



**OURO
DIESEL**

Tecnologia em Injeção Eletrônica Diesel

CATÁLOGO 2017

Bancadas



Catálogo completo com todas bancadas de teste para unidades injetoras sistema Common Rail e unidades UP, HEUI e EUI, bicos injetores e bombas injetoras Common Rail



PT2012
pumptester • CRe
Equipo Universal para
Bombas Tradicionales y CR



TK1029.02
injectester • CRH
Equipo para Inyectores CR
Servicio Pesado



T1000
injectester • CRM
Equipo Mediano para
Inyectores CR



TK1035
pumptester • CRS
Equipo para Bombas CR
Todas Marcas



A1000
Sistema de Reparación
de Inyectores Manual



UTS1004
injectester • UIP
Equipo para Bombas e
Inyectores Unitarios
Todas Marcas



TK1024
injectester • HEUI
Equipo para Inyectores
HEUI



KO4000
(Computer Aided Repair System)
Sistema de Reparación
de Inyectores Guiado
por Computadora



TK1026.03
injectester • CRb
Equipo para Inyectores CR
Todas Marcas

LOS EQUIPOS MAS VERSATILES.
LA TECNOLOGIA MAS AMIGABLE.
EL MEJOR SERVICIO POSTVENTA.
EQUIPO PARA TODOS LOS PRESUPUESTOS.
TODO AL ALCANCE DE UN TOUCH !!



TK1026.03

injectester

CRb

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

All Makes Common Rail Injector Test Stand



Independent solution provider for diesel injection problems



TK1026.03, third version of TK1026, is more than a test bench with its new measurement system and many updated features.

The new measuring system is faster and capable to measure bigger injectors up to 450mm³/stroke. Unlike earlier versions, TK1026.03 displays instantaneous delivery and return results from injector. Another new feature is a improved temperature control, providing more accuracy in injector fuel readings.

Maktest provides its customers;

- Updated information concerning test and repair instructions,
- Latest version control software and drivers,
- User's manuals and troubleshooting guides,
- Repair manuals for repairing various common rail injectors.

TK1026.03 control software has more than 500 injector test plans for Bosch, Delphi, Denso, Siemens and Caterpillar common rail injectors. Software and database is upgraded periodically and new models, types or new makes common rail injectors are included as they appear in the market.

Best Accuracy, Best Investment, Best Performance

Maktest has training centers in 5 locations around the world. Training centers are focused to help customers to stay up to date with new diesel injection systems. Customers are trained for repairing common rail injectors, using special tools and interpretation of test results. Training centers provides continuous support to the customers to help them solve their repair and diagnose problems with diesel injection problems.



MAKTEST
Independent solution provider
for diesel injection repair systems.

TK1026.03

injectester

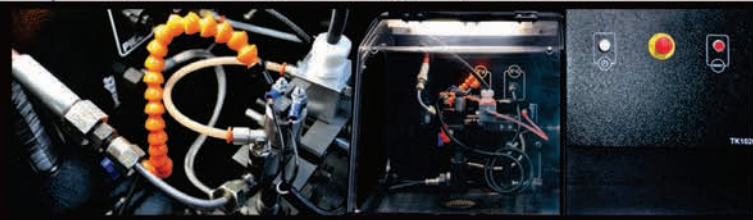
CRb

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FEATURES

Designed for longer and bigger injectors to come...



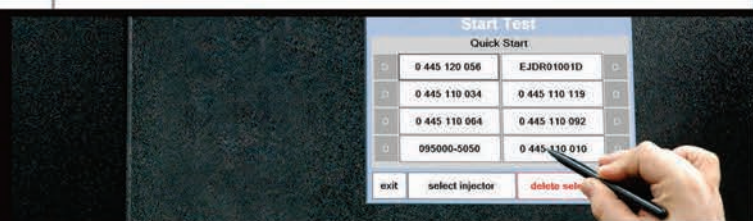
Higher and wider work area is designed for new coming injectors.

Fast and Accurate Measurement System



CMS measuring system shows instantaneous delivery and return results up to 1000mm³ per injection flow rate.

Touch to control...



Special software designed especially for touch panel operation makes life easier.

Control software with its easy to understand structure, but accurate design helps anybody to get accustomed to using TK1026.03 in just a couple of minutes.

Impressive cooling capacity



TK1026.03 is designed to work non-stop. Nothing can stop it, not even rising temperature, even without water...

Piezo and what is more?

Future is our today and we build machines for tomorrow. That is why TK1026.03 can test any common rail injector no matter it is piezo or anything else.

TK1026.03 infrastructure is capable to run many and more.

Technical Specifications

High Pressure Test Oil Transfer System	Pressure is controlled digitally between 100 and 1800 bars.
Injector Drive System	System is designed to be able to drive future injectors. It can drive electromagnetic injectors as well as piezo injectors. Drive system is capable to inject 3 times per injection cycle.
Control System	Control computer with 10" LCD. Touch Panel runs Windows 7 OS. Special control software operates TK1026 with high accuracy.
Fume Extraction	Patented filter system extracts the fume and filters it to drain. Powerful extraction capacity prevents fume from escaping out of spray chamber.
Delivery Measurement	Electronic Fuel Measurement System (TK1026.03)

Required Utilities

Electric	
TK1026.C	220VAC 50/60 Hz (3 ph)
TK1026.H	380VAC 50/60 Hz (3 ph)

Delivered Accessories With This Product

AP1638	DELPHI CABLE
AP1639	BOSCH CABLE
AP1640	DENSO CABLE
AP1761	SIEMENS CABLE
AP1648	CABLE FOR HEAVY DUTY APPLICATIONS
AP1675	CABLE FOR MERCEDES APPLICATIONS
KO1365-2	ADAPTOR FOR JOHN DEERE-DENSO
KO1740	FLEXIBLE HIGH PRESSURE HOSE SET
AP1713	INJECTION DELAY SENSOR CONNECTION CABLE
KO1538	BOSCH CR RETURN CONNECTOR
KO1485	MAINTENANCE KIT
KO1746	BOSCH INJECTOR RETURN ADAPTOR (0445 110 369)

Optional Accessories and Tools Recommended

KO1560	Torque Wrench Digital
KO1521	Denso Repair Tool Set
KO1579	Bosch CRIN 2.0 - 3.0 Service Tool Set
KO1382	CRI 1.0 - 2.0 - 2.2 and CRIN 1.0 Repair Tool Set
KO1475	Clean Bench for Electronic Injector Repair, Including Injector Clamp and Ultrasonic Cleaner

For Various Common Rail Injector Applications

KO1426	DENSO-KOMATSU (095000-0560)
KO1427	BOSCH-RENAULT (0445120020)
KO1428	BOSCH-IVECO/CUMMINS (0445120113-0445120114)
KO1429	BOSCH-MAN (0445120030)
KO1430	BOSCH-DAEWOO (0445120040)
KO1431	BOSCH-FORD (0445120025)
KO1432	DENSO-JOHN DEERE (095000-5480/5050)
KO1459	DENSO-HYUNDAI (095000-5550)
KO1462	BOSCH-MAN (0445120056)
KO1472	DELPHI-JAGUAR X400 (4S7Q-9K546-BD) (EJDR00504Z)
KO1484	DENSO-JOHN DEERE (7560-07K00201)
KO1502	DELPHI-MERCEDES-SMART (RA0020109751)
KO1583	CATERPILLAR 320C
KO1584	DENSO-095000-6222
KO1592	DENSO (0562 011 0516) (095000-1211)
KO1631	BOSCH-CUMMINS F-2093-02-370
KO1587	BOSCH-CUMMINS 0445 120/007-059-075
KO1644	BOSCH 0445120 078 FAWY-GOLDEN DRAGON



MAKTEST
Independent solution provider
for diesel injection repair systems.

KO1870

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

Bosch IMA Coding
Piezo and
Electromagnetic
Injectors

Coding Module for Bosch Injectors



**Independent
solution provider
for diesel
injection problems**



IMA Coding for both Bosch
Piezo and Electromagnetic
CR injectors

KO1870 is the Bosch IMA Coding module for:

- * TK1026.03A and 03B
 - * TK1029
- model test benches.

Module runs with the special software to determine the ISA class for piezo injectors and calculate the Target Delivery differences to create IMA codes for Bosch CR Injectors.



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MAKTEST
Independent solution provider
for diesel injection repair systems.

TK1029.02

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions

injectester

CRH

Heavy Duty Common Rail Injector Test Stand



**Independent
solution provider
for diesel
injection problems**



Common Rail injectors of Heavy Duty Engines up to 4000 Kw power are tested precisely on New TK1029.02. New Clamping system and spacious injector cabinet allows to mount various geometry injectors.

New design rail block and high pressure pump provides saturated high pressure flow even running the largest common rail injectors.

TK1029.02 injectester CRH is designed for testing high pressure and high volume injectors. Its metering capacity is up to 2000 mm³/stroke.

TK 1029.02 can test standard ELECTROMAGNETIC and PIEZO common rail injectors using KO2000 Clamping Unit. KO2000 Clamping Unit is designed to adapt all standard common rail injectors to TK1029.02's new injector mount system allowing still to measure INJECTION DELAY TIME and pre-injection flow rates accurately.

HYDRAULIC AMPLIFIED COMMON RAIL INJECTOR TESTING

TK1029.02 is designed to clamp and drive hydraulic amplified common rail injectors, e.g. Detroit Diesel DD15 Bosch Injectors with Dual Solenoid. Injector drive electronics is designed to control timing and to measure injection delay with precision.

The only powerful, accurate and precise solution for Heavy Duty Common Rail Injector testing



MAKTEST
Independent solution provider
for diesel injection repair systems.

TK1029.02

injectester

CRH

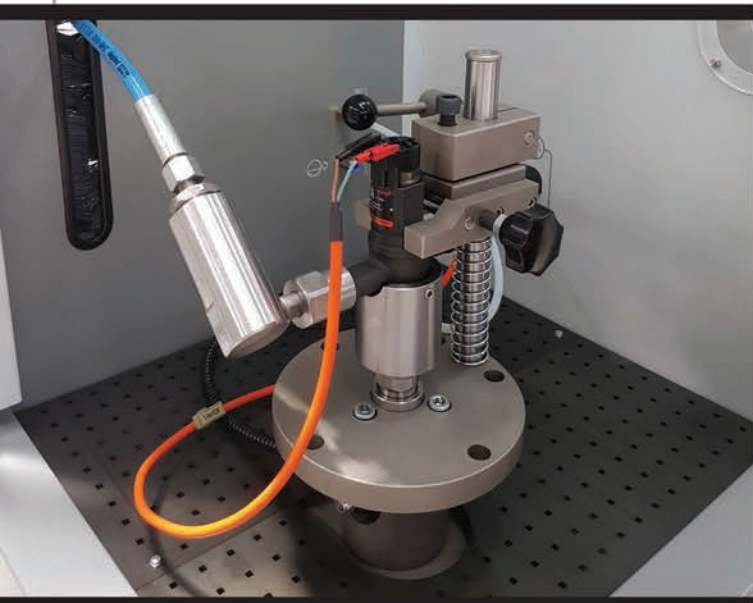
An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions

FEATURES

Renovated Clamp System for Heavy Duty Applications

Easy set-up with reinforced clamping mechanism helps to reduce overall testing time.



High Flow Testing Capacity

High Flow rate often creates heating problem when testing. Therefore TK1029.02 CRH is designed to have advanced temperature control systems to maintain temperature during testing.



Technical Specifications

High Pressure Test Oil Transfer System	Pressure is controlled digitally between 100 and 2200 bar.
Injector Drive System	It can drive electromagnetic injectors as well as piezo injectors. Drive system is capable to inject 3 times per injection cycle.
Control System	Control computer with 15" LCD. Touch Panel runs Windows 10 OS. Special control software operates TK1029.02 with high accuracy.
Fume Extraction	Patented filter system extracts the fume and filters it to drain. Powerful extraction capacity prevents fume from escaping out of injector cabinet.
Delivery Measurement	0.03 mm ³ resolution up to 2000 mm ³ /stroke fuel delivery.

Required Utilities

Electricity Supply

TK1029.H	380VAC 50 or 60 Hz 3 phase
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Delivered Accessories With This Product

AP1648	INJECTOR CABLE TRUCKS
BM1054	DELIVERY HOSE
BN1084	RETURN HOSE
BN1085	RETURN HOSE M12
KO1901	MAINTENANCE KIT

Optional Accessories

KO2000	Standard Injector (Bosch - Denso - Caterpillar etc.) Clamping Unit
KO2001	L'Orange Clamping Unit
KO2002	Cummins QSK Clamping Unit
KO2003	MTU 4000 L'orange Injector Clamping Unit
KO2004	Detroit Diesel DD15 Dual Solenoid Common Rail Injector Clamping Unit
KO2005	MTU 8000 L'Orange Injector Clamping Unit

Recommended Products

KO1580	Torque Wrench Digital
KO1521.C	Denso Repair Tool Set
KO1579.C	Bosch CRIN 2.0 - 3.0 Service Tool Set
KO1382.C	CRI 1.0 - 2.0 - 2.2 and CRIN 1.0 Repair Tool Set
KO1475	Clean Bench for Electronic Injector Repair, Including Injector Clamp and Ultrasonic Cleaner
KO4000	Computer Aided Repair System
A1000	Computer Aided Repair System (manual)



MAKTEST
Independent solution provider
for diesel injection repair systems.

T1000

An easy solution for a big problem

Economical and compact common rail injector test bench.

injectester

CRM

Fully Automated Testing

**Independent
solution provider
for diesel
injection repair**



T1000 is the new All Makes Common Rail Injector Tester with basic features just enough start repairing injectors with minimum investment.

It is designed for workshops starting to repair Common Rail injectors or workshops that need additional test equipment to increase their repair capacity with the least investment.

T1000 is a successor of TK1010 Injectester CRb test equipment, with proven performance and acceptance in the market.

T1000, just like its predecessors, have all Bosch, Delphi and Denso test plans in the control software. The software is upgraded regularly to include new test plans.

Control software includes test plan calibrator module to enable users even no experience to create test plans for new injectors.

**Best Investment with
return in shortest time..**

Maktest has training centers in 5 locations around the world. Training centers are focused to help customers to stay up to date with new diesel injection systems. Customers are trained for repairing various fuel injection systems, using special tools and interpretation of test results. Training centers provide continuous support to the customers to help them solve their repair and diagnose problems with diesel injection systems.



MAKTEST
Independent solution provider
for diesel injection repair systems.

T1000

An easy solution for a big problem

Economical and compact common rail injector test bench.

injectester

CRM

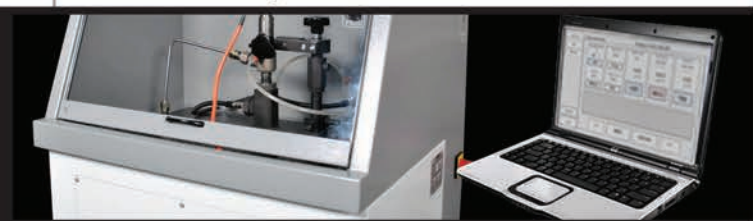
FEATURES

Ready for Future Injectors



T1000 can control rail pressure up to 2200 bar. Integrated cooling system controls the test oil temperature precisely at OE test specs for maximum accuracy.

With User-friendly Interface



Most user-friendly control interface ever built. Automated testing feature allows the user to be more productive while T1000 testing the injector itself.

Digital Metering with Injection Delay Measuring



TK1000's proven controls measure delivery and return flow with high accuracy. Injection delay time measurement is one of TK1000's advantages to enable the user to repair injector's condition with precision.

Is Piezo Testing Possible?



Piezo testing is possible for Continental VDO (Siemens) injectors. Bosch injectors are also tested however the user must create a test plan.

Technical Specifications

Measuring System	Digital Metering with capacity to measure 200 mm ³ /H
Rail Pressure	Maximum 2200 bar
Tank	20 L
Filter	5µ

Specs for Computer

Operating System	Windows 7 and above.
Ram	min. 2 gb
Serial Connection	min. 4 x USB 2.0 ports.

Required Utilities

T1000 L	220VAC 50/60 Hz (3 ph)
T1000 H	380VAC 50/60 Hz (3 ph)
Air Supply	Min 5 bar, min 1m ³ /min Flow, dry and oil free

Delivered Accessories With This Product

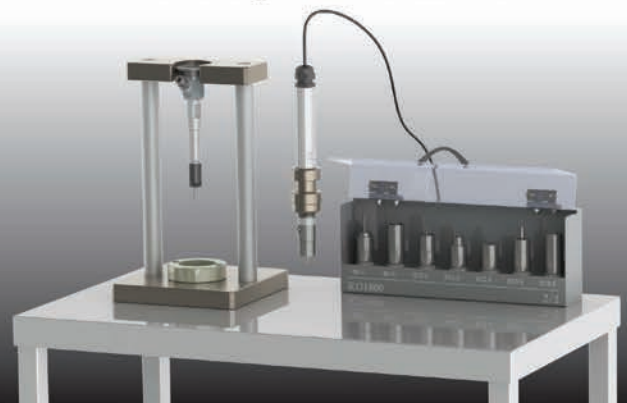
AP1638	DELPHI CABLE
AP1639	BOSCH CABLE
AP1640	DENSO CABLE
AP1648	CABLE FOR HEAVY DUTY APPLICATIONS
AP1675	CABLE FOR MERCEDES APPLICATIONS

See Maktest website for rich adapter set catalogue for various truck applications.

Optional Accessories and Tools Recommended

A1000	Computer aided manual operated electronic injector repair system.
KO1560	Torque Wrench Digital
KO1521C	Denso Repair Tool Set
KO1579C	Bosch CRIN 2.0 - 3.0 Service Tool Set (MAN)
KO1382C	CR1 1.0 - 2.0 - 2.2 and CRIN 1.0 Repair Tool Set

A1000-COMPUTER AIDED MANUAL OPERATED ELECTRONIC INJECTOR REPAIR SYSTEM



MAKTEST
Independent solution provider
for diesel injection repair systems.

TK1022

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

injectester

manual

Common Rail Injector and Mechanic Injector Test Equipment



Independent solution provider for diesel injection problems



TK1022 injectester CR Manual is a simple, hand operated test stand for initial testing of the common rail injectors.

It is designed to save time by checking return flow and spray pattern before actually putting it into a more complete test on TK1026 injectester CRb.

Its simple and ergonomical design helps customers to perform fast and reliable tests on every model of common rail injector. New touch panel display shows the instantaneous pressure as a graph on the screen which allows to understand the pressure holding capability of the injector easily.

TK1022 is created to be a multipurpose testing solution for all types of injectors; both mechanical and Common Rail. It can test 2-spring mechanical injectors with precision. First spring and second spring opening pressures are measured separately at two different settings.

Simple but Efficient, helps to create value

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MAKTEST
Independent solution provider
for diesel injection repair systems.

TK1022

injectester

manual

An easy solution for a big problem

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FEATURES

Functional



Touch panel display provides language free controls with self-explanatory symbols.

CR injector testing allows the operator to define min and max pressure levels for injection. The unique feature allows testing injection pattern at different pressure levels.

User also can change the injection duration and injection speed using touch panel.

Environmentally Friendly

Injector clamping is simple and easy. Spacious injector spray chamber allows the user to observe spray pattern of both mechanical CR injectors.

Spray fumes are contained within the spray chamber and filtered before sending to exhaust. TK1022 exhaust can be mounted to a air duck to convey the spray fumes outside of the working environment.

What tests can you do with TK1022?



Common Rail Testing:

- Flushing,
- Excessive return flow,
- Nozzle Condition; blocked or leaking,
- Spray pattern,
- Minimum spray pressure

Mechanical Injectors:

- Spray pattern,
- Opening pressure for traditional mechanical injectors,
- Opening pressure for 2 spring injectors, first and second spring separately.

What do we see on the screen?

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Spray fumes are contained within the spray chamber and filtered before sending to exhaust. TK1022 exhaust can be mounted to a air duck to convey the spray fumes outside of the working environment.

Investment that Creates Value



TK1022 is not a complete solution for repairing Common Rail Injectors, but it is a part of a total solution. It helps user to identify the injectors with too much return or complete mechanical failure without spending too much time.

TK1022 saves precious time and effort that we need for more valuable things.

Technical Specifications

Test Oil Tank Volume	3 L
Used Interface	Touch Screen LCD Display
Maximum Pressure	600 bar
Arm position	Left and right, configurable by user.

Required Utilities

Electricity Supply
220VAC 50/60 Hz

Included Accessories

2 test pipes - 4 test cables



MAKTEST
Independent solution provider
for diesel injection repair systems.

KO 4000 CARS

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

**Computer
Aided Repair
System**

Computer Aided Repair System for Repairing All Makes Electronic Injectors.

**Independent
solution provider
for diesel
injection problems**



**Complete solution
to an impossible problem.**

KO4000 CARS gives the ability to assemble the injector once and for all, eliminating the trial and error procedure on the way to repair. Its precision measuring unit and special tools work together with a special software that instructs the user what to do at each step of the repair and assembly process including calculating the exact adjustment shim thickness to be used.

KO4000 CARS is ready for repairing below injector groups:

Bosch CRI 1.0 - 2.0 - 2.1 - 22 - 2.18, Bosch CRIN 1.0 - 2.0 - 3.0, Denso G2, Bosch Piezo Injectors, Continental VDO Injectors



MAKTEST
Independent solution provider
for diesel injection repair systems.

KO 4000 CARS

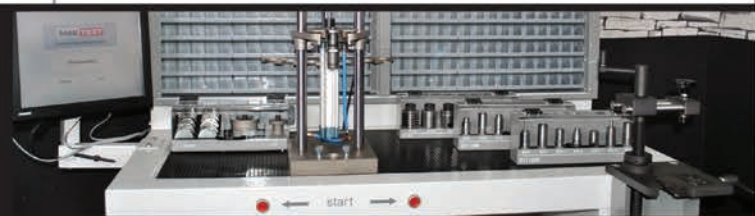
An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

Computer Aided Repair System

FEATURES

No more Trial and Error



Everybody who has worked on electronic injectors knows that repair is just about trial and error. Sometimes the repair is not successful and the reason is unknown. Experience and knowledge is a must but it is not always enough to complete a successful repair.

KO4000 CARS is the most advanced system to eliminate the trial and error in the electronic injector repair process. System is capable to calculate adjustment shim thickness at each step with micron accuracy. The control software displays the calculated adjustment shim thicknesses together with assembly instructions at each step of the repair.

Anyone can Repair...



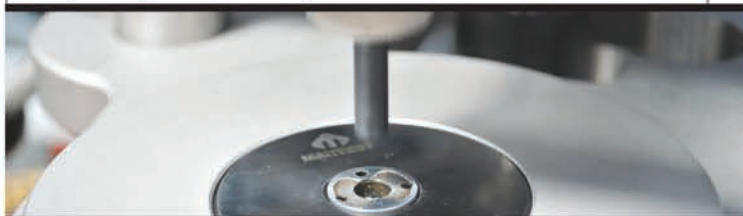
Repairing Electronic Injectors is not a specialist's business anymore. KO4000 CARS eliminates the experience and expertise needed to repair Electronic Injectors.

Fast and Safe Repair



KO4000 Computer Aided Repair speeds up and simplifies the repair process. Repair procedure becomes safer with the accuracy and instructions provided by the KO4000 CARS control software.

Accuracy is Everything When Repairing Electronic Injectors...



All electronic injectors are assembled with micron level clearances by their designs. KO4000 CARS is developed to measure micron with accuracy and repeatability.

Delivered Accessories With This Product

KO4001	CARS Repair Table
KO4002	Measurement Unit
KO4100	Bosch CRI-CRIN Tool and Adapter Set
KO210300	Clamp for C.A.R.S.

Optional Accessories and Tools Recommended

KO4200	Denso G2 Tool and Adapter Set
KO4400	Continental VDO Measurement and Adapter Set
KO1475	Clean bench, for disassembly and repair
KO1521	Denso disassembly tool set
KO1579C	Bosch CRIN 2.0 ve 3.0 Disassembly Set
KO1382C	Bosch CRI ve CRIN 1.0 Disassembly Set
KO1560	Torque Wrench

Required Utilities

Power Supply	220V 50/60 Hz Single Phase
Air Supply	min 5 bar, min 1m3/min Flow, dry and oil free

Technical Specifications

Control Panel	15" Touch Panel
Operating System	Windows 8



MAKTEST
Independent solution provider
for diesel injection repair systems.

KO 4200

An easy solution for a big problem

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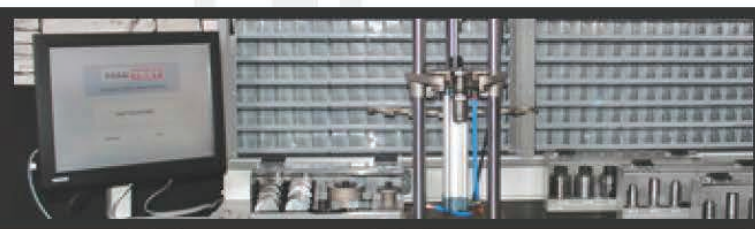
denso
assembly
tool set

CR Injector Service Tools

**Independent
solution provider
for diesel
injection problems**



KO4200 Denso Assembly Tool Set is the tool set to assemble Denso G2 type injectors using KO4000 Computer Aided Repair System.



KO4000 CARS
Computer Aided Repair System.



MAKTEST
Independent solution provider
for diesel injection repair systems.

KO4500

Una solución fácil para un gran problema

Las ventas mundiales y la red de servicio proporcionan un apoyo oportuno y confiable para todas las preguntas

Caterpillar
C15
Asamblea conjunto
de herramientas

Caterpillar C15 Asamblea conjunto de herramientas



Proveedor Independiente
de Soluciones Para
Problemas de
Inyección Diesel



Herramientas KO4500 Asamblea C15 ayuda a ensamblar:

- * Solenoide tensión del resorte
- * Carrera Válvula
- * Entrehierro
- * Boquilla tensión del resorte
- * Boquilla Ascensor



KO4000 CARS
Computer Aided sistema de reparación.

Maktest es el equipo de prueba de inyección diesel manufacturación desde 1977. productos Maktest se distribuyen en más de 70 países de todo el mundo y más de 3.000 equipos de prueba es activamente en la operación en estos países. Marcas dizotester, pumptester, injectester, unittester son Productos Maktest bien reconocido.



MAKTEST
Independent solution provider
for diesel injection repair systems.

K04600

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

Caterpillar
C7 / C9
assembly
tool set

C7/C9 HEUI Assembly Tools



**Independent
solution provider
for diesel
injection problems**



K04600 C7/C9 HEUI Assembly Tools helps setting:

- *Solenoid Spring Tension
- *Valve Air Gap
- *Poppet Valve Stroke
- *Plunger Valve Stroke
- *Nozzle Spring Tension
- *Nozzle Lift



*KO4000 CARS
Computer Aided Repair System.*

Maktest is manufacturing diesel injection test equipment since 1977. Maktest products are distributed in more than 70 countries around the world and more than 3000 test equipment is actively in operation in these countries. Well recognized brand names dizotester, pumptester, injectester, unittester are Maktest products.



MAKTEST
Independent solution provider
for diesel injection repair systems.

K01802

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions

Nozzle Holder Assembly / Disassembly Tool Set



To Use with Torque Wrench

**Independent
solution provider
for diesel
injection problems**



Complete tool set for Assembling or
Disassembling Nozzle Holders with
Diameters ranging from 22 mm to 30 mm.



Maktest has training centers in 5 locations around the world. Training centers are focused to help customers to stay up to date with new diesel injection systems. Customers are trained for repairing common rail injectors, using special tools and interpretation of test results. Training centers provide continuous support to the customers to help them solve their repair and diagnose problems with diesel injection problems.

Maktest is manufacturing diesel injection test equipment since 1977. Maktest products are distributed in more than 70 countries around the world and more than 3000 test equipment is actively in operation in these countries. Well recognized brand names dizotester, pumptester, injectester, unittester are Maktest products.



MAKTEST
Independent solution provider
for diesel injection repair systems.

K01873

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions

Caterpillar C7 / C9 Repair Tool Set



To Use with Torque Wrench



**Independent
solution provider
for diesel
injection problems**

**Including Nozzle Opening
Pressure Test Adapter
for C7 and C9**

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for diesel injection repair systems.

K01874

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions

Caterpillar C15 Repair Tool Set



To Use with Torque Wrench

**Independent
solution provider
for diesel
injection problems**



**Including Nozzle Opening
Pressure Test Adapter**

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MAKTEST
Independent solution provider
for diesel injection repair systems.

A•1000

An easy solution for a big problem

Economical and compact common rail injector test bench.

Computer Aided
Repair System
manual

**Independent
solution provider
for diesel
injection repair**

Repair System for All Makes
Electronic Injectors



A1000 is new member of the Computer Aided Repair Systems, with manual measuring probe. A1000 has the same precision like KO4000 lacking its speed in assembly. It uses the same tools with KO4000 and capable to conduct "dry test" to determine the solenoid assembly operation.

Computer controlled measurement brings precision level to microns, allowing the customer to assemble the injector in the perfect condition. A1000 eliminates the trial and error approach during the assembly process, introduces a simplified procedure to follow for anyone to assemble the injector without being puzzled.

Anyone new to CR injector assembly can start repairing any CR injector with a basic training to use A1000. The software is designed to instruct the user what to do at each step. Instructions are supported with videos and pictures to show the user how to handle the related assembling step.

A1000 software instructs the user to measure each part separately and then calculates the respective adjustment shim thickness with its correct tolerances.

Tool Sets are available for all types of Bosch and Denso CR injectors.

Inexpensive but capable, just
enough for perfect workshop.

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Independent solution provider
for diesel injection repair systems.

KO1815

BOSCH type control valve tester

Reliable Repair with Reliable Components...



It is ultimately important to thrust the parts before assembling them together when repairing the common rail injectors.

Control valve is one of those items that are almost impossible to tell whether it is acceptable or will fail during the Flow Test on the test bench by just looking at the surface condition using magnifier or more developed cameras.

KO1815 Control Valve Testing Unit saves time and effort to start repair all over again just because of a misjudgment made at a visual check. It performs a SAFE and reliable test at 8 bar air pressure to make sure that the control valve is completely acceptable before assembling into an injector.

BOSCH type control valve lapping unit

KO1816

Economical Repair Solution for Control Valves

Control valve lapping is a controversial repair method, not recommended by OEM's. One of the main reasons is the compensation calculation after the lapping may become very complex and the repair of the injector with the lapped control valve may become almost impossible.

Maktest KO4000 Cars system practically recalculates all the critical dimensions after the lapping very successfully and eliminates the risk of failing during the Flow Test.

KO1816 Bosch Type Control Valve Lapping Unit is a simple but effective solution for successfully repairing Bosch Type Control Valves.



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K01815

K01816

FEATURES

Safe Lock- Air Test System



Control valve testing requires high pressure with proper clamping to simulate the conditions inside the injector. 6-8 bar pressure is applied for checking the sealing performance.



Maktest Quality Behind Design

Control Valve testing is a tricky procedure and may be quite dangerous, if necessary precautions are not taken. Maktest design makes it perfectly safe to implement the test with even high air pressure level.

Technical Specifications

Pressure Display	0-10 Bar
Valve Leak Indicator	75 cm ³

Required Utilities

Power Supply	220 VAC 50/60Hz (1ph)
Air Supply	Min. 5 Bar, dry and oil free

The Bench Dimensions:

Width	320 mm
Depth	250 mm
Height	440 mm
Weight	11,1 kg

Package Dimensions:

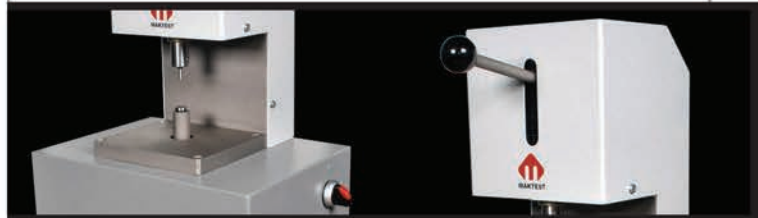
Width	360 mm
Depth	280 mm
Height	480 mm
Weight	12,2 kg

FEATURES

Correct Lapping Method with Correct Lapping Angle



Polishing tip with correct angle and simple lapping procedure erases the scratches and polishes the surface with precision.



Self aligning grip provides fast and easy operation.



Unfit Control Valve (at the right side) and control grinded Control Valve (at the left side)

Technical Specifications

Motor Speed	1320 Rpm
Motor Power	90 W

Required Utilities

Power Supply	220 VAC 50/60Hz (1ph)
--------------	-----------------------

The Bench Dimensions:

Width	320 mm
Depth	220 mm
Height	520 mm
Weight	16,2 kg

Package Dimensions:

Width	340 mm
Depth	280 mm
Height	560 mm
Weight	17,2 kg



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PT2012 • CRe

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pumptester

CRe

Mechanical and Common Rail Pump Test Bench



**Independent
solution provider
for diesel
injection problems**



Today we all know that we need some equipment to test mechanical diesel pumps as well as common rail system pumps. Tomorrow will have different systems, Hydraulically Amplified Common Rail etc. Every passing year, we are receiving newer diesel injection systems with different requirements for repair and test.

Maktest has designed PT2012.CRe for testing both old and new systems with success...

Built-in Common Rail pump testing.

The most advanced feature for PT2012.CRe is the built-in Common Rail Pump testing capability. The test bench is designed to test common rail pumps, and is delivered with the rail block and necessary attachments.

With its new Dual Metering System, PT2012.CRe measures 2 cylinder's output at the same time. Therefore the measurement is completed within seconds with precision.

Traditional test bench with features not very traditional...

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for diesel injection repair systems.

PT2012 • CRe

pumptester

CRe

An easy solution for a big problem

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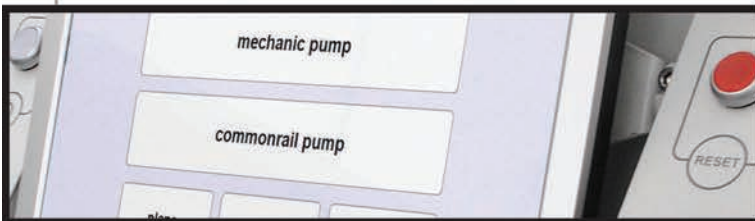
FEATURES

Absolute accuracy...



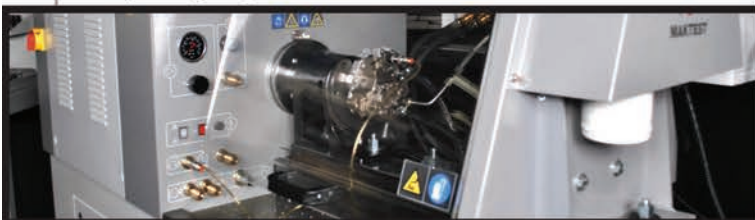
New metering system incorporating an advanced sensor and electronics, capable to measure flow rate with 0.033 mm³ resolution. This feature also enables our new electronics to measure each injection separately. The new metering technology is called. The new technology also enables to measure 2 cylinders at the same time, providing faster testing and shorter overall test time.

17" Touch Panel with user-friendly interface



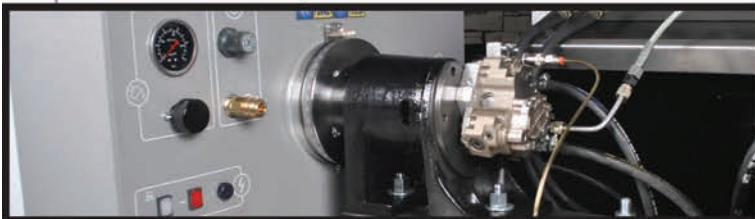
Colorful LCD screen and touch panel control interface present the most user-friendly control interface ever built for Pump testing equipment. Touch panel controls provide users navigate through control panel menu pages easily. Creating test plans to safely store in the memory has never been this easy. New test creator function allows every test to be stored as a test plan template that can be used for creating a test plan for both CR. and mechanical pumps.

Completely Digital Test Bench

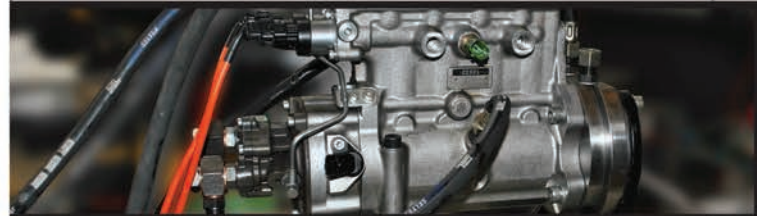


PT2012.CRE is completely digital with all pressure, rack travel and delivery measurements. Therefore, the test reports created by Pumptester CRE are the most comprehensive test reports for the purpose.

Comes with all adapters and accessories including Common Rail Pumps



PT2012.CRE is delivered with most common mechanical inline, distributor and Common Rail pump mounting adapter sets and cables. Test bench is delivered with a special rail cabinet with all pressure controls and sensors.



Technical Specifications

Drive System	20 HP - direct drive
Speed Range	40-4000 rpm
Flywheel	1.5 kgm ²
Test Fuel Transfer	0-6 bar
Lube Oil Transfer	0-6 bar
Cooling System	Without water, air cooling
Display	17" LED with Touchpanel
Computer	Win7 - 16 GB SSD HD
Digital Rack Travel Measurement	Max 30 mm with 0.1 mm resolution
CR Max Pressure	(2200 bar upgradeable)
Max Flow @2000 rpm	4000 mm ³ /H
All pressure readings are digitally displayed.	

Delivered Accessories With This Product

AP1689	CP2 BOSCH CP3 PUMP SCV CABLE
AP1693	HP3 SCV VALVE CABLE
AP1694	CP1-SIEMENS-DELPHI PUMP CABLE
AP1731	CP1 MERCEDES CABLE
	ADAPTER and FLANGES FOR INLIDE and ROTARY PUMPS
	12 PCS. TEST INSECTORS and 3 SETS TEST LINES

Optional Accessories and Tools Recommended

KO1475	Clean Bench for Electronic Injector Repair, including Injector Clamp and Ultrasonic Cleaner.
KO1347.e	Bosch CP2 - Denso HP0 CR Pump testing simulator kit.

Required Utilities

PT2012.CRE	360 - 415 VAC 50/60 Hz (3 faz) 62 A
Air Supply	Min. 5 bar, dry and oil free.



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Independent solution provider
for diesel injection repair systems.

TK1035

An easy solution for a big problem

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pumptester

CRS

All Makes Common Rail Pump Test Stand



**Independent
solution provider
for diesel
injection problems**



Testing common rail pumps are becoming tough with each new generation of common rail systems. More precise pressure controls, precise metering along with very precise speed control is now required for testing new generation CR pumps

TK1035 is designed to be able to test all types of CR Pumps, including Denso HP0 and Bosch CP2 type inline CR pump systems.

TK1035 introduces the highest specifications for temperature control and flow meter capacity for the after sales service industry.

The upgradable software is also unique to handle such a variety of common rail pumps.

World's new all makes
CR pumps test bench

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TK1035

pumptester

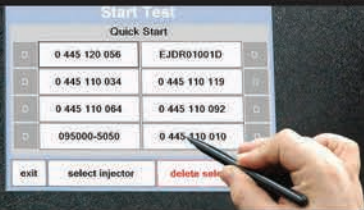
CRS

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FEATURES

Complete Automatic Testing



TK1035 completes the test in about 12 min. The results are shown with easy to understand graphics.

Simple Mounting Fixtures



TK1035 uses the standard pump mounting features for mounting common rail pumps, making life easy to understand.

Testing All Makes CR Pumps



TK1035 has what it takes to test all makes CR pumps. The control electronics is designed to run various SCV, PCV, ZME, IMV Valves according to their OEM standards.

Maximum Pressure



Pressure can be set and maintained up to 2200 bar.

Technical Specifications

Test Oil Transfer System	Pressure adjustable between 0 to 4 bar. System incorporates "Self Suction" line with Restriction valve and Vacuum Measurement capability. Pressure and Vacuum reading are digital on the touch panel.
Lube Oil Transfer System	Pressure is adjustable between 0 – 10 bar. Tank capacity is 15 lt.
Main Motor	Max Power: 20 HP; Max speed: 4000 rpm.
CR Control System	Capable to drive all SCV, PCV, ZME, IMV, actuators exists on today's CR pumps.
Control System	Win 7 operating system with Maktest Control Software.

Required Utilities

Electric	380V AC 50/60 HZ 3 phase
Air Supply	min 6 bar

Installation Requirement

380V AC - 3 ph 50/60 HZ
Fuse 80 A
Power Cable 4x10 mm ²
Compressed Air min 6 bar. Dry and oil free.

Delivered Accessories With This Product

AA3203	ADAPTER FLANGE SET
KO1467	COUPLING FOR SIEMENS CR PUMP
KO1353	COUPLING FOR BOSCH CP1
KO1356	DENSO HP3 FLANGE ADAPTER
MO1111	DELPHI PLUG FOR IMV
MO1112	BOSCH PLUG FOR CP1 PRESSURE REGULATOR
MO1113	BOSCH PLUG FOR CP3 ZME
MO1114	SIEMENS PLUG FOR IMV
MO1175	DENSO PLUG FOR SCV
BR1127	CR PUMP FEED HOSE
BR1142	OILING HOSE
BR1041	GEAR PUMP - HP0 FUEL INLET HOSE
AP1689	CABLE FOR CP2 (including sensor cable)
KO1347.s	BOSCH CP2-DENSO HPO CR PUMP TEST KIT with SIMULATOR

Optional Accessories and Tools Recommended

KO1475	Clean Bench for Electronic Injector Repair, Including Injector Clamp and Ultrasonic Cleaner
KO1560	Torque Wrench Digital
DE1382	Ultrasonic Cleaning Tank
KO1558	Hydraulic swiveling arm for disassemble



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TK1025

pumptester

CRPC

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All Makes Common Rail Pump Test System



Independent solution provider for diesel injection problems



TK1025 is a solution for common rail pump repair with the least investment, guaranteeing the highest return.

It is a solution for every type of common rail pump. Rich accessories let the professionals work on all vehicles.

Maktest has experience in diesel injection test systems for more than 30 years. It is this experience behind the successful test procedure keeping it simple and effective.

Streamlined test operation with its graphical representation easily shows the professionals where the problem is.

Like all the other Maktest products, it is not only for testing; but it is a key to figure out how to repair.

Maktest provides its customers;

- Latest version control software and drivers,
- User's manuals and troubleshooting guides,
- Repair manuals for repairing various common rail pumps.

Simple and efficient test system for the professionals

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MAKTEST
Independent solution provider
for diesel injection repair systems.

TK1025

pumptester

CRPC

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

FEATURES

Integrated High Efficiency Filtering



New Cabinet also accommodates high efficiency filtering system to prevent damages caused by insufficient filtering of the old test benches

Vacuum Testing for Transfer Pumps



Integrated Vacuum gauge provides a simple way of testing the transfer pumps on the Common Rail Pumps.

Semi-automatic testing



Maktest has unique approach to eliminate the need of any special test data to identify the problem. Control software automatically follows a special routine to diagnose if the problem lies in mechanical construction or the actuators of the pumps.

Technical Specifications

Pressure Control	0-2000 bar
Temperature	20-170 °C
Pump Delivery Measurement	0,2 to 5 L/min
Pressure Measurement	0-2000 bar

Required Utilities

Electricity Supply
220VAC 50/60 Hz single phase

Delivered Accessories With This Product

KO1632	UNIVERSAL CABLE SET (BOSCH-DENSO-DELPHI-SIEMENS)
AA3203	ADAPTER FLANGE SET
AA1195	COUPLING Ø19
KO1467	COUPLING FOR SIEMENS CR PUMP
KO1353	COUPLING FOR BOSCH CP1
KO1356	DENSO HP3 FLANGE ADAPTOR
KO1713	MAIN CRADLE BOSCH CENTER HEIGHT
MO1111	DELPHI PLUG FOR IMV
MO1112	BOSCH PLUG FOR CP1 PRESSURE REGULATOR
MO1113	BOSCH PLUG FOR CP3 ZME
MO1114	SIEMENS PLUG FOR IMV
AN3910	DENSO PLUG FOR SCV
AA3845	PRESSURE SENSOR ADAPTER
BR1127	CR PUMP FEED HOSE
AA3607	ADAPTOR FOR CR RAIL BLOCK PRESSURE SENSOR

Optional Accessories and Tools Recommended

KO1475	Clean Bench for Electronic Injector Repair, Including Injector Clamp and Ultrasonic Cleaner
KO1560	Torque Wrench Digital
AUX001	External Chiller
DE1382	Ultrasonic Cleaning Tank
KO1558	Hydraulic swiveling arm for disassemble



MAKTEST
Independent solution provider
for diesel injection repair systems.

UTS1004

An easy solution for a big problem

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injectester

UIP

All Makes Unit Injector and Unit Pump Test Stand



Independent solution provider for diesel injection problems



What makes equipment professional?

- Capacity?
- Capability?
- User friendliness?
- Flexibility?
- Convenience?

UTS1004 injectester UIP has all these features built in. It is designed upon 30 years of diesel injection background of Maktest combined with excellence.

UTS1004 is not designed only for testing; its abilities reach far beyond, providing fine details such that to guide professionals directly to solution.

Maktest provides its customers;

- Updated information concerning test and repair instructions,
- Latest version control software and drivers,
- User's manuals and troubleshooting guides,
- Repair manuals for repairing various unit injectors and unit pumps.

Perfected for the game...

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MAKTEST
Independent solution provider
for diesel injection repair systems.

UTS1004

injectester



An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

FEATURES

Distinct cam box design



UTS1004 has variable stroke height that allows testing all unit injectors or unit pumps with precision.

Exquisite precision in testing



Start of injection parameter is known to be one of the critical parameters to check and set when repairing. UTS1004 precisely measures start of injection time to avoid surprises when assembled on the engine.

Testing perfected...

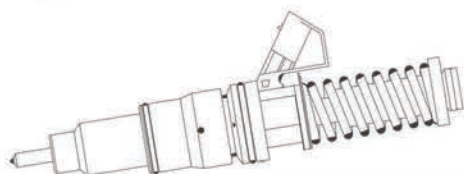


UTS1004 injectester UIP testing capability is perfected to conduct OEM test plans. Furthermore UTS1004 test plan creator module can generate test plans for any unit injector or unit pump to save in its database.

Dual Solenoid and Piezo unit injectors are welcome



UTS1004 just like its predecessor; can test piezo and 2 solenoid (4 pin) unit injectors.



Technical Specifications

Motor	10 hp AC with digital speed control between 0-1700 rpm.
Cam Box Stroke	Variable stroke between 10mm to 18mm.
Control System	Control computer with 15" LCD. Touch Panel runs Windows 7 OS. Special control software operates UTS1004.
Test Oil Inlet	0-10 bar pressure regulated, temperature controlled.
Test Oil Return	0-6 bar pressure regulated, temperature controlled.
Delivery Measurement	Electronic Fuel Measurement System (UTS1004.01)

Required Utilities

Electricity Supply

380VAC 50/60 Hz (3 ph)

Air

Dry and oil free air supply must be min 6 bar.

Optional Accessories for Various EUI / EUP

BOSCH DAF-RENAULT /EUP (CB5 2200)
BOSCH IVECO (CB5 0900 - CB5 3800 - CB5 4100)
BOSCH MAGIRUS (CB5 2300)
BOSCH MERCEDES ACTROS - TRAVEGO /EUP (CB5 0600)
BOSCH MERCEDES AXOR /EUP (CB5 0700)
BOSCH N3 (CB5 3900 - CB5 4200 - CB5 4300 - CB5 4800)
BOSCH NISSAN (9 443 613 182) (CB5 3200)
BOSCH SCANIA (CB5 1400)
BOSCH VOLVO (CB5 0800 - CB5 4900)
BOSCH VOLVO HEAVY DUTY WORK MACHINE /EUP (CB5 3000 - CB5 3700)
BOSCH VW-AUDI-SEAT-SKODA (CB5 0500)
BOSCH VW-AUDI-SEAT-SKODA NEW TYPE (CB5 2500)
CATERPILLAR 2113025-2235320 (CB5 1600)
CATERPILLAR 3116 (1071232-220264-1278209-727515) (CB5 1500)
CATERPILLAR 3406E (2113022, 2571515, 1189030, 1855742) (CB5 0300)
CATERPILLAR 3512-A (CB5 4500)
CATERPILLAR 3508 (1320202-108528) (CB5 1300)
CATERPILLAR C10 (1660155-437290AU) (CB5 2100)
CATERPILLAR C11-C13 (345C-345CL) (CB5 4800)
CUMMINS ELECT M11 - M11 + - ISM AND N14 (CB5 2700 - CB5 3300)
CUMMINS MECHANICAL INJECTOR @ SCANIA R SERIES (CB5 1200)
CUMMINS MECHANICAL INJECTOR MS 3084398-3028066 (CB5 2000)
CUMMINS MECHANICAL INJECTOR NTA855 (CB5 2800)
DELPHI A3 TYPE @ VOLVO (CB5 0400)
DELPHI E3 & E1 TYPE @ VOLVO/RENAULT WITH 2 CABLES (CB5 2600)
DELPHI A3 TYPE @ HYUNDAI TRUCKS (CB5 2900)
DELPHI DAF 1668325 (CB5 3400)
DELPHI JOHN DEERE TRACTOR (CB5 4000)
DELPHI LUCAS Land Rover - 17491CS (CB5 1100 - CB5 3600)
LUCAS JOHN DEERE (CB5 4700)
DETROIT DIESEL SERIES 60 (CB5 1900 - CB5 3500)
MARIN MECHANICAL INJECTOR (BR55510 100) (CB5 1700)
SIEMENS VOLKSWAGEN (CB5 2400)

Optional Accessories and Tools Recommended

KO1560	Torque Wrench Digital
KO1569	Bosch EUI - EUP Repair Tools Set
CBM01000	Unit Injector Universal Plunger Spring Removal Clamp
KO1558	Hydraulic swiveling arm for disassemble
KO1475	Clean Bench for Electronic Injector Repair, Including Injector Clamp and Ultrasonic Cleaner



MAKTEST
Independent solution provider
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CUMMINS HPI TESTING SOLUTION

IS NOW AVAILABLE FOR ORDER



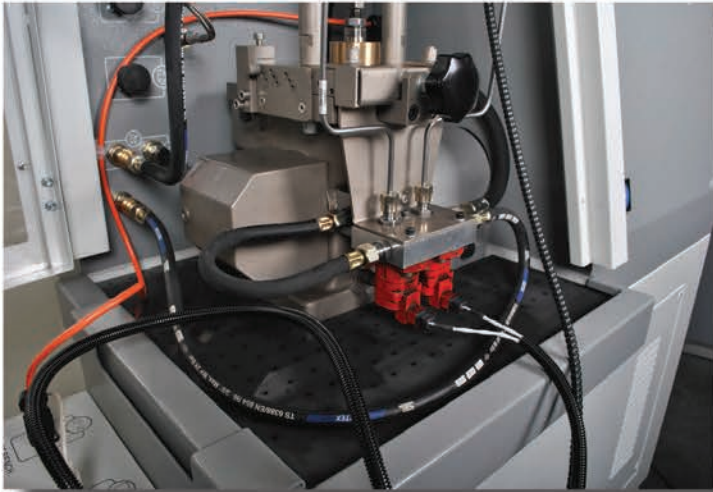
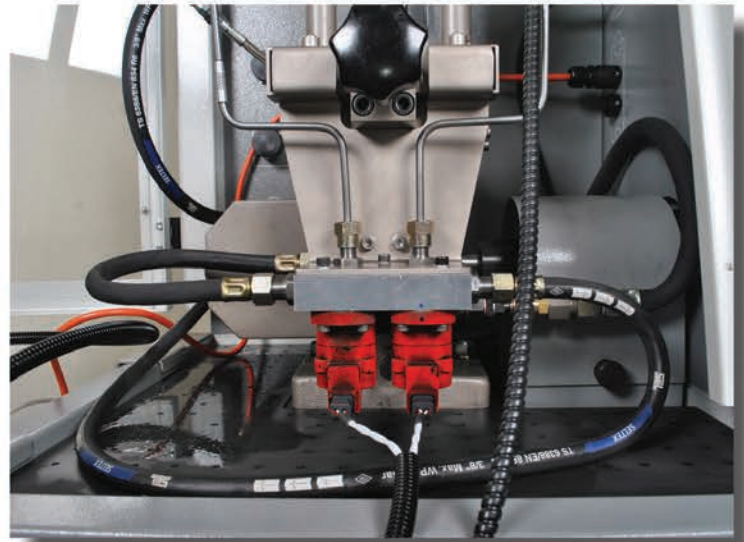
Solution is available to be used on UTS1004 only

Cummins HPI system testing always had some issues, as the actuators controlling the fuel delivery and the timing control were separate from injector body and the injector testing without these actuators were limited.

Maktest has developed a testing kit to accommodate the Cummins HPI system actuators in the same operating conditions as on the engine to be able to test the injectors as per the working conditions.

This ensures reliable tests of the injector.

The kit also enables testing of the actuators using a master injector as a reference.



In the test solution for Cummins HPI system is contemplated the use of a new Reaction Time Signal Module (or the upgrade of Reaction Time Signal Module that is currently using the client).

It also required a high pressure transfer system, changes in the control card and original Cummins actuators.

All this to ensure real solutions for Cummins HPI system.

**PLEASE CONTACT US
IT WILL BE A PLEASURE TO SERVE YOU**



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KO1871

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Caterpillar C15 Trim Coding Module

Caterpillar C15 Trim Coding Module



**Independent
solution provider
for diesel
injection problems**



Caterpillar Engine management system requires fine timing and fuel metering settings at the injector assembly.

KO4000 Computer Aided Repair System helps to assemble Caterpillar C15 injectors with precision using KO4500 Caterpillar C15 EUI Assembly Tool Set.

However Target Values for Timing and Metering for Caterpillar Engine management system requires more accurate response from the injector that the mechanical settings fail to provide.

Trim Codes are therefore needed to bring the timing response and associated fuel delivery into the Caterpillar Engine Management operation tolerances.

Trim Codes therefore balances the power output of each cylinder and reduces the fuel consumption and heat generated due to timing faults.



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MAKTEST
Independent solution provider
for diesel injection repair systems.

TK1024

An easy solution for a big problem

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injectester

HEUI

HEUI Eventually Have Their Test Stand That They Have Deserved...



Independent solution provider for diesel injection problems



It has been more than a decade since Maktest has introduced very first Hydraulic Unit Injector Test Stand.

Hydraulic Unit Injector technology have developed and progressed ever since.

Testing procedures and test specifications were needed to be revised to comply with the progress.

TK1024 injectester HEUI is redesigned with respect to the developments in HEUI technology. Computerized controls present the flexibility to adapt to all these changes and possible changes in future.

Accuracy in HEUI testing highly depends on effective temperature control and injector drive technology. TK1024 has now better temperature control and minimized need for cooling water.

Distinguished design, improved capabilities

TK1024 injectester HEUI is designed upon 30 years of diesel injection background of Maktest and assembled with perfection.

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for diesel injection repair systems.

TK1024

injectester

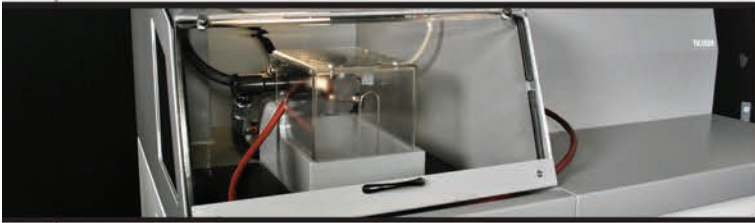
HEUI

An easy solution for a big problem

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FEATURES

Convenient set-up for testing



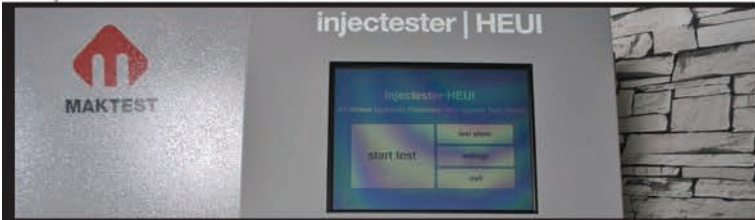
Sleeve adapters for various HEUI injectors are designed to arrange faster set-up for testing.

Less water consumption for cooling



Intelligent temperature control system with increased capacity required much less water and administers prolonged testing time.

Excellence in testing



Special control software gives the professionals extraordinary test plan management. Flexibility to create new test schemes enables operator to design new test plans for HEUI injectors. Test plan creator feature solves an important problem to obtain and save test data for HEUI injectors.

Technical Specifications

Motor	10 hp AC
High Pressure Test Oil Transfer	5-250 bar pressure regulated, pressure is measured digitally and displayed in the LCD screen.
Low pressure Test Oil Transfer	0-5 bar pressure regulated, pressure is measured digitally and displayed in the LCD screen.
Temperature Control	Internal Gas Cooling System
Delivery Measurement	Electronic Fuel Measurement System (TK1024.01)

Required Utilities

Electricity Supply

380VAC 50/60 Hz (3 ph)

Air

Dry and oil free air supply must be min 6 bar.

Delivered Accessories With This Product

KO1391 Caterpillar 3126 Sleeve Adaptor (for both short and long type)

Optional Accessories for Various HEUI

KO1392	Isuzu Trooper/Holden Jakaroo Sleeve Adaptor
KO1393	Caterpillar C9 Engine Injector Sleeve Adaptor
KO1394	Caterpillar 3408-3412
KO1395	Ford Powerstroke 6,0 - 7,3 Lt (Siemens HEUI) Sleeve Adaptor and Control Sim.
KO1396	Caterpillar C9 Engine Injector Sleeve Adaptor
KO1398	CAT 3116 - E (106 - 7056 AZ OR4970) Side Solenoid - Short
KO1399	Siemens Navistar - DT570 1848492C91

Optional Accessories and Tools Recommended

KO1560	Torque Wrench Digital
KO1558	Hydraulic Swiveling Arm
TK1014	Injectester 2 Digital Injector Tester With Fume Extractor 600 bar
KO1495	Clamp for Common Rail Injector - Unit Injector & HEUI
DE1382	Ultrasonic Cleaning Tank -4 Lt / 100W
KO1475	Clean Bench for Electronic Injector Repair, Including Injector Clamp and Ultrasonic Cleaner



MAKTEST
Independent solution provider
for diesel injection repair systems.

KO 1756

poppet valve tester

HEUI

An easy solution for a big problem

Worldwide sales and service network provide timely and reliable support to all questions.

HEUI Poppet Valve Test Module



**Independent
solution provider
for diesel
injection problems**



KO1756 HEUI Poppet Valve Testing Module is designed for solving a time consuming repair procedure problem, by allowing customers to be able test the sealing of the poppet valve when the injector is being assembled.

Once injector is assembled, mounting it for testing on the test bench takes some work and if the poppet valve stroke is not properly adjusted or the poppet valve condition is not good, the injector starts leaking to return and causes the fuel deliveries drop significantly.

KO1756 module allows the injector to be assembled properly and tested well to ensure that the injector will not leak once it is mounted for testing on the test bench.

The sleeve adaptor is also used for assembling the injector with ease allowing to set poppet valve stroke and air gap properly to be able to set the fuel deliveries correct.

KO1756 module is a must to have tool kit for easy repair of any type of HEUI injector.

KO1756 includes:

KO1759 test module

MO1161 Assembly Sleeve for Cat 3126 series injector.

Optional Accessories for Various HEUI

MO1162	ISUZU Injector Poppet Assembly (Cat 4JXI – TC)
MO1163	CAT 3408E-CAT 3412E Injector Poppet Assembly
MO1164	Cat C7 – C9 Poppet Assembly

Required Utilities

Power Supply	220 VAC 50-60 Hz
Air Supply	Min. 6 dry and oil free

Testing Poppet Valves as you
Assemble the Injector

Maktest has training centers in 5 locations around the world. Training centers are focused to help customers to stay up to date with new diesel injection systems. Customers are trained for repairing common rail injectors, using special tools and interpretation of test results. Training centers provides continuous support to the customers to help them solve their repair and diagnose problems with diesel injection problems.



MAKTEST
Independent solution provider
for diesel injection repair systems.

KO•1900

An easy solution for a big problem
Mobile Electronic Test Kit for Electronic Injectors.

Insulation Test Kit

**ELECTRONIC TESTING OF CR INJECTOR,
ELECTRONIC UNIT INJECTOR AND ACTUATOR**



**Independent
solution provider
for diesel
injection repair**



Insulation Tester helps to save time to detect solenoid or piezo actuator faults. Test can be performed while injectors are still on the engine. Practical test reduces risk of damaging electronics in Common Rail Injector Testing equipment.

Resistance / Insulation / Inductance measurement
of Injector Solenoids / Piezo Actuators / Pump IMV;
SCV;EAV;FMU valves.

Maktest has training centers in 5 locations around the world. Training centers are focused to help customers to stay up to date with new diesel injection systems. Customers are trained for repairing various fuel injection systems, using special tools and interpretation of test results. Training centers provide continuous support to the customers to help them solve their repair and diagnose problems with diesel injection systems.



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KO•1900

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Mobile Electronic Test Kit for Electronic Injectors.

Insulation Test Kit

FEATURES



Resistance / Insulation / Inductance measurement of Injector Solenoids / Piezo Actuators / Pump IMV; SCV;EAV;FMU valves



Check insulation of the coil to the injector body or SCV/DRV valves of the CR high pressure pumps.

Insulation Test Kit Saves time for diagnosing the most difficult electrical problems of Common Rail Injectors - Pumps / Unit Injectors - Pumps / Hydraulic Electronic Injectors



Delivered Accessories With This Product

AP1994	Siemens test cable
AP1995	Delphi test cable (tip 2)
AP1997	Bosch standard test cable
AP1998	Delphi Standard test cable
AP1999	Denso test cable
AP2000	Standard test cable
AP2001	CP1/CP3 Valve test cable
AP2002	Delphi EUI coil test cable
AP2003	Bosch WV coil test cable
AP2004	CAT HEUI coil test cable
AP2005	Insulation test tool
BA1718	Box



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 for diesel injection repair systems.

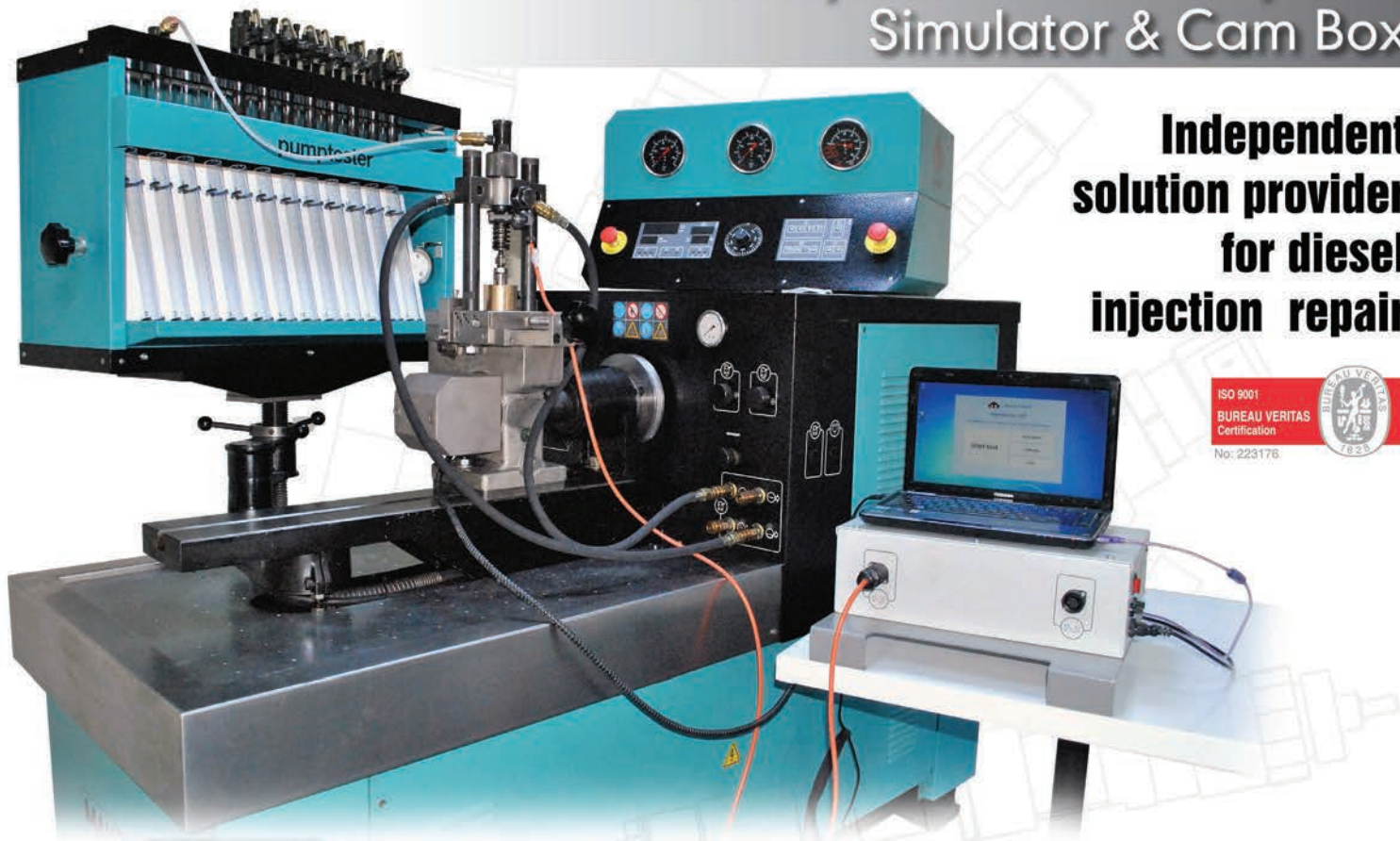
U•1000

An easy solution for a big problem

Economical and compact unit injector and unit pump Test Simulator & Cam Box.

Unit tester
EUI & EUP

Unit Injector & Unit Pump Test Simulator & Cam Box



**Independent
solution provider
for diesel
injection repair**



Effortless Cam Stroke Adjustment without changing cam.

U-1000 EUI/EUP Cam Box and Simulator is the right choice for your idle pump test bench.

Wide EUI / EUP applications on the market including ;

- Bosch (PDE-P1, PDE-100, PDE-90, PLD),
- Delphi (A1, A3, E1, E3 and Delphi EUP),
- Caterpillar,
- Cummins Celect (N14, M11),
- Detroit Diesel (Series 60, Series 92, MUI 53/71/93 Series and Mechanic Injectors)
- Siemens (piezo actuator)

Including BIP measurement for Bosch; Start of Delivery Measurement for all EUI/EUP applications.

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MAKTEST
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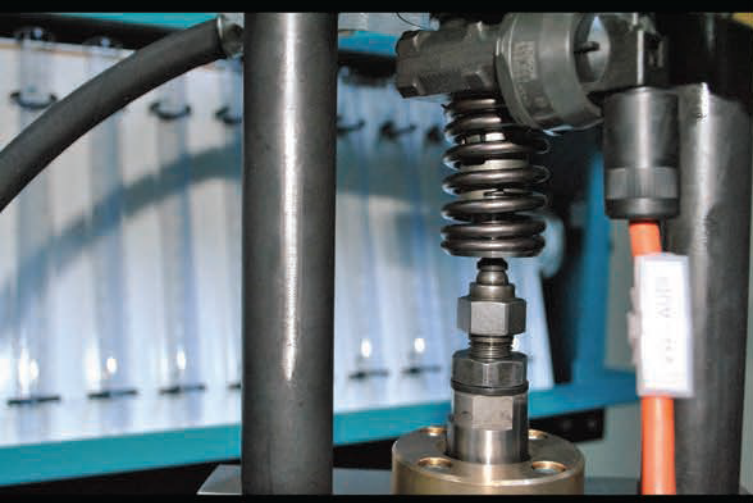
U•1000

An easy solution for a big problem

Economical and compact unit injector and unit pump Test Simulator & Cam Box.

Unit tester EUI & EUP

FEATURES



U-1000 has variable stroke height that allows testing all unit injectors or unit pumps with precision.



Start of injection parameter is known to be one of the critical parameters to check and set when repairing. U-1000 precisely measures start of injection time to avoid surprises when assembled on the engine.

Technical Specification :

Min 10 Hp direct drive or 20 HP hydraulic Drive Pump Test Bench is required for stable testing.

Variable stroke between 10 and 18 mm.

User friend Maktest Test Control Software.

Customers can create their own test plans.

Start of Delivery Time measurement

Printable test reports.

220V 50-60 Hz Power Supply.

Laptop or PC (not included) requirements: Windows 7, Windows 8/8.1 and Windows 10. Minimum 4GB RAM and 1GB Free Space.

Optional Accessories for Various EUI / EUP

SIEMENS VOLKSWAGEN (CB5 2400)
MARIN MECHANICAL INJECTOR (BR55510 100) (CB5 1700)
DETROIT DIESEL SERIES 60 (CB5 1900 - CB5 3500)
LUCAS JOHN DEERE (CB5 4700)
DELPHI LUCAS Land Rover - 17491CS (CB5 1100 - CB5 3600)
DELPHI JOHN DEERE TRACTOR (CB5 4000)
DELPHI DAF 1668325 (CB5 3400)
DELPHI E3 & E1 TYPE @ VOLVO/RENAULT WITH 2 CABLES (CB5 2600)
DELPHI A3 TYPE @ VOLVO (CB5 0400) @ HYUNDAI TRUCKS (CB5 2900)
CUMMINS MECHANICAL INJECTOR MS 3084398-3028066 (CB5 2000)
CATERPILLAR C11-C13 (345C-345CL) (CB5 4600)
CATERPILLAR C10 (1660155-437290AU) (CB521)
CATERPILLAR 3508 (1320202-108528) (CB5 1300)
CATERPILLAR 3512-A MECHANICAL (CB5 4500)
CATERPILLAR 3406E/C15&C16 (2113022, 2571515, 1189030, 1855742, 10R8501) (CB5 0300)
CATERPILLAR 3116 (1071232-220264-1278209-727515) (CB5 1500)
CATERPILLAR 3406E/C15&C16 (2113025-2235320) (CB5 1600)
BOSCH VW-AUDI-SEAT-SKODA NEW TYPE (CB5 2500)
BOSCH VW-AUDI-SEAT-SKODA (CB5 0500)
BOSCH VOLVO HEAVY DUTY WORK MACHINE /EUP (CB5 3000 - CB5 3700)
BOSCH VOLVO (CB5 0800 - CB5 4900)
BOSCH SCANIA (CB5 1400)
BOSCH NISSAN (9 443 613 182) (CB5 3200)
BOSCH N3 (CB5 3900 - CB5 4200 - CB5 4300 - CB5 4800)
BOSCH MERCEDES AXOR /EUP (CB5 0700)
BOSCH MERCEDES ACTROS - TRAVEGO /EUP (CB5 0600)
BOSCH MAGIRUS (CB5 2300)
BOSCH IVECO (CB5 0900 - CB5 3800 - CB5 4100)
BOSCH DAF-RENAULT /EUP (CB5 2200)

Optional Accessories and Tools Recommended

KO4000	Computer Aided Repair System
KO4500	CAT C15 Tools Set
TK1022	Common Rail Injector and Mechanic Injector Test Equipment
KO1802	Nozzle Holder Removal Set
KO1560	Torque Wrench Digital
KO1569	Bosch EUI - EUP Repair Tools Set
KO1558	Hydraulic swiveling arm for dissemble
KO1475	Clean Bench for Electronic Injector Repair, Including Injector Clamp and Ultrasonic Cleaner



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CONTATOS



**OURO
DIESEL**

Tecnologia em injeção eletrônica diesel

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