AUTLOG also offers exhaust gas recirculation valves – EGR-valves (standard abbreviation), available from stock Glinde!

• High fuel consumption
• Rough engine running over the whole rpm range
• Loss of power
• Poor cold running characteristics
• Reduced torque
• Bad or delayed throttle response
• Rough idling
• The diagnostic device indicates a fault in the MAF or in the lambda sensor
• Engine switches to emergency mode on highways (max. 100 kph)
• The engine control lamp lights up

A MAF defect becomes apparent as listed:
- The engine control lamp lights up
- Engine switches to emergency mode on highways (max. 100 kph)
- The diagnostic device indicates a fault in the MAF or in the lambda sensor
- Rough idling
- Bad or delayed throttle response
- Reduced torque
- Poor cold running characteristics
- Loss of power
- Rough engine running over the whole rpm range
- High fuel consumption

One-part and two-part MAF:

One-part MAF.
5 occupied pins with 6-pole plug
Pin 1 – supply + 5 Volt
Pin 2 – mass (sensor)
Pin 3 – supply + 12 Volt
Pin 5 – MAF signal
Pin 6 – MAF signal
Pin numbering is visible at the MAF.

Two-part MAF (tube with sensor insert).
4 occupied pins with 5-pole plug
Pin 2 – supply + 12 Volt
Pin 3 – mass (sensor)
Pin 4 – supply + 5 Volt
Pin 5 – MAF signal
In the two-part MAF, pin 1 is placed at the rounded side of the plug.

Quality
AUTLOG mass airflow meters are produced in dust-free atmosphere according to ISO/TS 16949.

Functions:

I. Generation =
Hot Wire Mass Airflow Meter – HW MAF (standard abbreviation)

The mass airflow meter consists of a hot wire component (platinum wire) and an air temperature sensor. These are no moving parts which may occur any flow resistance in the MAF. Mostly, the measuring unit is fitted in a bypass channel, to avoid multiple measurements caused by pulsations in the intake pipe. The hot wire element is heated electrically. The air temperature sensor determines the heating current demand, which is electronically regulated in such a way, that the temperature difference between the hot wire element and the air flow (100°C) is kept constant. Accordingly, the more warm air passes the hot wire, the higher the heating current has to be.

The heating current is a measurement of the air volume that flows through the bypass channel. This measuring principle is able to compensate fluctuations in both air pressure and temperature. You’ll get a clean hot wire by “burning free” following the short increase in heat (100°C) after turning off the engine.

These particular mass airflow meters will fail in cases of increasing pollution of the hot wire. The problem has mostly been solved by the new generation of hot wire mass airflow meters.

Current Generation =
Hot Coat Mass Airflow Meter – HC MAF (standard abbreviation)

The electrically heated sensor element rises into the air flow. The sensor’s temperature is always kept at a constant level. Heat is extracted from the sensor element by the air flow. This means that more energy is used with larger air mass flow, to keep the sensor’s temperature constant. In this design, burning-free is no longer required.

An analogue voltage signal (e.g. between 0 and 5 V) for the control unit of fuel engines is used as a tool to calculate the injection quantity, and the exhaust gas recirculation rates of diesel engines.

Oil, moisture and vibrations (diesel) make MAF clog up and soiled. Thus HC MAF are not wearfree and will partially fail – depending on the conditions of use – after 30000 km, or will cause incorrect measured values.

Causes of MAF defects:
- Increased vibrations due to construction errors in the vehicle, frequency in diesel engines, or incorrect installation of the MAF may cause a break of the sensor plate – then the MAF immediately fails.
- Soiled or damaged surface. External influences, such as poorly filtered intake air (average flow velocity ca. 50–200 m/s) and sandpaper, too much moisture in the air drawn, which is additionally spotted with dissolved aggressive road salt or water, or even oil, that comes through the crankcase ventilation, will run down the MAF more quickly.
- Aging after a mileage of 100000 km. Thus decreasing measurement value and performance losses.
- Lowering the MAF because of the vibrations is cheaper.
- Poor cold running characteristics
- Loss of power
- Rough engine running over the whole rpm range
- Increased fuel consumption

Replacement of the MAF:
- Be sure to thoroughly check the surroundings of the MAF before changing, such as blocked intake channels, dirty air filter, low boost pressure for turbo diesel, leakage between MAF and charger, and strong oil/soot deposits behind the exhaust gas recirculation.
- As experience shows, the sole cause is mostly the defective MAF. By replacing the MAF the problem is solved quickly.
- Adaption to the ECU is affordable!
- Recommended additional repair: air filter

Technical Information: Mass Airflow Meters