



CARBON ZAPP
INNOVATION DRIVEN

Welcome to an Innovation Driven World

Welcome to an Innovation Driven World



Carbon Zapp is dedicated in manufacturing Automotive Injection Service Solutions, providing a worldwide sales network, investing constantly in R&D and offering efficient support. With today's exponential increase in the automotive industry, Carbon Zapp offers solutions for a healthier, less polluted environment, specializing in designing and manufacturing Diesel and Gasoline Injector Service Benches, that have become a standard for major OE's and general workshops.

We always strive for excellence and innovation.

As a global supplier to diverse users, with broad knowledge in the automotive industry and through teamwork and skillful personnel, Carbon Zapp is able to support your corporate vision and fulfill your market's needs.

Let's make together the first step towards future and success!

Nikolaos Pantazis

Managing Director
International Business

Dimitrios Pantazis

Managing Director
Manufacturing

Contents

Carbon Zapp Company Profile	CZ 03
-----------------------------	-------

Diesel Injection Systems CZ 06

CRDi Solutions	CZ 08
----------------	-------

Heavy Duty Solutions: EUI/EUP & HEUI Systems	CZ 12
----------------------------------------------	-------

Diesel Specialists Solutions	CZ 20
------------------------------	-------

Injector Repair Solutions	CZ 26
---------------------------	-------

Gasoline Injection Systems CZ 30

Direct Injection Solutions	CZ 32
----------------------------	-------

Fuel Injection Solutions	CZ 36
--------------------------	-------

Engine Service Solutions CZ 42

Service Equipment	CZ 44
-------------------	-------

Fuel Injection Handheld Tools	CZ 46
-------------------------------	-------





Our Company

Carbon Zapp was founded in 1989 by Bill Pantazis. As a leading manufacturer of Automotive Injection Service Equipment and Tools, Carbon Zapp has its production plant in Athens, Greece and a constantly growing global network in every continent. Recently, the company expanded in Germany by establishing its global headquarters and business administration.

Through a wide range of innovative products, including injector test benches for Diesel and Gasoline injection systems, Engine service equipment and tools, Carbon Zapp offers high quality equipment and customer service to automotive dealers, workshops and educational institutions, as well as for specialized developers, remanufacturers and most major automotive OE's. Carbon Zapp uses over 35% of its profits to update existing products with newer technological advancements and aims to provide simpler methods and tools for a safer environment.

Our Mission

Carbon Zapp aims to provide user friendly, compact and time saving solutions to a wide range of operators, focusing in the automotive injection systems.

"We have earned our position to the global market because of our commitment to quality products and well known customer service. If we fail to provide satisfaction to our customers, we forfeit our right to their business. Carbon Zapp's Management and staff loyalty to this business makes it a win-win situation"

Bill Pantazis,
Founder of Carbon Zapp



Innovation Driven Company

"Innovation" is the key to continuous growth and competitive advantage. Carbon Zapp "Drives" its research team to keep a high ambition level and work on their research, development and technical skills.

On an annual basis, the company invests more than 35% of its profits on research and development for upgrading existing and implementing new products. Carbon Zapp has fostered an extensive group of intellectual property and talented personnel throughout the years. Strategic agreements and world-class component suppliers have contributed in developing advanced technologies and products.

Our Customers

Diesel Service Centers

Auto Workshops / Dealerships

Automotive Aftermarket OEM's

Parts Remanufacturers

Automotive OE's

Developers



Support

At Carbon Zapp, customer satisfaction is a major priority. The staff offers the best service to increase customer trust, earn their loyalty and built their respect. The key to this success is to acknowledge the customers' needs and listen to them.

Global Sales Network

With a logistics center in Athens, Greece, Carbon Zapp can effectively export its products globally in all 5 continents and over 65 countries. The products are trusted internationally for their world class quality. Carbon Zapp takes pride in consistently delivering premium products and reliable customer services.





DIESEL INJECTION SYSTEMS

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

1

CRDi Solutions

CRU.4R, CRU.2R, DS1R,
DS2R-A, DSF-4R

2

Heavy Duty Solutions

UIPR-S, UIPR-A
HUIR-S, HUIR-A

3

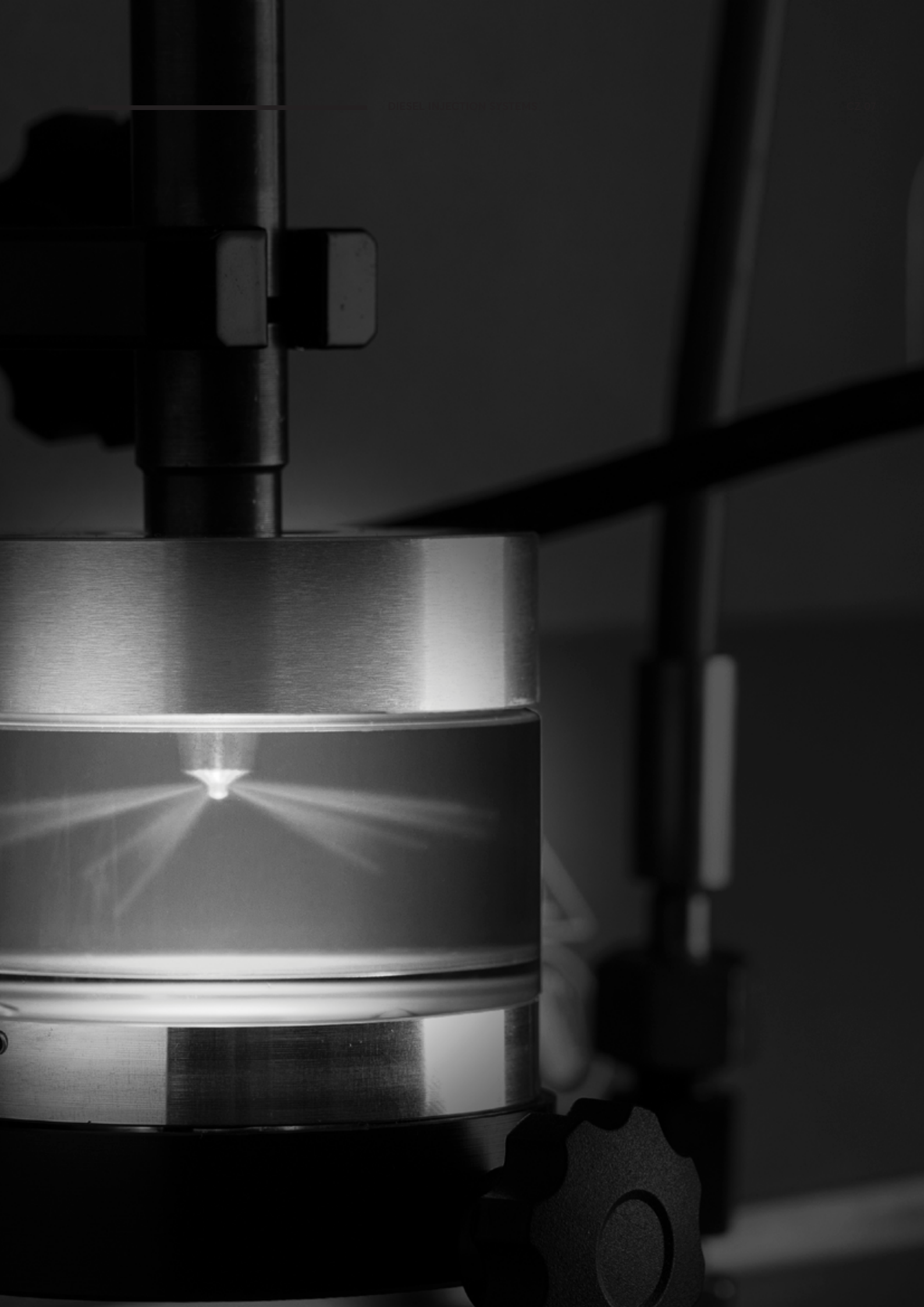
Specialists Solutions

MTBR, TCCMR

4

Injector Repair Solutions

CRRS, Tools/Extractors



1 CRDi Solutions

Common Rail Revolutionary testing solutions
for BOSCH, DELPHI, DENSO and VDO

Heavy Duty and Light Duty applications

All types Piezo, Solenoid & Dual-Solenoid actuators.



CRU.4R

Test Bench for 4 CRDi's
Up to 2500Bar HP with 6.5 bar air supply
Injector Coding C2i/C3i, IMA/ISA and others**
Dynamic Electronic
Mass Measurement (BK)
Acc: 0.2%FS, repeatability: 0.05%
Under 25min testing phase
Fully Automatic Operation
Diesel Specialist level of Diagnosis
10" Touchscreen HMI
Capable of EUI/EUP and HEUI
Testing with optional Attachment units
VDO/Bosch/Denso Piezo
Stack Regeneration function
CGL: VDO Automatic
Valve Lift Gap Measurement

Blue Limits Diagnosis



CRU.2R

Test Bench for 1 CRDi
Up to 2500Bar HP with 6.5 bar air supply
Injector Coding C2i/C3i, IMA/ISA and others**
Dynamic Electronic
Mass Measurement (BK)
Acc: 0.2%FS, repeatability: 0.05%
Under 8min testing phase
Fully Automatic Operation
Diesel Specialist level of Diagnosis
Flushing / Cleaning capability*
10" Touchscreen HMI
Capable of EUI/EUP and HEUI
Testing with optional Attachment units
VDO/Bosch/Denso Piezo
Stack Regeneration function
CGL: VDO Automatic
Valve Lift Gap Measurement

Blue Limits Diagnosis



Dynamic Electronic Mass Measurement



Analog Volumetric Measurement



Electronic Static Mass Measurement



DS1R

Test Bench for 1 CRDi
Up to 2000Bar HP with 6 bar air supply
Electronic Static Mass, Measurement (DFAP)
Resolution: 0.1mm³, Acc: 0.6%FS

Manual or Automatic Operation

Workshop level of Diagnosis
10-15 min testing phase
8" Touchscreen HMI
VDO/Bosch/Denso Piezo Stack Regeneration function
CGL: VDO Automatic Valve Lift Gap Measurement

Blue Limits Diagnosis

**NEW
2016**



DS2R-A

Test Bench for 1 CRDi
Up to 2000Bar HP @ 6Bar LP
Analog Volumetric
Measurement (VT)
Resolution: 0.5ml, Acc: $\pm 1\text{ml}/65\text{ml}$

Manual Operation

Workshop level of Diagnosis
Flushing / Cleaning capability*
16 min testing phase
8" Touchscreen HMI
Capable of EUI/EUP and HEUI
Testing with optional Attachment units
VDO/Bosch/Denso Piezo
Stack Regeneration function
CGL: VDO Automatic
Valve Lift Gap Measurement

Blue Limits Diagnosis



DSF.4R

Flushing / Servicing bench
for 4 Diesel Injectors
Up to 2000Bar HP with 6 bar air supply

Semi-Automatic Operation

Diesel Specialist and Workshop level
R2LC and CFL Testing only
8" Touchscreen HMI
VDO/Bosch/Denso Piezo
Stack Regeneration function
CGL: VDO Automatic
Valve Lift Gap Measurement

Blue Limits Diagnosis

Tests Performed

R2LC

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

CFL

Check For Leaks test (injector internal or external)

NLT

Nozzle Leakage Test

LKT

Static Back Leak Test

aNOP

Automatic Nozzle Opening Pressure test

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

Injector Volume Measuring test

(full-load, part-load, emissions, low-load, pre/post-injection tests and more...)

iVM-DFI

Injector Volume Measuring test (multiple test-points slope per Pressure)

RSP

Injector nozzle Response-time test

SPR

Dynamic Spray test performed in all testing conditions

Features

iPSC

Illuminated Pressurized spray chamber

View of injection pattern up to 2500Bar

Visually diagnose NOP, incorrect spraying, leaky / seized injectors

RSP

Sensor adaptable to all nozzles

Precise measurement of nozzle reaction time

Easily diagnose a slow acting injector, a retarded injection event, poor engine performance and emissions issues.

AZO Software

Advanced Android based HMI/PC

Wi-Fi printing, sharing, syncing, software/hardware & database updating, via USB or WiFi

Real-time Oscilloscope and CSV data export

TeamViewer Support and more...

Reports

Easy fail-track color report for each injector.

Single-page Quick report or Multi-page Analytic reporting

Specifications

All Makes OE Manufacturer
& User Database

Developer and OE customizing

Piezo & Solenoid programmable
actuation profiles

(HV: 0-300 Volts / 0-35A)

Injector & PCB protection circuit
(StG, StB, SC, OC, IC)

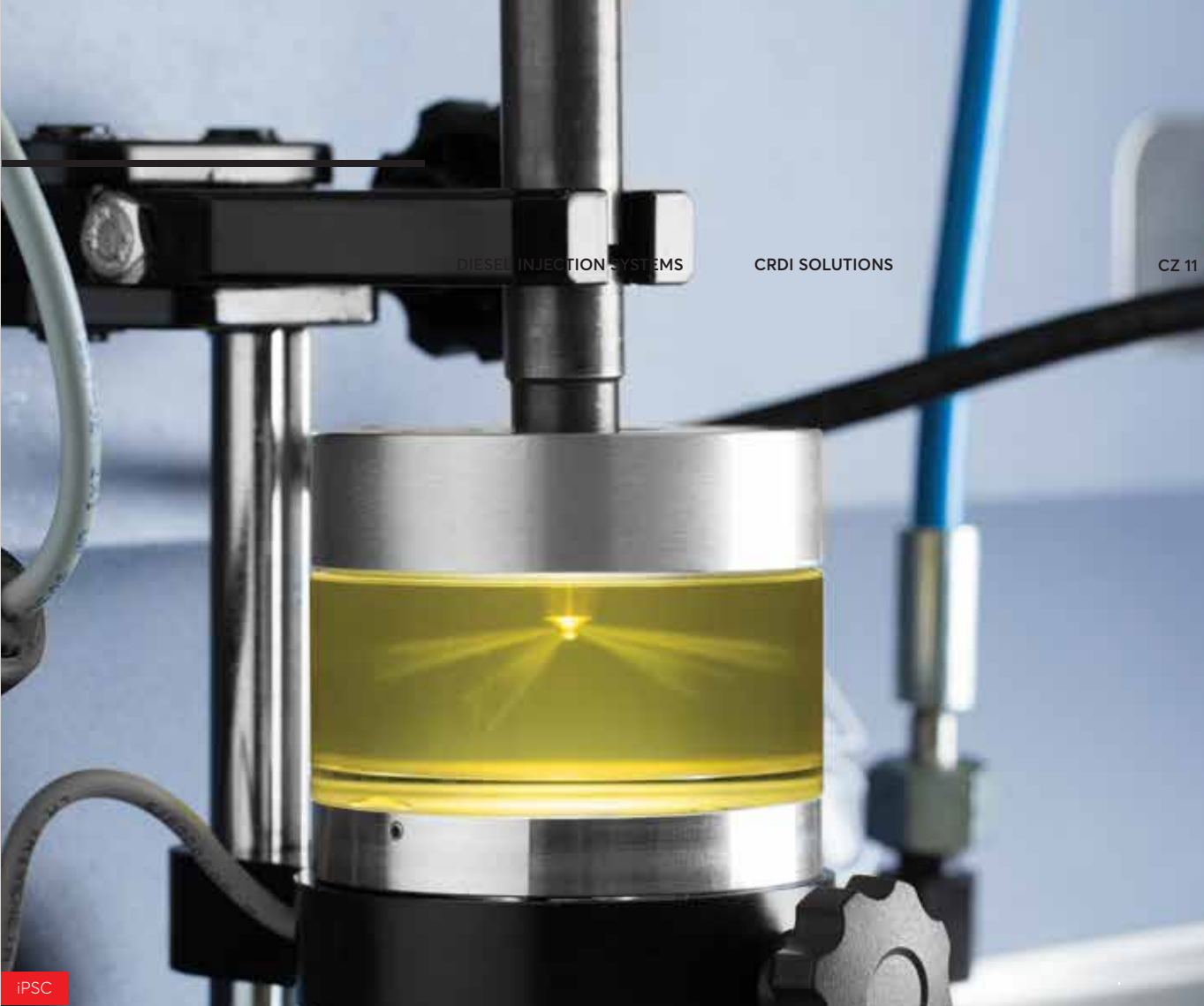
Multiple Injections capability

User friendly, ergonomic, dynamic
& robust design

Spill-free hose quick connectors

aMACC – Automatic chemical
treatment and flushing of the injector
before testing*

Complementary set of CRi adapters,
fittings and connectors for all makes
& types

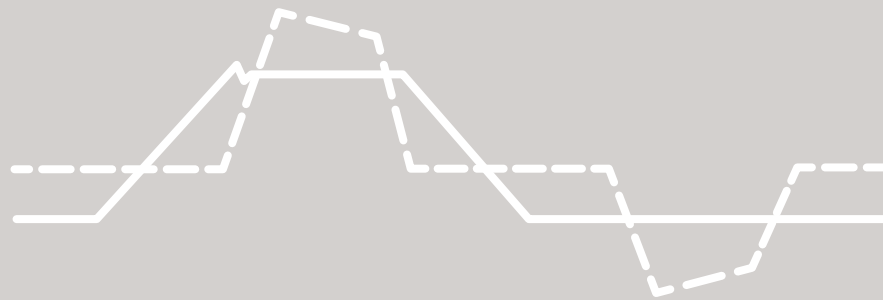


DIESEL INJECTION SYSTEMS

CRDI SOLUTIONS

CZ 11

iPSC



ADAPTABILITY

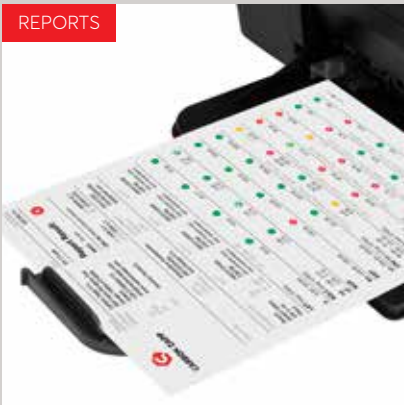


RSP



AZO SOFTWARE

REPORTS



2 Heavy Duty Solutions EUI/EUP & HEUI Systems

Standalone pneumatically actuated units for servicing all Makes & Types of Unit Injection Systems is made easy not only for Diesel Specialists, but also for every workshop.

Hydraulic Unit Injection Systems Applications

Caterpillar 3126, 7.3L,

Caterpillar C7/C9,

Navistar/ Ford Powerstroke

6.0L, 7.6L, 9.3L

Isuzu Trooper

HUIR-A

Test & Service Attachment
bench for 1 HEUI Diesel
Injector up to 300Bar

Semi-Automatic Operation

Under 15min testing phase

Advanced Workshop
and Expert level



attaches to
CRU.4R
CRU.2R
DS2R

HUIR-S

Standalone Test Bench
for 1 HEUI Diesel Injector
up to 300Bar Solenoid
& Dual-Solenoid actuators

Electronic Static Mass
Measurement (DFAP)

Resolution: 0.1mm³,
Acc: 0.6%FS

Workshop and Diesel
Specialist level of Diagnosis

Semi-Automatic Operation

10min testing phase

8" Touchscreen HMI

VDO/Bosch/Denso Piezo
Stack Regeneration function

CGL: VDO Automatic
Valve Lift Gap Measurement

Blue Limits Diagnosis



Heavy Duty, Industrial, Marine and Passenger Car UIS Applications

Delphi E3/E1, Delphi
DAF (Smart Pump/Injector),
Scania/Cummins HPI,

Volvo (Bosch & Delphi),
John Deere, Scania
/Yanmar, Iveco, VW PDE

All CAT's, Cummins Celect,
Detroit Diesel, Cummins,

MB Actros, MB Atego,
Mack, DAF, and more...

UIPR-A

Test & Service Attachment
bench for 1 EUI/EUP
Diesel Injector

Semi-Automatic Operation

Under 15min testing phase

Advanced Workshop
and Expert level



attaches to
CRU.4R
CRU.2R
DS2R



UIPR-S

Standalone Test Bench
for 1 EUI/EUP Diesel Injector

Piezo, Solenoid
& Dual-Solenoid actuators

Electronic Static Mass
Measurement (DFAP)

Resolution: 0.1mm³,
Acc: 0.6%FS

Workshop and Diesel
Specialist level of Diagnosis

Semi-Automatic Operation

10min testing phase

8" Touchscreen HMI

VDO/Bosch/Denso Piezo
Stack Regeneration function

CGL: VDO Automatic
Valve Lift Gap Measurement

Blue Limits Diagnosis

Tests Performed

R2LC

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

CFL

Check For Leaks test (injector internal or external)

RSP

Injector nozzle Response-time test

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

Injector Volume Measuring test (min 15-steps)
(full-load, part-load, emissions, low-load,
pre/post-injection tests and more...)

BIP [UIPR]

Injector Control Valve Response time test

SPR

Dynamic Spray test performed in all testing
conditions

** Available Optionals ** Future Updates*

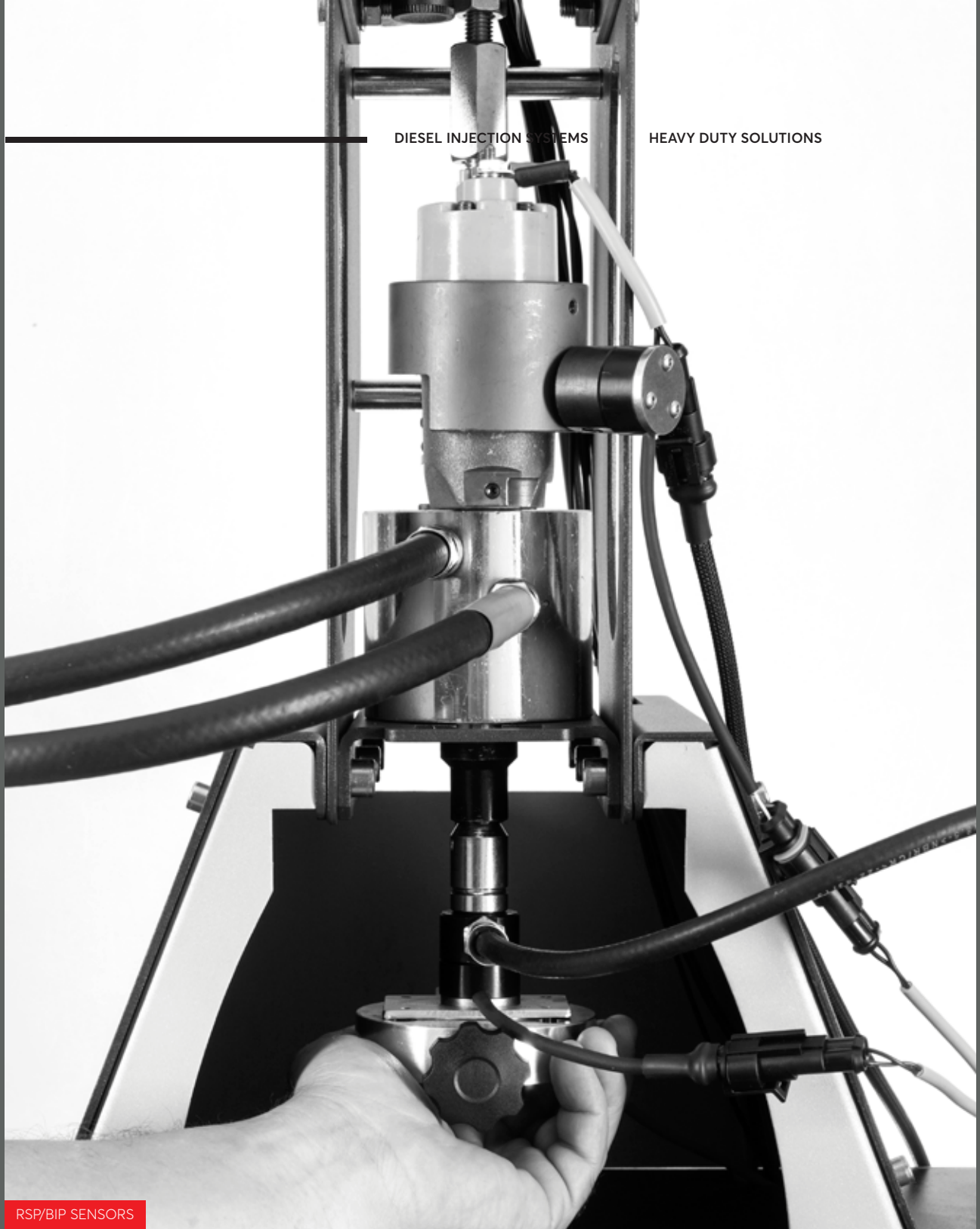
HEUI TESTING



DIESEL INJECTION SYSTEMS

HEAVY DUTY SOLUTIONS

CZ 15



RSP/BIP SENSORS



Specifications

All Makes CZ & User Database

Developer and OE customizing

*Pneumatic operated unit
(Test Bench NOT required)*

*Fast mounting and dismounting
of Unit injector/pump*

*Hydraulic system control & indication
(30-300 Bar / 40-4350 psi) [HUIR]*

*Low supply automatic
pressure control (10Bar)*

*Piezo & Solenoid programmable
actuation profiles
(HV: 0-300 Volts / 0-35A)*

*Injector & PCB protection circuit
(StG, StB, SC, OC, IC)*

Multiple Injections capability

*User friendly, ergonomic,
dynamic & robust design*

Spill-free hose quick connectors

*aMACC – Automatic chemical
treatment and flushing of the injector
before testing**

Features

iPSC

Illuminated Pressurized spray chamber

View of injection pattern up to 2500Bar

Visually diagnose NOP, incorrect spraying, leaky
/seized injectors

Easy

Adjustable Cam stroke 4-20mm with the use of variable
wheel [UIPR]

RSP/BIP

RSP Sensor adaptable to all Nozzles

BIP Sensor adaptable to most Control Valves [UIPR]

Precise measurement of C.V. & Nozzle actuation
delay from signal

Easily diagnose a slow acting injector, a retarded injection
event, poor engine performance and emissions issues.

AZO Software

Advanced Android based HMI/PC

Wi-Fi printing, sharing, syncing, software/hardware
& database updating, via USB or WiFi

Real-time Oscilloscope and CSV data export

TeamViewer Support and more...

Reports

Easy fail-track color report for each injector.

Single-page Quick report or Multi-page
Analytic reporting



ADJUSTABLE CAM



AZO SOFTWARE



REPORTS



IPSC

Extras optional

adapters kit

1

CRDi Solutions

A complete range of CRIN adapters kits for Heavy Duty applications are available*



Ultrasonic Devices

Ultrasonic Baths are available at sizes up to 120L featuring:

- 42KHz frequency
- Sweep technology*
- Degas function*,
- Controlled Heater and more...



Oils & Fluids

1. Diesel Injector Calibration Oil (ISO4113)
2. Ultrasonic Solvent (Concentrated)
4L | 20L | 208L
3. Diesel Injector Flushing Detergent
2L | 25L

2**Heavy Duty Solutions****EUI/EUP Systems**

A complete range of UI/UP adapter kits, rods, wiring harnesses and more are available*

**HEUI Systems**

A complete range of HEUI adapter kits, wiring harnesses and more are available*

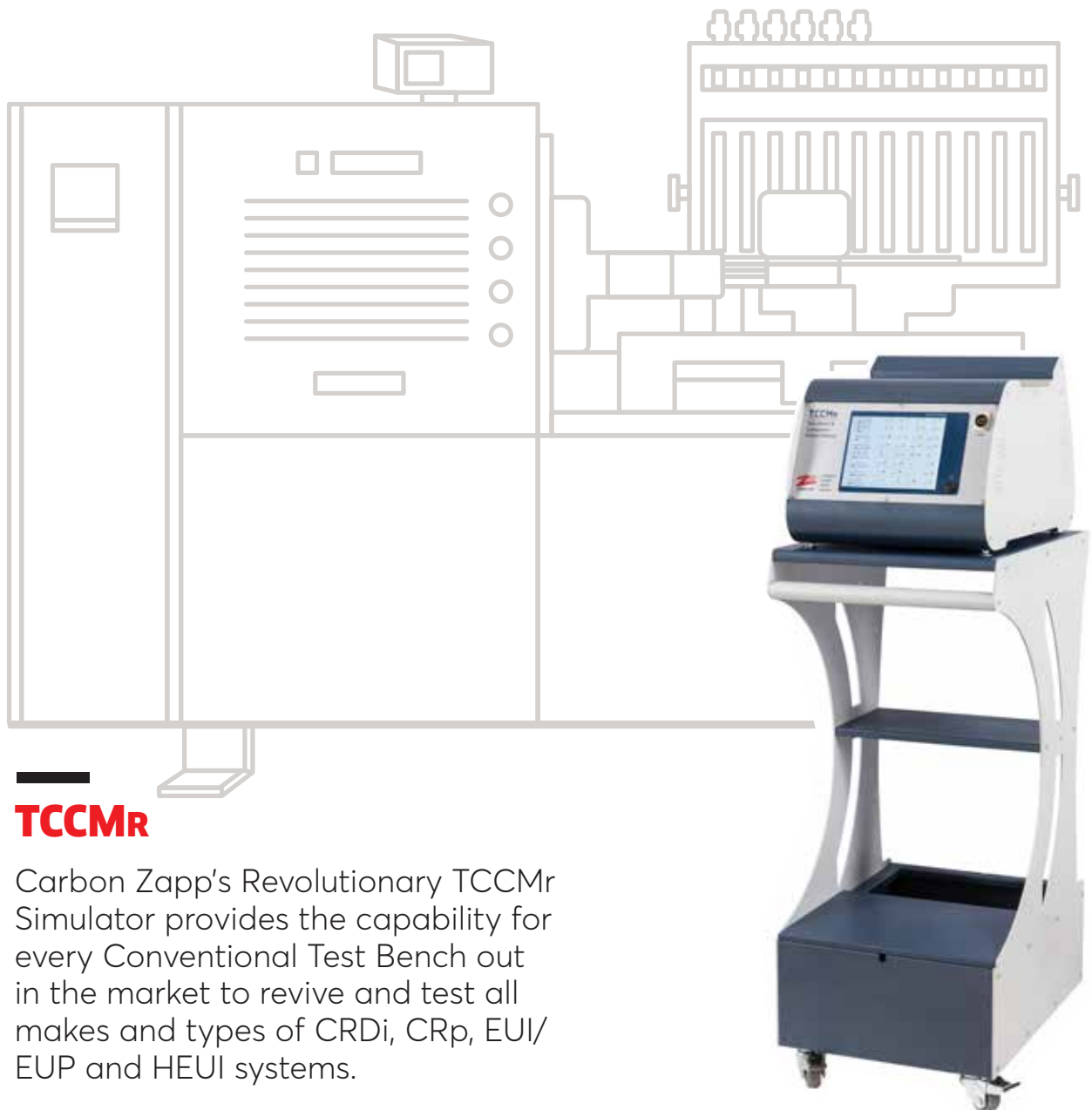
**Portable stand**

Compact, lightweight, robust with accessories cabinet



3 Diesel Specialists Solutions

Service all Diesel Injection Systems in the industry, utilizing test points from the largest OE database in the market. Upgrade existing Test Benches or Experience Carbon Zapp's Innovative Solution.



TCCMr

Carbon Zapp's Revolutionary TCCMr Simulator provides the capability for every Conventional Test Bench out in the market to revive and test all makes and types of CRDi, CRp, EUI/ EUP and HEUI systems.

**NEW
2016**

MTB_R

The Only Compact Diesel Specialist Solution for all Diesel Injection Systems available in the Automotive, Commercial, Industrial and Marine market today...

Can test all Makes and Types of CRDi, CRp, EUI/ EUP and HEUI systems.

Up to 2500Bar HP
Electronic and safe Protective Hood Opening
Injector Coding C2i/C3i, IMA/ISA and others**
Dynamic Electronic Mass (BK) Measurement (CRDi, HEUI, EUI/EUP)
Acc: 0.2%FS, repeatability: 0.05%
Static Electronic Mass (DFAP) Measurement (CRp)
Resolution: 1mm³, Acc: 0.6%FS
Fully Automatic and fast testing phase
Diesel Specialist level of Diagnosis
Internal cooling system (No water connection needed)
Instantaneous Emergency Stop function
15" Touchscreen HMI
VDO/Bosch/Denso Piezo Stack Regeneration function
CGL: VDO Automatic Valve Lift Gap Measurement
Blue Limits Diagnosis



* Available Optionals ** Future Updates

Tests Performed

R2LC

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

CFL

Check For Leaks test (injector internal or external)

NLT

Nozzle Leakage Test

LKT

Static Back Leak Test

aNOP

Automatic Nozzle Opening Pressure test

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

Injector Volume Measuring test (full-load, part-load, emissions, low-load, pre/post-injection tests and more...)

iVM-DFi

Injector Volume Measuring test (multiple test-points slope, per Pressure)

RSP

Injector nozzle Response-time test

BIP [UIS systems]

Injector Control Valve Response time test

SPR

Dynamic Spray Test performed in all testing conditions

Additionally

High pressure Control Valve operation (DRV, IMV, PCV, etc...)

High Pressure Sensor reaction

High Pressure relief safety valve operation

CR Pump flow limiter valve operation (ZME, IMV, SCV, VCV, etc...)

Features

iPSC

Illuminated Pressurized spray chamber

View of injection pattern up to 2500Bar

Visually diagnose NOP, incorrect spraying, leaky / seized injectors

RSP (CRDi & EUI/EUP & HEUI KIT)

RSP Sensor adaptable to all Nozzles

BIP Sensor adaptable to most Control Valves [EUI/EUP]

Precise measurement of C.V. & Nozzle reaction time

Easily diagnose a slow acting injector, a retarded injection event, poor engine performance and emissions issues.

AZO Software

Advanced Android based HMI/PC

Wi-Fi printing, sharing, syncing, software/hardware

& database updating, via USB or WiFi

Real-time Oscilloscope and CSV data export

TeamViewer Support and more...

Reports

Easy fail-track color report for each injector.

Single-page Quick report or Multi-Page Analytic reporting

Specifications

All Makes OE, CZ & User Database

Developer and OE customizing

Piezo & Solenoid programmable actuation profiles

(HV: 0-300 Volts / 0-35A)

Injector & PCB protection circuit

(StG, StB, SC, OC, IC)

Multiple Injections capability

Fast mounting and dismounting of Unit injector/pump

Hydraulic system control & indication (30-300 Bar / 40-4350 psi)

Low supply automatic pressure control (10Bar)

User friendly, ergonomic, dynamic & robust design

Spill-free hose quick connectors

Complimentary startup kit of CRp / CRi adapters, fittings and connectors for all makes & types

MTBr

Compact Standalone Diesel Test Bench

**NEW
2016**



Technical data

Input frequency	50/60 Hz
Number of phases	3 P/PE
Speed range	0 – 4,000 rpm
Powerful Motor with thermal protection	15HP
Maximum operating ambient temperature	50°C
Base to axis center height	125 mm
High Pressure system Max Pressure	2500 Bar
Supply pump pressure	10 – 800 kPa
Test oil tank	35 L
Waste Oil tank	10 L
Dimensions (W x D x H)	750 x 700 x 1610 mm
Weight	300 kg

Application



CRDi / HEUI



CRp



CamBox

Clamping brackets for all Types and Makes CP pumps
A complete range of CRiN adapters* for Heavy Duty applications*

* Available Optionals ** Future Updates

TCCMr

Test Bench and Component Control Module

Controls all Types and
Makes of Injectors & Pumps

Includes OEM database and test plans

Works with every Conventional
Test Bench in the Market

Electronic Measurement upgrade
for Conventional Test Bench*

Connects to any Cambox* (Proximity
Triggered) and CRDi Simulator Kit*

Connects to Carbon Zapp's
HUIr-A solution for HEUI systems

Compact, Lightweight and Portable unit

VDO/Bosch/Denso Piezo
Stack Regeneration function

CGL: VDO Automatic Valve
Lift Gap Measurement

[Blue Limits Diagnosis](#)



Extras optional



CRDi & CRp Function Kits are available for
all Makes and Types



A Universal Cambox that fits most Conventional
Test Benches in the market (h:125mm). Adapters for
all Makes and Types of UIS systems are available



HUIr-A Unit. The fast, easy
and precise solution to test
HEUI's



Specifications

All Makes OE, CZ & User Database

Developer and OE customizing

Piezo & Solenoid programmable
actuation profiles

(HV: 0-300 Volts / 0-35A)

Injector & PCB protection circuit
(StG, StB, SC, OC, IC)

Multiple Injections capability

User friendly, ergonomic, dynamic
& robust design

Tests Performed

R2LC

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

CFL

Check For Leaks test (injector internal or external)

NLT

Nozzle Leakage Test

LKT

Static Back Leak Test

aNOP

Automatic Nozzle Opening Pressure test

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

Injector Volume Measuring test (full-load, part-load,
emissions, low-load, pre/post-injection tests and more...)

iVM-DFi

Injector Volume Measuring test (multiple test-points slope per Pressure)

RSP

Injector nozzle Response-time test

BIP [UIS systems]

Injector Control Valve Response time test

SPR

Dynamic Spray Test performed in all testing conditions

Additionally

High pressure Control Valve operation (DRV, IMV, PCV, etc...)

High Pressure Sensor reaction

High Pressure relief safety valve operation

CR Pump flow limiter valve operation (ZME, IMV, SCV, VCV, etc...)

Features

AZO Software

Advanced Android based HMI/PC

Wi-Fi printing, sharing, syncing, software/hardware & database
updating, via USB or WiFi Real-time Oscilloscope and CSV data export

Reports

Easy fail-track color report for each injector.

Single-page Quick report or Multi-page Analytic reporting

Electronic Measurement Upgrades*

1. Dynamic Electronic Mass Measurement Kit (BK)
Injector Coding Capability*
Acc: 0.2%FS, repeatability: 0.05%
Applications: CRDi, EUI/EUP, HEUI
2. Electronic Static Mass Measurement Kit (DFAP)
Resolution: 0.1mm³, Acc: 0.6%FS
Applications: CRp



* Available Optionals ** Future Updates

4 Injector Repair Solutions

Repair Diesel injectors to achieve higher torque, lower emissions, fuel economy, quiet and efficient fuel injection performance, easy and affordable.



Systems

VDO
BOSCH
DENSO
DELPHI

CRRS

Standalone HMI & PC (15" touchscreen)
Electronic (Activation & COM) Module Kit (with cables)
Calibration Base for Accurate measurements
Injector Mounting/Dismounting position
Injector Measurement position (with micro adjustment wheel)
Accurate electronic micrometer comparator Mitutoyo
Electronic Torque Wrench
VDO/Bosch/Denso Piezo Stack Regeneration function
CGL: VDO Automatic Valve Lift Gap Measurement

Blue Limits Diagnosis

**NEW
2016**



CALIBRATION



*Note:
Injector Calibration Spare Parts
are available for Bosch, Denso, Delphi
& VDO Common Rail injectors*

Features

Latest OE specifications

Under 15' repair

6-step flow:

1. Ultrasonic Cleaning of all dismantled parts
2. Solenoid & Injector Nozzle Replacement
3. HP Control Valve Repair
4. Calibration (1µm Accuracy):
 - a. residual air gap
 - b. nozzle needle lift
 - c. nozzle spring strength
 - d. armature (valve) lift
 - e. valve spring strength
 - f. extra lift
5. Replacement of the HP sealing washer
6. Final Inspection on Carbon Zapp Diesel Test Bench

Injector Repair Tools

Tools and Kits for Repairing Diesel Injectors



SRA-061CR



SRA-370



SRA-400



SRA-491



**SRA-500
SRA-501**



**SRA0313-CELL1
SRA0313-CR**



DiT-062



GV3-352CR



SRA0501-CR32



SRA-129CR



SRA0134-00



SRA-440



SRA0127-00

DiT-062
Diesel injector manual hand pump tester
0-600bars

SRA-370
Universal Injector Seat (engine cylinder head)
cleaning for BOSCH, DELPHI, DENSO, VDO

SRA-400
Lapping tool kit for CR Injector Control Valve
Spherical seat (Is used to recondition the conic seat
of the closing valve (CR return valve) positioned under the
CR injector solenoids)

SRA-500
CRDi Solenoid wrench Dismounting Wrench for
solenoid HEX. 29mm

SRA-503
Illuminated lens with X10 magnification, led operated

GV3-352CR
Advanced universal tool to dismount & mount all type of
nozzle holders [CRDi] of all DI makes

SRA-129CR
Universal Adjustable Clamp Plate for vice to hold injectors
upright and service.
Applicable to all type of injectors

SRA-061CR
Universal Complete Tool kit to disassemble and repair
Common Rail Injectors [Bosch and others]

SRA-491
Nozzle holder cap wrench for DELPHI injectors
models: FORD Mondeo – Transit, and others..

SRA-440
Tools Kit to extract and replace the fiber ring on the
control spool valve of the BOSCH CR injectors
(components: Puller, Inserter, Positioning device)

SRA-501
CRDi Solenoid wrench Dismounting Wrench for
solenoid HEX. 30mm

SRA0127-00
Dismounting plate for UI/UP: 28,2 mm - 32,50 mm - 39,50 mm

SRA0134-00
Swivel vice for dismounting plate

SRA0313-CELL1
Load Cell for pick-up Force (with digital indicator)
SRA0313-CR
Advanced Universal Tool to dismount and mount all types
of Diesel Injection Systems [CRDi,
EUI, EUP, PLD and PDE]

SRA0501-CR32
Open wrench diam. 32mm

Injector Extractors

Diesel injector extractors for professional mechanics



GV3-0260



GV3-0320



GV3-8400



GV3-8500



GV3-7903



GV3-0640



GV3-0760



GV3-4400



GV3-6601



GV3-2200



GV3-6900



GV3-2700

GV3-0260

Universal complete set suitable for removing Bosch & Delphi CRDi models: MERCEDES, VOLVO, FORD, RENAULT, KIA, Trucks and General injectors

GV3-8400

Universal kit for All Makes injector removal, with two distinct procedures:
i) the pliers with holding arms
ii) or the use of the articulated joint adapter and the pivot

GV3-7903

DELPHI EMBR (Piezo & Solenoid) Extractor extension with adapter M18X1,5-M12. Slide hammer is Not supplied. models: Mercedes OM651, DFI 1.5 DELPHI (EURO 5), and others..

GV3-0760

Copper Seal-Ring Extractor. Can remove seized copper sealing rings without damaging the cylinder head. Equipped with a slide hammer for ease of operation.

GV3-6601

Universal complete set suitable for removing All Makes CRDi's. Specific for disassembling very locked injectors in restricted positions [mechanical operation] (GV3-2200 Cylinder Not Supplied)

GV3-6900

Complete set for removing all types DENSO injectors. Equipped with hammer. models: TOYOTA, NISSAN, MAZDA, OPEL/VAUXHALL, LEXUS and others.

GV3-0320

Extractor specific for MERCEDES injectors including socket for dismounting the electrical connection CDI models: MERCEDES Sprinter – Vito – Viano – Vario, etc..

GV3-8500

Universal kit for CRDi removal. Allows working safely and efficiently on removed engine using a slide hammer. Systems: BOSCH, VDO, DELPHI

GV3-0640

DELPHI Injectors extractor [EJBR, EJDR] models: SSANGYONG, MERCEDES, MAZDA, KIA and others..

GV3-4400

Copper Seal-Ring Extractor for Trucks. Can remove seized copper sealing rings without damaging the cylinder head. Equipped with a slide hammer for ease of operation.

GV3-2200

Mechanical-Hydraulic cylinder: 12tons-stroke 8mm. Compact size allows its application directly on the vehicle, therefore it is not necessary to remove the engine. [Works with GV3-6601]

GV3-2700

Universal injector seat cleaner and milling kit. Kit to be used for removing the combustion residues that remain in the Injectors' Seat without any damages.



Gasoline Injection Systems

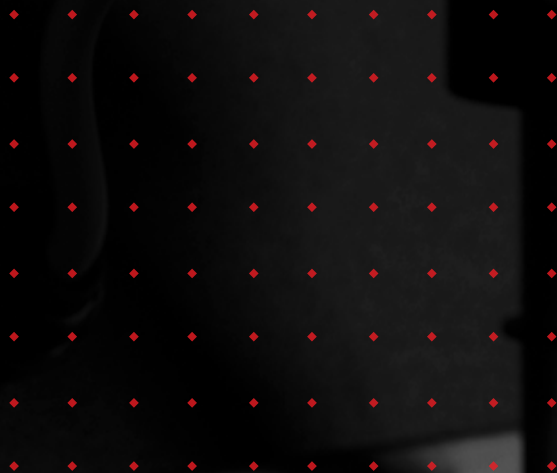
The only professional solutions
for OE's, Remanufacturers
and workshops to test & service
Gasoline Injection Systems

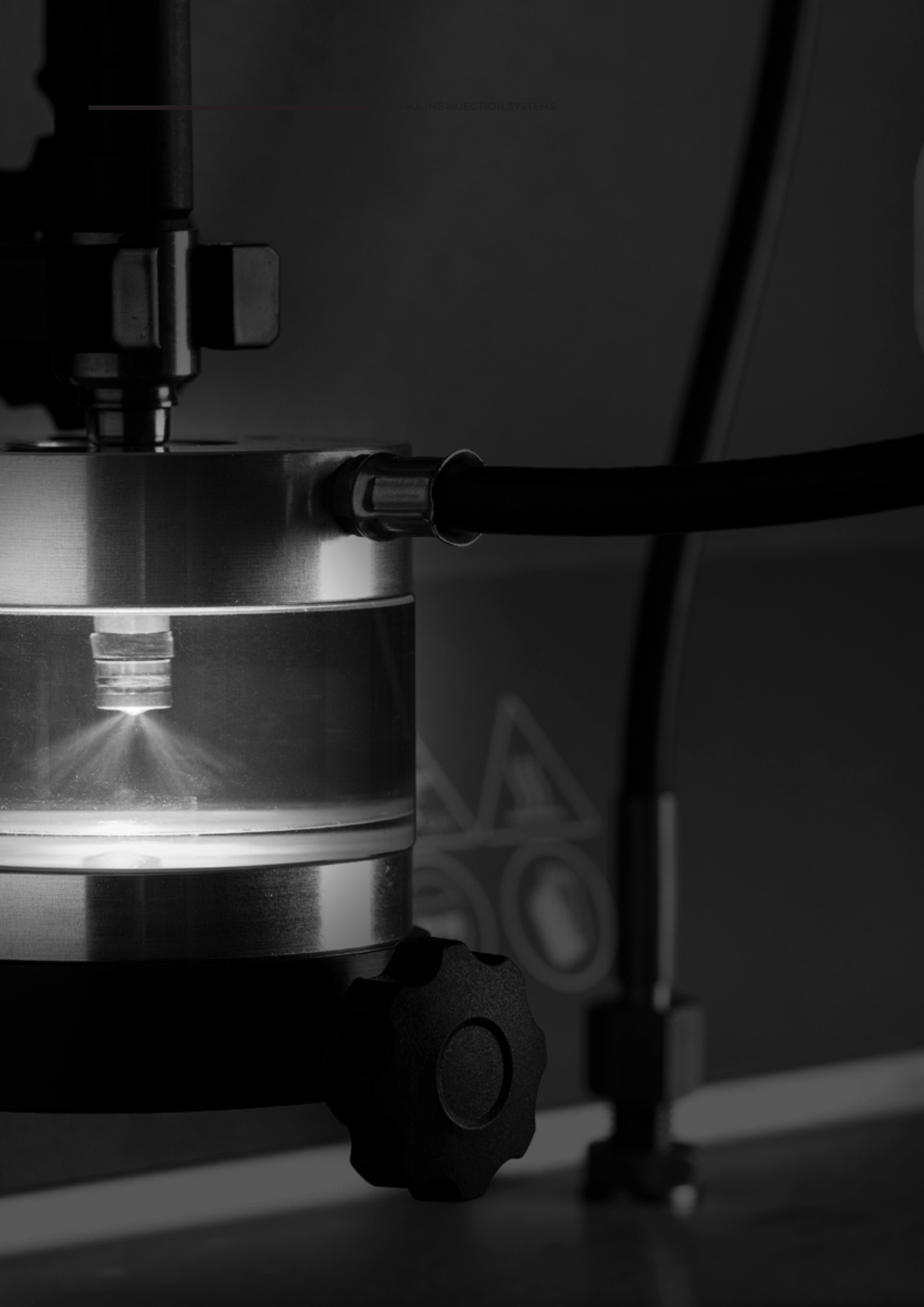
5

**Direct Injection
Solutions**
GDU.4R, GDU.2R,
GD1R

6

**Fuel Injection
Solutions**
GS8, GS4, GS2





5 Direct Injection Solutions

Gasoline direct injection requires high pressure testing to truly diagnose operation faults. Carbon Zapp once again provides the only complete testing solution in the market today, with the Revolutionary GDU.4r, GDU.2r and GD1r Test benches.



GDU.4r

Test bench for 4 Direct Injectors
Up to 850Bar* HP with 6.5 bar air supply

Test bench for 4 Conventional MPFi or
4 Racing application Injectors 0-10Bar

Gasoline Expert level of Diagnosis

Dynamic Electronic Mass Measurement
(BK) Acc: 0.2%FS, repeatability: 0.05%

Under 15min testing phase

Fully Automatic Operation

Flushing / Cleaning capability*

10" Touchscreen HMI

Ultrasonic cleaning function

VDO/Bosch/Denso Piezo

Stack Regeneration function

CGL: VDO Automatic

Valve Lift Gap Measurement

Blue Limits Diagnosis



GDU.2r

Test bench for 1 Direct Injector
Up to 850Bar* HP with 6.5 bar air supply

Test bench for 1 Conventional MPFi or
1 Racing application Injector 0-10Bar

Gasoline Expert level of Diagnosis

Dynamic Electronic Mass Measurement (BK)
Acc: 0.2%FS, repeatability: 0.05%

Under 5min testing phase

Fully Automatic Operation

Flushing / Cleaning capability*

10" Touchscreen HMI

Ultrasonic cleaning function

VDO/Bosch/Denso Piezo

Stack Regeneration function

CGL: VDO Automatic

Valve Lift Gap Measurement

Blue Limits Diagnosis



Dynamic Electronic Mass Measurement



Analog Volumetric Measurement



Electronic Static Mass Measurement

**GD1r**

Test bench for 1 Direct Injector
Up to 300Bar HP with 6.5 bar air supply

Test bench for 1 Conventional MPFi or
1 Racing application Injector 0-10Bar**

Electronic Static, Mass Measurement (DFAP)
Resolution: 0.1mm³, Acc: 0.6%FS

Manual or Automatic Operation

Workshop & Expert level of Diagnosis

7-8 min testing phase

8" Touchscreen HMI

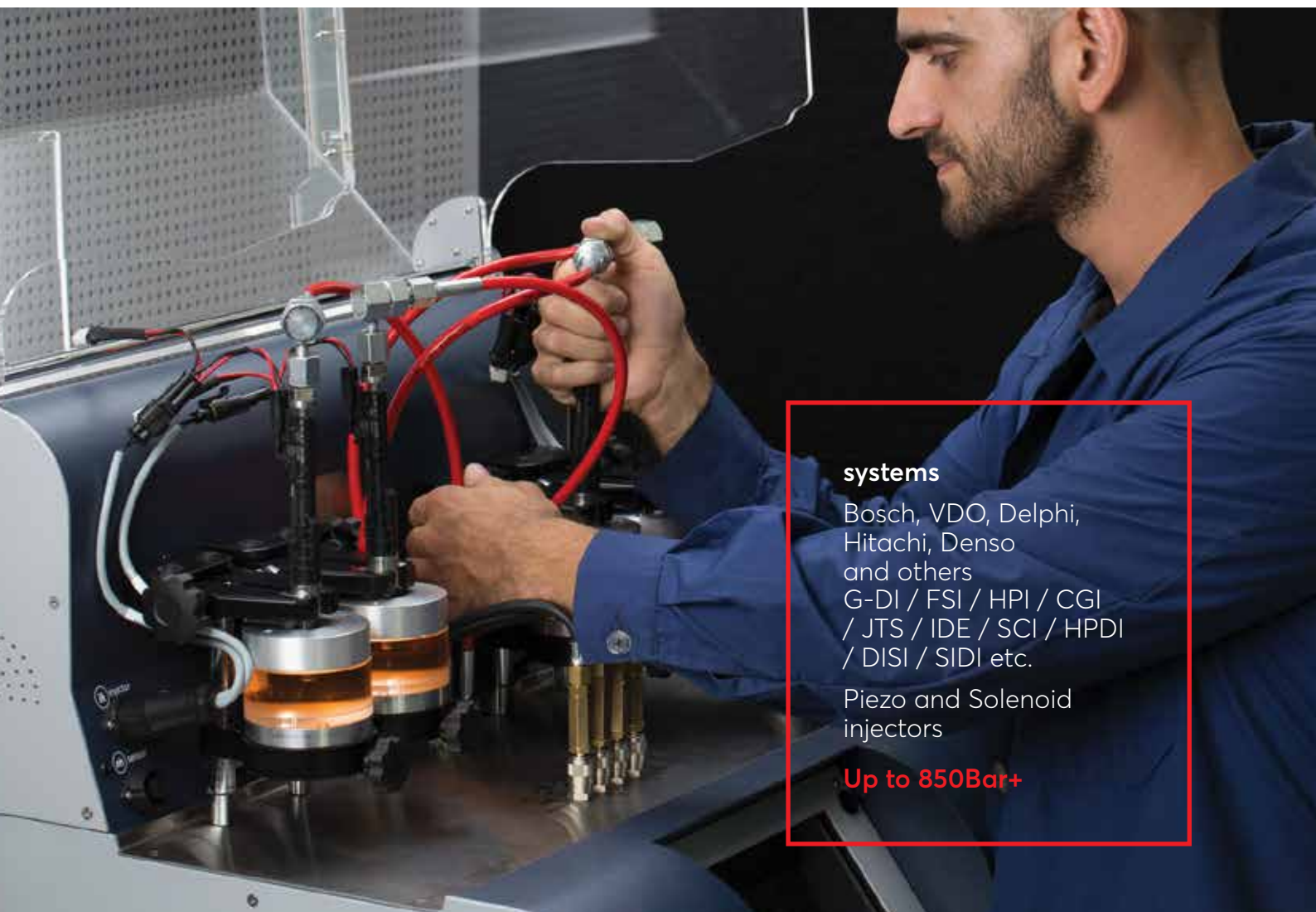
Ultrasonic cleaning function

VDO/Bosch/Denso Piezo Stack Regeneration function

CGL: VDO Automatic Valve Lift Gap Measurement

Blue Limits Diagnosis

**NEW
2016**

**systems**

Bosch, VDO, Delphi,
Hitachi, Denso
and others
G-DI / FSI / HPI / CGI
/ JTS / IDE / SCI / HPDI
/ DISI / SIDI etc.

Piezo and Solenoid
injectors

Up to 850Bar+

Tests Performed

R2LC

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

CFL

Check For Leaks test (injector internal or external)

NLT

Nozzle Leakage Test @High Pressure

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

Injector Volume Measuring test
(full-load, part-load, emissions, low-load,
pre/post-injection tests and more...)

RSP

Injector nozzle Response-time test

SPR

Dynamic Spray test performed in all testing conditions

Features

iPSC

Illuminated Pressurized spray chamber
View of injection pattern up to 1000Bar
Visually diagnose NOP, incorrect spraying, leaky / seized injectors

RSP

Sensor adaptable to all nozzles
Precise measurement of nozzle reaction time
Easily diagnose a slow acting injector, a retarded injection event, poor engine performance and emissions issues.

AZO Software

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

Reports

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

Specifications

All Makes OE, CZ & User Database

Developer and OE customizing

Piezo & Solenoid programmable actuation profiles

(HV: 0-300 Volts / 0-35A)

Injector & PCB protection circuit
StG, StB, SC, OC, IC)

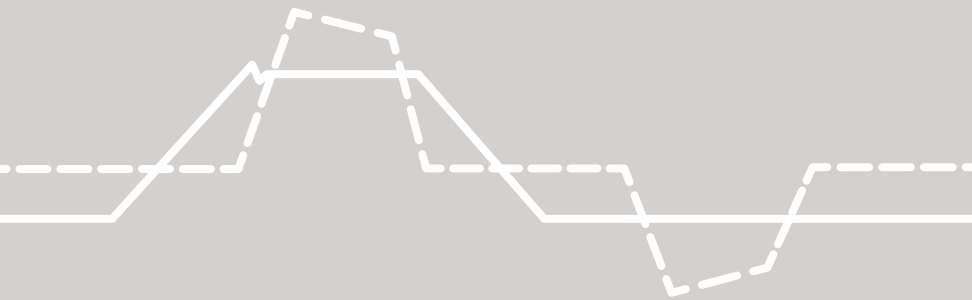
Multiple Injections capability

User friendly, ergonomic, dynamic & robust design

Spill-free hose quick connectors

aMACC – Automatic chemical treatment and flushing of the injector before testing*

Complementary set of GDi adapters, fittings and connectors for all makes & types



6 Fuel Injection Solutions

The efficient, cost-effective and proven workshop solution to bench test and service every gasoline fuel injector.

GS8 GS4 & GS2

Systems Tested

Solenoid Direct Injectors
(G-Di, FSI...)

Multi-Port Fuel Injectors
(MPFi / SPFi)

**Racing Application
Injectors***

**Central-Port Fuel
Injectors (CSFI / CPFI)**

Throttle Body Injectors
(TBI / CFI)

**Continuous Injection
Injectors (K-Jetronic),**

**Marines Application
Injectors (E-TEC / FICHT)**

**Motorcycle Application
Injectors (Racing*)**

**LPG & Alternative
fuels Injectors**





GS8

Bench for Testing & Ultrasonic
Cleaning up to 8 Fuel Injectors
Fully Automatic Function
Electronic Pressure
Control 0-10Bar
Racing Injectors Capable*
Dynamic & Static iVM
Auto-iRF function
Injector Leak Test function
User-Friendly Design
Language Localization



GS4

Bench for Testing & Ultrasonic
Cleaning up to 4 Fuel Injectors
Fully Automatic Function
Electronic Pressure
Control 0-10Bar
Racing Injectors Capable*
Dynamic & Static iVM
Auto-iRF function
Injector Leak Test function
User-Friendly Design
Language Localization

GS2

Bench for Testing & Ultrasonic
Cleaning up to 4 Fuel Injectors
Manual Function
Electronic Pressure Control 0-10Bar
Dynamic & Static iVM
Manual-iRF function
Injector Leak Test function



Features

iVM: Injection Volume Metering

Precise graduated led illuminated tubes are used for efficient diagnosis of uneven flow rates and weak or defective nozzle springs. Automatic drainage after each test. resolution 1ml, accuracy $\pm 1\text{ml}/130\text{ml}$

iSPC

Illuminated Spray Pattern Chamber used for visual diagnosis of correct injection

Ultrasonic Cleaning

Baths Available at sizes up to 120L* featuring:

42KHz frequency

Sweep technology*

Degas function*,

Controlled Heater and more...

iRF

Injector Reverse Flush Device used to remove all dirt remained inside injector body after cleaning with the use of Ultrasonics

eRSO

Electrical Resistance, Short Circuit & Open Circuit Test

0-10 Bar

Testing Capability of All Types of Injectors up to 10Bars Maximum.

GD Units are available for High Pressure Direct Injectors up to **850Bars**

Service & Repair

Increased exhaust emissions

Reduced engine performance (Power, Torque)

Increased fuel consumption

Poor drive-ability situations

Direct injection systems failure

(Leaks, Pressure drop)

Rough idle and periodic stall of the engine

Conditions that lead to long-term catalytic converter damage

Extended engine start-up

MIL - check engine light-up



GASOLINE INJECTION SYSTEMS

FUEL INJECTION SOLUTIONS

ivm / ispc

ULTRASONIC BATH



iRF



DISPLAY SCREEN

Extras optional

adapters kit

5

Direct Injection Solutions

A complete range of adapters* for All Makes and Types GD-I and Top-Feed Conventional Injectors are available

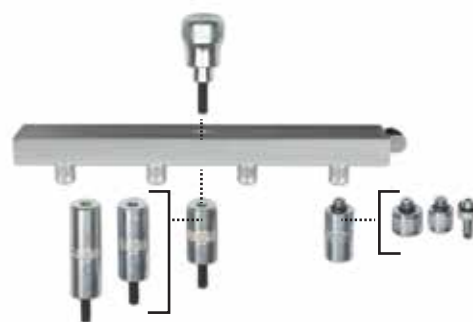


6

Fuel Injection Solutions

Standard Kit [GSx-10 units]

Fuel Rail & Adapters for all Makes and Types of Top-Feed and G-DI Injectors



Ultrasonic Devices

Ultrasonic Baths are available at sizes up to 120L featuring:

- 42KHz frequency
- Sweep technology*
- Degas function*,
- Controlled Heater and more...



Oils & Fluids

1. Gasoline Injector Calibration Oil (Exxsol D40)
2. Ultrasonic Solvent (Concentrated)
4L | 20L | 208L
3. Gasoline Injector Flushing Detergent
2L | 25L

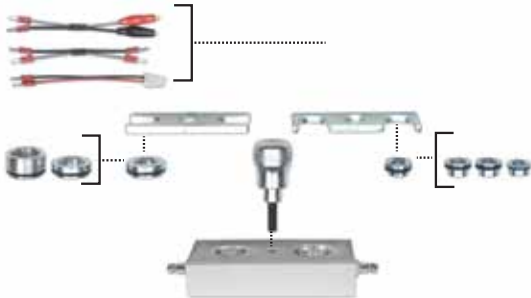
Portable stand

Compact, lightweight, robust with accessories cabinet

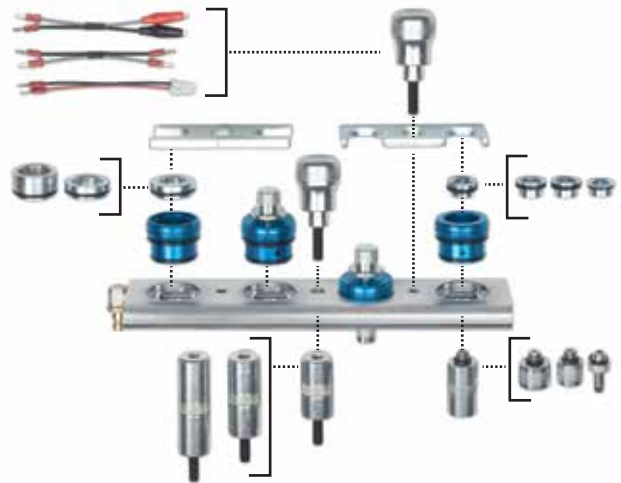


TBI Kit * [GSx-10 units]

Fuel Rail & Adapters for all Makes and Types of Throttle Body and Side-Feed Injectors

**Exclusive Kit [GSx-20/30 units]**

Complete set of Fuel Rail & Adapters, designed for Easy and Fast adaptation to all Makes and Types of Top-Feed, G-Di and Side-Feed Injectors

**MARINE****Tools****SRC-505**

Gasoline injector screen filter extractor tool

**GV3-4100**

Injector puller kit suitable for gasoline direct injection engines (VAG-FSI and others)

**E-TEC Kit ***

Complete Rail Kit specially designed for adaptation to E-TEC / FICHT Injectors





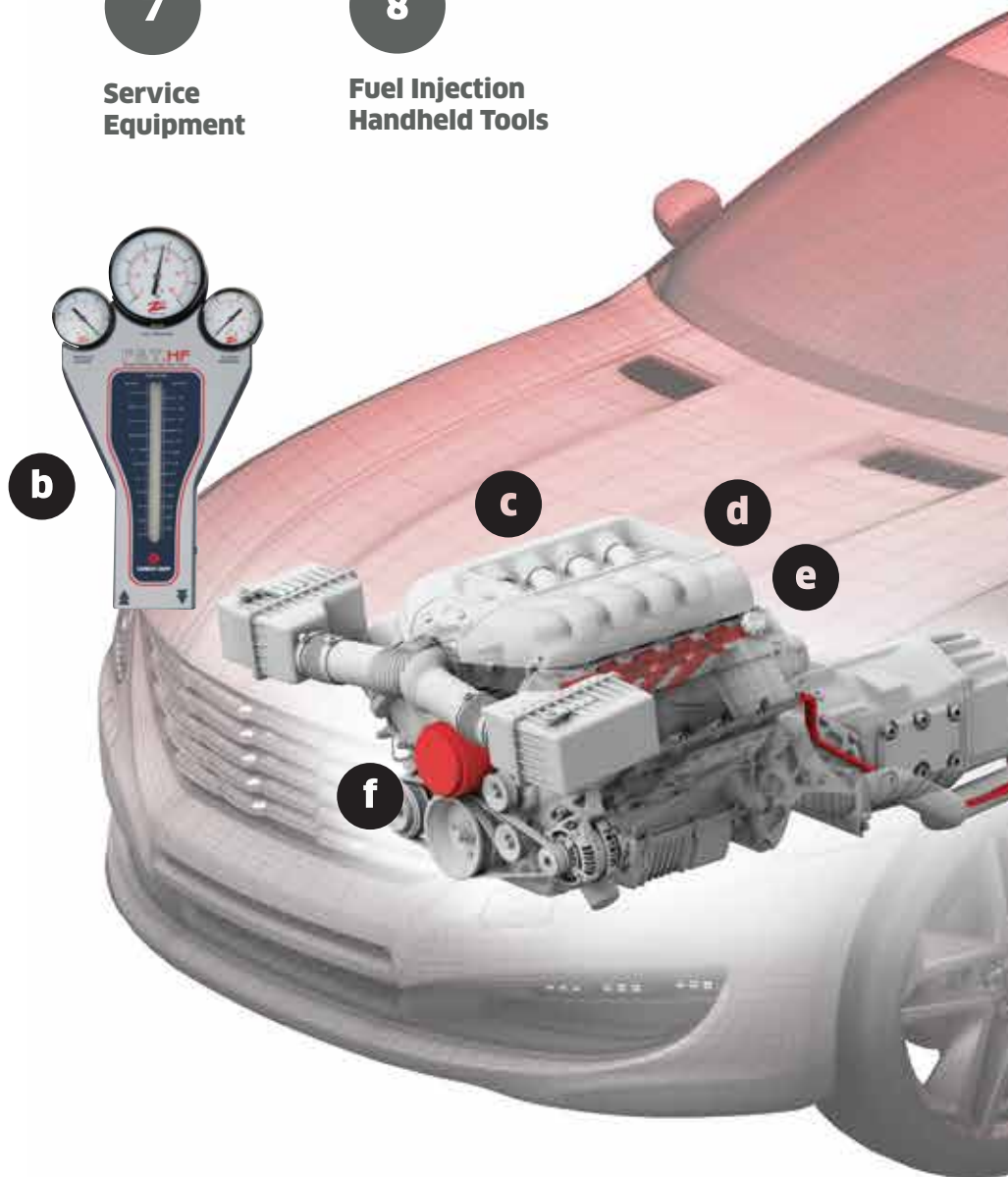
Engine Service Solutions

7

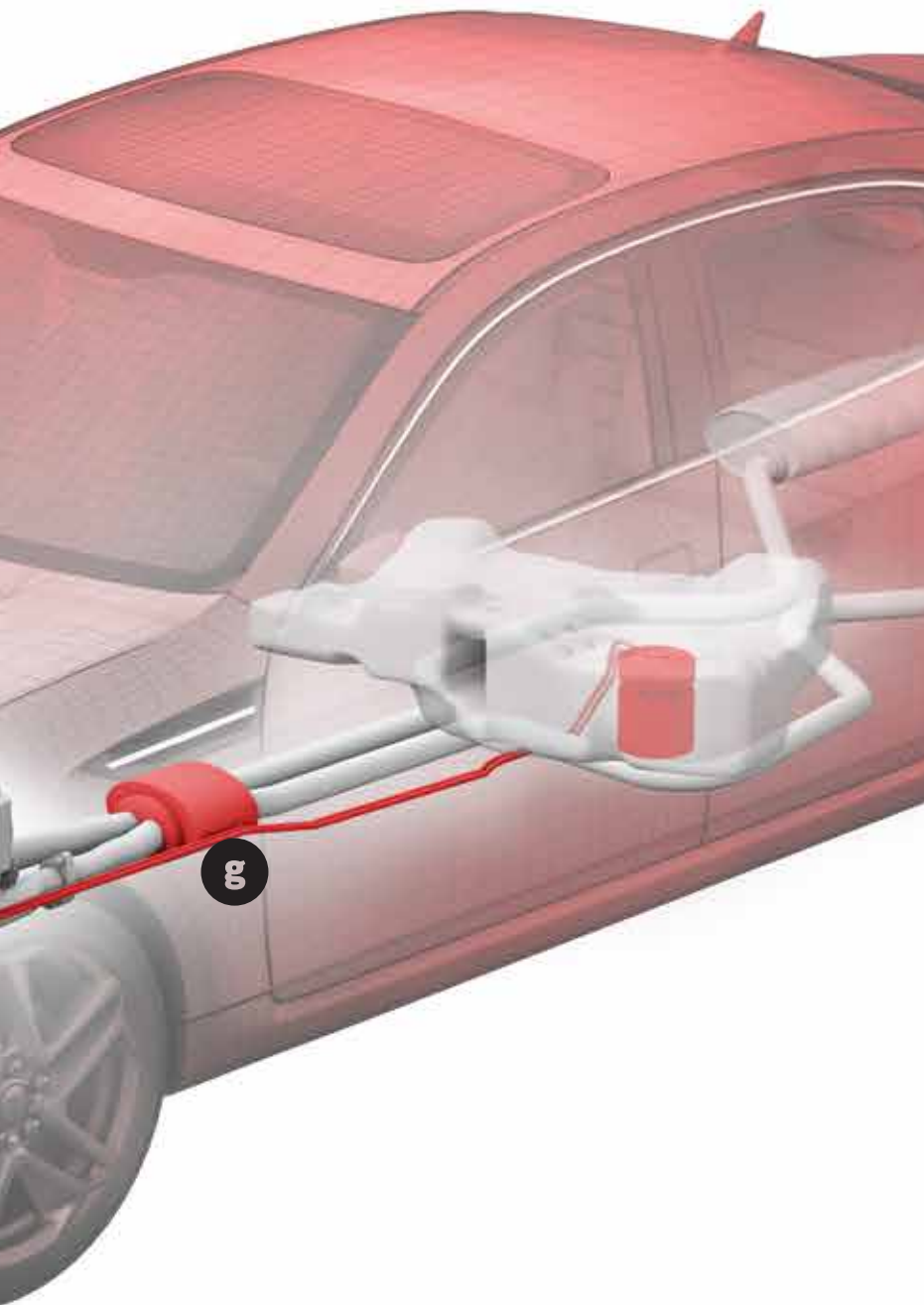
**Service
Equipment**

8

**Fuel Injection
Handheld Tools**

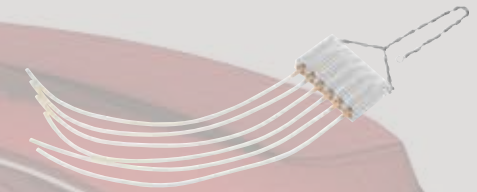


Modern engine servicing,
calls for time-saving, easy-to-use
and cost-effective solutions.



a **ES.3**
Engine & Exhaust
De-Carbonizing
Solution

b **FST**
Fuel System Tester



c **CRMK**
CRDi Return Kit

d **CRMK**
CR Pump Tester



e **HP-G2500HP / G250**
High Pressure Gauges



f **IMC.01**
Intake Manifold Cleaning Kit



g **DPF.01**
Diesel Particulate Filter Cleaning Kit



7 Service Equipment

Diesel & Gasoline Engine Treatment Unit

Benefits

Exhaust emissions reduction more than 70%

De-Carbonization of the combustion chamber

De-Carbonizing of Intake Manifold and throttle body

De-carbonization of the catalytic converter & DPF

Maximum restoration of engine's performance

Reduction of fuel consumption

Common-Rail system cleaning

High Pressure pump conditioning

Optimum fuel combustion gain

Blocked valves and piston rings release

Improved idle-speed stability

Fading of engine knocking

Prevention of long term expensive repairs

**NEW
2016**

ES.3

User-Friendly, On-Display guide
with language localization

Systems

Common-Rail
and Conventional Diesels

Gasoline Direct Injection
(G-Di, FSI, HPI, CGI etc.)

Conventional Fuel Injection
(MPFI / TBI / CIS)

LPG and Alternative fuels

Carburated Engines

Automatic
Pressure adjustment

Use of External Tank

Dual-Tank system

Adaptability to all makes and models

Portable,
Lightweight and Robust unit



Detergent



The environmental friendly ENGINE TECH Detergent activates the inert carbon molecules, resins, dust varnish and gums that accumulate inside the engine components, and burns them with the combustion process.

Adapters

Exclusive fuel system adapters kit available for all types of engine configurations*



DPF.01

**NEW
2016**

Diesel Particulate Filter Cleaning Adapter Kit. Use of Non-Combustible environmental friendly detergent to efficiently clean Particulate Matter, Carbon Soot, Ash, Organic materials and Sulfates.

Application programmable duty-cycle software integrated



IMC.01

**NEW
2016**

Intake Manifold Cleaning Adapter Kit and Non-Combustible environmental friendly detergent. Application programmable duty-cycle software integrated

8

Fuel Injection Handheld Tools

FST / FST-HF

Diesel & Gasoline
Fuel System Tester



DIAGNOSIS

Incorrect fuel pressure
Incorrect system fuel flow
Plugged fuel filter
Faulty fuel pump
Plugged fuel pump inlet strainer
Faulty fuel pump check valve
Leaky fuel injectors
Incorrect operation of the fuel pressure regulator
Fuel foaming and/or contamination
Restrictions in supply/ return fuel lines
Intake manifold vacuum fluctuation
Exhaust back-pressure for testing DPF & Catalytic Converter
Turbo-boost pressure operation
Adaptability for all Makes, Models and Types

FEATURES

Compact, Portable and Robust tool for use in the workshop
High flow capability for Racing and Performance applications [FST-HF]
Easy readable analog gauges: Fuel Pressure, Manifold Vacuum, Exhaust Back-Pressure
Durable and clear analog flow tube
Spill-free quick connectors
Easy hook for mounting on engine hood



HP-G2500

Common-Rail Gauge

FEATURES

New Common Rail Injection Systems
Up to 2500Bar
Compact & Portable
Dynamic & Static tests
Adaptable to all CRDi Systems



HP-G250

High Pressure Gauge

FEATURES

Conventional Diesel Systems
G-Di Gasoline Fuel Systems
Up to 250Bar
Compact & Portable
Dynamic & Static tests
Adaptable to all DI & G-Di Systems*



CRPT-110

Digital Common Rail Pressure Tester

DIAGNOSIS

CRDi system operating pressure
CRDi system leaking

FEATURES

Easy Operation / Robust design
Adaptability to All Makes sensors
Operation Range 0-2000 Bar
Measurement resolution of 1 bar
Indication for defective pressure sensor
Fault detection indicated by a red warning LED
Automatic shut-off after 1 minute
Power supply by 9 V battery (standalone unit)



CRMK-110

Common Rail Injector's Backflow Kit for All Injector Makes

DIAGNOSIS

CRDi Excessive Back-Leak

FEATURES

Test kit for checking the return flow volumes from Common-Rail Injectors
Plexiglass robust container with graduated scales for easy comparison
Metal chain hook to hold tester in upright position of the engine hood
Set of backleak connectors for BOSCH, VDO, DELPHI and DENSO injectors



PIMK-010

Piezo CRDi Backflow Pressure Tester

DIAGNOSIS

Piezo CRDi return pressure
Piezo injector proper operation

FEATURES

Transparent Plexiglass tester to permit view of any air pockets which may be present in the fuel
Interchangeable vacuum gauge on the test unit for further testing capabilities
Adaptability for most injectors in the market
Pressure relief valve for safe removing from engine
Adaptable to BOSCH (15 Bar gauge) and VDO, DELPHI & DENSO (+3 Bar gauge)

* Available Optionals ** Future Updates



CARBON ZAPP

INNOVATION DRIVEN

Production Plant
364 Varis-Koropiou Ave. Koropi
194 00 Athens, Greece

Headquarters
A.I.S.S. GmbH
68165 Mannheim, Germany

email contact@carbonzapp.com
tel +30 210 9856110
fax +30 210 9928655

carbonzapp.com