The key idea of the controller is an intuitive system focused on fast and easy installation, where the number of on-board functions meets the needs of most cars. The versatility of the controller is also emphasized by the number of supported vehicle groups operated in sequential, semi-sequential or full group modes.

**Functionality:**
- new hardware platform based on a 32-bit processor,
- optional extension with new application functions,
- new, intuitive PC application with a clear display of parameters and simple calibration,
- application sessions without the controller in use (demo mode),
- a switch with an integrated buzzer and simplified installation method – only 3 wires are required for connection,
- new compact housing made of plastic and working at -40...+140°C, resistant to moisture.

**Easy calibration:**
- all functions are arranged on two panels and no tab switching is required,
- on-board oscilloscope functionality,
- if the PC communication cable has been disconnected, the controller attempts to restore the transmission itself.

**Application functions:**
- reminder about the planned gas system service check
- preview of working parameters on the oscilloscope
- petrol injection time map 2D
- operating mode – CNG fueling
- engine rpm signal filter
- operation with various types of injection control (standard, doubling)
- engine type, standard or turbocharged
- intelligent post-injection
- post-injection cut-out threshold
- integrated corrections for gas temperature and pressure
- gas injectors heating
- map of correction based on gas temperature
- reducer pressure reduction upon cut-off (discharge)
- setting of the allowed number of emergency starts
- sound alarm for emergency start
- hot start
- map of correction based on gas pressure
- automatic setting of gas level
- “Leaning on cold engine” option – limiting the maximum injection time on a cold engine (VAG)
- detection of gas pressure sensor fault
- auto-calibration – “all injectors together” option
- map of correction based on reducer temperature
- freeze frames for controller faults
- switch visualization in the diagnostic application
- information on the vehicle and gas system
- petrol ratio (petrol adding)
- automatic adjustment of the multiplier
- reading of rpm based on petrol injection pulsing
- detection of missing or overloaded solenoid valve
- test of actuating devices: injectors, solenoid, buzzer
- option for changing injection sequence
- Valvetronic, start&stop, multiair options

**Extremely simple installation and calibration**
STAG 200 GoFast does not require connection to the ignition switch, what makes installation much shorter. There are also improvements related to rpm calculation based on injection times – there is no need to connect the wire with rpm signal. Connection of the switch has also become simple, as it includes only three installation wires.
STAG-4 QBOX PLUS controller for sequential autogas injection has been designed for vehicles with 4-cylinder engines with indirect injection. The unit is provided with all the functions of the proven controllers of STAG-4 and STAG-300 lines, what guarantees versatility and high quality. The new controller is equipped with an integrated OBD adapter and an optimized auto-adaptation assistant (ISA2).

**Improved self-adaptation based on ISA2 ensures the following:**
- dedicated ISA2 correction map independent of the rpm correction for injection times,
- precise acquisition of the reference petrol injection timing map at 1 kPa accuracy, with allowance for engine warm-up status,
- exact identification of open and closed loop modes for engine operation.

Additionally, it combines the traditional approach to gas dosage correction based on the reference petrol injection time map with the information acquired from the onboard OBD diagnostic systems so the control can be even more responsive to changes in mechanical components of the system and changes in the strategy of fuel dosing by the petrol ECU during system operation.

*The extended OBD reading options enable the viewing of all parameters accessed through the onboard OBD2/EOBD diagnostic system (e.g. wide-band oxygen sensor, mass air flow sensor, short-term and long-term corrections, etc.), as well as reading and deleting any saved and pending faults.*

**Benefits:**
- new ISA2 self-adaptation assistant
- integrated OBD adapter
- support for CAN and K-LINE compliant with OBD2/EOBD
- extended options for OBD* reading
- connection to the LED 401 switch with 3 wires
- modern design
- hardware platform based on a 32-bit microprocessor dedicated for automotive solutions
- wide range of operating temperatures allowed (-40°C +125°C)
AC R02 single-stage reducer designed for sequential injection autogas systems. It is used to reduce the pressure of liquid gas fed from the LPG cylinder and to transform it into a gas phase (vaporizing).

Its characteristics include small dimensions and unique design made of two aluminum castings and a hard plastic cover – not present in competitive reducers.

The high temperature efficiency and resistance to contaminations present in LPG, make it the best choice when selecting the components of LPG systems.

A new solution is the fitting, using only one central screw, which allows almost any mounting position. The versatility is enhanced by 120° and 90° elbows.

Stability is the word describing AC R02, as it not only provides constant pressure for the injection rail during driving, but is also fitter-friendly during the adjustments.

**Functional description:**
- Application: LPG reducer, single-stage, for sequential gas injection
- Design: two aluminum castings and a hard and resistant plastic cover
- Safety: compliant with Regulation R67
- Engine power: 120 HP
- Precision: pressure control within 0.9 – 1.5 bar
- Installation: gas inlet M10x1, gas outlet: hose Ø 12, elbows Ø 16

**Advantages:**
- reduced pressure drops at high load
- stable control
- high temperature efficiency
- high resistance to LPG contaminations
- small dimensions
- compact design
The four-section AC W02 injector offers excellent performance and a standardized range of applications with other products of AC S.A., both the new and older ones.

AC W02 has been designed for LPG and CNG injection systems in all engines, including turbocharged ones.

AC W02 ensures the following:
- very good and stable parameters of injection: opening time ~2.0 ms, closing time ~1.0 ms,
- fast and easy installation;
- modern and fine-tuned construction to ensure excellent performance;
- long service life thanks to the high quality of selected materials and innovative design.

AC W02 works perfectly in spite of the driving style and engine load.

Advantages of W02 injectors:
- plastic body, reduced weight and improved resistance to the negative effects of gas,
- easier installation due to reduced dimensions and weight,
- compatibility with the previous version of W01, as well as competitive products,
- designed for LPG and CNG injection systems in all engines with various power ratings, including turbocharged ones.
- innovative design solutions and improved materials ensuring excellent operating performance and body strength,
- test versions of the injector as 3-, 2- and 1-secton units installed directly at the intake manifold, with the optional installation of PS-04 sensor on one of the injectors,
- switchable plug and feed connection (feeding on any side) and installation of PS-04 sensor (on any side) that can be turned by 360° even after it is installed on the injector,
- service life reaching 100 km in urban driving or 200 km in highway driving.

Compared to the previous version of AC W01 injector, AC W02 has been redesigned to ensure the best injection times in any conditions by the use of specially selected materials, as well as a light and simple construction which allows easier installation. AC W02 has been designed so that it can be easily used to replace W01 in the existing systems. Additionally, the system of connecting the components brings greater configuration. The structure also offers the installation of the integrated gas temperature and pressure sensor PS-04 with low inertia of the response to gas temperature changes on any side and with 360° turning functionality even when installed on the injector.

W02 responds quickly to even minimum and transient load changes due to the excellent opening and closing characteristics. The minimum number of components and a plastic body make it light and simple.
Technical specification of AC W02-4, flow 120 l/min (black body):

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature [°C]</td>
<td>-20 do +120</td>
</tr>
<tr>
<td>Maximum working pressure [kPa]</td>
<td>400</td>
</tr>
<tr>
<td>Opening / closing time [ms]</td>
<td>2.0 / 1.0</td>
</tr>
<tr>
<td>Dedicated nozzle diameters [mm]:</td>
<td>Ø 1.5; Ø 1.8; Ø 2.0; Ø 2.2; Ø 2.4 (reaming allowed)</td>
</tr>
<tr>
<td>Gas inlet fitting [mm]</td>
<td>Ø 12</td>
</tr>
<tr>
<td>Gas outlet fitting [mm]</td>
<td>Ø 6</td>
</tr>
<tr>
<td>Overall dimensions [mm]</td>
<td>125 x 60 x 68</td>
</tr>
<tr>
<td>Service life [km]</td>
<td>- city driving mode: 100 k</td>
</tr>
<tr>
<td></td>
<td>- highway driving mode: 200 k</td>
</tr>
<tr>
<td>Weight [g]</td>
<td>410</td>
</tr>
</tbody>
</table>

Technical specification of AC W02-4, flow 150 l/min (light brown body):

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature [°C]</td>
<td>-20 do +120</td>
</tr>
<tr>
<td>Maximum working pressure [kPa]</td>
<td>400</td>
</tr>
<tr>
<td>Opening / closing time [ms]</td>
<td>2.3 / 1.2</td>
</tr>
<tr>
<td>Dedicated nozzle diameters [mm]:</td>
<td>Ø 1.5 (reaming allowed); Ø 2.4; Ø 2.8; Ø 3.2</td>
</tr>
<tr>
<td>Gas inlet fitting [mm]</td>
<td>Ø 12</td>
</tr>
<tr>
<td>Gas outlet fitting [mm]</td>
<td>Ø 6</td>
</tr>
<tr>
<td>Overall dimensions [mm]</td>
<td>125 x 60 x 68</td>
</tr>
<tr>
<td>Service life [km]</td>
<td>- city driving mode: 100 k</td>
</tr>
<tr>
<td></td>
<td>- highway driving mode: 200 k</td>
</tr>
<tr>
<td>Weight [g]</td>
<td>410</td>
</tr>
</tbody>
</table>

**Standards and approvals:**

W02 is compliant with the approval E8-67R-01 and UNECE Regulations.