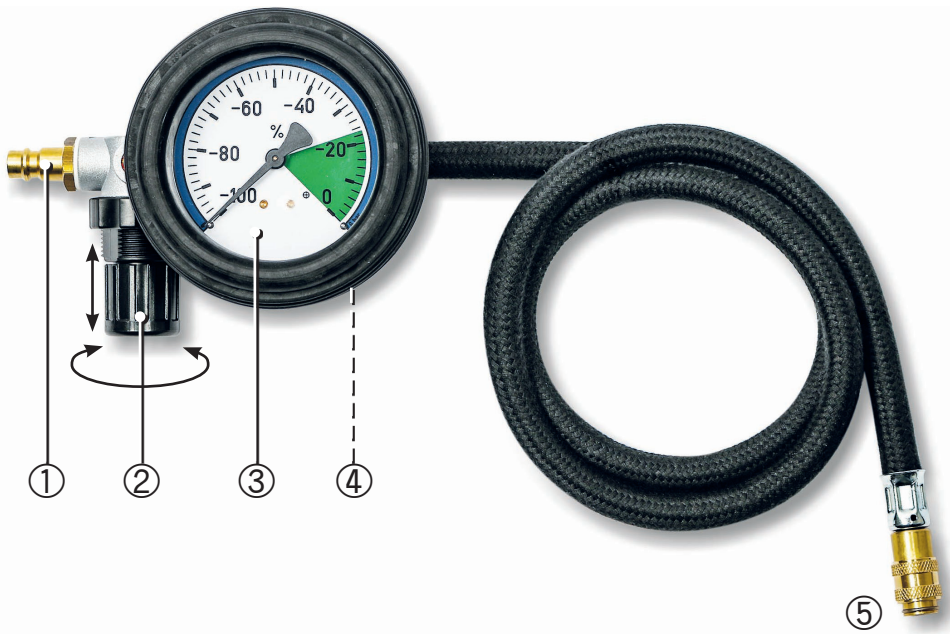


# VAS 522 001





NO.	Designation
①	Connection for workshop compressed air supply
②	Pressure control valve
③	Pressure gauge display
④	Calibration nozzle
⑤	Quick coupling
⑥	Connecting piece

## 1. Intended use

Engine pressure loss tester **VAS 522 001** is used to test the leak tightness of individual cylinders on petrol and diesel engines.

## 2. Safety notes



Safe working with the device is only possible if you read the operating instructions and safety information thoroughly and strictly observe the directions that they contain.



Do not make any design-related changes to the device.

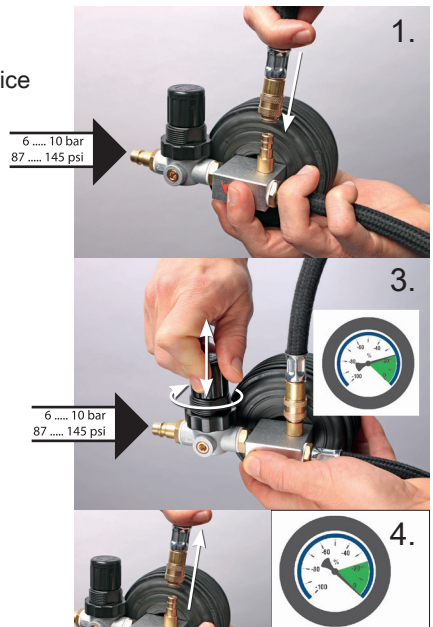


### WARNING

Work on the motor may only be performed by mechanics/mechatronics technicians with appropriate expertise and equipment.

## 3. Adjusting the device

1. Connect the quick coupling ⑤ to the calibration nozzle on the aluminium distributor block ④ (device bottom).
2. Connect the workshop compressed air supply to the input ① of the device.
3. Pull the cap ② of the pressure control valve and slowly turn clockwise. Set the display ③ to -23% and lock by pressing the cap.
4. Disconnect the quick coupling ⑤; the display must now show 0%.
5. The same admission pressure is now set for all cylinders. The test procedure can now begin.



## 4. Test procedure

- If possible, bring the engine up to operating temperature.
- Remove spark plug, injector or glow plug.
- The piston of the cylinder that is to be tested must be moved to TDC (top dead center). (Use VAS 522 001/1 for this purpose.)
- Screw the appropriate adapter into the cylinder that is to be tested. (ALL adaptations of compression pressure testing unit V.A.G 1763 can be used with VAS 522 001.)
- Connect the quick coupling (5) to the adapter.
- Read the display (3). If the display is in the range between 0 and -23% (green area), the currently existing engine pressure loss is OK.
- Repeat the test procedure for each individual cylinder.
- If the display goes beyond -23% (e.g., -30%), the engine pressure loss is unacceptable.\*
- The leak is localized in part by listening for the air noises or by feeling for the escaping air.

### \*NOTE



For older engines and for newer engines that have not yet been run in, the pressure loss may exceed -23% (e.g., -30%). The increased pressure loss is acceptable if all measured cylinders have the same pressure loss.

Differences in the pressure loss of up to 4% between the individual cylinders are not significant.

#### **Air escaping from:**

Intake manifold  
Exhaust manifold  
Oil filler neck, oil dipstick tube  
Cooling water filler neck

#### **Possible leak at:**

Inlet valve  
Outlet valve  
Pistons or piston rings  
Cooling system, cylinder head, cylinder head gasket

Subject to technical modifications.

2019/04

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# VAS 522 001/1





NO.	Designation
①	Quick coupling connection
②	Level
③	Sight glass

## 1. Intended use

Top dead center gauge **VAS 522 001/1** is used to determine the top dead center of the respective piston.

## 2. Safety notes



**Safe working with the device is only possible if you read the operating instructions and safety information thoroughly and strictly observe the directions that they contain.**



**Do not make any design-related changes to the device.**



### **WARNING**

**Work on the motor may only be performed by mechanics/mechatronics technicians with appropriate expertise and equipment.**

## 3. Use

To be able to perform a pressure loss test on the engine, it is necessary to set the cylinder that is to be tested to its top dead center (TDC).

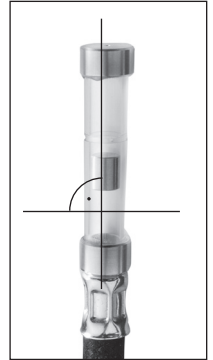
If this does not occur exactly, the piston is pushed down when pressure is applied and the crankshaft turns one half turn.

The marking present on the cam wheel usually applies only for the first cylinder of the engine. The top dead center of the other cylinders can be determined with the help of the top dead center gauge.

If the TDC marking cannot be seen on the cam wheel, the top dead center gauge can be used to determine the correct position of the engine.

## 4. Test procedure

- Screw a suitable adapter into the spark plug thread. ALL adaptations of compression pressure testing unit **V.A.G 1763** can be used with **VAS 522 001/1**.
- Connect the quick coupling ① of the **VAS 522 001/1** to the coupling nipple of the adapter.
- During the test procedure, make certain that the sight glass of the **VAS 522 001/1** is kept in a vertical position (see figure at right).
- Turn the crankshaft in the running direction (the piston pushes the level upwards) until the level ② stops rising. As soon as the TDC is exceeded, the piston draws the level downward again. TDC can thereby be identified by turning the crankshaft back and forth.



Subject to technical modifications.

2019/04

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2018/10/VAS522001/1OT04



# VOLKSWAGEN

AKTIENGESELLSCHAFT

## Allgemeine Sicherheitshinweise für die Anwendung von Spezialwerkzeugen der VOLKSWAGEN AG

## General Safety Instructions for the Use of Special Volkswagen Tools

VAS 522 001



Deutsch	DE
English	GB
العربي	AR
Български	BG
Português	BRA
Čeština	CZ
中文 (简体)	Cn
Dansk	DK
Español	ES
Eesti	EE
Suomi	FI
Français	FR
Ελληνικά	GR
עברית	HE
Hrvatski	HR
Magyar	HU
Italiano	IT
فارسی	IR
日本語	JP
한국어	KR
Lietuvių	LT
Latviešu	LV
Македонски	MK
Español	MX
Nederlands	NL
Norsk	NO
Polski	PL
Português	PT
Română	RO
Русский	RU
Svenska	SE
Slovenčina	SK
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Srpski	RS
Türkçe	TR
中文 (繁體)	TW
Українська	UA
English	US

# General Safety Instructions for the Use of Volkswagen AG Special Tools



US

## US-English:

For proper use of special tools, the properly trained technician using special tools must have access to the specific repair manual from the respective Volkswagen Group brand. Each user must carefully read and follow the applicable repair manual instructions before using special tools.

The warnings must be read, understood and heeded before performing any repairs.

Repair manuals are available the respective brand importer or via the importer's internet home page.

The repair manual must always be available at the location where any special tools are being used. In addition to the repair manual and applicable mandatory regulations on accident prevention, general safety rules, regulations and precautions must also be followed when using special tools.

The safety information must stay with the special tool and must be available whenever the special tool is to be used.

Damage caused by improper use or misuse will void any applicable warranties applicable to the special tool.

### **WARNING**

Misuse of the special tool or failure to comply with the generally applicable safety precautions can result in cuts, crushing injuries, amputation, or even death.

Make sure that only qualified and properly trained personnel use special tools.

Technicians who have not been trained on the use of special tools must never be allowed to use the special tools.

Special tools must be thoroughly inspected before every use.

Special tools must only be used for the purpose intended by the manufacturer.

Never handle special tools carelessly, throw or drop or otherwise permit special tools be damaged.

Never modify or rebuild special tools.

Volkswagen AG does not authorize any modifications or changes to special tools.

Any damage to special tools must be repaired to prevent corrosion. For example, Special tools that cannot be properly repaired must be replaced.

Special tools must be cleaned every six months or more frequently if necessary. The user must thoroughly inspect special tools after they have been cleaned to make sure that they can be used properly and safely for designated repair procedures.

