



BOX CONTENTS

4x Assembled 640cc Injectors

Fuel Rail Spacers

4x PnP Adapters

Install Instructions

Remove your existing injectors (the exact procedure varies between 1.6 and 1.8 cars). The original fuel rail spacers should be kept in case the original injectors are ever re-installed – the larger ones will not work with OEM height injectors.

Install the provided fuel rail spacers into the head in place of the OEM spacers – 1.6 engines typically have 2 spacers while the 1.8 has 3. The change in spacer is necessary to avoid damaging any components during install as the new injectors are 2mm taller than OEM.



Failure to replace the OEM fuel rail spacers with the ones provided in this kit may result in damage to the fuel rail or injectors

The lower isolating cushion and the upper o-ring should be lubricated and each injector pushed into place. It doesn't matter which end of the injector you install first (isolating cushion in the head or upper o-ring into the fuel rail) just make sure they go in straight and the seals don't get pinched.



The injectors are based on the Bosch EV14 and have a V shaped spray pattern. For this reason they should be installed with the connector straight up or straight down wherever possible. In some cases, the shape of the Intake Manifold prevents perfect positioning, but try and get as close as you can.



Use the original OEM bolts to secure the fuel rail, tighten each bolt bit by bit to push everything together evenly. There is no need to over tighten these, the OEM Torque Spec is 14-19 ft-lbs.

Connect one end of the PnP adapters to the injectors and the other end to the loom to complete installation. Ensure the wires are not pinched or rubbing against anything.

Injector Data

These injectors will require some changes to be made to your tune on your standalone ECU. The flow rate and dead time curves are presented below.

Flow Rate

Fuel Pressure	Flow Rate
3 Bar (43.5psi)	640cc
4 Bar (58 psi)	739cc

ME 221 Dead Times

Voltage	3 Bar Dead Time	4 Bar Dead Time
8	3.19ms	3.84ms
9	2.32ms	2.68ms
10	1.87ms	2.12ms
11	1.57ms	1.75ms
12	1.35ms	1.51ms
13	1.15ms	1.29ms
14	1.01ms	1.13ms
15	0.90ms	1.00ms
16	0.83ms	0.90ms

MS3 Dead Times

Voltage	3 Bar Dead Time	4 Bar Dead Time
13.2	1.12ms	1.26ms
11	140.3%	138.0%
12	120.9%	119.0%
13^{oe}	102.9%	102.5%
14	90.4%	89.8%
15	80.7%	79.0%
16	73.8%	71.9%

The ME221 has far more cells to fill in than are needed for this application. Ensure all the excess cells read the same as the 16v line to prevent any issues. The below screenshot illustrates this:

