

Assemble Kit For Bosch – Denso magnetically operated, Piezo Bosch and Siemens Common-Rail injector with computer monitored quotes and Mitutoyo control interface



P.N.: Q100-SN

The kit allows a fully monitoring of Common-Rail injector by measuring the quotes of its shims; by means of an interactive system connected to 3 centimal comparators it eventually compares the quotes with the original rate table in the software.

The systems includes:

- 1) Interface
- 2) N°3 cables connecting comparator to interface;
- 3) Sample shim (1 mm);
- 4) Steel cable to lift comparator;
- 5) Ethernet cable;
- 6) Solenoid washer for Q100;
- 7) Comparator switch;
- 8) Injector cable;
- 9) Key with Instructions and Software (to install in a PC of your possession, which must have a system for the Windows platform and a full version of Microsoft Office Excel)

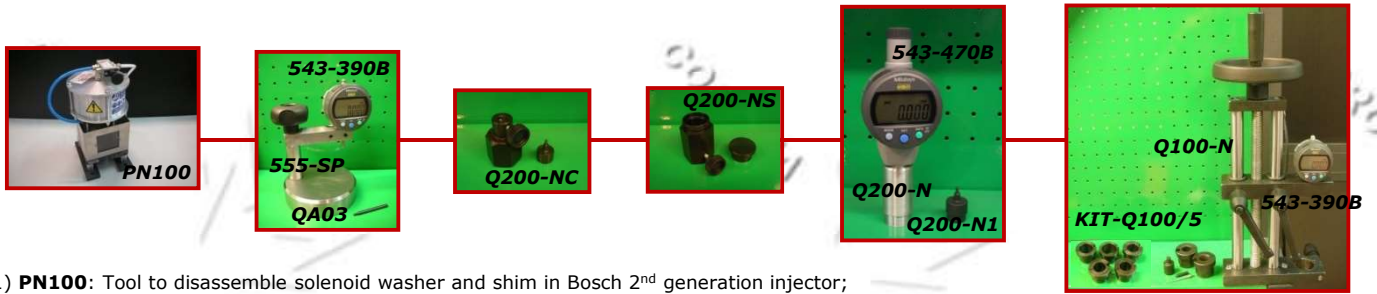
ITEMS ON REQUEST



Below are the details on the available injectors step

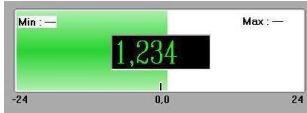


STEP: Bosch Injectors



- 1) **PN100**: Tool to disassemble solenoid washer and shim in Bosch 2nd generation injector;
- 2) **Q200-NC**: Comparator support for measuring body injectors 1st - 2nd generation of the vehicle;
- 3) **Q200-NS**: Comparator support for measuring solenoid injectors 1st - 2nd generation of the vehicle;
- 4) **Q200-N**: Pre-quote comparator bearing and Ima start in the truck Common-Rail electroinjectors 2nd generation;
- 5) **Q200-N1**: Calibration spacer in the Q200-N injector Type 0 445 120 026 - 030 - 044;
- 6) **Q100-N**: Guided bearing kit to measure the quote;
- 7) **KIT-Q100/5**: Adaptors Kit Q100-N for injectors Ø 21-22-23-26-29;
- 8) **555-SP**: Comparator grinding bearing;
- 9) **QA03**: Comparator rod for 555-SP;
- 10) n°2 **543-390B**: MITUTOYO ABSOLUTE centimal comparators;
- 11) **543-470B**: MITUTOYO ABSOLUTE centimal comparators

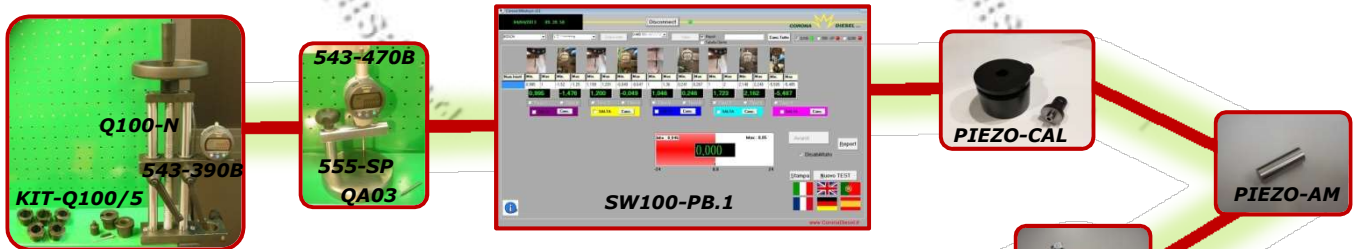
GUIDED TEST ON THE MEASUREMENT OF ALL INJECTOR SHIMS



GUIDED TEST ON THE DETECTION OF THE INJECTOR QUOTAS



STEP: Bosch Piezo-Inline Injectors

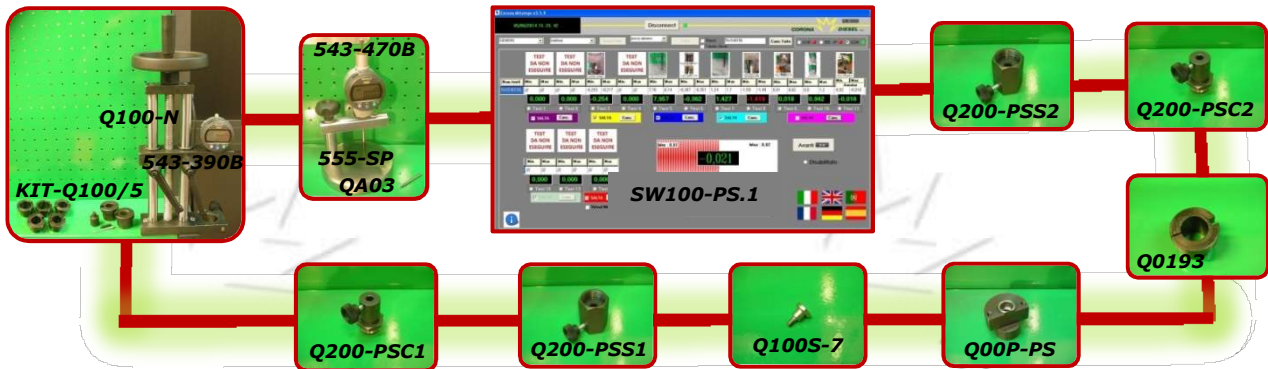


- 1) **SW100-PB.1**: Corona Software for Mitutoyo;
- 2) **Q100-N**: Guided bearing kit to measure the quote;
- 3) **KIT-Q100/5**: Adaptors Kit Q100-N for injectors Ø 21-22-23-26-29;
- 4) **555-SP**: Comparator grinding bearing;
- 5) **QA03**: Comparator rod for 555-SP;
- 6) n°2 **543-390B**: MITUTOYO ABSOLUTE centimal comparators;
- 7) **543-470B**: MITUTOYO ABSOLUTE centimal comparators;
- 8) **PIEZO-CAL**: Calibrating mask for Hydraulic coupler;
- 9) **PIEZO-AM**: Motion amplifier mask
- 10) **555-QP**: Support return servovalve height
- 11) **PN100**: Tool to disassemble solenoid washer and shim in Bosch 2nd generation injector;

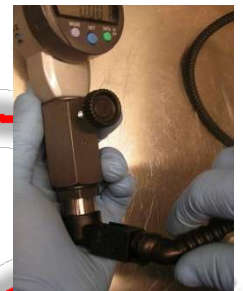
SUPPLIED WITH DETAILED USE INSTRUCTIONS



STEP: Siemens Piezo Injectors



- 1) **SW100-PS.1:** Corona Software for Mitutoyo;
- 2) **Q200-PSS1:** Device to measure the quote in Piezo Siemens 1st generation injector;
- 3) **Q200-PSS2:** Device to measure the quote in Piezo Siemens 2nd generation injector;
- 4) **Q200-PSC1:** Device to measure airgap in Piezo Siemens 1st generation injector;
- 5) **Q200-PSC2:** Device to measure airgap in Piezo Siemens 2nd generation injector;
- 6) **Q100S-7:** Comparator switch;
- 7) **Q00P-PS:** Adapter bushing for Siemens 1st generation injector nozzle and master ;
- 8) **Q0193:** Q100-N adapter for injectors 5WS40539 type;
- 9) **Q100-N:** Guided bearing kit to measure the quote;
- 10) **KIT-Q100/5:** Adaptors Kit Q100-N for injectors Ø 21-22-23-26-29;
- 11) **555-SP:** Comparator grinding bearing;
- 12) **QA03:** Comparator rod for 555-SP;
- 13) **n°2 543-390B:** MITUTOYO ABSOLUTE centimal comparators;
- 14) **543-470B:** MITUTOYO ABSOLUTE centimal comparators



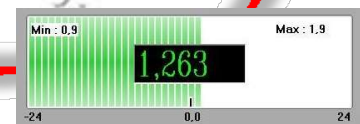
GUIDED TEST ON THE MEASUREMENT OF ALL INJECTOR SHIMS

GUIDED TEST ON THE DETECTION OF THE INJECTOR QUOTAS

STEP: Denso Injectors



- 1) **SW100-ND.1:** Software Corona for Mitutoyo;
- 2) **Q200/ND:** Pre-quote comparator support and Ima start in Denso Common-Rail electroinjector;
- 3) **Q00S/ND:** Solenoid washer in Q100-N;
- 4) **Q00B/ND:** Solenoid washer register tool (necessary for injectors with no shim)
- 5) **Q100S-7:** Comparator switch;
- 6) **Q100S-8:** 4 mm sample shim;
- 7) **Q100-N:** Guided bearing kit to measure the quote;
- 8) **KIT-Q100/5:** Adaptors Kit Q100-N for injectors Ø 21-22-23-26-29;
- 9) **555-SP:** Comparator grinding bearing;
- 10) **QA03:** Comparator rod for 555-SP;
- 11) **n°2 543-390B:** MITUTOYO ABSOLUTE centimal comparators;
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REQUIRED ITEMS

PNEUMATIC DEVICES



P.N.: 555-MIT/PN25



P.N.: 555-MIT/PN125

The pneumatic device is used to impart a constant and known force when measuring on the Q100-N, as it ensures precision and repeatability of the measurements.

It is supplied with a pressure regulator.

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OPTIONAL ITEMS ON REQUEST



**Work bench
P.N.: B002**



P.N.: CDAR-30A

Ultrasound tank

Capacity = 6.5 litres

Power = 180W

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The Mitutoyo computerized assembly system becomes indispensable when the main operating part is replaced of the Bosch magnetic solenoid injector, (“Control rod”), for size appropriately all the thicknesses inside. In some cases, such as the magnetic Bosch injector type 351 or 369, the tolerances very narrow in the height of the ball valve often need a accurate recalibration by means of this system as it is thousandths of a millimeter. In conclusion, the recalibration of the injector in these cases restores it correct operation without any replacement of parts.



In the case of the electric Piezo injectors Bosch has settled with the new ones test conditions that the pre-injections much more refined than the previous ones, need for the correct functioning of the height measures of the very accurate servovalves that can only be done with the Mitutoyo system do. In other cases this system allows correct reassembly of the injector with the appropriate thicknesses after having been manipulated by diesel patrons.



N.B .: It is recommended to proceed with computerized measurements only afterwards have guaranteed the correct functioning of the sprayer