



CSI

SELECTION
GUIDE

HOW TO CHOOSE THE RIGHT TANK CLEANING DEVICE



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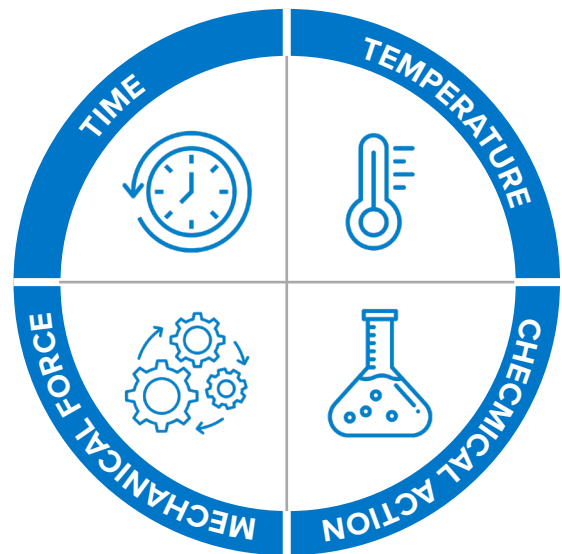
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BASICS OF CLEANING

Every cleaning task, whether it is doing the dishes, washing the dog, or cleaning a tank, is comprised of four elements, as defined by Herbert Sinner*:

The Sinner Circle

- **Time:** This is the time needed to clean
- **Temperature:** Hot cleans better and faster than cold
- **Chemical Action:** Detergents, acids, caustics, sanitizers. These can vary by application and nature of the soil/residue.
- **Mechanical Force:** Greater force and impingement can be used to “scrub” the surface allowing for a better, faster, and more efficient clean



If any element is increased, the remaining elements can be reduced. For example: by increasing the Mechanical Force, you can reduce the chemicals and water needed and clean in a shorter time.

Time, temperature, and chemicals are a cost for every CIP cleaning. An efficient tank cleaning method reduces these three elements.

*Sinner, H. 1959. The Sinner Circle "TACT." Sinner's Cleaning Philosophy. Henkel.

COMMON TANK CLEANING TECHNOLOGIES



Static Spray Ball

Application:

Rinsing and light cleaning applications and residues

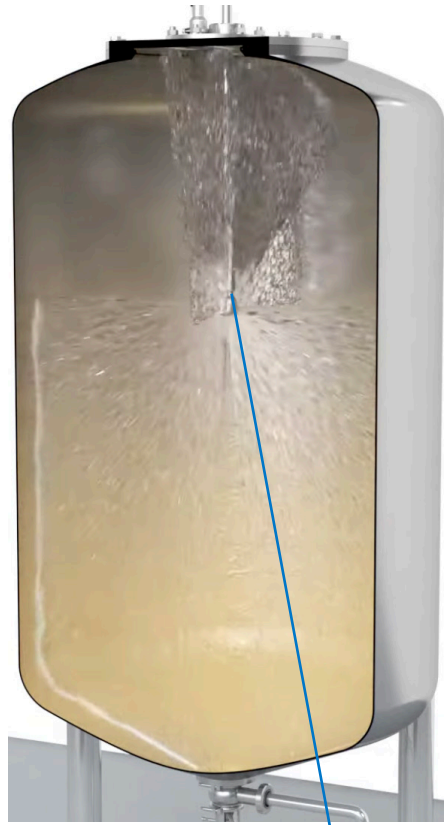
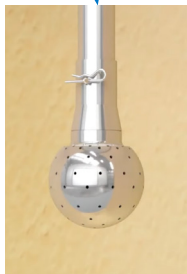
Operating

pressure:

30–43 PSI
(2–3 bar)

Tank sizes:

50–2,500 gallons



Rotary Spray Head

Application:

Light to medium cleaning applications and residues

Operating

pressure:

30–45 PSI
(2–3 bar)

Tank sizes:

50–10,000 gallons



Rotary Jet Head

Application:

Medium to very difficult cleaning applications and residues

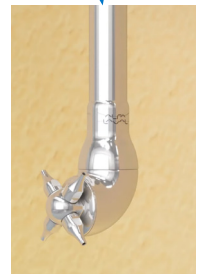
Operating

pressure:

72–800 PSI
(5–8 bar)

Tank sizes:

50–10,000 gallons



IMPORTANCE OF ROTARY IMPINGEMENT TANK CLEANING

Impingement is the force of the cleaning solution impacting the tank wall to “scrub” the surface free of residue. Alfa Laval rotary tank cleaning machines project cleaning fluid in an engineered stream pattern that strikes the tank surface with precise pressure and angles **to provide the most efficient and effective cleaning.**

Rotary Jet Head cleaners from Alfa Laval are designed to deliver a specific cleaning force to the tank surface for maximum cleaning efficiency. Understanding your operating conditions is necessary to deliver the required cleaning performance for your application. **It is, therefore, essential to understand your CIP system’s operating conditions.**

SPRAY VS. JET CLEANERS

The choice between a Rotary Spray Cleaner and a Rotary Jet Cleaner will depend on your application requirements. **Jet Cleaners provide much higher impingement** — impact or mechanical force — than Spray Cleaners **and are designed to offer the optimal output of force with the least flow to create the most effective and efficient cleaning.**

Unlike a static spray ball, which creates a weak and inexact spray — due to the large number of holes needed to clean the tank — a rotary spray head from Alfa Laval uses slits to produce a fan spray of cleaning fluid, which ensures efficient and complete coverage when cleaning a surface.



Rotary Spray Cleaner



Rotary Jet Cleaner

ROTARY SPRAY CLEANERS

A drop-in replacement for most spray balls, rotary spray cleaners from Alfa Laval provide complete tank coverage using a revolving flat fan spray that delivers moderate-level impact in a repeatable pattern. Specifically designed for a variety of applications involving light to medium soils, these devices are available in various sizes and configurations covering most tank sizes.

Cleaning Method

- Revolving flat fan spray effect
- Repeated moderate impact
- 360° complete coverage
- Dislodges soils

Water Consumption

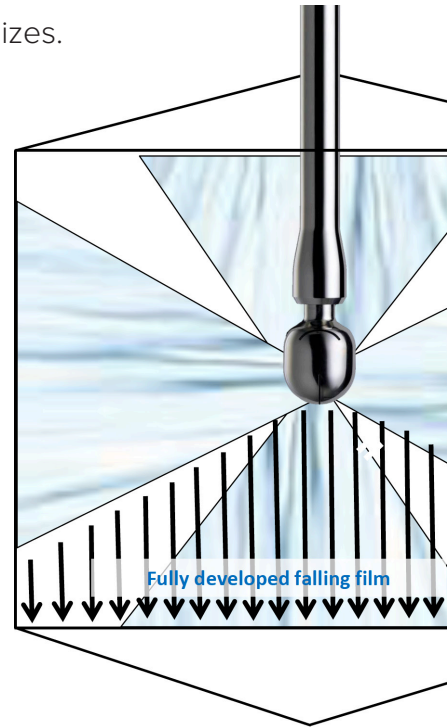
- 12–73 GPM
- Medium (30% less than spray balls)

Mechanical Force

- Medium

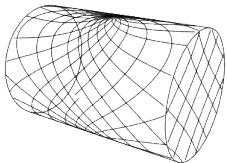
Pressure

- 30–45 PSI

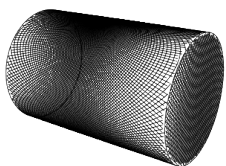


ROTARY JET CLEANERS

Designed for medium to heavy soils, the rotary jet heads from Alfa Laval enable manufacturing and process companies to achieve the most effective tank clean while using the least amount of resources. An automated, fluid-driven device optimizes the pressure and flow to create high impact cleaning jets. These devices maximize mechanical force, which saves on cleaning solution and time needed to effectively clean your tanks.



First Cycle



Full Pattern

Cleaning Method

- Impact and resulting force blast contaminants from surface
- Rotates in a repeatable, reliable 360° pattern for whole-tank coverage

Water Consumption

- 3–160 GPM
- Water and wash fluid savings estimated between 50–90%

Mechanical Force

- High

Pressure

- 30–800 PSI

ROTARY SPRAY CLEANERS FROM ALFA LAVAL

TofteJorg Sani Series

Cleans with a rotating fan generating impact and coverage. This results in lower liquid consumption and shorter runtime.



	SaniMicro	SaniMidget	SaniMagnum
Tank Cleaning Diameter (max)	4 ft	5 ft	13 ft Low Flow 11 ft
Recommended Pressure	30–45 PSI	30–45 PSI	30–45 PSI
Working Temperature (max)	203°F	203°F	203°F
Ambient Temperature (max)	284°F	284°F	284°F
Available Spray Patterns	360° 180° Down 270° Up	360° 180° Down 270° Up	360° 180° Down 270° Up
3-A Standard	No	No	No

TofteJorg Sani SB

3-A Series

The 3-A compliant spray heads clean with a rotating fan generating impact and coverage. This results in lower liquid consumption and shorter runtime.



	SaniMidget SB	SaniMagnum SB	SaniMega SB
Tank Cleaning Diameter (max)	9 ft	15.8 ft	17.8 ft
Recommended Pressure	30 PSI	30–45 PSI	30–45 PSI
Working Temperature (max)	203°F	203°F	203°F
Ambient Temperature (max)	302°F	302°F	302°F
Available Spray Patterns	360° 270° Up	360° 270° Up	360° 270° Up
3-A Standard	Yes	Yes	Yes

ROTARY JET CLEANERS FROM ALFA LAVAL



Designed for wall or bottom tank mounting to effectively clean obstructions caused by agitators or internal tank equipment



Easily fits through a 1½-inch access hole and capable of operating at both high and low pressures



Remains outside the barrel during cleaning, to provide exceptional durability

	ANY SIZE TANK	SMALL 2-3' TANKS	
	PlusClean®	GJ 7	GJ BB
Tank Cleaning Diameter (max)	10–26 ft	5 ft	5 ft
Throw Length (max)	13 ft	8 ft	8 ft
Cycle Time	5–10 min	2–5 min	1–2 min
Working Pressure	44–188 PSI	44–1,200 PSI	80–1,200 PSI
Recommended Pressure	73–116 PSI	80–797 PSI	80–795 PSI
Working Temperature (max)	194°F	203°F	203°F
Ambient Temperature (max)	284°F	284°F	284°F
Standards (*upon request)	2.2 & 3.1 material certificate*	2.1 material certificate*	2.1 material certificate*





Offers compact cleaning for small tanks, totes, and intermediate bulk containers (IBCs)



Created as a solution for pharmaceutical cleaning needs, but works cohesively in any sanitary environment



Designed for permanent installation and to provide true germ and bacteria-free cleaning



Provides 3D indexed impact cleaning over a defined time period



Compact size allows it to readily pass through a three-inch opening, making it ideal for cleaning small tanks, vats, and vessels

MID-SIZED 5-8' TANKS

GJ 9	GJ A2	GJ A6	TJ 20G	GJ 5
15 ft	10-15 ft	15 ft	15-30 ft	15 ft
30 ft	14 ft	19 ft	46 ft	4-24 ft
4-12 min	4-20 min	10-14 min	6-10 min	8-11 min
44-1,000 PSI	40-200 PSI	30-400+ PSI	44-116 PSI	40-1,000 PSI
58-580 PSI	50-150 PSI	30-150 PSI	73-94 PSI	50-600 PSI
203°F	203°F	203°F	203°F	203°F
284°F	284°F	284°F	284°F	284°F
2.1 material certificate*	2.1 & 3.1 material certificate*	2.1 & 3.1 material certificate*	USDA, USFDA, 3.1 material certificate*, and ATEX	2.1 material certificate*

ROTARY JET CLEANERS FROM ALFA LAVAL



For processing highly viscous, foaming, or thixotropic products and chemical applications where product cross-contamination is unacceptable



Provides automated 3D-indexed impact cleaning over a defined time period for large tanks and vessels



The jet pressure efficiently removes residue to provide the hygienic conditions required for batch production



Slim design with high impact can fit through a 4" Tri-Clamp; models available for both industrial and sanitary applications

LARGE TANKS

	SaniJet 20	TJ 40G	TJ SaniJet 25	GJ PF / GJ PF-FT
Tank Cleaning Diameter (max)	10–26 ft	30–60 ft	30–60 ft	50 ft
Throw Length (max)	13 ft	70 ft	56 ft	45–65 ft
Cycle Time	5–10 min	2–16 min	2–8 min	8–20 min
Working Pressure	44–188 PSI	44–174 PSI	44–116 PSI	40–400 PSI
Recommended Pressure	73–116 PSI	73–102 PSI	73–94 PSI	50–300 PSI
Working Temperature (max)	194°F	203°F	203°F	195°F
Ambient Temperature (max)	284°F	284°F	284°F	284°F
Standards (*upon request)	2.2 & 3.1 material certificate*, FAT & SAT, and ATEX	3.1 material certificate* and ATEX	2.2 material certificate*, FAT & SAT, ATEX, and EHEDG	2.1 material certificate*



Designed to fit through standard underground storage tank (UST) inlets



Engineered to minimize physical effort and maximize efficiency



Provides the same high impact clean as traditional, larger tank cleaners but is lighter, shorter, and narrower



Designed for large industrial tanks to run twice as long in between maintenance internals



Designed to remove the toughest residues and is highly customizable

LARGE				
GJ 10	GJ A8	GJ 8	GJ 18	GJ 4
50–70 ft	70 ft	70–100 ft	200 ft	200 ft
35 ft	45–85 ft	85 ft	100 ft	100 ft
10–28 min	8–12 min	8–12 min	8–30 min	10–25 min
40–300 PSI	40–400+ PSI	40–400+ PSI	50–300 PSI	40–300 PSI
50–270 PSI	50–300 PSI	50–300 PSI	80–200 PSI	50–200 PSI
203°F	203°F	203°F	203°F	203°F
284°F	284°F	284°F	284°F	284°F
2.1 material certificate*	2.1 & 3.1 material certificate*	N/A	2.2 material certificate*, FAT, and SAT	2.1 material certificate*



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