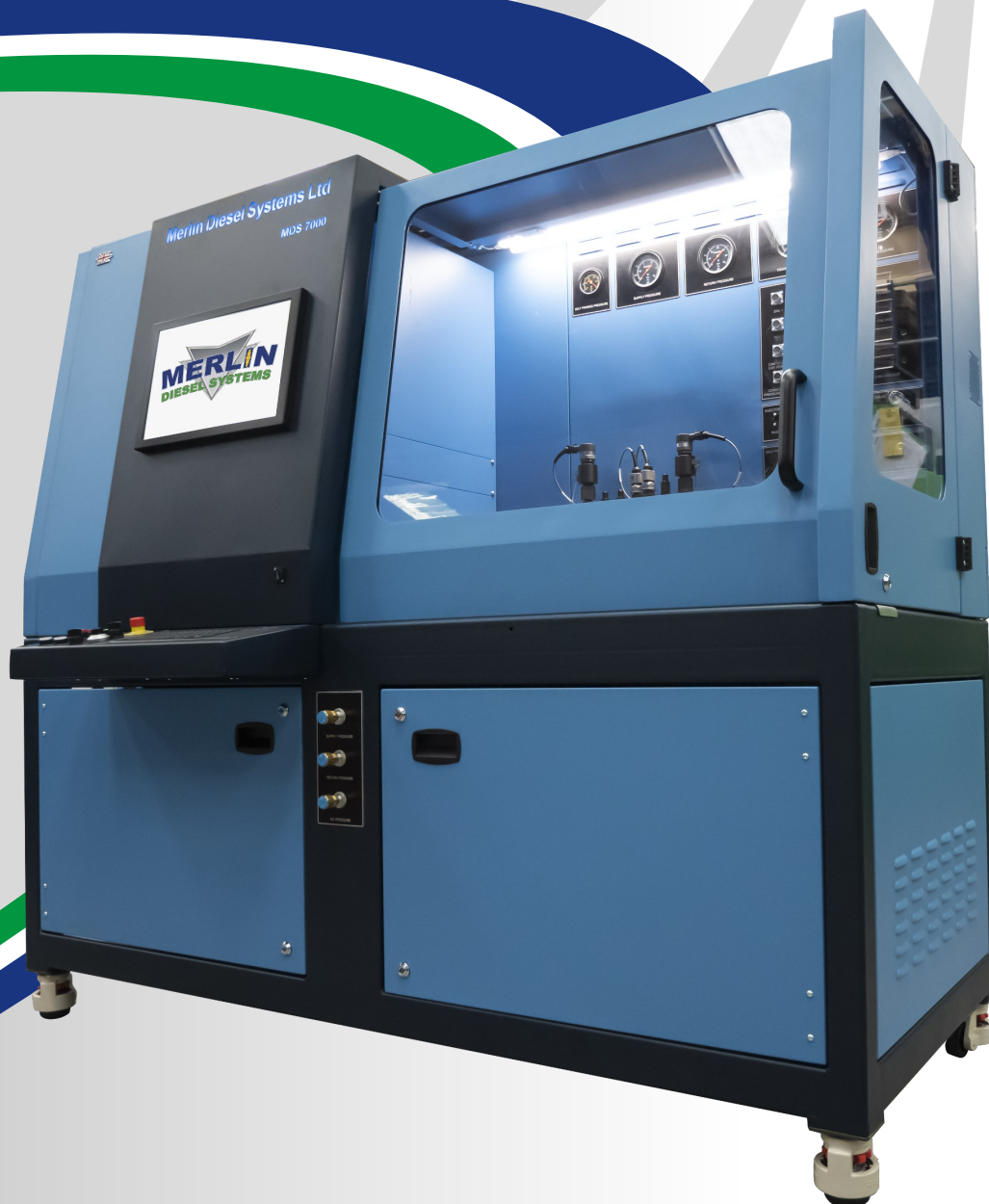


# MDS 7000

MULTIFUNCTIONAL TEST STAND FOR ALL APPLICATIONS  
ALL-MAKES SOLUTIONS IN ONE SIMPLE CONCEPT



DISCOVER

DIESEL

EXCELLENCE

# MDS 7000

## Overview

### **The MDS 7000 is a revolutionary concept in Diesel Fuel Injection Test solutions**

Bringing together several technologies onto one platform provides workshops with the true All-Makes solution to streamline their business and provide the comprehensive service their customers require.

The MDS 7000 covers over 50 applications from the simple Common Rail Pumps and Injectors to large engine Bosch QSI and HEUI Injectors and Pumps.



**Common Rail  
Pumps & Injectors**

**EUI, EUP & HEUI**

**Scania – Cummins  
HPI, XPI & QSI**

**CAT/Perkins Pumps**

**Denso HPO**

**Bosch HP Pumps**

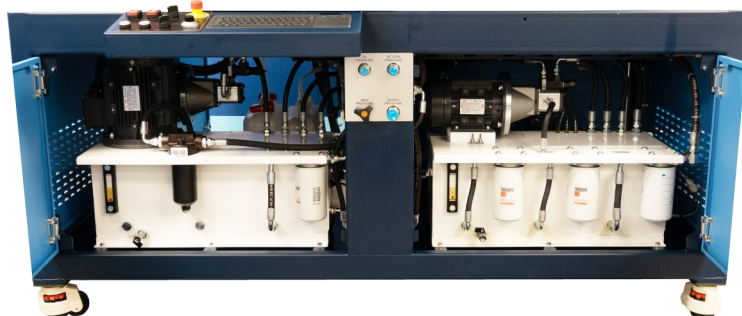
# MDS 7000

## Features



Smart Wheel  
System

Easy Access



Integrated digital electronic metering

Easy to use

Accurate

Flexible

Easy access for maintenance

Large work area with opening side door

S1000 Coding Software Included - Denso, Delphi, Siemens, John Deere, CAT/Perkins

Test plans - 24 hour response

Digital 24" LCD Touch Screen

Common Rail - Tests up to 2400 bar

EUI Compatible

**All-Makes Fuel Injection**

**Testing made easy**

**One Test Stand to cater to  
all your Requirements**

**Practically designed for  
easy access, mobility and  
maintenance**



# MDS 7000

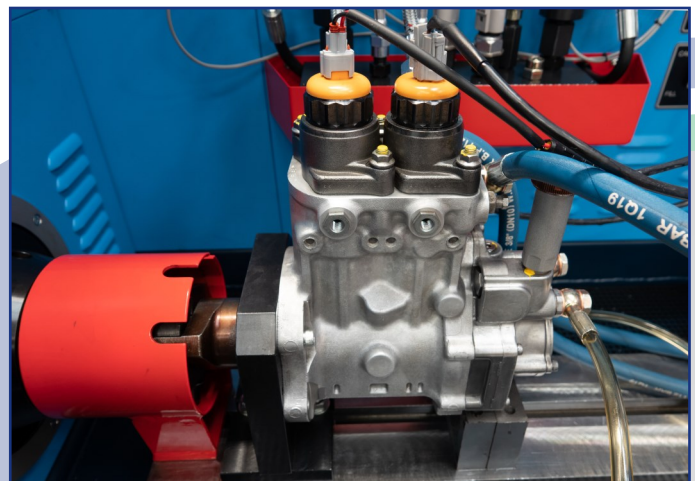
## Fuel Pumps

### COMMON RAIL

The MDS 7000 is capable of testing almost all Common Rail Pumps.

It runs through a selection of automated tests for fuel volume, pump transfer pressure and ZME performance.

The application coverage includes Bosch, Delphi, Siemens Denso, Caterpillar/Perkins Common Rail Pumps.



### EUP

The MDS 7000 Cam-Box is capable of testing Bosch EUP AND Delphi Smart Injectors/ Pumps. This encompasses Mercedes Actros, Atego, DAF and Volvo.



### HEUI

Testing of the Caterpillar HEUI Pump is possible due to the benches unique hydraulic oil system.

The system mimics that of the CAT HEUI engine, to allow the measurement of the pump's flow rate, pressure, and timing to exacting Caterpillar specifications.

# MDS 7000

## Fuel Injectors

### COMMON RAIL

The MDS 7000 has the ability to test almost all types of Common Rail Injectors including Electromagnetic & Piezo with single and two valve/actuator (two and four pin) up to 2400 bar.

Injectors are easily mounted and inbuilt test plans are comprehensive.



### EUI

The MDS 7000 Cam-Box is capable of testing the smaller PD/TD5 through to the large Commercial Scania Bosch, Delphi E1/E3, CAT/Perkins C Series and the Cummins Celect/HPI.

### HEUI

Having both hydraulic and high pressure components, allows this unique platform to test Caterpillar, Navistar and Ford off highway HEUI.

The hydraulic CAT pump is submerged in the hydraulic oil tank. This keeps the oil in the tank and ensures a clean working oil-free environment.



# MDS 7000

## Application: Complete Test Solution Covering

DELPHI A Series, E1, E3

CUMMINS Celect M11, N14 (Scania) HPI, XPI, Q60, X15

BOSCH QSK

DENSO HP5, HP6, HP7

CAT MC12, C13, C15, C18, 3500, 3116, 3512A

NAVISTAR/CAT 3216

CAT HEUI C7, C9, C4, C6, HEUI Pump, CAT 336E

SCANIA BOSCH "0 414" EUI

DAF BOSCH EUP

MERCEDES Actros, Atego

IVECO BOSCH 8, 10, 13

DETROIT N1, N2, N3

NISSAN E3, EUI

VW PD

LANDROVER TD5

LIEBHERR

BOSCH Common Rail Injectors and Pumps

DELPHI Common Rail Injectors and Pumps

DENSO Common Rail Injectors and Pumps

CONTINENTAL Common Rail Injectors and Pumps

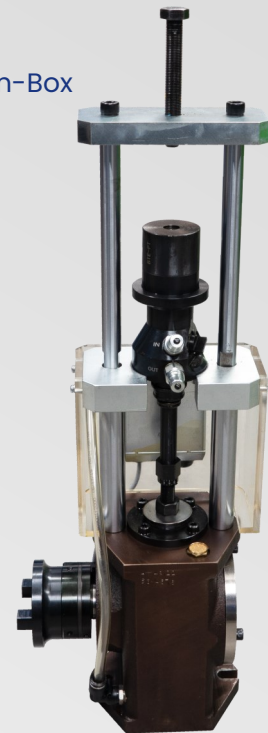
OTHER TEST PLANS IN DEVELOPMENT

E3 & CAT CODING COMING SOON

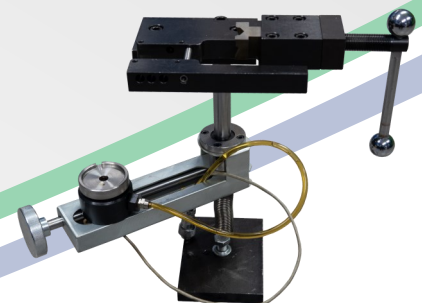
HEUI Kit



Cam-Box



Injector Kit





# MDS 7000

Applications: Complete Test Solution Covering



Common Rail Pump



Common Rail Injector



Piezo Injector



EUI & EUP



Cat C7/C9



Navistar



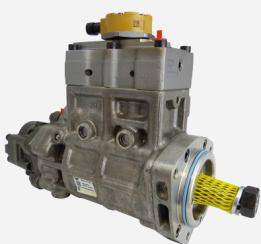
HPI



XPI



QSK



Cat/Perkins Pumps



HPO



HEUI Pump

# MDS 7000

## Technical Specification

<b>DRIVE MOTOR</b>	20 hp variant
<b>SPEED RANGE</b>	30–2500 RPM
<b>DISPLAY</b>	Digital 24" monitor
<b>TEST OIL SUPPLY PUMP</b>	600 litres/hr
<b>HYDRAULIC OIL SUPPLY PRESSURE</b>	600 litres/hr
<b>TEST OIL FEED PRESSURE</b>	0–27 bar
<b>TEST OIL PHASING PRESSURE</b>	0–40 bar
<b>FLOWMETERS</b>	4 gear flowmeters ± 1% of reading
<b>TECHOMETER</b>	± 1 rpm. Updates every 0.5 seconds
<b>WATER SUPPLY</b>	160litres/hr
<b>TEMPERATURE CONTROL</b>	160 °C ± °C at 40°C
<b>CALIBRATION FLUID (TEST OIL)</b>	Shell Calibration Fluid 4113 now S9365
<b>HYDRAULIC OIL</b>	Hydraulic oil ISO 5w 30
<b>WORK TABLE</b>	125mm Centre height
<b>TEST OIL TANK CAPACITY</b>	40 litres
<b>HYDRAULIC OIL TANK CAPACITY</b>	40 litres

<b>DIMENSIONS</b>	
<b>LENGTH:</b>	2080mm
<b>WIDTH:</b>	1209mm
<b>HIGHT:</b>	1862mm



# MDS 7000

## Specifications & Requirements

### ELECTRICAL

3 Phase Connection

380 - 440v/3 phase/50Hz



### WATER SUPPLY

160 Litres/hr

Air Cooling in development.



### TEST OIL & HYDRAULIC OIL TANKS

Easy Access

Submerged CAT Pump



### BASE MACHINE INCLUDES

Common Rail Pump & Bracket

Common Rail Injector

HEUI Pump Kit

HEUI Injector Kit

EUI Cam-box - 5 Applications

### OPTIONAL EXTRAS

HPI KIT

E3 Controller

# MDS 7000

## S1000 Coding & Test plan Development

A **unique, cost effective** solution to generate correction codes for **DENSO/DELPHI/VDO/BOSCH/JOHN DEERE/ISUZU/CAT** injectors on all major test benches - **Easy Installation** - Comes complete with all **test plans, DYMO label machine, operating manual, software & S1000 USB stick**



This unique software enables the user to create C2i/C3i and QR correction codes for the common rail injector market.

All Common Rail Diesel injectors need a calculated offset made by the ECU to ensure the injectors work cohesively with each other and optimize performance.

Delphi, Denso and Continental/VDO systems all require this information and our software

With easy set up and user-friendly interface, this software will enhance the quality of your product, keeping the emissions and performance of your engine in line with OEM standards.

### COMPATIBLE ON A WIDE VARIETY OF TEST STANDS

- **MDS 7000**
- **EPS 815 / EPS708 / EPS200 / EPS205**
- **CRI-PC**
- **AVM-2 PC**
- **SABRE SERIES, MERLIN S4000 MK2 / S8000 / S9000 MKII**

### CODING UPDATE

We have recently expanded the application database for our S1000 coding software.

We have included several Denso references in our recent update.

Delphi E3 and CAT coming soon.

**For further info email:**

**[test.equipment@merlindiesel.com](mailto:test.equipment@merlindiesel.com)**

# MDS 7000

## Training & Tooling

Merlin Diesel's extensive Research and Development programme in the field of EUI and HEUI has led to a surge of interest from technicians worldwide. The need for a qualified and skilled work force is essential for garage and workshop productivity.



In response to this demand, Merlin have created a state-of-the-art training facility dedicated to providing an in-depth understanding of the processes involved in effective inspection and fault diagnosis, fault correction, re-calibration and test.

All courses cover theoretical and practical demonstrations, equipping technicians with the practical skills to effectively identify faults and repair the relevant unit by the course's completion.



We provide comprehensive tool kits to compliment the courses we are offering. The tool kits cover a complete disassembly and assembly process for all the modules in the prospectus. The kits contain tools for the following technologies:

Technologies & Brand			
Bosch CRI/CRIN	Denso/VDO CRI	CAT CRI & CRP	Delphi Technologies EUI
Bosch EUI/EUP	All Makes HEUI	CAT EUI	Delphi Technologies/CAT EUI (Valve Kit)
Detroit Diesel EUI	Bosch EUI/EUP (Valve Kit)		





# MDS 7000

## Multi Functional Test Stand For All Applications

- Diesel Pump / Injector / Test and Repair
- Suppliers of New and Remanufactured Pumps / Injectors
- Technical Support
- Test Equipment
- Parts Sales
- Injector Software Coding Solutions

EXPORT SALES

T: +44(0)1772 694133

E: [export@merlindiesel.com](mailto:export@merlindiesel.com)

UK SALES

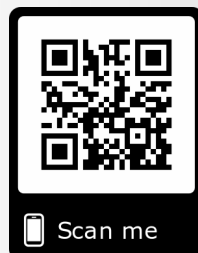
T: +44(0)1772 694130

E: [parts@merlindiesel.com](mailto:parts@merlindiesel.com)

TEST EQUIPMENT

T: +44(0)1772 694180

E: [equip@merlindiesel.com](mailto:equip@merlindiesel.com)



Merlin Diesel Systems Ltd | 189-191 Bradkirk Place | Walton Summit Centre | Preston | Lancashire | PR5 8AJ

Delphi  
Technologies



BOSCH  
Invented for life

Perkins

DENSO

Continental  
The Future is Motion

DISA

Stanadyne

YANMAR

hartridge ROBIEL