Alfa Laval TZ-89

Rotary jet heads

Introduction

The Alfa Laval TZ-89 is a rotary jet head tank cleaning machine for hygienic environments. Built to clean tanks with capacities from 5-20 m^3, it combines pressure and flow to create high-impact cleaning jets that rotate in a repeatable and reliable 360-degree cleaning pattern.

The TZ-89 minimizes the consumption of water and cleaning media. Easy to customize to meet customer requirements, it allows companies to spend less time cleaning and more time producing.

Applications

The Alfa Laval TZ-89 is designed for the removal of the toughest residues from hygienic tanks across a broad range of industries, such as the dairy, food, beverage, brewery, and personal care industries.

Benefits

- 60% faster cleaning = more time for production
- Saves up to 70% of your cleaning cost
- Eliminates the need for confined space entry for manual tank cleaning
- High-impact cleaning in a 360° repeatable cleaning pattern
- Cleaning process can be validated using Alfa Laval Rotacheck

Standard design

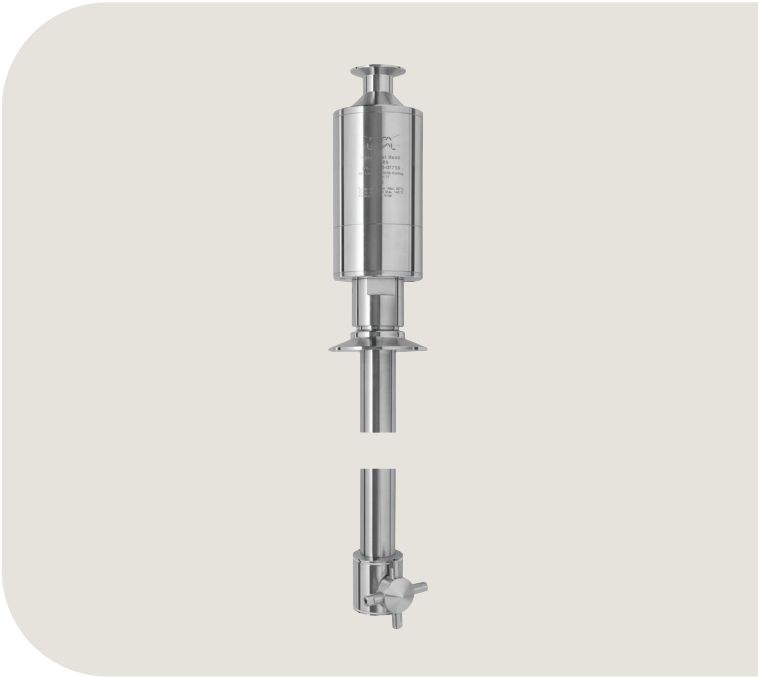
The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure. Due to its slim design, it is ideal to retrofit spray balls, thereby reducing Cleaning-in-Place (CIP) costs and cleaning time.

Alfa Laval offers a wide range of tank cleaning machines suitable for different duties and industries.

An alternative that offers performance similar to the Alfa Laval TZ-89 is the Alfa Laval SaniJet 20 for applications that require 3.1. material certification, ATEX certification, and the Alfa Laval Q-doc documentation package.

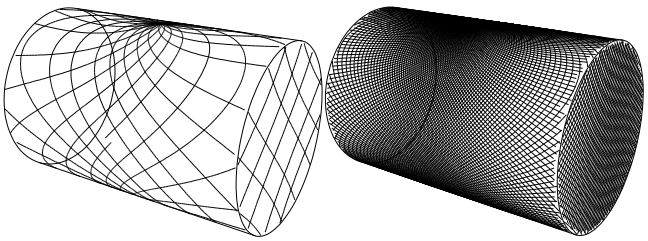
Working principle

The high-impact jet stream from the Alfa Laval TZ-89 rotary jet head is designed to cover the inside of the tank in a successively denser pattern. This achieves a powerful mechanical impact with a low volume of water and cleaning media.



The flow of the cleaning fluid makes the nozzles perform a geared rotation around the vertical and horizontal axes. In the first cycle, the nozzles lay out a course pattern on the tank surface. The subsequent cycles gradually make the pattern denser until at full cleaning pattern is reached. Once the full cleaning pattern is reached, the machine will start over again and continue to perform the next full cleaning pattern.

Cleaning Pattern



First cycle Full pattern

The above drawings show the cleaning pattern achieved on a cylindrical horizontal vessel. The difference between the first cycle and the full pattern represents the number of additional cycles available to increase the density of the cleaning.

Certificates

2.1 material certificate

TECHNICAL DATA

Lubricant:	Self-lubricating with the cleaning fluid

Standard Surface finish	
Product contact parts:	Ra 1.0 µm

Throw length	
Max. throw length:	4 - 7 m
Impact throw length:	2.5 - 4 m

Pressure	
Working pressure:	2 - 7 bar
Recommended pressure:	5 - 6.5 bar

PHYSICAL DATA

Materials:	316L (UNS S61603), Duplex steel (UNS N31803), PTFE, PEEK, FEP/silicone

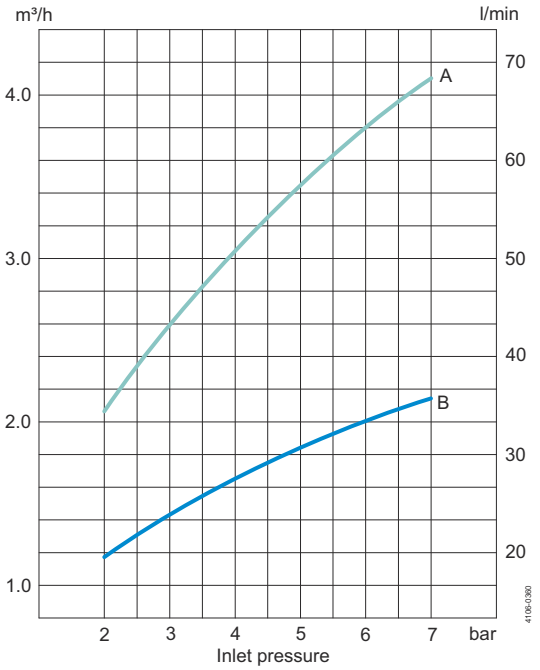
Temperature	
Max. working temperature:	95 °C
Max. ambient temperature:	140 °C

Weight	
Weight:	5.5 - 8.5 kg

Connections	
Inlet connections:	Thread: 3/4" Rp (BSP) or NPT, male or Clamp: 1" ISO 2852
Tank connection:	Flange: 50 DN6 DIN 2501, or 3" ANSI B 16.5 or Clamp: 3" or 4" ISO2852

Caution
Avoid hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, it is recommended to place a filter in the supply line.

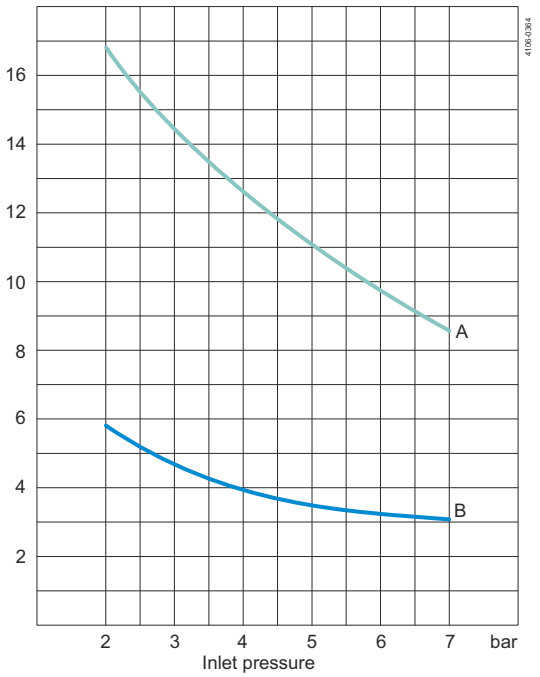
Flow Rate



Nozzles mm
A = 4 x Ø4
B = 2 x Ø2.5

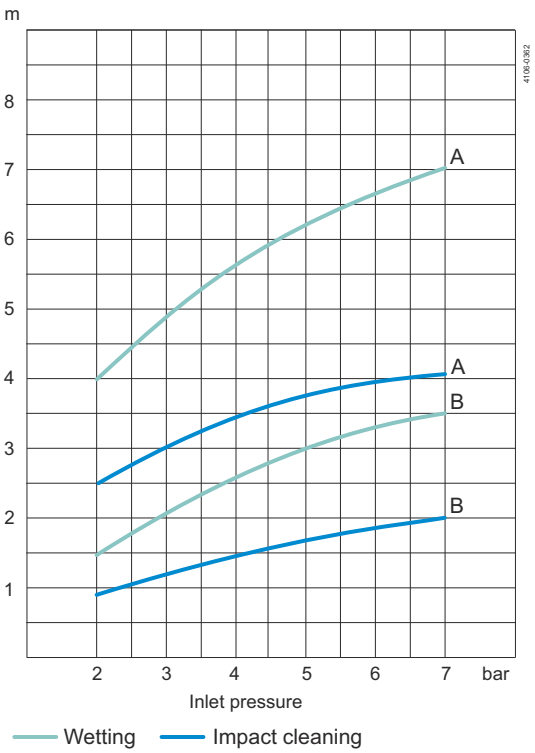
Cleaning Time, Complete Pattern

PTM (Pattern time minutes)



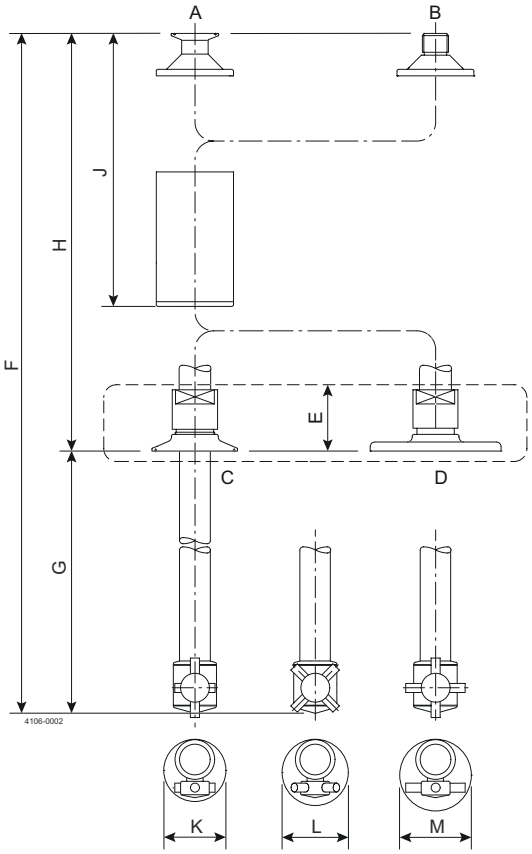
Nozzles mm
A = 4 x Ø4
B = 2 x Ø2.5

Impact Throw Length



Nozzles mm
A = 4 x Ø4
B = 2 x Ø2.5

Dimensions (mm)



A: Clamp 1" ISO, B: Thread 3/4" Rp (BSP) / NPT, C: Clamp 3" ISO

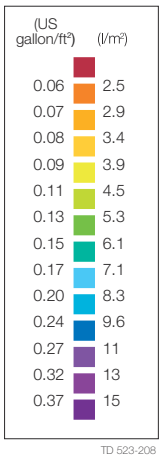
F	G-DPL	H	J	K	L	M
350	Min. 62 Max. 96	Max. 288 Min. 254	190	Ø69	Ø72	Ø79.5
500	Min. 62 Max. 246	Max. 438 Min. 254	190	Ø69	Ø72	Ø79.5
750	Min. 62 Max. 496	Max. 688 Min. 254	190	Ø69	Ø72	Ø79.5
1020	Min. 62 Max. 766	Max. 958 Min. 254	190	Ø69	Ø72	Ø79.5
1270	Min. 62 Max. 1016	Max. 1208 Min. 254	190	Ø69	Ø72	Ø79.5
1500	Min. 62 Max. 1246	Max. 1438 Min. 254	190	Ø69	Ø72	Ø79.5

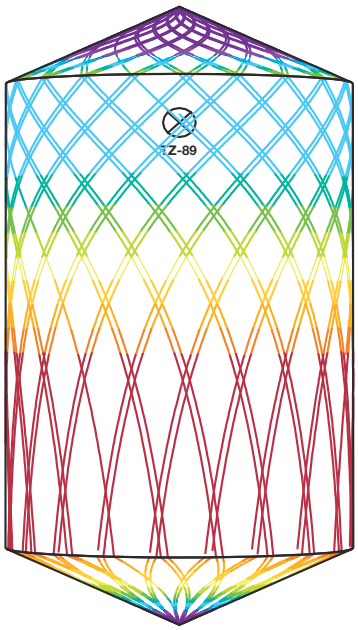
TRAX simulation tool

TRAX is a unique software that simulates how the Toftejorg TZ-89 performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning machine and the correct combination of flow, time and pressure to implement.

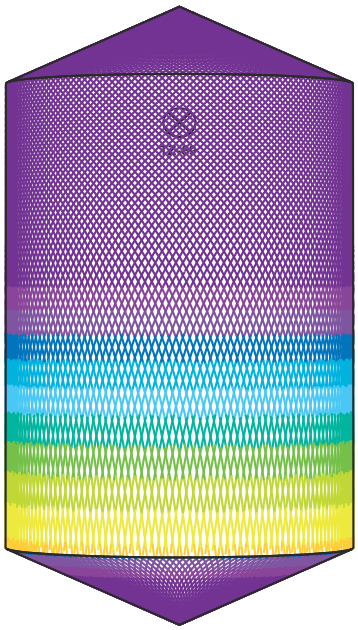
A TRAX demo containing different cleaning simulations covering a variety of applications can be used as reference and documentation for tank cleaning applications. A TRAX simulation is free and available upon request.

Wetting Intensity





D2 H3, TZ-89 4 x Ø4 mm, time 2.8 min



D2 H3, TZ-89 4 x Ø4 mm, time 11.1 min

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