Alfa Laval TJ SaniJet 20 Rotary Jet Head

Meets the Highest Standards in Hygienic Cleaning

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 hygienic, 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

<table>
<thead>
<tr>
<th>Lubricant: ...................</th>
<th>Machine: Self-lubricating with the cleaning fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface finish:</td>
<td></td>
</tr>
<tr>
<td>Product contact parts: ......</td>
<td>Ra 0.8µm</td>
</tr>
<tr>
<td>Impact throw length: ........</td>
<td>1.5 - 4 m</td>
</tr>
<tr>
<td>Min. tank opening: ..........</td>
<td>4&quot; Clamp w. rotacheck</td>
</tr>
<tr>
<td></td>
<td>3&quot; clamp - rotacheck N/A</td>
</tr>
<tr>
<td>Pressure</td>
<td></td>
</tr>
<tr>
<td>CIP media working pressure:</td>
<td>3-13 bar</td>
</tr>
<tr>
<td>CIP media recommended pressure:</td>
<td>5-8 bar</td>
</tr>
<tr>
<td>Air driven</td>
<td></td>
</tr>
<tr>
<td>Air quality:</td>
<td></td>
</tr>
<tr>
<td>Clean, filtered max.</td>
<td>40µm</td>
</tr>
<tr>
<td>Dry, dew point max.:</td>
<td>5°C Non-lubricated possible</td>
</tr>
<tr>
<td>Air supply pressure:</td>
<td>max. 7 bar</td>
</tr>
<tr>
<td>Free air consumption:</td>
<td>Max. 2 l/sec. (8 m³/h)</td>
</tr>
<tr>
<td>Adjustable speed:</td>
<td>5 - 16 RPM</td>
</tr>
<tr>
<td>Cleaning time:</td>
<td>3 - 10 min</td>
</tr>
</tbody>
</table>

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

PHYSICAL DATA

Materials
316L (UNS S31603), PEEK*, 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 hygienic 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

0.8 min. 2.3 min. 6.0 min.

**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.

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

**ATEX**
设备认证符合用于爆炸性环境。类别1安装在Zone 0/20根据Ex II 1 GD c T 140°C。

空气驱动版本：
类别1安装在Zone 0/20根据Ex II 1 GD c T 140°C。

空气驱动单元：
类别2安装在Zone 1/21根据Ex II 2 GD c IIIC T4 Tamb -20°C to +40°C

**Qualification Documentation**
- Q-doc: 3.1, USP Class VI, FDA, TSE and QC Declaration of Conformity
- RS, Requirement Specification
- 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)

Flow Rate

Nozzles mm

Inlet pressure

Recommended operating pressure: 5-8 bar

Impact Throw Length, Media Driven

Nozzles mm

Inlet pressure

Flow Rate

Nozzles mm

Flow rate

Inlet pressure

Inlet pressure

Inlet pressure

4xø4.2

2xø3.8

2xø2.0

4xø4.2

2xø3.8LS

2xø2LS

2xø2
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. A TRAX simulation 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.
Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval
Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.