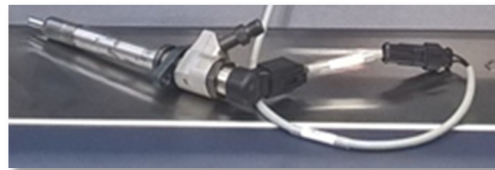
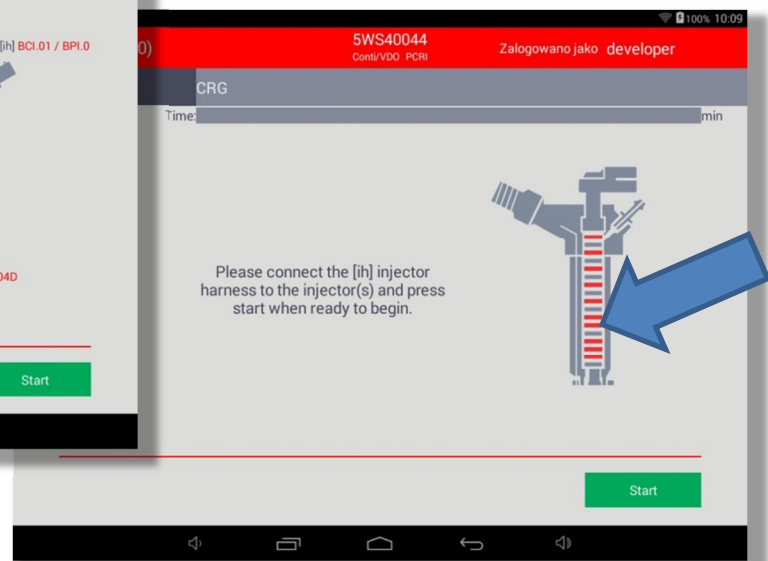
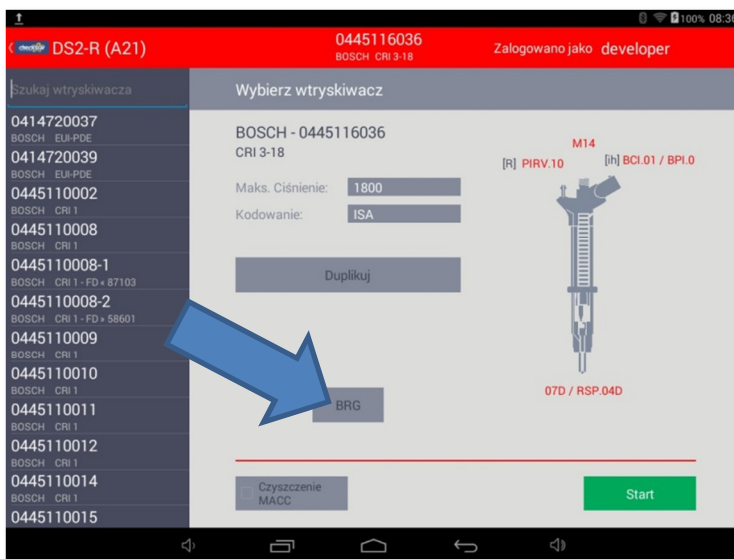


Subject: piezo stack regeneration function BRG / CRG, for the piezoelectric Siemens/VDO and Bosch injectors, available in Magneti Marelli Common Rail injectors testing devices - series DS1R / DS2R / CRU2R

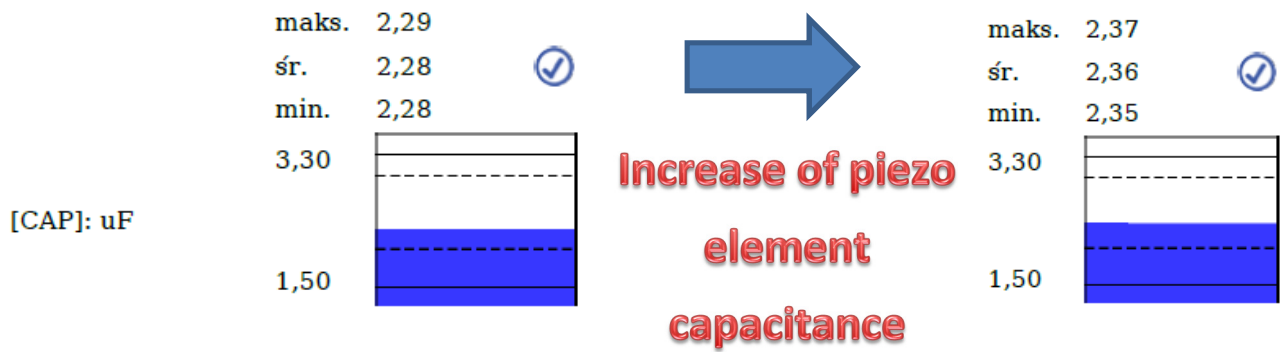


Thanks to the regeneration procedure of piezo stack, it is possible to restore proper functionality of the item. Many times, due to the operation of a piezoelectric injector, there is a micro shortcuts between the various layers of the piezoelectric crystals. This results in abnormal behavior of the piezo stack during operation of the injector, lack of the injector operation, or an insufficient piezo stack elongation (nominal extension of the piezo stack is 40 microns). The result of which, is impossibility to achieve the correct dosage and adequate response time of the injector. Regeneration procedure, lasting 10-20 minutes, treats the piezo stack with a specified current amplitude, which allows you to remove any shorts between crystals and restore the proper functioning of this element. The condition for the success of the procedure is the lack of mechanical damage to the item. This feature is available in the latest versions of our software in DS1R, DS2R, CRU2r, CRU4R diesel benches.



# Example: Injector CRI 3-16 BOSCH 0445115004

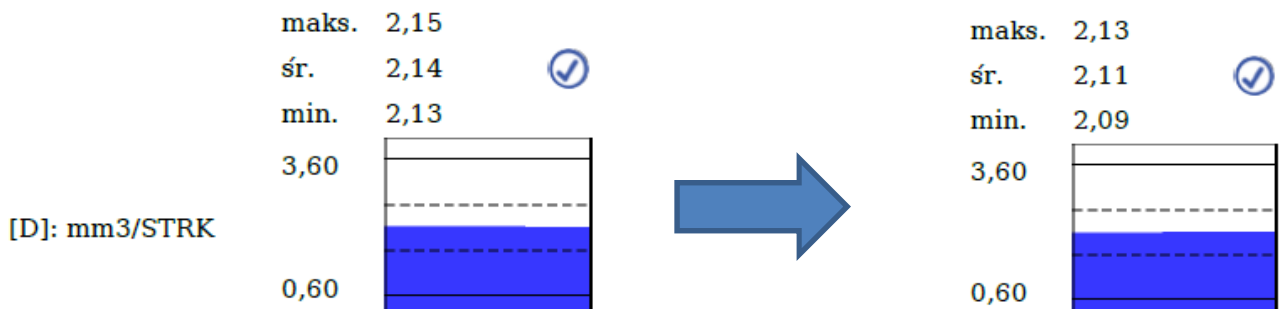
## 1) electrical test



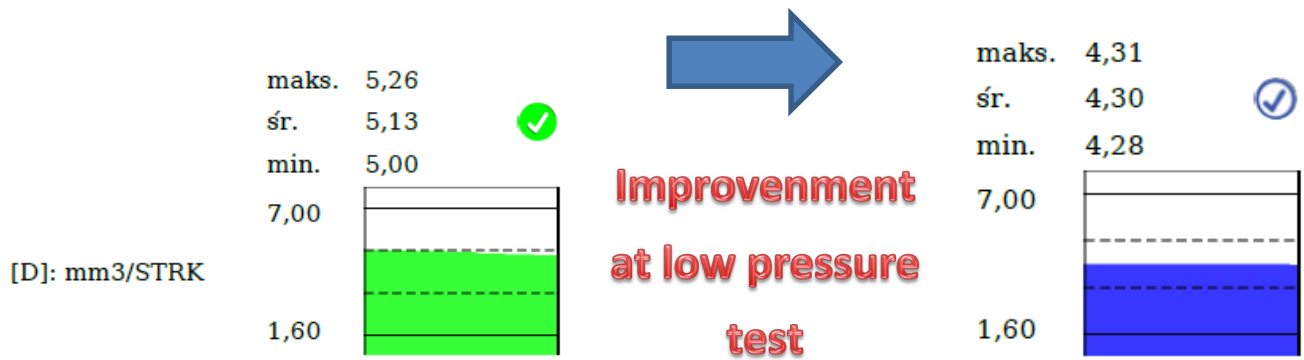
## 2) iVM (VL) pressure: 1600.0 bar, Pulsation: 535 usec



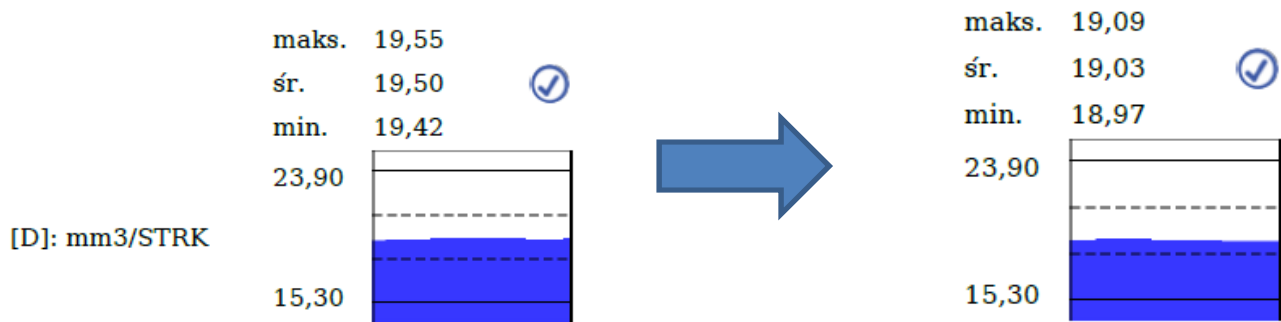
## 3) iVM (VE) Pressure: 1200.0 bar, Pulsation: 150 usec



4) iVM (LL) Pressure: 250.0 bar, Pulsation: 535 usec



5) iVM (EM) Pressure: 800.0 bar, Pulsation: 455 usec



With the regeneration of the piezo stack, without any other mechanical intervention in the injector, it was possible to improve the dosing at the maximum and minimum pressure, at which the greatest impact is just the proper functionality of the piezoelectric element.

**Before regeneration**

**checkstar**

Dane serwisu: 12:55, 2016-12-06

Wynik:

CRU.2-R(21)  
diesel  
SW: 1.60.6.1  
S/N: -

Dane wtryskiwacza:

BOSCH NS\* 1  
0445115004 DP  
CRI 3-16 Stary ISA

Nowy ISA -

**After regeneration**

**checkstar**

Dane serwisu: 13:51, 2016-12-06

Wynik:

CRU.2-R(21)  
diesel  
SW: 1.60.6.1  
S/N: -

Dane wtryskiwacza:

NS\* test2 po regfeneracj  
DP  
Stary ISA

Nowy ISA -

