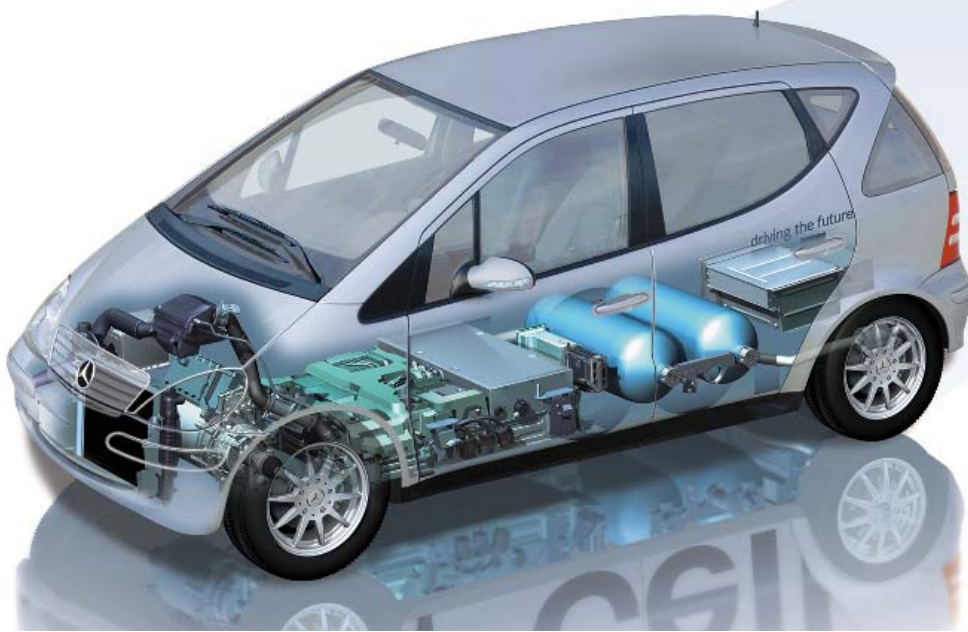


Components and Systems for the Automotive Industry









For reliable and cost-effective production, the automotive industry requires high operational availability of its systems. There must be confidence in internal plant technology and externally supplied components - from a single fitting up to highly complex assemblies – in order to avoid production down-time, variations in quality or even expensive call-backs.

Tescom Europe offers the automotive industry and its suppliers standardised as well as customised solutions for all pressure and flow control applications. We design, engineer, manufacture and install components and automated systems for pressure and flow regulation of gases and liquids. But our commitment does not end with the delivery of the product: if requested by our customers we also carry out inspection, maintenance and optimisation of all our components and systems at regular intervals. This is why Tescom Europe maintains its distinctive image as an innovative and experienced partner within the automotive industry.

Components for filling & testing

Series	Inlet pressure	Outlet pressure	Flow capacity
44-1100 	Pilot for dome loaded reducing regulator P ₁ : up to 690 bar	P ₂ : up to 414 bar	C _V : 0,06
<ul style="list-style-type: none"> • Precise pressure control (increasing/decreasing) due to self-venting • High reliability, long service life due to piston sensed design • High accuracy and repeatability • Non-venting versions for pilot gases like H₂ or CNG 			
26-2000 	Regulator for filling of fuel cell driven vehicles (FC) P ₁ : up to 1035 bar	P ₂ : up to 690 bar	C _V : 0,12
<ul style="list-style-type: none"> • Precise pressure control (increasing/decreasing) due to captured self-venting • High reliability, long service life due to piston sensed design • High accuracy and repeatability • Air actuated version optional 			
44-4000 	Regulator for filling of compressed natural gas driven vehicles (CNG) P ₁ : up to 414 bar	P ₂ : up to 240 bar	C _V : 2,0
<ul style="list-style-type: none"> • High flow capacity with low pressure drop due to pilot control • Balanced main valve - minimised outlet pressure fluctuations • High reliability, long service life due to piston sensed design • Spring loaded versions optional 			
ER-3000 	Electronic controlled PID regulator Max. control pressure P: 7 bar Set point signal: 4-20mA, 1-5 VDC or RS-485 Feedback signal: 4-20mA, 1-5 VDC		
<ul style="list-style-type: none"> • PID control algorithm enables highest accuracy • Can be combined with various mechanical regulators • Digital communication via RS-485 			
VA & VG 	Air operated shut-off valve Max. operating pressure P: 690 bar or 1034 bar Actuation pressure P _S : 2 bis 4 bar Flow capacity C _V : 0,75 bzw. 2,0		
<ul style="list-style-type: none"> • Normally open (N.O.) or normally closed (N.C.) • Balanced main valve reduces required actuation pressure • Compact package 			

Components for vehicle use

Modell	Inlet Pressure	Outlet pressure	Flow capacity
20-1000 	Pressure reducing regulator for compressed natural gas (CNG)		
	P ₁ : up to 248 bar	P ₂ : up to 35 bar	C _V : 0,5
	<ul style="list-style-type: none"> • High reliability, long service life due to piston sensed design • Balanced main valve - minimised outlet pressure fluctuations • Water heating jacket reduces temperature problems (freezing) • Available with ECE R110 approval 		
CNG-Block 	Regulator manifold for compressed natural gas (CNG)		
	P ₁ : up to 248 bar	P ₂ : up to 35 bar	C _V : 0,8
	<ul style="list-style-type: none"> • Based on the improved 20-1000 series regulator • Solenoid valve for inlet pressure shut-off • Pressure transmitter for controlled outlet pressure optional • Relief valve with bleed line to protect the downstream side 		
20-1200 	Pressure reducing regulator for fuel cells (FC)		
	P ₁ : up to 690 bar	P ₂ : up to 31 bar	C _V : 0,5
	<ul style="list-style-type: none"> • High reliability, long service life due to piston sensed design • Balanced main valve - minimised outlet pressure fluctuations • Inlet pressures up to 690 bar with stainless steel body 		
20-1400 	Pressure reducing regulator for fuel cells (FC)		
	P ₁ : up to 18 bar	P ₂ : up to 13 bar	C _V : 1,6
	<ul style="list-style-type: none"> • High accuracy due to diaphragm sensing • Dome loaded with bias spring 140 mbar • Captured bonnet design for safety 		
44-6000 	In-Line pressure reducing regulator for fuel cells (FC)		
	P ₁ : up to 18 bar	P ₂ : up to 13 bar	C _V : 1,6
	<ul style="list-style-type: none"> • High reliability due to positive shut-off • Balanced main valve - minimised outlet pressure fluctuations • Compact size because of in-line design • Inlet pressures up to 690 bar with stainless steel body 		
VA & VG 	Air operated shut-off valve		
	Max. operating pressure P: 690 bar or 1034 bar Actuation pressure P _S : 2 bis 4 bar Flow capacity C _V : 0,75 bzw. 2,0		
	<ul style="list-style-type: none"> • Normally open (N.O.) or normally closed (N.C.) • Balanced main valve reduces required actuation pressure • Compact package 		

Automated Systems

Automated solutions / Test benches

Central gas supply systems

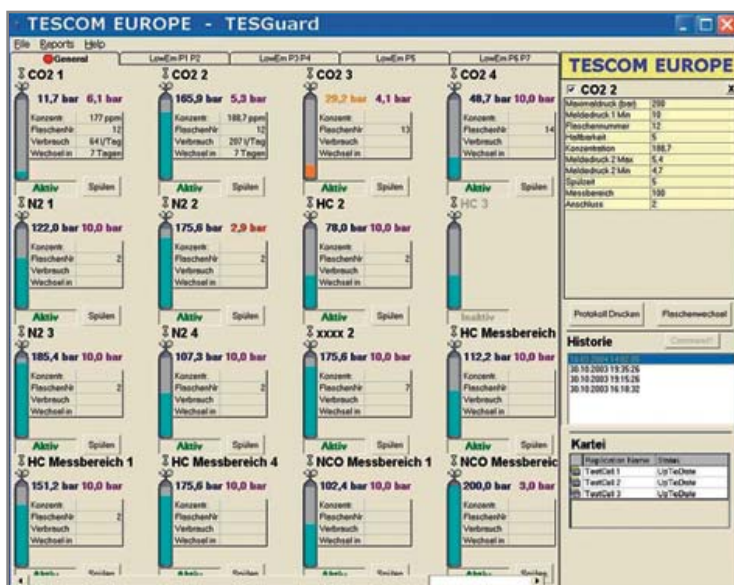
Tescom Europe designs, manufactures and installs central gas supply systems for non-corrosive and corrosive gases and gas mixtures up to gas purity level 6.0 and beyond. As basic components these systems include a cylinder station as the gas source (cylinder, cylinder bundles, vaporiser tank), the piping system to the final point-of-use, the central and local floor junction boxes and the point-of-use outlets.

By centralising the gas supply source the potential health risks for users are minimised and optimised plant operating efficiency may be achieved. An integrated safety concept, consisting of cylinder cabinet, gas warning and emergency shut-off systems complete the supply chain.



TESGuard gas management system

Gas management systems are used to continuously and reliably monitor central gas supply installations in industrial plants, laboratories and research institutes.



Tescom Europe's microprocessor controlled gas management system TESGuard supervises and logs all relevant parameters within the gas supply system. It monitors all functions automatically, records all relevant operating conditions and reacts without delay in the situation where pre-set limits are exceeded, shutting-down the central supply system or selected sub-systems.

Automated functional testing of exhaust gas test benches

To ensure correct analysis, exhaust gas test benches require accurate calibration during the various test cycles or after a change of calibration gases. As this is usually done manually, it is a time-, staff- and cost-consuming procedure.



TESCOM EUROPE offers the **APT series**, an **Automated Performance Test-bench** for exhaust gas analysers. The APT controls during the analysis of up to ten different purge and calibration gases and assures continual accuracy of pre-set values. Additional safety functions - e.g. an automated tightness check of the whole tubing system - are integrated into the system. The main benefits for the users are: human error during the performance tests is eliminated, testing time is minimised and the repeatability of the test cycles is significantly increased.

TESCOM EUROPE also designs, develops and manufactures customised test benches for a variety of "alternative fuel" applications (CNG, H₂).

Automated test bench for air bag cartridge filling

Cold gas generators are gas cartridges filled with pressurised speciality gases. They discharge their stored gas pressure instantaneously if the air bag system is activated. The released energy then inflates the air bag system.

Depending on the application, cold gas generators are filled to different pressure levels. The rate of pressure increase and accurate fill pressure are essential for the product quality. Pressure regulating systems from **TESCOM EUROPE** accurately control the filling process and adapt automatically to differing cartridge types. The high-precision plant control assures a reliable and continuous production cycle, minimised rejections and improved repeatability.



Hose test benches

TESCOM EUROPE hose test benches are used to test the function, tightness and strength of all types of hoses under a predefined pressure load. The pressure load – varying from a few bar up to several hundred bar - is controlled by an electronic pressure regulation system and linked to a PC or PLC. This means that the test cycles can be fully automated, all data electronically logged and stored in a local database. Different test protocols can be generated and each test procedure may be visualised on-screen.



References

Audi

MAN

AVL

Opel

Ballard

Peus

Bauer

Phoenix

BMW

Pierburg

Bosch

Porsche

ContiTech

Proton Motor

Daimler Chrysler

Ricardo Consulting Engineers

Dynetek

Siemens

Eberhard Technology

Sonplas

FEV

Steyer

Ford

TRW

Horiba

VW

Livbag

Weh

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