



HK1400 Expert

All-Makes EUI/EUP/HPI Test Solution

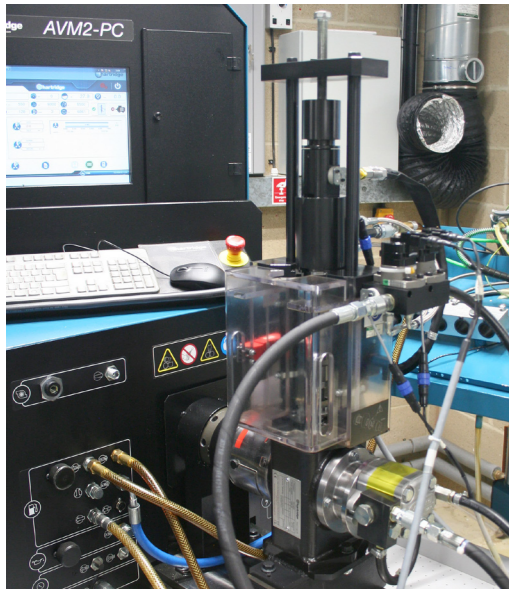
New
Generation
Features

Universal
& adaptable

New
Advanced
Applications

Unique
Patented
Technology





HK1400 Expert & application installed on an AVM2-PC

Key Features Overview

- Patented, adjustable 11-position Cam
- Easy to use, advanced magmah^{Touch} software
- Test plan database includes coverage for Denso, Delphi Technologies, Cummins, & more
- Tall pillar height fits wider range of applications
- Designed for universal bench compatibility
- Highly durable & proven market leading cam box
- Engineered to OE standards
- Technician safety comes first with market leading guarding & interlocks

Simplified Usability



Flexible & Adaptable



Innovative Design



OE Heritage

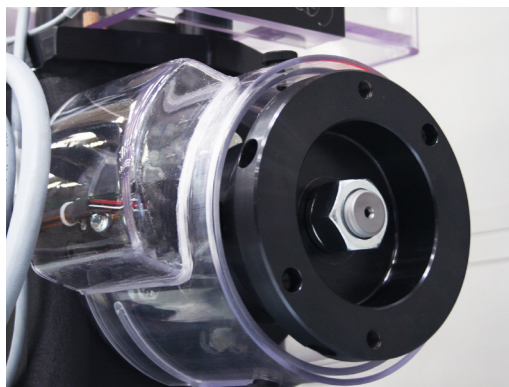


HK1400 Expert Evolution

Since its launch in 2015 the HK1400 EUI/EUP cambox has evolved to become the HK1400 Expert & amongst many new advantages. Now in its 3rd generation, it has been made taller & more robust to expand its EUI testing capability, enabling a wider range of new applications to be developed, such as the Caterpillar 3500 series. The control unit has also evolved, providing an enhanced platform for workshops via the award-winning magmah^{Touch} software, which is included as standard. This exceptionally durable, advanced, All-Makes solution enables diesel workshops to either expand their current testing capabilities, or start generating profit by offering EUI/EUP/HPI services using the market's leading & most advanced platform.

Patented Multi-Position Cam

At the heart of the HK1400's success is engineering innovation & excellence. There is no better example of that than its' patented, 11-position cam design to easily & quickly adapt the plunger lift & rate of lift for various applications. This simple yet ingenious feature helps to keep the cost of application tooling down to a minimum & simultaneously makes life easier for the workshop when changing between applications. There is also a dedicated high speed cam for VW 1.9/2.0 TDi & Land Rover TD5 applications.



The coupling guard & safety interlocks ensure maximum possible protection for HK1400 users



11 position cam for HD applications saves time & money for the workshop



The HK1400 Expert magmah^{Touch} test screen has ease of use at the forefront of every feature.



This next generation control unit features additional ports ready for when you need them

Intuitive magmah^{Touch} Software

The highly advanced magmah^{Touch} software is now provided as standard on the HK1400 Expert. It enables superior levels of in-test user control & revolutionises the user-experience compared to previous generations of software. It has been developed to provide highly advanced features & functionality without the need for specialist training. The detailed & comprehensive test reports provide a complete diagnosis of the injector or pump function that is easy to understand. For AVM2-PC users, completely automatic testing on the AVM2-PC is available via a unique link-software feature to fully integrate magmah^{Touch} into the bench.

Next Generation Control Unit

The new AE75 controller directly replaces the AE65/1 as standard for the HK1400 Expert & is also reverse compatible so that existing HK1400 users can upgrade & benefit from all the advanced features that the magmah^{Touch} software provides. This new control unit has allocated connection ports for ancillary devices that are ready to accommodate any additional hardware requirements for any future applications without requiring further investment in additional controller upgrades.

Extensive Application Coverage

The HK1400 Expert comes with a comprehensive database of Hartridge testplans, providing excellent coverage of the EUI/EUP/HPI parc. Each test plan has been developed using a proven process unique to Hartridge, after decades of developing solutions for our OE customers. Hartridge seeks to account for all test variables & specific on-vehicle conditions that need to be considered. This ensures that Hartridge test plans replicate real-world injector operating conditions as closely as possible.

Electronic Unit Injectors														Electronic Unit Pumps												
Volvo		Landrover	Volvo Bosch	Caterpillar	Scania		Iveco		Detroit Diesel		VW		Cummins	Nissan Bosch	Delphi	Bosch		John Deere								
E1	E3	A Series	TD5	A Series	C12, C13, C15, & C18	C3500	11, 12, & 16	Cummins XPI	Cummins HPI	Cursor 8	Cursor 10 & 13	Cursor E1	Series 60 N2	Series 60 N3	PD	PDB	PPD (Piezo)	CELECT	GEI3	DAF	MACK	MB Actros	MB Atego	Volvo	E1	A Series

Specification

Advanced Applications Capability

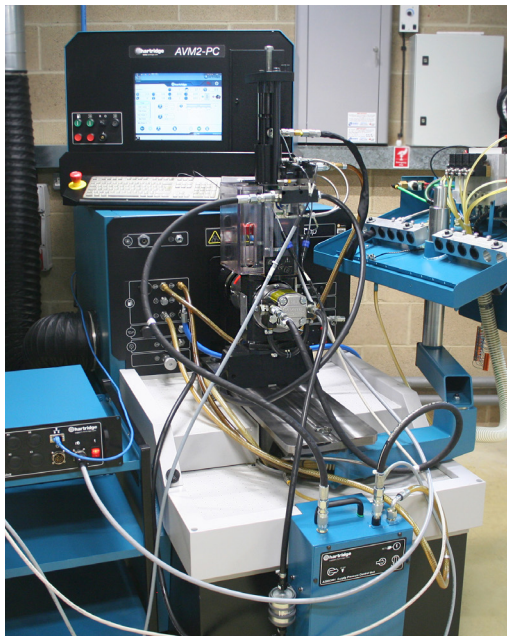


For full details on these application components & more, please refer to the supplemental HK1400 Cummins HPI leaflet

The HK1400 Expert can accommodate additional plug-in hardware for certain injector applications. Ancillary devices ensure specific on-vehicle conditions are replicated on the test bench, or enable the injector/pump to be driven correctly. The Cummins HPI test solution uses additional hardware so that real world timing & fuel delivery control is accurately replicated. It also ensures OE fuel delivery requirements are met, along with stable & consistent fuel pressure control. While these new optional hardware kits were developed for a specific application, they can also be used for general EUI/EUP testing to boost the capability of the host bench providing more fuel supply flow, stability, improve overall diagnostic accuracy.

Essential FERT Measurement

Hartridge has developed its own way to measure the full response time of an injector fuelling event. Rather than to only measure the electronic actuation of the solenoid to signal the start of fuel injection, Hartridge uses our patented approach to extend the measurement beyond the activation of the solenoid to include the mechanical actuation of the injector to the point at which fuel delivery starts. This thorough Full Event Response Time (FERT) testing ensures that both electrical & mechanical problems which impact the timing of injector delivery are positively identified.



The New HK1400 Expert boasts new, 3rd generation, features

Technical Specification Overview

Cambox Hardware

- Single Phase 85-264 volt, 5-/60HZ, fused at 2A with IEC connector inlet
- Weight (dry, no application) 26kg
- Max Speed 2400rpm
- Max Cam Lift 18mm
- Injector clamp load up to 1.5 tonnes
- Test Oil ISO4113 Calibration Fluid
- Lubrication Oil 10W-40W or similar

Programmable parameters: Injector coil drive peak current, peak current duration, hold current, injector piezo charge, discharge current, injector piezo charge & discharge current, injector pulse duration, injector cam timing, maximum & minimum limits for injected quantity, response time, & coil resistance measurements.

Programmable parameters: Drive shaft speed, FERT, & Solenoid resistance

