



MTBR - CAMBOX
SPECIALIST SOLUTIONS

**Diesel Injection
Systems**

Innovative, compact and professional
solutions for every workshop to test
& service Diesel Injection Systems

MTBr - CAMBOX

The only Complete Standalone unit to test every Automotive, Commercial, Industrial and Marine Unit Injection System (UIS) available in the market today.



Professional and
Automatic Testing
Solution for all Makes
and Types EUi/EUP



Technical data

Input frequency	50/60 Hz
Number of phases	3 P/PE
Speed range	0 – 3000 rpm 12.5HP
Powerful Motor with thermal protection	-
Maximum operating ambient temperature	50°C
Base to axis center height	125 mm
Supply pump pressure	10 – 800 kPa
Test oil tank	38 L
Waste Oil tank	15 L
Dimensions (W x D x H) Weight	750 x 700 x 1610 mm 350 kg

Compact Standalone Diesel Test Bench

Controls all Types and Makes of Unit Injectors & Pumps. Includes the markets greatest OEM and CZ Database and Test Plans

Automatic function with complete database and test plans (Coding*) with the Hartridge HK-1400A Cambox powered by Carbon Zapp

Cummins ISX / Scania HPI and Cummins QSK Test Plans

Easy and Oil free change of Cam (20sec) by use of the EZO-Kit (optional)

6 injectors testing in less than 1 hour

Compact and Robust Unit. 240° Efficient Working Area

Nozzle reaction time measurement for all systems via RSP sensor (optional)

Actuator Valve measurement via RSP/BIP sensor

Smart Injector / Pump (E3/E1/DAF) Coding coming soon

Fully Automatic and fast testing phase through a 15" Touchscreen HMI with AZO software

Dynamic Electronic Mass (BK) Measurement

Internal cooling system (No water connection needed)

Emergency Stop function (Instantaneous electric brake)

*Note: Future Update

CZ Technologies

Tests Performed

R2LC

Electrical actuator test for k Ω / μ F, Ω / μ H

CFL

Check For internal and external Leaks

NLT

High Pressure Nozzle Leakage

LKT

Static Back Leakage (Overflow) measurement

aNOP

Automatic Nozzle Opening Pressure

iVM (FL, PL, EM, LL, PI)

Injector Volume Measurements (full-load, part-load, emissions, low-load, pre/post-injection.)

iVM-aDFi

Injector Volume Measurement Performance Ramp (multiple testpoints slope / different Pressure points)

RSP

Injector Nozzle Response Time

BIP [EUI / EUP systems]

Injector / Pump Control Valve Response Time for Unit Injection Systems

SPR

Dynamic Spray Test performed in all testing conditions up to 2800Bar

Extra Tests

High pressure Control Valve operation (DRV, IMV, VCV, PCV, etc...) High Pressure Sensor reaction, High Pressure relief safety valve operation CR Pump flow limiter valve operation (ZME, IMV, SCV.)

MIM

Multiple Injection Metering (up to 8 fully programmable delay and overlap times)

Features

AZO Software

Advanced Android based HMI/PC, Wi-Fi printing, sharing, syncing, software/ hardware & database updating, via USB or Wi-Fi, Real-time Oscilloscope and CSV data export

Reports

Easy fail-track color report for each component tested. Single-page Quick report or Multi-page Analytic reporting

aMACC Flushing / Cleaning function

Automatic chemical treatment and flushing of the injector before testing under high pressure and using a specially formulated detergent

RSP / BIP

Response Sensor (RSP) adaptable to all Injector Nozzles

Response Sensor (BIP) adaptable to all Control Valves [EUI/EUP].

Precise measurement of Control Valve & Nozzle reaction time to easily diagnose a slow acting injector, a retarded injection event, poor engine performance and emissions issues."



1. BK



2. DFAP

Electronic Measurement

1. Dynamic Electronic Mass Measuring Sensor (BK). Ramp function capable for aDFI function, Injector Coding Capable, Acc:0.2%FS, repeatability: 0.05%. Fast and Accurate Measurement with Coriolis technology
2. Static Electronic Mass Measuring Sensor (DFAP) Acc: 0.6%FS, Accurate and Repeatable Measurement with Differential Absolute Pressure Technology



CARBON ZAPP

INNOVATION DRIVEN

—
Production Plant

364 Varis-Koropiou Ave. Koropi
194 42 Athens, Greece

—
Headquarters

A.I.S. GmbH
75438 Knittlingen, Germany

—
email contact@carbonzapp.com

tel +30 210 9856110

fax +30 210 9928655

carbonzapp.com