Assembling and disassembling Piezo Bosch Nozzle, Injector adjusting

All steps presented below are made on DX-75165 press and with Nova Ditex equipment.

Nozzle disassembly:

1. Before start, remember to cover inlet connection and back leakage connection to reduce the risk of leaving air bubbles inside the hydraulic amplifier. Do this with appropriate plugs.
2. Use appropriate mounting plate from **DX-75238** kit and set it up to press holder **DX-75165**.

3. Use appropriate pressing tip from **DX-75238** kit and mount it to **DX-75165** press.
4. Tighten press upper screw to **30 Nm** using **30 mm** cap (DX-75356)

5. Unscrew nozzle nut using **15 mm** cap (DX-753510)
6. Unscrew press upper bolt until nut removal is available.

7. Remove nut, nozzle body with needle, shim, spring and bushing. Pay attention **while** disassembling to injector components not get lost.
### Nozzle assembly:

1. Before mounting nozzle on the injector, remove air bubbles from inside hydraulic amplifier. In order to do this assembly it under oil (ISO oil).

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Do not skip this step, it results fuel doses equal zero during the test.
2. After assembling hydraulic amplifier under oil, press it on AE0284-CR press. Amplifier has to be mounted on the press in the right way – amplifier piston should be facing up.
3. Assembly nozzle components in correct order – shim, spring and bushing with phase facing up.

4. Pre-tighten nut without using torque wrench and tighten upper press screw to 30 Nm.
5. Pre-tighten injector nut with \textbf{15 mm} cap (DX-75351) to \textbf{20 Nm} and next loosen it to nozzle on the injector get proper position.

6. Tighten injector nut to \textbf{60 Nm}.
Piezo injector adjustment

Basic way to adjustment Piezo Bosch injector is using regulation shims on nozzle needle. They are full sets of shims available with 0.10 mm steps depends on manufacturer.

Depending on shim thickness, fuel quantities change, first three measurement points especially – full load quantity (VL), emission quantity (EM) and idle quantity (LL) the most.
Eragon reports present how does fuel quantity change with the change in shim thickness. We used 1,2 mm and 1,3 mm shims. Changing shim to 0,1 mm thicker causes appreciable decreasing of fuel quantity.

Common problem with Piezo Bosch Injectors are to high return fuel doses. In most cases there is no nozzle fault, but damaged valve. Only way to fix it is replace valve body and valve piston for new ones. There is no way to regeneration the valve.

Using of advantage these instructions guarantee certain results with assembly and disassembly injector process and professional adjustment. Further it excludes potential damage to parts of injector.