

ETBr //X

Injector & Pump Control Bench Extension Module



Authorized Solution for
Schaeffler / Continental



CloudX AZO

OVERVIEW

The Revolutionary Simulator That Modernizes Any Conventional Test Bench for All Types of Fuel Systems.

ETBR-X

Injector & Pump Control Bench Extension Module

TOTAL SYSTEM COVERAGE

- **Universal compatibility:** control unit for any conventional test bench in the market
- **Pressure control up to 2,800 bar:** full modern injection envelope
- **EU6 technologies:** VCC, NCC, iART, PCRS5, XPI, F2X / F3X, etc.
- **11,000+ part numbers in the factory database,** updated continuously

MODULAR CAPABILITIES

BUILD IT YOUR WAY

Most workshops own working test benches that simply cannot handle modern injection systems. Replacing them costs tens of thousands. The ETBR-X turns your existing bench into a fully capable modern fuel-system tester, electrical and hydraulic connectors, fittings and adapters available for every fuel system in the market.

Configuration	Capability
ETBR-X + BCR.1	1 Injector + Pump extension for any conventional bench
ETBR-X + BCR.4	4 Injectors + Pump extension for any conventional bench
ETBR-X + BCR-X + Cambox	1-4 Injectors, Pump, EUI / EUp Cambox

HEUI - Hydraulic Electronic Unit Injectors Testing
Can be configured with any version



- 01. ETBR-X
- 02. Cooling / Portable Stand
- 03. BCR-4
- 04. HK1400 Cambox
- 05. Conventional Bench

ETBR //X

ENGINEERED FOR PRECISION

- **Compact attachment:** fits any laboratory or workshop; 510 × 650 × 550 mm, 23 kg (Basic Version)
- **Modular and fully configurable:** buy what you need today, add what you need tomorrow
- **Drain pan with waste port:** clean operation on the host bench
- **Powered by CloudX:** every result encrypted, cloud-stored, GDPR-compliant, Industry 4.0 ready
- **AZO v3 operating system:** Android-powered, intuitive HMI

OEM-AUTHORIZED. OEM-TRUSTED.

Built to OEM testing standards across Bosch, Delphi, Denso, Schaeffler / Continental, Caterpillar and Cummins platforms. Additional authorizations pending.

AFTERMARKET-READY. INDUSTRY-CONNECTED.

CLOUDX REPAIR HUB. Certified third-party repair solutions, built to complement the market, not compete with it: hard-to-source parts, test plans not published by OEMs, and calibrations from approved specialists. Co-branded with our partners. OEM testing stays primary; the Repair Hub fills the gaps, optional, clearly marked, your choice.

ERGONOMICS

- **10" Android-powered touchscreen HMI**
- **WiFi · USB · Ethernet connectivity**
- **Emergency STOP safety integration**
- **External control of any conventional test bench**
- **Connects with HK1400A Cambox for full EUi / EUp operation**
- **Single-phase 100 – 240 VAC, 50/60 Hz: 0.5 / 1.2 kVA max consumption**

OVERVIEW

FEATURES

- **Pumps:** CRp / GDp all brands · EU6 sync operation (Denso HP5, Bosch CP4-EU6, VDO-EU6) · Heavy-Duty CR pumps (CPN5S2, CAT, Cummins, HP0)
- **Injectors:** CRI / CRiN / GDi all brands · CRiN 4.2 heavy commercial-vehicle · large-engine CRiN (QSK, MTU, L'Orange)
- **HEUi:** dual-coil capable · automatic NOP without disassembly
- **EUi / EUp:** all EU6 technologies, expandable to future systems (requires HK1400 Cambox)
- **FSC:** pressure control valves (PCV / VCV / IMV / SCV / EAV / ZME), rail-pressure sensors (RDS), high-pressure rails, all brands

TESTS PERFORMED

- Electrical (coil / piezo) • Volumetric flow (all conditions) • Nozzle opening pressure (aNOP) • Response time (RSP – eRSP) • Flow vs pressure & flow vs speed (pumps) • Return-flow measurement • EU6 technology testing • Full injector coding

Pressure sourced externally from the host test bench. EUi / EUp testing requires the optional HK1400A Cambox. Measurement sensors: XKM (injectors) / DFM500 (pumps) — optional. Part number CZ-007092. Specifications subject to configuration.

5-15 MIN

CRp / GDp pump testing
5–15 min per pump,
all brands and types

6-12 MIN

CRi / CRiN / GDi injector testing & coding
6–12 min per injector

6-8 MIN

HEUi testing & coding
6–8 min: dual-coil capable

6-10 MIN

EUi / EUp testing & coding
6–10 min (with HK1400 Cambox)



BCR.1 | BCR.4 | HK1400



AZO

The intelligence inside every Carbon Zapp machine.

Every Carbon Zapp X-Series bench is driven by AZO, the software platform at the heart of the machine's powerful touchscreen HMI. AZO turns complex injection diagnostics into a guided, fully automatic process: select the component, mount it, and let the machine run the complete OE-level test plan, from actuation and leak checks to dynamic precision flow measurement and coding. The result is expert-level diagnosis, delivered consistently, regardless of who is operating the bench.



AZO on the X-Series touchscreen HMI: one interface for every test, every system, every brand.

Built for the operator.

Fully automatic testing.

Guided sequences take the component from mounting to final verdict in minutes, with no guesswork. Live actuation signals for advanced analysis and R&D work.

Fast by design.

Complete test cycles measured in minutes, not hours, e.g. **4 Bosch CRDi injectors tested and coded in 8–10 minutes, Delphi C4i in 10–15 minutes, 4 GDi injectors tested and coded in 8–10 minutes; pumps in 5–15 minutes.**

Clear, sellable reports.

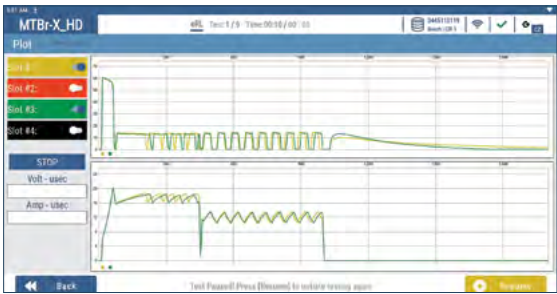
Color-coded pass/fail results per component, a single-page quick report for the customer or a multi-page analytic report for the specialist. Pick your slots with a tap, print or share on the spot, tablet-easy, workshop-fast, and simply incomparable to anything else in the market.

Real-time oscilloscope.

Live actuation signals for advanced analysis and R&D work.



The fail-track color report, results your customer understands at a glance.



The live oscilloscope view, every actuation, every microsecond.



Every connection, mapped on screen: numbered points, exact part numbers and adapters for each component, mount, connect and test with zero guesswork.

One database. Every system.

Complete OE & CZ database.

Test plans for all makes and types, continuously updated:

- CRDi** - Common Rail Diesel Injectors
- CRp** - Common Rail Diesel Pumps
- EUi/EUp** - Electronic Unit Injectors & Pumps
- HEUi** - Hydraulic Electronic Unit Injectors
- GDi** - Gasoline (High & Low Pressure) Injectors
- GDP** - Gasoline Rotary & Piston High Pressure Pumps
- Marine & Large Engine components**

Your tests, your rules.

User-defined test plans and developer-level customization alongside the factory database, shared to all your Carbon Zapp machines effortlessly.

Machine self-diagnosis.

AZO continuously monitors all the critical points of the bench, sensors, pressures, actuation circuits, and reports the machine's own health before it can affect your results.

Always connected.

On-board Wi-Fi and LAN connectivity for updates, printing, sharing and the live CloudX link.

Always current.

Software and database updates delivered over the air, powered by CloudX (see next spread).

CloudX

Your machines, beyond the workshop walls.

CloudX is Carbon Zapp's IoT cloud platform the natural extension of AZO. Every connected bench becomes part of a secure cloud environment where data, updates, features and support flow both ways. Fully Industry 4.0 compliant, CloudX means the machine you buy today keeps gaining capabilities tomorrow, without a single technician visit.

What CloudX does for your business

Live updates.

Database and software updates arrive online, automatically, your bench always tests to the latest specifications.

Complete cloud backup.

Machine data, settings and test history safely mirrored in the cloud, recover everything in minutes.

Features on demand.

Activate new capabilities instantly, online, forever or on a Pay-As-You-Go basis, and invest only when the work demands it.

Remote monitoring & reports.

Check machine status and generate, file and print test reports from anywhere, on any device.

Fleet management.

Run one bench or twenty: manage every machine, user and location from a single account.

Smart maintenance.

Notifications on your phone for oils, filters and service intervals, before downtime finds you.

24/7

Machine visibility from any device

1 Account

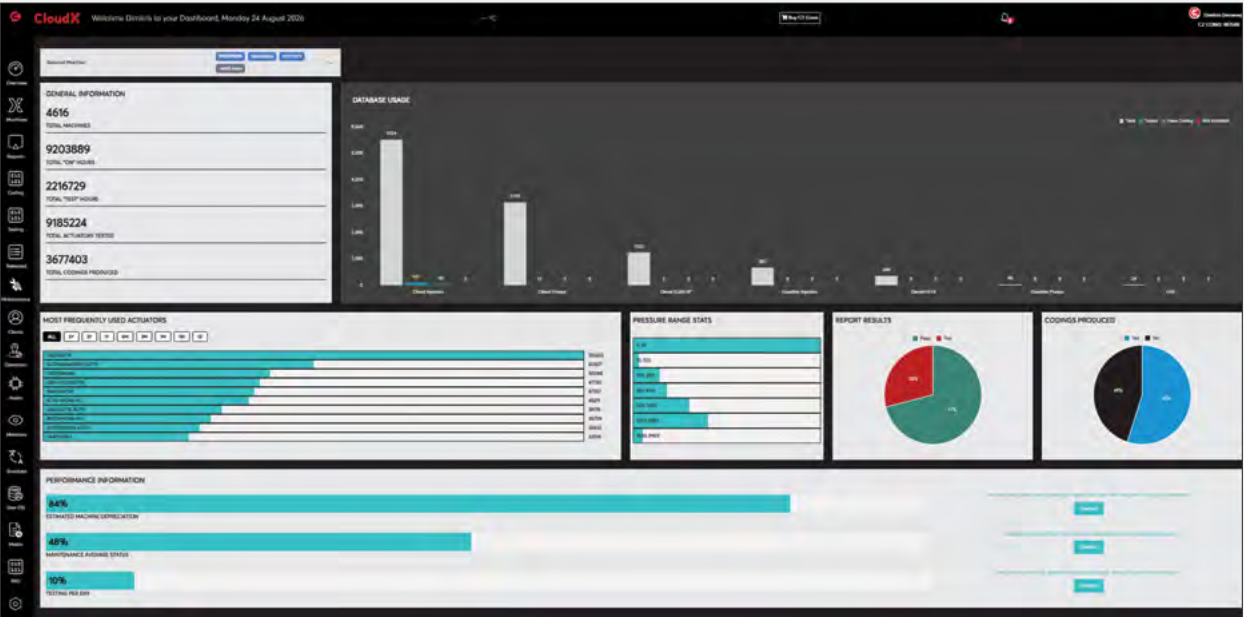
Your entire machine fleet

Minutes

To activate a new feature online



CloudX
is Carbon Zapp IoT Cloud
computing Platform.



The CloudX overview at cloudx.carbonzapp.com Your job in numbers.

The screenshot shows the 'MACHINES' section of the CloudX fleet dashboard. It features a table with columns for Machine, Status, Tablet Version, SW Version, Test Hours, Reports, Last Sync, User, Country, Company, and Warranty. The table lists several machines with their respective details and status indicators.

Machine	Status	Tablet Version	SW Version	Test Hours	Reports	Last Sync	User	Country	Company	Warranty
GTBL-4-K (S/N: 00030434)	PCB - Board in connected	V71	3.0.6	1438.3	237	07:13 21/07/2026	dev@carbonzapp.com	Greece	Carbon Zapp	Warranty Expires 01/09/2030
GTBL-4-K (S/N: 00030434)	PCB - Board in connected	V71	3.0.6	1438.3	237	07:13 21/07/2026	dev@carbonzapp.com	Greece	Carbon Zapp	Warranty Expires 01/09/2030
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The CloudX fleet dashboard at cloudx.carbonzapp.com Every machine, status and info in one secure view.

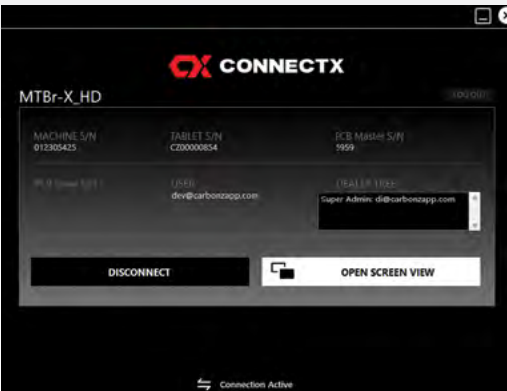


EXPERT FEATURES

CloudX unlocks three expert-level extensions
ConnectX, API Integration and the Repair Kit Solution (RKS).



A ConnectX session in progress: the machine's screen, live, wherever support happens to be.



ConnectX

Support at the speed of a click.

ConnectX gives authorized eyes and hands on the machine, remotely and per account. When something needs attention, whether a question, a setting or a fault, Carbon Zapp support, your distributor or your own fleet manager can securely connect to the bench and act immediately. No travel, no waiting, no lost workdays.

Instant troubleshooting.

Direct remote assistance from the Carbon Zapp factory or your local distributor, right on the machine screen.

Fleet control.

Fleet managers reach any machine in their network to monitor, adjust, update or resolve, from anywhere.

Per-account access.

Connections are permission-based and tied to accounts: you decide who can reach which machine.

Minimum downtime.

Most issues are resolved in a single remote session. The bench is back to testing the same day.



API Integration

Your test data, in your business systems.

Test data shouldn't stop at the bench. The CloudX API bridges your machines to your own IT environment, so results, reports and machine information flow automatically into the systems your business already runs on: ERP, workshop management, quality and warranty platforms.

Automated workflows.

Test results attach themselves to job cards, invoices and warranty files. No re-typing, no lost paperwork.

Built for scale.

Ideal for remanufacturers, OE service networks and multi-site operations with existing infrastructure.

Secure by design.

Data travels over the same secure cloud environment that powers CloudX.



From the test chamber to your ERP: one connected data path, no manual steps.



Repair Kit Solution

The authorized channel

For kit providers

Deploy to your network.

Publish your repair kits, data and test plans directly to your authorized workshops through CloudX.

Control who buys.

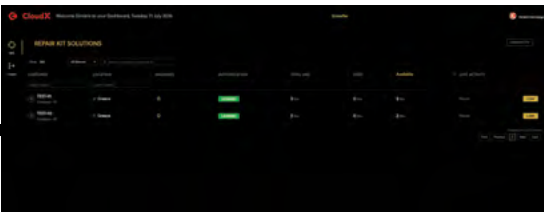
Entitlements are managed per user: only your authorized network can access and purchase your kits.

Protect your brand.

Every kit is diagnosed and validated on a Carbon Zapp bench, against your specifications. Quality and warranty stay in your hands.

A complete, branded solution.

From kit deployment to the final test report, the whole workflow carries your brand, a professional, consistent outcome across your entire network.



The RKS area in CloudX: providers publish, workshops access, and every kit is tested the authorized way.

For workshops

Genuine kits, on the bench.

Access authorized repair kits with the matching test plans, right where the work happens.

No more parts hunting.

Become an authorized workshop with any of the available providers for your systems, the right kit is always one click away.

Certified results.

Diagnosis and post-repair testing follow the provider's approved procedure, every repair leaves with proof.

One machine. One platform. The complete ecosystem.

AZO runs the test. CloudX connects the machine. ConnectX keeps it running. The API brings the data home. RKS closes the loop between component, kit and certified repair. Together, they turn a Carbon Zapp bench into a business platform.



Built to Move the Industry Forward.

From advanced testing equipment and connected intelligence to technical expertise and global support, Carbon Zapp brings every solution together in one complete ecosystem.

Let's Connect and Discover Future Opportunities.



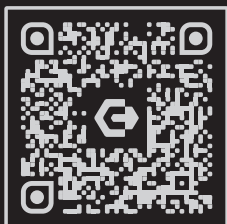
Scan the QR Code
and easily download
the Product Catalog
to your phone.



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Scan and Explore
Complete CZ Solutions