

MTBR //X

Diesel System Test Bench

X Series 2022

The Preferred Diesel Specialists Solution

The Comprehensive Solution
for Every Advanced Diesel Service Center



CloudX™

Powerful innovations at your fingertips with Carbon Zapp CloudX computing Platform. Take complete control over your service benches with cloud-based Apps, business intelligence (BI) services and database management systems over a secure Internet connection.

**Authorized Solution
for Continental/VDO**



SPECIALISTS

CRDi

EUi/EUP

HEUi

CRP

ENGINE

GDi

EFI

GDi Pumps

Overview of the New MTBR-X

Precise, repeatable and rapid Diesel & Gasoline Components Testing

[1] Pump Testing

- 5-15 minutes testing time per pump
- CRp / GDp Pump (All Brands and Types).
- Capable for all EU6 technologies with Sync Operation such as Denso HP5, Bosch CP4-EU6, VDO EU6 technology and more...
- Heavy-Duty CR pump (CPN5S2, CAT, Cummins etc.)

[4] Injectors Testing & Coding*

- 6-12 minutes testing and coding* time for 4 injectors
- CRi / CRiN / GDi injectors (All Brands and Types).
- Capable for all EU6 technologies such as VCC and NCC technology, iART, PCRS5,
- XPI, F2E, F2P, F2R Injectors pumps and more...
- CRIN 4.2 Heavy Commercial-Vehicle injectors
- Large Diesel Engine CRiN injector (QSK, MTU, L 'Orange, etc...)

[1] HEUi Testing & Coding*

- 6-8 minutes testing and coding* time per injector
- Dynamic and static measurement of the actual overflow
- Dual-Coil HEUi Injector testing capable

[1] EUi/EUp Testing & Coding* (requires HK1400A Cambox)

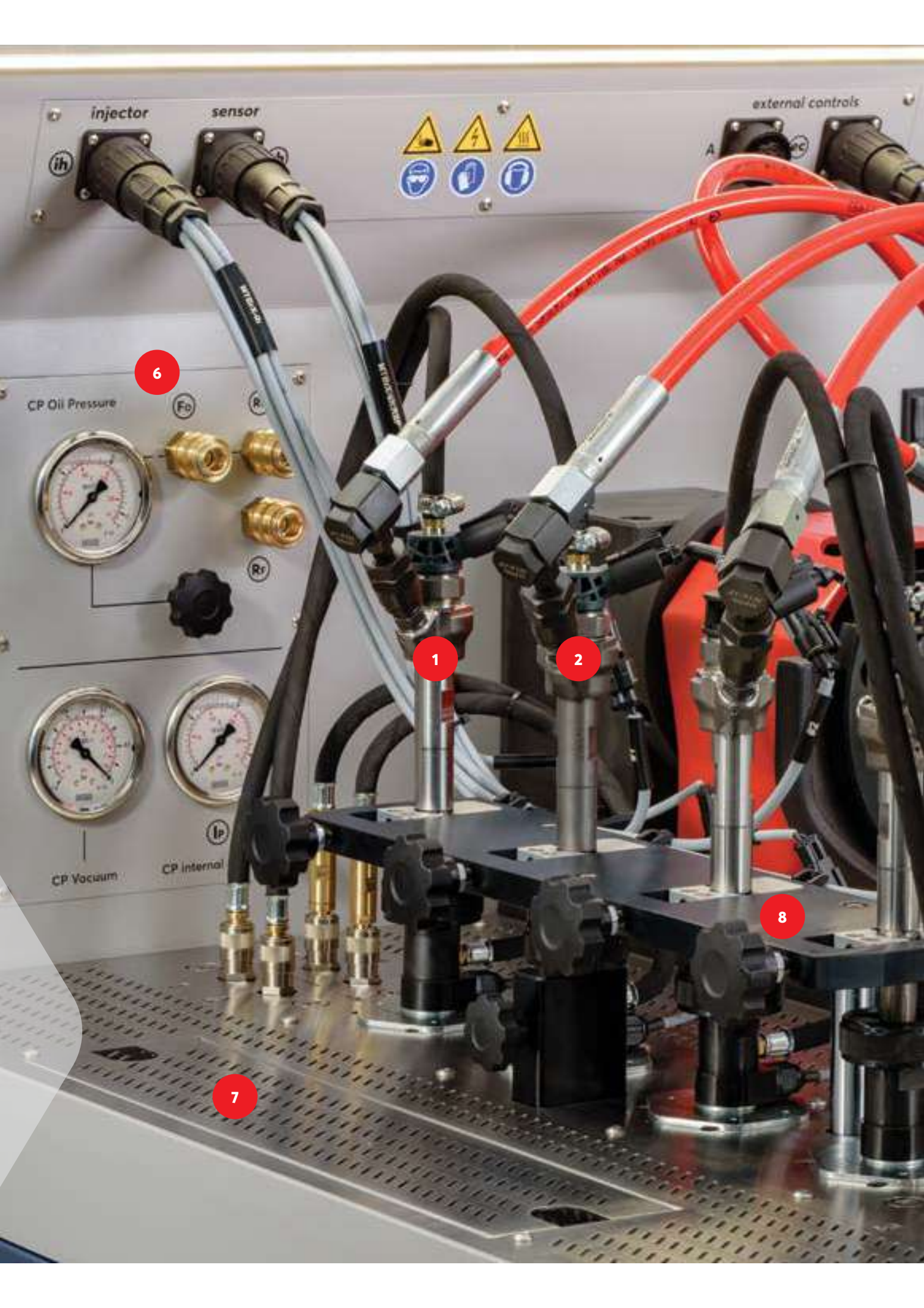
- 6-10 minutes testing and coding* time per injector
- Capable for all EU6 technologies
- Expandable to Future Systems

CGL - Authorized Continental / VDO "Blind-Lift" Measurement of Piezo-Stack



Setting the Benchmark for Test Benches

Our expertise, experience & innovative thinking brought together a New Design, Advanced Hardware & Upgraded Software for our New **MTBR-X**



injector

sensor

external controls



6

CP Oil Pressure



Fp

Rp

Rr

1

2



lp

CP Vacuum

CP Internal

8

7



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Diesel System Test Bench

- 1 DIESEL CRDi TESTING & CODING
- 2 GASOLINE GDI INJECTOR TESTING & CODING
- 3 GASOLINE GDI PUMP TESTING
- 4 DIESEL UNIT INJECTION SYSTEMS TESTING/CAMBOX
- 5 DIESEL CR PUMP TESTING
- 6 LOW SUPPLY PRESSURE/ SUCTION PERFORMANCE
- 7 EASILY ACCESSIBLE FILTERS & WASTE AREA
- 8 HEUi TESTING & CODING

Detailed information on next page



1 Diesel CRDI Testing & Coding

Ergonomic, Fast and Easy Injector Clamping device to minimize mounting times. Fully Adjustable height for all types of CR injectors. Utilizes a spring-loaded injector holder to ease the operation of the user.



4 Diesel Unit Injection Systems Testing/Cambox

EUI and EUP testing and coding with OE standards is now made as simple as testing a CR injector. Smart Pumps and Injectors testing and coding (EU6) has never been so accurate, repeatable and correct. Hartridge's HK-1400A Base Cambox optimized and upgraded with our ingenuity to meet all the standards of today's revolution in Medium and Heavy Duty Diesel Unit Systems.



2 Gasoline GDI Injector Testing and Coding

Quick and Easy Injector Clamping device with adjustable height to fit all types of adapters for Gasoline Direct injectors. Unperceivable testing capabilities, adaptability, global database and coding for newer EU6 applications* as well as for the widely available Siemens/VDO piezo injectors (for BMW) in the market today.



3 Gasoline GDI Pump Testing

The New MTBRIX is the first machine in the world to fully test and diagnose faulty GDI (Gasoline Direct Injection) Pumps. Adaptability and operation for All Types and Makes.

**New database and Coding is continuously being updated to new EU6 applications*

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5 Diesel CR pump testing

A well proven pump coupling apparatus provides the flexibility needed for future upgrades, as well as the quick coupling and versatility for today's All-Makes CR pumps. Capable to test all EU6 Common Rail pumps with sync control valve function.

5a: CPN5S2 and other **Heavy-Duty** CR Pump applications require high Power, high Torque and responsive correction of the machine's power transfer through the transmission and flywheel. The New **MTBr-X** is specifically designed to efficiently test these systems.

5b / 5c: EU6 Generation Common Rail Pump testing:

- Denso HP5S/D, HP6, HP7,
- Bosch CP4 new Euro6,
- Continental /VDO new Euro6
- and every other Euro 6 CR Pumps that operate by timing correctly the discharge quantity control valve(s).

The New **MTBr-X** advanced electronics and modern technology provides this unique testing capability for today's and next generation CR pumps.

SPECIALISTS



Capable to efficiently Diagnose and fully Calibrate all Makes and Types of CRDi's, EUi's, EUP's, HEUI's, CR-pumps, GDi-pumps and GDi injectors.



6 Low Supply Pressure/Suction Performance

Measures the inlet pressure made by the supply pump or the vacuum produced by the pump itself. Important diagnostic information for many types of pumps and even for newest EU6 generation pumps [CRp-iP3 KIT]



7 Easily Accessible Filters & Waste Area

Quick access to all inline filters for fast check-up and replacement located within your working area. A mess-free compartment to work at, continuously draining to the waste tank.

MTBR-X Points

**New database and Coding is continuously being updated to new EU6 applications*



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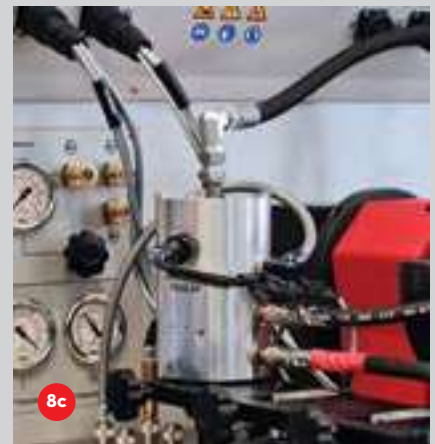
GDi Pumps



8a



8b



8c

8 HEUI testing and coding*

Pre-order your MTBR-X ready to test and code* HEUI injectors according to the OE standards. Adaptability and database available to test the majority and the diversity of injectors available in the world today. A unique capability of this add-on feature is to save space and cost from an additional standalone unit.

8. CAT C7/C9 testing and coding*. Measuring discharge and overflow at different loads to optimally diagnose faults and characterize the injector to generate the correct trim file for coding.

8a. CAT 3126/Navistar measuring the discharge and overflow at different loads.

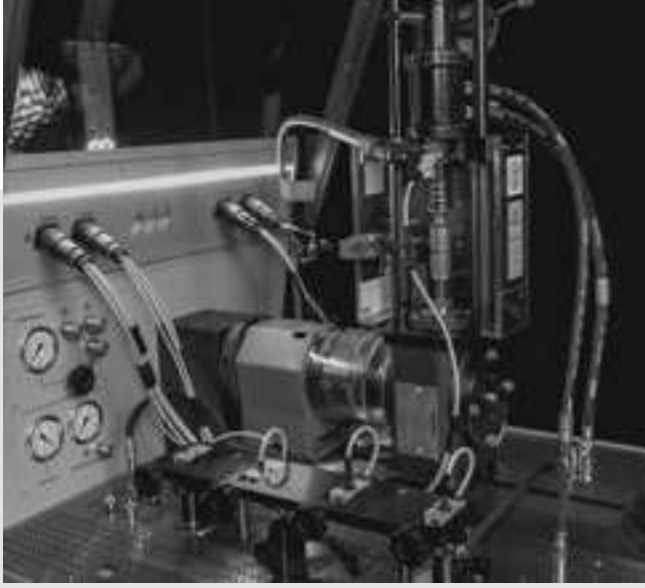
8b. CAT 3408/3412 measuring the discharge and overflow at different loads.

8c. Ford Power Stroke 6.0L / 7.3L* Efficiently controlling the dual solenoid control poppet valve we measure the discharge and overflow at different loads.

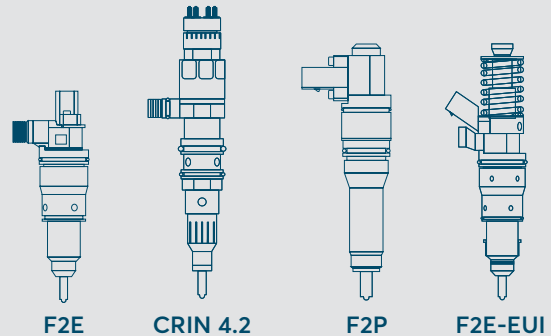
8d. Isuzu Trooper. Medium load HEUI injectors available in less countries in the world are also able to be fully tested with the New MTBR-X.(not shown in picture)



Scan to visit our **YouTube** channel and watch CZ Test Benches tutorials, training and product videos.



AZO SOFTWARE



EU6 Technologies

Features

A **Continental/VDO Authorized** Test Bench

Xtremely Fast Testing Times without any Compromise

New Design for every Service Station

Optimized Working Area access [240o] & Component Set-up Times

2800Bar Operating Pressure

EU6 Systems Testing and Coding*

CloudX Capabilities

Coding capability for all brands and types available in the market today. Bosch, Denso, Delphi, Continental /VDO, CAT, Cummins*, John Deere, ISUZU*, HINO*, KOMATSU*, E1/ E3/ DAF/ Smart Pump, F2E/ F2P/ F2R* technologies and more added every day...

Off-Highways CR applications testing and coding (John Deere, Komatsu, Hino, Isuzu)

Cummins XPI*, Caterpillar-Perkins C4/C6 and other Medium and Heavy-Duty testing and coding

Advanced water-cooling or air-cooling system to optimize long term nonstop operation at all environmental conditions.

Live Response Time Measurement at every test plan

BIP Actuation Measurement for all Heavy-Duty type solenoids (EUI & CR)

Adaptability for every type of Diesel Injectors in the market

Continuous Database updates and new Software capabilities to meet the market needs.

Android Powered 15.6" HMI with unlimited flexibility and connectivity competencies.

Injector & Pump flushing feature pre-installed (optional kits available)



*New database and Coding is continously being updated to new EU6 applications

DESCRIPTION		UNIT	MTBRX-A (CZ-008713)	MTBRX-W (CZ-008783)	
Machine Type	Cooling System	A / W	AIR	WATER	
Machine Dimensions	Length	mm	950	950	
	Width	mm	1300	1300	
	Height	mm	1610	1610	
Weight		kg	571	573	
HMI	Tablet Touchscreen	Inches	15	15	
Pressure Source	Type	Motor Driven High Pressure CR Pump			
Test Oil	Type	(DxL-ISO) ISO4113 Calibration Oil			
Test Oil for CPL / EZO	Type	Engine Oil (0W-40 / 10W-40 / 15W-50)			
EZO Oil Tank	Capacity	Liters	0.7	0.7	
CPL Oil Tank	Capacity	Liters	5	5	
Test Oil Tank	Capacity	Liters	44	44	
Flush Tank	Capacity	Liters	11	11	
Max Pressure	Pressure	Bar	2800	2800	
Max RPM	Max Revolutions Per Minute	RPM	4000	4000	
Max Pumps	Diesel Pumps	Slots	1	1	
	Gasoline Pumps	Slots	1	1	
Max Injectors	Test Injectors	Slots	4	4	
		Types	"4 CRI / 4 GDI / 1 HEUI / 1 EUI-EUP"	"4 CRI / 4 GDI / 1 HEUI / 1 EUI-EUP"	
LP Pump	Supply Pressure	Bar	0.1 / 5.4	0.1 / 5.4	
CP Vacuum	CP Vacuum Gauge	Bar	0 / -1	0 / -1	
CP IP	CP Internal Pressure Gauge	Bar	0 / 16	0 / 16	
CPL Pressure	CP Oil Pressure	Bar	0.1 / 8	0.1 / 8	
Air Supply	Pressure	Bar	-	-	
	Air Flow	Lt/ Min	-	-	
Main Power Supply	Phases	Number	3P	3P	
		TYPE	PE	PE	
	Voltage	VAC	380-480	380-480	
	Frequency	Hz	50/60	50/60	
	Current	Ampere	32	32	
Motor	Max Consumption	kVA (380V/480V)	21 - 26.6	21 - 26.6	
	Model	TYPE	AK132-4	AK132-4	
	RPM		RPM 50 / 60Hz	1450 / 1740	1450 / 1740
			KW 50 / 60Hz	13 / 15.6	13 / 15.6
	POWER	HP 50 / 60Hz	17.5 / 21	17.5 / 21	
Connection Δ		Ampere (50HZ)	400 V:24.4 A	400 V:24.4 A	
	Ampere (60HZ)	480 V: 24.4A	480 V: 24.4A		
Water Supply	Max Input pressure	Bar	-	4	
	Max Output Pressure	Bar	-	1Bar< Input Pressure	
	Min Input Temperature	Celsius	-	5	
	Max Input Temperature	Celsius	-	15	
	Min Diameter In/Out Water Hose	mm	-	10	
	Water Tank Capacity	Liters	-	17	
	Max Water Flow	Lt / Min (4Bar)	-	4	
	Min Water Output Temperature	Celsius	-	5	
	Max Water Output Temperature	Celsius	-	65	
	Delta T	Celsius	-	0-50	
	Max Cooling Efficiency "Debit" [27.2 liters of 5° C water in order to Cool Down the Test Oil from 43° C to 36° C (1.6 tank cycles)]	Tank Cycles	-	1.6	
Operating Temperature	Min / Max Room Temperature	Celsius	6 / 23	6 / 30	
IVM Sensors	Measurement Sensors	Type / Quantity	XKM / 4 *	XKM / 4 *	
		Type / Quantity	DFM500 / 1**	2/9/23	

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MEASUREMENT SENSORS
XKM [Dynamic Meas. Sensor]; High Accuracy: ± 0.1%, Exceptional Repeatability ±0.05%.
 Measur. Range: 1-1000ml/min
DFM 500 [Dynamic Measurement Sensor]; Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 5-500l/min
DFM 50 [Dynamic Measurement Sensor]; Accuracy: ± 1%, Repeatability 0.5%, Measurement range: 0.5-50l/min
Volumetric Tubes [Static Analog Measurement]; Accuracy: 1mi., Measurement range: 0.5-65ml

APPLICATIONS
Passenger Car/ Motorcycles: Volumes up to 120mm³/H
Light Duty: Volumes up to 200mm³/H
Medium Duty: Volumes up to 300mm³/H
Heavy Duty: Volumes up to 650mm³/H
Marines: Volumes up to 1500mm³/H

EXPLANATIONS
 - : N/A
 - A: Air Cooling
 - W: Water Cooling

PRESSURE SOURCES
Internal: High Pressure Pump
External: Air Motor Driven High Pressure CR Pump
External: Pressure coming from another Test Bench or external source
Electr. Pump: Fuel Injection system or Industrial Application Electrical Pump 12VDC
 - : No Pressure Source

eXpanding Capabilities

X Series 2023

Space saving, accessory organizers for everyday tasks.
Increased productivity and uncluttered space.

Extras MTBR-X & PTBR-X



1 Desk & Harness Shelf



Hydraulic Hose Side Panel Pocket with Drain

2



Ultrasonic Shelf

for GTBR-X,
ITBR-X, HTBR-X





**Carbon Zapp Trolley
Fully Configured Setup**



CZ Base Trolley



**Hose & Harness
Side Organizer**
(max. 2 pcs per trolley)

Carbon Zapp Trolley

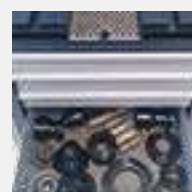
Ideal workshop organizer to fit most parts of the machine like harnesses, hoses, adapters, tools and flanges. Can be easily transformed to a Cambox and/or pump rack for easy transfer and storing.



**CRp Flange Drawer
Organizer**
(max. 1 pc per trolley)



**Cambox/Pump
Transfer Rack**
(max. 2 pcs per trolley)





CloudX is CarbonZapp IoT Cloud computing Platform

Powerful innovations at your fingertips
with CZ CloudX computing Platform



CZ CloudX computing technology Platform as a service (PaaS) is a complete environment in the cloud, with resources that enable clients the full control of their Bench with cloud based Apps access them over a secure Internet connection. With middleware, development tools, business intelligence (BI) services, database management systems and more.

CloudX allows clients to access live online updates of database, remote operation and status report of their bench. Generate remote reports for handling, printing, filling and organizing from machine database. Instant activation of features on a pay-as-you-go basis. Multiple machines management support. Complete machine cloud back-up and instant trouble shooting via X-Connect directly from CZ factory. Receive notifications on your smart devices for machine maintenance tasks like Oils, Filters, Service, and more.

Explore today new powerful innovations at your fingertips with CZ CloudX computing Platform.

CloudX Features

- IoT Cloud computing Platform. Industry 4.0 Complaint
- Live Online Updates of Database and supporting new requests from clients
- Remote Operation and Status Report of Client Bench
- Generating remote reports for handling, printing, filling and organizing from machine database
- Instant Activation of Features on a pay-as-you-go basis
- Multiple machines management
- Complete machine cloud back-up
- Instant troubleshooting via X-Connect directly from CZ Factory
- Notifications on Client smart devices for machine maintenance tasks like Oils, Filters, Service, and more



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Product Catalog

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