

## Diesel High Pressure Pump Test Kit



### Information

- Essential tool for accurately measuring the high pressure fuel circuit of diesel common rail systems.
- Features 2,000bar gauge, pressure relief valve and high pressure flexible hoses.
- The kit also includes a set of dummy pump regulator and injector pipe blanks.
- Kit allows for a variety of tests to be conducted:

Engine cranking/running pressure test.	Pump pressure regulator test.
Maximum pump pressure test.	Injector leakage test.

### Safety First

- Only operate if trained to do so.
- Read these instructions carefully and retain for future reference.
- Ensure the vehicle is properly supported with the wheels secured, in line with manufacturer's guidelines.
- Wear safety apparel while operating and keep hands away from moving parts.



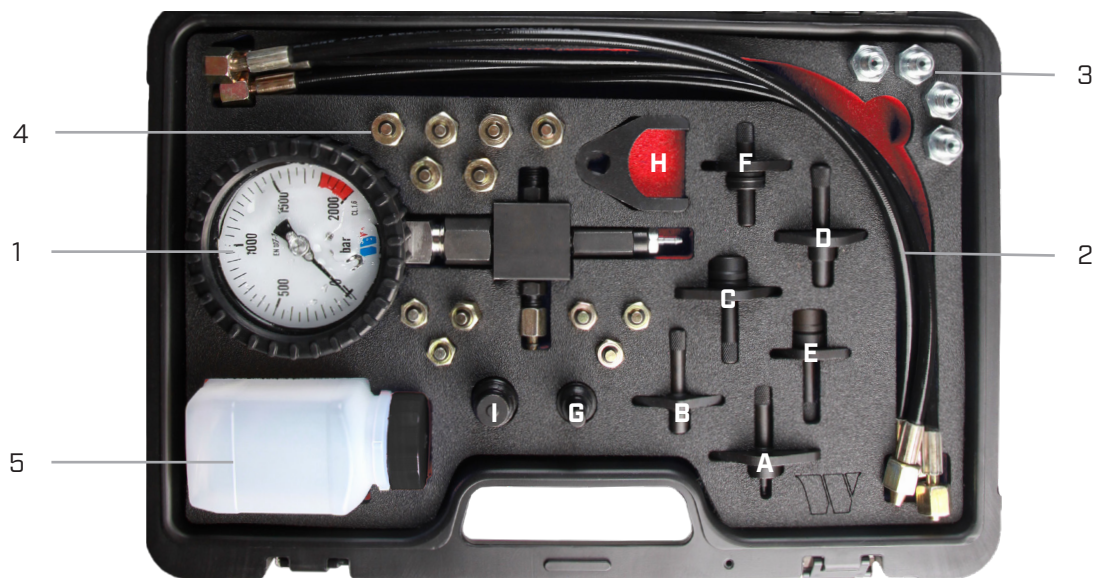
Wear Safety Gloves



Wear Safety Glasses



Read Instructions



1	Gauge Pressure	Range: 0-2000bar										
2	Flexible Hose [x4]	Length: 500mm										
3	Hose Connection	M12x1.5 [x2], M14x1.5 [x2]										
4	Injector Pipe Blanks	M12x1.5 [x6], M14x1.5 [x6]										
5	Diesel Waste Bottle											
6	Dummy Regulators	<table border="0"> <tr> <td>A: Bosch CP1</td> <td>F: Siemens DCP2</td> </tr> <tr> <td>B: Bosch CP3</td> <td>G: Siemens DCP1</td> </tr> <tr> <td>C: Delphi DFP1/DFP3</td> <td>H: Siemens Key</td> </tr> <tr> <td>D: Denso HP3</td> <td>I: Siemens DCP1 and DCP 2</td> </tr> <tr> <td>E: Denso HP1/HP2</td> <td></td> </tr> </table>	A: Bosch CP1	F: Siemens DCP2	B: Bosch CP3	G: Siemens DCP1	C: Delphi DFP1/DFP3	H: Siemens Key	D: Denso HP3	I: Siemens DCP1 and DCP 2	E: Denso HP1/HP2	
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E: Denso HP1/HP2												

Instructions

**Engine Cranking/Running Pressure Test**

**Step 1**

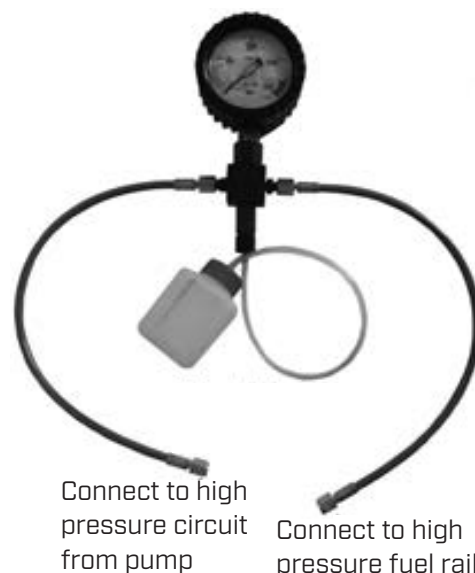
Connect the gauge to the vehicle's high pressure circuit. The engine will operate normally; giving the actual fuel pressure reading.

**Step 2**

- Locate the high pressure pipe from the pump to the fuel rail. If it is difficult to access, locate the pipes from the fuel rail to the injector.
- With the fuel system de-pressurised, disconnect the accessible high pressure pipe and connect the gauge using either the M12 or M14 hoses.
- Ensure all hose fittings are fitted tightly prior to performing the next steps.

**Step 3**

- Connect the diesel waste bottle [5] using a tube to the bottom of the gauge. The bottle will collect the waste fuel when the pressure relief valve is activated. A non-starting vehicle should still have a reading of 300 bar.
- While the engine is running carefully check that there are no fuel leaks before proceeding to the next step. If there is a leak turn off the engine and allow the system to de-pressurise before checking the fittings are correctly sealed. Start the engine and check for leaks again.



## Step 4

- Increase the engine speed ensuring that the fuel pressure increases accordingly.
- Most importantly test that 300bar is reached with the engine idling or activating the starter. If this pressure is correct, the low pressure circuit is working correctly and the high pressure pump is supplying the minimum pressure needed in order to start the engine properly.
- If the pressure is correct but the engine does not start, the problem is not the high pressure pump, it could be an electrical fault, injector, etc.

## Step 5

- If the pressure does not reach the required pressure test the pressure at the inlet of the high pressure pump using a low pressure tester.
- If the pressure at the high pressure pump inlet is correct, check the maximum pressure of the pump.

## Maximum Pump Pressure Test

There are high pressure pumps that disconnect the third piston when the required pressure is low. They only work with two pistons, whereas the engine power requirement is less. The third piston is activated by a solenoid when the 600-700bar is reached.

## Step 1

- Connect the gauge to the vehicle's high pressure circuit. This will not allow the engine to start, and the testing is done with only the engine cranking. Pressure should rise above the 1050bar showing that the pump is operating correctly.

## Step 2

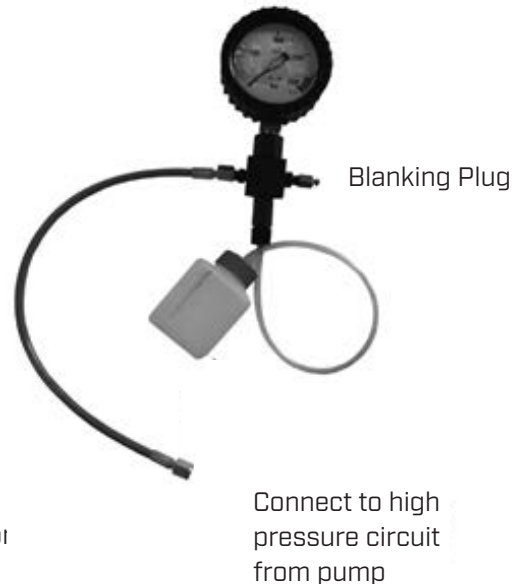
- Locate the high pressure pipe from the pump to the fuel rail. If it is difficult to access, locate the pipes from the fuel rail to the injector.
- With the fuel system de-pressurised, disconnect the accessible high pressure pipe and connect the gauge to either M12 or M14 hose. Fit the blanking plug to the gauge outlet. Ensure the hose fittings are tight prior to proceeding.

## Step 3

- Connect the diesel waste bottle [5] with the tube to the bottom of the gauge. The bottle will collect the waste fuel when the pressure relief valve is activated.

## Step 4

- Crank the engine. The pressure should quickly rise above 1050bar. This means the pump is operating correctly. If the pressure reading is low it means the pump or the pressure regulator has a fault. Carry out a pump pressure regulator test to identify the problem.
- NOTE: A problem with the pressure sensor (located on the fuel rail) may send the wrong information to the PCM, thus giving the incorrect information to the pressure regulator causing it open earlier than it should. This will result in a low pressure reading. Use an EOBD tool with live data and compare the actual pressure from the gauge to the reading from the EOBD tool.



## Instructions

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### Injector Leakage Test

- The injector pipe blanks is designed to be used together with the gauge and hose.
- This test should be carried out when the pump pressure does not reach 300bar; not allowing the vehicle to start. By blanking the injector pipes it will show if the loss of pressure is because of faulty injectors (sticking open.)

#### Step 1

- With the fuel de-pressurised, disconnect the high pressure pipes to the injectors and fit the injector pipe blanks [4].

#### Step 2

- Follow the steps above for Engine Cranking/Running Pressure.

#### Step 3

- If the pressure has increased it means that at least one of the injectors is leaking.
- In order to identify which injector is leaking, connect the injector pipes individually and repeat the test.
- If the pressure is still lower it might mean the pump or pressure regulator is faulty.



## Warranty

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Limited 12 month warranty from date of purchase. If you are unsure on how to use the item please contact us. If it were to fail due to a manufacturing fault or poor workmanship we will repair or replace it. Please contact your local dealer in the event you need to send the item back. You can also make a repair/replacement request on our website and download & complete the form online. Normal wear and tear along with misuse will void any warranty. Consumables are not covered under warranty.

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