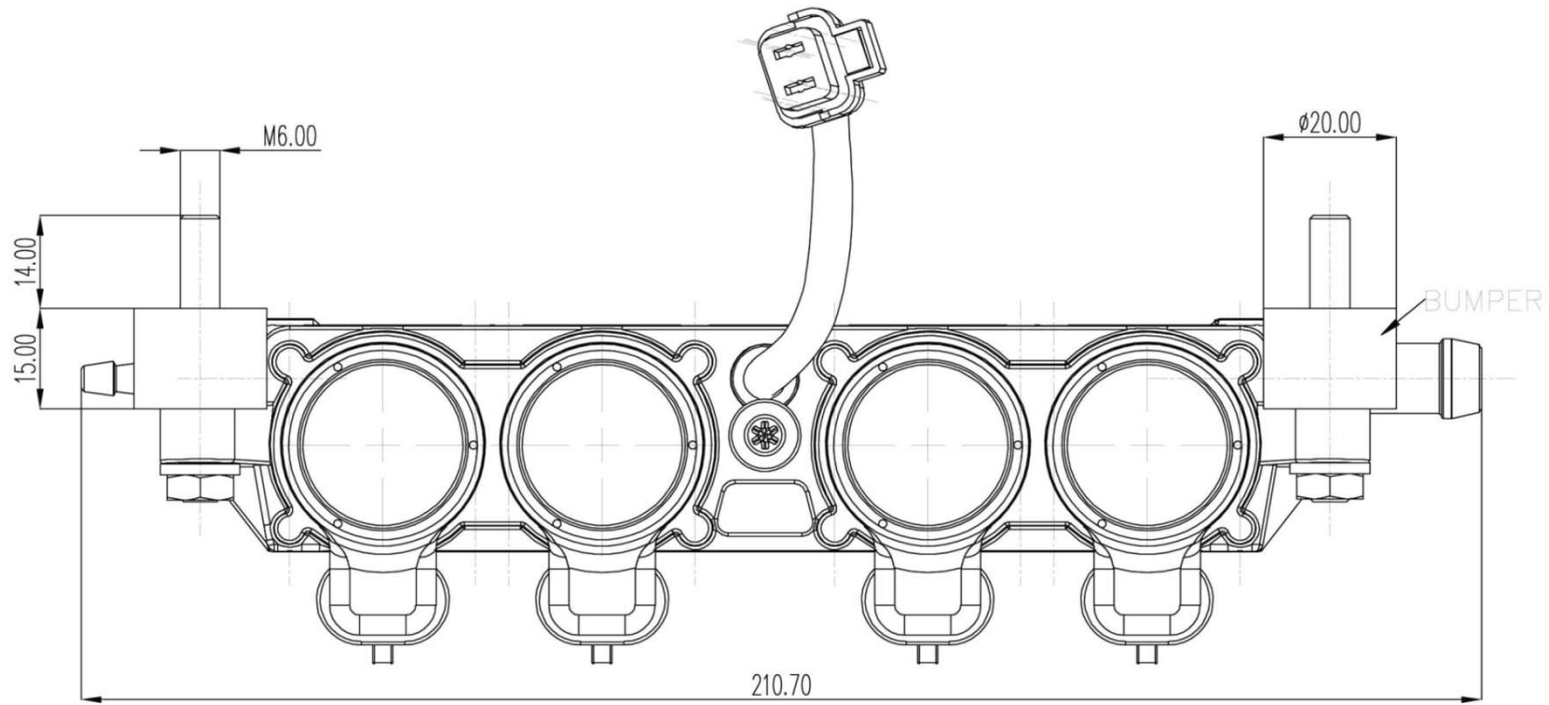


# Tecnopolimer Injectors, Interchangeable nozzle

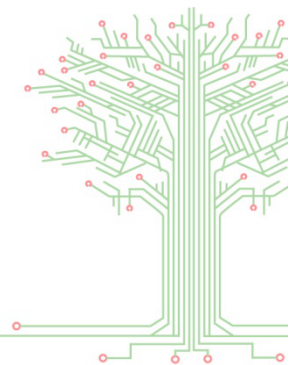
## Injector Assemblig



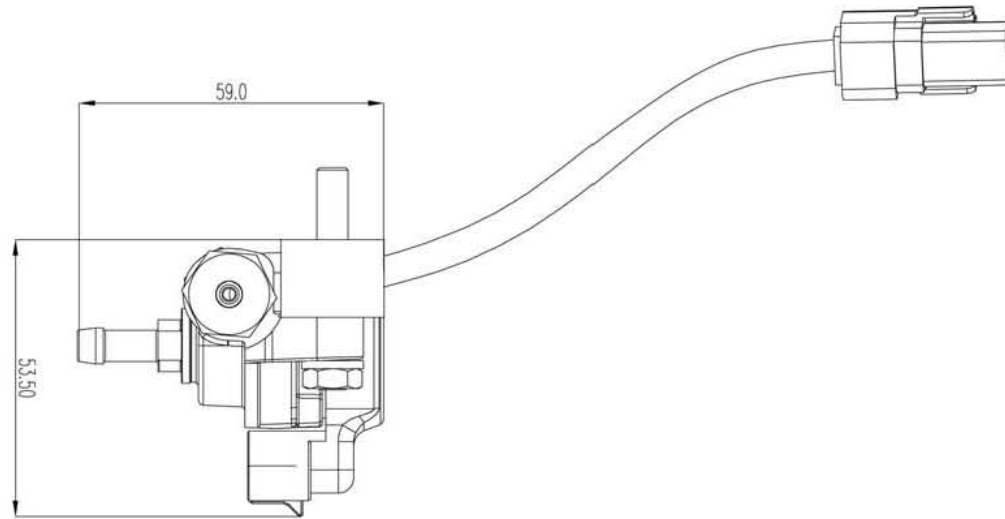
# Mechanical Drawing



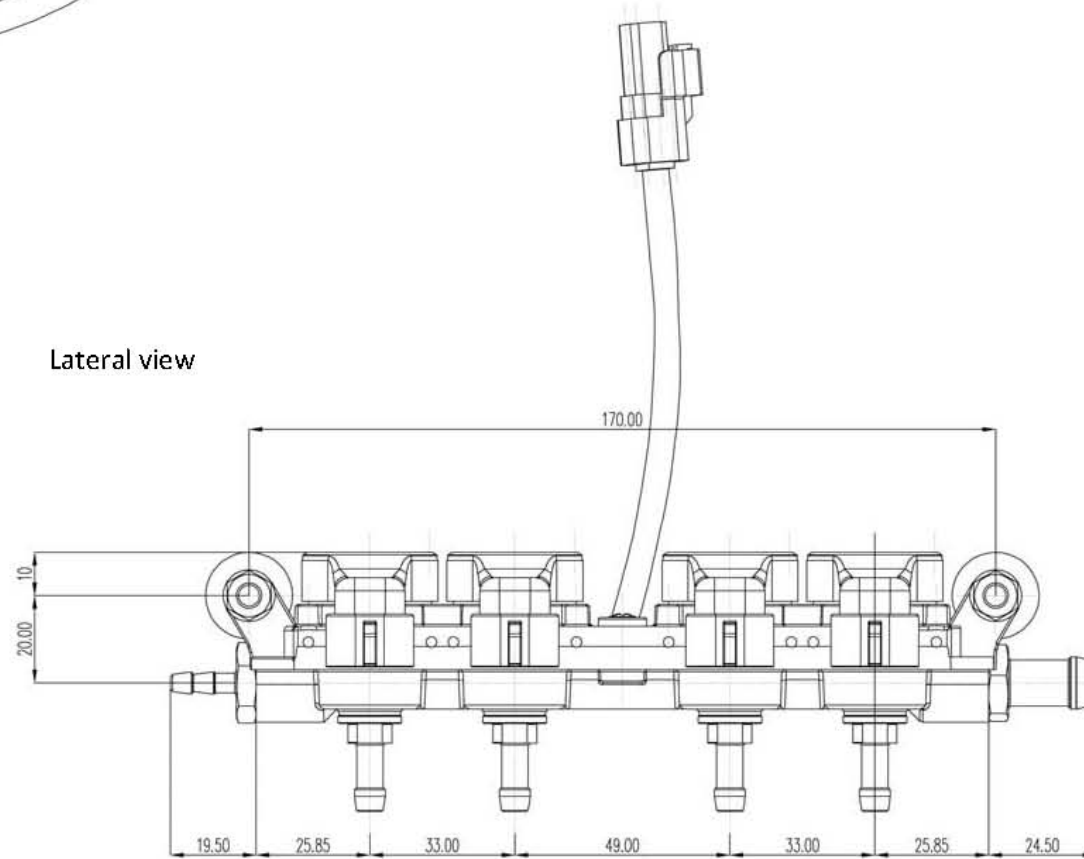
AEB



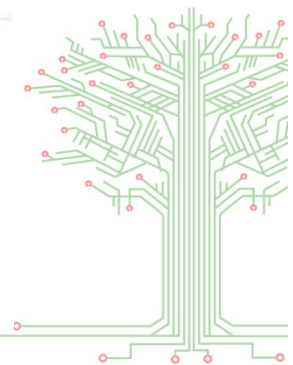
# Mechanical Drawing



Lateral view



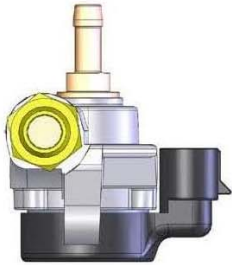
Front view



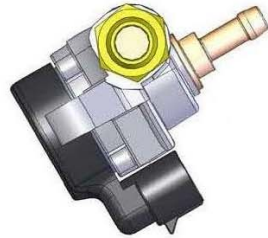


# Injector Installation position

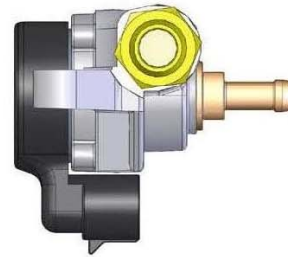
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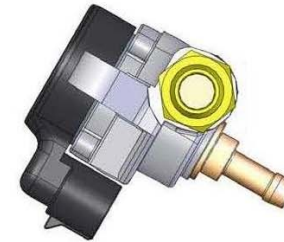
**NO!!**



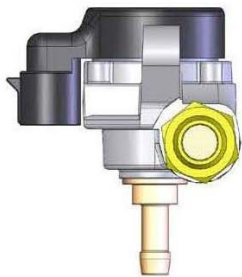
**NO!!**



**NO!!**



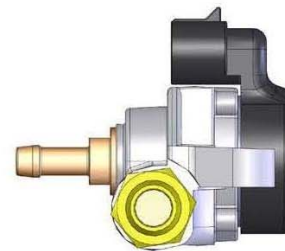
**OK**



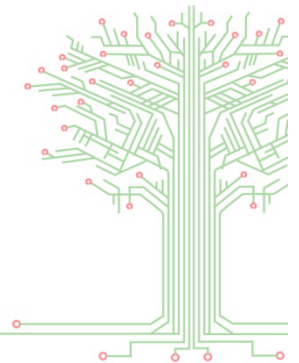
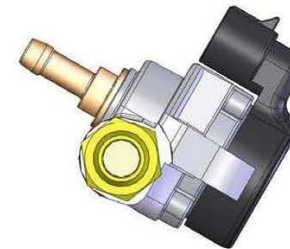
**OK**



**OK**



**OK**



# Injectors Characteristics

## Supported gas typologies

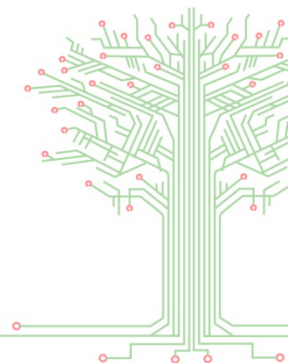
- CNG
- LPG

## Gas maximum pressure in working conditions

- CNG = 7 bar
- LPG = 4.5 bar

## Mechanical data sheet

Parameter	Value
Valve stroke	0.5 <sup>0/+0.1</sup> mm
Maximum diameter of relative hole opening on front <i>O-ring</i>	4.2 mm
Maximum diameter available on gauged nozzle	3 mm
<i>O-ring</i> material	VITON 75°Sh



## Injectors Opening and Closing Times

The Opening and Closing time of the Gas injectors are effected to the battery voltage rating and gas pressure into the injectors rail. All the AEB ECUs make an automatic compensation according to the Battery voltage fluctuation and gas pressure into the Injectors rail. Here following the opening a closing time of the AEB Injectors with nominal voltage and working pressure.

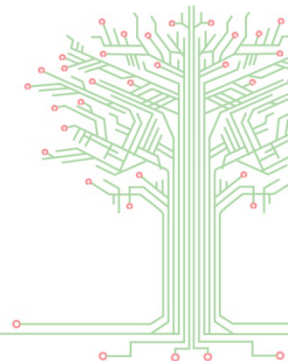
- ✓ Voltage: 15V
- ✓ Pressure: 1 and 2 Bar

### Opening times [ms]

Pressure	$V_3 = 15 \text{ V}$
1 bar	$2.16 \pm 0.15$
2 bar	$2.30 \pm 0.15$

### Closing times [ms]

Pressure	$V_3 = 15 \text{ V}$
1 bar	$1.57 \pm 0.15$
2 bar	$1.51 \pm 0.15$



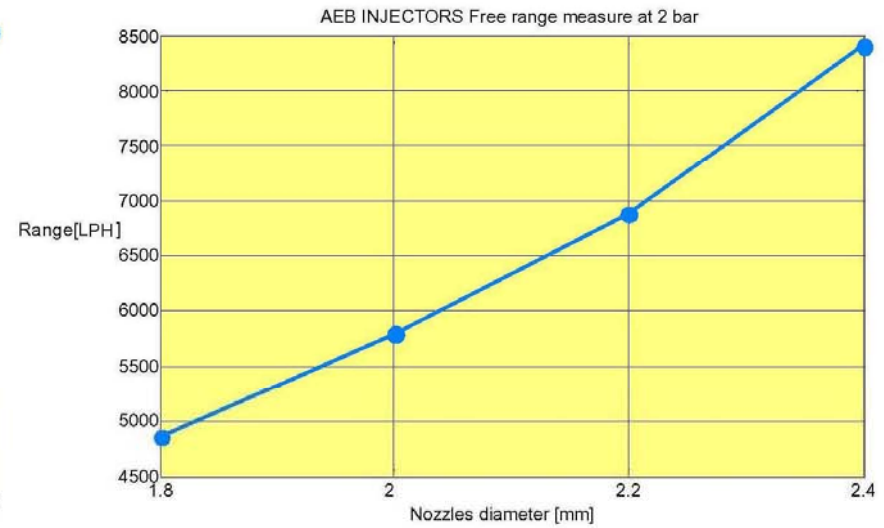
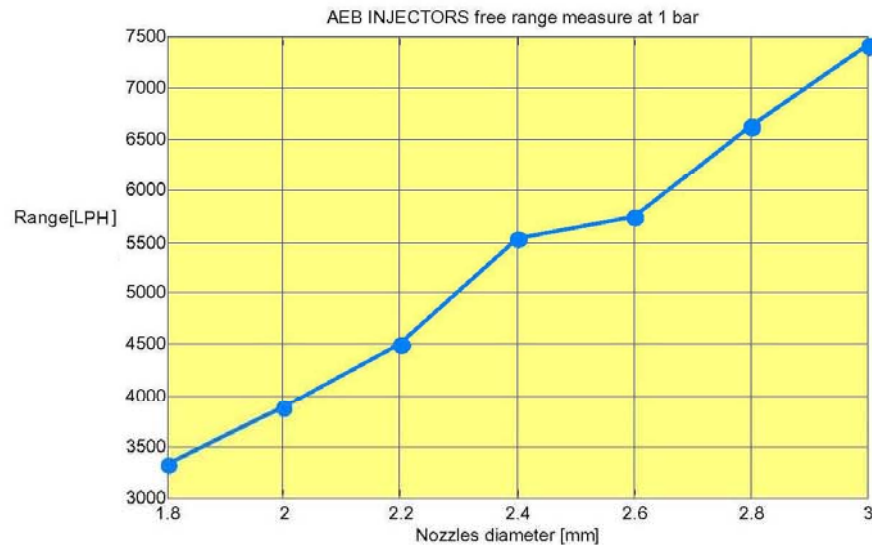
# Injectors Characteristics (Aluminium Type)

## Free range

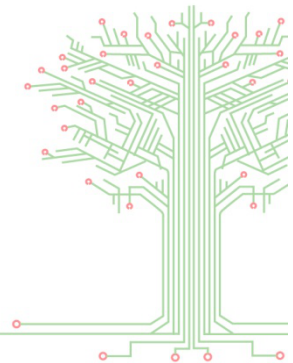
The calculation of the injectors free range has been effected feeding the *rail* with a constant voltage range equal to 5 V, in order to allow a complete and continuous opening of the nozzles.

On Picture 7.1.1 is shown the free range run in case of operational pressure equal to 1 bar according to the change of nozzles diameter.

Besides on Picture 7.1.2 the free range run is relating to an operational pressure of 2 bar.



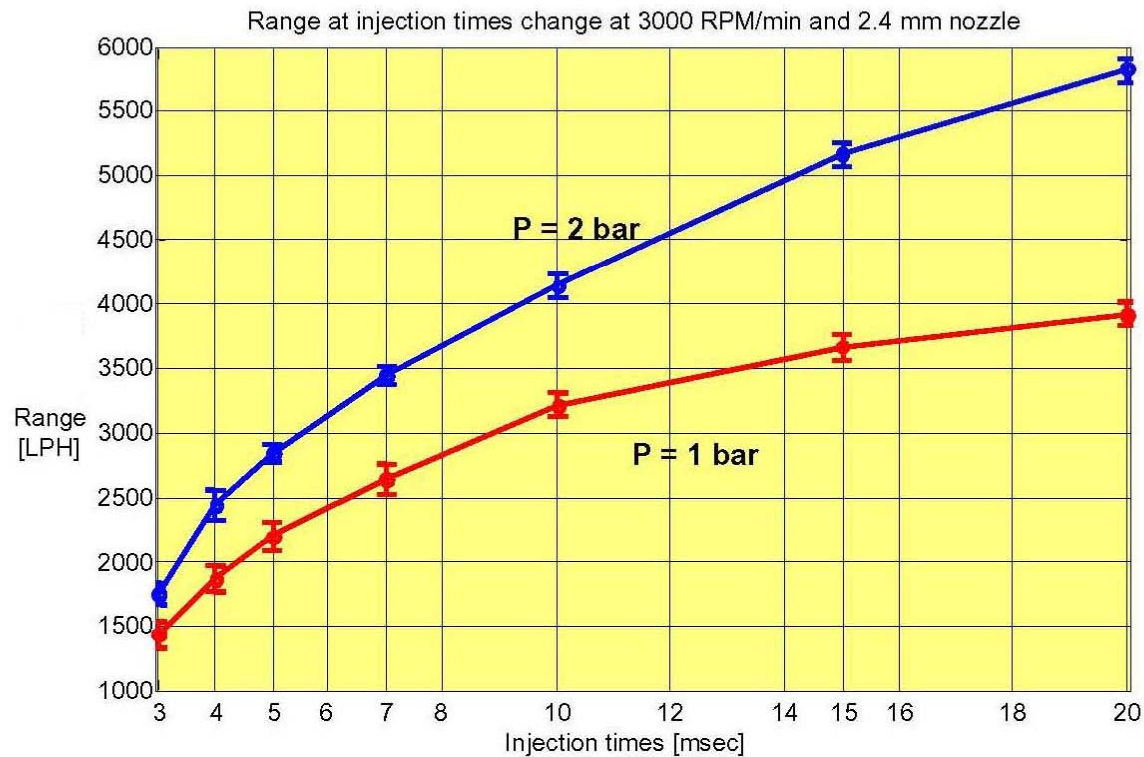
Free range with 2 bar pressure value



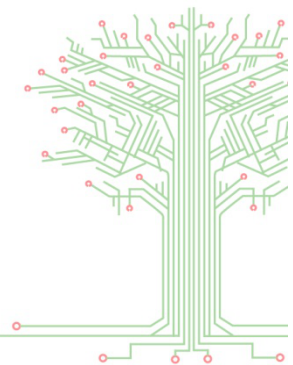
# Injectors Characteristics (Aluminium Type)

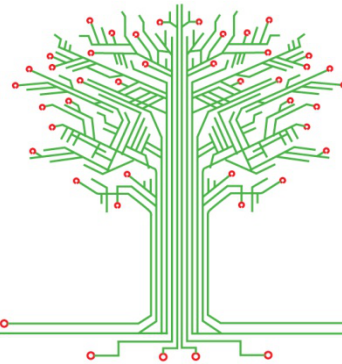
## Partial range

On Picture are shown the range values relating each injector in case the rail is controller by a driving stage of *peak and hold* type. In particular the measures, realized in standard temperature conditions (25°C), refer to a operational speed of 3000 RPM/min and to nozzles with diameter like 2.4 mm. On the picture are shown also the tolerances relating the effected measures.



Picture 7.2.1 : Partial range with 1 and 2 bar pressure values





**A.E.B. S.P.A. a socio unico**

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