

# KAIRO-CAVS

Revolutionizing Water Treatment in Agriculture with Advanced Cavitator Technology

## Efficient Nanobubble Generation

Experience superior water quality with our advanced nanobubble technology. These tiny bubbles significantly enhance oxygen levels, promoting healthier plants and clearer water.



## Enhanced Mixing Capabilities

Achieve the best mixing results. Our cavitators optimize chemical distribution and reaction efficiency, maximizing every treatment.



## Versatile Operating Pressures

Our cavitators perform under various pressures, perfect for any agricultural water system. Adaptability meets reliability.

## Customizable Solutions

Select from JetCAVS for maximum cavitation or ShearCAVS for optimal mixing. Available in 3, 6, or 9 mixing body configurations, tailor your cavitator to specific needs.



## Innovative Water Treatment

Lead the industry with our revolutionary cavitators. Set new standards for efficiency and sustainability in agricultural water treatment.



KAIROSPACE  
TECHNOLOGIES

# Key Benefits for Agriculture

## Enhanced Mixing:

- The rapid collapse of cavitation bubbles and shearing forces result in vigorous mixing actions, ensuring **uniform distribution of chemicals** in water treatments.

## Efficient Chemical Reactions:

- Shockwaves and shearing contribute to accelerating chemical reactions, making **treatments faster and more effective.**

## Water Quality Improvement:

- Cavitation and shearing help **reduce pathogens, algae, and other impurities,** leading to clearer and cleaner water conducive to plant and animal health.

## Energy Efficient:

- Utilizes the kinetic energy of water flow and dynamic fluid forces, **reducing the need for additional mechanical or chemical inputs.**



Our patent pending cavitators leverage both hydrodynamic cavitation and shearing to optimize the mixing and treatment processes in agricultural systems, making them more efficient and less energy-intensive.

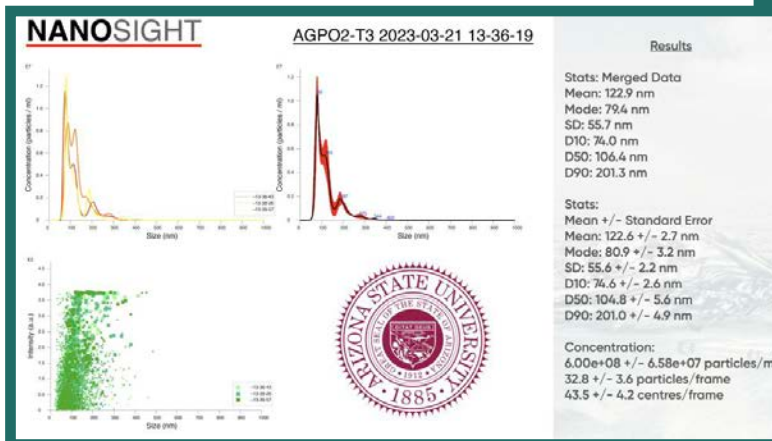
### What is Hydrodynamic Cavitation?

- Hydrodynamic cavitation occurs when pressure variations within a fluid lead to the formation of vapor cavities or **"bubbles" that rapidly collapse**.
- This process generates intense local shockwaves and microjets, **effective in mixing** and breaking down particles.

### What is Shearing?

- Shearing in **fluid dynamics** refers to the application of force that causes different layers of the fluid to slide past each other at varying velocities.
- This action **effectively disperses and mixes components**, enhancing the homogeneity

**600 millions nanobubbles/ml +  
350% DO on a single pass\***



\*For JetCAV at 40 PSI with injection of O2 purity 93% with volume of gas to volume of liquid of 3.5%

## Empower Your Farm

Advance your farming with technology that enhances crop health and optimizes resource use.

### Versatile Applications of Our Cavitators

Our cavitators are designed to be universally applicable wherever water is utilized, ensuring flexibility across various operational settings.

Here's how they can enhance different systems:

- **Pretreatment for Reverse Osmosis Tanks:** By reducing particle size and homogenizing the water before it enters reverse osmosis systems, our cavitators significantly **decrease the incidence of membrane fouling**, thereby extending the life of the system and reducing maintenance costs.
- **Mixing Tanks:** Ideal for any mixing operation, the cavitators ensure thorough integration of solutions, **preventing sedimentation and stratification** for more consistent mixtures.
- **Day Tanks:** Enhance the quality of water in day tanks by maintaining a **uniform chemical composition** throughout the tank, which is crucial for processes that require **consistent water characteristics** over an entire day.
- **Fertigation Lines:** In agricultural applications, our cavitators **optimize the dissolution and distribution of fertilizers** mixed with irrigation water, ensuring even distribution across crops for optimal nutrient uptake.
- **Recirculation Pumps:** Improve the efficiency of recirculation systems by using our cavitators to prevent sedimentation, **improve aeration** and enhance the mixing of additives, ensuring that the water quality remains high in recirculating systems such as deep water culture ponds, lakes, and other water bodies.

With these applications, our cavitators provide a high-efficiency solution that enhances system performance and sustainability wherever water is used.

**Redefine agricultural possibilities.**

### Scalable Sizes

Available from 1 inch to 12 inches, our cavitators grow with your agricultural needs. Invest in efficiency and robustness.

## Specifications\*



<b>JETCAVS Capacity</b>	<b>Ideal for mixing, shearing and high nanobubble generation, nanoemulsions, with higher pressure loss</b>								
Operating Pressure	Delta Pressure 30 PSI			Delta Pressure 50 PSI			Delta Pressure 100 PSI		
	GPM	M3/hr	Gas Injection** (optional)	GPM	M3/hr	Gas Injection** (optional)	GPM	M3/hr	Gas Injection** (optional)
1 inch	9	2	3.5-7%	12	3	3.5-7%	15	3.5	3.5-7%
1.5 inches	22	5	3.5-7%	29	7	3.5-7%	39	8.9	3.5-7%
2 inches	37	8.5	3.5-7%	49	11	3.5-7%	66	15	3.5-7%
3 inches	83	19	3.5-7%	107	25	3.5-7%	146	33	3.5-7%
4 inches	146	33	3.5-7%	188	43	3.5-7%	257	58	3.5-7%
6 inches	333	75	3.5-7%	430	98	3.5-7%	586	133	3.5-7%
8 inches	581	132	3.5-7%	750	170	3.5-7%	1020	231	3.5-7%
10 inches	914	208	3.5-7%	1180	269	3.5-7%	1600	365	3.5-7%
12 inches	1300	295	3.5-7%	1673	380	3.5-7%	2279	518	3.5-7%



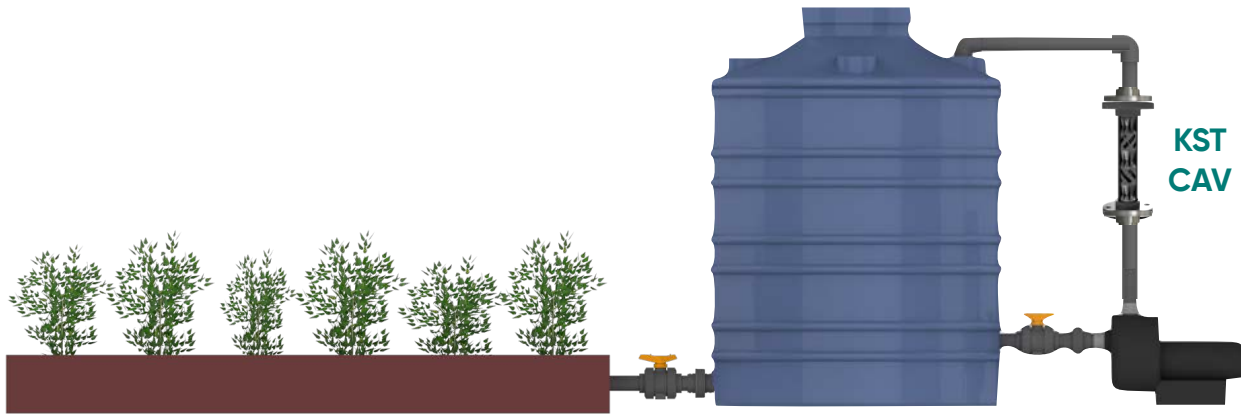
<b>ShearCAV Capacity</b>	<b>Ideal for mixing, shearing and medium nanobubble generation, larger microbubbles generation with low pressure loss</b>								
	Delta Pressure 30 PSI			Delta Pressure 50 PSI			Delta Pressure 100 PSI		
	GPM	M3/hr	Gas Injection** (optional)	GPM	M3/hr	Gas Injection** (optional)	GPM	M3/hr	Gas Injection** (optional)
1 inch	23	5	3.5-7%	29	7	3.5-7%	38	3.5	3.5-7%
1.5 inches	55	13	3.5-7%	71	16	3.5-7%	98	8.9	3.5-7%
2 inches	93	21	3.5-7%	123	28	3.5-7%	165	15	3.5-7%
3 inches	208	48	3.5-7%	268	63	3.5-7%	365	33	3.5-7%
4 inches	365	83	3.5-7%	470	108	3.5-7%	643	58	3.5-7%
6 inches	833	188	3.5-7%	1075	245	3.5-7%	1465	133	3.5-7%
8 inches	1453	330	3.5-7%						
10 inches	2285	520	3.5-7%						
12 inches	3250	738	3.5-7%						

\*Please note that all images provided are for representation purposes only and may not precisely depict the final product or service.

\*\*for Nanobubble Generation Vg/Vl (optional)

# KAIRO-CAVS

## Setup



Unleash the full potential of water treatment with JetCAVS and ShearCAVs, and elevate your operations with Kairospace's integrated solutions.

Along with our advanced cavitators, we offer integrated water treatment systems with gas generation (O<sub>2</sub>, O<sub>3</sub>, CO<sub>2</sub>, and N<sub>2</sub>) and state-of-the-art automation capabilities.

Connect with Kairospace today to transform your water management systems at [info@kairospacectech.com](mailto:info@kairospacectech.com).



**KAIROSPACE**  
TECHNOLOGIES

Las Vegas, NV, 89166  
Tel: +1 (714) 401-9922  
[www.kairospacectech.com](http://www.kairospacectech.com)