GAMAJET CLEANING SYSTEMS

Tank cleaning solutions you can trust, from START TO FINISH.
Gamajet Mission:
Gamajet is committed to providing the world’s processing industries with tank cleaning solutions by designing, manufacturing and innovating the most effective and efficient automated tank cleaning machines and systems that meet our customers needs.
What is Cleaning

Dr. Herbert Sinner, a former chemical engineer for Henkel, first summarized the basic principals of cleaning in 1959. His summary, now referred to as the Sinner’s Circle (seen left), describes the four factors that can be manipulated in any cleaning scenario: Temperature, Chemical Reaction, Time and Mechanical Action. When the effectiveness of any factor is reduced, it must be compensated with the increase of one or multiple other factors. Washing dishes is an effective example of how the four factors interact. Hot water (temperature) is going to remove stuck on food better than cold. Adding soap (chemical reaction) makes the process even easier, and you can either soak a dish overnight (time) or scrub the dish clean (mechanical action). Gamajet utilizes the “mechanical action” to its maximum benefit, resulting in a drastic reduction of the three remaining factors; time, chemical and temperature.

Cleaning: (adj) to make clean: as (1): to rid of dirt, impurities, or extraneous matter.

CLEANING IS A MUST, HOW YOU CLEAN IS OPTIONAL
Things to observe when selecting a tank cleaning machine:

- Level of cleanliness
- Cleaning pattern
- Operating costs
- Confined space entry
- Mechanical reliability

There are millions of tanks being used and cleaned per day, throughout every processing industry.
How do Gamajets Work?

Gamajet’s rotary impingement tank cleaning machines combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point in which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which blasts contaminants from the surface, scouring the tank interior. In conjunction with this impact, the Gamajet is engineered to rotate in a precise, repeatable and reliable, 360-degree pattern (seen left). This full-coverage, indexing pattern ensures the entire tank interior is cleaned, every time. This combination of impact in a controlled indexing manner results in an economic ideal, because impact is a one-time investment; chemicals, temperature and time are continual, never-ending expenditures. With a short ROI, Gamajet’s Impingement Cleaning is guaranteed to positively impact the ultimate scorecard, your bottom line.

A guaranteed cleaning pattern, you can trust.

BEFORE

100% CLEANING, EVERY TIME.

AFTER
Tank cleaning is the number one culprit in water wastage as well as a major cause for lost production and revenue, due to tank downtime. Maximizing impingement (mechanical force), allows for the minimum amount of resources to be utilized.
Engineering, Manufacturing, and Innovating Tank Cleaning Solutions to Meet Your Needs

Designing and Developing The Solution

Our experience has shown that "off-the-shelf" solutions rarely provide a thorough or effective cleaning. At Gamajet, every cleaning application is resolved with its own unique solution. This process begins with a clear understanding of your needs, what benefits mean the most to you and your company; whether it be a guaranteed clean, the elimination of confined space entry, a reduction in time or water usage, etc. Once the needs are clearly defined and prioritized, we examine your existing process and facility, including:

- The Residue: Amount, Consistency, Properties, Disposal Regulations
- The Tank: Size, Drainage, Inlet, Material, Obstacles, Accessibility
- The Facility: Available Pressure and Flow, Standards and Requirements
- Other Factors: Preferred Wash Fluid, Filters, Available Temperature, Ability to Recirculate.

Upon completion of examination, our tank cleaning experts and engineers implement the latest state-of-the-art rotary impingement technology to design a solution, specifically tailored to meet your needs, guaranteeing the most effective clean, while minimizing resources.
BEFORE

AFTER

The Only Rotary Impingement Cleaner to meet 3-A Standard 78-01

Fits through a 2' Sanitary Inlet

Cleans a Tote or IBC in Under 4 Minutes

180-Degree Option for Open Top Vessels

For the tank type we have a tank solution.
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<tbody>
<tr>
<td>Gamajet IV</td>
<td>85lbs at 25'</td>
<td>100' (30m)</td>
<td>20-700 psi (2-45 bar)</td>
<td>30-320 gpm (115-1210 lpm)</td>
<td>6.7&quot; (170mm)</td>
<td>10-25 min.</td>
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<td>ROTARY IMPINGEMENT TANK CLEANING MACHINES</td>
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<tr>
<td>Gamajet Aseptic-1</td>
<td>10lbs at 10'</td>
<td>25' (7.5m)</td>
<td>20-80 psi (1-5 bar)</td>
<td>20-70 gpm (75-265 lpm)</td>
<td>5.75&quot; (145mm)</td>
<td>3-6 min.</td>
<td>Self Cleaning and Draining</td>
<td>FDA/3-A Compliant Materials</td>
<td>Ultra Sanitary Design</td>
<td>The Most Versatile, Light-Weight, Ergonomic Large Tank Cleaner</td>
</tr>
<tr>
<td>Gamajet VIII</td>
<td>40lbs at 25'</td>
<td>35' (10.5m)</td>
<td>20-1000 psi (3-70 bar)</td>
<td>25-130 gpm (95-490 lpm)</td>
<td>4.75&quot; (121mm)</td>
<td>8-12 min.</td>
<td>Self Cleaning and Draining</td>
<td>FDA/3-A Compliant Materials</td>
<td>Ultra Sanitary Design</td>
<td>FDA/3-A Compliant Materials, Meets the Requirements of 3-A 78-01</td>
</tr>
<tr>
<td>Gamajet PowerFLEX</td>
<td>25lbs at 25'</td>
<td>30' (9m)</td>
<td>20-120 gpm (75-450 lpm)</td>
<td>11.5kg at 7.5m</td>
<td>3.80&quot; (97mm)</td>
<td>8-20 min</td>
<td>Self Cleaning and Draining</td>
<td></td>
<td></td>
<td>FDA Compliant Materials, Ultra Sanitary Design</td>
</tr>
<tr>
<td>Gamajet Aseptic-1</td>
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</table>
**Gamajet X**
- Impact: Up to 25lbs at 25’ (12kg at 7.5m)
- Cleaning Range: 35’ (10m)
- Pressure: 50-750 psi (4-50 bar)
- Flow: 40-80 gpm (150-300 lpm)
- Clearance: 4” (102mm)
- Cycle Time: 8-15 min.
- Fits Through a Standard UST Pipe

**Gamajet V**
- Impact: Up to 15lbs at 10’ (7kg at 3m)
- Cleaning Range: 7.5’ (2.5m)
- Pressure: 50-1200 psi (4-80 bar)
- Flow: 5-45 gpm (25-160 lpm)
- Clearance: 3” (76mm)
- Cycle Time: 8-11 min.

**Gamajet IX**
- Impact: Up to 12lbs at 10’ (5.5kg at 3m)
- Cleaning Range: 7.5’ (2.5m)
- Pressure: 50-1000 psi (4-70 bar)
- Flow: 3-30 gpm (15-110 lpm)
- Clearance: 2.8” (71mm)
- Cycle Time: 4-12 min.
- Self Cleaning and Draining Ideal for Totes and IBCs

**Gamajet Nanojet**
- Impact: Up to 7lbs at 5’ (3kg at 1.5m)
- Cleaning Range: 7.5’ (2.5m)
- Pressure: 20-200+ psi (2-14 bar)
- Flow: 5-30 gpm (20-110 lpm)
- Clearance: 1.85” (47mm)
- Cycle Time: 4-20 min.
- Self Cleaning and Draining
- FDA Compliant Materials
- Ultra Sanitary Design

**Gamajet AlphaJET**
- Impact: Up to 7lbs at 5’ (3kg at 1.5m)
- Cleaning Range: 10’ (3m)
- Pressure: 50-100+ psi (4-7 bar)
- Flow: 6-20 gpm (25-75 lpm)
- Clearance: 2” (50mm)
- Cycle Time: 4-20 min.
- Fits through Standard 2” ASTs

All Gamajets are made with 316L Stainless Steel.
Seals and bearings made from Teflon based materials. Elastomers are offered in EPDM, Viton® and Kalrez®.
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<tbody>
<tr>
<td>Gamajet Aseptic VI</td>
<td>10lbs at 5'</td>
<td>5' (1.5m)</td>
<td>10-700 psi (1-45 bar)</td>
<td>5-40 gpm (20-150 lpm)</td>
<td>2.80&quot; (71mm)</td>
<td>10-14 min.</td>
<td>Self Cleaning and Draining, FDA Compliant Materials, Ultra Sanitary Design</td>
</tr>
<tr>
<td>Gamajet GentleJET</td>
<td>1lbs at 2.5'</td>
<td>1.5' (0.5m)</td>
<td>60 psi (4 bar)</td>
<td>6 gpm (23 lpm)</td>
<td>2&quot; (50mm)</td>
<td>1-2 min.</td>
<td>The Ultimate Barrel Cleaning Machine</td>
</tr>
<tr>
<td>Gamajet VII</td>
<td>5lbs at 2.5'</td>
<td>2.5' (1m)</td>
<td>50-1500 psi (4-100 bar)</td>
<td>2-8 gpm (8-30 lpm)</td>
<td>1.5&quot; (38mm)</td>
<td>2-5 min.</td>
<td>The Smallest Rotary Impingement Tank Cleaner</td>
</tr>
<tr>
<td>Gamajet Intrepid</td>
<td>3lbs at 2.5'</td>
<td>2.5' (1m)</td>
<td>10-80 psi (1-5 bar)</td>
<td>5-25 gpm (20-95 lpm)</td>
<td>2.80&quot; (71mm)</td>
<td>4-8 min.</td>
<td>Self Cleaning and Draining, FDA Compliant Materials, Ultra Sanitary Design</td>
</tr>
<tr>
<td>Gamajet AIO - AIO Flex - HD Barrel Blaster</td>
<td>5lbs at 2.5'</td>
<td>2.5' (1m)</td>
<td>50-1000 psi (4-70 bar)</td>
<td>3.5-6 gpm (13-23 lpm)</td>
<td>1.75&quot; (55mm)</td>
<td>2-5 min.</td>
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</table>
Let us update your process, not your plant.

Gamajet manufactures a complete line of Mobile CIP Systems for tank and vessel cleaning. These units are tailored to provide the most effective and efficient solution based on your application, beginning inside the tank with the residue.

GobyJET: Outdoor Portable Tank Cleaning System

Use a Gamajet to clean, any time and anywhere with this diesel powered, high pressure pump system.

MegaJET and AlphaJET: Fuel Storage Tank Cleaning and Polishing System

Clean any USTs and ASTs. System polishes the fuel while utilizing it to clean. (Class II fuels only)

MCIP: Mobile CIP System

Tailored designs include pumps, filters, recirculation options, control panels (manual or PLC), holding tanks and heating elements.

ToteBlast Station: Stationary Tote Cleaning System

Clean the entire tote or IBC (including the top), regardless of the residue in under 4 minutes.
Positioning Your Gamajet

Although Gamajets are dynamically balanced, meaning they will not sway when lowered into a tank on a flexible hose, access from above is not always easily accessible. Here are a few accessories that make positioning the Gamajet easy.

- **Tripod**: Conical bottom tanks, sludge build up
- **Portable Cart**: Bottom manway, rolls into place.
- **Bipod**: Wine barrels, bung down.
- **Manway Adaptor**: Easy placement and sealing into tankers.
- **Gamajet 88**: Positioning (2) two Gamajets to clean the hard to reach bulkheads.

**Choose Your Connection**

Part of customizing the Gamajet includes selecting your preferred inlet connection choosing from: Tri-Clover, Female NPT, Camlock or R-Clip.

**Validation**

Confirm the Gamajet is properly functioning within the tank with The Validator. State-of-the-art IFM Effector technology, with an ultra sanitary design, wash down safe, and easy to install.

**OTHER ACCESSORIES INCLUDE**: Filters, Pressure Washers, Diaphragm Pumps, a deflector plate, and more.
Service you can count on, from the company you trust.

Gamajets are designed for durability, periodic maintenance keeps the world’s best cleaning machines performing at their peak. With standard preventative maintenance and proper care, your Gamajet will far outlast your tanks.

The entire Gamajet product line can be easily maintained in the field, no special tools required. Spare parts and customer support are readily available at all times, with a 24 hour turnaround on parts, repairs and new orders. You can conduct regular maintenance yourself with our detailed instructions, or have a Gamajet technician do it for you.

Our repair program includes:

- A tear down of the machine
- Ultrasonic cleaning
- Detailed inspection, quotation, and a phone call with an explanation.
- Reassembly
- Hydraulic testing at customers operating conditions

ONE YEAR WARRANTY WITH ALL REPAIRS AND NEW MACHINES
Sustainability Through the Triple Bottom Line: People, Planet, Profit

**PEOPLE**
Gamajet machines allow for customers to ensure the utmost safety is taken when cleaning tanks through the elimination of confined space entry and the limiting of fall potential. Gamajet machines can be lowered into tanks with hazardous gases and environments that are potentially fatal to employees. When a Gamajet is implemented the dangers involved in such activities are nearly eliminated, allowing for safer work environments and peace of mind – priceless.

**PLANET**
Gamajet machines allow for customers to obtain the sustainable goals designed to protect our world. Through tank cleaning optimization, customers experience water savings nearing 80% and energy savings averaging around 85%. As a result, greenhouse emissions and the overall impact on our environment are significantly reduced. Tank cleaning is typically the number one culprit in water waste. Many customers have obtained their company wide water savings goals through this simple implementation.

**PROFIT**
Gamajet machines allow for significant savings of expenditures such as time, chemicals and other operating costs. In addition, the significant savings in time allows for an increase in production and a recovery in revenue resulting in an honest profit. As a result, customers can maintain the former objectives of positively impacting the community and decreasing the negative impact on the environment in perfect harmony with the final bottom line.
### WATER & CHEMICALS

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Residue</th>
<th>Current Procedure</th>
<th>Savings in Water Per Year</th>
<th>Water Usage</th>
<th>Tank Cleaning Downtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia, MO (US)</td>
<td>4 Ribbon Blenders</td>
<td>Processed Meats</td>
<td>Tanks are filled with water and agitated, followed by manual cleaning, totalling 4 hours per tank, per day.</td>
<td>92% Less Water &amp; Chemicals</td>
<td>26,280,000</td>
<td>5,840 hours per year</td>
</tr>
<tr>
<td>Missouri</td>
<td></td>
<td></td>
<td><strong>Solution:</strong> Gamajet steam operated pump powering 5 directional Gamajet Vs operating at 15 gpm (per machine). Cleaning includes a 5 minute pre-rinse, 10 minute wash and a final 5 minute rinse, totaling 20 minutes per tank.</td>
<td><strong>Tank Cleaning Downtime:</strong></td>
<td>2,190,000</td>
<td>486 hours per year</td>
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<td><strong>Savings in Water Per Year:</strong> 24,090,000 gallons: $112,000 ($0.00469 per Gal)</td>
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### ENERGY

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Residue</th>
<th>Current Procedure</th>
<th>Savings in Gas Per Year</th>
<th>Water Usage</th>
<th>Tank Cleaning Downtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunshine, Victoria (AU)</td>
<td>Reactors &amp; Storage Tanks</td>
<td>Variety of Chemicals</td>
<td>Tanks are filled with a total of 5,800 gallons of hot water and caustic for 4 hours, 4 times per week.</td>
<td>86% Less Water &amp; Chemicals</td>
<td>1,206,400</td>
<td>832 hours per year</td>
</tr>
<tr>
<td>Missouri</td>
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<td><strong>Solution:</strong> Gamajet CIP system, powering 1 Gamajet VIII operating at 75 gpm. Cleaning includes an 8 minute closed loop wash per tank, averaging 200 gallons of hot water for 45 minutes, 4 times per week.</td>
<td><strong>Tank Cleaning Downtime:</strong></td>
<td>41,600</td>
<td>156 hours per year</td>
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<td><strong>Savings in Gas Per Year:</strong> 280k kwh: $27,760 ($0.10 per kwh)</td>
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### TIME & PRODUCTIVITY

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Residue</th>
<th>Current Procedure</th>
<th>Savings in Total Batch Time</th>
<th>Water Usage</th>
<th>Tank Cleaning Downtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason, OH (US)</td>
<td>12 Process Vessels</td>
<td>Burnt on Sauces</td>
<td>4 production lines with 3 tanks each are cleaned with spray balls for 2.5 hours. 1,460 batches per year, 6 hours per batch.</td>
<td>85% Less Water &amp; Chemicals</td>
<td>3,504,000</td>
<td>3,650 hours per year</td>
</tr>
<tr>
<td>Missouri</td>
<td></td>
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<td><strong>Solution:</strong> Gamajet Aseptic VI operating at 15 gpm. Cleaning includes a 2 minute pre-rinse, 5 minute recirculate wash and a final 2 minute rinse, totaling 9 minutes per tank. 2,413 batches per year, 3.63 hours per batch.</td>
<td><strong>Tank Cleaning Downtime:</strong></td>
<td>525,420</td>
<td>362 hours per year</td>
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<td><strong>Savings in Total Batch Time:</strong> 2.37 hours</td>
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### REVENUE RECOVERY

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Residue</th>
<th>Current Procedure</th>
<th>Revenue Recovered</th>
<th>Water Usage</th>
<th>Tank Cleaning Downtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somerset, NJ</td>
<td>8 Process Vessels</td>
<td>Cosmetic Products</td>
<td>Tanks are cleaned daily with 3 spray balls for 1.5 hours, with a total of 14,400 gallons of hot water and caustic per day.</td>
<td><strong>51% Less Water &amp; Chemicals</strong></td>
<td>5,253,000</td>
<td>4,380 hours per year</td>
</tr>
<tr>
<td>Missouri</td>
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<td><strong>Solution:</strong> 2 Gamajet Aseptic VIs operating at 20 gpm (per machine). Cleaning includes a 7 minute pre-rinse, 14 minute recirculated wash with caustic and a final 7 minute rinse, totaling 28 minutes per tank, per day.</td>
<td><strong>Revenue Recovered:</strong></td>
<td>5,256,600</td>
<td>1,362 hours per year</td>
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<td><strong>Cost Per Hour Tank Downtime:</strong> $3,300.00 (Supplied by company)</td>
<td><strong>$9,959,400</strong></td>
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</table>
Servicing Every Industry with Quality Products and Unsurpassed Customer Service

- Food and Beverage
- Personal Care
- Pharmaceutical
- Cosmetic
- Wine
- Dairy
- Bio-Pharmaceutical
- Brewing
- Distilling
- Petroleum
- Ethanol and Grain
- Transportation
- Portable Sanitation
- Wastewater
- Pulp and Paper
- Chemical
- Marine
- Bio-Chemical
- Utility/Municipal
- Paint and Coatings
- Biofuel

3 out of 4 of the leading processing manufacturers use and trust Gamajet as **the solution** to their tank cleaning applications.
Start, cleaning your entire tank, every time. Stop wasting time and water. Stop sending your crew into your tanks.

What are you waiting for? **Get your Gamajet today.**

**GO WITH THE LEADER IN TANK CLEANING TECHNOLOGY.**