MAXIMATOR®

Maximum Pressure.

High Pressure Technology • Testing Equipment
Hydraulics • Pneumatics

Content

Your partner for high-pressure and testing technology

MAXIMATOR GmbH successfully develops complex systems in high-pressure and testing technology, hydraulics and pneumatics and has been the market leader in these segments for decades.

As a specialist for high-pressure equipment up to 25.000 bar, we are a partner to reputed companies in the automotive and supplier industry, and in the chemicals, plastics, oil and gas sectors.

Maximator has many years of experience with components, power units and systems. We give professional advice, plan projects and supply testing and manufacturing systems. We also develop special solutions precisely customised to the requirements of our customers.

Our high-performance service department not only carries out the installation and maintenance of the machines, we also inspect and retrofit our products, both nationally and internationally.

In our own testing laboratories it is possible to test the product before the start of the project; we also carry out exceptional individual and series testing.

Hydrogen technology reduces CO_2 output - But is it safe?

Many components for the development of this future technology are exposed to extreme stresses. Maximator meets this challenge with innovative high pressure test technology for hydrogen components such as valves, pipes or CGH vessels.

We can carry out all legally prescribed testing on pressure-bearing components with our test technology: from individual acceptance to type approval testing. We also offer gas control technology for hydrogen applications - approved effective and reliable technology for automotive manufacturers and suppliers.

Join us on our journey into a clean and save future.

Components

Electro Hydraulic Booster

Check valves

Air operated valves

Pressure generation

Technical specifications:

- Double acting reciprocating piston booster
- Electro hydraulic linear drive with high energy efficiency and high force
- Use of flushing ports avoids the formation of explosive H_2 concentrations
- Pressure ranges up to 1.050 bar
- CE Ex II 2G/2D IIC compliant version will be available soon

Direction related shut-off

Technical specifications:

- Highly reliable because of special cone shaped poppet/ seal combination for low leak rates across the orifice
- PEEK seal enables use in wide temperature range from - 50°C up to + 200°C
- Pressure range up to 1.550 bar

Air operated shut-off

Technical specifications:

- Compact air operated valve in normally closed (N.C) and normally open (N.O.) design
- Temperature ranges from - 20°C to + 80°C for bank operation and from - 73°C to + 80°C for dispenser operation
- Mechanical open/close indication
- CE Ex II 2G/2D IIC compliant
- Required actuation pressure 2 to 10 bar
- Pressure range up to 1.050 bar

In addition to our standard gas booster, valves, fittings and tubing portfolio, specific products for hydrogen applications have been designed. These meet the requirements regarding safety, reliability and durability of typical hydrogen applications. For the completion of high pressure instrumentations the standard hand operated valves, fittings and tubing are suitable. Please refer to the Maximator VFT catalog for further information. Materials are austenitic stainless steel grades which comply with EIGA and/or KHK requirements.

Systems - Research & Development

Burst test chamber with sacrificial elements

Extreme temperature pressure cycle test stand

Leak test stand

Burst or proof test

Technical specifications:

- Pressure: up to 4.000 bar
- Fluid: e.g. water
- Volume: as required
- Diameter: as required
- Length: as required
- Pressure increase: controllable
- Pressure tolerance: < 0,1 bar

Optional:

- MAXIMATOR software
- Length-, circumference-, diameter-, volume-, temperature measurement
- High speed recording
- Mechanical treatment (e.g. torsion)

Pressure cycle test

Technical specifications:

- Pressure: up to 1.400 bar
- Volume: as required
- Diameter: as required
- Length: as required
- Frequency: depending on specimen
- Pressure curve: e.g. sinus
- Pressure tolerance: < 1 bar
- Fluid: water glycol mixture or heat transfer fluid
- Ambient and fluid temperature: ≤ - 40°C up to ≥ + 85°C
- Humidity: up to 98%

Optional:

- MAXIMATOR software
- Length-, circumference-, diameter-, volume-, temperature measurement
- Test chamber with or without temperature control
- High pressure heat exchanger

Leak test

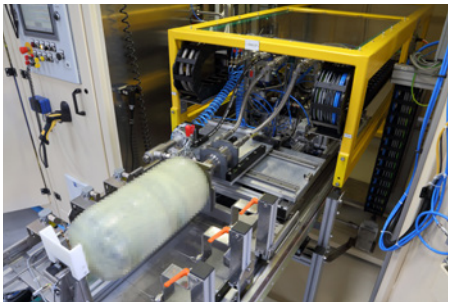
Technical specifications:

- Pressure: up to 1.050 bar
- Volume: as required
- Diameter: as required
- Length: as required
- Fluid: tracer gas (e.g. helium)
- Measurement: local with sniffer

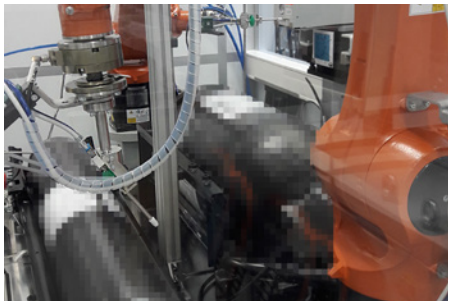
Optional:

- MAXIMATOR software
- Vacuum chamber (integral measurement)
- Gas pre-cooling
- Length-, circumference-, diameter-, volume-, temperature measurement

Systems - End of Line



CNG proof pressure test



Hydrogen leak test stand

CNG pressure cycle test stand

Proof pressure test

Technical specifications:

- Pressure: up to 1.050 bar
- Volume: as required
- Diameter: as required
- Length: as required
- Fluid: e.g. water
- Pressure increase: controllable
- Filling: automatic
- Draining: automatic

Optional:

- MAXIMATOR software
- Length-, circumference-, diameter-, volume-, temperature measurement
- Communication with superior production system
- Automation (e.g. with robots)
- Disassembly of tooling

Leak test

Technical specifications:

- Pressure: up to 875 bar
- Volume: as required
- Diameter: as required
- Length: as required
- Fluid: tracer gas (e.g. helium)
- Measurement: local or integral

Optional:

- MAXIMATOR software
- Length-, circumference-, diameter-, volume-, temperature measurement
- Communication with superior production system
- Gas pre-cooling
- Automation (e.g. with robots)
- Assembly of On-Tank-Valve (OTV)

Batch tests (burst, cycle, torque)

Technical specifications:

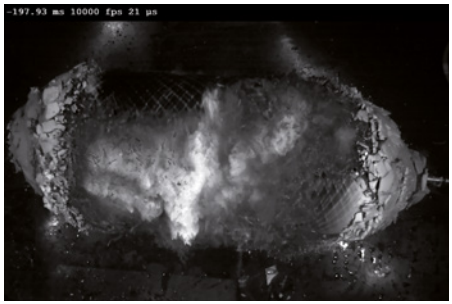
- Pressure (burst): up to 2.000 bar
- Pressure (cycle): up to 1.050 bar
- Volumen: as required
- Diameter: as required
- Length: as required
- Fluid (burst): water
- Fluid (cycle): water glycol mixture
- Pressure increase: controllable
- Pressure curve (cycle): sinus

Optional:

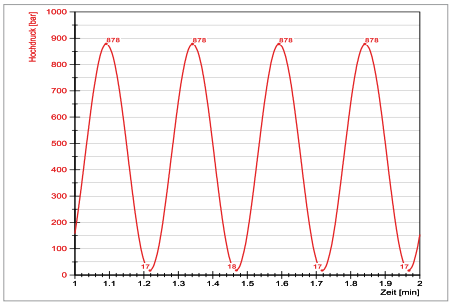
- MAXIMATOR software
- Length-, circumference-, diameter-, volume-, temperature measurement
- Communication with superior production system
- High speed recording

Service

Common regulations



High speed recording of burst process



Reproducible sinus curve

Regulations

Short overview:

- EC79/2009
- EU406/2010
- ECE R67
- ECE R110
- ECE R134
- DIN EN 12245
- DIN EN 14427
- HGV 2 / 3.1
- NGV 2 / 3.1
- UN GTR No. 13
- ISO 11119-3
- ISO 11439
- ISO 15869
- SAE J2579
- SAE J2601

Not limited to above mentioned regulations.
More on request.

Burst or proof pressure test

Technical specifications:

- Pressure: up to 4.000 bar
- Fluid: e.g. water
- Volume: up to 500 l
- Diameter: up to 1.000 mm
- Length: up to 4.000 mm
- Pressure increase: controllable
- Pressure tolerance: < 0,1 bar
- Temperature: + 20° ± 5°C

Optional:

- Length-, circumference-, diameter-, volume-, temperature measurement
- Test within temperature chamber
- High speed recording
- Laser optical 3D deformation measurement
- Torsional moment up to 10.000 Nm
- Bending moment up to 15.000 N

Pressure cycle test

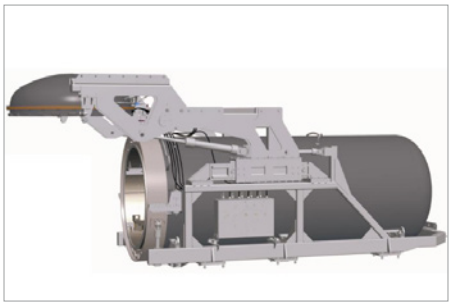
Technical specifications:

- Pressure: up to 1.400 bar
- Volume: up to 500 l
- Diameter: up to 1.000 mm
- Length: up to 4.000 mm
- Frequency: depending on specimen
- Pressure curve: e.g. sinus, trapezoid
- Pressure tolerance: < 1 bar
- Fluid: water glylol mixture
- Ambient temperature: + 20°C ± 5°C
- Fluid temperature: < + 40°C

Optional:

- Length-, circumference-, diameter-, volume-, temperature measurement
- Laser optical 3D deformation measurement
- Torsional moment up to 10.000 Nm
- Bending moment up to 15.000 N
- Pre-treatment (e.g. chemical, thermal, flaw, drop, crash)

Climate chamber



Safety chamber

Bonfire test

Extreme temperature pressure cycle test

Technical specifications:

- Pressure: up to 1.400 bar
- Volume: up to 500 l
- Diameter: up to 1.000 mm
- Length: up to 4.000 mm
- Frequency: depending on specimen
- Pressure curve: e.g. sinus
- Pressure tolerance: < 1 bar
- Fluid: heat transfer fluid
- Ambient and fluid temperature: ≤ - 40°C up to ≥ + 85°C
- Humidity: up to 98%

Optional:

- Length-, circumference-, diameter-, volume-, temperature measurement
- Pre-treatment (e.g. chemical, thermal, flaw, drop, crash)

Hydrogen cycle test

Technical specifications:

- Pressure: up to 1.050 bar
- Volume: up to 150 l (6 kg hydrogen)
- Diameter: up to 600 mm
- Length: up to 2.500 mm
- Frequency: < 1 cycle per hour
- Pressure tolerance: < 1 bar
- Fluid: hydrogen
- Ambient temperature: ≤ - 60°C up to ≥ +120°C
- Fluid temperature: ≤ - 60°C up to ≥ + 60°C
- Humidity: up to 98%

Optional:

- Length-, circumference-, diameter measurement
- Pre-treatment (e.g. chemical, thermal, flaw, drop, crash)
- Hydrogen cycle test until major leak or rupture

Bonfire and penetration test

Technical specifications:

- Pressure: up to 1.050 bar
- Volume: up to 500 l
- Diameter: up to 1.000 mm
- Length: up to 4.000 mm
- Fluid (bonfire): hydrogen
- Fluid (penetration): nitrogen
- Temperature (bonfire): up to + 1.000°C
- Projectile: ≥ 7,62 mm

Optional:

- Length-, circumference-, diameter measurement
- High speed recording
- Pre-treatment (e.g. chemical, thermal, flaw, drop, crash)
- Without OTV or TPRD

Your contact for the next step:

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