



Industrial  
autoclaves





## About company

Company Kurgankhimmash is one of the leading Russian factories to design and manufacture autoclaves engineered to conduct processes at changing temperature and pressure.

Kurgankhimmash autoclaves are running on construction, aviation, chemical, industrial rubber, non-ferrous and ferrous metallurgy factories and other industries over 30 years with high reliability.

Currently Kurgankhimmash LLC has implemented the project to expand the autoclave range under the heavy machinery import substitution state program.

Factory has modernized capacity and heavy equipment in order to launch into production autoclaves to produce composite items and replace similar equipment of world's manufacturers on Russian market.

### Types of manufactured autoclaves

- For building industry;
- For composite materials;
- Curing;
- Impregnating;
- Wood modification;
- Food industry.

Autoclaves may be fabricated in the design other than the range suited for customer's process.

**Length** – up to 50 000 mm

**Equipment diameter** – up to 4 000 mm

**Pressure** – up to 2 MPa (20 kgs/cm<sup>2</sup>)

**Operating temperature** – up to 250 C

All autoclaves are equipped with new bayonet closure. Closure is fabricated on the latest horizontal boring mill TOS Varnsdorf WRD 150 Q. This allowed to improve the processing accuracy significantly and change the technology of opening/closing autoclave cover.



## Composite autoclaves



Composites win greater popularity in fields where mechanical properties should match small weight and possibility to sustain high loads. The improvement of technologies used in modern composite production contributes to tougher requirements to workmanship of fabricated items. Consequently the need to apply most high-tech equipment is increased.

Company Kurgankhimmash offers autoclaves designed for composite polymerization. These units allow to construct high-tech items characterized by small weight but at the same time high resistance to mechanical loads and temperature.

Good components of world manufacturers are used at fabrication of composite autoclaves. We do gradient distribution and heat flow velocity calculations inside autoclave which together with APCs designed based on world manufacturers guarantees equal composite heating inside autoclave.

Kurgankhimmash autoclave scope may include the following equipment and services:

- Vacuum plant;
- Compressor station/ Nitrogen station;
- Air receiver;
- Cooling system/ cooling stack;
- Accessories transportation system;
- Autoclave design to operate on nitrogen;
- Loading trolley design with split vacuum hook-ups;
- Electric tractor to load trolley with item into autoclave;
- Autoclave installation at end user location.



Fluid temperature — up to 400 °C  
Pressure — up to 2 MPa (20 kgs/cm<sup>2</sup>)  
Length — up to 50 000 mm  
Diameter — up to 4 000 mm

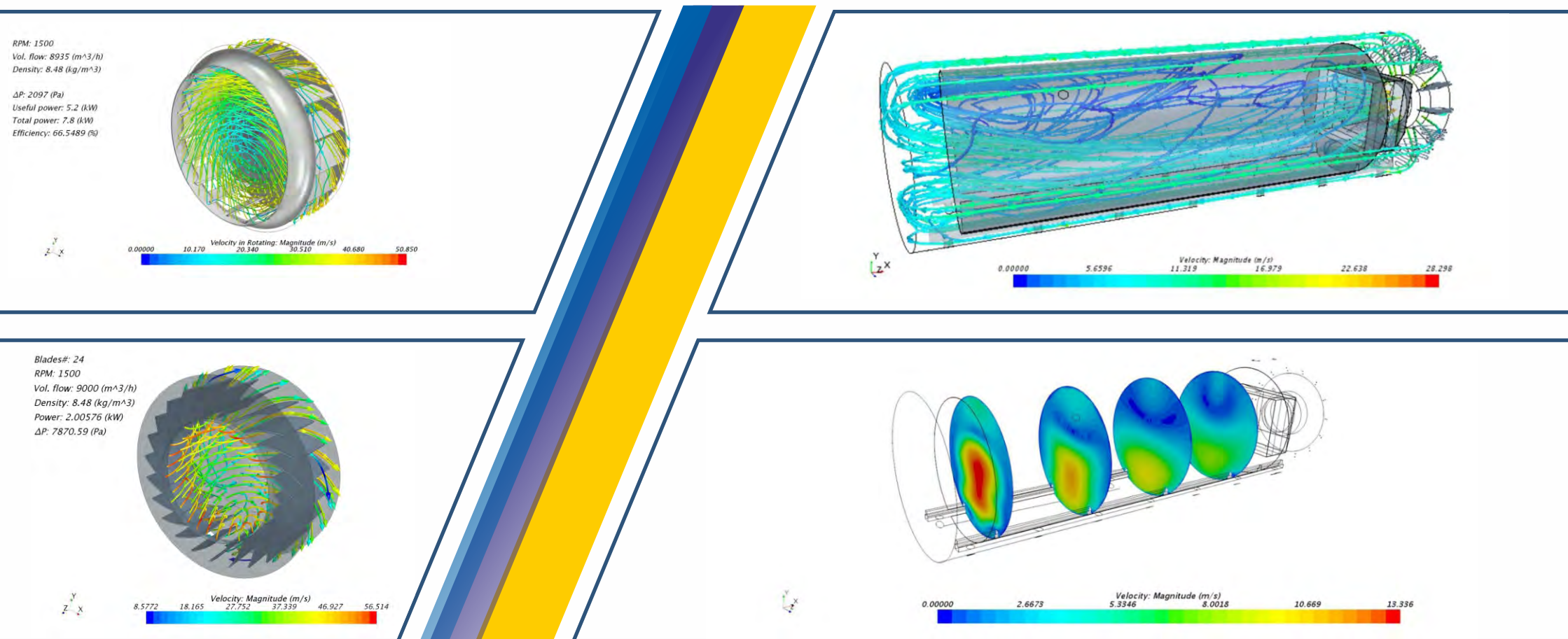


Autoclave foreign manufacturers can remotely control supplied equipment. In case of troubles equipment supplier may lock process control program stopping autoclave molding.



## SFD analysis

Technological calculation of suitable shape of impeller, diffuser and air channels with CFD methods to ensure even heating/cooling in every point of autoclave work envelope.







## Autoclave 3D Model

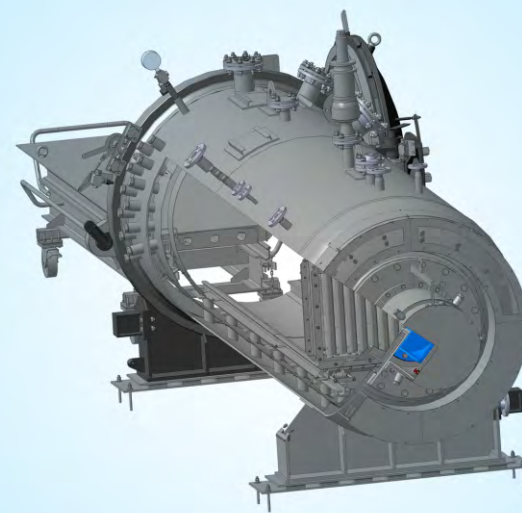
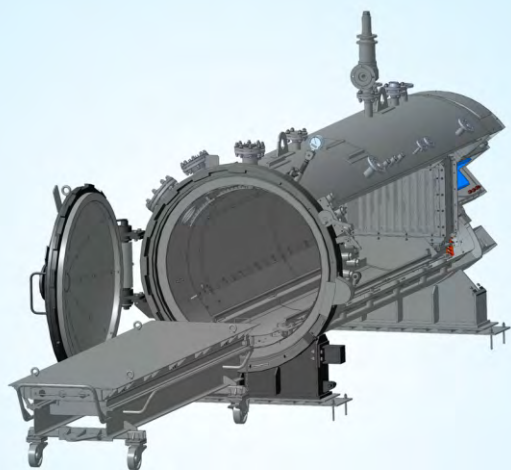
### **Autoclave ABTM 1300-5000-860-ЭВ**

Service: composite polymerization

Specifications:

Work envelope length — 3000 mm  
Work envelope diameter — 1000 mm  
Pressure — 0,8 MPa

Temperature — 250 °C  
Fluid — air  
Internal volume — 4,2 m<sup>3</sup>





**KURGANKHIMMASH**