

INNOVATION DRIVEN



# Engineering Solutions for Tomorrow's Mobility

**CloudX™**  
CARBON ZAPP TECHNOLOGY

Product Catalog 2022-23





# Engineering Solutions for Tomorrow's Mobility

**We always strive  
for excellence  
and innovation**

Carbon Zapp is dedicated in manufacturing Automotive Injection Service Solutions, providing a worldwide sales network, investing constantly in R&D and offering efficient support. With today's exponential increase in the automotive industry, Carbon Zapp offers solutions for a healthier, less polluted environment, specializing in designing & manufacturing Diesel and Gasoline Injection Service Benches, that have become a standard for major OE's and general workshops.

As a global supplier to diverse users, with broad knowledge in the automotive industry and through teamwork and skillful personnel, Carbon Zapp is able to support your corporate vision and fulfill your market's needs.

**Let's make together the first step towards future and success!**

**Nikolaos Pantazis**

Managing Director  
International Business

**Dimitrios Pantazis**

Managing Director  
Manufacturing

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Test Bench





## Our Statement

**"We have earned our position to the global market because of our commitment to quality products and well known customer service. If we fail to provide satisfaction to our customers, we forfeit our right to their business. Carbon Zapp's Management and staff loyalty to this business makes it a win-win situation"**

**Bill Pantazis,  
Founder of Carbon Zapp**

## Our Company

Carbon Zapp was founded in 1989 by Bill Pantazis. As a leading manufacturer of Automotive Injection Service Equipment and Tools, Carbon Zapp has its Headquarters and Production Plant in Athens, Greece and a constantly growing global network in every continent. Recently, the company expanded in Germany by establishing its OEM business administration offices.

Through a wide range of innovative products, including injector and pump test benches for Diesel and Gasoline High Pressure injection systems, Engine service equipment and tools, Carbon Zapp offers high quality equipment and customer service to automotive dealers, workshops and educational institutions, as well as for specialized developers, remanufacturers and most major automotive OE's. Carbon Zapp uses over 35% of its profits to update existing products with newer technological advancements and aims to provide simpler methods and tools for a safer environment.

Carbon Zapp today is the Authorized global partner for Diesel Specialists to Diagnose and Service CRDi systems, holding the unique technology to correctly control with Energy and accurately test Continental / VDO systems.

## Our Mission

Carbon Zapp aims to provide user friendly, compact and time saving solutions to a wide range of operators, focusing in the automotive injection systems.

## BUILDING WHAT'S NEXT FOR THE AUTOMOTIVE INJECTION SERVICE, TODAY!



### Our Customers

Diesel Service Centers  
Auto Workshops /Dealerships  
Automotive Aftermarket OEM's  
Parts Remanufacturers  
Automotive OE's  
Developers

### Innovation Driven Company

"Innovation" is the key to continuous growth and competitive advantage. Carbon Zapp "Drives" its research team to keep a high ambition level and work on their research, development and technical skills.

On an annual basis, the company invests more than 35% of its profits on research and development for upgrading existing and implementing new products. Carbon Zapp has fostered an extensive group of intellectual property and talented personnel throughout the years. Strategic agreements and world-class component suppliers have contributed in developing advanced technologies & products.

**We Provide Authorized  
Solutions for Continental/VDO**





### Support

At Carbon Zapp, customer satisfaction is a major priority. The staff offers the best service to increase customer trust, earn their loyalty and built their respect. The key to this success is to acknowledge the customers' needs and listen to them.

### Global Sales Network

With a logistics center in Athens, Greece, Carbon Zapp can effectively export its products globally in all 5 continents and over 85 countries. The products are trusted internationally for their world class quality and unique capabilities. Carbon Zapp takes pride in consistently delivering premium products and reliable customer services.



**Let's Connect and Discover  
Future Opportunities.**



## **CloudX is CarbonZapp IoT Cloud computing Platform**

Powerful innovations at your fingertips  
with CZ CloudX computing Platform



CZ CloudX computing technology Platform as a service (PaaS) is a complete environment in the cloud, with resources that enable clients the full control of their Bench with cloud based Apps access them over a secure Internet connection. With middleware, development tools, business intelligence (BI) services, database management systems and more.

CloudX allows clients to access live online updates of database, remote operation and status report of their bench. Generate remote reports for handling, printing, filling and organizing from machine database. Instant activation of features on a pay-as-you-go basis. Multiple machines management support. Complete machine cloud back-up and instant trouble shooting via X-Connect directly from CZ factory. Receive notifications on your smart devices for machine maintenance tasks like Oils, Filters, Service, and more.

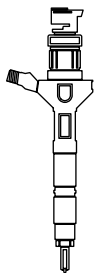
**Explore today new powerful innovations at your fingertips with CZ CloudX computing Platform.**

## **CloudX Features**

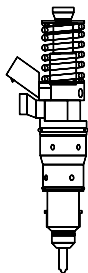
- IoT Cloud computing Platform. Industry 4.0 Complaint
- Live Online Updates of Database and supporting new requests from clients
- Remote Operation and Status Report of Client Bench
- Generating remote reports for handling, printing, filling and organizing from machine database
- Instant Activation of Features on a pay-as-you-go basis
- Multiple machines management
- Complete machine cloud back-up
- Instant troubleshooting via X-Connect directly from CZ Factory
- Notifications on Client smart devices for machine maintenance tasks like Oils, Filters, Service, and more

# INDEX BY SYSTEM

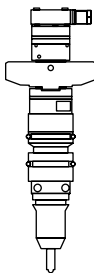
Explore our complete range of Automotive Injection Service Solutions both for Specialist and Workshops thought the supporting Systems & find your next best match.



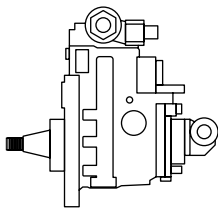
CRDi



EUI/EUP



HEUI



CRP

|             | PAGE  | MACHINES | DIESEL |   |   |   |
|-------------|-------|----------|--------|---|---|---|
| SPECIALISTS | 14-23 | MTBR-X   | •      | • | • | • |
|             | 24-27 | PTBR-X   |        |   |   | • |
|             | 28-33 | ITB.4R-X | •      |   |   |   |
|             | 28-33 | ITB.1R-X | •      |   |   |   |
|             | 34-37 | CRU.2R-X | •      |   |   |   |
|             | 38-39 | DGFR-X   | •      |   |   |   |
|             | 42-47 | ETBR-X   | •      | • | • | • |
|             | 48-53 | HTBR-X   |        |   | • |   |
|             | 54-59 | GTB.4R-X |        |   |   |   |
|             | 60-63 | GDU.4R-X |        |   |   |   |
| WORKSHOPS   | 66-67 | DSR-X    | •      |   |   |   |
|             | 68-69 | DS2R.A   | •      |   |   |   |
|             | 70-71 | GDR-X    |        |   |   |   |
|             | 72-73 | GS4      |        |   |   |   |
|             | 72-73 | GS8      |        |   |   |   |
|             | 74-75 | ES.3     |        |   |   |   |
|             | 76    | FST      |        |   |   |   |
|             | 76    | FST-HF   |        |   |   |   |
|             | 76    | HP-G2500 |        |   |   |   |
|             | 76    | HP-G250  |        |   |   |   |
|             | 77    | CRPT-110 |        |   |   |   |
|             | 77    | CRMK-110 |        |   |   |   |
|             | 77    | PIMK-010 |        |   |   |   |
|             | 77    | DIT-062  |        |   |   |   |

**CRDi**  
Common Rail Diesel Injectors

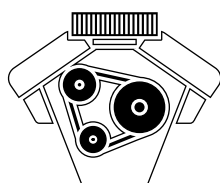
**EUI**  
Electronic Unit Injectors

**EUP**  
Electronic Unit Pumps

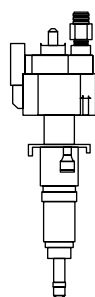
**HEUi**  
Hydraulic Electronic Unit Injectors

**CRp**  
Common Rail Diesel Pumps

**Engine**  
Diagnostic and Service Solutions



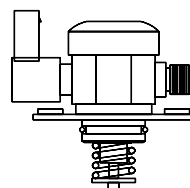
ENGINE



GDi  
INJECTORS



EFi  
INJECTORS



GDi  
PUMPS



CONTINENTAL  
VDO

| DIESEL/GASOLINE | GASOLINE |   |   | AUTHORIZED | MACHINES |
|-----------------|----------|---|---|------------|----------|
|                 | •        |   | • | •          | MTBR-X   |
|                 |          |   | • |            | PTBR-X   |
|                 |          |   |   | •          | ITB.4R-X |
|                 |          |   |   | •          | ITB.1R-X |
|                 |          |   |   | •          | CRU.2R-X |
|                 | •        |   |   | •          | DGFR-X   |
|                 | •        | • | • |            | ETBR-X   |
|                 |          |   |   |            | HTBR-X   |
|                 | •        |   | • |            | GTB.4R-X |
|                 | •        |   |   |            | GDU.4R-X |
|                 |          |   |   |            | DSR-X    |
|                 |          |   |   |            | DS2R.A   |
|                 | •        | • |   |            | GDR-X    |
|                 | •        | • |   |            | GS4      |
|                 | •        | • |   |            | GS8      |
| •               |          |   |   |            | ES.3     |
| •               |          |   |   |            | FST      |
| •               |          |   |   |            | FST-HF   |
| •               |          |   |   |            | HP-G2500 |
| •               |          |   |   |            | HP-G250  |
| •               |          |   |   |            | CRPT-110 |
| •               |          |   |   |            | CRMK-110 |
| •               |          |   |   |            | PIMK-010 |
| •               |          |   |   |            | DIT-062  |

**GDi**  
Gasoline Direct Injectors  
**EFi**  
Electronic Fuel Injectors

**GDi Pumps**  
Gasoline Direct Injection  
HP Pumps

**Continental /VDO**  
Authorized Solutions for EU3, EU4  
and EU5 Diesel Injectors



## Index By Product

Browse our catalog by Product and find your next best match for all your needs through Carbon Zapp's new full improved XSeries benches, a complete range of Automotive Injection Service Solutions both for Specialists and Workshops.



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**SPECIALISTS**

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**SPECIALISTS**

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**GDU.4R-X**  
**SPECIALISTS**

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SPECIALISTS



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**GS4**  
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**GS8**  
**WORKSHOPS**

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**ES.3**  
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**FST/FST-HF**  
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**WORKSHOPS**

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**HP-G250**  
**WORKSHOPS**

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**CRPT-110**  
**WORKSHOPS**

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**CRMK-110**  
**WORKSHOPS**

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**PIMK-010**  
**WORKSHOPS**

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**DIT-062**  
**WORKSHOPS**

Page 77



**SPECIALISTS** 

**Discover Diesel & Gasoline  
Specialists Solutions**



Innovative, Compact and Professional Solutions  
for every Diesel Specialist Workshop to Test  
and Service All Makes and Types of Heavy Duty,  
Light Duty and Passenger Car Fuel Injection Systems.



**Continental**

**CRDi**

Common Rail Diesel Injectors

**EUi**

Electronic Unit Injectors

**EUp**

Electronic Unit Pumps

**HEUi**

Hydraulic Electronic Unit Injectors

**CRp**

Common Rail Diesel Pumps

**Engine**

Diagnostic and Service Solutions

**GDi**

Gasoline Direct Injectors

**EFi**

Electronic Fuel Injectors

**GDi Pumps**

Gasoline Direct Injection HP Pumps

**MTBR //**X

Diesel System Test Bench

**X Series 2022**

## The Preferred Diesel Specialists Solution

The Comprehensive Solution  
for Every Advanced Diesel Service Center



**CloudX™**

Details on page 06

**Authorized Solution  
for Continental/VDO**



*\*New database and Coding is continuously being updated to new EU6 applications*



## Overview of the New MTBR-X

Precise, repeatable and rapid Diesel & Gasoline Components Testing

### [1] Pump Testing

- 5-15 minutes testing time per pump
- CRp / GDp Pump (All Brands and Types).
- Capable for all EU6 technologies with Sync Operation such as Denso HP5, Bosch CP4-EU6, VDO EU6 technology and more...
- Heavy-Duty CR pump (CPN5S2, CAT, Cummins etc.)

### [4] Injectors Testing & Coding\*

- 6-12 minutes testing and coding\* time for 4 injectors
- CRi / CRiN / GDi injectors (All Brands and Types).
- Capable for all EU6 technologies such as VCC and NCC technology, iART, PCRS5,
- XPI, F2E, F2P, F2R Injectors pumps and more...
- CRIN 4.2 Heavy Commercial-Vehicle injectors
- Large Diesel Engine CRiN injector (QSK, MTU, L 'Orange, etc...)

### [1] HEUi Testing & Coding\*

- 6-8 minutes testing and coding\* time per injector
- Dynamic and static measurement of the actual overflow
- Dual-Coil HEUi Injector testing capable

### [1] EUi/EUp Testing & Coding\* (requires HK1400A Cambox)

- 6-10 minutes testing and coding\* time per injector
- Capable for all EU6 technologies
- Expandable to Future Systems

**CGL - Authorized Continental / VDO "Blind-Lift"**  
**Measurement of Piezo-Stack**

## SPECIALISTS

CRDi

EUi/EUP

HEUi

CRP

ENGINE

GDi

EFi

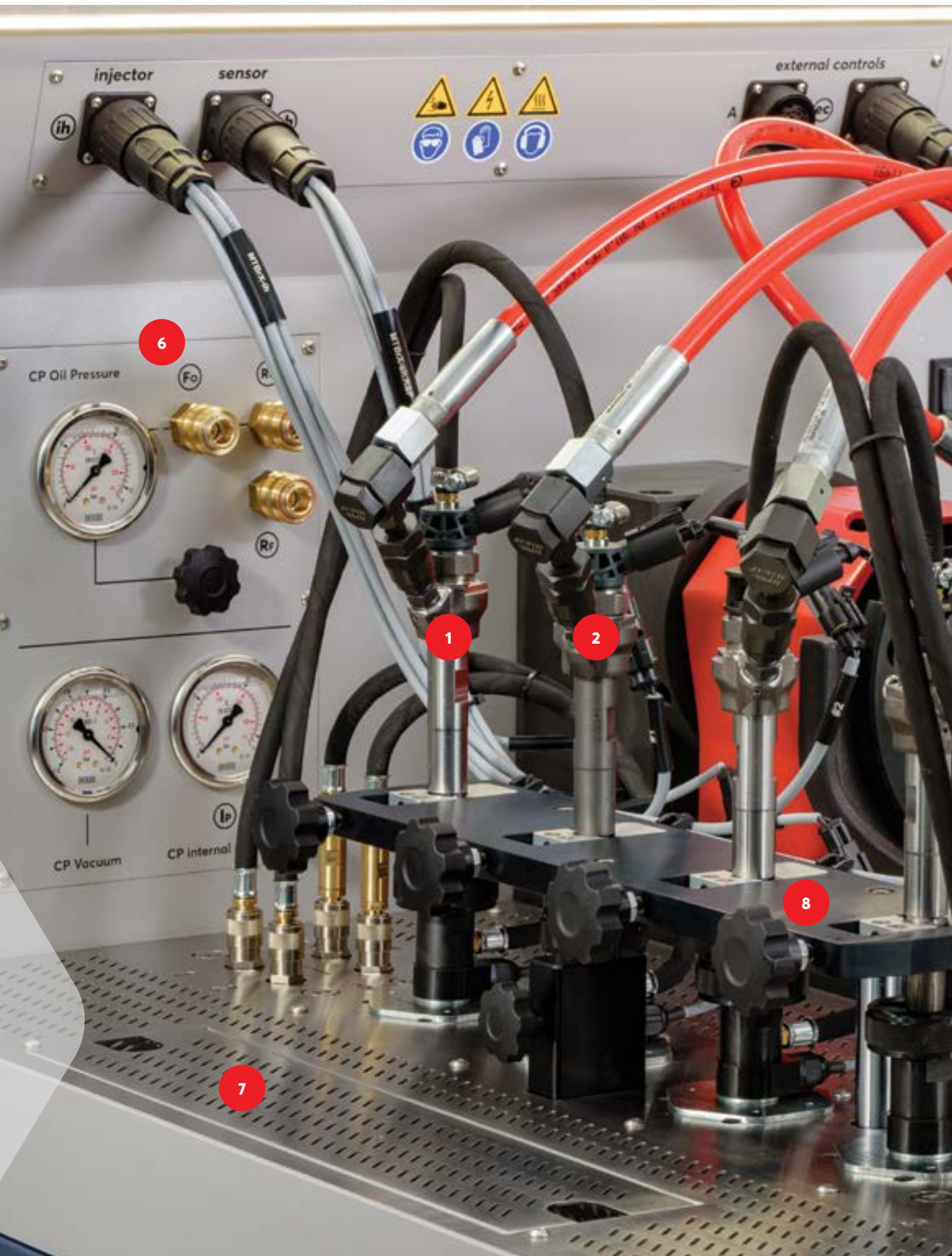
GDp Pumps

## Setting the Benchmark for Test Benches

Our expertise, experience & innovative thinking brought together a New Design, Advanced Hardware & Upgraded Software for our New **MTBR-X**











## SPECIALISTS

CRDi

EUi/EUP

HEUi

CRP

ENGINE

GDi

EFi

GDi Pumps

## MTBr //X

### Diesel System Test Bench

- 1 DIESEL CRDi TESTING & CODING
- 2 GASOLINE GDI INJECTOR TESTING & CODING
- 3 GASOLINE GDI PUMP TESTING
- 4 DIESEL UNIT INJECTION SYSTEMS TESTING/CAMBOX
- 5 DIESEL CR PUMP TESTING
- 6 LOW SUPPLY PRESSURE/ SUCTION PERFORMANCE
- 7 EASILY ACCESSIBLE FILTERS & WASTE AREA
- 8 HEUi TESTING & CODING

*Detailed information on next page*



### 1 Diesel CRDI Testing & Coding

Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times. Fully Adjustable height for all types of CR injectors. Utilizes a spring-loaded injector holder to ease the operation of the user.



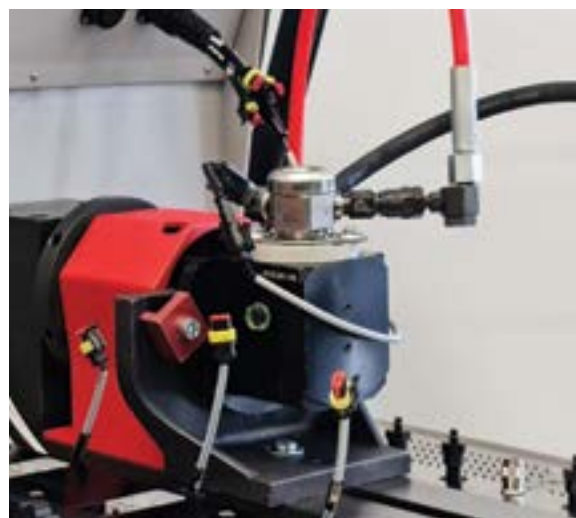
### 2 Gasoline GDI Injector Testing and Coding

Quick and Easy Injector Clamping device with adjustable height to fit all types of adapters for Gasoline Direct injectors. Unperceivable testing capabilities, adaptability, global database and coding for newer EU6 applications\* as well as for the widely available Siemens/VDO piezo injectors (for BMW) in the market today.



### 4 Diesel Unit Injection Systems Testing/Cambox

EUI and EUP testing and coding with OE standards is now made as simple as testing a CR injector. Smart Pumps and Injectors testing and coding (EU6) has never been so accurate, repeatable and correct. Hartridge's HK-1400A Base Cambox optimized and upgraded with our ingenuity to meet all the standards of today's revolution in Medium and Heavy Duty Diesel Unit Systems.



### 3 Gasoline GDI Pump Testing

The New MTBRIX is the first machine in the world to fully test and diagnose faulty GDI (Gasoline Direct Injection) Pumps. Adaptability and operation for All Types and Makes.

\*New database and Coding is continuously being updated to new EU6 applications

## SPECIALISTS

CRDi

EUi/EUP

HEUi

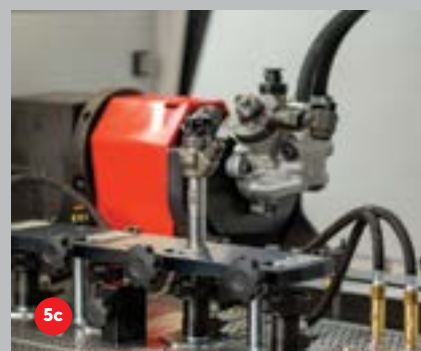
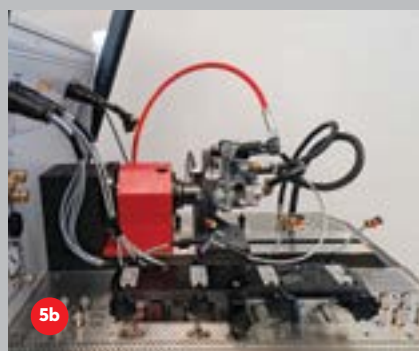
CRP

ENGINE

GDi

EFi

GDi Pumps



### 5 Diesel CR pump testing

A well proven pump coupling apparatus provides the flexibility needed for future upgrades, as well as the quick coupling and versatility for today's All-Makes CR pumps. Capable to test all EU6 Common Rail pumps with sync control valve function.

**5a:** CPN5S2 and other **Heavy-Duty** CR Pump applications require high Power, high Torque and responsive correction of the machine's power transfer through the transmission and flywheel. The New **MTBr-X** is specifically designed to efficiently test these systems.

#### 5b / 5c: EU6 Generation Common Rail Pump testing:

- Denso HP5S/D, HP6, HP7,
- Bosch CP4 new Euro6,
- Continental /VDO new Euro6
- and every other Euro 6 CR Pumps that operate by timing correctly the discharge quantity control valve(s).

The New **MTBr-X** advanced electronics and modern technology provides this unique testing capability for today's and next generation CR pumps.



# SPECIALISTS



Capable to efficiently Diagnose and fully Calibrate all Makes and Types of CRDi's, EUI's, EUP's, HEUI's, CR-pumps, GDi-pumps and GDi injectors.



## 6 Low Supply Pressure/Suction Performance

Measures the inlet pressure made by the supply pump or the vacuum produced by the pump itself. Important diagnostic information for many types of pumps and even for newest EU6 generation pumps [CRp-iP3 KIT]



## 7 Easily Accessible Filters & Waste Area

Quick access to all inline filters for fast check-up and replacement located within your working area. A mess-free compartment to work at, continuously draining to the waste tank.

*\*New database and Coding is continously being updated to new EU6 applications*



## SPECIALISTS

CRDi

EUi/EUP

HEUi

CRP

ENGINE

GDi

Efi

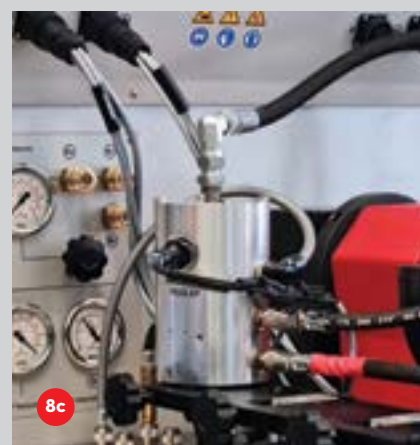
GDi Pumps



8a



8b



8c

### 8 HEUi testing and coding\*

Pre-order your MTBR-X ready to test and code\* HEUi injectors according to the OE standards. Adaptability and database available to test the majority and the diversity of injectors available in the world today. A unique capability of this add-on feature is to save space and cost from an additional standalone unit.

**8. CAT C7/C9 testing and coding\*.** Measuring discharge and overflow at different loads to optimally diagnose faults and characterize the injector to generate the correct trim file for coding.

**8a. CAT 3126/Navistar** measuring the discharge and overflow at different loads.

**8b. CAT 3408/3412** measuring the discharge and overflow at different loads.

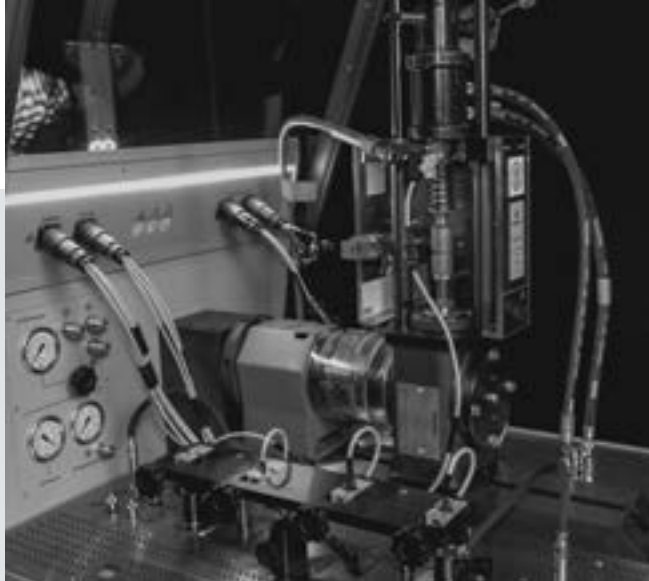
**8c. Ford Power Stroke 6.0L / 7.3L\*** Efficiently controlling the dual solenoid control poppet valve we measure the discharge and overflow at different loads.

**8d. Isuzu Trooper.** Medium load HEUi injectors available in less countries in the world are also able to be fully tested with the New MTBR-X.(not shown in picture)

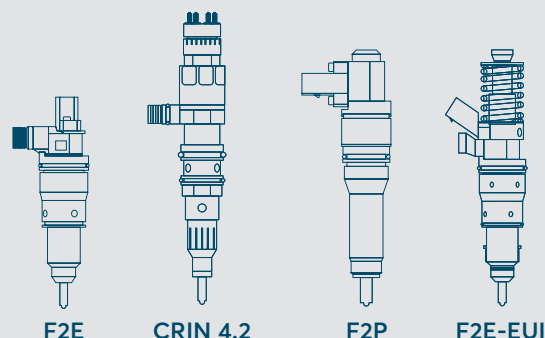


Scan to visit our **YouTube** channel and watch CZ Test Benches tutorials, training and product videos.





## AZO SOFTWARE



## EU6 Technologies

### Features

A **Continental/VDO Authorized** Test Bench

Xtremely Fast Testing Times without any Compromise

New Design for every Service Station

Optimized Working Area access [240o] & Component Set-up Times

2800Bar Operating Pressure

EU6 Systems Testing and Coding\*

**CloudX** Capabilities

Coding capability for all brands and types available in the market today. Bosch, Denso, Delphi, Continental /VDO, CAT, Cummins\*, John Deere, ISUZU\*, HINO\*, KOMATSU\*, E1/ E3/ DAF/ Smart Pump, F2E/ F2P/ F2R\* technologies and more added every day...

Off-Highways CR applications testing and coding (John Deere, Komatsu, Hino, Isuzu)

Cummins XPI\*, Caterpillar-Perkins C4/C6 and other Medium and Heavy-Duty testing and coding

Advanced water-cooling or air-cooling system to optimize long term nonstop operation at all environmental conditions.

Live Response Time Measurement at every test plan

BIP Actuation Measurement for all Heavy-Duty type solenoids (EUI & CR)

Adaptability for every type of Diesel Injectors in the market


Continuous Database updates and new Software capabilities to meet the market needs.

Android Powered 15.6" HMI with unlimited flexibility and connectivity competencies.

Injector & Pump flushing feature pre-installed (optional kits available)



\*New database and Coding is continously being updated to new EU6 applications

|                                |  |  |
|--------------------------------|--|--|
|                                | Part Number                                      | MTBRX-A [CZ-008713]<br>MTBRX-W[CZ-008783]  |
|                                | Cooling Type                                     | [A / W]  |
|                                | Standalone                                       | ●  |
|                                | Add-On   | -  |
| TYPE                           | Test Bench                                       | ●  |
|                                | Simulator / Controller                           | -  |
|                                | Service / Diagnostic Unit                        | -  |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●  |
|                                | Workshop / Garage                                | -  |
|                                | Test Slots [injectors / Pumps]                   | [4 / -]  |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | ● / [-/9]  |
|                                | GDi Injectors [ 1 / 4 ]                          | ● / [-/6']   |
|                                | CR Pumps [ 1 ]                                   | ● / [6']   |
|                                | GDi Pumps [ 1 ]                                  | □ / [6]  |
|                                | EUI / EUP / Smart EUP [ 1 ]                      | □ / [8]  |
|                                | HEUI [ 1 / 4 ]                                   | □ / [-/12]   |
|                                | Gasoline Injectors [ 1 / 4 ]                     | □ / [3/8]  |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | □ / [3/8]  |
|                                | Gasoline /Other Engines                          | -  |
|                                | Diesel Engines                                   | -  |
|                                | Gasoline/Diesel Fuel Systems                     | -  |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●  |
|                                | Motorcycles                                      | □  |
|                                | Racing (Gasoline)                                | □  |
|                                | Light Duty                                       | □  |
|                                | Medium Duty                                      | □  |
|                                | Heavy Duty / Industrial                          | □  |
|                                | Marine   | □  |
|                                | EV (Electric Vehicles)                           | -  |
| FEATURES                       | CloudX - (Page 06)                               | □  |
|                                | Coding Capability for Passenger Car / Light Duty | □  |
|                                | Coding Capability for Medium/Heavy Duty          | □  |
|                                | Authorized Solutions                             |  |
| MEASUREMENT<br>SENSORS         | XKM  | 4  |
|                                | BK   | -  |
|                                | DFM500   | 1  |
|                                | DFM50  | -  |
|                                | Volumetric Tubes                                 | -  |
| SYSTEM PRESSURE                | Max (BAR)  | 2800   |
|                                | Source   | MOTOR  |
|                                | Source Power (HP)                                | 18   |
| CHARACTERISTICS                | Response Sensor                                  | □  |
|                                | Response Sensor HD                               | □  |
|                                | Pressurized Return Hoses / PIRV's                | ○  |
|                                | Exclusive Return Hoses Kit                       | ●  |
|                                | Spray Chamber                                    | ○  |
|                                | Heavy Duty Injector Adapters & Fittings          | □  |
|                                | Heavy Duty Pump Adapters & Fittings              | □  |
|                                | Exclusive Electrical Connectors                  | ○  |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | -  |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | ●  |
|                                | Air-Supply (Bar / L/min)                         | -  |
|                                | Water Cooling (requires connection)              | -  |
|                                | Air Cooling                                      | ●  |
|                                | Tank Capacity [testing / flushing]               | [45 / 15]  |
|                                | HMI (Inches)                                     | 15   |
|                                | Touchscreen                                      | ●  |
|                                | Flushing / MACC                                  | □ / -  |
|                                | Protective Cover                                 | ●  |
|                                | Calibration Oils                                 | ○  |
|                                | Ultrasonic Bath                                  | ○  |
| PACKAGING                      | Width (mm)                                       | 1160   |
|                                | Depth (mm)                                       | 1530   |
|                                | Height (mm)                                      | 1790   |
|                                | Weight (kg)                                      | 717  |

**MEASUREMENT SENSORS**  
XKM [Dynamic Meas. Sensor]: High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
Measur. Range: 1-1000ml/min  
DFM 500 [Dynamic Measurement Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500L/min  
DFM 50 [Dynamic Measurement Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 0.5-50L/min  
Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml | Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm3/H  
Light Duty: Volumes up to 200mm3/H  
Medium Duty: Volumes up to 300mm3/H  
Heavy Duty: Volumes up to 650mm3/H  
Marines: Volumes up to 1500mm3/H

## EXPLANATIONS

- : Capable / Standard Equipped
- : Capable / Optionals required
- : Optional
- : N/A

-A: Air Cooling  
-W: Water Cooling

## PRESSURE SOURCES

Air: Air High Pressure Pump  
Max Air: Max. Air High Pressure Pump  
External: Pressure coming from another Test Bench or external source  
Electr. Pump: Fuel Injection system or Industrial Application  
Electrical Pump 12VDC  
--: No Pressure Source

**PTB<sub>2</sub> //X**

**Diesel System Test Bench**

## **The Comprehensive Diesel Specialists Solutions**

**for Testing Diesel Common Rail and Gasoline GDi Pumps**

**2800 Bar**

**Standalone Diesel CR  
& Gasoline GDi PumpTest  
Bench for Specialists**



**CloudX™**

Details on page 06

*\*New database and Coding is continuously being updated to new EU6 applications*



## Overview of the New PTBR-X

Precise, repeatable and rapid Diesel & Gasoline High Pressure Pump Testing

### [1] Pump Testing

- 5-15 minutes testing time per pump
- CRp / GDp Pump (All Brands and Types).
- Capable for all EU6 technologies with Sync Operation such as Denso HP5, Bosch CP4-EU6, VDO EU6 technology and more...
- Heavy-Duty CR pump (CPN5S2, CAT, Cummins etc.)



## SPECIALISTS

CRDi

EUI/EUP

HEUi

**CRP**

ENGINE

GD<sub>i</sub>

EFi

**GD<sub>i</sub> Pumps**

## Setting the Standard for Diesel & Gasoline High Pressure Pumps Test Benches

Our expertise, experience & innovative thinking brought together a New Design, Advanced Hardware & Upgraded Software for our New **PTBR-X**



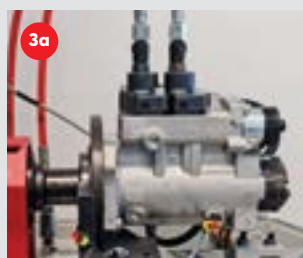
## 1 Gasoline GDI Pump Testing

The New PTBR-X is the first machine in the world to fully test and diagnose faulty GDI (Gasoline Direct Injection) Pumps. Adaptability and operation for All Types and Makes.



## 2 Low Supply Pressure/Suction Performance

Measures the inlet pressure made by the supply pump or the vacuum produced by the pump itself. Important diagnostic information for many types of pumps and even for newest EU6 generation pumps [CRp-iP3 KIT]



## 3 Diesel CR pump testing

A well proven pump coupling apparatus provides the flexibility needed for future upgrades, as well as the quick coupling and versatility for today's All-Makes CR pumps. Capable to test all EU6 Common Rail pumps with sync control valve function.

**3a: CPN5S2** and other **Heavy-Duty** CR Pump applications require high Power, high Torque and responsive correction of the machine's power transfer through the transmission and flywheel. The New **PTBR-X** is specifically designed to efficiently test these systems.

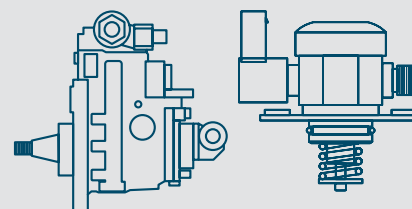
### 3b / 3c: EU6 Generation Common Rail Pump testing:

- Denso HP5S/D, HP6, HP7,
- Bosch CP4 new Euro6,
- Continental /VDO new Euro6
- and every other Euro 6 CR Pumps that operate by timing correctly the discharge quantity control valve(s).

The New **PTBR-X** advanced electronics and modern technology provides this unique testing capability for today's and next generation CR

## Features

- Xtremely Fast Testing Times without any Compromise
- New Design for every Service Station
- Optimized Working Area to reduce Pump Set-up Times
- 2800Bar Operating Pressure
- EU6 Systems Testing CloudX



*\*New database and Coding is continously being updated to new EU6 applications*



|                                |  |  |
|--------------------------------|--|--|
|                                | Part Number                                      | PTBRX-A [CZ-008715]<br>PTBRX-W [CZ-008785] |
|                                | Cooling Type                                     | [A / W]                                    |
|                                | Standalone                                       | ●  |
|                                | Add-On   | -  |
| TYPE                           | Test Bench                                       | ●  |
|                                | Simulator / Controller                           | -  |
|                                | Service / Diagnostic Unit                        | -  |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●  |
|                                | Workshop / Garage                                | -  |
|                                | Test Slots [injectors / Pumps]                   | [- / 1]                                    |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | -  |
|                                | GD i Injectors [ 1 / 4 ]                         | -  |
|                                | CR Pumps [ 1 ]                                   | ● / [6]                                    |
|                                | GD i Pumps [ 1 ]                                 | ○ / [6]                                    |
|                                | EUI / EUP / Smart EUP [ 1 ]                      | -  |
|                                | HEUI [ 1 / 4 ]                                   | -  |
|                                | Gasoline Injectors [ 1 / 4 ]                     | -  |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | -  |
|                                | Gasoline /Other Engines                          | -  |
|                                | Diesel Engines                                   | -  |
|                                | Gasoline/Diesel Fuel Systems                     | -  |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●  |
|                                | Motorcycles                                      | -  |
|                                | Racing (Gasoline)                                | □  |
|                                | Light Duty                                       | ●  |
|                                | Medium Duty                                      | □  |
|                                | Heavy Duty / Industrial                          | □  |
|                                | Marine   | □  |
| FEATURES                       | EV (Electric Vehicles)                           | -  |
|                                | CloudX - (Page 06)                               | -  |
|                                | Coding Capability for Passenger Car / Light Duty | -  |
|                                | Coding Capability for Medium/Heavy Duty          | -  |
|                                | Authorized Solutions                             | -  |
| MEASUREMENT<br>SENSORS         | XKM  | -  |
|                                | BK   | -  |
|                                | DFM500   | 1  |
|                                | DFM50  | 1  |
|                                | Volumetric Tubes                                 | -  |
| SYSTEM PRESSURE                | Max (BAR)  | 2800                                       |
|                                | Source   | MOTOR                                      |
|                                | Source Power (HP)                                | 18   |
| CHARACTERISTICS                | Response Sensor                                  | -  |
|                                | Response Sensor HD                               | -  |
|                                | Pressurized Return Hoses / PIRV's                | -  |
|                                | Exclusive Return Hoses Kit                       | -  |
|                                | Spray Chamber                                    | -  |
|                                | Heavy Duty Injector Adapters & Fittings          | -  |
|                                | Heavy Duty Pump Adapters & Fittings              | □  |
|                                | Exclusive Electrical Connectors                  | ○  |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | -  |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | ●  |
|                                | Air-Supply (Bar / L/min)                         | -  |
|                                | Water Cooling (requires connection)              | -  |
|                                | Air Cooling                                      | ●  |
|                                | Tank Capacity [testing / flushing]               | [45 / 15]                                  |
|                                | HMI (Inches)                                     | 15   |
|                                | Touchscreen                                      | ●  |
|                                | Flushing / MACC                                  | □ / -                                      |
|                                | Protective Cover                                 | ●  |
|                                | Calibration Oils                                 | ○  |
|                                | Ultrasonic Bath                                  | ○  |
| PACKAGING                      | Width (mm)                                       | 1160                                       |
|                                | Depth (mm)                                       | 1530                                       |
|                                | Height (mm)                                      | 1790                                       |
|                                | Weight (kg)                                      | 717  |

**MEASUREMENT SENSORS**  
XKM (Dynamic Meas. Sensor): High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
Measur. Range: 1-1000ml/min  
DFM 500 (Dynamic Measurement Sensor): Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500l/min  
DFM 50 (Dynamic Measurement Sensor): Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 0.5-50l/min  
Volumetric Tubes (Static Analog Measurement): Accuracy: 1ml | Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm3/H  
Light Duty: Volumes up to 300mm3/H  
Medium Duty: Volumes up to 300mm3/H  
Heavy Duty: Volumes up to 650mm3/H  
Marines: Volumes up to 1500mm3/H

EXPLANATIONS

- : Capable / Standard Equipped
- : Capable / Optionals required
- : Optional
- : N/A
- A: Air Cooling
- W: Water Cooling

PRESSURE SOURCES

Air: Air Driven High Pressure Pump  
Water: Motor Driven High Pressure CR Pump  
Electrical: Pressure coming from another test Bench or external source  
Electrical Pump: Pressure coming from another test Bench or external source  
Electrical Pump 12V/DC  
--: No Pressure Source

# ITB4R //X

Diesel System Test Bench

## The Optimum Diesel Specialists CRDi Solution

The Professional's Service Station  
for All Types and Makes CRDI systems.

**2800 Bar**

**Standalone Diesel  
CRDi Test Benches  
for Specialists.  
Available in 2 models  
for 4 / 1 injectors**



ITB.4R-X

**Authorized Solution  
for Continental/VDO**



*\*New database and Coding is continuously being updated to new EU6 applications*

## SPECIALISTS

CRDi

EUI/EUP

HEUI

CRP

ENGINE

GDi

EFI

GDi Pumps

## Overview of the New ITB.4R-X

Precise, repeatable and rapid Diesel Injectors Testing

### [1 / 4] Injector(s) Testing & Coding\*

- 6-12 minutes testing and coding\* time for 1 or 4 injectors respectively
- CRi / CRiN injectors (All Brands and Types).
- Capable for all EU6 technologies such as VCC and NCC technology, iART, PCRS5,
- XPI, F2E, F2P, F2R Injectors pumps and more...
- CRIN 4.2 Heavy Commercial-Vehicle injectors
- Large Diesel Engine CRiN injector (QSK, MTU, L 'Orange, etc...)

**CGL - Authorized Continental / VDO "Blind-Lift"**  
Measurement of Piezo-Stack



ITB.1R-X

## CloudX™

Powerful innovations at your fingertips with Carbon Zapp CloudX computing Platform. Take complete control over your service benches with cloud-based Apps, business intelligence (BI) services and database management systems over a secure Internet connection.

**Details on page 06**

## A Revolution in CRDi Test Benches

Our qualified team, know-how and pioneering thinking developed the New Powerful ITBR-X Generation



*\*New database and Coding is continuously being updated to new EU6 applications*



# ITB4R //X

## Diesel System Test Bench



### SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFi

GDi Pumps

#### 1 Working Area

Ergonomic & easily accessible illuminated working space. Fast mounting for all types of Injectors.

#### 2 Easily Accessible Filters & Waste Area

Quick access to all inline filters for fast check-up and replacement located within your working area. A mess-free compartment to work at, continuously draining to the waste tank.

#### 3 Machine Interface

New CloudX based AZOV3 software features speed, connectivity and expandability in a user friendly environment.

#### 4 Easily accessible drawer and connection ports.

#### 5 Functional use of test oil tank enhances maintenance.

Tank extends to fill-up, drain and clean.



## AZO SOFTWARE



**CRIN 4.2**



**F2E**



**F2P**



**F2E-EUI**

## EU6 Technologies

### Features

A Continental/VDO Authorized Test Bench

Xtremely Fast Testing Times without any Compromise

New Design for every Service Station

Optimized Working Area to reduce Injector Set-up Times

2800Bar Operating Pressure

EU6 Systems Testing and Coding CloudX Capabilities

Coding capability for all brands and

types available in the market today. Bosch, Denso, Delphi, Continental /VDO, CAT, Cum- mins\*, John Deere, ISUZU\*, HINO\*, KOMATSU\*, F2 Smart EUI/ EUP EU6 Technology\*, F2P/ F2E/ E1/ E3/ DAF/ Smart Pump technologies and more added every day...

Off-Highways CR applications testing and coding (John Deere, Komatsu, Hino, Isuzu)

Cummins XPI\*, Caterpillar-Perkins C4/C6 and other Medium and Heavy-Duty testing and coding

Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.

Fully Adjustable height for all types of CR injectors.

Utilizes a spring-loaded injector holder to ease the operation of the user.

Easily accessible filters and waste area

Quick access to all inline filters for fast check-up and replacement located within your working area. A mess-free compartment to work at, continuously draining to the waste tank.

Advanced water-cooling or air-cooling system to optimize long term nonstop operation at all environmental conditions.

Live Response Time Measurement for all injectors

BIP Actuation Measurement for all Heavy-Duty type solenoids



Adaptability for every type of Diesel Injectors in the market

Continuous Database updates and new Software capabilities to meet the market needs.

Android Powered 15.6" HMI with unlimited flexibility and connectivity competencies.

Injector flushing feature pre-installed (optional kit available)

*\*New database and Coding is continously being updated to new EU6 applications*

|                                |  | ITB4R-X   | ITB1R-X   | CRDi  |
|--------------------------------|--|---|---|---|
|                                |  | ITB.4RX-A [CZ-008721]<br>ITB.4RX-W [CZ-008771]                                      | ITB.1RX-A [CZ-008719]<br>ITB.1RX-W [CZ-008799]  | EUI/EUP   |
|                                |  | [A / W]   | [A / W]   | HEUi  |
|                                |  | ●   | ●   | CRP   |
|                                |  | -   | -   | ENGINE  |
| TYPE                           | Test Bench                                       | ●   | ●   | GDi   |
|                                | Simulator / Controller                           | -   | -   |   |
|                                | Service / Diagnostic Unit                        | -   | -   |   |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●   | ●   | EFI   |
|                                | Workshop / Garage                                | -   | -   |   |
|                                | Test Slots [injectors / Pumps]                   | [4 / -]   | [1 / -]   |   |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | ● / [-/9]   | ● / [-/6]   | GDi Pumps   |
|                                | GDi Injectors [ 1 / 4 ]                          | -   | -   |   |
|                                | CR Pumps [ 1 ]                                   | -   | -   |   |
|                                | GDi Pumps [ 1 ]                                  | -   | -   |   |
|                                | EUI / EUP / Smart EUP [ 1 ]                      | -   | -   |   |
|                                | HEUI [ 1 / 4 ]                                   | -   | -   |   |
|                                | Gasoline Injectors [ 1 / 4 ]                     | -   | -   |   |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | -   | -   |   |
|                                | Gasoline /Other Engines                          | -   | -   |   |
|                                | Diesel Engines                                   | -   | -   |   |
|                                | Gasoline/Diesel Fuel Systems                     | -   | -   |   |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●   | ●   | MEASUREMENT SENSORS<br>XKM [Dynamic Meas. Sensor]: High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,<br>KRM [Dynamic Meas. Sensor]: High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,<br>DFM 500 [Dynamic Meas. Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500lt/min<br>DFM 50 [Dynamic Meas. Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 0.5-50lt/min<br>Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml, Measurement range: 0.5-65ml |
|                                | Motorcycles                                      | -   | -   |   |
|                                | Racing (Gasoline)                                | -   | -   |   |
|                                | Light Duty                                       | ●   | ●   |   |
|                                | Medium Duty                                      | □   | □   |   |
|                                | Heavy Duty / Industrial                          | □   | □   |   |
|                                | Marine   | □   | □   |   |
|                                | EV (Electric Vehicles)                           | -   | -   |   |
| FEATURES                       | CloudX - (Page 06)                               | □   | □   | APPLICATIONS<br>Passenger Car/ Motorcycles: Volumes up to 120mm3/H<br>Light Duty: Volumes up to 200mm3/H<br>Medium Duty: Volumes up to 300mm3/H<br>Heavy Duty: Volumes up to 650mm3/H<br>Marines: Volumes up to 1500mm3/H   |
|                                | Coding Capability for Passenger Car / Light Duty | □   | □   |   |
|                                | Coding Capability for Medium/Heavy Duty          | □   | □   |   |
| Authorized Solutions           |  |  |  | EXPLANATIONS<br>● : Capable / Standard Equipped<br>□ : Capable / Optionals required<br>○ : Optional<br>- : N/A<br>-A: Air Cooling<br>-W: Water Cooling  |
| MEASUREMENT SENSORS            | XKM  | 4   | 2   |   |
|                                | BK   | -   | -   |   |
|                                | DFM500   | -   | -   |   |
|                                | DFM50  | -   | -   |   |
|                                | Volumetric Tubes                                 | -   | -   |   |
| SYSTEM PRESSURE                | Max (BAR)  | 2800  | 2800  | PRESSURE SOURCES<br>Air: Air Driven High Pressure Pump<br>Motor: Motor Driven High Pressure CR Pump<br>External: Pressure coming from another Test Bench or external source<br>Electr Pump: Fuel Injection system or Industrial Application<br>Electrical Pump 12VDC<br>-: No Pressure Source   |
|                                | Source   | MOTOR   | MOTOR   |   |
|                                | Source Power (HP)                                | 4.8   | 4.8   |   |
| CHARACTERISTICS                | Response Sensor                                  | □   | □   |   |
|                                | Response Sensor HD                               | □   | □   |   |
|                                | Pressurized Return Hoses / PIRV's                | ○   | ○   |   |
|                                | Exclusive Return Hoses Kit                       | ●   | ●   |   |
|                                | Spray Chamber                                    | ○   | ○   |   |
|                                | Heavy Duty Injector Adapters & Fittings          | □   | □   |   |
|                                | Heavy Duty Pump Adapters & Fittings              | -   | -   |   |
|                                | Exclusive Electrical Connectors                  | ○   | ○   |   |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | -   | ●   |   |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | ●   | -   |   |
|                                | Air-Supply (Bar / L/min)                         | -   | -   |   |
|                                | Water Cooling (requires connection)              | ●   | -   |   |
|                                | Air Cooling                                      | -   | ●   |   |
|                                | Tank Capacity [testing / flushing]               | [30 / -]  | [30 / -]  |   |
|                                | HMI (Inches)                                     | 15  | 15  |   |
|                                | Touchscreen                                      | ●   | ●   |   |
|                                | Flushing / MACC                                  | □/ -  | □/ -  |   |
|                                | Protective Cover                                 | ●   | ●   |   |
|                                | Calibration Oils                                 | ○   | ○   |   |
|                                | Ultrasonic Bath                                  | ○   | ○   |   |
| PACKAGING                      | Width (mm)                                       | 920   | 920   |   |
|                                | Depth (mm)                                       | 1160  | 1160  |   |
|                                | Height (mm)                                      | 1870  | 1870  |   |
|                                | Weight (kg)                                      | 380   | 337   |   |

## **CRU2R //X**

**Diesel System Test Bench**

### **The Affordable Diesel Specialists CRDi Solution**

Service Station for All Makes Passenger Car, Light  
and Medium Duty CRDi systems.

**2500 Bar**

**Standalone Air-Driven  
Test Bench for 1 Diesel  
CRDi Injector.**

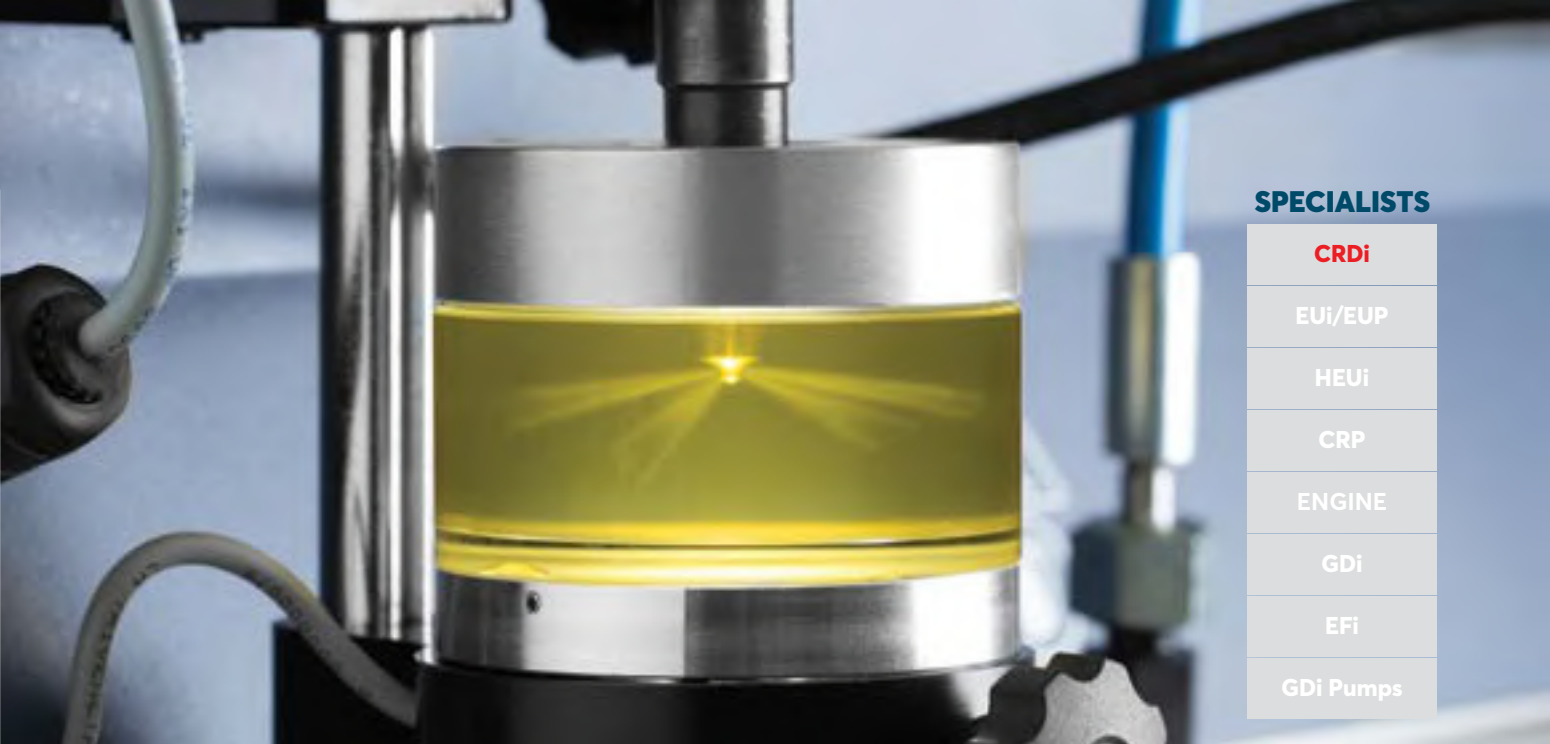


**Authorized Solution  
for Continental/VDO**



*\*New database and Coding is continuously being updated to new EU6 applications*





## SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFi

GDi Pumps

## Overview of the CRU2.R-X

Precise, repeatable and rapid Diesel Injectors Testing

### [1] Injector Testing & Coding\*

- 6-12 minutes testing and coding\* time per injector
- CRi / CRiN injectors (All Brands and Types).
- Capable for all EU6 technologies such as VCC and NCC technology, iART, PCRS5, XPI and more...

**CGL - Authorized Continental / VDO "Blind-Lift"**  
**Measurement of Piezo-Stack**



**CloudX™**

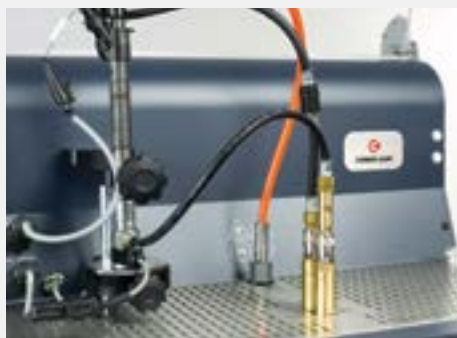
Details on page 06

## CRDi Test Bench for Diesel Specialists & Workshops

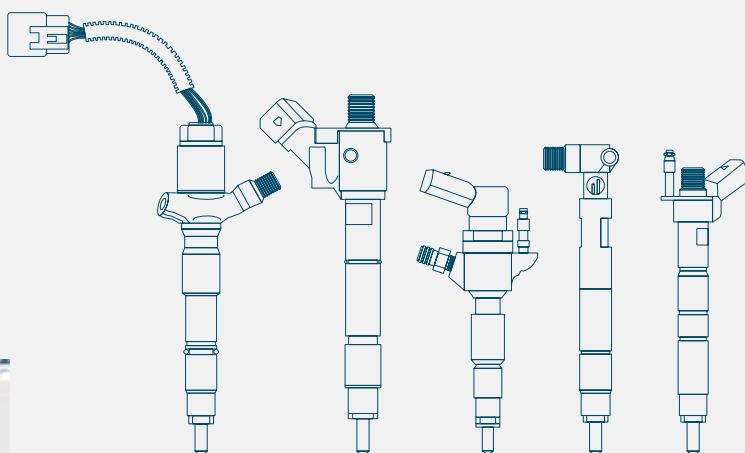
AZO SOFTWARE



TESTING WITH ILLUMINATED  
SPRAY CHAMBER.



TESTING WITH RESPONSE MEASUREMENT  
CHAMBER FOR CODING.



## Passenger & Light Duty Systems

### Features

- A Continental/VDO Authorized Test Bench
- Xtremely Fast Testing Times without any Compromise
- Modern Design for every Service Station
- Optimized Working Area to reduce Injector Set-up Times
- 2500Bar Operating Pressure
- EU6 Systems Testing and Coding

### CloudX Capabilities


- Coding capability for all brands and types available in the market today. Bosch, Denso, Delphi, Continental / VDO, CAT
- Off-Highways CR applications testing and coding\* (John Deere, Komatsu, Hino, Isuzu)
- Cummins XPI\*, Caterpillar-Perkins C4/C6 and other Medium-Duty testing and coding

### Diesel CRDI testing and coding

- Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.
- Fully Adjustable height for all types of CR injectors.
- Utilizes a spring-loaded injector holder to ease the operation of the user.
- Advanced self air-cooling system to optimize long term nonstop operation at all environmental conditions.
- Live Response Time Measurement for all injectors
- BIP Actuation Measurement for all Heavy-Duty type solenoids
- Adaptability for every type of Diesel Injectors in the market
- Continuous Database updates and new Software capabilities to meet the market needs.
- Android Powered 10 HMI with unlimited flexibility and connectivity competencies.
- Injector flushing feature pre-installed (optional kit available)

\*New database and Coding is continiously being updated to new EU6 applications

## Technical Data

|                                |  |  |
|--------------------------------|--|--|
|                                | Part Number                                      | (CZ-008728)  |
|                                | Standalone                                       | ●  |
|                                | Add-On   | -  |
| TYPE                           | Test Bench                                       | ●  |
|                                | Simulator / Controller                           | -  |
|                                | Service / Diagnostic Unit                        | -  |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●  |
|                                | Workshop / Garage                                | ●  |
|                                | Test Slots [injectors / Pumps]                   | [1 / -]  |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | ● / [8]  |
|                                | GDi Injectors [ 1 / 4 ]                          | -  |
|                                | Gasoline Injectors [ 1 / 4 ]                     | -  |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | -  |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●  |
|                                | Motorcycles                                      | -  |
|                                | Racing (Gasoline)                                | -  |
|                                | Light Duty                                       | ●  |
|                                | Medium Duty                                      | □  |
|                                | Heavy Duty / Industrial                          | -  |
|                                | Marine   | -  |
| FEATURES                       | CloudX - (Page 06)                               | □  |
|                                | Coding Capability for Passenger Car / Light Duty | □  |
|                                | Coding Capability for Medium/Heavy Duty          | -  |
|                                | Authorized Solutions                             |  |
| MEASUREMENT<br>SENSORS         | XKM  | -  |
|                                | BK   | 1  |
|                                | Volumetric Tubes                                 | -  |
| SYSTEM PRESSURE                | Max (BAR)  | 2500   |
|                                | Source   | AIR  |
| CHARACTERISTICS                | Response Sensor                                  | □  |
|                                | Response Sensor HD                               | -  |
|                                | Pressurized Return Hoses / PIRV's                | ○  |
|                                | Exclusive Return Hoses Kit                       | ●  |
|                                | Spray Chamber                                    | ○  |
|                                | Heavy Duty Injector Adapters & Fittings          | -  |
|                                | Heavy Duty Pump Adapters & Fittings              | -  |
|                                | Exclusive Electrical Connectors                  | ○  |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●  |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -  |
|                                | Air-Supply (Bar / L/min)                         | -  |
|                                | Water Cooling (requires connection)              | 6.5 / 350  |
|                                | Air Cooling                                      | ●  |
|                                | Tank Capacity [testing / flushing]               | [4 / -]  |
|                                | HMI (Inches)                                     | 10   |
|                                | Touchscreen                                      | ●  |
|                                | Flushing / MACC                                  | -  |
|                                | Protective Cover                                 | ●  |
|                                | Calibration Oils                                 | ○  |
|                                | Ultrasonic Bath                                  | ○  |
| PACKAGING                      | Width (mm)                                       | 660  |
|                                | Depth (mm)                                       | 770  |
|                                | Height (mm)                                      | 800  |
|                                | Weight (kg)                                      | 63   |

### EXPLANATIONS

- : Capable / Standard Equipped
- : Capable / Optionals required
- : Optional
- : N/A

-A: Air Cooling  
-W: Water Cooling

### PRESSURE SOURCES

Air: Air Driven High Pressure Pump  
Water: Water Driven High Pressure CR Pump  
Electr: Electric Driven High Pressure CR Pump  
Electr Pump: Fuel Injection system or Industrial Application  
Electrical Pump 12V/DC  
--: No Pressure Source

### MEASUREMENT SENSORS

XKM (Dynamic Meas. Sensor): High Accuracy: ± 0.1%, Exceptional  
Repeatability ±0.05%  
Measur. Range: 1-1000ml/min  
Volumetric Tubes (Static Analog Measurement): Accuracy: 1ml | Measure-  
ment range: 0.5-65ml

### APPLICATIONS

Passenger Car/ Motorcycles: Volumes up to 120mm3/H  
Light Duty: Volumes up to 300mm3/H  
Medium Duty: Volumes up to 300mm3/H  
Heavy Duty: Volumes up to 650mm3/H  
Marines: Volumes up to 1500mm3/H

## SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps

# DGFR

## Diesel System Test Bench

### Diesel CRDi & Gasoline GDi Flushing Bench

Flushing / Cleaning and Servicing bench for up to 4 injectors.

#### Features

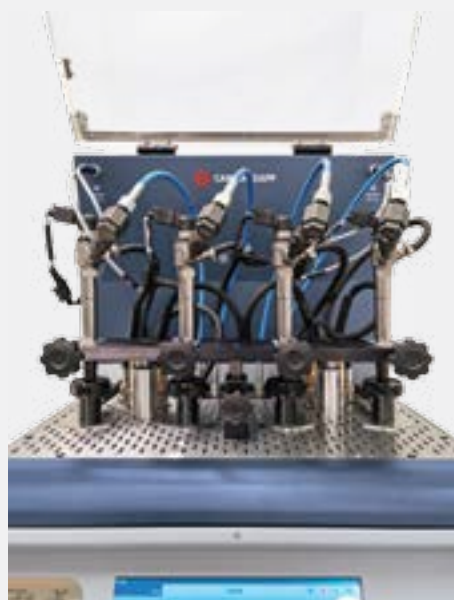
##### A Continental/VDO Proposed Flushing Bench

- Xtremely Fast Flushing Times
- New Design for every Service Station
- Optimized Working Area to reduce Injector Set-up Times
- 1000Bar Operating Pressure
- EU6 Systems Capable
- CloudX Capabilities
- Off-Highways CR applications operation (John Deere, Komatsu, Hino, Isuzu)
- Cummins XPI, Caterpillar-Perkins C4/C6 and other Medium-Duty operation

#### Diesel CRDi / Gasoline GDi Injector Flushing Bench

- Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.
- Fully Adjustable height for all types of CRDi / GDi injectors.
- Utilizes a spring-loaded injector holder to ease the operation of the user.
- Advanced self air-cooling system to optimize long term nonstop operation at all environmental conditions.
- Adaptability for every type of Diesel Injectors in the market
- Android Powered 10" HMI with unlimited flexibility and connectivity competencies.

**Authorized Solution  
for Continental/VDO**



*\*New database is continuously being updated to new EU6 applications*





# SPAR

## Diesel System Test Bench

CZ Piezo Stack Filler, Air remover and Stack Activator is the only automatic solution to assure optimum servicing and operation of Piezo injectors today after being serviced by Diesel Specialists.

Automatic and easy operation for 4 Piezo injectors at once

Connects directly at the return port (backleak)

Only needs single phase 100-250Vac

Lightweight and portable solution

Connects to any Carbon Zapp Test Bench for use of appropriate Test Plans

High Flow Vacuum Power 10KPa and Pressure of 100KPa

Automatic Start / Stop function

Adaptability to all types of Piezo injectors

### SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps

## DGFR //X

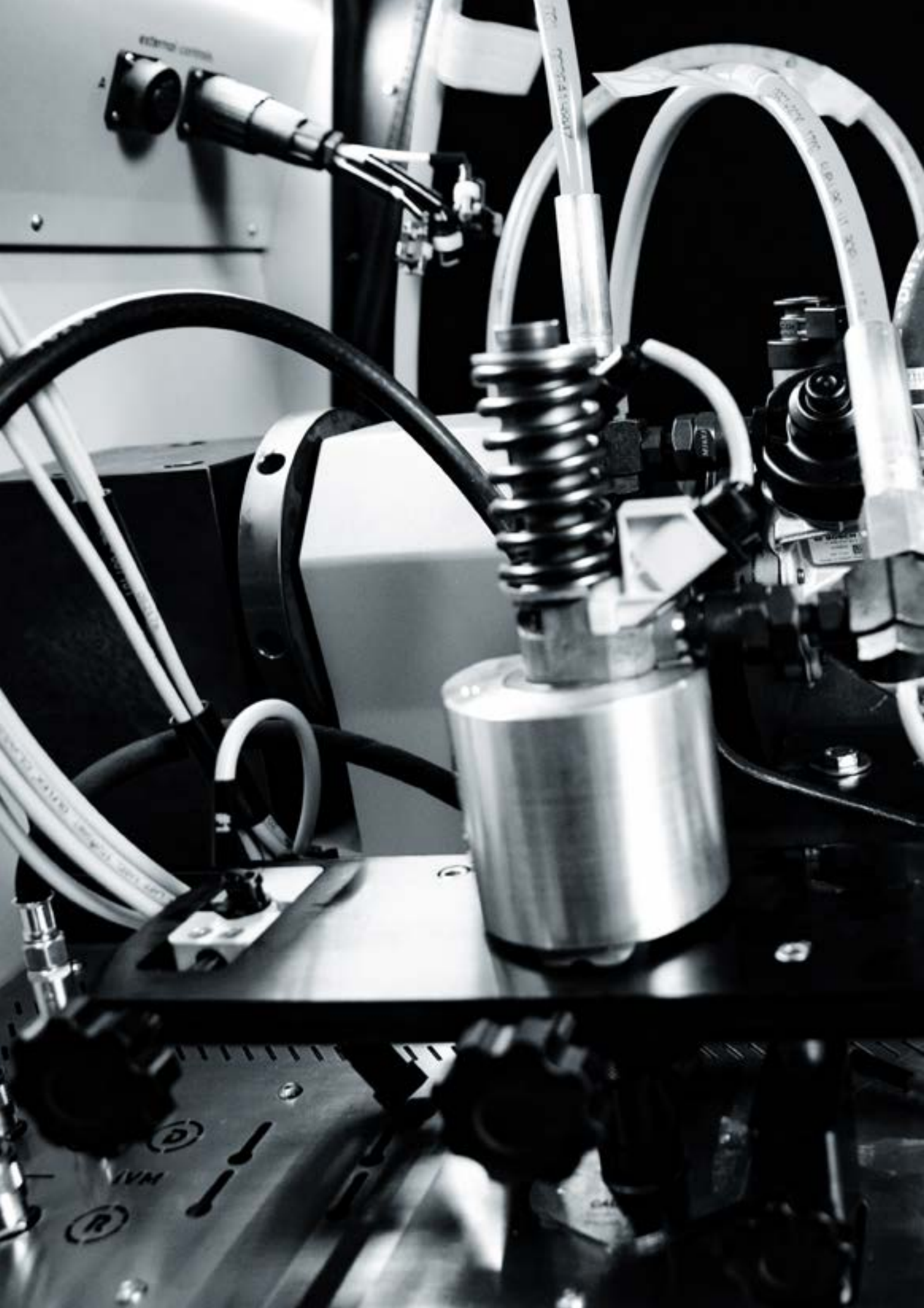
### Technical Data

|                                | Part Number                                | (CZ-008747) |  |
|--------------------------------|--|-------------|--|
|                                | Standalone                                 | ●           |  |
|                                | Add-On                                     | -           |  |
| TYPE                           | Test Bench                                 | ●           |  |
|                                | Service / Diagnostic Unit                  | -           |  |
| USER LEVEL                     | Diesel / Gasoline Specialists              | ●           |  |
|                                | Workshop / Garage                          | ○           |  |
|                                | Test Slots [injectors / Pumps]             | [4 / -]     |  |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]           | ●           |  |
|                                | GDi Injectors [ 1 / 4 ]                    | ●           |  |
|                                | CR Pumps [ 1 ]                             | -           |  |
|                                | GDi Pumps [ 1 ]                            | -           |  |
|                                | EUI / EUP / Smart EUP [ 1 ]                | -           |  |
|                                | HEUi [ 1 / 4 ]                             | -           |  |
|                                | Gasoline Injectors [ 1 / 4 ]               | -           |  |
|                                | LPG / CNG Injectors [ 1 / 4 ]              | -           |  |
|                                | Gasoline/Diesel Fuel Systems               | -           |  |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                 | ●           |  |
|                                | Motorcycles                                | -           |  |
|                                | Racing (Gasoline)                          | -           |  |
|                                | Light Duty                                 | ●           |  |
|                                | Medium Duty                                | -           |  |
|                                | Heavy Duty / Industrial                    | -           |  |
|                                | Marine                                     | -           |  |
| SYSTEM PRESSURE                | Max (BAR)                                  | 1000        |  |
|                                | Source                                     | AIR         |  |
|                                | Source Power (HP)                          | -           |  |
| CHARACTERISTICS                | Response Sensor                            | -           |  |
|                                | Response Sensor HD                         | -           |  |
|                                | Pressurized Return Hoses / PIRV's          | -           |  |
|                                | Exclusive Return Hoses Kit                 | □           |  |
|                                | Spray Chamber                              | -           |  |
|                                | Heavy Duty Injector Adapters & Fittings    | □           |  |
|                                | Heavy Duty Pump Adapters & Fittings        | -           |  |
|                                | Exclusive Electrical Connectors            | □           |  |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC    | ●           |  |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC | -           |  |
|                                | Air-Supply (Bar / L/min)                   | ●           |  |
|                                | Water Cooling (requires connection)        | -           |  |
|                                | Air Cooling                                | ●           |  |
|                                | Tank Capacity [testing / flushing]         | [4 / -]     |  |
|                                | HMI (Inches)                               | 10          |  |
|                                | Touchscreen                                | ●           |  |
|                                | Flushing / MACC                            | ●           |  |
|                                | Protective Cover                           | ●           |  |
|                                | Calibration Oils                           | ○           |  |
|                                | Ultrasonic Bath                            | ○           |  |
| PACKAGING                      | Width (mm)                                 | 660         |  |
|                                | Depth (mm)                                 | 770         |  |
|                                | Height (mm)                                | 800         |  |
|                                | Weight (kg)                                | 63          |  |

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm<sup>3</sup>/H  
Light Duty: Volumes up to 200mm<sup>3</sup>/H  
Medium Duty: Volumes up to 300mm<sup>3</sup>/H  
Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
Marines: Volumes up to 1500mm<sup>3</sup>/H

**PRESSURE SOURCES**  
Air: Air Driven High Pressure Pump  
Motor: Motor Driven High Pressure CR Pump  
External: Pressure coming from another Test Bench or external source  
Electr Pump: Fuel Injection system or Industrial Application  
Electrical Pump 12VDC  
---: No Pressure Source

**EXPLANATIONS**  
● : Capable / Standard Equipped  
□ : Capable / Optionals required  
○ : Optional  
- : N/A





**We always strive  
for Excellence  
and Innovation**

# ETBR //X

## Injector & Pump Control Bench Extension Module

### The Revolutionary Simulator that provides the unique capability to Modernize every Test Bench out in the Market and test all Makes and Types of Fuel Systems

The Optimized Test Bench Simulator for every Fuel System.

#### Overview to the New ETBRX

##### Precise and repeatable Diesel & Gasoline Components Testing

###### [1] Pump Testing

###### 5-15 minutes testing time per pump

CRp / GDp Pump (All Brands and Types).

Capable for all EU6 technologies with Sync Operation such as Denso HP5, Bosch CP4-EU6, VDO-EU6 technology and more...

Heavy-Duty CR pump (CPN5S2, CAT, Cummins etc.)

###### [4] Injectors Testing & Coding\*

###### 6-12 minutes testing and coding\* time per injector

CRi / CRiN / GDi injectors (All Brands and Types).

Capable for all EU6 technologies such as VCC and NCC technology, iART, PCRS5,

XPI, F2E, F2P, F2R Injectors pumps and more...

CRIN 4.2 Heavy Commercial-Vehicle injectors (max. 2 Large Diesel Engine CRiN injector (QSK, MTU, L 'Orange, etc..)

###### [1] HEUi Testing & Coding\*

###### 6-8 minutes testing and coding\* time per injector

Dynamic and static measurement of the actual overflow

Dual-Coil HEUi Injector testing capable

###### [1] EUi/EUp Testing & Coding\* (requires HK1400A Cambox)

###### 6-10 minutes testing and coding\* time per injector

Capable for all EU6 technologies

Expandable to Future Systems



*\*New database and Coding is continuously being updated to new EU6 applications*



**CRDi - GDp - CRp  
- GDp - EUi - EUp  
and HEUi systems.**

## CloudX™

Powerful innovations at your fingertips with Carbon Zapp CloudX computing Platform. Take complete control over your service benches with cloud-based Apps, business intelligence (BI) services and database management systems over a secure Internet connection.

**Details on page 06**

### SPECIALISTS

**CRDi**

**EUi/EUP**

**HEUi**

**CRP**

**ENGINE**

**GDp**

**EFI**

**GDp Pumps**

Conventional Test Bench  
(EPS625 or similar)



**BCR.1**



**BCR.4**



**ETBR-X**

Injector holder (1 / 4) injectors, with Common-Rail, Pressure Control and protective hood, ready to mount on a conventional bench

*Detailed information on next page*

# ETBr //X

## Injector & Pump Control Bench Extension Module

Expandable and Fully Configurable Modular Unit for Every Diesel and Gasoline Specialist.

Electrical and Hydraulic connectors, fittings and adapters are available for all Systems in the Market.

2



1



1



5

4

\*New database and Coding is continuously being updated to new EU6 applications



- 1 • 0, 1 or 4 Injectors Measuring Ports  
• Actuate 1-4 Injectors / Components  
• Measure Response time for 1-4 injectors
- 2 • External Control of any Test Bench.  
• Connect With Cambox for Operation.
- 3 • Measure up to 1 Pump  
• Post Measurement Oils return back to Test Bench Tank.
- 4 HMI - 10" Touchscreen with CloudX Based AZO.V3 Software.
- 5 WiFi, USB and Ethernet Connectivity
- 6 Emergency STOP
- 7 Drain Pan with Waste Port

## SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFi

GDi Pumps



Build your **ETBR-X** according to your Testing Needs now and Upgrade it Anytime in the Future on your own.

AZO SOFTWARE



**The unique, compact & Universal solution for every Test Bench in the market to operate with the latest technology Diesel and Gasoline Systems.**

## Features

- Control Unit for Every Test Bench in the Market
- Compact Size Attachment for Every Laboratory
- Expandable and Modular Apparatus
- Pressure Control up to 2800 bar
- Up to EU6 System Technologies Capable
- Semi-Automatic Operation of Cambox
- Operating, Measuring & Coding of All Types & Makes
- IoT Cloud computing Platform - Industry 4.0 Complaint
- The Diesel Specialists Affordable Choice

## Characteristics

- Xtremely Fast Testing Times without any Compromise
- New Design for every Service Station
- Optimized Working Area
- EU6 Systems Testing and Coding\*
- CloudX Capabilities
- Coding capability for all brands and types available in the market today. Bosch, Denso, Delphi, CAT, Cummins\*, John Deere, ISUZU\*, HINO\*,KOMATSU\*, E1/ E3/ DAF/ Smart Pump, F2E/ F2P/ F2R\* technologies and more added every day...
- Off-Highways CR applications testing and coding (John Deere, Komatsu, Hino, Isuzu)
- Cummins XPI\*, Caterpillar-Perkins C4/C6 and other Medium and Heavy-Duty testing and coding
- Live Response Time Measurement at every test plan
- BIP Actuation Measurement for all Heavy-Duty type solenoids (EUI & CR)
- Adaptability for every type of Diesel and Gasoline Injectors in the market (optional)
- Continuous Database updates and new Software capabilities to meet the market needs.
- Android Powered 10" HMI with unlimited flexibility and connectivity competencies.

*\*New database and Coding is continiously being updated to new EU6 applications*

|                                |  |             |
|--------------------------------|--|-------------|
|                                | Part Number                                      | (CZ-008297) |
|                                | Standalone                                       | -           |
|                                | Add-On   | ●           |
| TYPE                           | Test Bench                                       | -           |
|                                | Simulator / Controller                           | ●           |
|                                | Service / Diagnostic Unit                        | -           |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●           |
|                                | Workshop / Garage                                | ○           |
|                                | Test Slots [injectors / Pumps]                   | [4 / 1]     |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | ● / [-/16]  |
|                                | GDi Injectors [ 1 / 4 ]                          | -           |
|                                | CR Pumps [ 1 ]                                   | ● / [6]     |
|                                | GDi Pumps [ 1 ]                                  | ○ / [6]     |
|                                | EUI / EUP / Smart EUP [ 1 ]                      | □ / [8]     |
|                                | HEUI [ 1 / 4 ]                                   | □ / [-/12]  |
|                                | Gasoline Injectors [ 1 / 4 ]                     | □ / [-/8]   |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | □ / [-/8]   |
|                                | Gasoline /Other Engines                          | -           |
|                                | Diesel Engines                                   | -           |
|                                | Gasoline/Diesel Fuel Systems                     | -           |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●           |
|                                | Motorcycles                                      | □           |
|                                | Racing (Gasoline)                                | □           |
|                                | Light Duty                                       | □           |
|                                | Medium Duty                                      | □           |
|                                | Heavy Duty / Industrial                          | □           |
|                                | Marine   | □           |
|                                | EV (Electric Vehicles)                           | -           |
| FEATURES                       | CloudX - (Page 06)                               | □           |
|                                | Coding Capability for Passenger Car / Light Duty | □           |
|                                | Coding Capability for Medium/Heavy Duty          | □           |
|                                | Authorized Solutions                             | -           |
| MEASUREMENT<br>SENSORS         | XKM  | 1           |
|                                | BK   | -           |
|                                | DFM500   | 1           |
|                                | DFM50  | -           |
|                                | Volumetric Tubes                                 | -           |
| SYSTEM PRESSURE                | Max (BAR)  | 2800        |
|                                | Source   | EXTERNAL    |
|                                | Source Power (HP)                                | -           |
| CHARACTERISTICS                | Response Sensor                                  | □           |
|                                | Response Sensor HD                               | □           |
|                                | Pressurized Return Hoses / PIRV's                | □           |
|                                | Exclusive Return Hoses Kit                       | □           |
|                                | Spray Chamber                                    | □           |
|                                | Heavy Duty Injector Adapters & Fittings          | □           |
|                                | Heavy Duty Pump Adapters & Fittings              | □           |
|                                | Exclusive Electrical Connectors                  | □           |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●           |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -           |
|                                | Air-Supply (Bar / L/min)                         | -           |
|                                | Water Cooling (requires connection)              | -           |
|                                | Air Cooling                                      | ●           |
|                                | Tank Capacity [testing / flushing]               | [- / -]     |
|                                | HMI (Inches)                                     | 10          |
|                                | Touchscreen                                      | ●           |
|                                | Flushing / MACC                                  | -           |
|                                | Protective Cover                                 | -           |
|                                | Calibration Oils                                 | ○           |
|                                | Ultrasonic Bath                                  | ○           |
| PACKAGING                      | Width (mm)                                       | 450/510     |
|                                | Depth (mm)                                       | 460/600     |
|                                | Height (mm)                                      | 1030/570    |
|                                | Weight (kg)                                      | 50/23       |

|  |   |   |
|--|---|---|
| <b>EXPLANATIONS</b><br>● : Capable / Standard Equipped<br>○ : Capable / Optional required<br>□ : Optional<br>- : N/A<br>-A: Air Cooling<br>-W: Water Cooling | <b>MEASUREMENT SENSORS</b><br>XKM [Dynamic Meas. Sensor]; High Accuracy; ± 0.1%; Exceptional Repeatability ±0.05%<br>BK [Dynamic Meas. Sensor]; High Accuracy; ± 0.1%; Exceptional Repeatability ±0.05%<br>DFM 500 [Dynamic Measurement Sensor]; Accuracy: ± 1%; Repeatability 0.5%; Measurement range: 5-500L/min<br>DFM 50 [Dynamic Measurement Sensor]; Accuracy: ± 1%; Repeatability 0.5%; Measurement range: 0.5-50L/min<br>Volumetric Tubes [Static Analog Measurement]; Accuracy: 1ml; Measurement range: 0.5-65ml | <b>APPLICATIONS</b><br>Passenger Car/ Motorcycles: Volumes up to 120mm <sup>3</sup> /H<br>Passenger Car/ Motorcycles: Volumes up to 200mm <sup>3</sup> /H<br>Medium Duty: Volumes up to 300mm <sup>3</sup> /H<br>Heavy Duty: Volumes up to 650mm <sup>3</sup> /H<br>Marines: Volumes up to 1500mm <sup>3</sup> /H |
|  | <b>PRESSURE SOURCES</b><br>Air Driven High Pressure Pump<br>Motor Driven High Pressure CR Pump<br>Electric Pump<br>Electric Pump<br>Electric Pump<br>Electric Pump<br>Electrical Pump 12VDC<br>--: No Pressure Source   |   |



**HTBR //X**

**Diesel System Test Bench**

## **The Optimum Diesel Specialists HEUI Solution**

The Professional's Service Station  
for All Types and Makes HEUI systems.

#carbonzappXseries



The New **HTBR-X** is a unique Standalone Diesel Hydraulic Electronic Unit Injector Test Bench capable to thoroughly Test, Service and Code\* every possible HEUi in the market today

*\*New database and Coding is continuously being updated to new EU6 applications*

## Overview of the New HTBR-X

Precise, repeatable and rapid Diesel HEUI Injectors Testing

### [1] HEUi Testing & Coding\*

- 6-8 minutes testing and coding\* time per injector
- Dynamic and static measurement of the actual overflow
- Dual-Coil HEUi Injector testing capable

**400 Bar**  
**Standalone**  
**Diesel HEUI**  
**(1 Injector)**  
**Test Bench**  
**For Specialists**

**CloudX™**

Details on page 06



## A Revolution in HEUI Test Benches

Our qualified team, know-how  
and pioneering thinking developed  
the New Powerful HTBR-X Generation

### SPECIALISTS

CRDi

EUI/EUP

**HEUi**

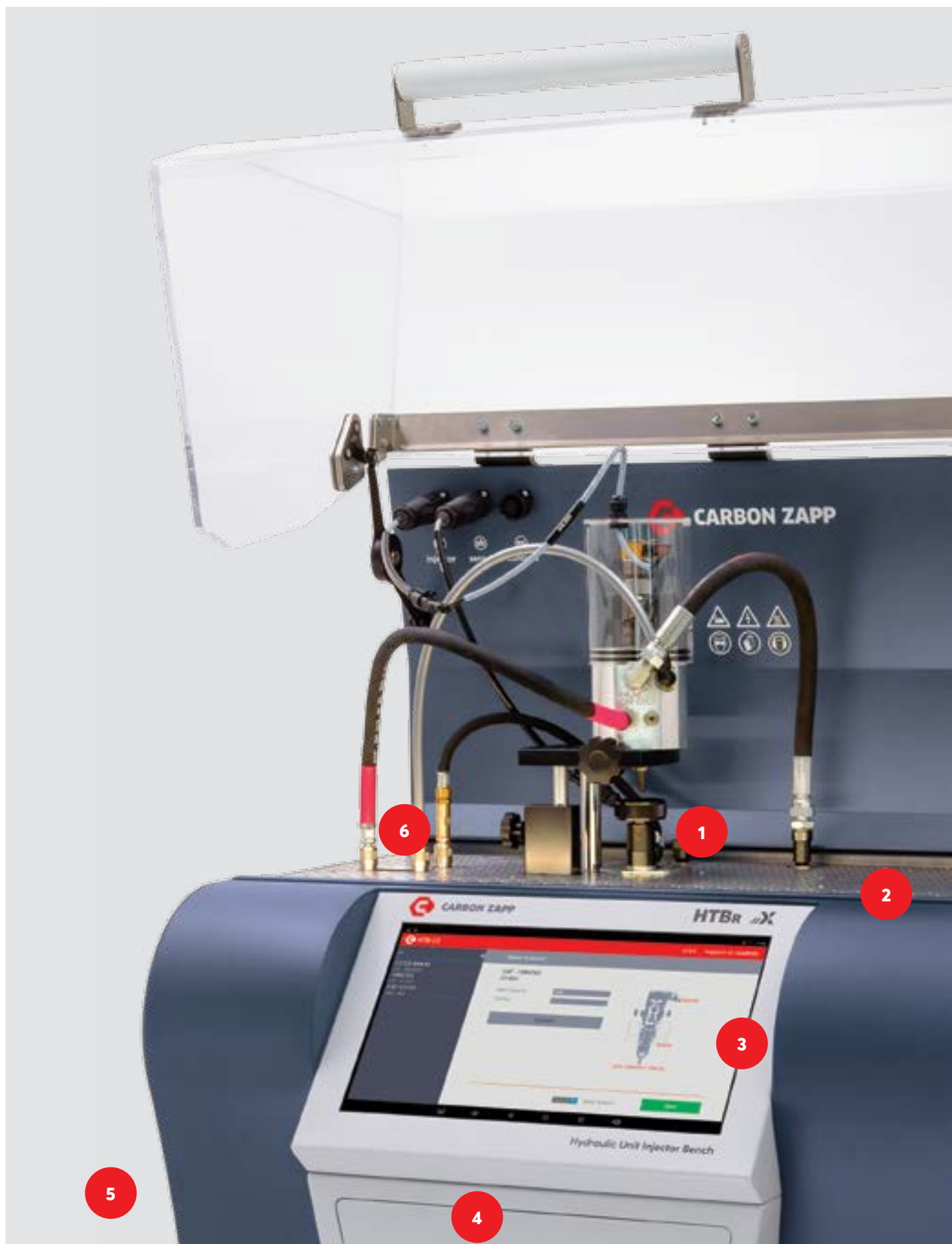
CRP

ENGINE

GDi

EFI

GDi Pumps



*\*New database and Coding is continuously being updated to new EU6 applications*

# SPECIALISTS



## SPECIALISTS

CRDi

EUI/EUP

**HEUi**

CRP

ENGINE

GDi

EFI

GDi Pumps

## HTBR **X**

### Diesel System Test Bench

#### 1 Working Area

Ergonomic & easily accessible illuminated working space. Fast mounting for all types of Injectors.

#### 2 Easily Accessible Filters & Waste Area

Quick access to all inline filters for fast check-up and replacement located within your working area. A mess-free compartment to work at, continuously draining to the waste tank.

#### 3 Machine Interface

New CloudX based AZOV3 software features speed, connectivity and expandability in a user friendly environment.

#### 4 Easily accessible drawer and connection ports.

#### 5 Functional use of test oil tank enhances maintenance.

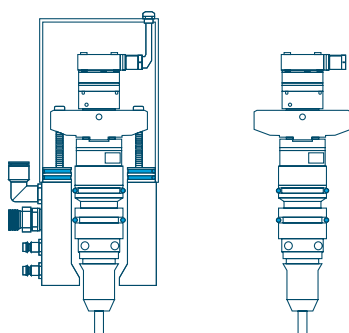
Tank extends to fill-up, drain and clean.  
(View detailed image on page 30)

#### 6 Actual Dynamic measurement of the injector overflow



Scan to visit our YouTube channel and watch CZ Test Benches tutorials, training & product videos.

## AZO SOFTWARE



## HEUI Technologies

### Systems

CAT C7/C9

CAT 7.3L/3126

CAT 3408/3412

FORD POWER STROKE

ISUZU TROOPER

### Features

Xtremely Fast Testing Times without

any Compromise

New Design for every Service Station

Optimized Working Area to reduce Injector Set-up Times

400Bar Operating Pressure

All Systems Testing and Coding

### CloudX Capabilities

Coding capability for CAT C7/C9\*

### Diesel HEUI testing and coding\*

Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.

Fully Adjustable height for all types of injectors.

Utilizes a spring-loaded injector holder to ease the operation of the user.

Easily accessible filters and waste area

Quick access to all inline filters for fast check-up and replacement located within your working area.

A mess-free compartment to work at, continuously draining to the waste tank.

Advanced water-cooling or air-cooling system to optimize long term nonstop operation at all environmental conditions.

Live Response Time Measurement for all injectors

Capable to automatically measure the BIP of the solenoid actuator

Adaptability for every type of Diesel HEUI Injectors in the market

Continuous Database updates and new Software capabilities to meet the market needs.

Android Powered 15.6" HMI with unlimited flexibility and connectivity competencies.

Injector flushing feature pre-installed (optional kit available)

\*New database and Coding is continously being updated to new EU6 applications



|                                |  |  |
|--------------------------------|--|--|
|                                | Part Number                                      | HTBRX-A [CZ-008722]<br>HTBRX-W [CZ-008862] |
|                                | Cooling Type                                     | [A / W]                                    |
|                                | Standalone                                       | ●  |
|                                | Add-On   | -  |
| TYPE                           | Test Bench                                       | ●  |
|                                | Simulator / Controller                           | -  |
|                                | Service / Diagnostic Unit                        | -  |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●  |
|                                | Workshop / Garage                                | -  |
|                                | Test Slots [injectors / Pumps]                   | [1 / -]                                    |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | -  |
|                                | GDi Injectors [ 1 / 4 ]                          | -  |
|                                | CR Pumps [ 1 ]                                   | -  |
|                                | GDi Pumps [ 1 ]                                  | -  |
|                                | EUI / EUP / Smart EUP [ 1 ]                      | -  |
|                                | HEUI [ 1 / 4 ]                                   | ● / [6]                                    |
|                                | Gasoline Injectors [ 1 / 4 ]                     | -  |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | -  |
|                                | Gasoline /Other Engines                          | -  |
|                                | Diesel Engines                                   | -  |
|                                | Gasoline/Diesel Fuel Systems                     | -  |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | -  |
|                                | Motorcycles                                      | -  |
|                                | Racing (Gasoline)                                | -  |
|                                | Light Duty                                       | ●  |
|                                | Medium Duty                                      | ●  |
|                                | Heavy Duty / Industrial                          | ●  |
|                                | Marine   | -  |
|                                | EV (Electric Vehicles)                           | -  |
| FEATURES                       | CloudX - (Page 06)                               | □  |
|                                | Coding Capability for Passenger Car / Light Duty | -  |
|                                | Coding Capability for Medium/Heavy Duty          | ○  |
|                                | Authorized Solutions                             | -  |
| MEASUREMENT<br>SENSORS         | XKM  | 1  |
|                                | BK   | -  |
|                                | DFM500   | -  |
|                                | DFM50  | -  |
|                                | Volumetric Tubes                                 | -  |
| SYSTEM PRESSURE                | Max (BAR)  | 400  |
|                                | Source   | MOTOR                                      |
|                                | Source Power (HP)                                | 4.8  |
| CHARACTERISTICS                | Response Sensor                                  | □  |
|                                | Response Sensor HD                               | □  |
|                                | Pressurized Return Hoses / PIRV's                | -  |
|                                | Exclusive Return Hoses Kit                       | -  |
|                                | Spray Chamber                                    | ○  |
|                                | Heavy Duty Injector Adapters & Fittings          | □  |
|                                | Heavy Duty Pump Adapters & Fittings              | -  |
|                                | Exclusive Electrical Connectors                  | ○  |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●  |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -  |
|                                | Air-Supply (Bar / L/min)                         | -  |
|                                | Water Cooling (requires connection)              | -  |
|                                | Air Cooling                                      | ●  |
|                                | Tank Capacity [testing / flushing]               | [30 / -]                                   |
|                                | HMI (Inches)                                     | 15   |
|                                | Touchscreen                                      | ●  |
|                                | Flushing / MACC                                  | □/ -                                       |
|                                | Protective Cover                                 | ●  |
|                                | Calibration Oils                                 | ○  |
|                                | Ultrasonic Bath                                  | ○  |
| PACKAGING                      | Width (mm)                                       | 920  |
|                                | Depth (mm)                                       | 1160                                       |
|                                | Height (mm)                                      | 1870                                       |
|                                | Weight (kg)                                      | 380  |

**MEASUREMENT SENSORS**  
XKM [Dynamic Meas. Sensor]: High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
Measur. Range: 1-1000ml/min  
DFM 500 [Dynamic Measurement Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500L/min  
DFM 50 [Dynamic Measurement Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 0.5-50L/min  
Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml, Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm3/H  
Light Duty: Volumes up to 200mm3/H  
Medium Duty: Volumes up to 300mm3/H  
Heavy Duty: Volumes up to 650mm3/H  
Marines: Volumes up to 1500mm3/H

### EXPLANATIONS

● : Capable / Standard Equipped  
□ : Capable / Optionals required  
○ : Optional  
- : N/A

-A: Air Cooling  
-W: Water Cooling

### PRESSURE SOURCES

Air & Driver High Pressure Pump  
Motor, Motor Driver, High Pressure CR Pump  
External: Pressure coming from another Test Bench or external source  
Electr. Pump: Fuel Injection system or Industrial Application  
Electrical Pump 12VDC  
--: No Pressure Source

## GTB4R //X

Gasoline System Test Bench

### The Optimum Gasoline Specialists GDi Solution

The Professional's Service Station for All Types and Makes GDi systems.

The New GTB4R-X is a unique Standalone Gasoline Direct Injector Test Bench capable to thoroughly Test, Service and Code every possible GDi in the market today.

The machine's Innovative technology is already in compliance with all EU6 standards and requirements, meantime is prepared for future upgrades.



#carbonzappXseries

*\*New database and Coding is continuously being updated to new EU6 applications*

## SPECIALISTS

CRDi

EUI/EUP

HEUI

CRP

ENGINE

**GDi**

**EFi**

**GDi Pumps**

## Overview of the New GTB.4R-X

Precise, repeatable and rapid Gasoline Injectors Testing

### [4] Injectors Testing & Coding\*

- 5-7 minutes testing and coding\* time for 4 injectors
- GDi injectors (All Brands and Types)
- Conventional Gasoline EFi Injectors
- Capable for all EU6 technologies
- Coding Capable for all Types of GDi's (Energy Controlled or Volume Metering types)
- Flushing and Servicing options for GDi injectors
- External Control and Measurement for GDi High Pressure Pumps operating on a Conventional Test Bench\*\*



**CloudX™**

Details on page 06

**1200 Bar**

**4 GDi Injectors.  
Capable for all  
EU6 Technologies**

## A Revolution in GDi Test Benches

Our qualified team, know-how and pioneering thinking developed the New Powerful **GTB.4R-X**

\*\* : Future upgrade expected Q1/2023.



\*New database and Coding is continuously being updated to new EU6 applications



## SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

**GDi**

**EFI**

**GDi Pumps**

# GTB4R //X

## Gasoline System Test Bench

### 1 Working Area

Ergonomic & easily accessible illuminated working space. Fast mounting for all types of Injectors.

### 2 Easily Accessible Filters & Waste Area

Quick access to all inline filters for fast check-up and replacement located within your working area. A mess-free compartment to work at, continuously draining to the waste tank.

### 3 Machine Interface

New CloudX based AZOV3 software features speed, connectivity and expandability in a user friendly environment.

### 4 Easily accessible drawer and connection ports.

*(View detailed image on page 30)*

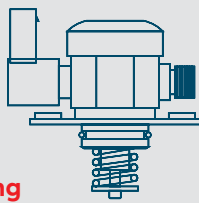
### 5 Functional use of test oil tank enhances maintenance.

Tank extends to fill-up, drain and clean.  
*(View detailed image on page 30)*

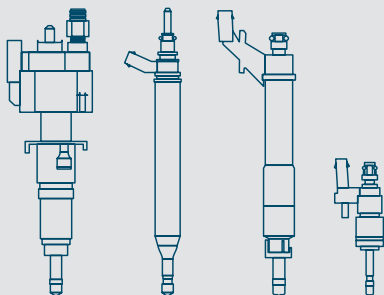
### 6 Actual Dynamic measurement of the injector overflow



AZO SOFTWARE



**GDi Pump testing  
on a conventional bench  
as an external control**



**EU6 Technologies**

## Applications

Gasoline Passenger cars  
Gasoline Light Duty vehicles  
Gasoline Outboard motors  
Alternative Fuels engines

## Features

Xtremely Fast Testing Times without  
any Compromise  
New Design for every Service Station  
Optimized Working Area to reduce  
Injector Set-up Times  
1200Bar Capable Test Bench  
EU6 Systems Testing and Coding

## CloudX Capabilities

## Gasoline GDi testing and coding

Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.  
Fully Adjustable height for all types of GDi and EFi injectors.  
Utilizes a spring-loaded injector holder to ease the operation of the user.  
Quick access to all inline filters for fast check-up and replacement located within your working area. A mess-free compartment to work at, continuously draining to the waste tank.  
Advanced Testing capability for all brands and types available in the market today. Bosch, Denso, Delphi, Continental /VDO, Hitachi-HTC, Magneti Marelli and more added every day...  
Coding capability for Siemens/ VDO and for the newer\* generation EU6 available in the market today.  
Advanced water-cooling or air-cooling system to optimize long term nonstop operation at all environmental conditions.  
Live Response Time Measurement at every test plan  
Adaptability for every type of Gasoline Injectors in the market  
Continuous Database updates and new Software capabilities to meet the market needs.  
Android Powered 15.6" HMI with unlimited flexibility and connectivity competencies.

\*New database and Coding is continously being updated to new EU6 applications

|                                | Part Number                                      | GTB.4RX-A [CZ-008737]<br>GTB.4RX-W [CZ-008787] |  |
|--------------------------------|--|--|--|
|                                | Cooling Type                                     | [A / W]  |  |
|                                | Standalone                                       | ●  |  |
|                                | Add-On   | -  |  |
| TYPE                           | Test Bench                                       | ●  |  |
|                                | Simulator / Controller                           | -  |  |
|                                | Service / Diagnostic Unit                        | -  |  |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●  |  |
|                                | Workshop / Garage                                | ○  |  |
|                                | Test Slots [injectors / Pumps]                   | [4/ 1]   |  |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | -  |  |
|                                | GDi Injectors [ 1 / 4 ]                          | ● / [-/6]                                      |  |
|                                | CR Pumps [ 1 ]                                   | -  |  |
|                                | GDi Pumps [ 1 ]                                  | □ / [5]  |  |
|                                | EUI / EUP / Smart EUP [ 1 ]                      | -  |  |
|                                | HEUI [ 1 / 4 ]                                   | -  |  |
|                                | Gasoline Injectors [ 1 / 4 ]                     | □  |  |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | □  |  |
|                                | Gasoline /Other Engines                          | -  |  |
|                                | Diesel Engines                                   | -  |  |
|                                | Gasoline/Diesel Fuel Systems                     | -  |  |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●  |  |
|                                | Motorcycles                                      | ●  |  |
|                                | Racing (Gasoline)                                | ●  |  |
|                                | Light Duty                                       | ●  |  |
|                                | Medium Duty                                      | -  |  |
|                                | Heavy Duty / Industrial                          | -  |  |
|                                | Marine   | -  |  |
|                                | EV (Electric Vehicles)                           | -  |  |
| FEATURES                       | CloudX - (Page 06)                               | □  |  |
|                                | Coding Capability for Passenger Car / Light Duty | □  |  |
|                                | Coding Capability for Medium/Heavy Duty          | -  |  |
|                                | Authorized Solutions                             | -  |  |
| MEASUREMENT<br>SENSORS         | XKM  | 4'   |  |
|                                | BK   | -  |  |
|                                | DFM500   | -  |  |
|                                | DFM50  | -  |  |
|                                | Volumetric Tubes                                 | -  |  |
| SYSTEM PRESSURE                | Max (BAR)  | 1200   |  |
|                                | Source   | MOTOR  |  |
|                                | Source Power (HP)                                | 4',8   |  |
| CHARACTERISTICS                | Response Sensor                                  | □  |  |
|                                | Response Sensor HD                               | -  |  |
|                                | Pressurized Return Hoses / PIRV's                | -  |  |
|                                | Exclusive Return Hoses Kit                       | -  |  |
|                                | Spray Chamber                                    | ○  |  |
|                                | Heavy Duty Injector Adapters & Fittings          | -  |  |
|                                | Heavy Duty Pump Adapters & Fittings              | -  |  |
|                                | Exclusive Electrical Connectors                  | ○  |  |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●  |  |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -  |  |
|                                | Air-Supply (Bar / L/min)                         | -  |  |
|                                | Water Cooling (requires connection)              | -  |  |
|                                | Air Cooling                                      | ●  |  |
|                                | Tank Capacity [testing / flushing]               | [30 / -]                                       |  |
|                                | HMI (Inches)                                     | 15   |  |
|                                | Touchscreen                                      | ●  |  |
|                                | Flushing / MACC                                  | □ / -  |  |
|                                | Protective Cover                                 | ●  |  |
|                                | Calibration Oils                                 | ○  |  |
|                                | Ultrasonic Bath                                  | ○  |  |
| PACKAGING                      | Width (mm)                                       | 920  |  |
|                                | Depth (mm)                                       | 1160   |  |
|                                | Height (mm)                                      | 1870   |  |
|                                | Weight (kg)                                      | 352  |  |

**MEASUREMENT SENSORS**  
 XKM [Dynamic Meas. Sensor]: High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
 Measur. Range: 1-1000ml/min  
 DFM 500 [Dynamic Measurement Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500l/min  
 DFM 50 [Dynamic Measurement Sensor]: Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 0.5-50l/min  
 Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml, Measurement range: 0.5-65ml

**APPLICATIONS**  
 Passenger Car/ Motorcycles: Volumes up to 120mm3/H  
 Light Duty: Volumes up to 200mm3/H  
 Medium Duty: Volumes up to 300mm3/H  
 Heavy Duty: Volumes up to 650mm3/H  
 Marines: Volumes up to 1500mm3/H

### EXPLANATIONS

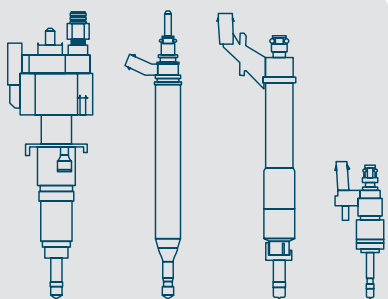
● : Capable / Standard Equipped  
 □ : Capable / Optionals required  
 ○ : Optional  
 - : N/A

-A: Air Cooling  
 -W: Water Cooling

**PRESSURE SOURCES**  
 Air: Air Driven High Pressure Pump  
 Motor: Motor Driven High Pressure CR Pump  
 External: Pressure coming from another Test Bench or external source  
 Electr. Pump: Fuel Injection system or Industrial Application  
 Electrical Pump 12VDC  
 --: No Pressure Source

# GDU4R //X

## Gasoline System Test Bench



**EU3 > EU6  
Technologies**

**The professional solution for  
workshops to test & service  
Gasoline Direct Injection Systems.**

*\*New database and Coding is continuously being updated to new EU6 applications*

## Overview of the GDU.4R-X

### Precise & repeatable Gasoline Injectors Testing

#### [4] Injectors Testing & Coding\*

- 20 minutes testing and coding\* time for 4 injectors
- GDi injectors (All Brands and Types)
- Conventional Gasoline EFi Injectors
- Capable for all EU6 technologies
- Coding Capable for all Types of GDi's (Energy Controlled or Volume Metering types)
- Flushing and Servicing options for GDi injectors

#### SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

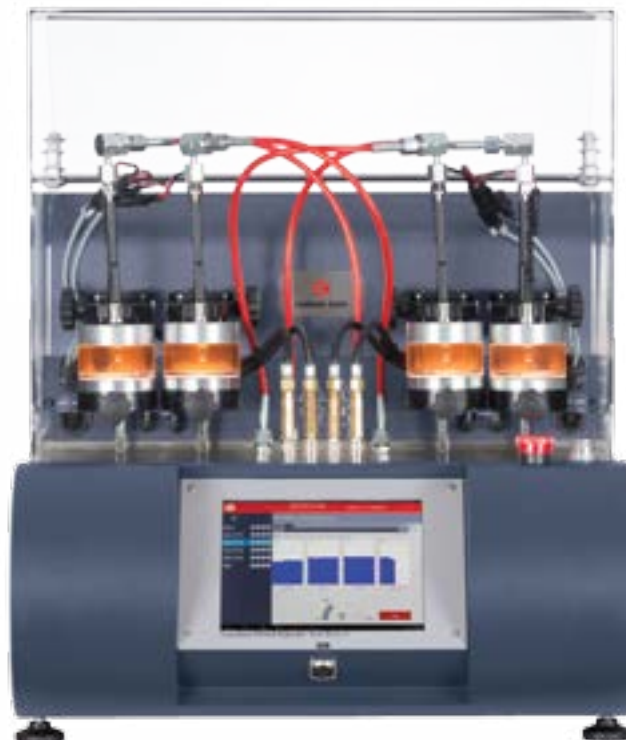
**GDi**

**EFi**

GDi Pumps

**650 Bar**

**4 GDi Injectors  
Capable**

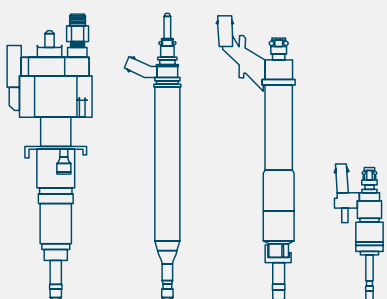


Gasoline Direct Injection (GDi) requires high pressure testing to truly diagnose injector operation faults.





## AZO SOFTWARE



## EU3 > EU6 Technologies

### Features

Controls all Types and Makes of Injectors. Includes OEM Database and Test Plans

Low Pressure Testing for Conventional MPFi or Racing application Injectors 0-10Bar

Controls NEW Generation High Pressure GDi with multiple Step Current profiles

LPG for Heavy Duty Applications (Trucks, Commercial Vehicles)

Continental / Siemens GDi injectors (EU5) testing only with approved Energy Control

Nozzle reaction time measurement for all systems via RSP sensor

Dual System - Flushing / Cleaning system using detergents and Ultrasonics

Efficient Working Area with Protective Hood fully opening

The fastest and easiest clamping of injectors in the market

Fully Automatic and fast testing phase through a 10" Touchscreen HMI with AZO software

GDi Piezo Stack Regeneration function. The only way to correct GDi Piezo injectors after Cleaning them internally and reverse flushing them

Reverse flushing adapter and function with 25Bar pressure

Blue Limits Diagnosis for Specialists

Dynamic Electronic Mass (BK) Measurement

Prepared for Future Injector Coding

Emergency Safety Stop function

*\*New database and Coding is continuously being updated to new EU6 applications*

CRDi

EUI/EUP

HEUI

CRP

ENGINE

GDi

EFI

GDi Pumps

|                                |  |               |
|--------------------------------|--|---------------|
|                                | Part Number                                      | (CZ-008726)   |
|                                | Standalone                                       | ●             |
|                                | Add-On   | -             |
| TYPE                           | Test Bench                                       | ●             |
|                                | Simulator / Controller                           | -             |
|                                | Service / Diagnostic Unit                        | -             |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ●             |
|                                | Workshop / Garage                                | ○             |
|                                | Test Slots [injectors / Pumps]                   | [4 / -]       |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | -             |
|                                | GDi Injectors [ 1 / 4 ]                          | ● / [-/10]    |
|                                | Gasoline Injectors [ 1 / 4 ]                     | □             |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | □             |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●             |
|                                | Motorcycles                                      | ●             |
|                                | Racing (Gasoline)                                | ●             |
|                                | Light Duty                                       | ●             |
|                                | Medium Duty                                      | -             |
|                                | Heavy Duty / Industrial                          | -             |
|                                | Marine   | -             |
| FEATURES                       | CloudX - (Page 06)                               | □             |
|                                | Coding Capability for Passenger Car / Light Duty | □             |
| MEASUREMENT<br>SENSORS         | XKM  | -             |
|                                | BK   | 1             |
|                                | Volumetric Tubes                                 | -             |
| SYSTEM PRESSURE                | Max (BAR)  | 650           |
|                                | Source   | AIR           |
| CHARACTERISTICS                | Response Sensor                                  | □             |
|                                | Response Sensor HD                               | -             |
|                                | Spray Chamber                                    | ○             |
|                                | Exclusive Electrical Connectors                  | ○             |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●             |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -             |
|                                | Air-Supply (Bar / L/min)                         | ● / (6.5/300) |
|                                | Air Cooling                                      | ●             |
|                                | Tank Capacity [testing / flushing]               | [5 / -]       |
|                                | HMI (Inches)                                     | 10            |
|                                | Touchscreen                                      | ●             |
|                                | Flushing / MACC                                  | -             |
|                                | Protective Cover                                 | ●             |
|                                | Calibration Oils                                 | ○             |
|                                | Ultrasonic Bath                                  | ○             |
| PACKAGING                      | Width (mm)                                       | 660           |
|                                | Depth (mm)                                       | 770           |
|                                | Height (mm)                                      | 800           |
|                                | Weight (kg)                                      | 76            |

#### EXPLANATIONS

- : Capable / Standard Equipped
- : Capable / Optionals required
- : Optional
- : N/A

**MEASUREMENT SENSORS**  
XKM [Dynamic Meas. Sensor]: High Accuracy: ± 0.1%; Exceptional Repeatability ±0.05%  
Measur. Range: 1-1000ml/min  
Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml | Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car: Motorcycles: Volumes up to 120mm<sup>3</sup>/H  
Light Duty: Volumes up to 200mm<sup>3</sup>/H  
Medium Duty: Volumes up to 200mm<sup>3</sup>/H  
Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
Marines: Volumes up to 1500mm<sup>3</sup>/H

**PRESSURE SOURCES**  
Air: Air Driven High Pressure Pump  
Motor: Motor Driven High Pressure CR Pump  
External: Pressure coming from another test Bench or external source  
Electrical Pump: Pressure coming from another test Bench or external source  
Electrical Pump 12VDC  
---: No Pressure Source

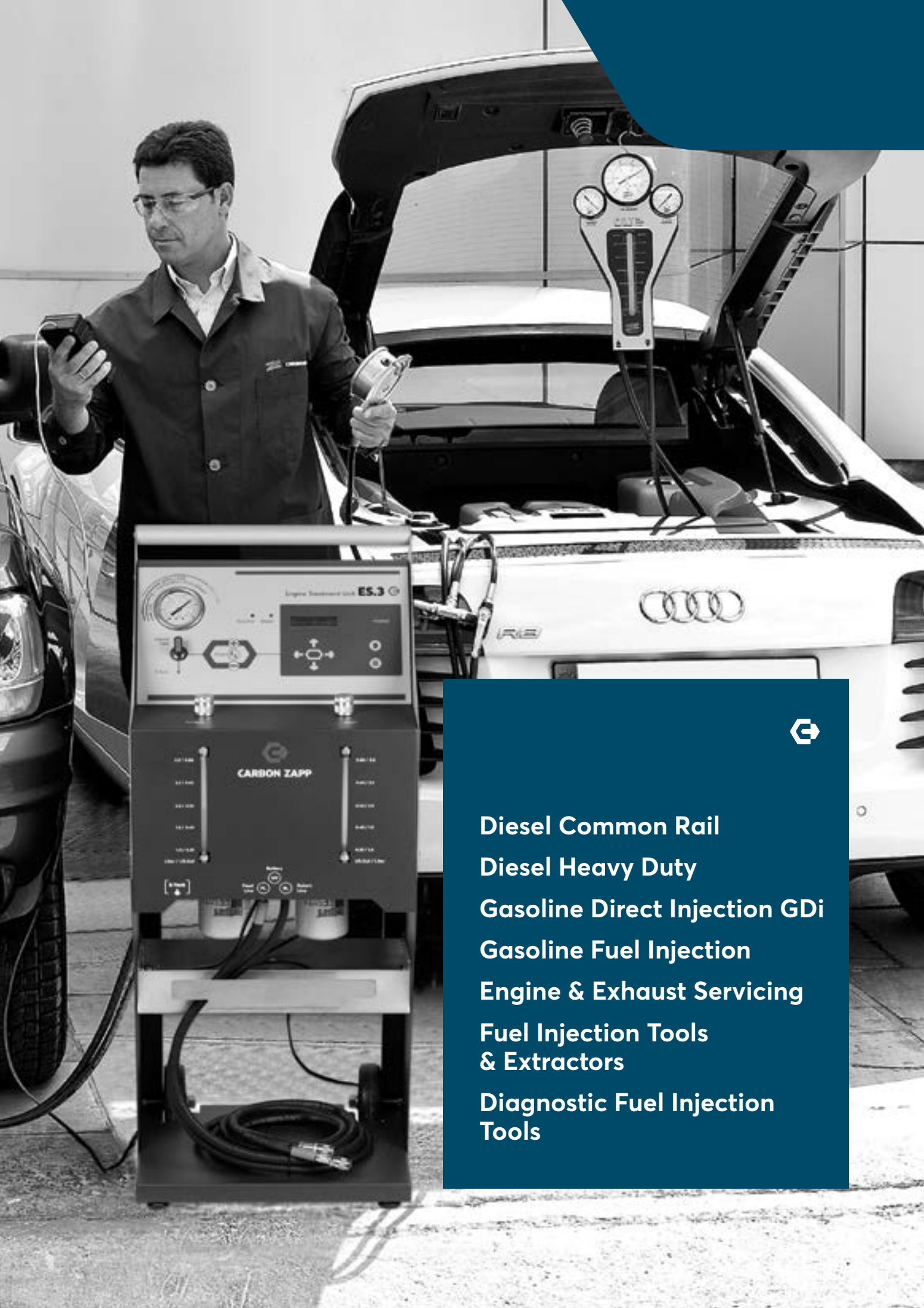
**WORKSHOPS** 

**Explore Workshop Diagnostic  
& Service Solutions**

Passenger Car and Light Duty Types







**Diesel Common Rail**  
**Diesel Heavy Duty**  
**Gasoline Direct Injection GDi**  
**Gasoline Fuel Injection**  
**Engine & Exhaust Servicing**  
**Fuel Injection Tools**  
**& Extractors**  
**Diagnostic Fuel Injection**  
**Tools**

# DSR //X

## Diesel Common-Rail Injector Test Bench

### The Affordable Diesel CRDi Workshop Solution

Advanced Diesel CRDi Test Bench, to diagnose cars and light duty vehicles of All Makes

#### Overview of the New DSR-X

Fast, Accurate and Reliable Diesel CRDi Injector Testing

##### [1] Injector Testing

6-12 minutes testing time per injector

- CRi (All Brands and Types).
- Capable for all EU6 technologies such as VCC and NCC technology, iART, PCRS5 and more...
- CRIN Light Duty Vehicle injectors
- 1 Medium Duty CRDi injector

**2000 Bar**

**Standalone Air-Operated Diesel CRi Test Bench For Workshops**

**CloudX™**

Details on page 06



#### Features

Xtremely Fast Testing Times without any Compromise

New Design for every Service Station

Optimized Working Area

EU6 Systems Testing

CloudX Capabilities

IoT Cloud computing Platform - Industry 4.0 Complaint

Live Response Time Measurement at every test plan

Adaptability for every type of Diesel CRDi's in the market (optional)

Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.

Continuous Database updates and new Software capabilities to meet the market needs.

Android Powered 10" HMI with unlimited flexibility and connectivity competencies.

*\*New database and Coding is continously being updated to new EU6 applications*





## WORKSHOPS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps

DSR **X**

## Technical Data

|                                |  |             |
|--------------------------------|--|-------------|
|                                | Part Number                                      | (CZ-008729) |
|                                | Standalone                                       | ●           |
|                                | Add-On   | -           |
| TYPE                           | Test Bench                                       | ●           |
|                                | Simulator / Controller                           | -           |
|                                | Service / Diagnostic Unit                        | -           |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ○           |
|                                | Workshop / Garage                                | ●           |
|                                | Test Slots [injectors / Pumps]                   | [1 / -]     |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | ● / [11]    |
|                                | GDi Injectors [ 1 / 4 ]                          | -           |
|                                | Gasoline Injectors [ 1 / 4 ]                     | -           |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | -           |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●           |
|                                | Motorcycles                                      | -           |
|                                | Racing (Gasoline)                                | -           |
|                                | Light Duty                                       | ●           |
|                                | Medium Duty                                      | -           |
|                                | Heavy Duty / Industrial                          | -           |
|                                | Marine   | -           |
| FEATURES                       | CloudX - (Page 06)                               | □           |
|                                | Coding Capability for Passenger Car / Light Duty | -           |
|                                | Coding Capability for Medium/Heavy Duty          | -           |
|                                | Authorized Solutions                             | -           |
| MEASUREMENT<br>SENSORS         | XKM  | 1           |
|                                | BK   | -           |
|                                | Volumetric Tubes                                 | -           |
| SYSTEM PRESSURE                | Max (BAR)  | 2000        |
|                                | Source   | AIR         |
| CHARACTERISTICS                | Response Sensor                                  | □           |
|                                | Response Sensor HD                               | -           |
|                                | Pressurized Return Hoses / PIRV's                | ○           |
|                                | Exclusive Return Hoses Kit                       | ●           |
|                                | Spray Chamber                                    | ○           |
|                                | Heavy Duty Injector Adapters & Fittings          | -           |
|                                | Heavy Duty Pump Adapters & Fittings              | -           |
|                                | Exclusive Electrical Connectors                  | ○           |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●           |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -           |
|                                | Air-Supply (Bar / L/min)                         | 6.5/ 250    |
|                                | Air Cooling                                      | ●           |
|                                | Tank Capacity [testing / flushing]               | [4 / -]     |
|                                | HMI (Inches)                                     | 10          |
|                                | Touchscreen                                      | ●           |
|                                | Flushing / MACC                                  | -           |
|                                | Protective Cover                                 | ●           |
|                                | Calibration Oils                                 | ○           |
|                                | Ultrasonic Bath                                  | ○           |
| PACKAGING                      | Width (mm)                                       | 440         |
|                                | Depth (mm)                                       | 670         |
|                                | Height (mm)                                      | 810         |
|                                | Weight (kg)                                      | 40          |

**MEASUREMENT SENSORS**  
XKM [Dynamic Meas. Sensor]: High Accuracy: ± 0.1%; Exceptional Repeatability ±0.05%  
Measur. Range: 1-1000ml/min  
Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml | Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm<sup>3</sup>/H  
Light Duty: Volumes up to 200mm<sup>3</sup>/H  
Medium Duty: Volumes up to 200mm<sup>3</sup>/H  
Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
Marines: Volumes up to 1500mm<sup>3</sup>/H

### EXPLANATIONS

● : Capable / Standard Equipped  
□ : Capable / Optionals required  
○ : Optional  
- : N/A

**PRESSURE SOURCES**  
Air: Air Driven High Pressure Pump  
Motor: Motor Driven High Pressure CR Pump  
Extern: Pressure coming from another test Bench or external source  
Elect: Pressure coming from an external source  
Electrical Pump 12VDC  
---: No Pressure Source

## DS2R-A

Diesel Common-Rail Injector  
Basic Test Bench

### The Affordable Semi-Automatic Volumetric Tube Diesel CRDi Workshop Solution

Standard Diesel CRDi Test Bench to diagnose cars  
and light duty vehicles of All Makes



#### Overview of the New DS2R-A

The Standard Diesel CRDi Injector Testing

##### [1] Injector Testing

20-25 minutes testing time per injector

- CRi (All Brands and Types).
- Capable for all EU6 technologies
- CRIN Light Duty Vehicle injectors



**2000 Bar**  
Standalone Air-Operated  
Diesel CRi Test Bench  
For Workshops



*\*New database and Coding is continuously being updated to new EU6 applications*

## Features

Optimized Working Area

Volumetric Tube Measurement for Discharge and Overflow

Semi-Automatic Operation of the Unit

Manual Pressure control

Intuitive Software – Step by Step Progress

CloudX Capabilities

IoT Cloud computing Platform - Industry 4.0 Complaint

Live Response Time Measurement at every test plan (optional)

Adaptability for every type of Diesel CRDi's in the market (optional)

Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.

Continuous Database updates and new Software capabilities to meet the market needs.

Android Powered 8' HMI with unlimited flexibility and connectivity competencies.

## WORKSHOPS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps

## DS2R-A Technical Data

|                                |  |             |  |
|--------------------------------|--|-------------|--|
|                                | Part Number                                      | (CZ-008730) |  |
|                                | Standalone                                       | ●           |  |
|                                | Add-On   | -           |  |
| TYPE                           | Test Bench                                       | ●           |  |
|                                | Simulator / Controller                           | -           |  |
|                                | Service / Diagnostic Unit                        | -           |  |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ○           |  |
|                                | Workshop / Garage                                | ●           |  |
|                                | Test Slots [injectors / Pumps]                   | [1 / -]     |  |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | ● / [15]    |  |
|                                | GDi Injectors [ 1 / 4 ]                          | -           |  |
|                                | Gasoline Injectors [ 1 / 4 ]                     | -           |  |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | -           |  |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●           |  |
|                                | Motorcycles                                      | -           |  |
|                                | Racing (Gasoline)                                | -           |  |
|                                | Light Duty                                       | ●           |  |
|                                | Medium Duty                                      | -           |  |
|                                | Heavy Duty / Industrial                          | -           |  |
|                                | Marine   | -           |  |
| FEATURES                       | CloudX - (Page 06)                               | -           |  |
|                                | Coding Capability for Passenger Car / Light Duty | -           |  |
|                                | Coding Capability for Medium/Heavy Duty          | -           |  |
|                                | Authorized Solutions                             | -           |  |
| MEASUREMENT<br>SENSORS         | XKM  | -           |  |
|                                | BK   | -           |  |
|                                | Volumetric Tubes                                 | 2           |  |
| SYSTEM PRESSURE                | Max (BAR)  | 2000        |  |
|                                | Source   | AIR         |  |
| CHARACTERISTICS                | Response Sensor                                  | □           |  |
|                                | Response Sensor HD                               | -           |  |
|                                | Pressurized Return Hoses / PIRV's                | ○           |  |
|                                | Exclusive Return Hoses Kit                       | ●           |  |
|                                | Spray Chamber                                    | ○           |  |
|                                | Heavy Duty Injector Adapters & Fittings          | -           |  |
|                                | Heavy Duty Pump Adapters & Fittings              | -           |  |
|                                | Exclusive Electrical Connectors                  | ○           |  |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●           |  |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -           |  |
|                                | Air-Supply (Bar / L/min)                         | 6.5/ 250    |  |
|                                | Air Cooling                                      | ●           |  |
|                                | Tank Capacity [testing / flushing]               | [4 / -]     |  |
|                                | HMI (Inches)                                     | 8           |  |
|                                | Touchscreen                                      | ●           |  |
|                                | Flushing / MACC                                  | -           |  |
|                                | Protective Cover                                 | ●           |  |
|                                | Calibration Oils                                 | ○           |  |
|                                | Ultrasonic Bath                                  | ○           |  |
| PACKAGING                      | Width (mm)                                       | 660         |  |
|                                | Depth (mm)                                       | 770         |  |
|                                | Height (mm)                                      | 800         |  |
|                                | Weight (kg)                                      | 46          |  |

**MEASUREMENT SENSORS**  
XKM [Dynamic Meas. Sensor]: High Accuracy, ± 0.1%, Exceptional Repeatability ±0.05%, Measur. Range: 1-1000ml/min  
Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml, Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm³/H  
Light Duty: Volumes up to 200mm³/H  
Medium Duty: Volumes up to 600mm³/H  
Heavy Duty: Volumes up to 650mm³/H  
Marines: Volumes up to 1500mm³/H

### EXPLANATIONS

● : Capable / Standard Equipped  
□ : Capable / Optionals required  
○ : Optional  
- : N/A

**PRESSURE SOURCES**  
Air: Air Driven High Pressure Pump  
Motor: Motor Driven High Pressure CR Pump  
External: Pressure coming from another test Bench or external source  
Electrical: Pressure coming from an external system or Industrial Application  
Electrical Pump 12VDC  
--: No Pressure Source



## Gasoline Direct Injector Test Bench

# The Affordable Gasoline GDi Workshop Solution

Advanced Gasoline GDi Test Bench to diagnose and service faults for All makers

### Overview of the New GDR-X

Fast, Accurate and Reliable Gasoline GDi Injector Testing

#### [1] Injector Testing

5-7 minutes testing time per injector

- GDi (All Brands and Types)
- Capable for all EU6 technologies
- Capable for GDi Piezo (with Energy Controlled Signal)

**450 Bar**

**Standalone Air-Operated  
Gasoline GDi Test Bench  
For Workshops**



### Features

- Xtremely Fast Testing Times without any Compromise
- New Design for every Service Station
- Optimized Working Area
- Pressurized Reverse Flush for Injectors
- Optimized Actuation Software for Ultrasonic Cleaning
- CloudX Capabilities
- IoT Cloud computing Platform - Industry 4.0 Complaint
- Live Response Time Measurement at every test plan
- Adaptability for every type of Gasoline GDi's in the market (optional)
- Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times.
- Continuous Database updates and new Software capabilities to meet the market needs.
- Android Powered 10" HMI with unlimited flexibility and connectivity competencies.

*\*New database and Coding is continously being updated to new EU6 applications*



## WORKSHOPS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

**GDi**

**EFI**

GDi Pumps



## Technical Data

|                                |  |               |
|--------------------------------|--|---------------|
|                                | Part Number                                      | (CZ-008727)   |
|                                | Standalone                                       | ●             |
|                                | Add-On   | -             |
| TYPE                           | Test Bench                                       | ●             |
|                                | Simulator / Controller                           | -             |
|                                | Service / Diagnostic Unit                        | -             |
| USER LEVEL                     | Diesel / Gasoline Specialists                    | ○             |
|                                | Workshop / Garage                                | ●             |
|                                | Test Slots [injectors / Pumps]                   | [1 / -]       |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]                 | -             |
|                                | GDi Injectors [ 1 / 4 ]                          | ● / [5]       |
|                                | Gasoline Injectors [ 1 / 4 ]                     | □             |
|                                | LPG / CNG Injectors [ 1 / 4 ]                    | □             |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                       | ●             |
|                                | Motorcycles                                      | ●             |
|                                | Racing (Gasoline)                                | -             |
|                                | Light Duty                                       | -             |
|                                | Medium Duty                                      | -             |
|                                | Heavy Duty / Industrial                          | -             |
|                                | Marine   | -             |
| FEATURES                       | CloudX - (Page 06)                               | □             |
|                                | Coding Capability for Passenger Car / Light Duty | -             |
| MEASUREMENT<br>SENSORS         | XKM  | 1             |
|                                | BK   | -             |
|                                | Volumetric Tubes                                 | -             |
| SYSTEM PRESSURE                | Max (BAR)  | 450           |
|                                | Source   | AIR           |
| CHARACTERISTICS                | Response Sensor                                  | □             |
|                                | Response Sensor HD                               | -             |
|                                | Spray Chamber                                    | ○             |
|                                | Exclusive Electrical Connectors                  | ○             |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC          | ●             |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC       | -             |
|                                | Air-Supply (Bar / L/min)                         | ● / (6.5/200) |
|                                | Air Cooling                                      | ●             |
|                                | Tank Capacity [testing / flushing]               | [5 / -]       |
|                                | HMI (Inches)                                     | 10            |
|                                | Touchscreen                                      | ●             |
|                                | Flushing / MACC                                  | -             |
|                                | Protective Cover                                 | ●             |
|                                | Calibration Oils                                 | ○             |
|                                | Ultrasonic Bath                                  | ○             |
| PACKAGING                      | Width (mm)                                       | 440           |
|                                | Depth (mm)                                       | 670           |
|                                | Height (mm)                                      | 810           |
|                                | Weight (kg)                                      | 42            |

**MEASUREMENT SENSORS**  
XKM [Dynamic Meas. Sensor], High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
Measur. Range: 1-1000ml/min  
Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml, Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm<sup>3</sup>/H  
Light Duty: Volumes up to 200mm<sup>3</sup>/H  
Medium Duty: Volumes up to 200mm<sup>3</sup>/H  
Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
Marines: Volumes up to 1500mm<sup>3</sup>/H

### EXPLANATIONS

● : Capable / Standard Equipped  
□ : Capable / Optionals required  
○ : Optional  
- : N/A

**PRESSURE SOURCES**  
Air: Air Driven High Pressure Pump  
Motor: Motor Driven High Pressure CR Pump  
Extern: Pressure coming from another test Bench or external source  
Electrical Pump: Pressure coming from another test Bench or external source  
Electrical Pump 12VDC  
---: No Pressure Source



# GS4 / GS8

## Gasoline System Test Bench

**The efficient, cost-effective and proven workshop solution to bench test and service every gasoline fuel injector**

### Systems Tested

Solenoid Direct Injectors (G-Di, FSI...)  
Multi-Port Fuel Injectors (MPFi / SPFi)  
Racing Application Injectors\*  
Central-Port Fuel Injectors (CSFI / CPFI)  
Throttle Body Injectors (TBI / CFI)  
Continuous Injection Injectors (K-Jetronic),  
Marines Application Injectors (E-TEC / FICHT)  
Motorcycle Application Injectors (Racing\*)  
LPG & Alternative fuels Injectors



Ultrasonic Cleaning  
Baths Available at sizes up to 120L\*  
featuring: 42KHz frequency  
Sweep technology\*  
Degas function\*,  
Controlled Heater and more...



Bench for Testing & Ultrasonic Cleaning up to 8 Fuel Injectors

|                                     |
|-------------------------------------|
| Fully Automatic Function            |
| Electronic Pressure Control 0-10Bar |
| Racing Injectors Capable*           |
| Dynamic & Static iVM                |
| Auto-iRF function                   |
| Injector Leak Test function         |
| User-Friendly Design                |
| Language Localization               |



Bench for Testing & Ultrasonic Cleaning up to 4 Fuel Injectors

\*Optional Upgrade

## Features

### iVM: Injection Volume Metering

Precise graduated led illuminated tubes are used for efficient diagnosis of uneven flow rates and weak or defective nozzle springs. Automatic drainage after each test resolution 1ml, accuracy ±1ml/130ml

### iSPC

Illuminated Spray Pattern Chamber used for visual diagnosis of correct injection

### iRF

Injector Reverse Flush Device used to remove all dirt remained inside injector body after cleaning with the use of Ultrasonics

### eRSO

Electrical Resistance, Short Circuit & Open Circuit Test

### 0-10 Bar

Testing Capability of All Types of Injectors up to 10Bars Maximum.

GD Units are available for High Pressure Direct Injectors up to 1200Bars

### Service & Repair

Increased exhaust emissions

Reduced engine performance (Power, Torque)

Increased fuel consumption

Poor drive-ability situations

Direct injection systems failure (Leaks, Pressure drop)

Rough idle and periodic stall of the engine

Conditions that lead to long-term catalytic converter damage

Extended engine start-up MIL - check engine light-up

## WORKSHOPS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps

## GS8 / GS4

### Technical Data

|                                |  | GS8          | GS4          |
|--------------------------------|--|--------------|--------------|
|                                | Part Number                                | (CZ-008350)  | (CZ-008347)  |
|                                | Standalone                                 | ●            | ●            |
|                                | Add-On                                     | -            | -            |
| TYPE                           | Test Bench                                 | ●            | ●            |
|                                | Service / Diagnostic Unit                  | -            | -            |
| USER LEVEL                     | Diesel / Gasoline Specialists              | ○            | ○            |
|                                | Workshop / Garage                          | ●            | ●            |
|                                | Test Slots [injectors / Pumps]             | [8/ -]       | [4/ -]       |
|                                |  |              |              |
| SYSTEMS /<br>[TESTING MINUTES] | CRDi / Smart Injectors [ 1 / 4 ]           | -            | -            |
|                                | GDi Injectors [ 1 / 4 ]                    | ●            | ●            |
|                                | Gasoline Injectors [ 1 / 4 ]               | ●            | ●            |
|                                | LPG / CNG Injectors [ 1 / 4 ]              | ●            | ●            |
|                                |  |              |              |
| APPLICATIONS                   | Passenger Car / HEV / PHEV                 | ●            | ●            |
|                                | Motorcycles                                | ●            | ●            |
|                                | Racing (Gasoline)                          | ●            | ●            |
|                                | Light Duty                                 | -            | -            |
|                                | Medium Duty                                | -            | -            |
|                                | Marine                                     | □            | □            |
|                                |  |              |              |
| MEASUREMENT<br>SENSORS         | XKM  | -            | -            |
|                                | BK   | -            | -            |
|                                | Volumetric Tubes                           | 8            | 4            |
|                                |  |              |              |
| SYSTEM PRESSURE                | Max (BAR)                                  | 10           | 10           |
|                                | Source                                     | ELECTR. PUMP | ELECTR. PUMP |
|                                | Spray Chamber                              | ●            | ●            |
|                                | Mains Power 50/60Hz /1-Phase 100-250VAC    | ●            | ●            |
|                                | Mains Power 50/60Hz /3-Phase/PE 380-480VAC | -            | -            |
|                                | Tank Capacity [testing / flushing]         | [4 / -]      | [4 / -]      |
|                                | HMI (Inches)                               | LCD          | LCD          |
|                                | Touchscreen                                | -            | -            |
|                                | Protective Cover                           | -            | -            |
|                                | Calibration Oils                           | ○            | ○            |
|                                | Ultrasonic Bath                            | ●            | ●            |
|                                |  |              |              |
| PACKAGING                      | Width (mm)                                 | 660          | 500          |
|                                | Depth (mm)                                 | 770          | 440          |
|                                | Height (mm)                                | 800          | 680          |
|                                | Weight (kg)                                | 52           | 39           |

**MEASUREMENT SENSORS**  
XKM [Dynamic Meas. Sensor], High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
Measur. Range: 1-1000ml/min  
Volumetric Tubes [Static Analog Measurement]: Accuracy: 1ml, Measurement range: 0.5-65ml

**APPLICATIONS**  
Passenger Car/ Motorcycles: Volumes up to 120mm<sup>3</sup>/H  
Light Duty: Volumes up to 200mm<sup>3</sup>/H  
Medium Duty: Volumes up to 200mm<sup>3</sup>/H  
Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
Marines: Volumes up to 1500mm<sup>3</sup>/H

#### EXPLANATIONS

● : Capable / Standard Equipped  
□ : Capable / Optionals required  
○ : Optional  
- : N/A

**PRESSURE SOURCES**  
Air: Air Driven High Pressure Pump  
Motor: Motor Driven High Pressure CR Pump  
External: Pressure coming from another test Bench or external source  
Electr. Pump: Pressure coming from an electrical system or Industrial Application  
Electrical Pump 12VDC  
---: No Pressure Source

## ES.3

### Gasoline System Test Bench

## Diesel & Gasoline Engine De-Carbonizing Unit.

### DPF & Intake Manifold Treatment Unit

#### Benefits

- Exhaust emissions reduction more than 70%
- De-Carbonization of the combustion chamber
- De-Carbonization of the catalytic converter
- De-Carbonizing of Intake Manifold and throttle body
- DPF Cleaning without disassembling
- Maximum restoration of engine's performance
- Reduction of fuel consumption

#### Features

- Common-Rail system cleaning
- High Pressure pump conditioning
- Optimum fuel combustion gain
- Blocked valves and piston rings release
- Improved idle-speed stability
- Fading of engine knocking
- Prevention of long-term expensive repairs
- User-Friendly, On-Display guide with language localization
- Automatic Pressure adjustment and Operation Cycle
- Use of External Tank/Dual-Tank system
- Adaptability to all makes and models
- Portable, Lightweight and Robust unit



#### Systems

- Common-Rail and Conventional Diesels
- Gasoline Direct Injection (G-Di, FSI, HPI, CGI etc.)
- Conventional Fuel Injection (MPFI / TBI / CIS)
- LPG and Alternative fuels
- Carbureted Engines

*\*Optional Upgrade*

## Detergents

The environmental friendly ES Series Detergents for Decarbonizing the engine activates the inert carbon molecules, resins, dust varnish and gums that accumulate inside the engine components, and burns them with the combustion process.



## Adapters

Exclusive fuel system adapters kit available for all types of engine configurations\*



## DPF.01

Diesel Particulate Filter Cleaning Adapter Kit. Use of Non-Combustible environmental friendly detergent to efficiently clean Particulate Matter, Carbon Soot, Ash, Organic materials and Sulfates.

Application programmable duty-cycle software integrated



## IMC.01

Intake Manifold Cleaning Adapter Kit & Non-Combustible environmental friendly detergent. Application programmable duty-cycle software integrated



## WORKSHOPS

|               |
|---------------|
| CRDi          |
| EUI/EUP       |
| HEUi          |
| CRP           |
| <b>ENGINE</b> |
| GDİ           |
| Efi           |
| GDİ Pumps     |

## ES3 Technical Data

|                 | Part Number                                | (CZ-008354)  |
|-----------------|--|--------------|
|                 | Standalone                                 | ●            |
|                 | Add-On                                     | -            |
| TYPE            | Test Bench                                 | -            |
|                 | Service / Diagnostic Unit                  | ●            |
| USER LEVEL      | Diesel / Gasoline Specialists              | ○            |
|                 | Workshop / Garage                          | ●            |
|                 | Gasoline /Other Engines                    | ●            |
|                 | Diesel Engines                             | ●            |
|                 | Gasoline/Diesel Fuel Systems               | ●            |
| APPLICATIONS    | Passenger Car / HEV / PHEV                 | ●            |
|                 | Motorcycles                                | ●            |
|                 | Racing (Gasoline)                          | ●            |
|                 | Light Duty                                 | ●            |
|                 | Medium Duty                                | ●            |
|                 | Heavy Duty / Industrial                    | ●            |
|                 | Marine                                     | ●            |
| SYSTEM PRESSURE | Max (BAR)                                  | 10           |
|                 | Source                                     | ELECTR. PUMP |
|                 | Mains Power 50/60Hz /1-Phase 100-250VAC    | 12VDC        |
|                 | Mains Power 50/60Hz /3-Phase/PE 380-480VAC | -            |
|                 | Tank Capacity [testing / flushing]         | [6 / -]      |
|                 | HMI (Inches)                               | LCD          |
|                 | Touchscreen                                | -            |
|                 | Ultrasonic Bath                            | -            |
| PACKAGING       | Width (mm)                                 | 410          |
|                 | Depth (mm)                                 | 410          |
|                 | Height (mm)                                | 1030         |
|                 | Weight (kg)                                | 33           |

### EXPLANATIONS

● : Capable / Standard Equipped  
 □ : Capable / Optionals required

○ : Optional  
 - : N/A

## FST / FST-HF

### Diesel & Gasoline System Test



#### Diagnosis

Incorrect fuel pressure  
Incorrect system fuel flow Plugged fuel filter  
Faulty fuel pump  
Plugged fuel pump inlet strainer Faulty fuel pump check valve  
Leaky fuel injectors  
Incorrect operation of the fuel pressure regulator Fuel foaming and/or contamination  
Restrictions in supply/ return fuel lines  
Intake manifold vacuum fluctuation  
Exhaust back-pressure for testing DPF & Catalytic Converter  
Turbo-boost pressure operation  
Adaptability for all Makes, Models and Types

#### Features

Compact, Portable and Robust tool for use in the workshop  
High flow capability for Racing and Performance applications[FST-HF]  
Easy readable analog gauges: Fuel Pressure, Manifold Vacuum, Exhaust Back-Pressure  
Durable and clear analog flow tube Spill-free quick connectors  
Easy hook for mounting on engine hood



## HP-G2500

### Common-Rail Gauge

#### FEATURES

New Common Rail Injection Systems  
Up to 2500Bar  
Compact & Portable  
Dynamic & Static tests  
Adaptable to all CRDi Systems



## HP-G250

### High Pressure Gauge

#### FEATURES

Conventional Diesel Systems  
GDi Gasoline Fuel Systems  
Up to 250Bar  
Compact & Portable Dynamic  
& Static tests Adaptable to all DI  
& G-Di Systems\*

\*Optional Upgrade





## CRPT-110

Digital Common Rail Pressure Tester

### DIAGNOSIS

CRDi system operating pressure CRDi system leaking

### FEATURES

Easy Operation / Robust design

Adaptability to All Makes sensors

Operation Range 0-2000 Bar

Measurement resolution of 1 bar

Indication for defective pressure sensor

Fault detection indicated by a red warning LED

Automatic shut-off after 1 minute

Power supply by 9 V battery (standalone unit)



## CRMK-110

Common Rail Injectors Backflow Kit for All Injector Makes

### DIAGNOSIS

CRDi Excessive Back-Leak

### FEATURES

Test kit for checking the return flow volumes from Common-Rail Injectors

Plexiglass robust container with graduated scales

for easy comparison

Metal chain hook to hold tester in upright position of the engine hood

Set of backleak connectors for BOSCH, VDO, DELPHI and DENSO injectors

## WORKSHOPS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDİ

EFİ

GDİ Pumps



## PIMK-010

Piezo CRDi Backflow Pressure Tester

### DIAGNOSIS

Piezo CRDi return pressure Piezo injector proper operation

### FEATURES

Transparent Plexiglass tester to permit view of any air pockets which may be present in the fuel

Interchangeable vacuum gauge on the test unit for further testing capabilities

Adaptability for most injectors in the market

Pressure relief valve

for safe removing from engine

Adaptable to BOSCH (15 Bar gauge) and VDO, DELPHI & DENSO (+3 Bar gauge)



## DIT-062

High Pressure Injector Leakage Tester

### FEATURES

Up to 600Bar

Compact Static tests adaptable to all Di and GDİ injectors



Welcome  
to an Innovation  
Driven World

Product Catalog











Scan CZ Digital  
Product Catalog

### Import i dystrybucja w Polsce

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