



Complete filling solutions
Blow molding equipment

Company

PET Technologies provides professional and modern turn-key solutions for PET market producers.

Our main customers are the manufacturers of food industry (dairy products, edible oil, vinegar, water, soft drinks, beer etc.), chemical industry (household and automobile chemicals), and converters.

Our blow molding equipment has been successfully operated at above 250 factories in more than 10 countries of Europe and Middle East as well as in CIS countries.

PET Technologies is focused on implementation of European innovative technologies in blow molding equipment and blow molds manufacturing at optimal price.

The whole range of machines meets all the norms and directives of European quality standard CE and HACCP requirements for food industry, has certificates of conformity of Ukrainian and Russian standards.



PET Technologies general response:

complete solutions

| projecting of filling lines for mineral water and soft drinks, vegetable oil, milk as well as for other food and non-food products;

- | engineering;
- | complete turn-key filling lines supply;
- | filling line start up;
- | sales and after-sales service.

blow molding equipment

- | machines development for all kinds of PET containers;
- | fully automatic equipment production (up to 12000 bph);
- | universal semi-automatic equipment.

blow molds

- | PET bottles design, 3D models and sketches development;
- | prototyping;
- | production of blow molds for linear and rotative machines;
- | laboratory testing of bottle strength properties;
- | contract supervision.

service

- | customers' personnel training;
- | equipment start up;
- | free service in guarantee period;
- | spare parts and auxiliaries supply.



Complete solutions

PET Technologies provides turn-key solutions to complete filling lines supply for manufacturers of mineral water, soft drinks and beer as well as other food and non-food products.

Filling line is a set of automatic or semi-automatic equipment connected by conveyor and working as a single unit.

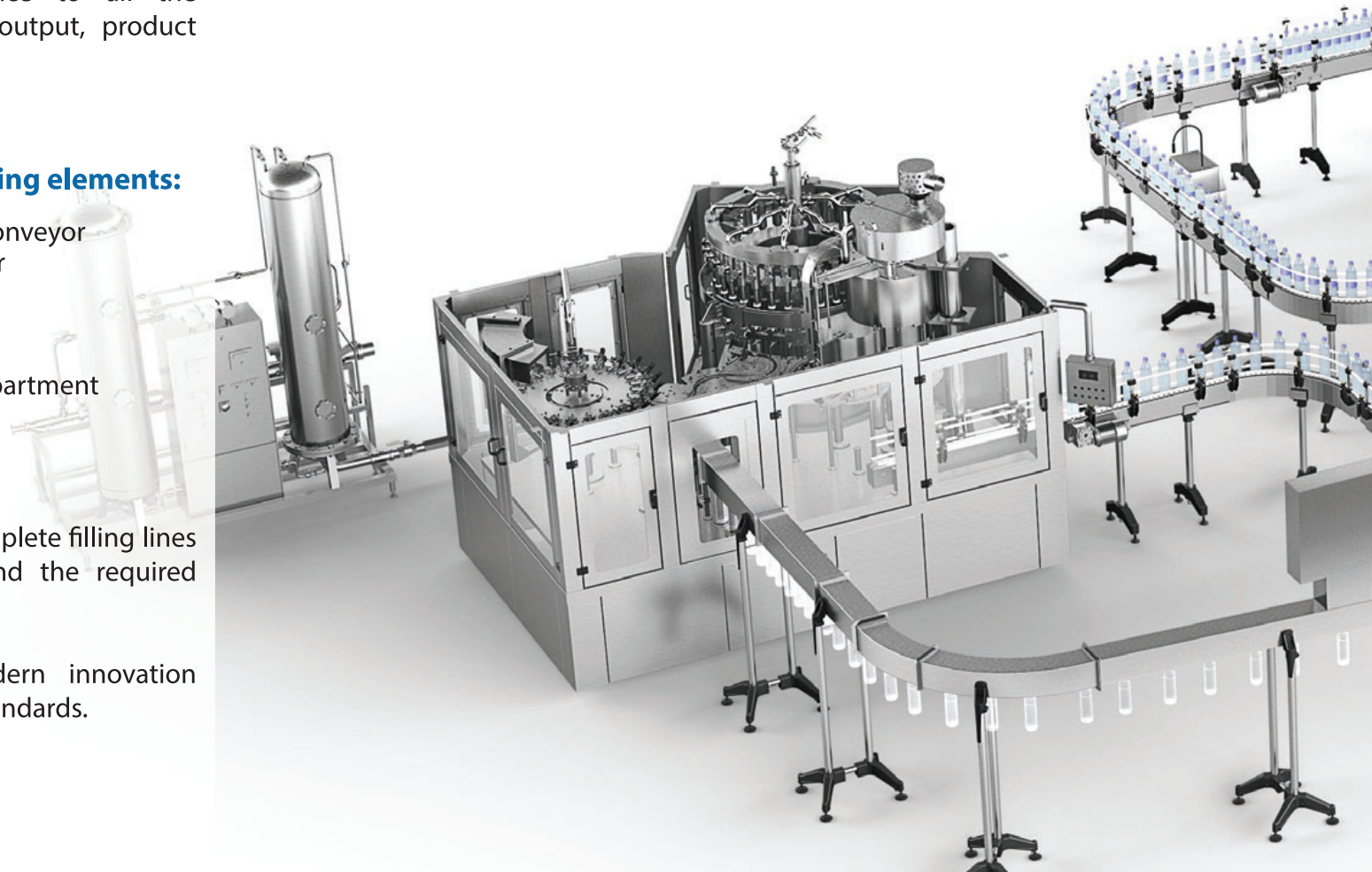
We guarantee exact project correspondence to all the requirements of PET market producers for output, product quality and cost effectiveness.

Full cycle filling line consists of the following elements:

- | | |
|------------------------|---------------------|
| Blow molding equipment | Pneumatic conveyor |
| Compressor station | Belt conveyor |
| Chiller | CIP unit |
| Filling machine | Carbonator |
| Labeling machine | Dater |
| Packaging machine | Blending department |
| Palletizer | |

PET Technologies offers several options for complete filling lines supply depending on the bottle volume and the required output.

Equipment is designed according to modern innovation technologies and meets all European quality standards.



Having received your company's order we develop individual technological solution taking into account all your demands and options. We assist in maximally correct equipment choice from technological and economic aspects for your production and suggest machinery layout and optimum logistical scheme within production hall.

PET Technologies provides:

- Project development
- Components choice
- Manufacture
- Start up and warranty service
- After-sales service

All the elements are joined according to your individual requirements for the development of technologically and economically efficient solution.



Automatic blow molding machine APF-6004

Technical data

APF-6004

Output, bottles/h	6 000*
Bottle volume, l	0,25-2,0
Blowing pressure, bar	up to 40
Low pressure, bar	8-10
High pressure air demand, m ³ /min - bottle 1,5 l	7,2
Low pressure air demand, m ³ /min - bottle 1,5 l	2,5
Cooling liquid temperature, °C	7-9
Voltage supply	400V/50HZ
Installed power, kW	62
Overall dimensions, mm	8660x3240x2540
Weight, kg	3780



*1,5 liter with 35 gr. PCO-Preform

New innovation automatic equipment series consists of two models: APF-6004 and APF-3002, which concept is based on the world output standard for this machine category - 1500 bph from one mold cavity, and meets all the norms and directives of European quality standard CE and HACCP requirements for food industry.

- unique patented mold closing system without analogs in the world allows to reduce time cycle for bottle forming and thus guarantees machine high speed performance;
- B&R company PLC system with automatic temperature regulation and feedback control via sensor Omron (Japan);
- equipment constructive concept allows to use plenty of mold sets on one machine for a wide range of PET bottles production with minimum changeover time;
- air recovery system with the reuse of compressed air from high pressure system into low pressure line allows to save up to 25% on compressor equipment investments;
- preform intensive heating system with IR reflector lamps rating 1000 W and 2000 W, 8 temperature regulating zones with the option of independent desactivation for production of asymmetric bottles with original shape;
- innovation air cooling system provides uniform distribution of temperature from outer to inner preform wall with production rejection rate elimination;
- improved system of preform feeding to the heater which excludes nonorientation and jamming;
- for model APF-6004 servo drives are implemented for preform transfer to blow mold unit and outfeed system;
- each blowing station is provided with separate block of valves;
- additional fine adjustments of blow molding process, including stretching rod speed regulation;
- polyurethane and elastomer components with improved service characteristics;
- complex high-performance molds cooling system is provided by D-M-E company (USA-Belgium) component parts;
- loading unit with the system of non-orientated preform returning into hopper;
- all the machine parts and elements are covered with casing and special organic glass according to the requirements of European standards for food industry HACCP;
- space-saving overall dimensions.



Automatic blow molding machine APF-3002

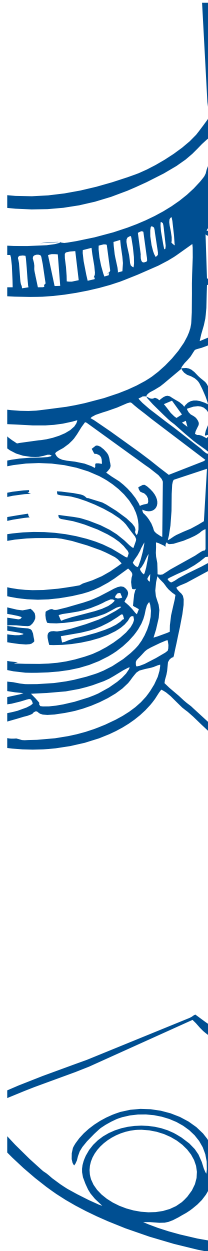
Technical data	APF-3002
Output, bottles/h	3 000*
Bottle volume, l	0,25-2,0
Blowing pressure, bar	up to 40
Low pressure, bar	8-10
High pressure air demand, m ³ /min - bottle 1,5 l	3,6
Low pressure air demand, m ³ /min - bottle 1,5 l	1,3
Cooling liquid temperature, °C	7-9
Voltage supply	400V/50HZ
Installed power, kW	33
Overall dimensions, mm	6400x2800x2300
Weight, kg	2350



*1,5 liter with 35 gr. PCO-Preform

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- B&R company PLC system with automatic temperature regulation and feedback control via sensor Omron (Japan);
- equipment constructive concept allows to use plenty of mold sets on one machine for a wide range of PET bottles production with minimum changeover time;
- air recovery system with the reuse of compressed air from high pressure system into low pressure line allows to save up to 25% on compressor equipment investments;
- preform intensive heating system with IR reflector lamps rating 1000 W and 2000 W, 8 temperature regulating zones with the option of independent desactivation for production of asymmetric bottles with original shape;
- innovation air cooling system provides uniform distribution of temperature from outer to inner preform wall with production rejection rate elimination;
- improved system of preform feeding to the heater which excludes nonorientation and jamming;
- each blowing station is provided with separate block of valves;
- additional fine adjustments of blow molding process, including stretching rod speed regulation;
- polyurethane and elastomer components with improved service characteristics;
- complex high-performance molds cooling system is provided by D-M-E company (USA-Belgium) component parts;
- loading unit with the system of non-orientated preform returning into hopper;
- all the machine parts and elements are covered with casing and special organic glass according to the requirements of European standards for food industry HACCP;
- space-saving overall dimensions.



Automatic blow molding machine APF-4

Technical data	APF-4
Output, bottles/h	4 000*
Bottle volume, l	0,25-2,0
Blowing pressure, bar	up to 40
Low pressure, bar	8-10
High pressure air demand, m ³ /min - bottle 1,5 l	4,8
Low pressure air demand, m ³ /min - bottle 1,5 l	1,8
Cooling liquid temperature, °C	7-9
Voltage supply	400V/50HZ
Installed power, kW	32
Overall dimensions, mm	5700x3090x2640
Weight, kg	3000

*1,5 liter with 35 gr. PCO-Preform



Reliable and easy in maintenance machine is an ideal solution for preform standards with undeveloped thread part.

- B&R company PLC system with machine operation self-diagnostic control and adjustment system;
- each blowing station is provided with separate block of valves;
- special infra-red lamps and air cooling system provide uniform distribution of temperature from outer to inner preform wall with rejection rate elimination;
- 4 heating channels with 6 zones in each;
- "quick start" system for operation mode readiness in 2-3 minutes;
- mandrel additional cooling system in the heater for easier temperate balance maintenance and reduction of preform thread overheating;
- new system of bottles outfeed - special non-stocked Festo cylinders with two additional progressive shock-absorbers for shift speed and machine output increase with necessary travel evenness;
- heater loading unit with the system of non-orientated preform returning into hopper;
- all the machine parts and elements are covered with casing and special organic glass according to the requirements of European standards for food industry HACCP;
- preform heating in "thread down" position excludes its overheating and deformation while blow molding process.



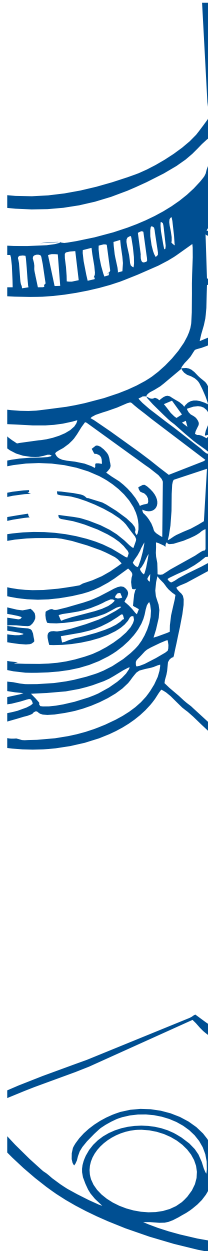
Automatic blow molding machine APF-5 / APF-10

Technical data	APF-5	APF-10
Output:		
for bottle volume 3-5 l, bottles/h	1 600	2 500
for bottle volume 10 l, bottles/h	700	up to 1 800
Bottle volume, l	3,0-10,0	3,0-10,0
Blowing pressure, bar	up to 30	up to 40
Low pressure, bar	8-10	8-10
High pressure air demand, m ³ /min - bottle 5 l	5,0	10,0
Low pressure air demand, m ³ /min - bottle 5 l	1,3	2,0
Cooling liquid temperature, °C	7-9	7-9
Voltage supply	400V/50Hz	400V/50Hz
Installed power, kW	46	55
Overall dimensions, mm	9200x2200x2740	8200x3400x2600
Weight, kg	4600	6800



Full automatic complex for large bottles (up to 10 l) production.

- high machine performance is provided by mold closing system analogous to rotary machines for APF-5 and special linear guiderails for APF-10;
- stretching rods, developed specially for thick-walled preform for 5-10 l bottles guarantee blowing process stability and exclusion of deformation;
- touch screen controller of Austrian B&R company with enlarged screen for visualization enhancement and easy operation of all process parameters;
- air recovery system with reuse of compressed air from high pressure system into low pressure line allows to save up to 25% on compressor equipment investments;
- servo drive system is implemented for bottles outfeed system for APF-10 model;
- 8 temperature regulating zones with the option of independent deactivation for production of asymmetric bottles with original shape;
- each blowing station is provided with separate original block of valves designed by PET Technologies R&D department;
- innovation air cooling system provides uniform distribution of temperature from outer to inner preform wall with production rejection rate elimination;
- water and additional cooling system of mandrel for easier temperate balance maintaining and reduction of preform thread overheating;
- oriented outfeed system with conveyor unit for further transportation to filling line.
- 2 independent blowing units allows to produce alternately 2 different formats/volumes of bottles for APF-5 model



Automatic blow molding machine APF-30

Technical data

APF-30

Output, bottles/h	120-200
Bottle volume, l	20,0-30,0
Blowing pressure, bar	up to 40
Low pressure, bar	8-10
Low and high pressure air demand, m ³ /min - for keg 30 l	4,7
Cooling liquid temperature, °C	7-9
Voltage supply	400V/50HZ
Installed power, kW	80
Overall dimensions, mm	6700x2400x3100
Weight, kg	6050



Automatic blow molder specially designed for PET coolers and kegs of volume 20-30l

- high machine performance is provided by mold closing system designed on linear rails
- touch screen controller of Austrian B&R company with enlarged screen for visualization enhancement and easy operation of all process parameters
- servo drive system is implemented for stretching unit for easy control and stable rod speed;
- air recovery system with reuse of compressed air from high pressure system allows to cover 100% of low pressure line demand
- 16 temperature regulating zones for preforms deep heating and uniform material distribution what is especially important for heavy weight and thick wall preforms
- special loading manipulators install and remove preform from heater spindles and orientate it in right position
- stretching rods developed specially for thick-walled preform for 20-30 l bottles guarantees blowing process stability and exclusion of deformation;
- blowing station is provided with original block of valves designed by PET Technologies R&D department;
- innovation air cooling system provides uniform distribution of temperature from outer to inner preform wall with production rejection rate elimination;
- water and additional cooling system of mandrel for easier temperate balance maintaining and reduction of preform thread part overheating;
- bottle oriented outfeed system



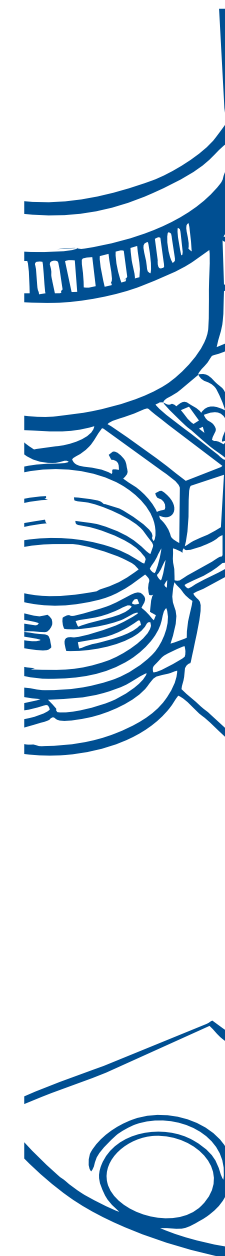
Series of semi-automatic blow molding machines UPF-5, UPF-10 and UPF-30

Technical data	UPF-5	UPF-10	UPF-30
Output:			
- for bottle volume 0,2-2 l, bottles/h	600-800		
- for bottle volume 5-6 l, bottles/h	300-350	600-800	
- for bottle volume 7-10 l, bottles/h		250-350	
- for bottle volume 30 l, bottles/h			up to 80
Bottle volume, l	0,2 - 6,0	0,2 - 10,0	10,0 - 40,0
Blowing pressure, bar	15 (up to 25)	15 (up to 25)	up to 35
Low pressure, bar	10	10	8-10
Compressed air demand, m ³ /min	0,8	1,3	1,9
Cooling liquid temperature, °C	7-9	7-9	8-12
Voltage supply	400 V/50Hz	400 V/50Hz	400 V/50Hz
Installed power, kW	7,5	12	20
Overall dimensions, mm	1600x600x2200	1300x800x2200	2485x810x2440
	1200x600x1100	1200x600x1200	1980x760x2190
Weight, kg	500+220	700+225	1700+500



Acquired perfect reputation and well service-tested series of semi-automatic blow molding machines consists of UPF-5 and UPF-10 models. This universal series has been renewed with a semi-automatic blow molding machine UPF-30, designed for PET bottles 10-40 l production.

- quick reset and operation mode adjustment for another bottle format production;
- handy and simple way to assign operation parameters on LCD display;
- preblow system for large bottles easier production;
- unique air compensation system for bottles production with 15 bars as well as 25 bars;
- electronic output counter for produced bottles quantity control and record keeping;
- conveyor speed stepless adjustment provides optimal heating mode selection and productivity increase without blow molder stopping;
- infra-red lamps with special connections for a wide range of preform standards high-quality heating;
- IR lamps can be easily adjusted horizontally and vertically according to preform shape;
- heater thermal insulation reduces the heat loss;
- original pneumatic scheme and proper components guarantee machine high productivity and bottle shape excellent quality;
- equipment self-diagnosis and easy access to all units reduce time for technical service.



PET Technologies blow molding department started from manufacturing of sets for its own blow molding machines and developed into a small factory, producing blow molds for multi cavity linear and rotary machines of all the leading manufactures (Sidel, Krones, SIPA, KHS, SMI, Kosme and others) with own design office and PET bottles test laboratory.

Bottle design

PET Technologies starts designing from a bottle sketch, concept development and agreement with customer's Marketing Department.

Bottle design is made in Catia v5 software with an account of customer's Technical Department requirements, filling line peculiarities, 2D drawings and 3D models development.

Bottle samples production and prototypes development is performed.

Blow molds production

PET Technologies owns a specialized workshop with manufacturing equipment complete set.

Mold-forming surfaces are produced on 5 processing centres Stroitos Lipnik (Czech Republic), Dugard (England), Deckel Maho (Germany) with the leading companies Heidenhain and Siemens computer numerical controls.

Blow molds



We use German certified duraluminum alloys of special purpose characterized by optimal hardness and plasticity combination that excludes cracking and deformation under impact load.

Blow molds surfaces undergo electro machining in order to increase aluminium corrosion resistance and mold endurance that prolongs blow molds service period.

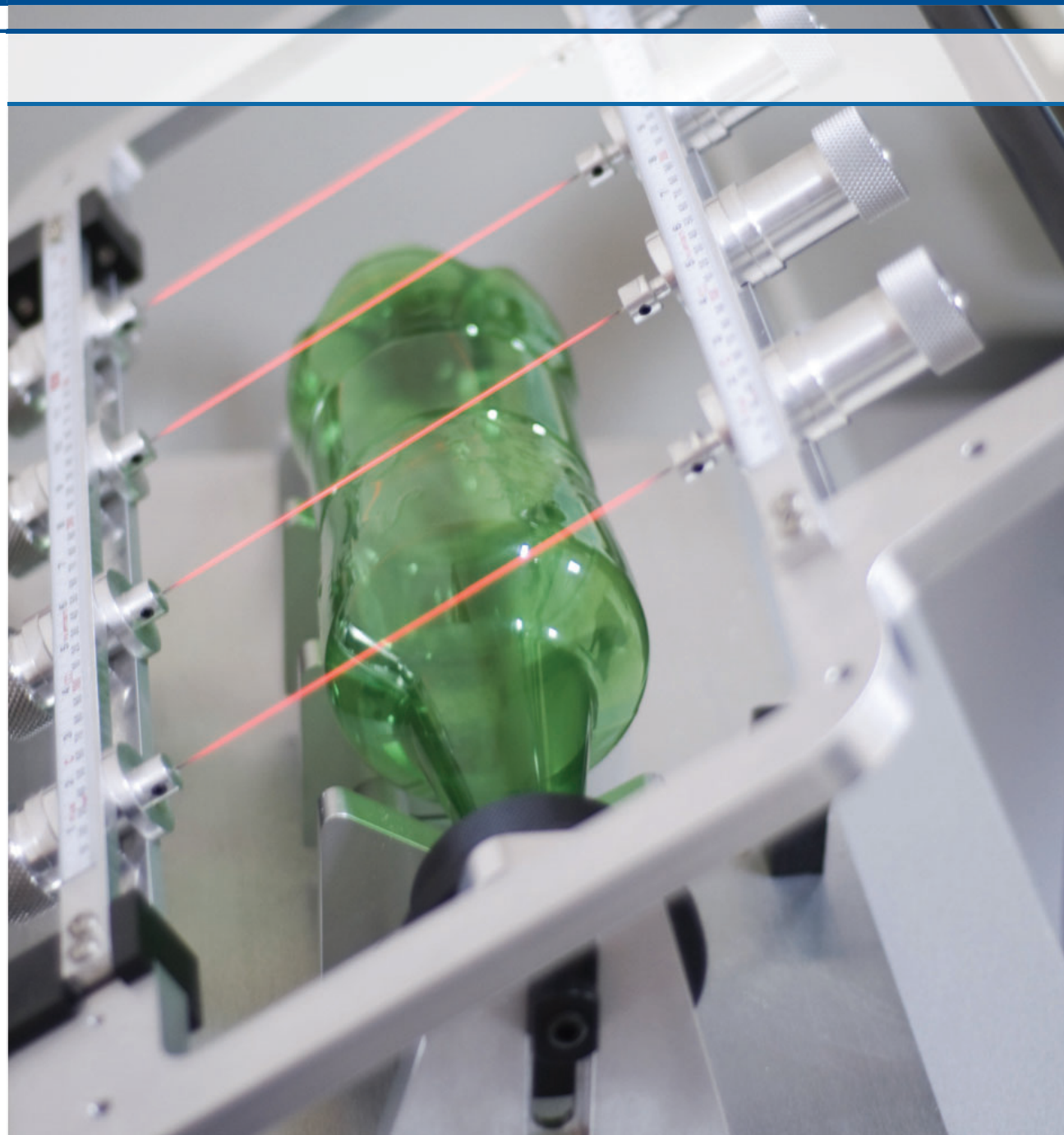
Laboratory tests

In a specially equipped laboratory we perform the following bottle tests:

- Top load
- Burst test
- Material distribution
- Brimful
- Fill point
- Dimensions

PET Technologies laboratory allows:

- bottle quality criteria development with a detailed bottle test report to the customer,
- preform weight reduction,
- bottle designing with required mechanical characteristics,
- project feasibility analysis.



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