



AUTOCLAVES

LARGE PROJECTS
REQUIRE STRONG TEAMS

www.akarmak.com.tr
www.autoclave.com.tr



akarmak
• autoclaves • tire retreading • projects

**turnkey autoclave
systems with** high
degree of safety

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LARGE PROJECTS
REQUIRE STRONG TEAMS

ABOUT US

Akarmak, founded in 1990, manufactures autoclaves and pressure vessels for various industries including the Composite Materials, Glass Industry, Tire Retreading - Rubber Vulcanization, Building Materials, Medical Waste Sterilization.

Our autoclaves are manufactured in our state-of-the-art manufacturing facilities in the city of Eskisehir, with close proximity to major cities and ports. From the customer requirement acquisition stage to design, manufacturing, test, delivery and on-site commissioning, Akarmak is capable of providing turnkey and boutique solutions for every customer need.

The autoclaves are designed using advanced design tools and software meeting the highest safety and quality standards. We approach every project as unique and custom-made, and we can handle customer specific requests. The autoclaves are manufactured with limited reliance on outside suppliers and carried out by an experienced, highly trained and certified work force and technical staff.

Akarmak has the following certifications including those for autoclave and pressure vessel manufacturing:

- Pressured Equipment Directive 97/23/EC (PED)
- Simple Pressure Vessels Directive 2009/105/EC (SPVD)
- ASME SEC VIII Div. 1
- GOST - R
- DIN EN 15085-2 CL 1
- DIN EN ISO 3834-2
- Other certificates that may be required by different countries and jurisdictions.

To certify our autoclaves, we work with internationally well-known certificate agencies such as Bureau Veritas, TUV, Hartford Steam Boilers.

Thank you for your interest in our company and our products. We look forward to realizing successful projects with you and enhancing your value chain with high quality products.

Please do not hesitate to contact us if you have any questions. You can also visit us at www.akarmak.com.tr and www.autoclave.com.tr to get more information about our company and our products.

QUICK FACTS

- State of the art machinery manufacturing facility
- Professional management team with experience and knowledge
- Highly-skilled workforce (incl. certified welders)
- High machining capacity and advanced design capabilities
- Conveniently located in the hub city of Eskisehir (close to ports and major cities)
- ISO 9001 – 2008 certified and providing CE Certification
- Well executed future growth plans
- Export and growth oriented international company
- High degree of flexibility and access to numerous subcontractor companies allow Akarmak to manage high-volume projects



STRONG
TEAMS

FACTORY

LOCATION

Eskişehir, Turkey Conveniently located close to ports and major cities.

FACTORY

27.000 m² factory space in Eskişehir Industrial Zone

QUALITY

ISO 9001-2008 certified with advanced engineering capabilities

ASME, CE, GOST-R

DIN EN 15085-2 CL 1, DIN EN ISO 3834-2

Professional management with well executed future growth plans



SOFTWARE & HARDWARE CAPABILITIES

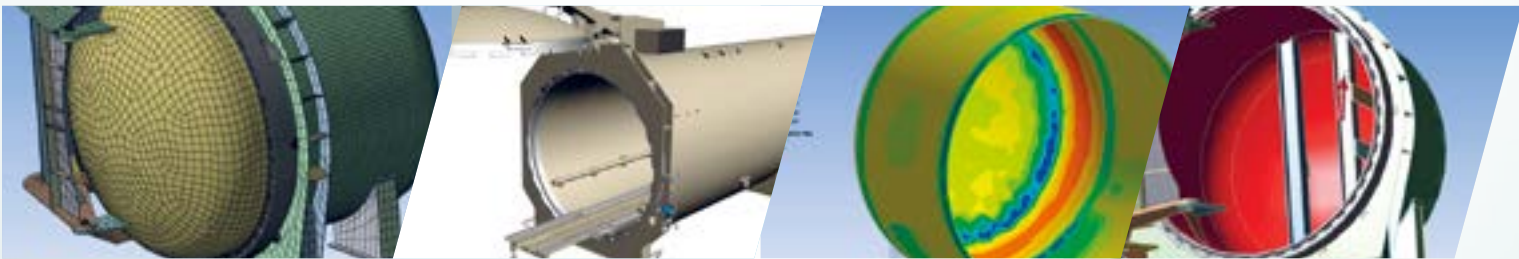
IFS (ERP & MRP) SOFTWARE

PV ELITE(PRESSURE VESSEL DESIGN & ANALYSIS)

PROFIRST CAD-CAM

AUTODESK INVENTOR

ANSYS CFD Flo w/MRF



WELDING

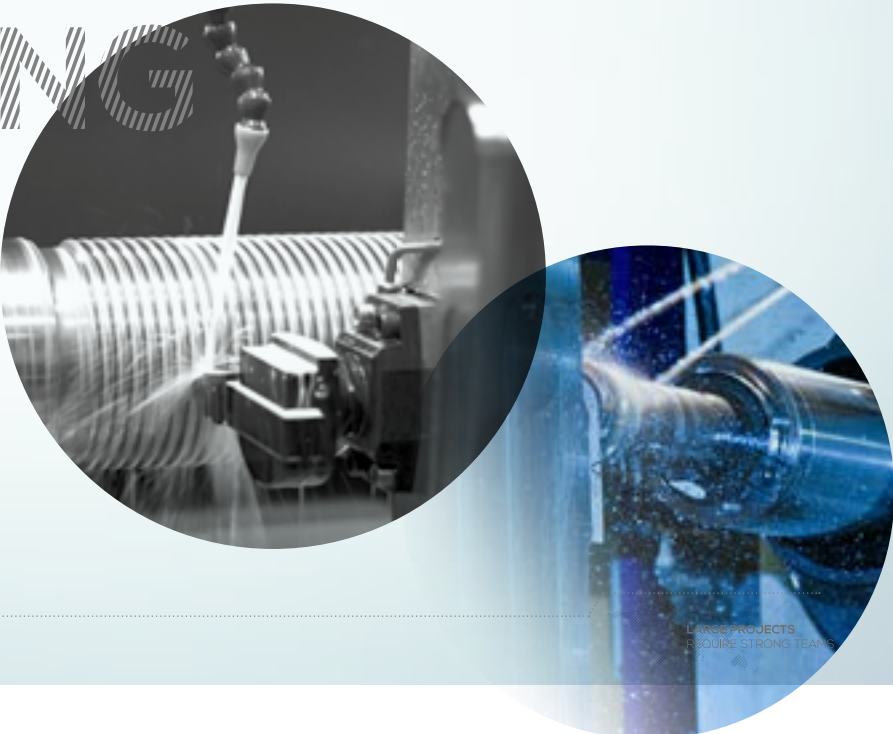
SUBMERGED ARC WELDING (Linear and circular parts using column boom and Welding stations) (SAW)
METAL ARC WELDING (MIG & MAG) (GMAW)
TIG WELDING (Tungsten Inert Gas Welding)(TIG/GTAW)
ELECTRODE WELDING (MMA /SMAW)

SPECIAL WELDING TESTS

- RADIOGRAPHIC TEST
- ULTRASONIC TEST
- DYE PENETRANT TEST
- MAGNETIC PARTICLE TEST
- VISUAL TEST



MACHINING



STRONG CONNECTION WITH INNOVATION

AUTOCLAVES

Safety is critical when it comes to autoclaves, and manufacturing is based on accepted standards.

AKAR'S AUTOCLAVE SYSTEMS SAFETY IS GUARANTEED BY THE FOLLOWING

Material used is special material used for pressure vessels.

Safety switches used at the door system showing the door as open/closed and locked

Advanced PLC control system controlling maximum and minimum pressure values through PLC

Mechanical over pressure valve system

Manufacturing based on 97/23/EC Pressure Equipment Directives (PED) or ASME or GOST-R standards

Manufacturing based on 98/37/AT Machinery Safety Regulation

Manufacturing based on CE, ASME, GOST-R standards

Certified autoclaves by world well-known certification agencies such as Bureau Veritas, TUV, Hartford Steam Boilers etc.

10 year safety guarantee as part of CE/ASME



COMPOSITE AUTOCLAVES

FOR PRODUCTION & LAB APPLICATIONS

TURNKEY AUTOCLAVES FOR

AEROSPACE



AUTOMOTIVE



MOTO SPORTS



MARINE INDUSTRIES



COMPOSITE AUTOCLAVES FOR PRODUCTION



TECHNICAL FEATURES

Composite autoclaves for various composite material curing applications in production

Up to Ø 5000 and ability to offer custom-made sizes to respond to customers unique requests

260 °C (500 °F) @ 10,5 Bar (150 psi) ; 400 °C (750 °F) @ 14 Bar (200 psi) working conditions

User friendly and maintenance-free PC based control system offering the best heating, cooling rates and temperature uniformity

Adaptable to different electrical voltage conditions

Project specific number of vacuum, thermocouple connections

Ability to set up turnkey systems including cooling units, autoclave trolleys, compressor sets, nitrogen units

Authorized onsite commissioning and assembly services around the world and ongoing after-sale support

Manufactured at state-of-the-art manufacturing facilities

Advanced safety features with available certification of PED 97/23/EC CE, ASME, GOST-R

10 year safety guarantee as part of CE/ASME





COMPOSITE AUTOCLAVES

FOR LAB APPLICATION

TECHNICAL FEATURES

Composite autoclaves for various composite material curing applications

Specifically designed and offered for R&D usage at universities, research centers, laboratories and preproduction tests

260 °C (500 °F) @ 10,5 Bar (150 psi) ; 400 °C (750 °F) @ 14 Bar (200 psi) working conditions

User friendly and maintenance-free PC based control system offering the best heating, cooling rates and temperature uniformity

Adaptable to different electrical voltage conditions

Project specific number of vacuum, thermocouple connections

Ability to set up turnkey systems including cooling units, autoclave trolleys, compressor sets, nitrogen units

Authorized onsite commissioning and assembly services around the world and ongoing after-sale support

Manufactured at state-of-the-art manufacturing facilities

Advanced safety features with available certification of PED 97/23/EC CE, ASME, GOST-R

10 year safety guarantee as part of CE/ASME



GLASS LAMINATION AUTOCLAVES

FLAT
(ARCHITECTURAL)
GLASS

AUTO
GLASS

BULLET
RESISTANT
GLASS

TECHNICAL FEATURES

Lamination Autoclaves for Flat (Architectural), Auto Glass, and Bullet Resistant laminated glass production

Custom-made solutions with various diameter and length options including jumbo size glass lamination process

Durable bayonet door system and alternative door opening systems depending on customers' project requirements

Excellent heating, pressurizing, depressurizing and cooling phases guaranteeing perfect end product

Special motor fan system to create optimum temperature and air distribution

Standard heating system: Electrical or thermal

User friendly control system

Energy conservative heating and insulation system

Multiple point safety control devices and built with highest safety standards

Optional features: Vacuum system, autoclave trolleys, cooling units, compressor sets

Manufactured at state-of-the-art manufacturing facilities

Advanced safety features with available certification of PED 97/23/EC CE, ASME, GOST-R

10 year safety guarantee as part of CE/ASME



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CERTIFIED**



TIRE RETREADING AUTOCLAVES



15" TO
63"

OTR TIRE

AUTOCLAVES

TECHNICAL FEATURES

Certified P series material suitable for pressure vessels

Bayonet door closure systems

Hydraulic door opening and locking mechanism

Precured or Orbitread system automation control

Advanced PLC software able to control time, temperature, pressure, DPC functions (precured) automatically

Manufactured at state-of-the-art manufacturing facilities

Advanced safety features with available certification of PED 97/23/ EC CE, ASME, GOST-R

10 year safety guarantee as part of CE/ASME



HIGHEST SAFETY STANDARDS



DESCRIPTIONS

	Inner Diameter	Length	Capacity	Heating System	Working Pressure	Tire Curing
AKR 881	2300 mm/90"	4900 mm/193"	29,50 R 25 x 4 Tires	Electrical / Indirect Steam	6 Bar/90 psi	J Hook
AKR 384	3100 mm/122"	4000 mm/158"	27,00 R 49 x 4 Tires	Direct / Indirect Steam	6 Bar/90 psi	J Hook
AKR 434	3500 mm/138"	5000 mm/197"	36,00 R 51 x 4 Tires	Direct / Indirect Steam	6 Bar/90 psi	Console
AKR 389	3900 mm/153"	5500 mm/216"	40,00 R 57 x 4 Tires	Direct / Indirect Steam	6 Bar/90 psi	Console
AKR 337	4600 mm/181"	3500 mm/138"	59/80 R63 x 2 Tires	Direct / Indirect Steam	6 Bar/90 psi	Console

TRUCK TIRE

AUTOCLAVES



TECHNICAL FEATURES

Fully computerized plc controlled

Electrical heating system with efficient use

Preheating feature

Vacuum test function

Working pressure: 6 bar (90 psi)

Advanced safety features with available certification of PED 97/23/EC CE, ASME, GOST-R

10 year safety guarantee as part of CE/ASME

HIGHEST SAFETY STANDARDS



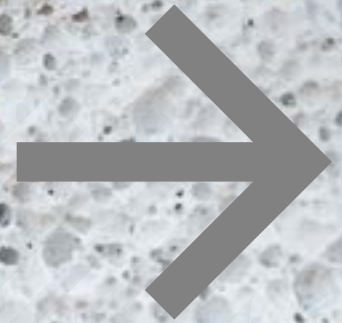
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DESCRIPTIONS

	Capacity	Inner Diameter (mm)	Length (mm)	Heating System	Working Temperature
AKR 291	12 Tires	1600 mm / 63"	4500 mm / 177"	Electric	120 °C / 248 °F
AKR 293	16 Tires	1600 mm / 63"	6000 mm / 236"	Electric	120 °C / 248 °F
AKR 294	20 Tires	1600 mm / 63"	7500 mm / 295"	Electric	120 °C / 248 °F
AKR 297	24 Tires	1600 mm / 63"	9000 mm / 354"	Electric	120 °C / 248 °F



BUILDING MATERIALS AUTOCLAVES

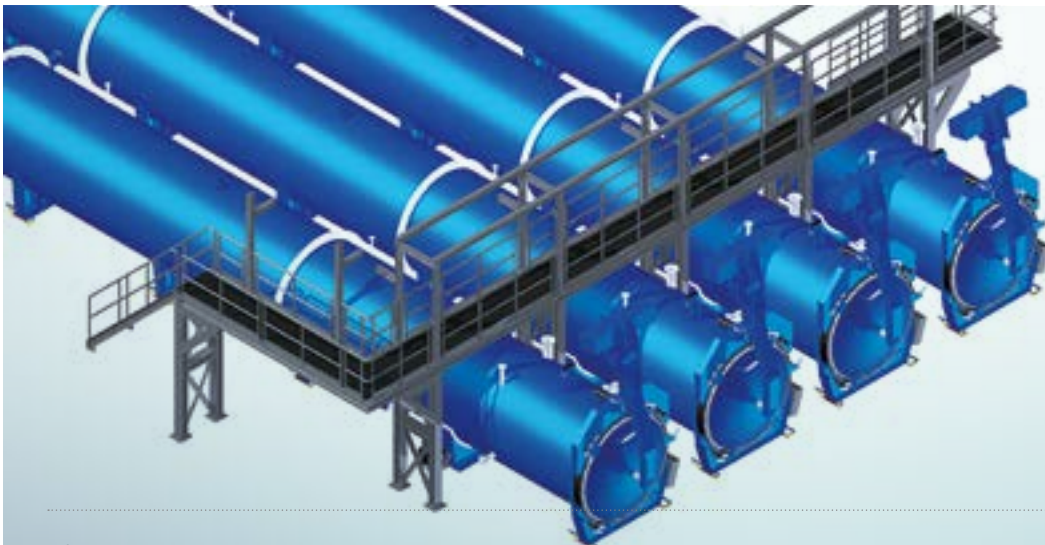


BUILDING MATERIALS

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AUTOCCLAVE

For the production of **HIGHEST SAFETY**
AAC blocks, Sand Lime
Bricks, Fiber Cement STANDARDS

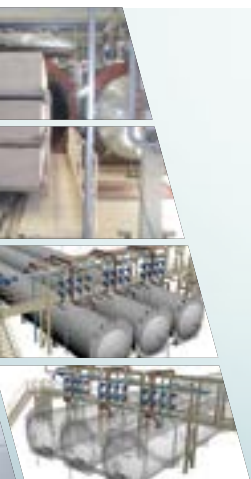


LARGE PROJECTS
REQUIRE STRONG TEAMS



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Complete manufacturing of the autoclave
bayonet door and shell

Vacuum ring system and steam distribution
piping

Direct steam heating

Internal rail system

Multiple point safety control devices and
built with highest safety standards

Design and manufacturing based on
international standards including CE, ASME,
GOST-R

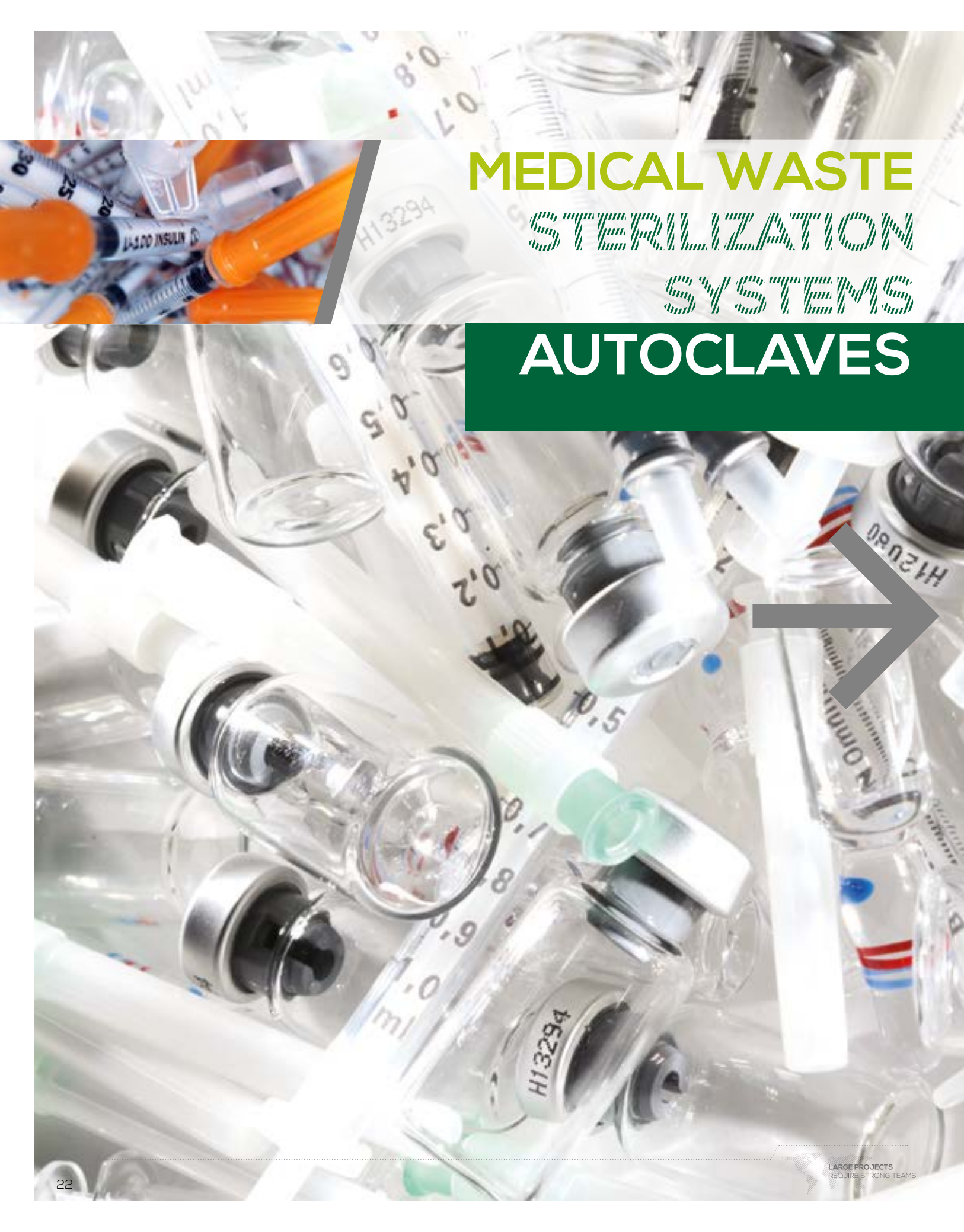
200 °C and above service temperatures

15 bar and above operating pressure

Maximum diameter : 5.0 m

Maximum length : 50.0 m

Manual or automatic closure control system



MEDICAL WASTE STERILIZATION SYSTEMS

AUTOCLAVES

POST & PRE SHREDDING SYSTEMS



MEDICAL WASTE STERILIZATION SYSTEM WITH POST & PRE SHREDDED AUTOCLAVE METHODS

- High quality materials
- Various hourly capacity sterilization systems based on specific customer needs
- Full automatic and advanced automation control system with pressured direct steam sterilization in autoclave
- Automatic shredding after loading into shredder's lifter
- Advanced reporting and monitoring features
- High standard of sterilization meeting requirements by regulations
- Turnkey solutions including shredders, autoclave trolleys, steam generators, air compressor systems
- Special gasket system for perfect vacuum and pressure conditions
- Multiple safety control devices and built with highest safety standards
- Design and manufacturing with international standards including CE, ASME, GOST-R



RUBBER VULCANIZATION AUTOCLAVES



TECHNICAL FEATURES

- Custom made design and manufacturing based on specific customer needs
- Project/application specific working pressure and temperature
- Various heating systems including direct/indirect steam, electrical, gas
- Homogenous heat distribution
- Advanced automation control system and product specific recipes
- Turnkey solutions including autoclave trolleys, steam generators, air compressor systems
- Advanced safety features with available certification of PED 97/23/EC CE, ASME, GOST-R
- 10 year safety guarantee as part of CE/ASME



PRESSURE VESSELS

TECHNICAL FEATURES

Special vessel manufacturing for project based applications such as filters, vacuum chambers, air receivers, impregnators and many more

Custom-made sizes in diameters up to 5000 mm and working pressure up to 80 bars

Multiple point safety control devices and built with highest safety standards

Design and manufacturing based on international standards including CE, ASME, GOST-R



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LARGE PROJECTS
REQUIRE STRONG TEAMS

**Safe turnkey
autoclave systems** for our
customers around the globe



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CERTIFICATIONS





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