

repairing the future...



# TK1024.03

## HYDRAULIC ELECTRONIC UNIT INJECTOR TESTER

TK1024.03 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. TK1024.03 has now better temperature control and minimized need for cooling water.

### APPLICATION KITS

- Ford Powerstroke 4.5L V6, 6.0L V8, 7.3L V8
- Navistar DT444E 7.3L
- Navistar DT446E 7.6L
- Navistar DT530E 8.7L
- Navistar DT570 & HT570 9.3L
- Navistar VT275 4.5L
- Isuzu Trooper 4JX1 3.1L
- Caterpillar 3408 18.0L
- Caterpillar 3412 27.0L
- Caterpillar 3116E 6.6L
- Caterpillar 3126A 7.2L
- Caterpillar 3126B 7.2L
- Caterpillar C7 7.2L
- Caterpillar C9 8.8



Distinguished  
design, improved  
capabilities



## Higher Pressure....

New Hydraulic System is capable to provide 300 Bar Test Oil Pressure at max 4 L/min flow rate.

## Standard Test Oil...

Use ISO4113 to test HEUI injectors with precision.

## Automatic High Pressure Setting...

New Hydraulic System sets pressure automatically, testing continues without interruption.

## Much Faster Testing.... No need to attend testing....

New control application and automatic high pressure testing eliminates the need for an operator to stand and observe testing. HEUI injectors are now tested just like Common Rail Injectors, uninterrupted till the end of the test.

## PD FlowMeter for more accuracy and repeatability

New Metering System response time is less than 3 s and it is the key factor behind the fast testing. The metering system has resolution of 0,3 mm3 with 0.5% FS Accuracy Level, making TK1024.03 the most accurate test bench in the market.

## Temperature Control with Intelligent Pump Control Module

New Control Application controls the pump speed according to flow demand to minimize the return of high temperature flow to the tank. As a result new TK1024.03 has heating demand more than cooling demand.

## New Control Application and Test Plan Editing Features

New Application allows the user to create new test plans based on the Generic Test plans. The user can also modify Signal parameters that allows to create different test modes to detect various problems of HEUI Injectors.

Important Test Parameters to understand the assembly conditions of HEUI Injectors:

**BIP**; Beginning of Injection Period; namely the time delay until the injector solenoid activation to start the injection cycle,

**NRT**; Nozzle Response Time; namely the time delay until the delivery of fuel from the nozzle. Both of these parameters play important role in determining the performance of the injector on the engine, eliminating all timing related problems when assembled on the engine.

**HEUI Test Report V4** **MAKTEST**

Test Details:  
Injector No: 3126  
Serial No: 123456  
Make: CATERPILLAR  
Type: Application  
Application: Application  
Model: Application  
Customer Info: Maktest

Test Date & Time: 2020-05-17 9:09  
Authorized Personnel: Maktest

Status	Test	Bar	µs	NRT	BIP	Q mm3H	IPM	RPM	°C (tank)	LP Bar
PASS	Conditioning	100 ± 5	2500	0 ± 0	0.0 ± 0.0	0.0	600	2000	40 ± 2	4 ± 1
		600		1000		0.0			00.0	00.0
PASS	Delivery 1	200 ± 5	2500	0 ± 0	0.0 ± 0.0	0.0	600	2000	40 ± 2	4 ± 1
		730		1000		0.0			00.0	00.0

Note: No Code for Database

Test Report as PDF File

HEUI Tester Control Software  
Advanced Injector Drive Signal Settings

Formula	Boost V (0-250)	Delivery V (0-24)	Boost A (0-250)	Boost Time (0-250)	Deact. mode (0-1-2-3)	Pickup A Max (0-250)	Pickup A Min (0-250)	Pickup LP Time µs (0-2500)	PN (0)
Conditioning	0	24	120	1100	5	0	0	10	2
Delivery 1	80	24	120	1100	5	0	0	10	2
Delivery 2	80	24	120	1100	5	0	0	10	2
Delivery 3	80	24	120	1100	5	0	0	10	2
Delivery 4	80	24	120	1100	5	0	0	10	2

Buttons: Back, Save

Advanced Test Plan Creator

Test Screen HEUI Tester Control Software

Injector No: 3126  
Make: CATERPILLAR  
Application: Application  
Serial Number: 123456  
Customer Name: Maktest

System initializing. Please wait. (5%)

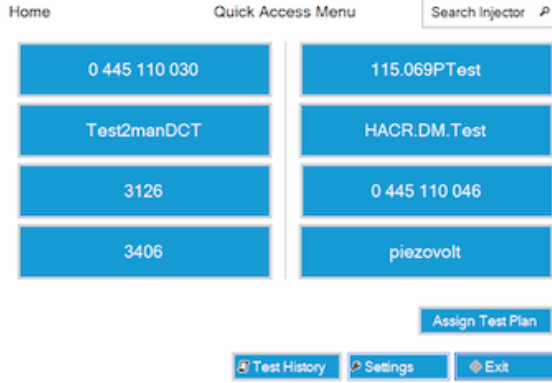
Bar	Conditioning	NRT (µs)	°C (tank)	LP (bar)	Run	Bar	Test
	100	2500	40	4	50	200	Delivery 1
					50	150	Delivery 2
					50	100	Delivery 3
					50	50	Delivery 4

Test Results:  
Bar: 100 ± 5  
Q (mm3/H): 0.0 ± 0.0  
°C (tank): 40.0 ± 2.0  
LP (bar): 4.0 ± 1.0

Buttons: Start Test, Stop Test, Settings

Test Screen Image





Home Screen of TK1024.03 Test Control Software

### Electricity Requirement

360-415 Vac 3 phase 50 Hz. 415-480 Vac  
3 phase 60 Hz.

100- 240 Vac 1 phase 50/60 Hz for  
electronics and computer.

### Air Supply

Min 5 bar, oil and water free @6L/min  
flow..

### Test Oil Transfer System

#### High Pressure Circuit Specs

HP Pump 9 L/min; Gear Pump  
Max Pressure 200 bar  
HP Regulator Manual

#### Low Pressure Circuit Specs

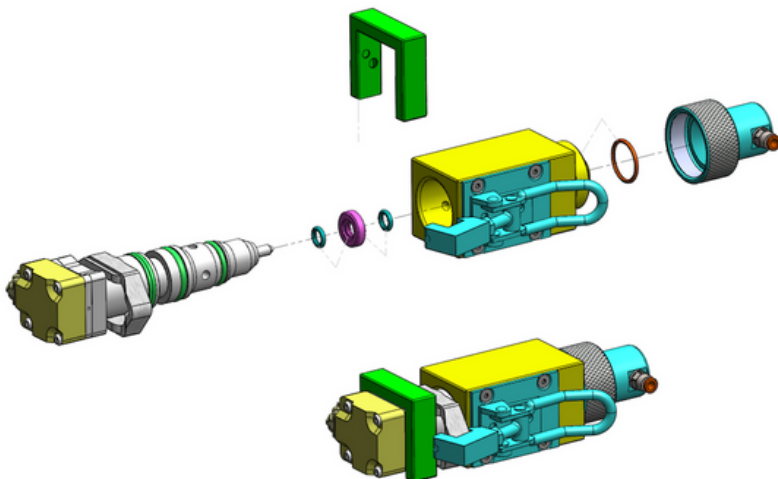
LP Pump Electric Pump, 4 L/min Max Pressure 4 bar  
LP Regulator Manual

### Instrumentation

High Pressure : 0-300 bar;  
Digital Low Pressure . 0-6 bar;  
Digital Flow Gear Type; 0 - 200 mm<sup>3</sup>/Stroke;  
Digital Temperature 10- 160 °C; Digital



Automatic High Pressure Control



KO1391 Test Adapter

### Machine Dimensions:

Width: 930 mm  
Depth: 650 mm  
Height: 1690 mm  
Weight: 270 kg

### Packing Dimensions:

Width: 1090 mm  
Depth: 860 mm  
Height: 1890 mm  
Weight: 360 kg

## Optional Accessories for Various HEUI

- KO4600 CATERPILLAR C7-C9 HEUI ASSEMBLY TOOL SET **FOR KO4000**
- KO1873 CATERPILLAR C7-C9 REPAIR TOOL SET
- KO1391 CATERPILLAR 3126 SLEEVE ADP.(SHORT AND LONG)
- KO1392 ISUZU TROOPER/HOLDEN JAKAROO SLEEVE ADAPTOR
- KO1393 CATERPILLAR C7 ENGINE INJECTOR SLEEVE ADAPTOR
- KO1394 CATERPILLAR 3408-3412
- KO1396 CATERPILLAR C9 ENGINE INJECTOR SLEEVE ADAPTOR
- KO1397 INJECTESTER HEUI FORD 6,0-7,2 LT POWER STROK SIEMENS - HEUI ADAP.
- KO1398 CAT 3116 - E (106 - 7056 AZ OR4970) SIDE SOLENOID - SHORT
- KO1399 SIEMENS NAVISTAR-DT570 1848492C91
- KO1756 HEUI Poppet Valve Test Module (including MO1161 adaptor sleeve)
- MO1161 Assembly Sleeve for Cat 3126 (INCLUDED IN KO1756)
- MO1162 Assembly Sleeve for Cat 4jxl - TC
- MO1163 Assembly Sleeve for Cat 3408E - 3412E
- MO1164 Assembly Sleeve for Cat C7 - C9

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