

# JETEX

FIRE FIGHTING SYSTEM



## THE ULTIMATE GAS-DYNAMIC TECHNOLOGY

OUTSTANDING AND UNIQUE PERFORMANCE IN FIRE FIGHTING

Developments, made on the principals of the gas-dynamic technology, allowed to create a new and unique high-power firefighting equipment, capable of forming a two-phase highly dispersed flow of liquid, ensuring unsurpassed performance in firefighting.

The JETEX-fitted equipment and appliances by their high-qualitative characteristics have no analogues in the world, designed to fight effectively even with the high-intensity area fires.

The patented JETEX module can be used in a number of fire extinguishing systems on various carriers and platforms to extinguish fires of any complexity, including fires of high radiation, fires on high-rise buildings and facilities, forest fires, etc.

## Introduction to Gas Dynamic Technology implemented in JETEX Fire Fighting System

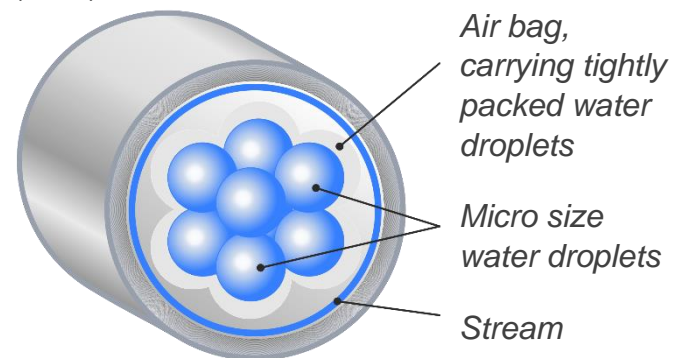
**System of Gas dynamic Technology (SGT) – is a technology for creating a high-speed two-phase gas droplet stream with micro size water droplets.**

The invention belongs to the field of liquid atomization technology and control of the process of mixing fuel with an oxidizer (air), and is intended to obtain finely dispersed two-phase jet and aerosol in a wide range of droplet size – from 10 to 200 µm.



*The essence of the invention is to create a two-phase jet of a mixture of gas (air) and water droplets, with a view to change the volume concentration of the gas in the mixing chamber, thereby achieving a high output speed of the mixture.*

Since these are liquid media (phases), mass and volume change per unit time; hence, the flow regime is gas driven if the droplets are spherical in shape and touch in six planes, as shown in the figure – they are tightly packed (SGT).



Therefore, the described above show the fundamental difference between the SGT technology stream and the one formed conventionally. Since the said technologies work differently, providing their systems to work with completely different extinguishing media, both mechanically and, mainly, physically, – these systems cannot be compared at all.

### *What needs to be done to effectively extinguish a fire?*

- **To knock down the flames,** which requires the greatest possible speed of the extinguishing medium;
- **Reduce the temperature in the fire** by evaporating the water;
- **Reduce the oxygen content of the fire** by producing steam.

Achieving the listed above three basic parameters influence the success, speed and especially the quality of extinguishing. All existing extinguishing systems are built on different liquid nozzles, which have a number of significant disadvantages.

*We have developed a new technology to create a different extinguishing mixture. Its essence is to create a high-speed two-phase jet of gas and microdroplets of water with a certain concentration of phases. This jet has a long range, linear trajectory, and short extinguishing time, while consuming a small amount of water.*

The main reasons for the low efficiency of the existing jets are their very low extinguishing velocity, which varies between 1.8 and 12 m/s, depending on the pump power, whereas

*SGT technology provides the increase to up to 100 m/s, resulting in a diametrically different speed and quality of extinguishing, as well as in subsequent consumption of the extinguishing agent.*

In order for the water to evaporate and form steam in the fire as quickly as possible, it is important that the droplets, coming out of the nozzle in the form of a water stream, have the smallest possible diameter.

The existing technologies work with a droplet size of around 1 mm in diameter, being essentially the limit size for those technologies, as further reduction of the droplet diameter produces no longer a water jet fire extinguishing mixture, but an unstable diffused water mist, which loses not just velocity and active direction of the jet, but also its range.

*SGT technology is unique due to the fact that the droplets hit the fire at high speed to effectively knock down the flame, avoiding premature evaporation along the way.*

*We have achieved a several-fold increase in the flow rate of the mixture coming out of the jet, reducing the droplet size radically – **down to 10-300 μm**. The evaporation rate of the mixture is significantly accelerated, thus producing large amounts of vapor – **up to ~1000 times larger**, compared to existing technologies.*

*SGT system is patented by us, and no this or “similar” technology is used or offered by any competitors.*

These are just a few obvious facts that allow us to say that *SGT technology has no direct rivals.*





## JETEX: Container type

Range of the jet  
up to **120 m**

Height of the jet  
**80+ m**

<b>Water consumption</b>	Up to 60 lit/s
<b>Expansion of foam application</b>	Any value that can provide the plugged-in water carrier
<b>Range of the jet by water</b>	up to 120 m
<b>Range of the jet by medium expansion foam</b>	up to 120 m
<b>Lifting/dropping angle</b>	+65/-5 degrees
<b>Tube control</b>	Manual and remote up to 50 m
<b>Necessary pressure of water supply</b>	1.0-1.3 MPa
<b>Horizontal rotation of the tube</b>	350 degrees
<b>Operating temperature</b>	From -40 to +40°C
<b>Fitting</b>	20-foot container
<b>Overall weight</b>	12.000 kg

## JETEX: Aku firefighter

Range of the jet  
**20+ m**

Height of the jet  
**15+ m**

<b>Water consumption</b>	40 – 60 lit/min
<b>Expansion of foam application</b>	Any value that can provide the plugged-in water carrier
<b>Range of the jet by water</b>	20+ m
<b>Range of the jet by medium expansion foam</b>	20+ m
<b>Tube control</b>	Manual
<b>Necessary pressure of water supply</b>	1.5 – 1.8 MPa
<b>Dimensions (Width / Height / Depth)</b>	81 / 64 / 59 cm
<b>Overall weight</b>	85 kg

More information about the unique JETEX equipment can be found here:

<https://www.jetex-holding.com>