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УСТРОЙСТВА ДЛЯ ОЧИСТКИ РЕЗЕРВУАРОВ

Роторные распылительные головки



Устройства очистки бака с вращающейся распылительной головкой обеспечивают исключительную чистоту, лучшее качество конечного продукта, большую общую производительность и сниженные эксплуатационные расходы. Они предназначены для гигиенических, биотехнологических и фармацевтических применений. Доступный в различных размерах и различных конфигурациях, охватывающих любой размер бака.

Multi

Разработанные для использования в большинстве отраслей промышленности, вращающиеся распылительные головки Toftejorg от Alfa Laval отличаются высокой эффективностью очистки резервуаров, обеспечивают исключительную чистоту, улучшенное качество конечного продукта, большую общую производительность и сниженные эксплуатационные расходы.



Alfa Laval MultiMagnum

Low Flow Saves on Water and Chemicals

Application

The Toftejorg MultiMagnum is a rotary spray head that uses cleaning media to provide coverage and impact. The device represents an effective alternative to traditional static spray balls because it uses low volumes of cleaning fluid at low pressure. The double ball bearing in the Toftejorg MultiMagnum's rotating head makes the device suitable for all industrial cleaning applications, including tanks, reactors, vessels and other containers ranging from 5 m³ to 50 m³, depending on dimensions and cleaning task.

Working principle

The flow of the cleaning media causes the head of the Toftejorg MultiMagnum to rotate, and the fan-shaped jets lay out a swirling pattern throughout the tank or reactor. This generates the impact needed for the efficient removal of residual product; the cascading flow covers all internal surfaces of the vessel. The MultiMagnum are designed to be installed in any given angle.



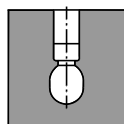
TECHNICAL DATA

Lubricant: Self-lubricating with the cleaning fluid
Wetting radius: Max. 3 m
Impact cleaning radius: Max. effective 2 m

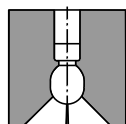
Pressure

Working pressure: 1-3 bar
Recommended pressure: 2 bar

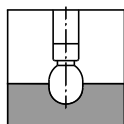
Spray Pattern



360°



270° up



180° down

Standard Design

As standard documentation, the Toftejorg MultiMagnum can be supplied with a "Declaration of Conformity" for material specifications.

Certificates

2.1 material certificate.



PHYSICAL DATA

Materials

Inlet connections/Balls: 316 (UNS S31600)
Bearing race parts: Duplex steel (UNS S31803)
Head: 316 (UNS S31603)
* FDA compliance 21CFR§177
Standard Surface finish: Ra 0.8µm exterior/ Ra 0.8µm internal

Standard Surface finish:

exterior: Ra 0.8µm
internal: Ra 0.8µm

Temperature

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

Weight

Thread: 0.90 kg
On pipe: 2.5 kg

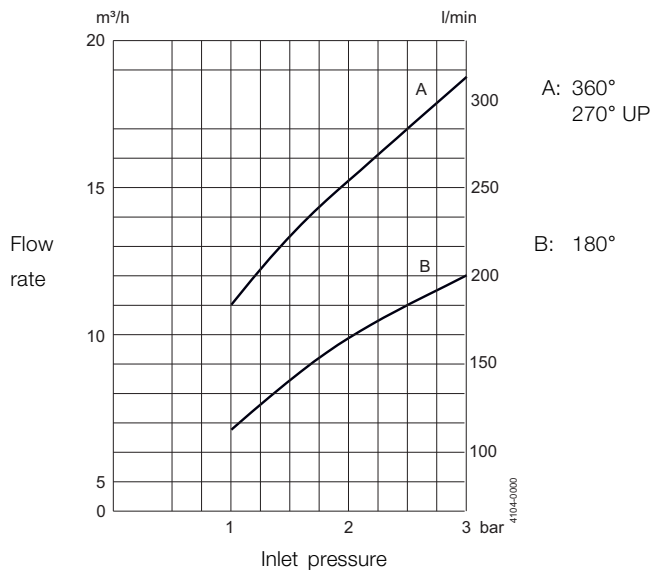
Connections

- Thread: 1 1/4" Rp (BSP) or NPT
- Weld-on: 1 1/2" ISO 2037 or DN40 DIN11850-R2

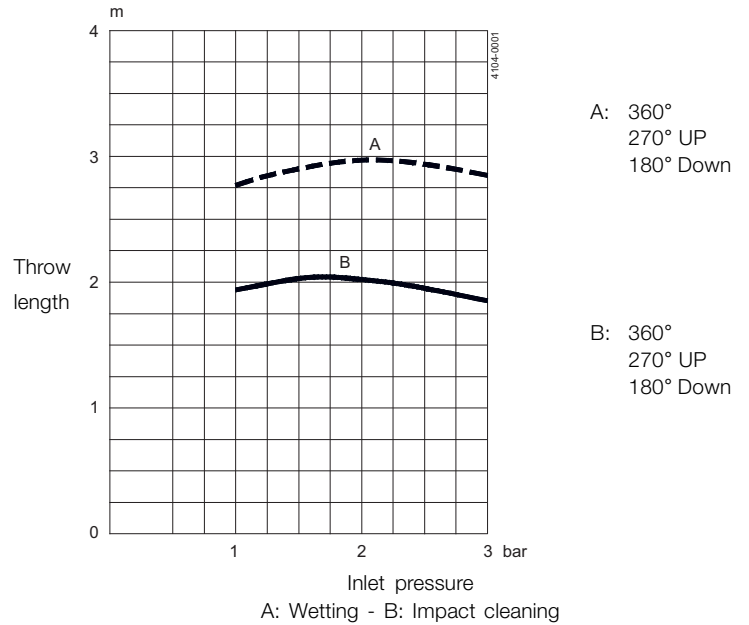
Caution

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.

Flow Rate

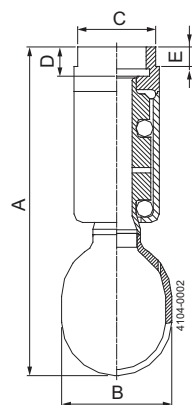


Cleaning radius



Dimensions (mm)

Thread

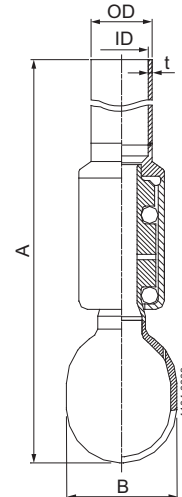


TH

1 1/4" Rp (BSP)

1 1/4" NPT

Weld-on



OD x t

Welded on

pipe

ISO: $\varnothing 38 \times 1.2$ mm

DIN Range 2: $\varnothing 41 \times 1.5$ mm

Type	A	B	C	D	E
Thread	183	$\varnothing 65$	46	16	15
Weld-on	1000	$\varnothing 65$			

Sani

Разработанные для гигиенических применений устройства для очистки резервуаров с вращающейся головкой Toftejorg обеспечивают исключительную очищаемость и дренаж, а также простое и экономичное обслуживание.





Alfa Laval SaniMagnum

Hygienic, Low-Flow Cleaning

Application

The Toftejorg SaniMagnum is an efficient replacement for traditional static spray balls as it uses low volumes of liquid at low pressure. The device, particularly well-suited to hygienic applications, can be used in tanks ranging from 5 m³ to 50 m³.

Working principle

The flow of the cleaning media causes the head of the Toftejorg SaniMagnum to rotate, with fan jets laying out a swirling pattern throughout the vessel. This generates a vibrating impact and cascading flow that covers all internal surfaces of the tank or reactor. The device's self-cleaning feature is achieved by directing the cleaning media through the rotating bearing track and onto the neck of the elongated head.

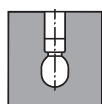
TECHNICAL DATA

Lubricant: Self-lubricating with the cleaning fluid
Wetting radius: Max. 3 m
Impact cleaning radius: Max. effective 2 m

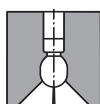
Pressure

Working pressure: 1-3 bar
Recommended pressure: 2 bar

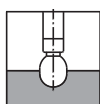
Spray Pattern



360°



270° up



180° down

Standard Design

As standard documentation, the Toftejorg SaniMagnum can be supplied with a "Declaration of Conformity" for material specifications or 3.1 certification for metallic parts. Conformity of Declaration ATEX available on request. The device is available in hastelloy C22 (balls in hastelloy C276) with 3.1 certification for metallic parts. ATEX approved, Category 1 for installation in zone 0/20.

Certificates

2.2 material certificate, Q-doc and ATEX.



PHYSICAL DATA

Materials

Inlet connections/Head: 316L (UNS S31603)
Bearing race parts: Duplex steel (UNS S31803)
Balls: 316L (UNS S31603) /PTFE*
Clip parts 316
* FDA compliance 21CFR§177

Standard Surface finish:

exterior: Ra 0.8µm
internal: Ra 0.8µm

Improved Surface finish:

exterior: Ra 0.5µm
internal: Ra 0.8µm

Temperature

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

Weight

Thread and clip-on: 0.76 kg
On pipe: 0.97/1.52 kg

Connections

- Thread: 1 1/4" or 1 1/2" Rp (BSP) or NPT
- Weld-on: 1 1/2" or 2" ISO 2037, or DN40 DIN11850-R2, or 1 1/2" or 2" BPE US
- Clip-on: 1 1/2" or 2" ISO 2037, or DN40 DIN11850-R1 or R2, or 1 1/2" or 2" BPE US

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.

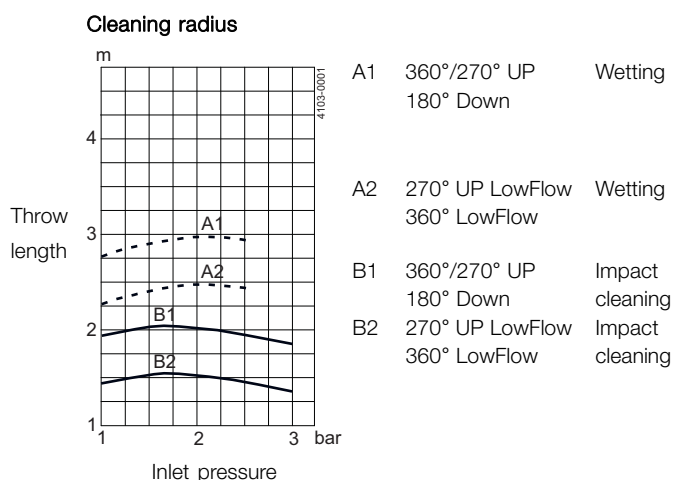
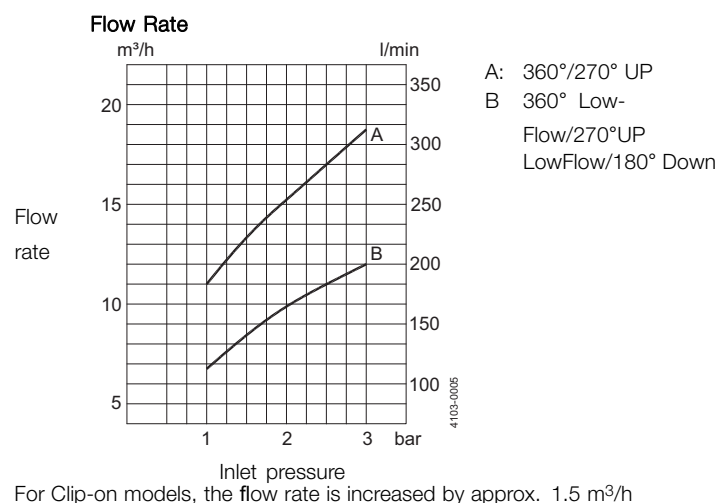
Qualification Documentation (Q-doc)

Documentation specification

Equipment Documentation includes:

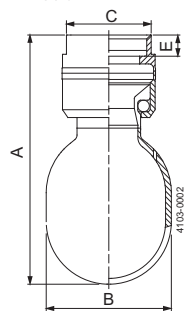
- EN 10204 type 3.1 Material Inspection certificate
- FDA Declaration of Conformity
- ADI Declaration (TSE)
- QC Declaration of Conformity

ATEX
ATEX approved machine for use in explosive atmospheres.
Category 1 for installation in zone 0/20 in accordance to
Ex II 1 GD c T 140°C.

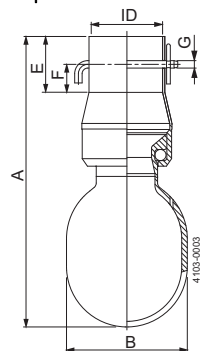


Dimensions (mm)

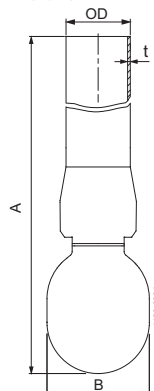
Thread



Clip-on



Weld-on



TH

1 1/4" (BSP)
1 1/4" NPT
1 1/2" (BSP)
1 1/2" NPT

ID

ID 1: 1 1/2" $\varnothing 38.4$ mm
ID 2: 2" $\varnothing 51.3$ mm
DIN Range 1 $\varnothing 40.4$ mm
DIN Range 2 $\varnothing 41.4$ mm

OD x t

ISO $\varnothing 38 \times 1.2$ mm
BPE US $\varnothing 38.1 \times 1.65$ mm
BPE US $\varnothing 50.8 \times 1.65$ mm
DIN Range 1 $\varnothing 40 \times 1$ mm
DIN Range 2 $\varnothing 41 \times 1.5$ mm

Type	A	B	C	E	F	G
Thread	130	$\varnothing 65$	44	10		
Clip-on	157	$\varnothing 65$		30	15	$\varnothing 4.2$
Weld-on	157, 500, 1000	$\varnothing 65$				

Sani SB

Разработанные для применения в гигиенических отраслях, вращающиеся распылительные головки Toftejorg от Alfa Laval отличаются высокой эффективностью очистки резервуаров, обеспечивают исключительную чистоту, лучшее качество конечного продукта, большую общую производительность и сниженные эксплуатационные расходы.





Alfa Laval SaniMagnum SB

Hygienic, Low-Flow Cleaning that meet 3-A standards

Application

The Alfa Laval Toftejorg SaniMagnum SB Rotary Spray Head is designed with respect to Self-Cleaning, Self-Draining and Inspectability. Its novel patented One-clip assembly offers easy installation, disassembly and inspection without compromising cleanability and drainability. The Toftejorg SaniMagnum SB is an efficient replacement for the traditional Static Spray Ball as it offers liquid impact on the entire tank wall that lies within the spray pattern – a 270°U or a 360° pattern; both at a lower flow rate at equally low pressure.

Working principle

The flow of cleaning media causes the head of the Toftejorg SaniMagnum SB to rotate on a liquid film (Slide Bearing), with fans of water laid out in a swirling pattern on the entire perimeter within the spray pattern. This generates a vibrating impact in the impact zone and a dynamic cascading flow that covers all internal surfaces of the tank, vessel or reactor. The Self-Cleaning feature is due to the unique design that includes cleaning of the down pipe.



TECHNICAL DATA

Lubricant: Lubrication by rinse/cleaning fluid

Wetting radius: Max. 4.5 m

Impact cleaning radius: Max. 2.4 m

Pressure

Working pressure: 1-3 bar

Recommended pressure: 2 bar

Spray Pattern



360°



270° up

Standard Design

The Toftejorg SaniMagnum SB can be supplied with 3.1 Certificates for metallic parts and 3-A Conformity* on its plastic part.

*Implies that the material complies with FDA 21CFR.

Sizing/selection and installation drawing are available. Contact Alfa Laval for recommendations.

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.

PHYSICAL DATA

Materials

Metalic parts: 316L

Non-metallic parts: PEEK 450G*

* FDA compliance 21CFR§177

Surface finish: Ra 0.8 µm

Temperature

Max. working temperature: 95°C

Max. ambient temperature: 150°C

FDA compliant tekst

Weight: 0.4 kg

Connections

Clip-on: 1½" BPE US, 1½" ISO 2037

Weld-on: 2" BPE US*

Clip

Easy-on/off clip (ø4.0 mm)

Clip needed for both clip-on and weld-on versions to assemble the machine.

Recommended tank size: 23-68 m³

Certificates

2.2 material certificates, Q-doc, EHEDG, 3-A and ATEX



Qualification Documentation (Q-doc)

Documentation specification

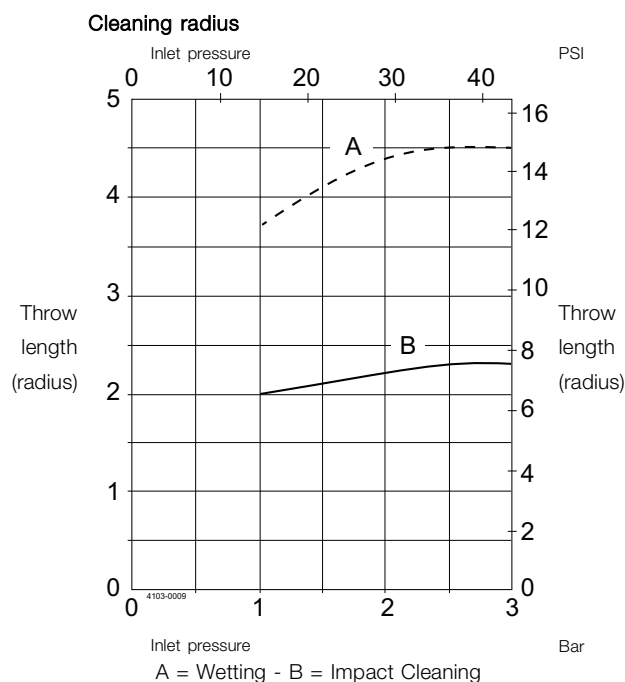
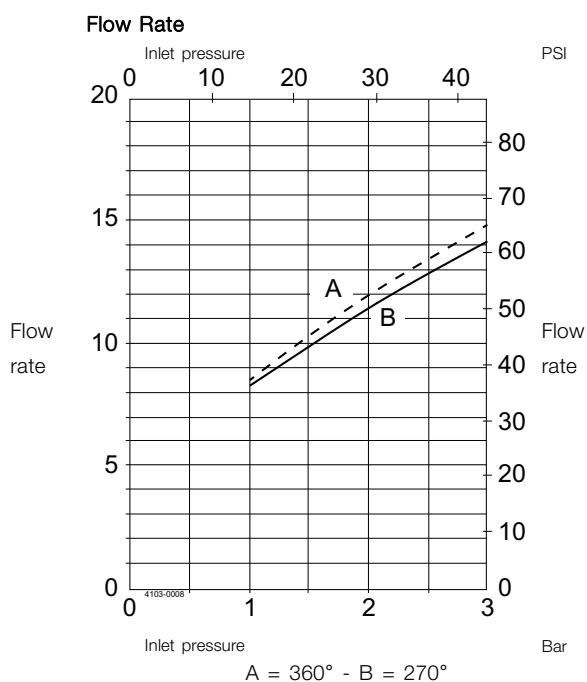
Equipment Documentation includes:

- EN 10204 type 3.1 Material Inspection certificate
- FDA Declaration of Conformity
- ADI Declaration (TSE)
- QC Declaration of Conformity

Q-doc

ATEX

ATEX approved machine for use in explosive atmospheres.
Category 1 for installation in zone 0/20 in accordance to
Ex II 1 GD c T 140°C.



For Clip-on models, the flow rate is increased by approx. 1.5 m³/h.

Note: The inlet pressure has been taken immediately before the inlet to the machine. In order to achieve the performance indicated on the curves, the pressure drop in the supply lines between pump and machine must be taken in consideration and the water temperature during testing was approx. 20°C.

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