

# HK-1400A CAMBOX SPECIALIST SOLUTIONS

# Diesel Injection Systems

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

# **HK-1400A CAMBOX**

Universal EUI & EUP Cambox. The New HK-1400A Cambox manufactured by Hartridge and powered by Carbon Zapp fits onto the MTBr and automatically tests completely all Heavy Duty EUi and EUP systems in the market today utilizing the continuously updated database that meets the OE standards.

Test every Automotive, Commercial, Industrial and Marine Unit Injection System (UIS) available in the market today.

Compact, lightweight and easy to operate Unit

Controls all Types and Makes of Unit Injectors & Pumps. Includes the markets greatest OEM and CZ Database and Test Plans with the use of Carbon Zapp's AZO software

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

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

Blue Limits Diagnosis for Diesel Specialist



CRDi CRp EUi EUp HEUi GDi

# **Extras and Optionals**



# EZO-Kit

Use the Easy Oil Supply unit to change the Cam position fast and oil mess-free.

### Complete range of UIS Adapters

There is a wide-range of easy to fit adapters for every type and make of EUI and EUP injection systems in the market.

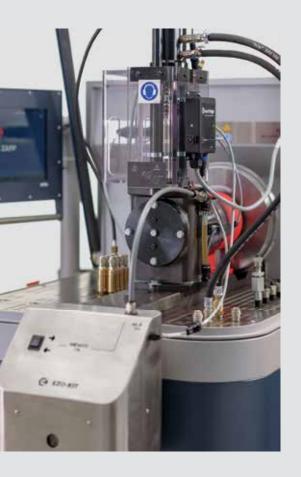


for Cummins ISX / Scania HPI and Cummins QSK Test Plans and Adaptability

### The HK-1400A

has been engineered to be accurate and repeatable in testing Unit Injection Systems, yet is affordable for all Diesel workshops worldwide.

We offer a wide-range of easy to fit adapters for every UIS system. Finally, with the use of the EZO-Kit, changing the cam and its position has never been easier and oil mess-free.



DGS 🐨

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# **CZ** Technologies

## **Tests Performed**

#### R2LC

Electrical actuator test for k $\Omega/\mu$ F,  $\Omega/\mu$ H

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

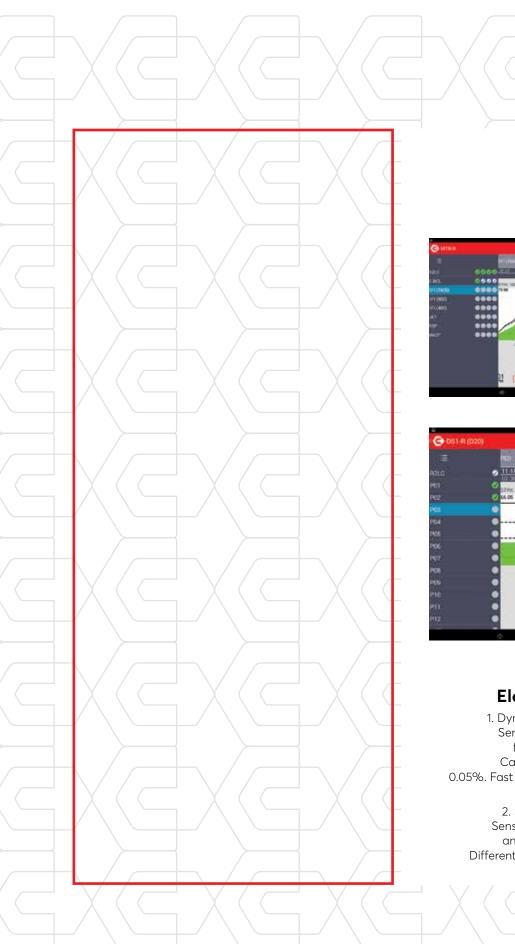
Response Sensor (RSP) adaptable to all Injector Nozzles

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." CRDi CRp EUi EUp HEUi GDi

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2. DFAP

# **Electronic Measurement**

 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



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