

Meets the Highest Standards in Sanitary Cleaning

Alfa Laval TJ SaniJet 20 Rotary Jet Head

Application

The device is designed for use in pharmaceutical, biotechnological, food and dairy processing applications and is suitable for tanks and vessels between 0.5 and 30 m³. It is especially well-suited to processing highly viscous, foaming or thixotropic products and to chemical processing applications where product cross-contamination is unacceptable.

Working principle

The Toftejorg SaniJet 20 is a sanitary, rotary jet head device that cleans in a 3D indexed "Golden Section" pattern. It has an integrated self-cleaning (patent pending) and self-draining downpipe. The drive mechanism is located outside the tank, leaving a minimum of parts inside the vessel or to be submerged into the product. The distance between the tracks of the jets ensures efficient removal of residual product from the tank surface, from the start of the cleaning sequence, allowing for quick jet effective cleaning.



TECHNICAL DATA

Lubricant: Machine: Self-lubricating with the cleaning fluid
 Air motor: Can operate non-lubricated

Surface finish:

Product contact parts: Ra 0.8µm

Impact throw length: 1.5 - 4 m

Min. tank opening: 4" Clamp w. rotacheck
 3" clamp - rotacheck N/A

Pressure

Air supply pressure: max. 7 bar

CIP media working pressure: 3-13 bar

CIP media recommended pressure: 5-8 bar

Air driven

Air quality:

Clean, filtered max. 40µm

Dry, dew point max.: 5°C Non-lubricated possible

Free air consumption: Max. 2 l/sec. (8 m³/h)

Adjustable speed: 5 - 16 RPM

Cleaning time: 3 - 10 min

Certificates

2.2 material certificate, Q-doc, Q-doc incl. FAT & SAT and ATEX.

PHYSICAL DATA

Materials

316L (UNS S31603), PEEK*, E-CFTE*

Sealing: EPDM* (standard), FPM* FFKM*

* FDA compliance 21CFR§177

Temperature

Max. working temperature: 90°C

Max. ambient temperature: 140°C

Weight

Media-driven machine: 11 - 18 kg

Air-driven machine: 11.7 - 19.2 kg

Connections

Inlet connection: Clamp: 1" ISO 2852

Tank connection: Clamp: 4" ISO 2852

Tank connection: Clamp: 3" ISO 2852

Note: 3" Tank connection has no possibility of integrated rotacheck.

Options

A. Electronic rotation sensor to verify 3D coverage

B. Improved surface finish

C. 3.1 certification for metallic parts by request

D. With FFKM or FPM seal ring

E. ATEX

Caution

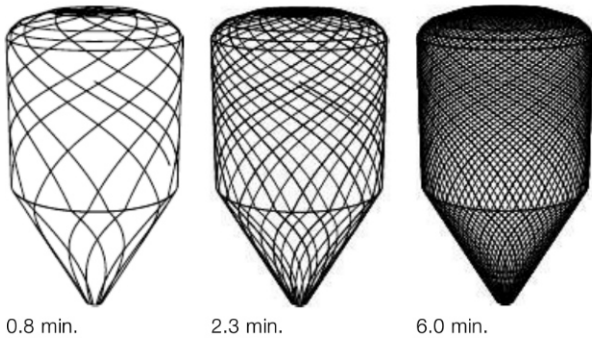
Avoid hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, it is recommended to place a filter in the supply line.

Standard Design

The Toftejorg SaniJet 20 is available in media-driven or air-driven version. Air-driven versions are equipped with a magnetic clutch for leakage-proof transmission. The air motor provides an effective drive for low flow machines in rough environments and for use in explosive hazard zones, provided it is installed according to safety instructions. The air motor has variable speed to adjust cleaning intensity. The sanitary construction of the Toftejorg SaniJet 20 is designed, with the aim to meet regulations, such as EHEDG, etc. As standard documentation, it can be supplied with a "Declaration of Conformity" for material specifications. ATEX approved, Category 1 for installation in zone 0/20.

Cleaning Pattern

Example - 2xø3.8LS



Qualification Documentation (Q-doc)

Designed for the BioPharm and Personal Care industry for qualification of hygienic Tank Cleaning Machines. Developed in accordance to the ISPE V-model and GDP, Good Documentation Practice, and includes: RS (Requirement Specification); DS (Design Specification incl. Traceability Matrix); FAT (Factory Acceptance Test incl. IQ & OQ); 3.1 and USP Class VI Certificates; FDA Declaration of Conformity; TSE Declaration; QC Declaration of Conformity; SAT (Site Acceptance Test Protocol incl. IQ & OQ) for End-User Execution.

Documentation specification

- Equipment Documentation includes:
 - EN 10204 type 3.1 Material Inspection certificate
 - USP Class VI certificate
- Q-doc
 - FDA Declaration of Conformity
 - TSE Declaration
 - QC Declaration of Conformity

ATEX approved machine for use in explosive atmospheres. Media driven version:

Category 1 for installation in zone 0/20 in accordance to Directive 94/9/EC. Ex II 1 GD c T140 °C.

Air driven version:

ATEX Category 1 for installation in zone 0/20 in accordance to Directive 94/9/EC. Ex II 1 GD c T140 °C.

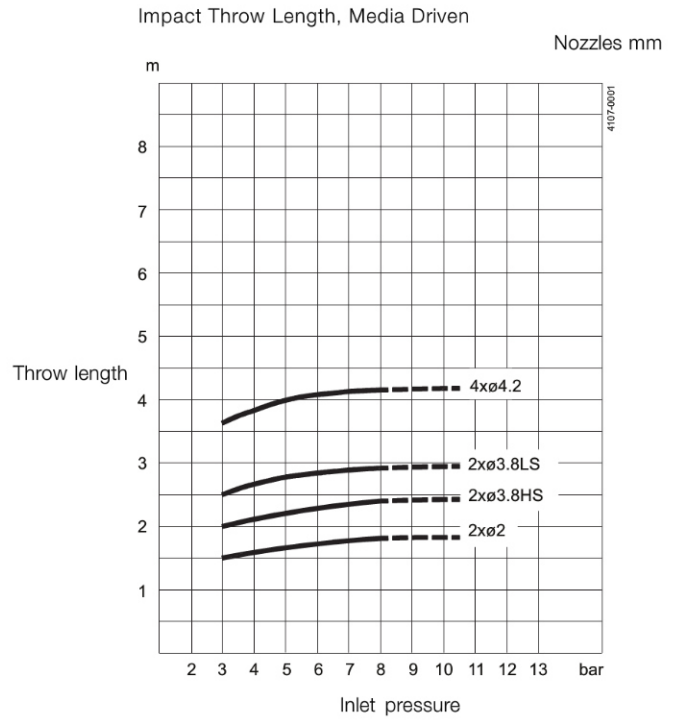
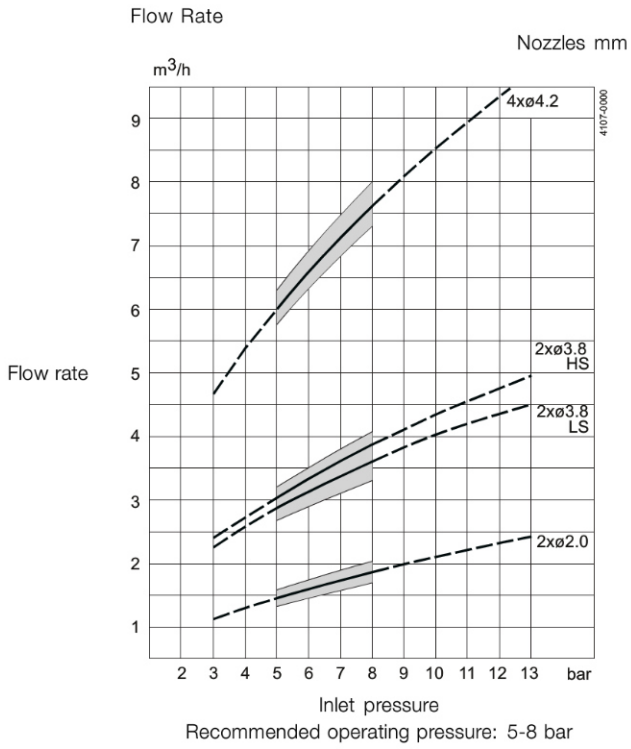
Air driven unit:

Category 2 for installation in zone 1/21 in accordance to Directive 94/9/EC. Ex II 2 GD c IIC T4 Tamb -20 °C to +40 °C

Qualification Documentation includes:

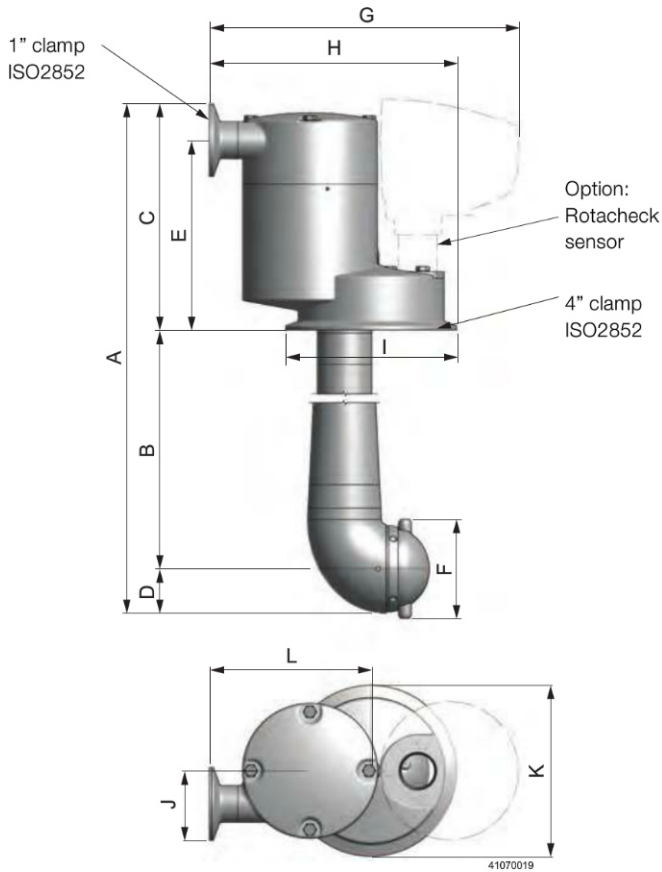
- Q-doc: 3.1 , USP Class VI, FDA, TSE and QC Declaration of Conformity
- Q-doc +
 - RS, Requirement Specification
- FAT-SAT
 - DS, Design specification incl. Traceability Matrix
 - FAT, Factory acceptance Test incl. IQ and OQ
 - SAT, Site Acceptance Test protocol incl. IQ and OQ for End-User Execution

Flow Rate (Media & Air driven)



5.3

Dimensions (mm), Media Driven

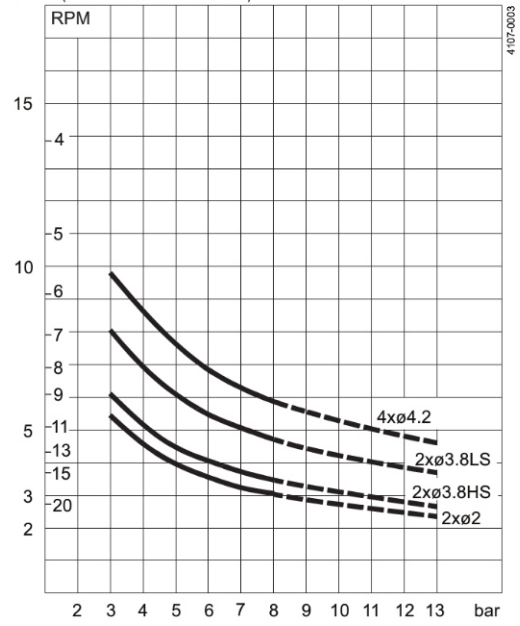


Cleaning Time, Complete Pattern, Media driven

Min. RPM of machine body

Nozzles mm

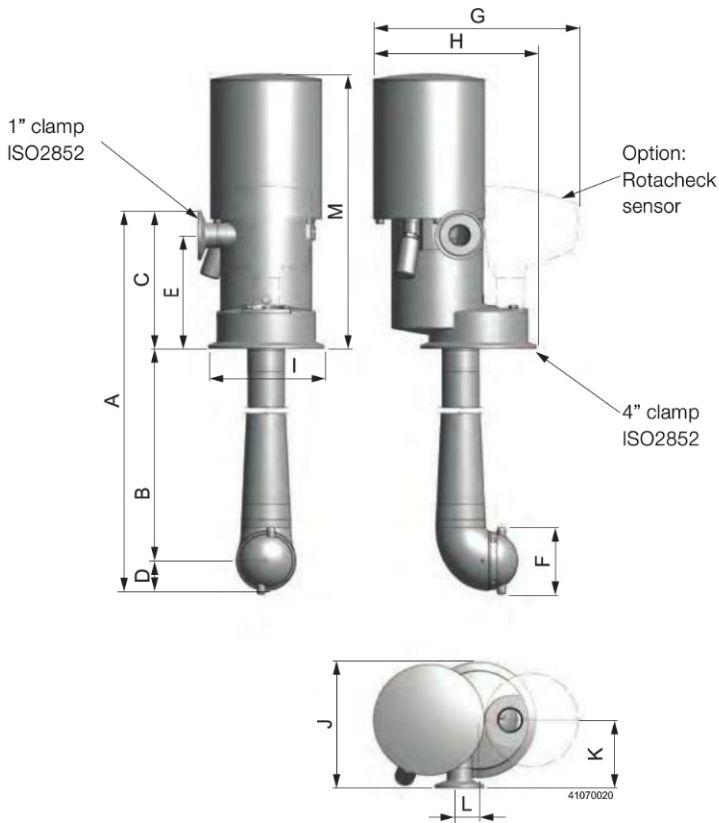
PTM (Pattern time minutes)



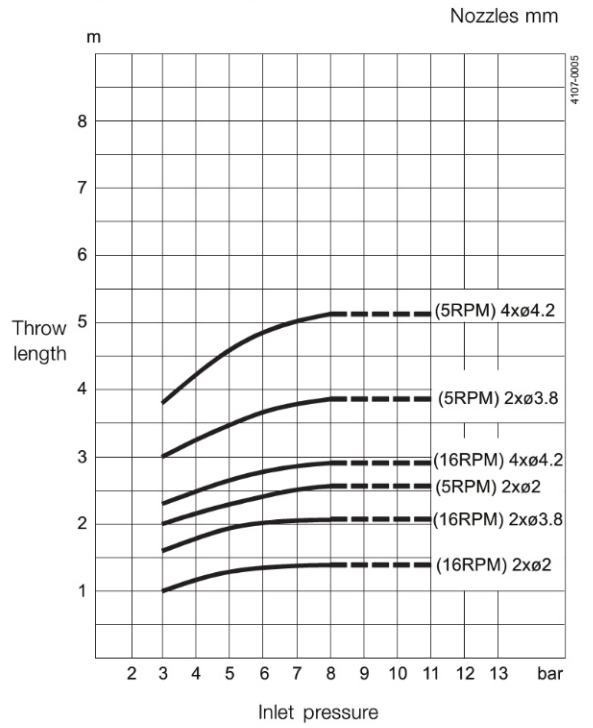
Inlet pressure

A	B	C	D	E	F	G	H	I	J	K	L
537 - 687 - 887 -	350, 500, 700, 1000,	157	31	132	ø69	215	172	ø119	23	ø119	113
1187 - 1387 - 1687	1200, 1500										

Dimensions (mm), Air Driven



Impact Throw Length, Air Driven

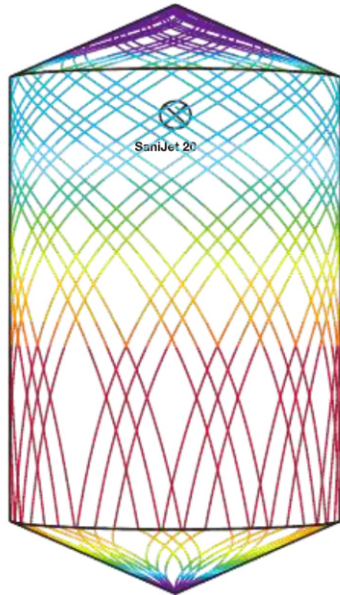
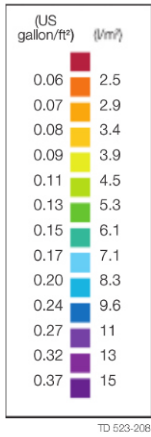


A	B	C	D	E	F	G	H	I	J	K	L
523 - 673 - 873 -	350 - 500 - 700 -	142	31	117	ø69	211	168	ø119	130	70	19.5
1173 - 1376 - 1673	1000 - 1200 - 1500										

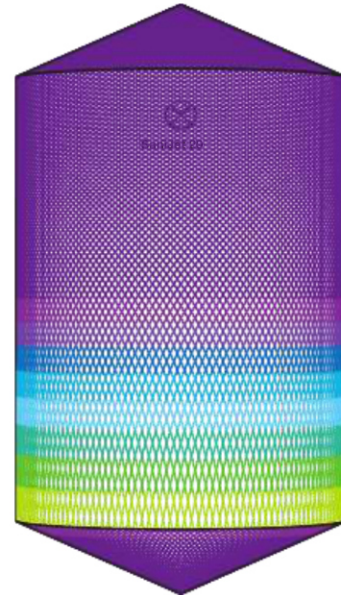
TRAX simulation tool

TRAX is a unique software that simulates how the Toftejorg SaniJet 20 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. The TRAX demo is free and available upon request.

Wetting Intensity



D2m H3m, Toftejorg SaniJet 20, 4 x ø4.2 mm, Time = 1.7 min., Water consumption = 171 l



D2m H3m, Toftejorg SaniJet 20, 4 x ø4.2 mm, Time = 7.6 min., Water consumption = 763 l

Cleaning Pattern, the Golden Section

Toftejorg SaniJet 20 operates according to the patented Golden Section cleaning pattern (EP-Patent No.: 0495883, US-Patent No.: 5,279,675), which is unique in building up a uniform pattern. The pattern starts very coarse and refines itself in a step-less way by laying out the tracks approximately in the middle of the two most distant tracks already made. This means that the jets always clean the areas containing the most remaining product, and thereby remove as much deposit as possible in the shortest possible time. In some instances, this method of cleaning can even render a complete cleaning pattern unnecessary. The Golden Section is the most suitable cleaning pattern for an effective pre-rinse.

Golden Section Cleaning Pattern Traditional Cleaning Pattern

