

INNOVATION DRIVEN



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# 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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## 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**

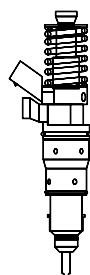
- IoT Cloud computing Platform. Industry 4.0 Complaint
- Live Online Updates of Database and supporting new requests from clients
- Remote Operation and Status Report of Client Bench
- Generating remote reports for handling, printing, filling and organizing from machine database
- Instant Activation 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

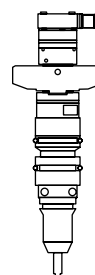
Explore our complete range of Automotive Injection Service Solutions both for Specialist and Workshops thought the supporting Systems & find your next best match.



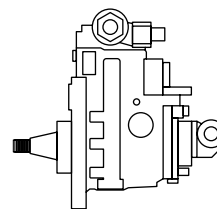
CRDI



EUI/EUP



HEUI



CRP

SPECIALISTS

PAGE	MACHINES	DIESEL			
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				
64-65	ACCESSORIES				

WORKSHOPS

68-69	DSR-X	●			
70-71	DS2R-A	●			
72-73	GDR-X				
74-75	GS4				
74-75	GS8				
76-77	ES.3				
78	FST				
78	FST-HF				
78	HP-G2500				
78	HP-G250				
79	CRPT-110				
79	CRMK-110				
79	PIMK-010				
79	DIT-062				

**CRDi**  
Common Rail Diesel Injectors

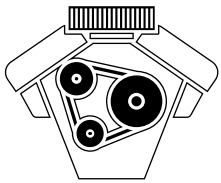
**EUI**  
Electronic Unit Injectors

**EUP**  
Electronic Unit Pumps

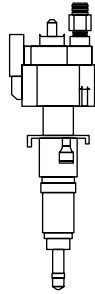
**HEUI**  
Hydraulic Electronic Unit Injectors

**CRp**  
Common Rail Diesel Pumps

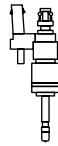
**Engine**  
Diagnostic and Service Solutions



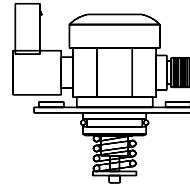
ENGINE



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
				ACCESSORIES
				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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**PTBR-X**  
**SPECIALISTS**

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**ITB.4R-X**  
**SPECIALISTS**

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**ITB.1R-X**  
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**CRU.2R-X**  
**SPECIALISTS**

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**DGFR-X**  
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**GDU.4R-X**  
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**DSR-X**

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**DS2R-A**

**WORKSHOPS**

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**GDR-X**

**WORKSHOPS**

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**GS8**

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**ES.3**

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**HP-G2500**

**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.



**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*



## SPECIALISTS

CRDi

EUi/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps

## 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)

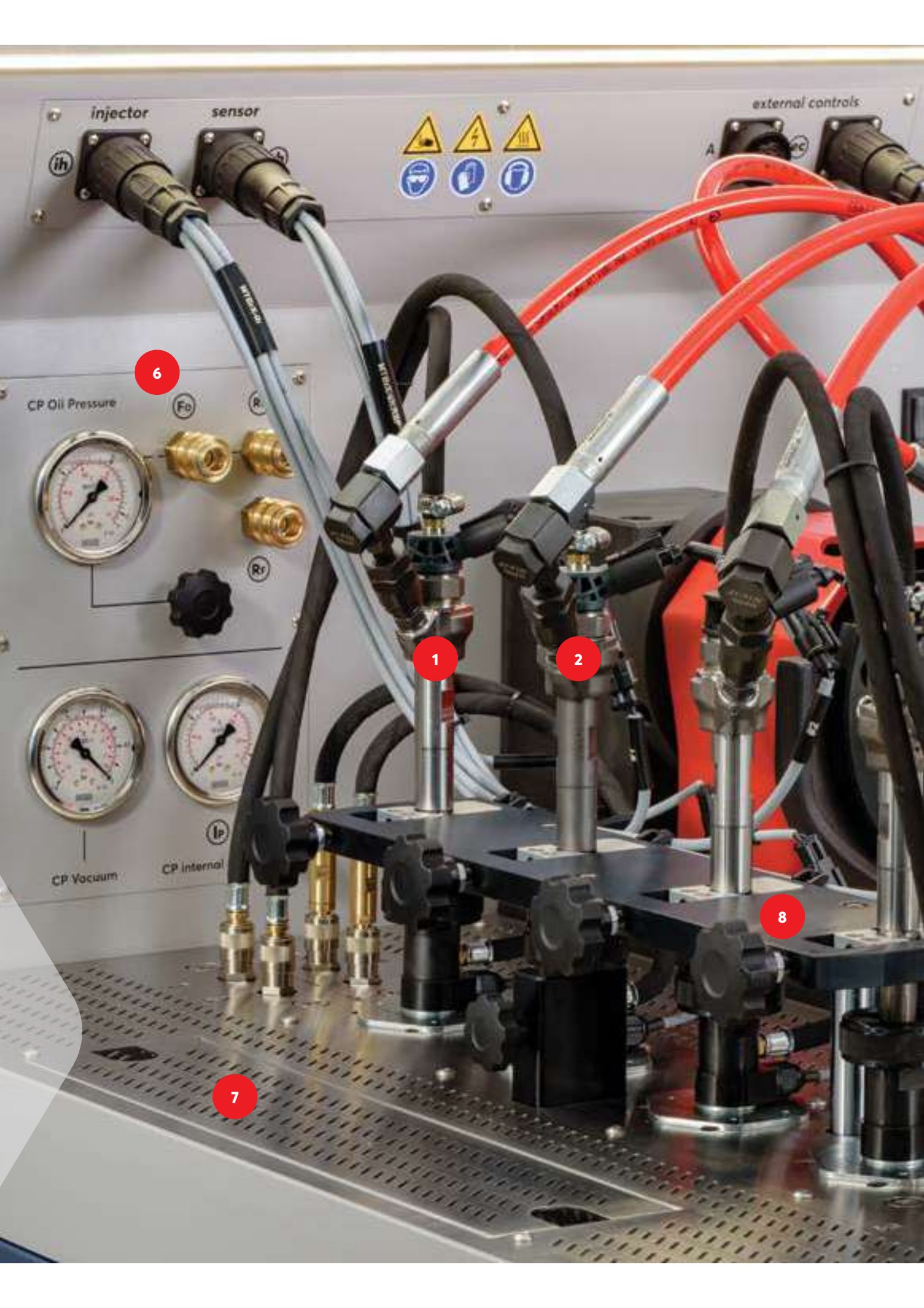
- 6-10 minutes testing and coding\* time per injector
- Capable for all EU6 technologies
- Expandable to Future Systems

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

## 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**





injector

sensor

external controls



6

CP Oil Pressure



Fp

Rp

Rr

1

2



lp

CP Vacuum

CP Internal

8

7



## 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.



### 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.



### 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.



### 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.

MTBR-X Points

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



## SPECIALISTS

CRDi

EUi/EUP

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GDi

EFi

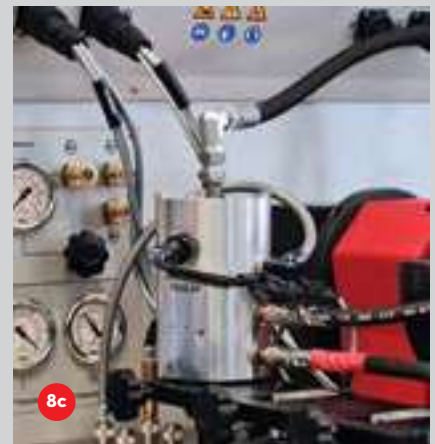
GDi Pumps



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.

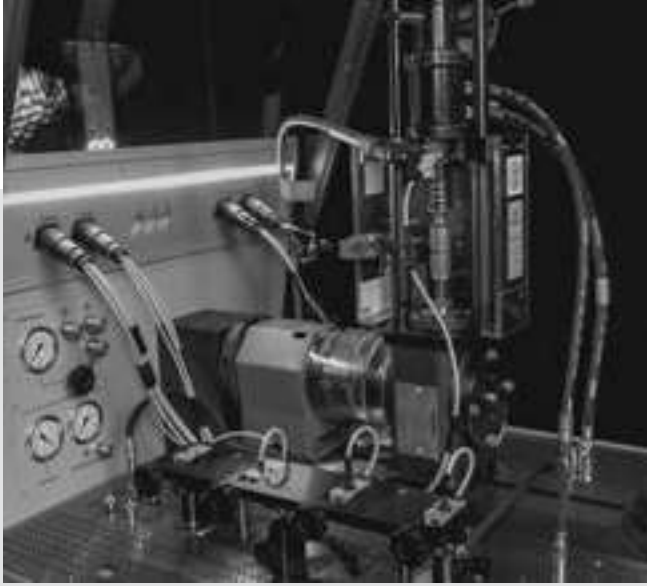
**8b. CAT 3408/3412** measuring the discharge and overflow at different loads.

**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.

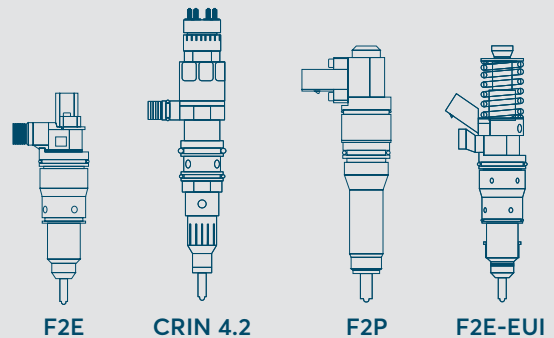
**8d. Isuzu Trooper.** Medium load HEUI injectors available in less countries in the world are also able to be fully tested with the New MTBR-X.(not shown in picture)



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 [240°] & 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



DESCRIPTION		UNIT	MTBRX-A (CZ-008713)	MTBRX-W (CZ-008783)	
Machine Type	Cooling System	A / W	AIR	WATER	
Machine Dimensions	Length	mm	950	950	
	Width	mm	1300	1300	
	Height	mm	1610	1610	
Weight		kg	571	573	
HMI	Tablet Touchscreen	Inches	15	15	
Pressure Source	Type	Motor Driven High Pressure CR Pump			
Test Oil	Type	(DxL-ISO) ISO4113 Calibration Oil			
Test Oil for CPL / EZO	Type	Engine Oil (0W-40 / 10W-40 / 15W-50)			
EZO Oil Tank	Capacity	Liters	0.7	0.7	
CPL Oil Tank	Capacity	Liters	5	5	
Test Oil Tank	Capacity	Liters	44	44	
Flush Tank	Capacity	Liters	11	11	
Max Pressure	Pressure	Bar	2800	2800	
Max RPM	Max Revolutions Per Minute	RPM	4000	4000	
Max Pumps	Diesel Pumps	Slots	1	1	
	Gasoline Pumps	Slots	1	1	
Max Injectors	Test Injectors	Slots	4	4	
		Types	"4 CRI / 4 GDI / 1 HEUI / 1 EUJ-EUP"	"4 CRI / 4 GDI / 1 HEUI / 1 EUJ-EUP"	
LP Pump	Supply Pressure	Bar	0.1 / 5.4	0.1 / 5.4	
CP Vacuum	CP Vacuum Gauge	Bar	0 / -1	0 / -1	
CP IP	CP Internal Pressure Gauge	Bar	0 / 16	0 / 16	
CPL Pressure	CP Oil Pressure	Bar	0.1 / 8	0.1 / 8	
Air Supply	Pressure	Bar	-	-	
	Air Flow	Lt/ Min	-	-	
Main Power Supply	Phases	Number	3P	3P	
		TYPE	PE	PE	
	Voltage	VAC	380-480	380-480	
	Frequency	Hz	50/60	50/60	
	Current	Ampere	32	32	
Motor	Max Consumption	kVA (380V/480V)	21 - 26.6	21 - 26.6	
	Model	TYPE	AK132-4	AK132-4	
	RPM		RPM 50 / 60Hz	1450 / 1740	1450 / 1740
			KW 50 / 60Hz	13 / 15.6	13 / 15.6
	POWER	HP 50 / 60Hz	17.5 / 21	17.5 / 21	17.5 / 21
Connection Δ		Ampere (50HZ)	400 V:24.4 A	400 V:24.4 A	
		Ampere (60HZ)	480 V: 24.4A	480 V: 24.4A	
Water Supply	Max Input pressure	Bar	-	4	
	Max Output Pressure	Bar	-	1Bar< Input Pressure	
	Min Input Temperature	Celsius	-	5	
	Max Input Temperature	Celsius	-	15	
	Min Diameter In/Out Water Hose	mm	-	10	
	Water Tank Capacity	Liters	-	17	
	Max Water Flow	Lt / Min (4Bar)	-	4	
	Min Water Output Temperature	Celsius	-	5	
	Max Water Output Temperature	Celsius	-	65	
	Delta T	Celsius	-	0-50	
	Max Cooling Efficiency "Debit" [27.2 liters of 5° C water in order to Cool Down the Test Oil from 43° C to 36° C (1.6 tank cycles)]	Tank Cycles	-	1.6	
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 23	6 / 30	
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 4 *	XKM / 4 *	
		Type / Quantity	DFM500 / 1**	2/9/23	

<b>CRDi</b>
<b>EUJ/EUP</b>
<b>HEUI</b>
<b>CRP</b>
<b>ENGINE</b>
<b>GDI</b>
<b>EFI</b>
<b>GDi Pumps</b>

**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: 1mi., 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 300mm<sup>3</sup>/H  
**Heavy Duty:** Volumes up to 650mm<sup>3</sup>/H  
**Marines:** Volumes up to 1500mm<sup>3</sup>/H

**EXPLANATIONS**  
 - : N/A  
 - A: Air Cooling  
 - W: Water Cooling

**PRESSURE SOURCES**  
 Air: Air 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

**PTBR //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*

## SPECIALISTS

CRDi

EUI/EUP

HEUi

**CRP**

ENGINE

GDi

EFI

**GDi Pumps**

## 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.)



## 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.

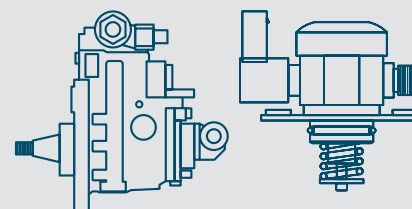
**3b / 3c: EU6 Generation Common Rail Pump testing:**

- 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 pumps.

**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*

# PTBR Specifications

DESCRIPTION		UNIT	PTBRX-A (CZ-008715)	PTBRX-W (CZ-008785)
Machine Dimensions	Length	mm	950	950
	Width	mm	1300	1300
	Height	mm	1610	1610
Weight		kg	520	522
HMI	Tablet Touchscreen	Inches	15	15
Pressure Source	Type	Motor Driven High Pressure CR Pump		
Test Oil	Type	(DxL-ISO) ISO4113 Calibration Oil		
Test Oil for CPL / EZO	Type	Engine Oil (0W-40 / 10W-40 / 15W-50)		
EZO Oil Tank	Capacity	Liters	0.7	0.7
CPL Oil Tank	Capacity	Liters	5	5
Test Oil Tank	Capacity	Liters	44	44
Flush Tank	Capacity	Liters	11	11
Max Pressure	Pressure	Bar	2800	2800
Max RPM	Max Revolutions Per Minute	RPM	4000	4000
Max Pumps	Diesel Pumps	Slots	1	1
	Gasoline Pumps	Slots	1	1
Max Injectors	Test Injectors	Slots	-	-
		Types	-	-
LP Pump	Supply Pressure	Bar	0.1 / 5.4	0.1 / 5.4
CP Vacuum	CP Vacuum Gauge	Bar	0 / -1	0 / -1
CP IP	CP Internal Pressure Gauge	Bar	0 / 16	0 / 16
CPL Pressure	CP Oil Pressure	Bar	0.1 / 8	0.1 / 8
Air Supply	Pressure	Bar	-	-
	Air Flow	Lt/ Min	-	-
Main Power Supply	Phases	Number	3P	3P
	TYPE		PE	PE
	Voltage	VAC	380-480	380-480
	Frequency	Hz	50/60	50/60
	Current	Ampere	32	32
	Max Consumption	kVA (380V/480V)	21 - 26.6	21 - 26.6
Motor	Model	TYPE	AK132-4	AK132-4
	RPM	RPM 50 / 60Hz	1450 / 1740	1450 / 1740
	POWER	KW 50 / 60Hz	13 / 15.6	13 / 15.6
		HP 50 / 60Hz	17.5 / 21	17.5 / 21
		Connection Δ	Ampere (50HZ)	400 V:24.4 A
	Ampere (60HZ)	480 V: 24.4A	480 V: 24.4A	
Water Supply	Max Input pressure	Bar	-	4
	Max Output Pressure	Bar	-	1Bar< Input Pressure
	Min Input Temperature	Celsius	-	5
	Max Input Temperature	Celsius	-	15
	Min Diameter In/Out Water Hose	mm	-	10
	Water Tank Capacity	Liters	-	17
	Max Water Flow	Lt / Min (4Bar)	-	4
	Min Water Output Temperature	Celsius	-	5
	Max Water Output Temperature	Celsius	-	65
	Delta T	Celsius	-	0-50
	Max Cooling Efficiency "Debit" [27.2 liters of 5° C water in order to Cool Down the Test Oil from 43° C to 36° C (1.6 tank cycles)]	Tank Cycles	-	1.6
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 23	6 / 30
IVM Sensors	Measurement Sensors	Type / Quantity	DMF50 / 1 *	DMF50 / 1 *
			DFM500 / 1**	2/9/23

## SPECIALISTS

CRDi
EUI/EUP
HEUi
<b>CRP</b>
ENGINE
GDi
EFI
<b>GDi Pumps</b>

**MEASUREMENT SENSORS**  
 XKM [Dynamic Meas. Sensor]; High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%, Measur. Range: 1-1000ml/min  
 DFM500 [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: 1mi., 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 300mm<sup>3</sup>/H  
 Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
 Marines: Volumes up to 1500mm<sup>3</sup>/H

**EXPLANATIONS**  
 - : N/A  
 - A: Air Cooling  
 - W: Water Cooling

**PRESSURE SOURCES**  
 Air: Air  
 High Pressure Pump: High Pressure CR Pump  
 Motor Driven: Motor Driven High Pressure CR Pump  
 External: Pressure coming from another Test Bench or external source  
 Elect. Pump: Fuel Injection system or Industrial Application Electrical Pump 12VDC  
 -: 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*

## 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...)
- Capable to diagnose failures on GDi Injectors (Optional). Recommended unit for GDi Injector Testing and Servicing is the GTBR-X

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

## SPECIALISTS

CRDi

EUI/EUP

HEUI

CRP

ENGINE

GDi

EFI

GDi Pumps



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

# ITBR-X Points



*\*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



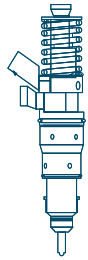
CRIN 4.2



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*



## SPECIALISTS

CRDi

EUI/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps



## Specifications

DESCRIPTION		UNIT	ITB.4RX-A (CZ-008721)	ITB.4RX-W (CZ-008771)	ITB.1RX-A (CZ-008719)	ITB.1RX-W (CZ-008799)	
Machine Dimensions	Length	mm	770	770	770	770	
	Width	mm	800	800	800	800	
	Height	mm	1650	1650	1650	1650	
Weight		kg	292	294	250	252	
HMI	Tablet Touchscreen	Inches	15	15	15	15	
Internet Update	WiFi / Ethernet	-	YES / YES	YES / YES	YES / YES	YES / YES	
Pressure Source	Type		Motor Driven High Pressure CR Pump				
Test Oil	Type		(DxL-ISO) ISO4113 Calibration Oil				
Test Oil Tank	Capacity	Liters	30	30	30	30	
Max Pressure	Pressure	Bar	2800	2800	2800	2800	
Max RPM	Max Revolutions Per Minute	RPM	1850	1850	1600	1600	
Max Pumps	Pumps Test	Slots	-	-	-	-	
Max Injectors	Test Injectors	Slots	4	4	1	1	
LP Pump	Supply Pressure	Bar	0.1 - 5.4	0.1 - 5.4	0.1 - 5.4	0.1 - 5.4	
Air Supply	Pressure	Bar	-	-	-	-	
	Air Flow	Lt/ Min	-	-	-	-	
Main Power Supply	Phases	Number	3P	3P	1P	1P	
		TYPE	PE	PE	P+N / PE	P+N / PE	
		Voltage	VAC	380-480	380-480	220-240	220-240
		Frequency	Hz	50/60	50/60	50/60	50/60
		Current	Ampere	16	16	25	25
		Max Consumption	kVA (380V/480V) kVA (220V/240V)	10.5-13.3	10.5-13.3	5.5 - 6	5.5 - 6
Motor	Model	TYPE	AK100L-4	AK100L-4	AK100L-4	AK100L-4	
	RPM	RPM 50 / 60Hz	1420 / 1700	1420 / 1700	1420 / 1700	1420 / 1700	
	POWER	KW 50 / 60Hz	3 / 3.6	3 / 3.6	3 / 3.6	3 / 3.6	
		HP 50 / 60Hz	4 / 4.8	4 / 4.8	4 / 4.8	4 / 4.8	
	Connection Δ	Ampere (50HZ)	400 V:6.56 A	380 V: 6.89 A	400 V:6.56 A	380 V: 6.89 A	
	Ampere (60HZ)	480 V:6.56 A	460 V: 6.89 A	480 V:6.56 A	460 V: 6.89 A		
Water Supply	Max Input pressure	Bar	-	4	-	4	
	Max Output Pressure	Bar	-	1Bar< Input Pressure	-	1Bar< Input Pressure	
	Min Input Temperature	Celsius	-	5	-	5	
	Max Input Temperature	Celsius	-	15	-	15	
	Min Diameter In/Out Water Hose	mm	-	10	-	10	
	Water Tank Capacity	Liters	-	10	-	10	
	Max Water Flow	Lt / Min (4Bar)	-	4	-	4	
	Min Water Output Temperature	Celsius	-	5	-	5	
	Max Water Output Temperature	Celsius	-	65	-	65	
	Delta T	Celsius	-	0-50	-	0-50	
	Max Cooling Efficiency "Debit" [20 liters of 5° C water in order to Cool Down the Test Oil from 43° C to 36° C (2 tank cycles)]	Tank Cycles		-	2	-	2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 23	6 / 30	6 / 23	6 / 30	
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 4 *	XKM / 4 *	XKM / 2 *	XKM / 2 *	

**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: 1mi, Measurement range: 0.5-65ml

**APPLICATIONS**  
 Passenger Car/ Motorcycles: Volumes up to 1200mm<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

### EXPLANATIONS

- : N/A  
 - A: Air Cooling  
 - W: Water Cooling

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

# 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...

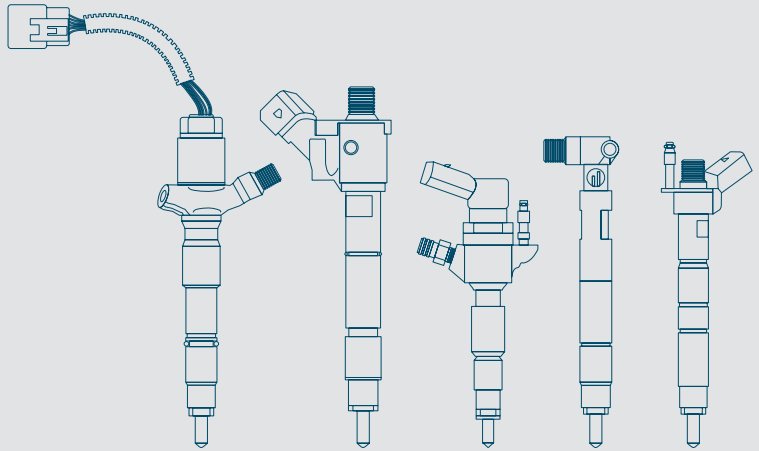
**CGL - Authorized Continental / VDO "Blind-Lift"  
Measurement of Piezo-Stack**



**CloudX™**

Details on page 06

## CRDi Test Bench for Diesel Specialists & Workshops



## 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)

### AZO SOFTWARE

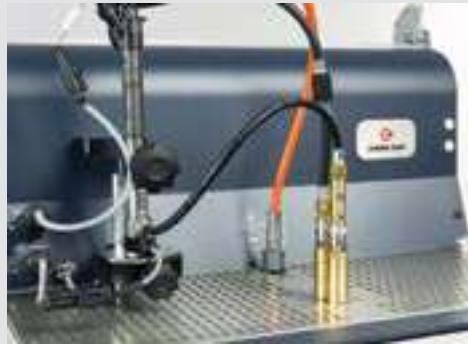


\*New database and Coding is continously being updated to new EU6 applications

## SPECIALISTS



TESTING WITH ILLUMINATED  
SPRAY CHAMBER.



TESTING WITH RESPONSE MEASUREMENT  
CHAMBER FOR CODING.

CRDi
EUI/EUP
HEUi
CRP
ENGINE
GDi
EFi
GDi Pumps

## CRU2R //X Specifications

DESCRIPTION		UNIT	CRU.2R X (CZ-008728)
Machine Dimensions	Length	mm	620
	Width	mm	780
	Height	mm	740
Weight		kg	63
HMI	Tablet Touchscreen	Inches	10
Internet Update	WiFi / Ethernet	-	YES / YES
Pressure Source	Type	Air Driven High Pressure Pump	
Test Oil	Type	"(DxL-ISO) ISO4113 Calibration Oil"	
Test Oil Tank	Capacity	Liters	4
Max Pressure	Pressure	Bar	2500
Max RPM	Max Revolutions Per Minute	RPM	-
Max Pumps	Pumps Test	Slots	-
Max Injectors	Test Injectors	Slots	1
HP Pump	High Pressure Pump	Type	Pneumatic Pump
LP Pump	Supply Pressure	Bar	-
	Pressure	Bar	6.5-10
	Air Tank Capacity	Lt	250
	Air Flow	Lt/ Min	400
	Min Diameter at Air Supply Hose	mm	8
Air Supply	Air	Type	Water / Oil FREE
	Phases	Number	1
	Voltage	VAC	1P+N
	Frequency	Hz	50/60
	Current	Ampere	5
Main Power Supply	Max Consumption	kVA (100V/240V)	0.5 / 1.2
	Operating Temperature	Min / Max Room Temperature	Celsius
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 2 *

**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 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

### EXPLANATIONS

- : N/A  
- A: Air Cooling  
- W: Water Cooling

**PRESSURE SOURCES**  
Air: Air Driven High Pressure Pump  
Max: Max. Dynamic High Pressure  
External: Pressure coming from another Test Bench or external source

**Electr. Pump:** Fuel Injection system or Industrial Application Electrical Pump 12VDC  
--: No Pressure Source

**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*



## SPECIALISTS

CRDi

EUI/EUP

HEUI

CRP

ENGINE

GDi

EFI

GDi Pumps



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

# SPAR

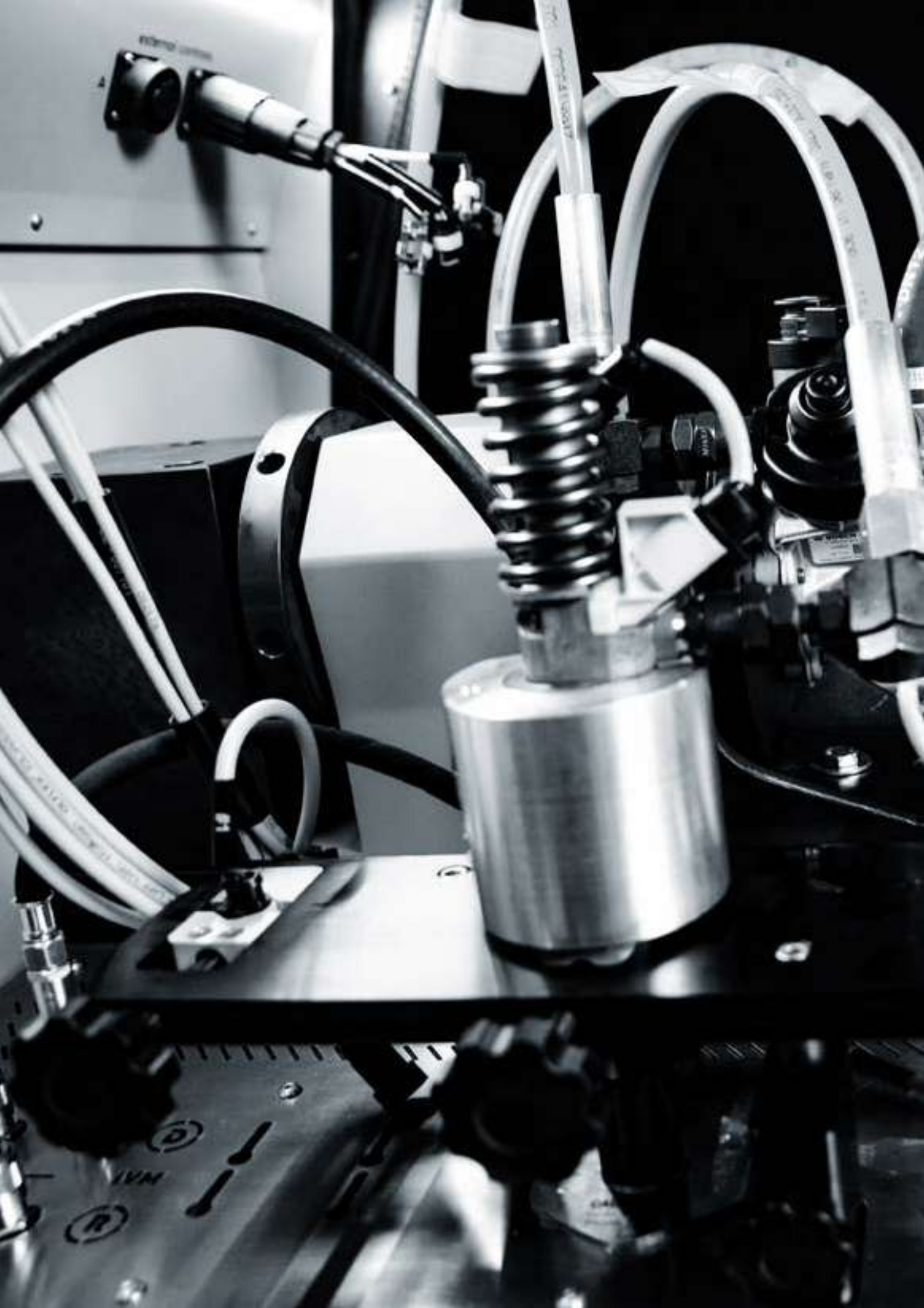
## Diesel System Test Bench

## DGFR //X Specifications

DESCRIPTION		UNIT	DGFR-X (CZ-007091)
Machine Dimensions	Length	mm	510
	Width	mm	780
	Height	mm	780
Weight		kg	66
HMI	Tablet Touchscreen	Inches	10
Internet Update	WiFi / Ethernet	-	YES / YES
Pressure Source	Type	Air Driven High Pressure Pump (DxL-ISO) ISO4113	
Test Oil	Type	Calibration Oil	
Test Oil Tank	Capacity	Liters	4
Flush Tank	Capacity	Liters	4
Max Pressure	Pressure	Bar	1000
Max RPM	Max Revolutions Per Minute	RPM	-
Max Pumps	Pumps Test	Slots	-
Max Injectors	Test Injectors	Slots	4
HP Pump	High Pressure Pump	Type	Pneumatic Pump
LP Pump	Supply Pressure	Bar	-
	Pressure	Bar	6 - 8
	Air Tank Capacity	Lt	200
	Air Flow	Lt/ Min	300
Air Supply	Min Diameter at Air Supply Hose	mm	8
	Air	Type	Water / Oil FREE
Main Power Supply	Phases	Number	1
		TYPE	1P+N
	Voltage	VAC	100 - 240
	Frequency	Hz	50/60
	Current	Ampere	5
	Max Consumption	kVA (100V/240V)	0.5 / 1.2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 35
IVM Sensors	Measurement Sensors	Type / Quantity	-

**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  
 Marine: Volumes up to 1500mm<sup>3</sup>/H

**EXPLANATIONS**  
 - : 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  
 Electric Pump: Fuel Injection system or Industrial Application Electrical Pump 12VDC  
 -: No Pressure Source



STANDARD CONNECTION

ATKINS Primary

ATKINS Primary

IVM

®

®



**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 - GDi – 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

GDi

EFi

GDi Pumps

Conventional Test Bench  
(EPS625 or similar)



**BCR.1**

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



**BCR.4**



**ETBR-X**

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.



ETBR-X Points

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

## SPECIALISTS

CRDi

EUi/EUP

HEUi

CRP

ENGINE

GDi

EFi

GDi Pumps



- 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
- 8 Cooling

*More detailed information on page 45*



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 continously being updated to new EU6 applications



## 8 Cooling System

CRp pump outlet portable cooling system & stand for the ETBRX bench (optional add on).



## SPECIALISTS

CRDi
EUI/EUP
HEUi
CRP
ENGINE
GDi
EFi
GDi Pumps

## ETBR //X Specifications

DESCRIPTION		UNIT	ETBR-X (CZ-007092)
Machine Dimensions	Length	mm	510
	Width	mm	650
	Height	mm	550
Weight		kg	23 (Basic Version)
HMI	Tablet Touchscreen	Inches	10
Internet Update	WiFi / Ethernet	-	YES / YES
Pressure Source	Type	External: Pressure coming from another Test Bench or external source	
Test Oil	Type	(DxL-ISO) ISO4113 Calibration Oil	
Test Oil Tank	Capacity	Liters	-
Max Pressure	Pressure	Bar	2800
Max RPM	Max Revolutions Per Minute	RPM	-
Max Pumps	Pumps Test (Optional)	Slots	1
Max Injectors	Test Injectors (Optional)	Slots	4
		Types	4 CRI / 1 HEUI / 1 EUI-EUIP
Main Power Supply	Phases	Number	1
	Voltage	VAC	1P+N
	Frequency	Hz	100 - 240
	Current	Ampere	5
	Max Consumption	kVA (100V/240V)	0.5 / 1.2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 35
IVM Sensors (Optional)	Measurement Sensors (Full Version / Pumps)	Type / Quantity	XKM / 1 *
		Type / Quantity	DFM500 / 1 *

### EXPLANATIONS

- : N/A  
 - A: Air Cooling  
 - W: Water Cooling  
**PRESSURE SOURCES**  
 - Air: Air High Pressure Pump  
 - Max: Max. D. High Pressure CR Pump  
**External:** Pressure coming from another Test Bench or external source  
**Elect. Pump:** Fuel Injection system or Industrial Application Electrical Pump 12VDC  
 - -: No Pressure Source

**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 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

**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*

## SPECIALISTS

CRDi

EUI/EUP

**HEUi**

CRP

ENGINE

GDi

EFI

GDi Pumps

## 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™**

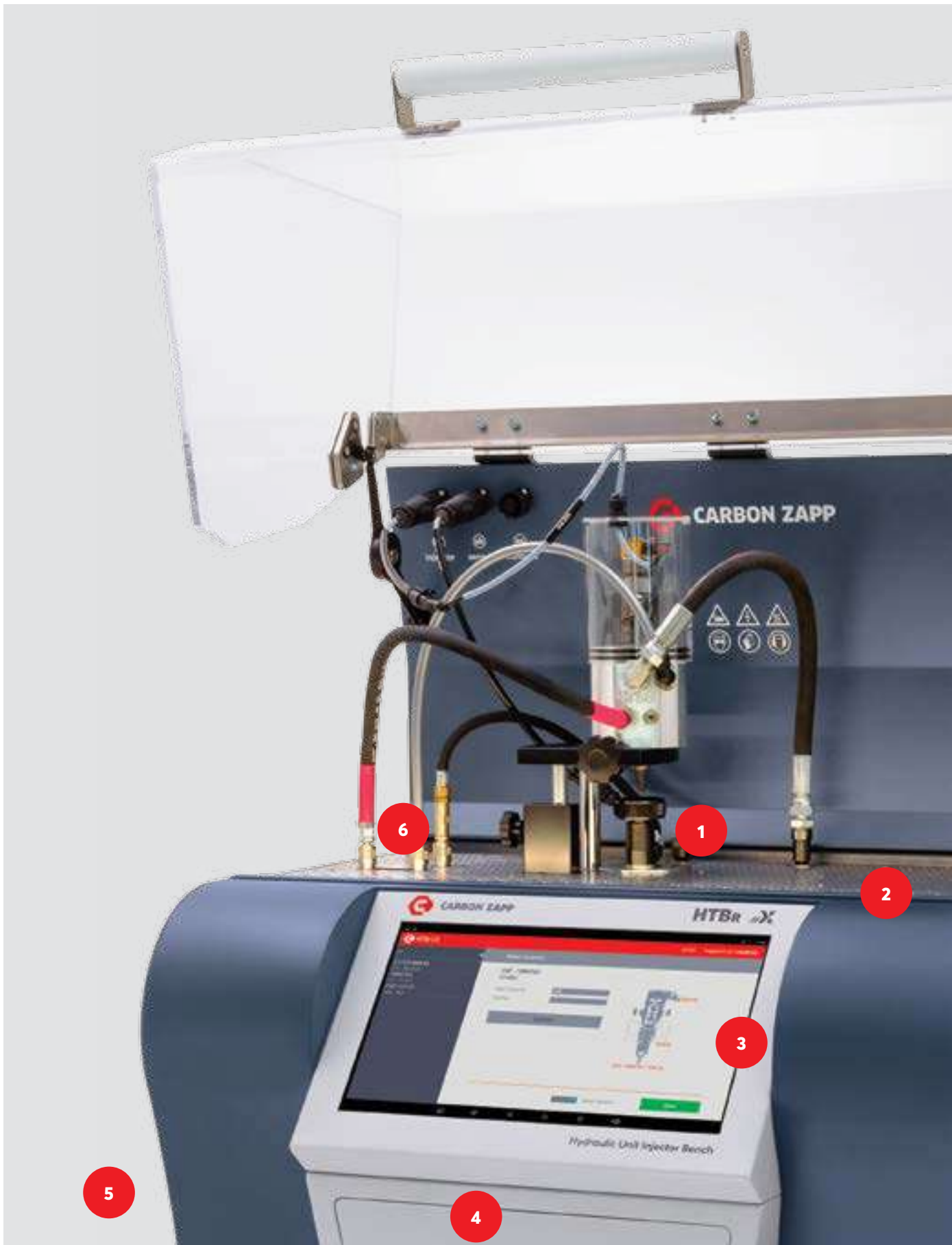
Details on page 06



## A Revolution in HEUi Test Benches

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

# HTBR-X Points



*\*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.

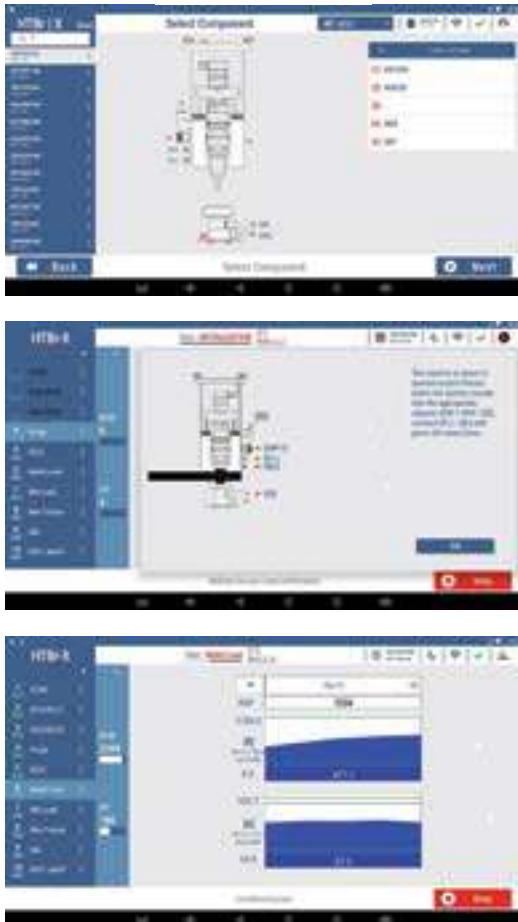
Tank extends to fill-up, drain and clean.  
(View detailed image on page 30)

#### 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



### 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

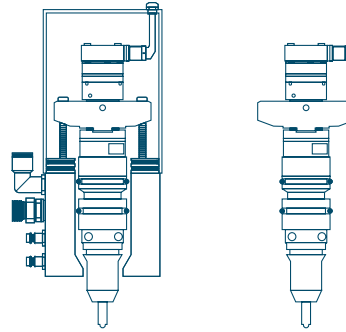
Adaptability for every type of Diesel HEUI Injectors in the market

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



## HEUI Technologies

## SPECIALISTS

CRDi
EUI/EUP
<b>HEUI</b>
CRP
ENGINE
GDi
EFI
GDi Pumps

## HTBR //X Specifications

DESCRIPTION		UNIT	HTBRX-A (CZ-008722)	HTBRX-W (CZ-008862)	
Machine Dimensions	Length	mm	770	770	
	Width	mm	800	800	
	Height	mm	1650	1650	
Weight		kg	250	252	
HMI	Tablet Touchscreen	Inches	15	15	
Internet Update	WiFi / Ethernet	-	YES / YES	YES / YES	
Pressure Source	Type	Motor Driven High Pressure CR Pump			
Test Oil	Type	(DxL-ISO) ISO4113 Calibration Oil			
Test Oil Tank	Capacity	Liters	30	30	
Max Pressure	Pressure	Bar	400	400	
Max RPM	Max Revolutions Per Minute	RPM	2500	2500	
Max Pumps	Pumps Test	Slots	-	-	
Max Injectors	Test Injectors	Slots	1	1	
LP Pump	Supply Pressure	Bar	0.1 - 5.4	0.1 - 5.4	
Air Supply	Pressure	Bar	-	-	
	Air Flow	Lt/ Min	-	-	
Main Power Supply	Phases	Number	1P	1P	
		TYPE	P+N / PE	P+N / PE	
	Voltage	VAC	220-240	220-240	
	Frequency	Hz	50/60	50/60	
	Current	Ampere	12	12	
Motor	Max Consumption	kVA (220V/240V)	2.64 - 2.88	2.64 - 2.88	
	Model	TYPE	AK100L-4	AK100L-4	
	RPM		RPM 50 / 60Hz	1420 / 1700	1420 / 1700
		POWER	KW 50 / 60Hz	3 / 3.6	3 / 3.6
	Connection Y		HP 50 / 60Hz	4 / 4.8	4 / 4.8
			Ampere (50HZ)	400 V: 6.56 A	380 V: 6.89 A
	Ampere (60HZ)	480 V: 6.56 A	460 V: 6.89 A		
Water Supply	Max Input pressure	Bar	-	4	
	Max Output Pressure	Bar	-	1Bar< Input Pressure	
	Min Input Temperature	Celsius	-	5	
	Max Input Temperature	Celsius	-	15	
	Min Diameter In/Out Water Hose	mm	-	10	
	Water Tank Capacity	Liters	-	10	
	Max Water Flow	Lt / Min (4Bar)	-	4	
	Min Water Output Temperature	Celsius	-	5	
	Max Water Output Temperature	Celsius	-	65	
	Delta T	Celsius	-	0-50	
	Max Cooling Efficiency "Debit" [20 liters of 5° C water in order to Cool Down the Test Oil from 43° C to 36° C (2 tank cycles)]	Tank Cycles	-	-	2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 23	6 / 30	
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 1 *	XKM / 1 *	

**MEASUREMENT SENSORS**  
**XKM** [Dynamic Meas. Sensor]; High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
 Measur. Range: 1-1000ml/min  
**DPM 500** [Dynamic Measurement Sensor]; Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500l/min  
**DPM 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 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

**EXPLANATIONS**  
 - : N/A  
 - A: Air Cooling  
 - W: Water Cooling

**PRESSURE SOURCES**  
 - In: In-vehicle High Pressure Pump  
 - M: Motor Driven High Pressure CR Pump  
 - E: 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.

# GTB4R-X Points



*\*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.

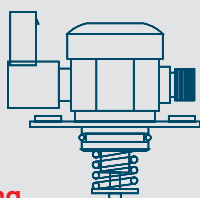
### 4 Easily accessible drawer and connection ports.

*(View detailed image on page 30)*

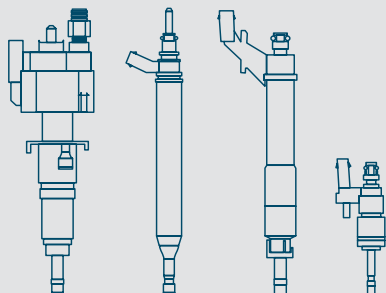
### 5 Functional use of test oil tank enhances maintenance.

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

### 6 Actual Dynamic measurement of the injector overflow



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



**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



**SPECIALISTS**

CRDi
EUI/EUP
HEUi
CRP
ENGINE
<b>GDi</b>
<b>EFI</b>
<b>GDi Pumps</b>

**GTB4R** //X Specifications

DESCRIPTION		UNIT	GTB.4RX-A (CZ-008737)	GTB.4RX-W (CZ-008787)	
Machine Dimensions	Length	mm	770	770	
	Width	mm	800	800	
	Height	mm	1650	1650	
Weight		kg	250	252	
HMI	Tablet Touchscreen	Inches	15	15	
Internet Update	WiFi / Ethernet	-	YES / YES	YES / YES	
Pressure Source	Type	Motor Driven High Pressure CR Pump			
Test Oil	Type	(GxL-ISO) Calibration Oil			
Test Oil Tank	Capacity	Liters	30	30	
Max Pressure	Pressure	Bar	1200	1200	
Max RPM	Max Revolutions Per Minute	RPM	2000	2000	
Max Pumps	Diesel Pumps	Slots	-	-	
	Gasoline Pumps	Slots	1	1	
Max Injectors	Test Injectors	Slots	4	4	
LP Pump	Supply Pressure	Bar	0.1 - 5.4	0.1 - 5.4	
Air Supply	Pressure	Bar	-	-	
	Air Flow	Lt/ Min	-	-	
Main Power Supply	Phases	Number	1P	1P	
		TYPE	P+N / PE	P+N / PE	
	Voltage	VAC	220-240	220-240	
	Frequency	Hz	50/60	50/60	
	Current	Ampere	16	16	
	Max Consumption	kVA (220V/240V)	3.52 - 3.84	3.52 - 3.84	
Motor	Model	TYPE	AK100L-4	AK100L-4	
		RPM	RPM 50 / 60Hz	1420 / 1700	1420 / 1700
	POWER	KW 50 / 60Hz	3 / 3.6	3 / 3.6	
		HP 50 / 60Hz	4 / 4.8	4 / 4.8	
		Connection Δ	Ampere (50HZ)	400 V: 6.56 A	380 V: 6.89 A
			Ampere (60HZ)	480 V: 6.56 A	460 V: 6.89 A
Water Supply	Max Input pressure	Bar	-	4	
	Max Output Pressure	Bar	-	1Bar< Input Pressure	
	Min Input Temperature	Celsius	-	5	
	Max Input Temperature	Celsius	-	15	
	Min Diameter In/Out Water Hose	mm	-	10	
	Water Tank Capacity	Liters	-	10	
	Max Water Flow	Lt / Min (4Bar)	-	4	
	Min Water Output Temperature	Celsius	-	5	
	Max Water Output Temperature	Celsius	-	65	
	Delta T	Celsius	-	0-50	
	Max Cooling Efficiency "Debit" [20 liters of 5° C water in order to Cool Down the Test Oil from 43° to 36° C (2 tank cycles)]	Tank Cycles	-	-	2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 23	6 / 30	
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 4 *	XKM / 4 *	

**MEASUREMENT SENSORS**  
**XKM** [Dynamic Meas. Sensor]; High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%,  
 Measur. Range: 1-1000ml/min  
**DPM 500** [Dynamic Measurement Sensor]; Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500l/min  
**DPM 50** [Dynamic Measurement Sensor]; Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 0.5-50l/min  
**Volumetric Tubes** [Static Analog Measurement]; Accuracy: 1mi., 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 300mm<sup>3</sup>/H  
**Heavy Duty:** Volumes up to 650mm<sup>3</sup>/H  
**Marines:** Volumes up to 1500mm<sup>3</sup>/H

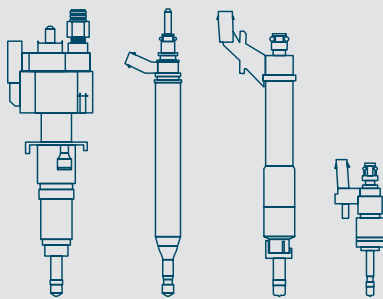
**EXPLANATIONS**  
 - : N/A  
 - A: Air Cooling  
 - W: Water Cooling

**PRESSURE SOURCES**  
 - In: In-Cell High Pressure Pump  
 - Air: Air 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

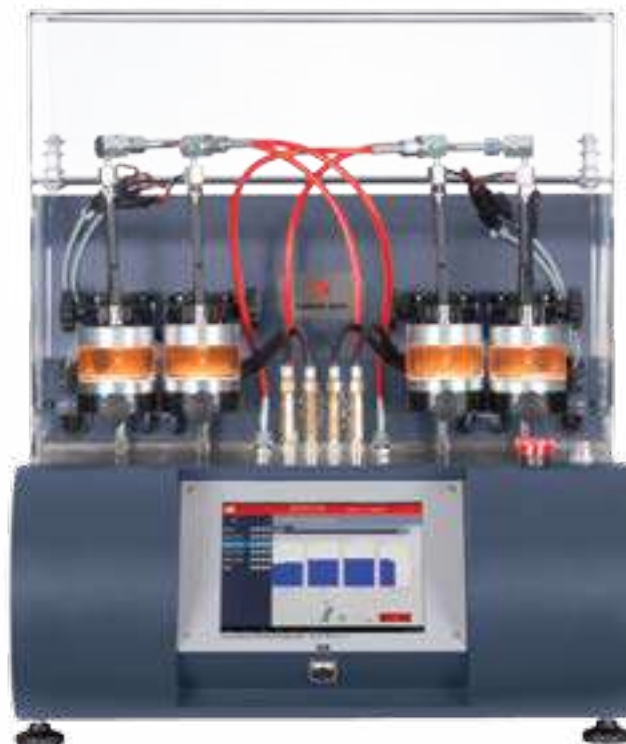
**GDi**

**EFi**

GDi Pumps

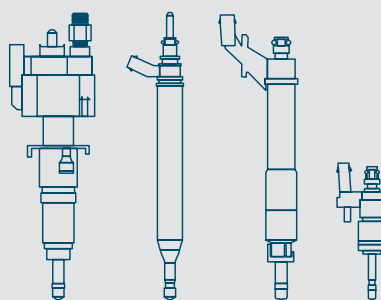
**650 Bar**

**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*





## SPECIALISTS

CRDi
EUI/EUP
HEUi
CRP
ENGINE
<b>GDi</b>
<b>EFI</b>
GDi Pumps

## GDU4R //X Specifications

DESCRIPTION		UNIT	GDU.4R X (CZ-008726)
Machine Dimensions	Length	mm	620
	Width	mm	780
	Height	mm	740
Weight		kg	59
HMI	Tablet Touchscreen	Inches	10
Internet Update	WiFi / Ethernet	-	YES / YES
Pressure Source	Type	Air Driven High Pressure Pump	
Test Oil	Type	(GxL-ISO) Calibration Oil	
Test Oil Tank	Capacity	Liters	4
Max Pressure	Pressure	Bar	650
Max RPM	Max Revolutions Per Minute	RPM	-
Max Pumps	Pumps Test	Slots	-
Max Injectors	Test Injectors	Slots	4
HP Pump	High Pressure Pump	Type	Pneumatic Pump
LP Pump	Supply Pressure	Bar	-
	Pressure	Bar	6.5-10
	Air Tank Capacity	Lt	250
	Air Flow	Lt/ Min	400
Air Supply	Min Diameter at Air Supply Hose	mm	8
	Air	Type	Water / Oil FREE
Main Power Supply	Phases	Number	1
		TYPE	1P+N
	Voltage	VAC	100 - 240
	Frequency	Hz	50/60
	Current	Ampere	5
	Max Consumption	kVA (100V/240V)	0.5 / 1.2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 35
IVM Sensors	Measurement Sensors	Type / Quantity	BK Coriolis / 1*

**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 300mm<sup>3</sup>/H  
 Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
 Marines: Volumes up to 1500mm<sup>3</sup>/H

### EXPLANATIONS

- : N/A  
**PRESSURE SOURCES**  
 Air: Air Driven High Pressure Pump  
 Motor: Motor Driven High Pressure CR Pump  
 External: Pressure coming from another test Bench  
 Elect. Pump: Fuel Injection system or Industrial Application Electrical Pump 12VDC  
 -: No Pressure Source

# eXpanding Capabilities

X Series 2023

Space saving, accessory organizers for everyday tasks.  
Increased productivity and uncluttered space.

## Extras MTBR-X & PTBR-X



1 Desk & Harness Shelf



Hydraulic Hose Side Panel Pocket with Drain

2



## Ultrasonic Shelf

for GTBR-X,  
ITBR-X, HTBR-X





**Carbon Zapp Trolley  
Fully Configured Setup**



**CZ Base Trolley**



**Hose & Harness  
Side Organizer**  
(max. 2 pcs per trolley)

**Carbon Zapp Trolley**

Ideal workshop organizer to fit most parts of the machine like harnesses, hoses, adapters, tools and flanges. Can be easily transformed to a Cambox and/or pump rack for easy transfer and storing.



**CRp Flange Drawer  
Organizer**  
(max. 1 pc per trolley)



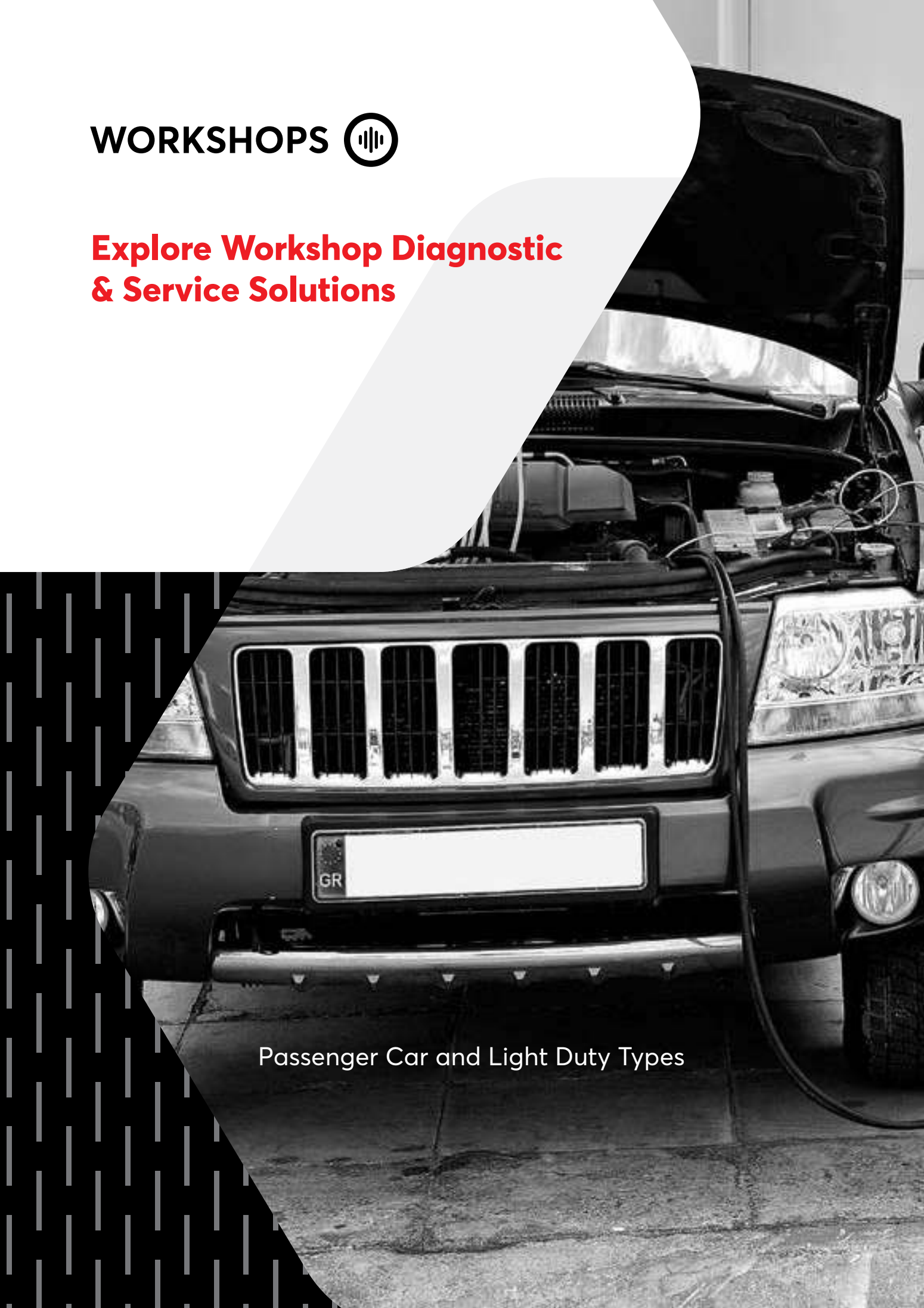
**Cambox/Pump  
Transfer Rack**  
(max. 2 pcs per trolley)

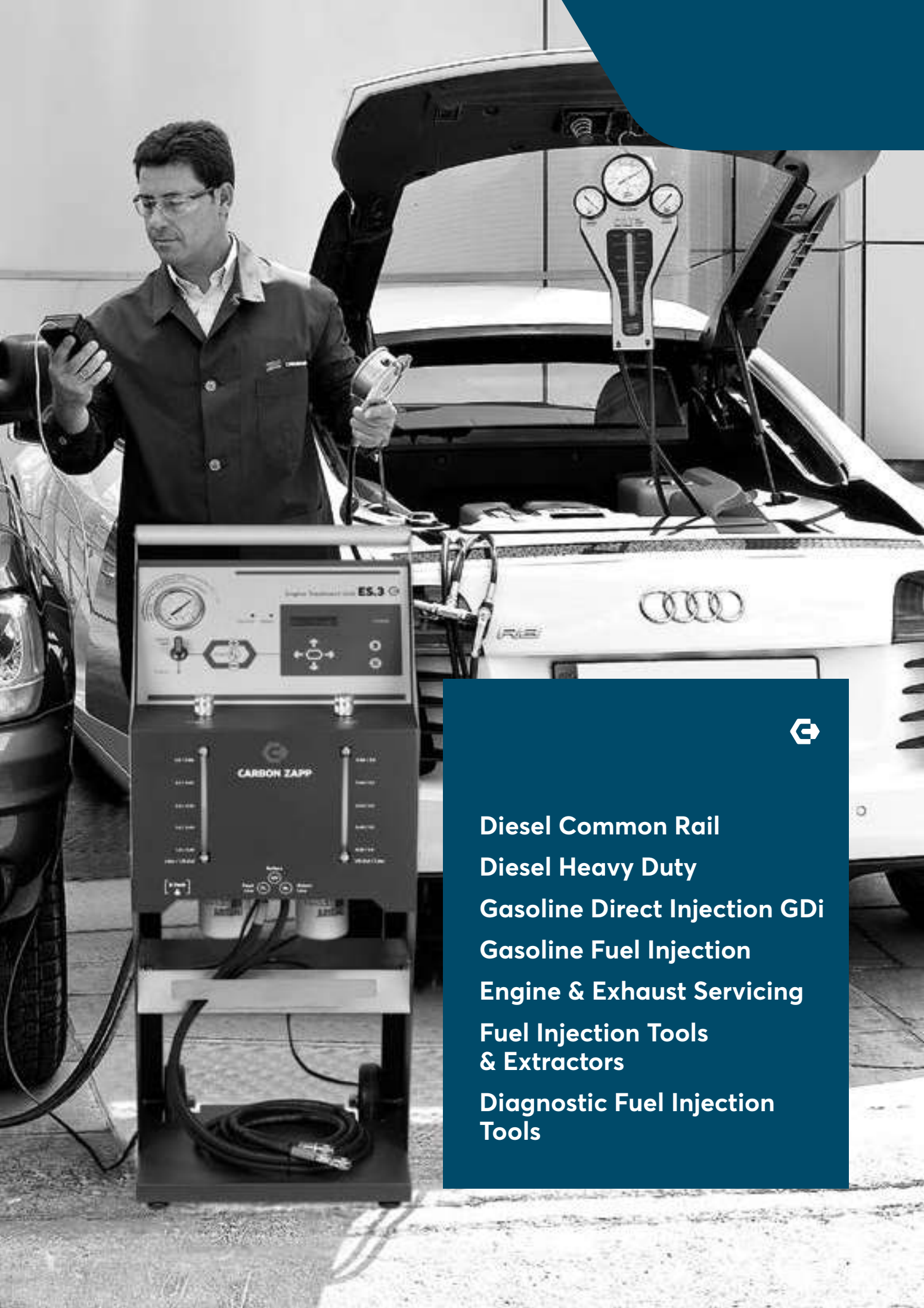


**WORKSHOPS** 

**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 Specifications

DESCRIPTION		UNIT	DSR-X (CZ-007093)
Machine Dimensions	Length	mm	510
	Width	mm	780
	Height	mm	780
Weight		kg	50
HMI	Tablet Touchscreen	Inches	10
Internet Update	WiFi / Ethernet	-	YES / YES
Pressure Source	Type	Air Driven High Pressure Pump	
Test Oil	Type	(DxL-ISO) ISO4113 Calibration Oil	
Test Oil Tank	Capacity	Liters	4
Max Pressure	Pressure	Bar	2000
Max RPM	Max Revolutions Per Minute	RPM	-
Max Pumps	Pumps Test	Slots	-
Max Injectors	Test Injectors	Slots	1
HP Pump	High Pressure Pump	Type	Pneumatic Pump
LP Pump	Supply Pressure	Bar	-
Air Supply	Pressure	Bar	7.5-10
	Air Tank Capacity	Lt	200
	Air Flow	Lt/ Min	400
	Min Diameter at Air Supply Hose	mm	8
Main Power Supply	Air	Type	Water / Oil FREE
	Phases	Number	1
	Voltage	TYPE	1P+N
	Frequency	VAC	100 - 240
	Current	Hz	50/60
	Max Consumption	Ampere	5
Operating Temperature	Min / Max Room Temperature	kVA (100V/240V)	0.5 / 1.2
	Measurement Sensors	Celsius	6 / 35
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 1 *

**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**  
**Pass 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

**EXPLANATIONS**  
 -: N/A  
**PRESSURE SOURCES**  
**Air**: Air Driven High Pressure Pump  
**Motor**: Motor Driven High Pressure CR Pump  
**External**: Pressure coming from another test bench  
**Electr Pump**: Fuel Injection system or Industrial Application  
**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.



<b>CRDi</b>
<b>EUI/EUP</b>
<b>HEUi</b>
<b>CRP</b>
<b>ENGINE</b>
<b>GDi</b>
<b>EFI</b>
<b>GDi Pumps</b>

## DS2R-A Specifications

DESCRIPTION		UNIT	DS2R-A (CZ-008334)
Machine Dimensions	Length	mm	610
	Width	mm	640
	Height	mm	760
Weight		kg	45
HMI	Tablet Touchscreen	Inches	8
Internet Update	WiFi / Ethernet	-	YES
Pressure Source	Type	Air Driven High Pressure Pump	
Test Oil	Type	(DxL-ISO) ISO4113 Calibration Oil	
Test Oil Tank	Capacity	Liters	4
Max Pressure	Pressure	Bar	2000
Max RPM	Max Revolutions Per Minute	RPM	-
Max Pumps	Pumps Test	Slots	-
Max Injectors	Test Injectors	Slots	1
HP Pump	High Pressure Pump	Type	Pneumatic Pump
LP Pump	Supply Pressure	Bar	-
Air Supply	Pressure	Bar	7.5-10
	Air Tank Capacity	Lt	250
	Air Flow	Lt/ Min	400
	Min Diameter at Air Supply Hose	mm	8
Main Power Supply	Air	Type	Water / Oil FREE
	Phases	Number	1
		TYPE	1P+N
	Voltage	VAC	100 - 240
	Frequency	Hz	50/60
	Current	Ampere	5
	Max Consumption	kVA (100V/240V)	0.5 / 1.2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 35
IVM Sensors	Measurement Sensors	Type / Quantity	Volumetric Tubes / 2

**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 300mm3/H  
 Heavy Duty: Volumes up to 650mm3/H  
 Marines: Volumes up to 1500mm3/H

**EXPLANATIONS**  
 -: N/A  
**PRESSURE SOURCES**  
 Air: Air Driven High Pressure Pump  
 Motor: Motor Driven High Pressure CR Pump  
 External: Pressure coming from another test Bench  
**Electr. Pump:** Fuel Injection 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.



## WORKSHOPS

CRDi
EUI/EUP
HEUi
CRP
ENGINE
<b>GDi</b>
<b>EFi</b>
GDi Pumps

## GDR //X Specifications

DESCRIPTION		UNIT	GDRiX (CZ-007094)
Machine Dimensions	Length	mm	510
	Width	mm	780
	Height	mm	780
Weight		kg	46
HMI	Tablet Touchscreen	Inches	10
Internet Update	WiFi / Ethernet	-	YES / YES
Pressure Source	Type	Air Driven High Pressure Pump (GxL-ISO)	
Test Oil	Type	Calibration Oil	
Test Oil Tank	Capacity	Liters	4
Max Pressure	Pressure	Bar	450
Max RPM	Max Revolutions Per Minute	RPM	-
Max Pumps	Pumps Test	Slots	-
Max Injectors	Test Injectors	Slots	1
HP Pump	High Pressure Pump	Type	Pneumatic Pump
LP Pump	Supply Pressure	Bar	-
Air Supply	Pressure	Bar	6 - 8
	Air Tank Capacity	Lt	200
	Air Flow	Lt/ Min	400
	Min Diameter at Air Supply Hose	mm	8
Main Power Supply	Air	Type	Water / Oil FREE
	Phases	Number	1
		TYPE	1P+N
	Voltage	VAC	100 - 240
	Frequency	Hz	50/60
	Current	Ampere	5
	Max Consumption	kVA (100V/240V)	0.5 / 1.2
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 35
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 1 *

**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 300mm<sup>3</sup>/H  
 Heavy Duty: Volumes up to 650mm<sup>3</sup>/H  
 Marines: Volumes up to 1500mm<sup>3</sup>/H

**EXPLANATIONS**  
 -: N/A  
**PRESSURE SOURCES**  
 Air: Air Driven High Pressure Pump  
 Motor: Motor Driven High Pressure CR Pump  
 External: If pressure coming from another test bench  
 Electric Pump: Fuel Injection system or Industrial Application  
 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)
TYPE	Standalone	●	●
	Add-On	-	-
USER LEVEL	Test Bench	●	●
	Service / Diagnostic Unit	-	-
SYSTEMS / [TESTING MINUTES]	Diesel / Gasoline Specialists	○	○
	Workshop / Garage	●	●
APPLICATIONS	Test Slots [injectors / Pumps]	[8/ -]	[4/ -]
	CRDi / Smart Injectors [ 1 / 4 ]	-	-
MEASUREMENT SENSORS	GDi Injectors [ 1 / 4 ]	●	●
	Gasoline Injectors [ 1 / 4 ]	●	●
SYSTEM PRESSURE	LPG / CNG Injectors [ 1 / 4 ]	●	●
	Max (BAR)	10	10
PACKAGING	Source	ELECTR. PUMP	ELECTR. PUMP
	Spray Chamber	●	●
MEASUREMENT SENSORS	Mains Power 50/60Hz /1-Phase 100-250VAC	●	●
	Mains Power 50/60Hz /3-Phase/PE 380-480VAC	-	-
APPLICATIONS	Tank Capacity [testing / flushing]	[4 / -]	[4 / -]
	HMI (Inches)	LCD	LCD
PACKAGING	Touchscreen	-	-
	Protective Cover	-	-
MEASUREMENT SENSORS	Calibration Oils	○	○
	Ultrasonic Bath	●	●
PACKAGING	Width (mm)	660	500
	Depth (mm)	770	440
PACKAGING	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 300mm<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: Fuel Injection 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>
GDi
EFI
GDi 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	12VDC
	100-250VAC	-
	Mains Power 50/60Hz /3-Phase/PE	[6 / -]
	380-480VAC	LCD
	Tank Capacity [testing / flushing]	-
	HMI (Inches)	-
	Touchscreen	-
	Ultrasonic Bath	-
PACKAGING	Width (mm)	410
	Depth (mm)	410
	Height (mm)	1030
	Weight (kg)	33

### EXPLANATIONS

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

# FST / FST-HF

## Diesel & Gasoline System Test Bench



### 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**

GDi

EFI

GDi 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 GDi injectors



Welcome  
to an Innovation  
Driven World

Product Catalog





Scan CZ Digital  
Product Catalog

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194 42 Athens, Greece

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