Alfa Laval MultiJet 40

Rotary jet heads

Introduction

The Alfa Laval MultiJet 40 is a rotary jet head tank cleaning machines for use in industrial environments. Built to clean tanks with capacities from 50 and 500 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 MultiJet 40 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.

Application

The Alfa Laval MultiJet 40 is designed for the removal of the toughest residues from industrial tanks across a broad range of industries, such as the home care, chemical, pulp and paper, ethanol, starch, oil, and transportation 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. A 2.1 material certificate and an ATEX certification are available.

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 MultiJet 40 is the Alfa Laval GJ 8 for applications that require a small tank inlet opening.

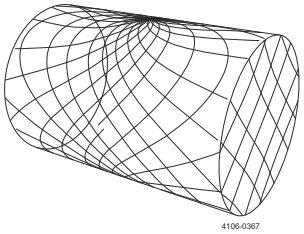
The above drawings show the cleaning pattern achieved on a cylindrical horizontal vessel. The difference between the first cycle and the full pattern represents the number of additional cycles available to increase the density of the cleaning.

Working principle

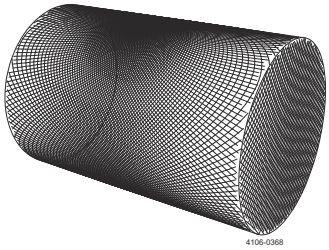
The high-impact jet stream from the Alfa Laval MultiJet 40 rotary jet head covers the entire surface of the tank interior in a successively denser pattern. This achieves a powerful mechanical impact with a low volume of water and cleaning media.

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.



First cycle



Full pattern

Certificates

2.1 material certificate and ATEX.

TECHNICAL DATA

Lubricant:	Self-lubricating with the cleaning fluid
Max. throw length:	2 nozzles: 22 - 31 m
	4 nozzle: 8 - 17 m
Impact throw length:	2 nozzles: 11 - 18 m
	4 nozzles: 4 - 10 m

Pressure	
Working pressure:	2 nozzles: 2 - 12 bar
	4 nozzles: 3 - 12 bar
Recommended pressure:	2 nozzles: 5 - 10 bar
	4 nozzles: 5 - 6.5 bar

PHYSICAL DATA

Materials
316L (UNS S31603), PTFE, PEEK, ETFE, FPM, TFM

Surface finish	
Exterior finish:	Glass blasted

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

Weight:	2 nozzles: 6.5 kg
	4 nozzles: 6.1 kg

Connections	
Standard female thread:	1½" Rp (BSP) or 1½" NPT

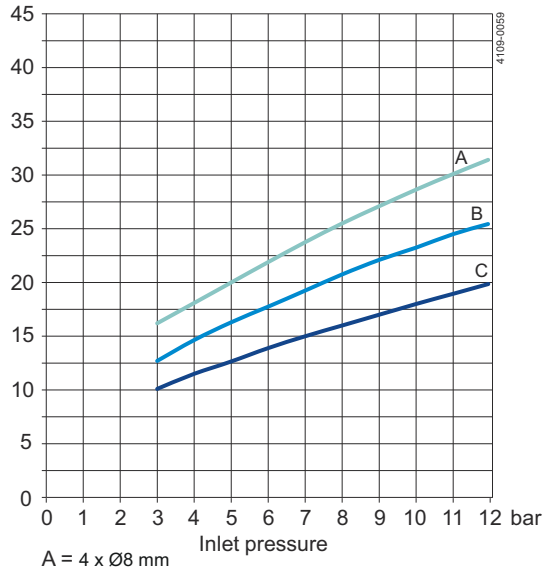
Caution

Avoid hydraulic shock, hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, a filter in the supply line is recommended. Do not use for gas evacuation or air dispersion. For steaming we refer to the manual.

PERFORMANCE DATA, 4 NOZZLES

Flow rate

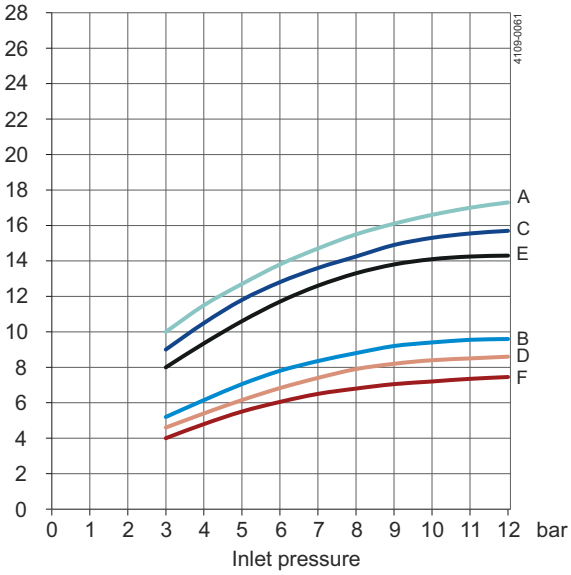
m³/h



A = 4 x Ø8 mm
B = 4 x Ø7 mm
C = 4 x Ø6 mm

Impact Throw Length

m

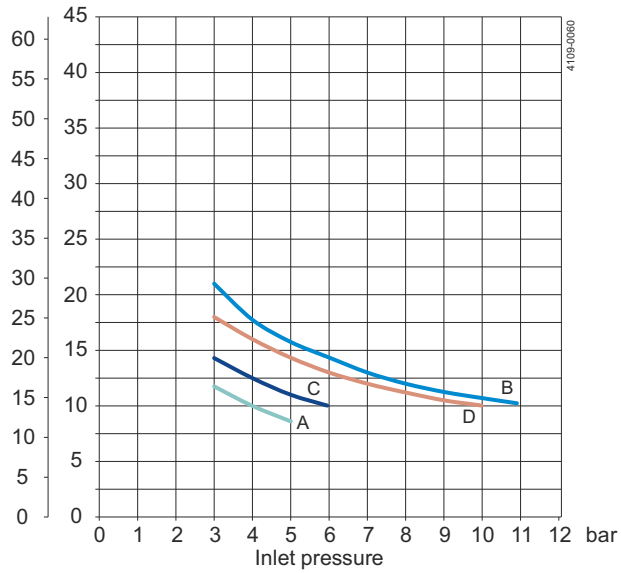


A = 4 x Ø8 mm, Max static
B = 4 x Ø8 mm, Effective
C = 4 x Ø7 mm, Max static
D = 4 x Ø7 mm, Effective
E = 4 x Ø6 mm, Max static
F = 4 x Ø6 mm, Effective

Cleaning Time, Complete Pattern

Min. RPM of machine body

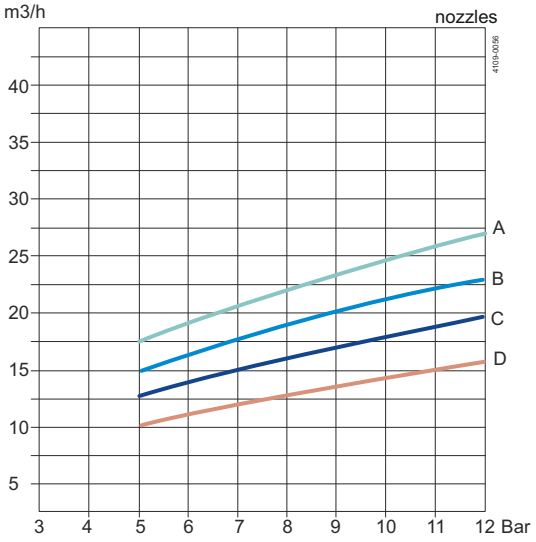
[sec] [min]



A = 4 x Ø8 mm, 100%
B = 4 x Ø8 mm, 0%
C = 4 x Ø7 mm, 100%
D = 4 x 6 Ømm, 100%

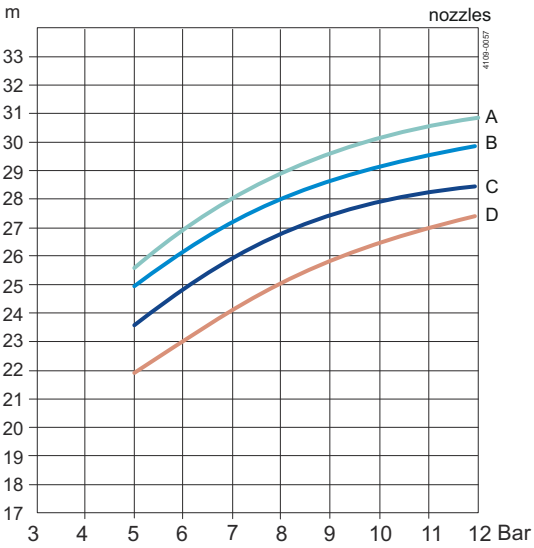
PERFORMANCE DATA, 2 NOZZLES

Flow rate



A = 2 x Ø10 mm C = 2 x Ø8 mm
B = 2 x Ø9 mm D = 2 x Ø7 mm

Impact Throw Length

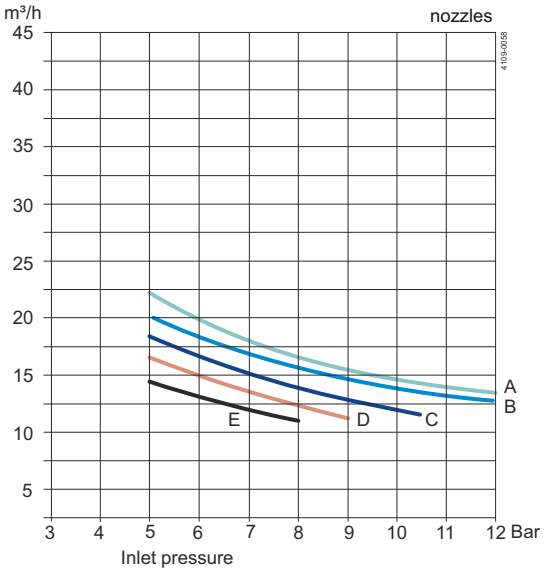


A = 2 x Ø10 mm C = 2 x Ø8 mm
B = 2 x Ø9 mm D = 2 x Ø7 mm

——— Max. static

Cleaning Time, Complete Pattern

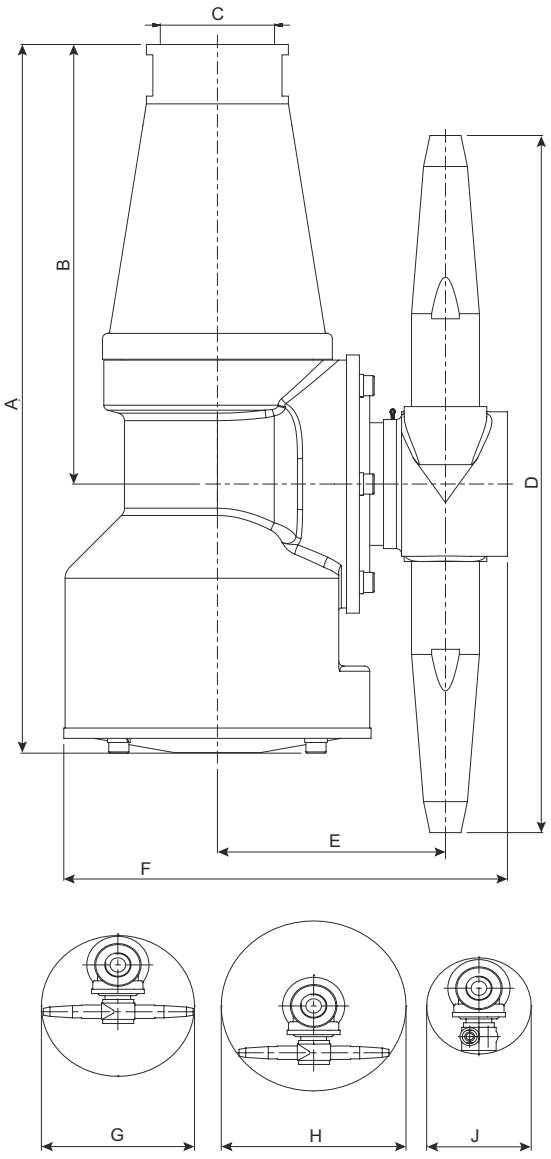
Min. RPM of machine body



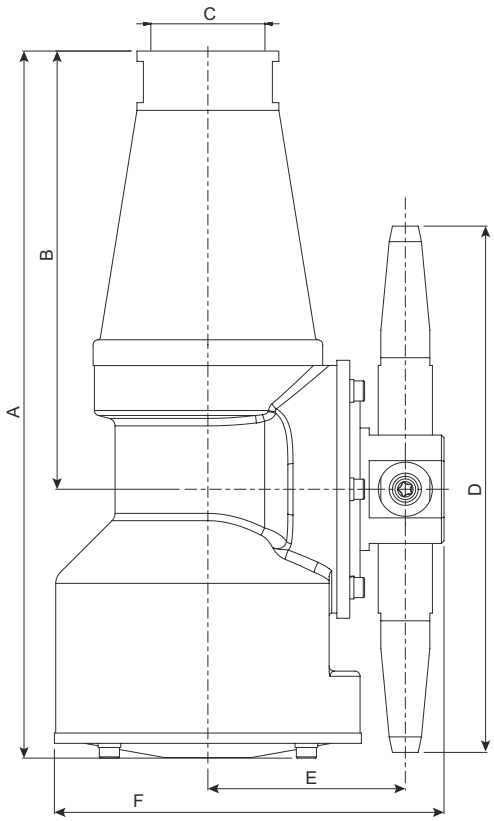
A = 2 x Ø9 mm D = 2 x Ø8 mm
B = 2 x Ø7 mm 100% E = 2 x Ø7 mm 50%
C = 2 x Ø10 mm

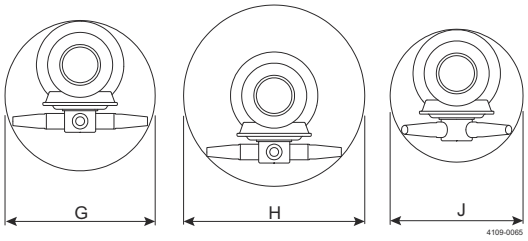
Dimension(mm)

2 nozzle version



4 nozzle version





2 nozzles

A	B	C	D	E	F	G	H	J
274	170	1½" BSP or 1½" NPT	270	88	172	Ø274	Ø333	Ø176

4 nozzles

A	B	C	D	E	F	G	H	J
297	170	1½" BSP or 1½" NPT	204	78	152	Ø216	Ø264	Ø180

Qualification Documentation

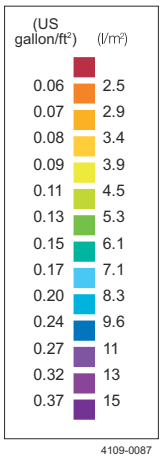
Documentation specification	
ATEX	ATEX approved machine for use in explosive atmospheres Catagory 1 for installation in zone 0/20 in accordance with Directive 2014/34/EU II 1G Ex h IIC 85 °C ... 175 °C Ga II 1D Ex h IIIC T85 °C ... T140 °C Da

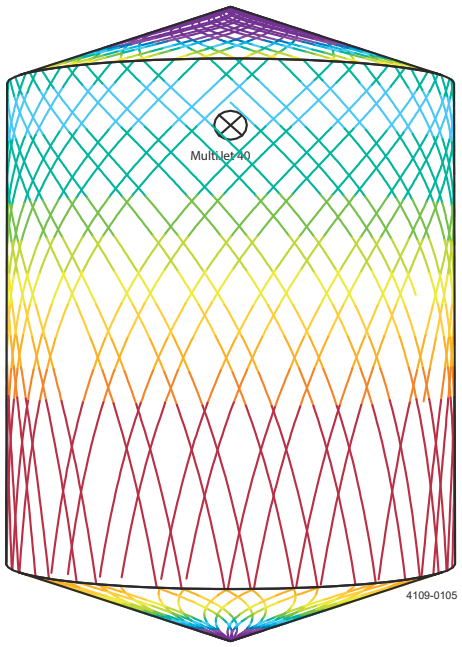
TRAX simulation tool

TRAX is a unique software that simulates how the Toftejorg MultiJet 40 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.

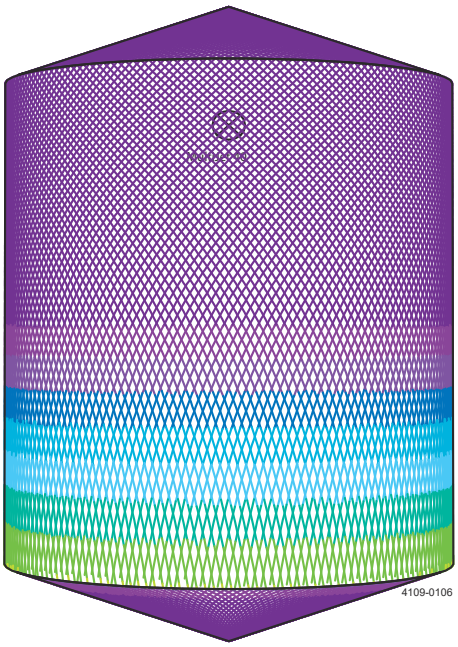
A TRAX demo containing different cleaning simulations covering a variety of applications can be used as reference and documentation for tank cleaning applications. A TRAX simulation is free and available upon request.

Wetting Intensity





D5 m H6 m, Toftejorg MultiJet 40, 4 x Ø6 mm, 100% Time = 4.3 min, Water consumption = 887 l



D5 m H6 m, Toftejorg MultiJet 40, 4 x Ø6 mm, 100% Time = 18.2 min, Water consumption = 3760 l

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How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com