

Stepp motors for idle control for Audi vehicles

si 0055 **GB**

MSI-PG 03.01

Vehicle: Audi			Product: Stepp motor	
Type	Engine	Enginecode	Pierburg-No.	O.E.-No. *)
Audi 80 / Audi 100	2,6l V6	ABC	4.07501.52.0	078 133 455 D
Audi A4 / Audi A6	2,6l V6	ABC		
Audi Cabrio / Audi Coupé	2,6l V6	ABC		

For the above vehicles, the product range has been extended by the addition of stepp motors, Fig. 1.

Please note different names are used for stepp motors in practice, e.g. idle control, idle fuel governor, idle control valve, valve for idle stabilisation, stepp motor, etc.

Via the stepp motor, the idle speed is kept virtually constant under all loads with the engine at temperature. Depending on the load condition and coolant temperature, it regulates the air flow for start, warm-up and maintaining the idle speed (idle fuel governor). The stepp motor is seated in an air duct as a bypass to the throttle valve directly at the throttle housing, Fig. 2.

Scope of supply

According to Fig. 1, including O-ring (arrow).

Complaints

The following complaints can indicate a faulty stepp motor:

- Idle too high or too low
- Irregular or unstable idling
- Engine stops after cold start or thrust phase

In case of complaint, the fault memory should be read out. In the event of malfunctions of the stepp motor or deviations from the required idle speed fault codes are indicated, see next page.

Testing and installation information

See next page.

For changes

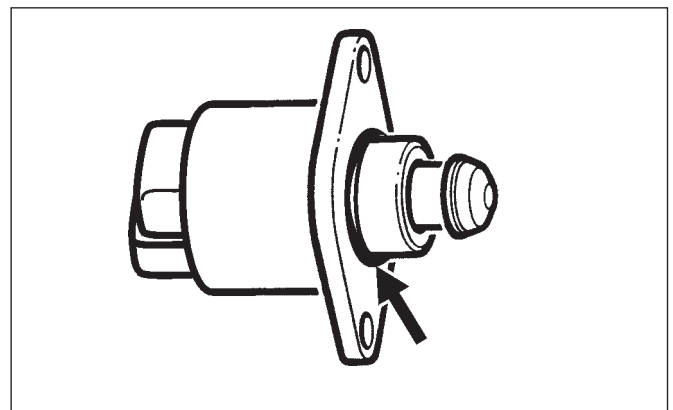


Fig. 1 Stepp motor with O-ring (arrow)

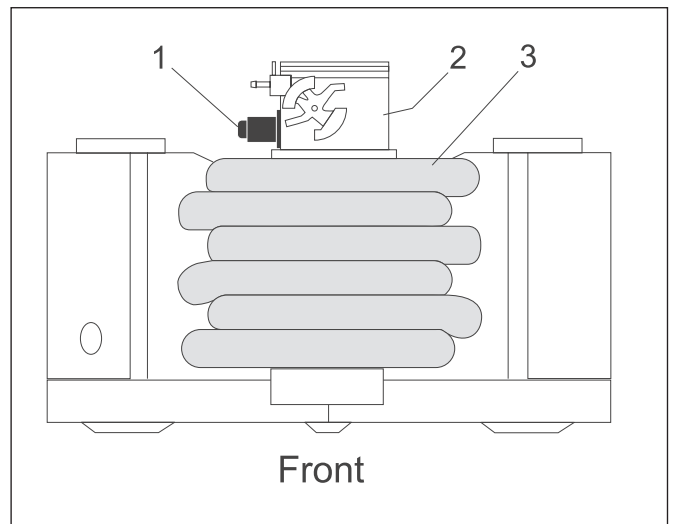


Fig. 2 Top view of engine

- 1 Stepp motor
- 2 Throttle housing
- 3 Intake pipe

*) The listed reference numbers should be listed for comparison only. They may not be used on invoices sent to final users.

Subject to change of illustrations and text.

For changes with regard to respective matching and replacements, refer to the catalogs, TECDOC-CD or systems basing on TECDOC-data, which are currently in effect.

Fault codes

The fault codes shown in the table are indicated in the event of malfunctions of the stepp motor at the V.A.G. 1551 diagnosis unit. The display indication may deviate on standard equipment.

Possible fault code and display indication	Possible cause	Remedial action
00533 Idle control Adaptation limit exceeded	<ul style="list-style-type: none"> • Stepp motor (Audi designation: N71) not correctly positioned or sticks in a closed condition • Stepp motor faulty 	<ul style="list-style-type: none"> • Carry out basic adjustment with V.A.G. 1551 • Check function
00533 (fault code as above) Idle control Adaptation limit not reached	<ul style="list-style-type: none"> • Stepp motor sticks in open condition • Interruption in cable connection to control unit • Secondary air 	<ul style="list-style-type: none"> • Check function • Check cable connections according to circuit diagram of vehicle manufacturer • Locate leaks and eliminate
01257 Valve for idle stabilisation -N71 interruption	<ul style="list-style-type: none"> • Cable interruption or short-circuit to ground or positive between stepp motor and control unit 	<ul style="list-style-type: none"> • Check cable connections according to circuit diagram of vehicle manufacturer

Testing

Note: The adjusting cone (arrow), Fig. 3 of the stepp motor must not be removed from the housing or threaded rod due to a risk of damage.

Testing functions

- Switch off ignition.
- Unscrew stepp motor and carefully remove.
- Connect connector to stepp motor.
- Switch on ignition.

Required value:

The adjusting cone of the stepp motor must retract.

- Apply light axial pressure to the end of the adjusting cone with the thumb (arrow), Fig. 3 and subsequently switch off the ignition.

Required value:

The adjusting cone of the stepp motor must extend.

If the stepp motor does not react as described, measure the coil resistance.

Measuring coil resistance

- Measure the resistance at both stepp motor coils as shown in Fig. 4.

Required value: 45 to 60 Ω respectively.

If the required value is not reached, renew the stepp motor.

If the stepp motor is o.k. the cable connections should be tested for open-circuit and short-circuit to ground or positive according to the circuit diagram of the vehicle manufacturer.

Important installation information

- Prior to installation, the seat in the air duct must be cleaned.
- Ensure correct seating of O-ring (arrow), Fig. 1.
- Following installation of the stepp motor, basic adjustment must be carried out with the V.A.G. 1551 diagnosis unit, i.e. the adjusting cone must be moved into the basic position.

If this diagnosis unit is not available, proceed as follows:

- Carefully withdraw the adjusting cone of the stepp motor (without exerting force) until the dimension "A", Fig. 5 is reached (do not withdraw completely).
- In this position, carefully fit the stepp motor and screw tight. The adjusting cone thus closes the bypass.

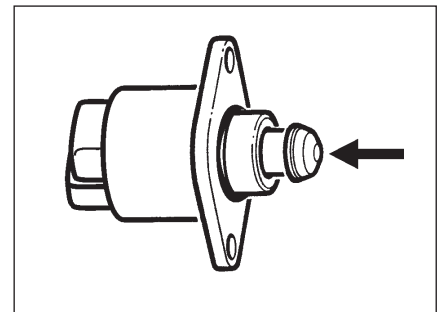


Fig. 3 Stepp motor

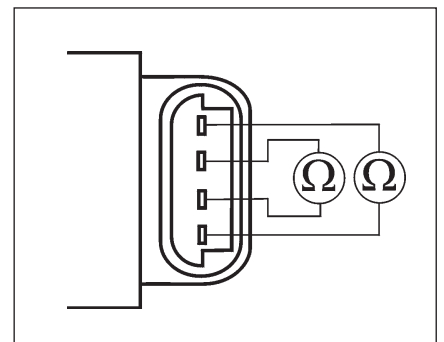


Fig. 4 Resistance measurement at stepp motor

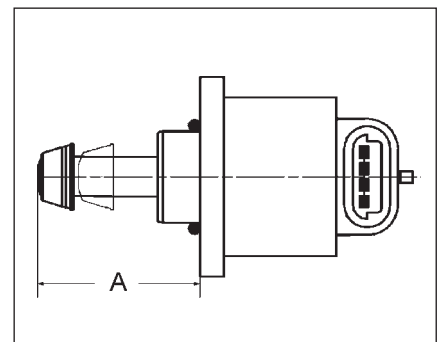


Fig. 5
A -Adjustment dimension as an orientation for installation **35 to 36 mm**