# Sanitary, Low-Flow Cleaning

## Toftejorg SaniMagnum Rotary Spray Head

### 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 sanitary applications, can be used in tanks ranging from 5 $m^3$ to 50 $m^3$.

### 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.

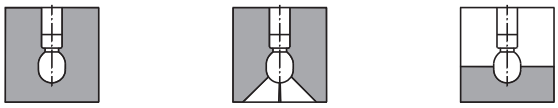
### TECHNICAL DATA

| | |
|---|---|
| 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 directive 94/9/EC 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, Q-doc incl. FAT & SAT and ATEX.

### PHYSICAL DATA

#### Materials

| | |
|---|---|
| Inlet connections/Head: | 316L (UNS S31603) |
| Bearing race parts: | Duplex steel (UNS N31803) |
| Balls: | 316L (UNS S31603) /PTFE* |

* FDA compliance 21CFR§177

#### Standard Surface finish:

| | |
|---|---|
| exterior: | Ra 0.8µm |
| internal: | Ra 0.8µm |

#### Improved Surface finish:

| | |
|---|---|
| exterior: | Ra 0.5µm |
| internal + Electro polished: | Ra 0.5µm |

#### 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

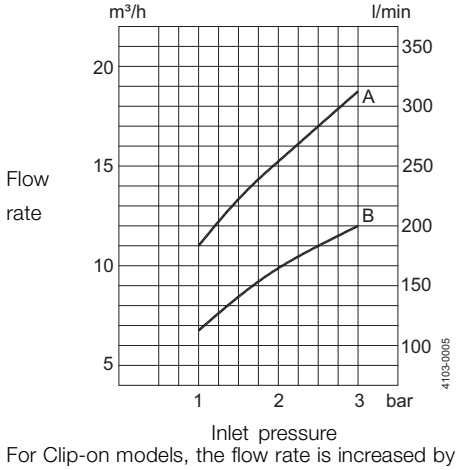
- Thread: 1 1/4" or 1 1/2" Rp (BSP) or NPT
- Weld-on: 1 1/2" or 2" ISO 2037, or DN40 DIN11850-R2, or 1 1/2" or 2" BPE US
- Clip-on: 1 1/2" or 2" ISO 2037, or DN40 DIN11850-R1 or R2, or 1 1/2" or 2" BPE US

### Qualification Documentation (Q-doc)

Designed for the BioPharm and Personal Care industry for qualification of hygienic Tank Cleaning Machines. Developed in according 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.

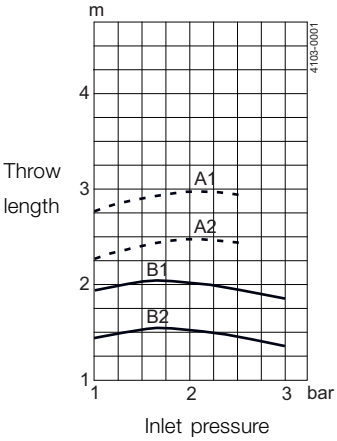
### Flow Rate




A: 360°/270° UP
B 360° Low-Flow/270°UP LowFlow/180° Down

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

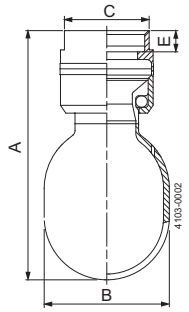
### Cleaning radius



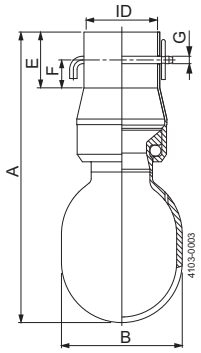

| | | |
|---|---|---|
| A1 | 360°/270° UP 180° Down | Wetting |
| A2 | 270° UP LowFlow 360° LowFlow | Wetting |
| B1 | 360°/270° UP 180° Down | Impact cleaning |
| B2 | 270° UP LowFlow 360° LowFlow | Impact cleaning |

### Dimensions (mm)

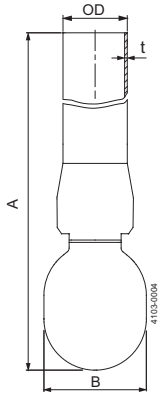
#### Thread




#### Clip-on




#### Weld-on




**TH**

| | |
|---|---|
| 1 1/4" (BSP) | |
| 1 1/4" NPT | |
| 1½" (BSP) | |
| 1½" NPT | |

**ID**

| | |
|---|---|
| ID 1: 1½" | ø38.4 mm |
| ID 2: 2" | ø51.3 mm |
| DIN Range 1 | ø40.4 mm |
| DIN Range 2 | ø41.4 mm |

**OD x t**

| | |
|---|---|
| ISO | ø38 x 1.2 mm |
| BPE US | ø38.1 x 1.65 mm |
| BPE US | ø50.8 x 1.65 mm |
| DIN Range 1 | ø40 x 1 mm |
| DIN Range 2 | ø41 x 1.5 mm |

| Type | A | B | C | E | F | G |
|---|---|---|---|---|---|---|
| Tread | 130 | ø65 | 44 | 10 | | |
| Clip-on | 157 | ø65 | | 30 | 15 | ø4.2 |
| Weld-on | 157, 500, 1000 | ø65 | | | | |

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