OPERATING INSTRUCTIONS

GDP

High-pressure tester for GDI systems (analogue)

Described product

GDP 400 – High-pressure tester for GDI systems (analogue)

Manufacturer
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Germany

Contents

1. Safety

1.1 Safety notes and regulations

To ensure safe and reliable work with the high-pressure tester and to protect the user from injuries, the following points are to be observed:

- **Read the operating instructions carefully.**

- The high-pressure tester may only be operated and installed in systems by trained motor vehicle specialists who possess the necessary expertise and qualifications to perform these tasks, and who are familiar with the applicable standards, regulations and requirements of the field of application.
- The operating instructions are part of the high-pressure tester. Store the operating instructions in a safe location so that you can quickly find the desired information if necessary.
- The legal provisions and regulations as well as those of the system/vehicle manufacturer are generally to be observed.

- Prior to commissioning, perform a check to ensure that the high-pressure tester, along with all its components, is in faultless condition. Do NOT operate the high-pressure tester if damaged.
- Never kink or pinch pressure lines.

- With daily use, the pressure lines must be replaced after max. 6 years.
- No technical modifications may be made to the high-pressure tester or its components.
- Do not subject the high-pressure tester or its components to any extreme temperatures, direct sunlight, extreme humidity or moisture.
- Never exceed the maximum measurement range end values of the high-pressure tester.

- Repairs on the high-pressure tester may only be carried out by the manufacturer.
- Use only original spare parts and accessories.
- Non-specified use of the product or failure to observe the safety and operating notes may lead to severe malfunctions as well as personal injury and property damage.
- The discharge of media or hot liquids that are under pressure may cause injuries.

- Pressurised systems may burst and cause parts to be ejected.
- When working on the fuel system, the special safety regulations for flammable liquids must be observed.

- Wear personal protective equipment, such as protective goggles, gloves, safety shoes, etc. when working on pressurised systems and components.

1.2 Explanation of symbols

Warning notices and important information are marked in this document with symbols for better identification.

The notices begin with signal words that indicate the extent of the danger. You must absolutely comply with these notices and information and handle the device with care to prevent accidents and avoid personal injury and property damage.

DANGER
Notice indicating a dangerous situation which, if not avoided, will result in death or severe injury.

WARNING
Notice indicating a dangerous situation which, if not avoided, could result in death or severe injury.

CAUTION
Notice indicating a dangerous situation which, if not avoided, could result in minor to moderate injury.

Attention
Notice indicating a dangerous situation which, if not avoided, could result in property damage.

Note
Notice including useful tips, recommendations and information for efficient and trouble-free operation of the digital pressure gauge.

1.3 Intended use

The GDP 400 high-pressure tester is used for static and dynamic fuel pressure measurements on Otto direct injection systems within the permitted ranges with the vehicle at a standstill and the engine cold.

Warning
Danger from improper use.
Any improper use and failure to observe safety and operating notices can result in serious malfunctions as well as personal injury and property damage.

– Only use the GDP 400 high-pressure tester in accordance with its intended use.
– All information in the operating instructions and safety data sheets must be strictly complied with.

1.4 Disclaimer

Failure to comply with the intended use will immediately void any warranty and guarantee claims against the manufacturer. No liability is accepted for damage or malfunctions caused by improper use, assembly errors or failure to observe the operating instructions.

1.5 Ambient conditions

The GDP 400 high-pressure tester is only to be used in commercial workshops.
The climatic requirements correspond to the conditions typically prevailing in Central Europe. Optimum function is ensured between -10 °C and +45 °C. The device must be stored within a temperature range of -20 °C to + 60 °C.

The GDP 400 high-pressure tester and its components must be secured against falling.

2. Product description

The GDP 400 high-pressure tester is a testing unit for static and dynamic fuel pressure testing of the high-pressure circuit on GDI (Gasoline Direct Injection) engines. For example, for static testing of the pressure pump when starting the engine or for dynamic system pressure testing at changing speeds while idling.

2.1 Device versions / delivery scope

GDP 400 high-pressure tester for GDI systems (analogue)

Item	Component	Quantity
①	Test block with analogue pressure gauge (with rubber protection cap), NG 100, measurement range 0…400 bar	1
②	Flexible pressure line M14 x 1.5 (length 0.7 m)	2
③	Adapter, M14 x 1.5 to M12 x 1.5	2
	Plastic case (not shown)	1

3. Prior to commissioning

3.1 Check the scope of delivery.

3.2 Prepare the high-pressure tester.

Depending on the desired measurement method, connect the pressure line(s) to the test block:

For static measurements:
Connect a pressure line (2) to the test block connection (without sealing cap).
Screw the sealing cap (on the chain) onto the second test block connection.
Tighten the measuring hose screw connection and the cap to 25 Nm.

For dynamic measurements:
Connect both pressure lines (2) to both test block connections and tighten to 25 nm.

3.3 Connect the high-pressure tester.

CAUTION
– Risk of injury due to leaking liquids or gases.
– The discharge of liquids that are under pressure may cause injuries.
Before switching on the ignition or starting the engine, examine the fittings for damage and check that they are properly tightened.
Risk of injury due to ejected parts.

– Pressurised systems may burst and cause parts to be ejected.
– Never open pressurised fittings.
Wear personal protective equipment, such as protective goggles, gloves and safety shoes when working on pressurised systems.

– Risk of injury due to flammable liquids.
– Leaking liquids may ignite.
Only attach and remove the high-pressure tester when the engine is cold.
Observe the specifications and instructions of the vehicle manufacturer

Attention
Follow the instructions and specifications of the vehicle manufacturer regarding the tightening torque of the fittings.
Use the high-pressure tester only for temporary measurements at a standstill.
Do not leave the unit in the engine compartment.

Connecting the high-pressure tester (static measurement)
Remove the high-pressure fuel line from the high-pressure pump according to the vehicle manufacturer's specifications. Attach the flexible pressure line of the tester to the high-pressure pump and tighten according to the vehicle manufacturer's specifications. Use a reducing adapter (3) if necessary.

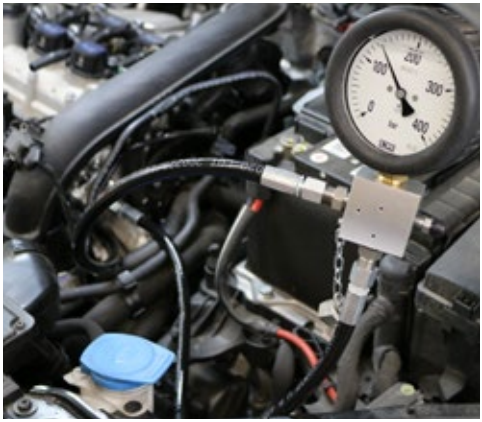
Connecting the high-pressure tester (dynamic measurement)
Connect the tester using the two flexible pressure lines (2) between the high pressure pump and the rail pipe and tighten according to the vehicle manufacturer's specifications. Use a reducing adapter (3) if necessary.

Before the measurement, the device must be completely vented bubble-free using the vent screw.
Make sure that the vent screw is closed, briefly actuate the ignition or starter, connect the collection container to the vent screw, slowly open the vent screw and vent the high-pressure tester. A correct display is only possible when the high-pressure tester is filled bubble-free.

4. Operation

Static measurement:
Briefly actuate the ignition to measure. Observe the display as the pressure builds and read off the measurement value.

Dynamic measurement:
Let the engine idle briefly to measure. Observe the display and read off the measurement value.



Before removing the high-pressure tester, the residual pressure must be released via the vent screw. To do this, connect the collection container to the vent screw, slowly open the vent screw and release the residual pressure, then loosen the flexible pressure line(s) from the pump and remove the tester.

Restore the original condition of the engine/vehicle.

5. Handling instructions

5.1 Care and storage

To enable effective working, we designed the high-pressure tester to be low maintenance. Nevertheless, you should still observe a few notes. This helps to ensure trouble-free operation and to preserve the value of the technology.

Note:
Damage to the high-pressure tester or individual components caused by aggressive cleaning agents or solvents. Do not use aggressive or abrasive cleaning agents, solvents or similar chemicals for cleaning.

– Keep the high-pressure tester and its components free of dust and dirt.
– Clean the device and components after each use.
– Store your product in a dry, dust-protected environment.
  Avoid places with higher temperatures and moisture or places which can become wet, also for maintenance.

– Keep the original packaging to avoid damage during transportation.

5.2 Maintenance and repair

– Regularly check the tightness and accuracy of the tester (30 seconds at 200/300 bar)

5.3 Environmentally friendly disposal

Recycling according to WEEE (EU Directive 2002/96 EC)
You can optionally return the high-pressure tester to us for disposal.
The high-pressure tester or its components must not be disposed of as normal waste.

If you prefer not to return the high-pressure tester to us for disposal, you are required to bring the device to a specialised centre for the separate collection and disposal of hazardous and special waste.

6. Technical data, specifications

Feature	Unit	Description
Burst pressure, pressure line	bar	800
Ambient temperature	°C	-10…+45°C
Storage temperature	°C	-10…45°C,
Media temperature	°C	-20…+80°C
Maximum relative humidity	% RH	<85% RH without condensation
Connection thread, pressure line	mm	M14x1.5
Thread adapter	mm	M14 x 1.5 to M12 x 1.5
Weight	kg	3
Dimensions L x W x H	mm	520 x 420

Feature	Unit	Measurement range (pressure gauge)
Measurement range relative	bar	0 … 400
Measurement range relative	psi	0…5800
Overpressure Pmax	bar	400
Accuracy	Class	1

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