

repairing the future...

U 1000

CAM BOX FOR TESTING ELECTRONIC UNIT INJECTOR & UNIT PUMP

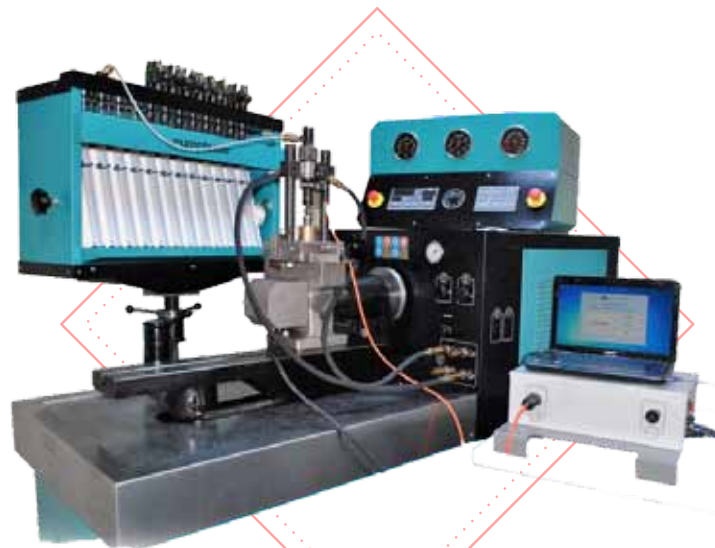
U1000 kit is designed to be connected to traditional diesel test benches to enable testing of EUI/EUP fuel injection equipment. A typical system for a specific application would consist of:

- Cambox and Electronic Drivebox
- Application kits for injector type (fuel sleeve, cable, cam and pushrod)
- Computer & U1000 control software.

The kit consists of a single cam cambox and basic tooling. Injectors are mounted to the cambox using existing components supplied by Maktest, and the cambox is mechanically driven by the host test bench. Fuel supply and delivery measurement will be via the host test bench.

Electronic Drive Module drives the injectors electrically, results are read from the host test bench and manually entered into the computer software for results display and analysis.

The control box may be on a desktop.



An easy solution
for a big problem



MAKTEST DIESEL
INJECTION TEST AND
REPAIR SOLUTIONS



Features

Adjustable Cam Stroke

provides testing being as close to as standard working conditions of the injector. Internal pressure level maintains same as when running on the engine, creating a similar condition like in the engine and allowing the delivery to be compatible to the engine conditions.

Its patented Cam Box design, allows to set the cam stroke without

- draining oil,
- removing cam
- adjusting timing

It only takes turning a knob a few times to set the cam stroke.

Wide Application Range; from Caterpillar to Continental VDO

U1000 has the technical infrastructure to test ;

- Caterpillar EUI: 3406E; C15; C10; C11; C12; C13; C18; 3116 MEUI, 3500 MEUI; 3500E.
- Cummins: Celect N14/M11/M11+; HPI (ISX and QSK); K-STC;
- Bosch EUI/EUP all types.
- Delphi: A0; A3; E1; E3; F2P
- Detroit Diesel: all types.
- Continental VDO all types.

BIP and NRT Measurement

U1000 is capable to measure the Beginning of Injection Period (BIP) and Nozzle Response Time. BIP is the parameter to determine the condition of the Solenoid, Control Valve Spring Tension; whereas, NRT is the parameter to determine the Valve Stroke and Nozzle Spring Tension. Patented structure to measure NRT eliminates all pressure reflections and waves causing false readings.

Easy User Interface with Test Plan Create and Calibrate Function

U1000 user interface provides all the necessary data on the test screen readily available for the user to decide the condition of the injector. The software allows the use to create different test plans. Software help user to keep the test plan target values calibrated with its automatic calibration feature. New interface software can store the test results, prepare test reports in pdf, excel or html format.

Test Report as PDF File

rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm
800	10	12.0	3.7	0	1200	100	0	0.0	0.0
800	10	12.0	6.1	0	1200	100	0	0.0	0.0
275	10	12.0	2.3	0	1200	100	0	0.0	0.0

Test Plan Creator

Test Screen Image

Home Screen of U1000 Test Control Software



The U1000 All-Makes cam box utilizes U1000 test control software to drive the EUI/EUP application. Test control software requires a dedicated computer and this is not supplied as part of the U1000 cam box, the end user is responsible for supplying the computer. The following hardware specification is required to utilize software and interface with U1000 electronic drive module.

Operating System	Windows 7, 32 bit
Processor	i5 processor or better
RAM	Min 8 GB
Video Display Output	Min 14" LCD, resolution 1600x900 or better
Mass Storage	Min 500 GB
USB Interface	3 x usb ports
Network Port	802.11ac 2.4/5 GHz wireless adaptor

The host test bench is to provide:

- 10 HP direct drive A.C. or D.C. motor or 15 kW hydraulic drive.
- Any type metering system.
- 110 mm diameter coupling.
- High pressure phasing is required for testing Cummings Celect and HPI systems.

Host Bench Recommended Specifications

	MIN	MAX	Unit
Fuel supply pressure	3.5	25	bar
Fuel supply temperature	30	45	°C
Fuel supply flow rate	6	12	liters/min.

Electricity Requirement

100- 240 Vac 1 phase 50/60 Hz
Universal Single Phase Power Supply.



Electronic Drive Module & Patented Cam Box; stroke set between 10 & 18 mm.



One of Test Adapters

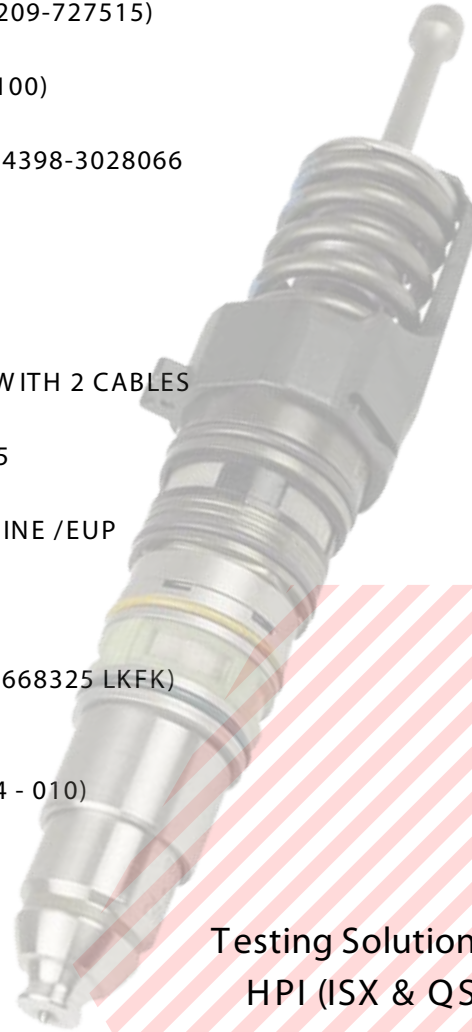
Dimensions

Packing Dimensions:
Width: 810 mm
Depth: 620 mm
Height: 1150 mm
Weight: 200 kg



Optional Accessories for Various EUI / EUP

CB50400 DELPHI A3 TYPE @ VOLVO
CB50500 BOSCH VW-AUDI-SEAT SKODA
CB50600 BOSCH MERCEDES ACTROS TRAVEGO / EUP
CB50700 BOSCH MERCEDES AXOR / EUP
CB50800 VOLVO-BOSCH (8113408)
CB50900 BOSCH IVECO
CB51100 DELPHI LUCAS LAND ROVER - 17491CS
CB51300 CATERPILLAR 3500 (EUI 1320202-108528)
CB51400 BOSCH SCANIA
CB51500 CATERPILLAR 3116 (1071232-220264-1278209-727515)
CB51600 CATERPILLAR 2113025-2235320
CB51700 MARIN MECHANICAL INJECTOR (BR55510 100)
CB51900 DETROIT DIESEL SERIES 60
CB52000 CUMMINS MECHANICAL INJECTOR MS 3084398-3028066
CB52100 CATERPILLAR C10 (1660155-437290AU)
CB52200 BOSCH DAF-RENAULT /EUP
CB52300 BOSCH DEUTZ
CB52400 SIEMENS PPD 131021 / 1121013
CB52500 BOSCH VW-AUDI-SEAT-SKODA NEW TYPE
CB52600 DELPHI E3 & E1 TYPE @ VOLVO/RENAULT WITH 2 CABLES
CB52700 CUMMINS CELECT N14
CB52800 CUMMINS MECHANICAL INJECTOR NTA855
CB52900 DELPHI A3 TYPE @ HYUNDAI TRUCKS
CB53000 BOSCH VOLVO HEAVY DUTY WORK MACHINE /EUP
CB53100 ADAPTOR FOR SIEMENS VOLKSWAGEN
CB53200 BOSCH NISSAN (9 443 613 182)
CB53300 CUMMINS CELECT M11 - M11+ - ISM
CB53400 DELPHI UNIT PUMP FOR DAF (092330311 1668325 LKFK)
CB53600 LUCAS (KCCOT120A0020)
CB53700 VOLVO HEAVY DUTY (0414 750 003)
CB53800 BOSCH IVECO PDE 100S4003 (0414 703 004 - 010)
CB53900 BOSCH (0414 693 003)
CB54000 DELPHI John Deere Tractor
CB54100 BOSCH IVECO (0414 700 003)
CB54200 BOSCH 0986 411 029
CB54300 BOSCH 0412 010 594
CB54500 CATERPILLAR 3500 (MUI)
CB54600 CATERPILLAR 2490713
CB54700 LUCAS John Deere
CB54800 UNIT PUMP BOSH-DEUTZ (0414 491 107)
CB54900 VOLVO-BOSCH (0986 441 004-0414 701 004)
CB55000 DEUTZ PUMP (0428 7047)
CB55100 CUMMINS - QSK (4088428)
CB55300 CUMMINS MECHANICAL INJECTOR @ ISX (1521978-1464976)
CB55500 DETROIT DIESEL DD15 DELPHI E3 INJECTOR ADAPTER SET
CB55600 DETROIT DIESEL MUI (53/71/93) ADAPTER SET
CB55700 DETROIT DIESEL SERIES 149 EUI ADAPTER SET
CB55800 DETROIT DIESEL 8 MM EUI ADAPTER SET
CB56000 ADAPTER FOR EMD INJECTOR EUI
CB56100 VOLVO F2 PUMP INJECTOR ADAPTER SET



Testing Solutions of Cummins
HPI (ISX & QSK) Injectors



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For more detailed information, contact your Maktest Inc. distributor or visit



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INJECTION TEST AND
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Continuous development is taking place. Maktest reserves the right to alter the design &/or specification without prior notice.
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