

## 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.

## 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.



# ETBR //X

## Injector & Pump Control Bench Extension Module

### 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

## SPECIALISTS

CRDi

EUi/EUP

HEUi

CRP

ENGINE

GDi

EFi

GDi Pumps

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

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)	
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

# 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)





# **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