

1.3 Rotary jet heads

Alfa Laval's comprehensive range of cleaning devices guarantees impact, making the most economical use of energy, manpower and cleaning solutions.

Application overview	1.3.113
Application overview - Hygienic application	1.3.113
Application overview	1.3.114
Application overview - Industrial application	1.3.114
Product leaflet	
GJ 7	1.3.115
GJ A2	1.3.119
GJ BB	1.3.122
GJ 9	1.3.125
GJ 10	1.3.128
TZ-89	1.3.131
GJ A6	1.3.134
SaniJet 20	1.3.137
SaniJet 20 UltraPure	1.3.142
GJ PF	1.3.147
GJ PF FT	1.3.151
MultiJet 25	1.3.155
TJ20G	1.3.158
SaniJet 25	1.3.161
SaniJet 25 UltraPure	1.3.164
TJ40G	1.3.167
GJ 8	1.3.170
MultiJet 40	1.3.174
GJ 4	1.3.177
MultiJet 50	1.3.181
MultiJet 65	1.3.184
TZ-750	1.3.186
Three-in-one technology for optimized tank cleaning	1.3.188
Price lists	
GJ 7	1.3.189
GJ A2	1.3.190
GJ BB	1.3.191
GJ 9	1.3.192
GJ 10	1.3.194
TZ-89	1.3.195
GJ A6	1.3.197

1.3 Rotary jet heads

Alfa Laval's comprehensive range of cleaning devices guarantees impact, making the most economical use of energy, manpower and cleaning solutions.

SaniJet 20	1.3.198
SaniJet 20 UltraPure	1.3.205
GJ PF	1.3.208
GJ PF FT	1.3.212
MultiJet 25	1.3.219
TJ20G	1.3.220
TJ40G all versions	1.3.222
SaniJet 25 & SaniJet 25 UltraPure	1.3.224
GJ 8	1.3.225
MultiJet 40	1.3.228
GJ 4	1.3.230
MultiJet 50	1.3.240
MultiJet 65	1.3.242
TZ-750	1.3.244

Main duties	Rotary Spray Head										Rotary Jet Head												
	SaniMicro	SaniMicro Ultra Pure	SaniMidget	SaniMidget Ultra Pure	SaniMidget SB	SaniMidget SB Ultra Pure	SaniMidget Retractor	SaniMagnum	SaniMagnum Ultra Pure	SaniMagnum SB	SaniMega SB	GJ/A2	GJ/A6	TZ-89	SaniJet 20	SaniJet 20 UltraPure	TJ20G	TJ20G distillery	SaniJet 25 UltraPure	GJ PF FT	TJ40G	TJ40G-HD	TJ40G-BURST
Dairy																							
Milk silo							X		X	X							X				X		
Cream tank			X		X		X		X	X							X						
Cultured milk tanks							X		X	X						X						X	
Whey tanks			X		X		X		X	X						X						X	
Curd tanks			X		X		X		X							X							
Ice cream tanks			X		X		X	X	X					X		X							
Cheese tanks			X		X		X		X					X		X							
Yoghurt fermenters			X		X		X	X	X					X		X						X	
Road tanker			X		X											X							
Spray drying			X		X		X		X	X						X						X	
Retrofit of existing static spray ball			X		X		X		X			X				X				X	X		
Brewery																							
Wort kettles / boilers																	X						X
Mash tun																	X						X
Beer fermenters			X		X		X		X					X		X					X		X
Bright beer tank (BBT)			X		X		X		X							X					X		
Yeast propagation and storage			X		X		X		X					X		X		X					
Retrofit of existing static spray ball			X		X		X		X	X		X				X	X			X	X	X	X
Distillery																							
Wort kettles / boilers																	X						X
Washbacks			X		X		X		X								X						X
Yeast propagation and storage			X		X		X		X					X		X		X					X
Retrofit of existing static spray ball			X		X		X		X	X		X	X			X	X			X	X	X	X
Beverage																							
Juice tanks							X		X	X							X						X
Juice concentrate tanks							X		X	X							X						X
Sirup tanks							X		X								X					X	
Wine fermentation			X		X		X		X	X						X						X	
Wine storage			X		X		X		X	X						X						X	
IBC containers			X										X										
Retrofit of existing static spray ball			X		X		X		X	X		X				X				X	X		
Other Food																							
Low viscous product	X		X		X		X		X	X	X	X	X			X					X		
High viscous product	X		X		X		X		X	X	X	X	X			X					X		
Vegetable oil tanks	X		X		X		X		X	X	X	X	X			X					X		
Prepared food tanks	X		X		X		X		X	X	X	X	X			X					X		
IBC containers			X									X											
Retrofit of existing static spray ball	X		X		X		X		X	X	X	X				X			X	X	X		
Pharma																							
PW		X		X		X		X							X			X					
WFI		X		X		X		X							X			X					
API									X							X		X		X		X	
Reactors				X		X		X								X		X		X		X	X
Retrofit of existing static spray ball				X		X		X			X				X		X		X	X	X		
Personal care																							
Shampoo tanks			X	X	X	X	X	X	X	X	X	X	X	X			X						
Toothpaste tanks			X	X	X	X	X	X	X	X	X	X	X	X			X						
Lotion tanks			X	X	X	X	X	X	X	X	X	X	X	X			X						
IBC containers			X									X											
Retrofit of existing static spray ball											X	X				X				X			
IBC containers																							
Powder			X									X				X							
Liquid			X									X				X							

Ultra Pure version

Ultra Pure version is typically delivered with Alfa Laval Q-doc, which consist of 3.1 certificates, FAT, XX, XX. Surface finish are typically 0,5Ra Electro polished

HD version

HD version is machine which can handle re-circulation of cleaning liquid containing particles

BURST version

BURST version is special nozzle which is designed for fast chemical distribution

Main duties	Rotary Spray Head		Rotary Jet Head												
	MultiMidget	MultiMagnum	GJ 7	GJ BB	GJ 9	GJ 10	GJ PF	MultiJet 25	GJ 8	MultiJet 40	GJ 4	MultiJet 50	MultiJet 65	i40S	i40D
Home care															
Laundry detergent tanks	X	X			X		X	X							
Cream tanks	X	X			X		X	X							
Low viscous cleaning products	X	X			X		X	X							
High viscous cleaning products	X	X			X		X	X							
Chemical application															
Paint tanks							X	X							
Laquers							X	X							
Glue							X	X							
Ink			X		X		X	X							
Fertilizers							X	X	X	X	X	X	X		
Bulk chemicals							X	X	X	X	X	X	X		
Pulp & Paper															
Pulp tower							X	X	X	X	X	X	X		
White liquor tanks							X	X	X	X	X				
Black liquor tanks							X	X	X	X	X				
Stock chest							X	X	X	X	X				
Wire pit					X		X	X							
Disc filters	X				X										
Mixing tanks							X	X	X	X					
Bleaching tanks	X						X	X	X	X					
Ethanol															
Mashing / Cooking							X		X		X				
Fermentation							X		X		X				
Storage							X	X	X	X	X	X	X		
Starch															
Steeping tanks									X		X				
Process tanks							X		X		X				
Storage tanks							X		X		X				
Spray drying							X	X	X	X	X	X	X		
Transportation															
Road tankers									X	X	X	X			
Rail cars									X	X	X	X			
Frac tanks									X	X	X	X			
IBC containers															
Powder	X				X										
Liquid	X				X										
Oil															
Undergroup storage tank						X									
Storage tank							X	X	X	X	X	X	X	x	x
Various															
Monosodium Glutamate (MSG)									X						
Municiples							X		X						
Cold rolling steel										X					
Storm tanks							X		X						
Drums	X		X	X											

Alfa Laval GJ 7

Powerful tank cleaning for small barrels and drums

Application

The smallest rotary impingement tank cleaning device, the Alfa Laval GJ 7 easily fits through a 3.8 cm access hole. Capable of operating at both high and low pressures, this device delivers 2.27 kg. of cleaning force at .76 m. The Alfa Laval GJ 7 offers quick and easy cleaning of barrels, drums, and other small vessels in a wide variety of industries. The device is part of the world-renowned Gamajet range of high impact tank cleaning devices.

Working principle

The Gamajet range of high impact tank cleaning devices combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point at which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which blasts contaminants from the surface, scouring the tank interior. In conjunction with this impact, the device is engineered to rotate in a precise, repeatable and reliable, 360° pattern. This full-coverage, global indexing pattern ensures the entire tank interior is cleaned, every time.



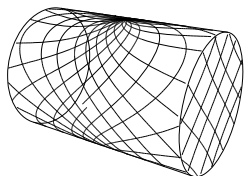
TECHNICAL DATA

Lubricant Food grade
 Max. throw length 2 - 2.5 m

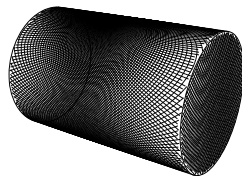
Pressure

Working pressure 3.5 - 83 bar
 Recommended pressure 5.5 - 55 bar

Cleaning Pattern



First Cycle



Full Pattern

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.

PHYSICAL DATA

Materials

1.4404 (316L), PTFE, EPDM (FKM and FFKM available)

Temperature

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

Weight

. 6.8 kg.

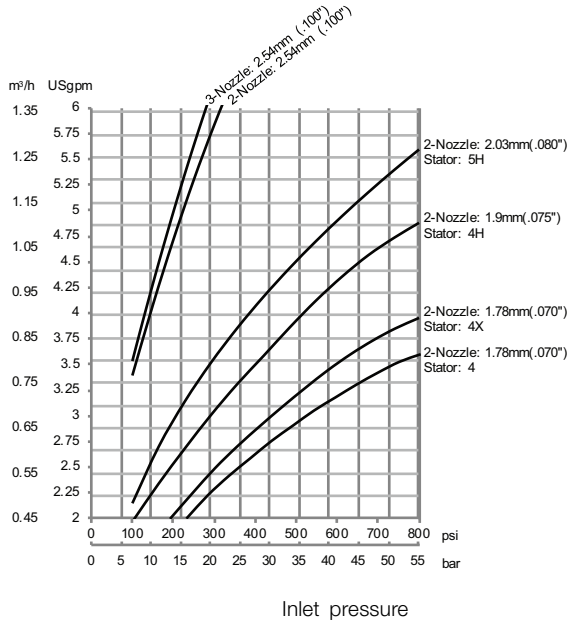
Connections

Standard thread ½" NPT, ½" BSP

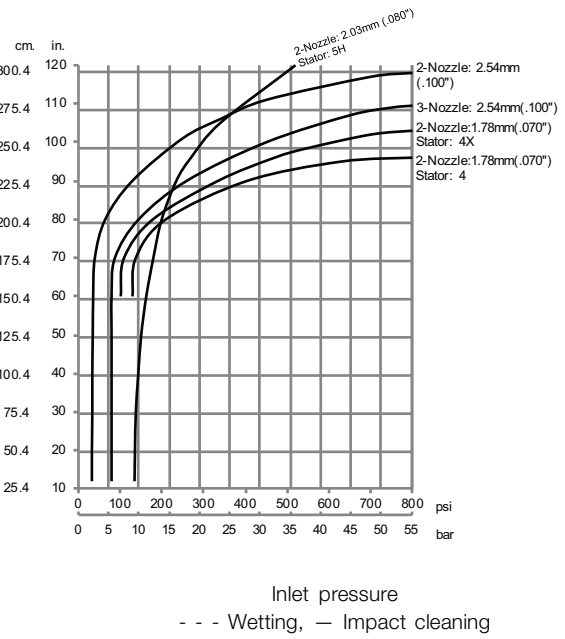
Caution

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.

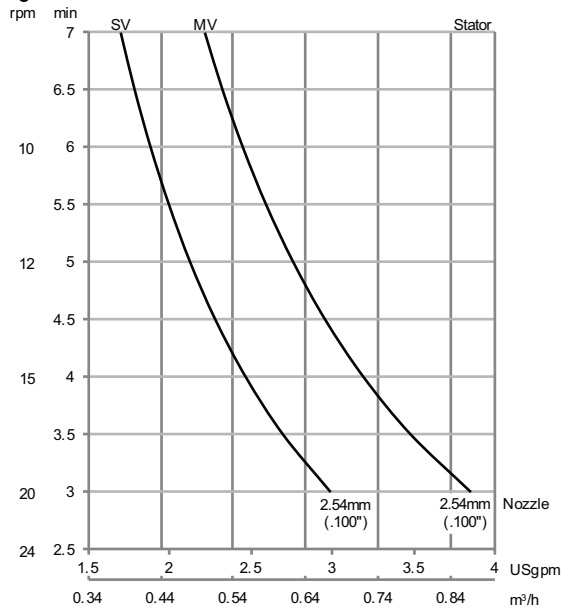
Flow Rate



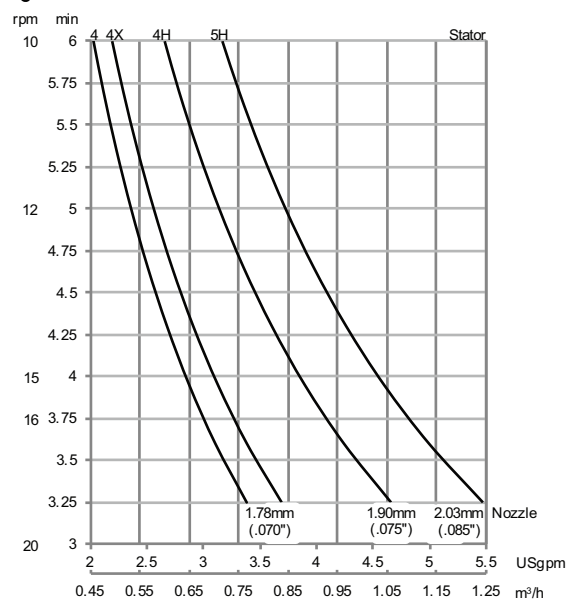
Impact Throw Length



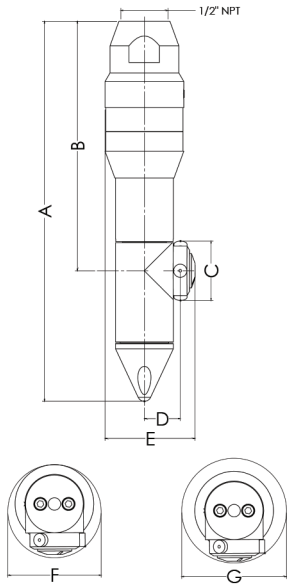
Cleaning Time .100 NOZ



Cleaning Time .7-.8 NOZ



Dimensions (mm)(in)



A	B	C	D	E	F	G
176	115	27	17	42	43	48

Standard Design

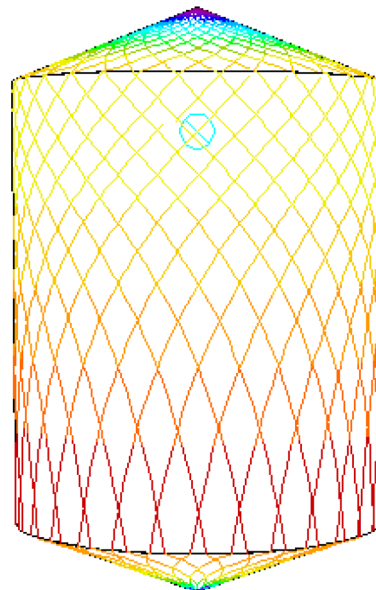
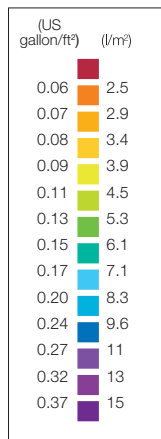
The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure. As standard documentation, the Alfa Laval GJ 7 can be supplied with a "Declaration of Conformity" for material specifications.

TRAX simulation tool

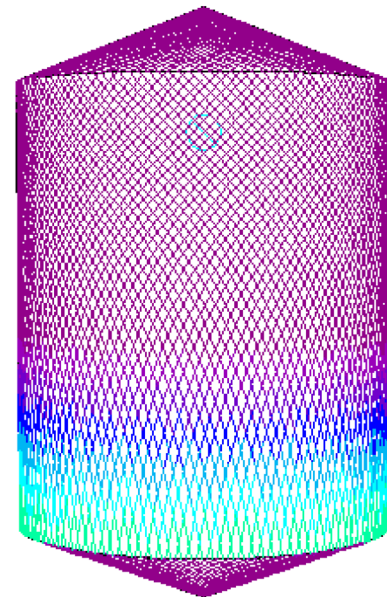
TRAX is a unique software that simulates how the Alfa Laval GJ 7 performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning device and the correct combination of flow, time, and pressure to implement.

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

Wetting Intensity



D1.8m, H2.8m, 2xØ2.03mm Time = 1.56 min.



D1.8m, H2.8m, 2xØ2.03mm Time = 6.25 min.

Alfa Laval GJ A2

Optimal tank cleaning through 2" openings

Application

Designed to fit through a 5.08 cm (2") sanitary fitting, the Alfa Laval GJ A2 is ideal for retrofit applications to replace resource-heavy static spray balls and costly manual cleaning. Compact and efficient, the Alfa Laval GJ A2 can accommodate typical opening sizes while delivering the improved cleaning effectiveness and range of rotary impingement. The efficient and durable design is ideal for tank cleaning in hygienic environments such as food and beverage and personal care applications.

Working principle

The GJ range of high impact tank cleaning devices combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point at which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which blasts contaminants from the surface, scouring the tank interior. In conjunction with this impact, the device is engineered to rotate in a precise, repeatable and reliable, 360° pattern. This full-coverage, global indexing pattern ensures the entire tank interior is cleaned, every time.



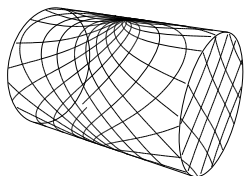
TECHNICAL DATA

Lubricant Self-lubricating
 Max. throw length 4 - 5 m.

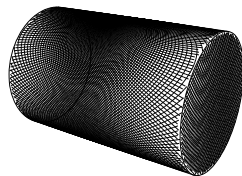
Pressure

Working pressure 2.75 - 14 bar
 Recommended pressure 4 - 10 bar

Cleaning Pattern



First Cycle



Full Pattern

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.

Certificate

2.1 material certificate



PHYSICAL DATA

Materials

316L, PPS*, PTFE*, EPDM* (FKM* and FFKM*)
 * FDA compliance 21CFR§177

Temperature

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

Weight 2.26 kg

Surface finish Ra 0.8 µm

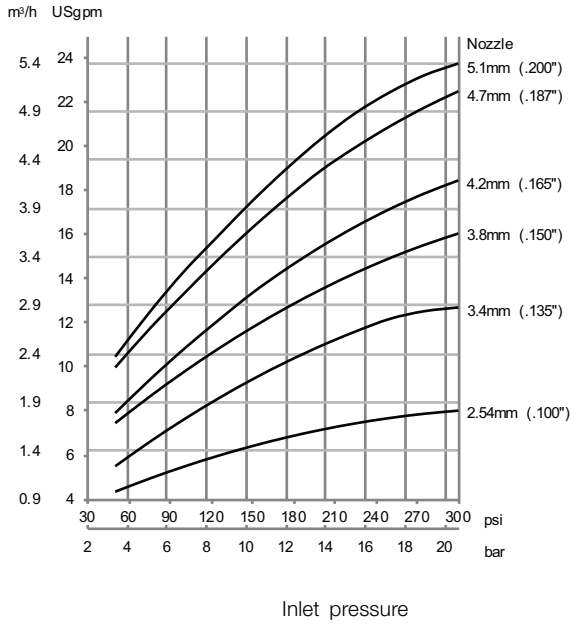
Connections

Standard thread 1" ISO 2852 Clamp
 Available option 3/4" NPT female Thread
 3/4" Rp female Thread
 ODØ38, 1/1½" ISO 2037
 Weld-on

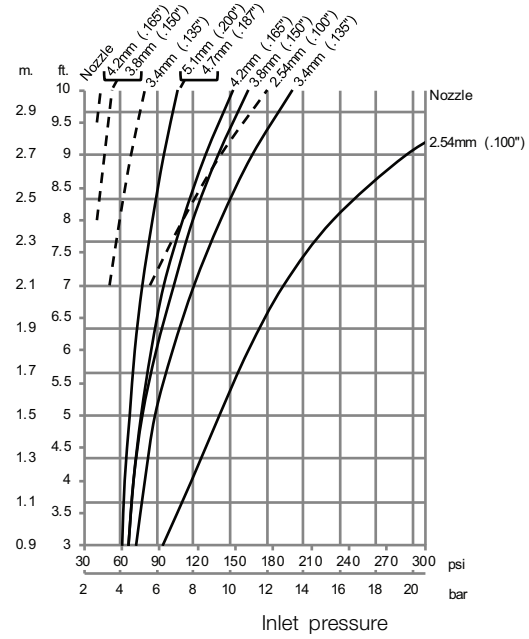
Caution

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.

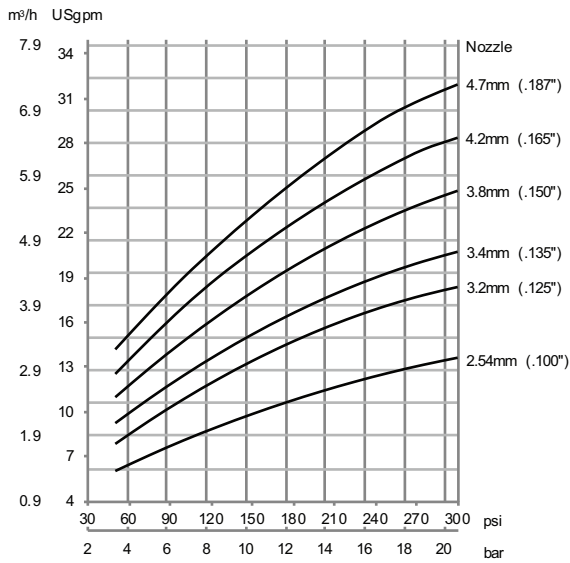
Flow Rate (2 nozzle)



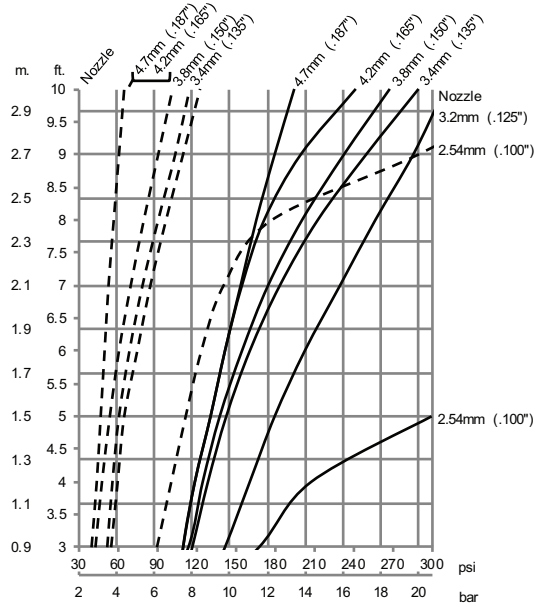
Impact Throw Length



Flow Rate (4 nozzle)

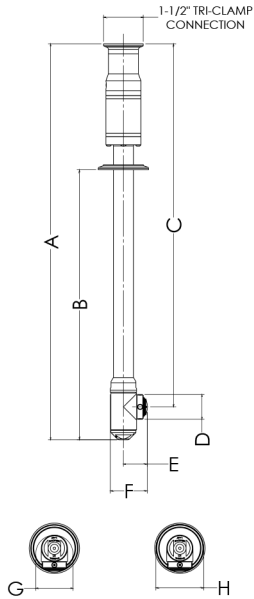


Impact Throw Length (4 nozzle)

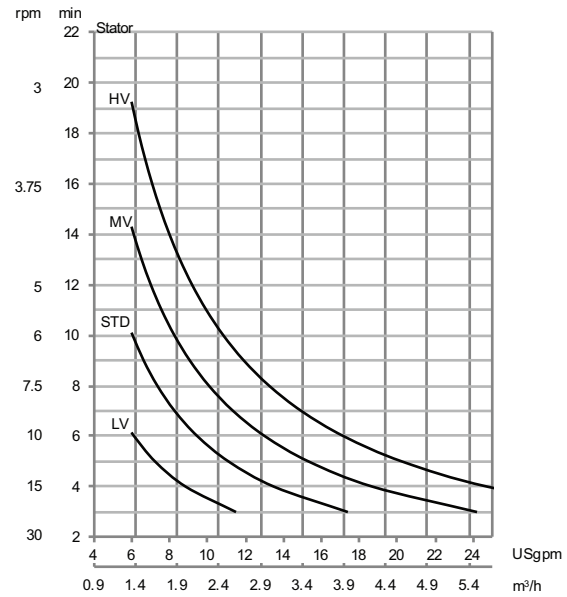


- - - Wetting, — Impact

Dimensions



Cleaning Time



	A	B	C	D	E	F	G	H
mm	503	343	431	31	30	47	47	61
in	19.8	13.5	18.1	1.2	1.2	1.9	1.9	2.4

Standard Design

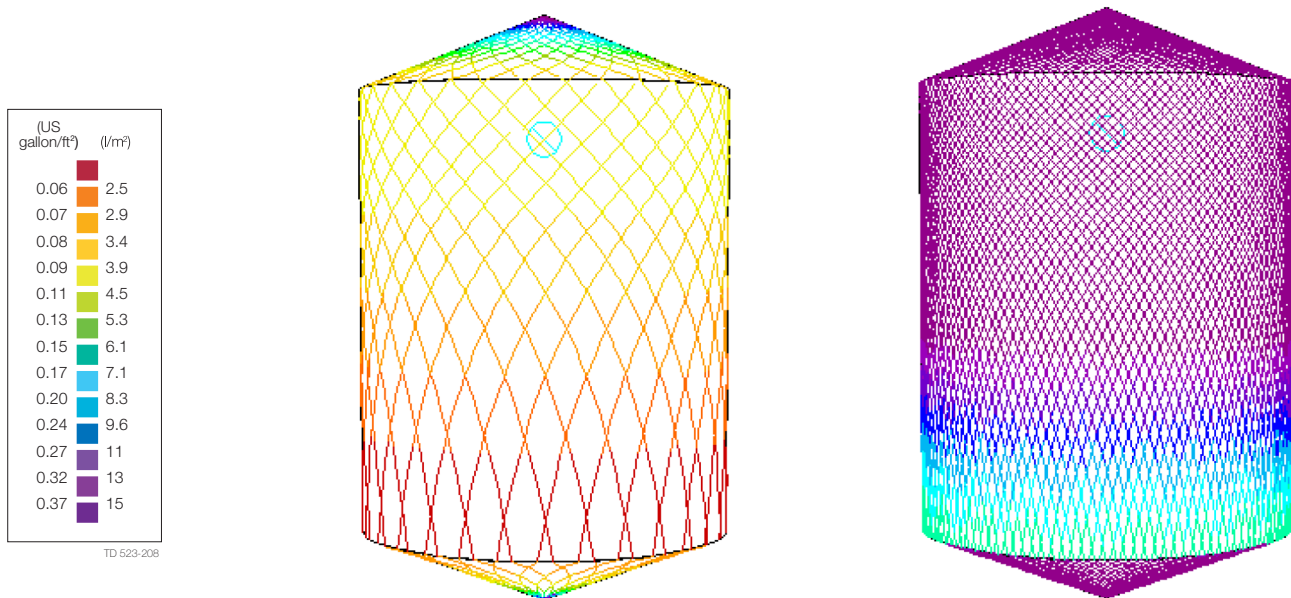
The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure. As standard documentation, the Alfa Laval GJ A2 can be supplied with a "Declaration of Conformity" for material specifications.

TRAX simulation tool

TRAX is a unique software that simulates how the Alfa Laval GJ A2 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 device 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 a reference and documentation for tank cleaning applications. The TRAX demo is free and available upon request.

Wetting Intensity



D2.2m(85"), H3.6m(140"), 2x3.81mm (2xØ3/16") Time = 2 min.

D2.2m(85"), H3.6m(140"), 2x3.81mm (2xØ3/16") Time = 8 min.

Alfa Laval GJ BB

Save time and water with single-insertion barrel cleaning

Application

The Alfa Laval GJ BB is part of the world-renowned Gamajet range of tank cleaning devices. With a single insertion of the Alfa Laval GJ BB, barrels and 208.2 l drums are cleaned in only 2-3 minutes while using only 30-45 l of water. This device offers high-performance cleaning combined with maximum durability. A heavy-duty stainless steel gear train remains outside the barrel or drum during cleaning, ensuring a long service life. The Alfa Laval GJ BB saves companies substantial amounts of time, water, and money.

Working principle

The Gamajet range of high impact tank cleaning devices combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point at which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which blasts contaminants from the surface, scouring the tank interior. In conjunction with this impact, the device is engineered to rotate in a precise, repeatable and reliable, 360° pattern. This full-coverage, global indexing pattern ensures the entire tank interior is cleaned, every time.



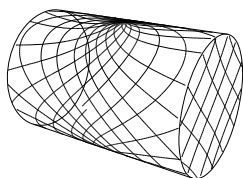
TECHNICAL DATA

Lubricant Food grade
 Max. throw length 2.5 m

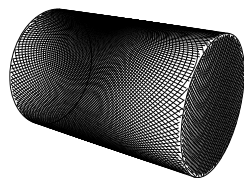
Pressure

Working pressure 5.5 - 83 bar
 Recommended pressure 5.5 - 55 bar

Cleaning Pattern



First Cycle



Full Pattern

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.

PHYSICAL DATA

Materials

1.4404 (316L), PPS, EPDM, PTFE (FKM and FFKM available)

Temperature

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

Weight

. 2.5 kg.

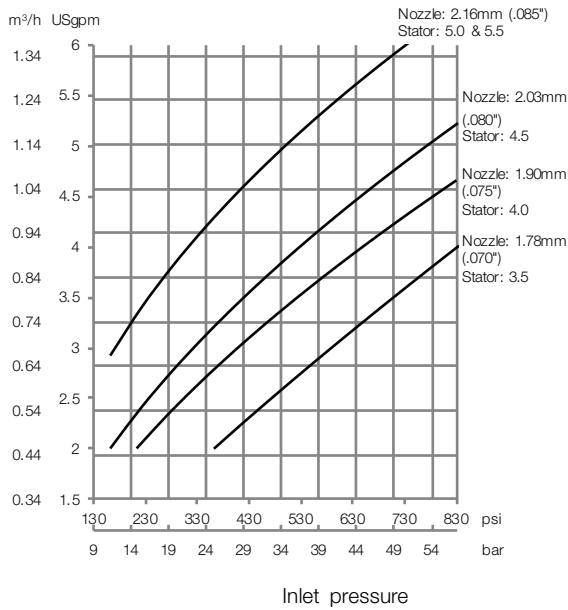
Connections

Standard thread 3/8" NPT
 Available option 3/4" NPT, 3/4" BSP

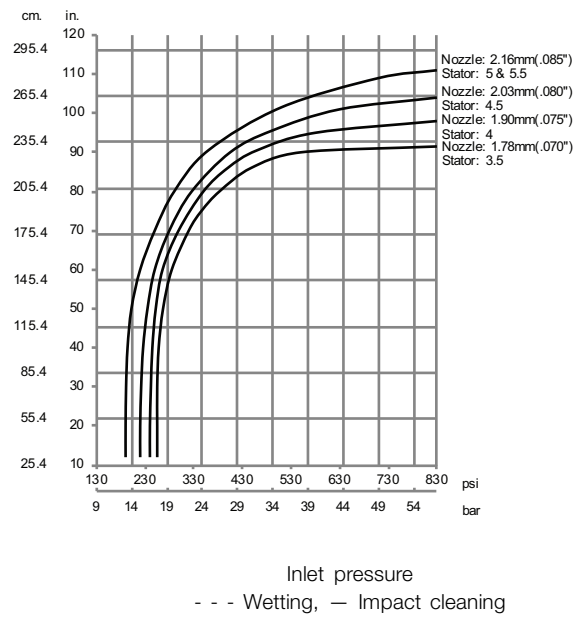
Caution

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.

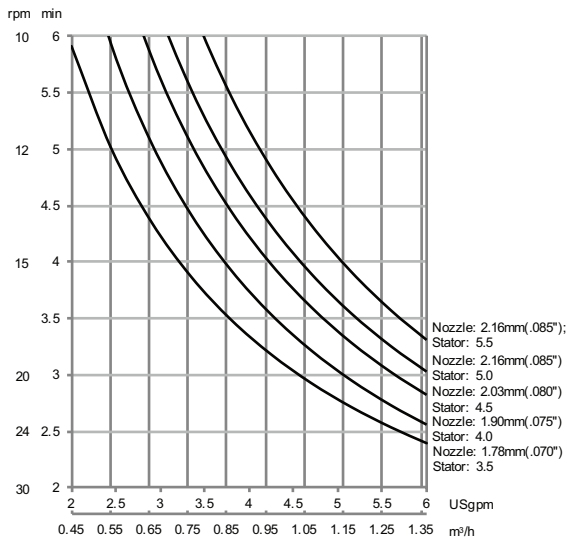
Flow Rate



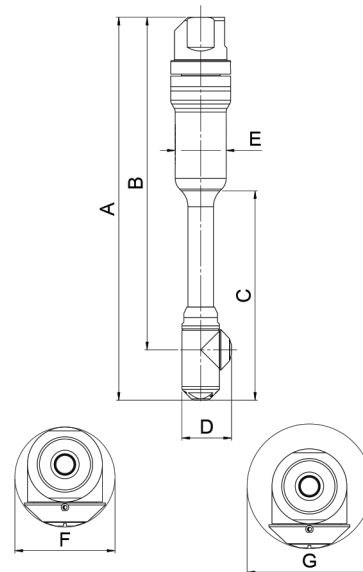
Impact Throw Length



Cleaning Time



Dimensions



Dimensions (mm)

	A	B	C	D	E	F	G
mm	325	282	178	42	44	43	52

Standard Design

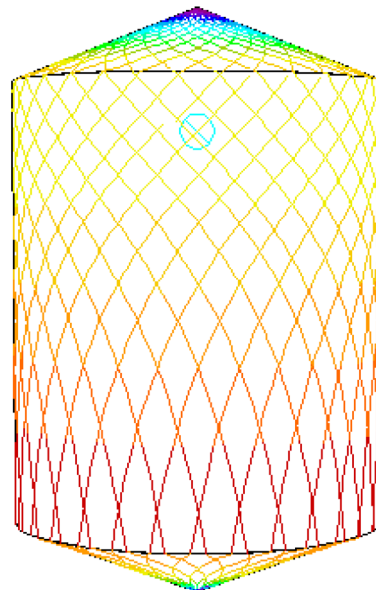
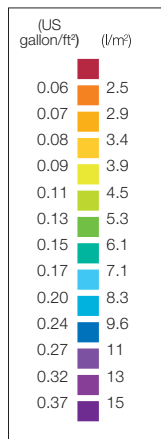
The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure. As standard documentation, the Alfa Laval GJ BB can be supplied with a "Declaration of Conformity" for material specifications.

TRAX simulation tool

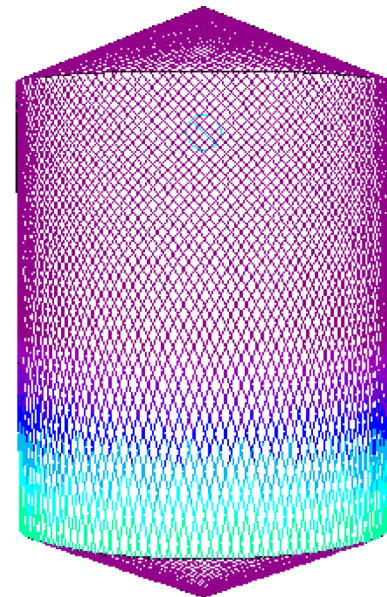
TRAX is a unique software that simulates how the Alfa Laval GJ BB performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning device and the correct combination of flow, time, and pressure to implement.

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

Wetting Intensity



D2.5m, H4.1m, 2xØ2.03mm Time = 1 min.



D2.5m, H4.1m, 2xØ2.03mm Time = 4 min.

Alfa Laval GJ 9

Fast, effective impact cleaning for small tanks and IBCs

Application

The Alfa Laval GJ 9 is part of the world-renowned Gamajet range of high impact tank cleaning devices. The device offers compact cleaning for small tanks, totes and intermediate bulk containers (IBCs) in both industrial and hygienic applications. With fewer parts and a highly durable design, the Alfa Laval GJ 9 provides superior performance and is the most versatile rotary jet head available. This device readily passes through 76 mm openings and can handle high pressures and temperatures, enabling quick and easy cleaning of small totes/IBCs, tanks, trash carts, and much more. Companies are able to clean in-house and in half the time, saving a substantial amount of time, water, and money.

Working principle

The Gamajet range of high impact tank cleaning devices combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point at which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which blasts contaminants from the surface, scouring the tank interior. In conjunction with this impact, the device is engineered to rotate in a precise, repeatable and reliable, 360° pattern. This full-coverage, global indexing pattern ensures the entire tank interior is cleaned, every time.



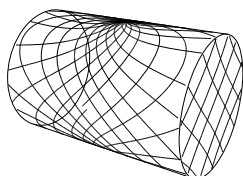
TECHNICAL DATA

Lubricant Food grade
 Max. throw length 1.2 - 6 m

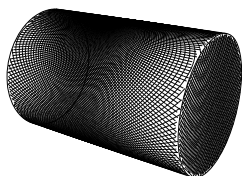
Pressure

Working pressure 3 - 70 bar
 Recommended pressure 4 - 40 bar

Cleaning Pattern



First Cycle



Full Pattern

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.

PHYSICAL DATA

Materials

1.4404 (316L), PPS, PTFE, FKM (EPDM and FFKM available).

Temperature

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

Weight

. 2.2kg

Connections

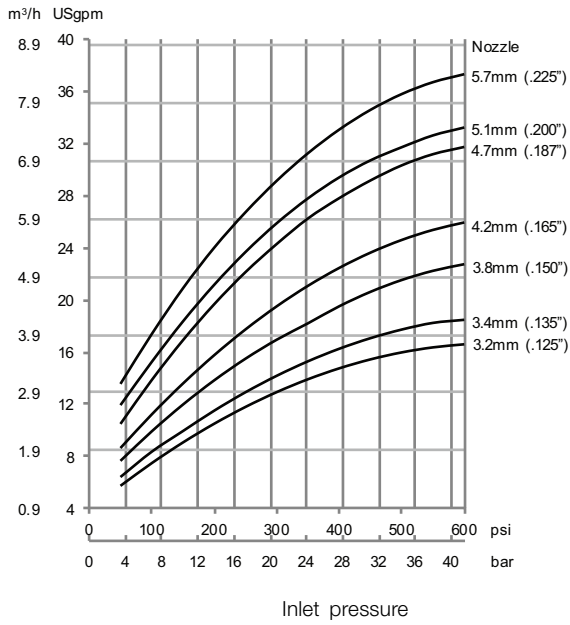
Standard thread ¾" Rp NPT, female/ 1 ¼" camlock
 Available option ¾" BSP, female/ 1 ¼" camlock, 1 ½" tube weld on

Caution

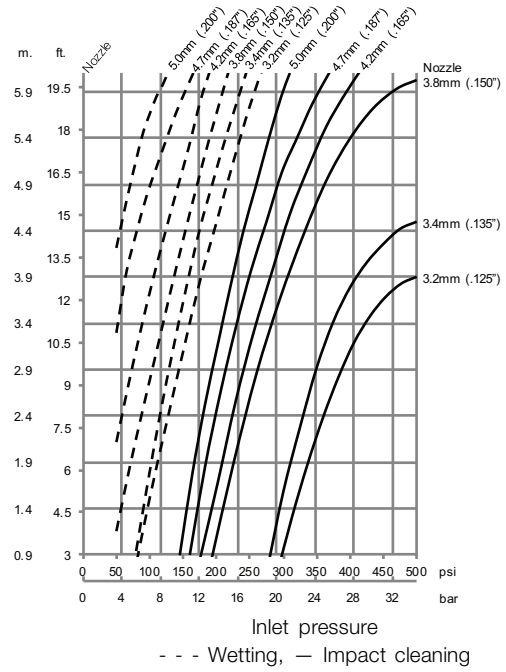
Avoid hydraulic shock, hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, a filter in the supply line is recommended. Do not use for gas evacuation or air dispersion. For steaming we refer to the manual.

1.3

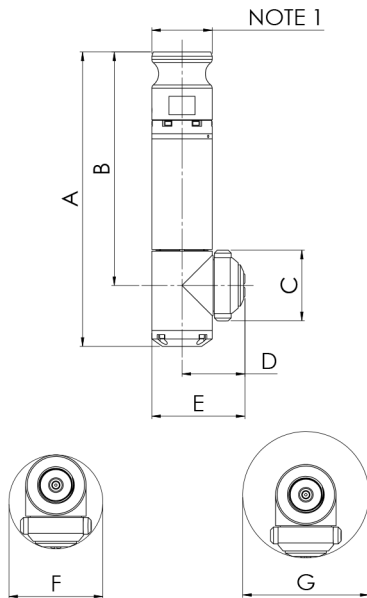
Flow Rate



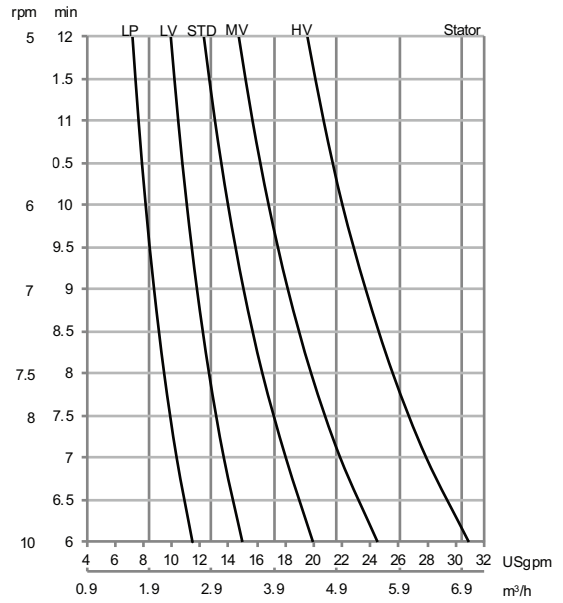
Impact Throw Length



Dimensions



Cleaning Time



Dimension (mm)

A	B	C	D	E	F	G
223	177	54	48	71	72	96

NOTE 1: 3/4" FNPT/1-1/4" CAMLOCK OR 1-1/2" Tri-Clamp

Standard Design

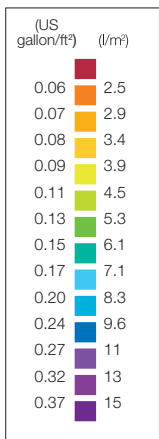
The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure. As standard documentation, the Alfa Laval GJ 9 can be supplied with a “Declaration of Conformity” for material specifications.

TRAX simulation tool

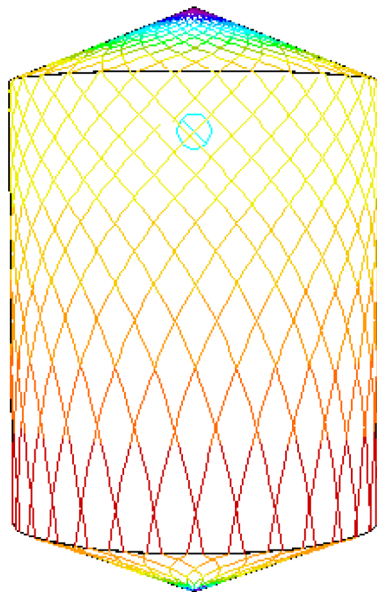
TRAX is a unique software that simulates how the Alfa Laval GJ 9 performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning device and the correct combination of flow, time, and pressure to implement.

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

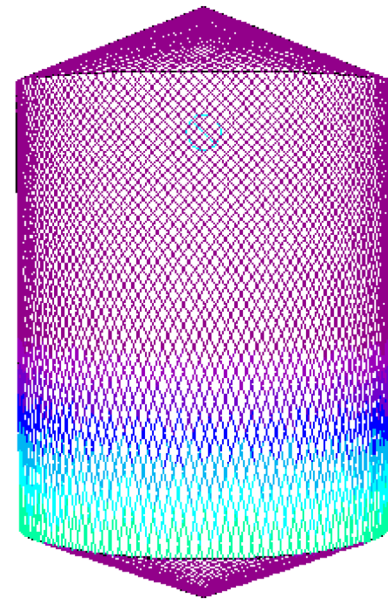
Wetting Intensity



TD 523-208



D5.1m, H8.1m, 2xØ4.76mm Time = 2.25 min.



D5.1m , H8.1m, 2xØ4.76mm Time = 9 min.

Alfa Laval GJ 10

First choice in fuel storage tank cleaning

Application

The Alfa Laval GJ 10 tank cleaning device fits through a 10.16 cm (4") opening and is capable of cleaning a 113.56 liter (30,000 gal) underground fuel storage tank with one insertion. This device blasts away contaminants and breaks up dirt and sludge in minutes. The Alfa Laval GJ 10 easily converts the contaminant-laden sludge into a solution which allows for complete liquid extraction and thorough tank cleaning. The device is part of the world-renowned Gamajet range of tank cleaning devices.

Working principle

The Gamajet range of high impact tank cleaning devices combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point at which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which blasts contaminants from the surface, scouring the tank interior. In conjunction with this impact, the device is engineered to rotate in a precise, repeatable and reliable, 360° pattern. This full-coverage, global indexing pattern ensures the entire tank interior is cleaned, every time.



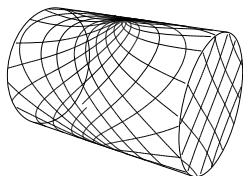
TECHNICAL DATA

Lubricant Food grade
 Max. throw length 10.5 m

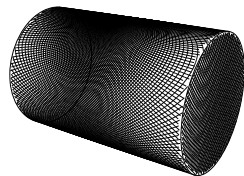
Pressure

Working pressure 2.75 - 20 bar
 Recommended pressure 3.5 - 18.5 bar

Cleaning Pattern



First Cycle



Full Pattern

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.

PHYSICAL DATA

Materials

1.4404 (316L), PPS, FKM (EPDM and FFKM available)

Temperature

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

Weight

. 4.3 kg

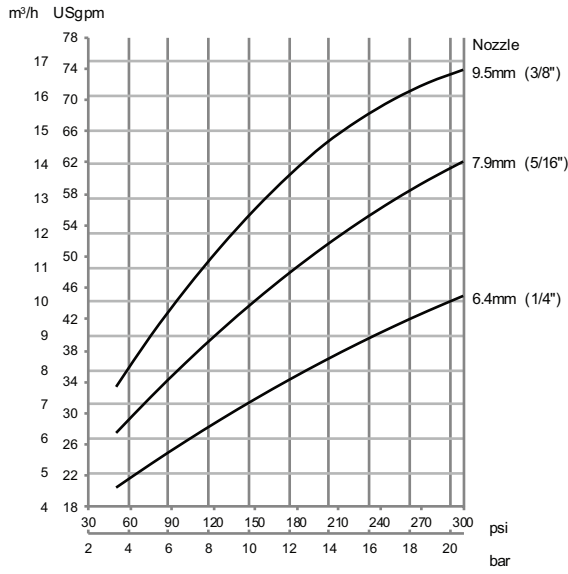
Connections

Standard thread 1½" NPT, 1½" BSP

Caution

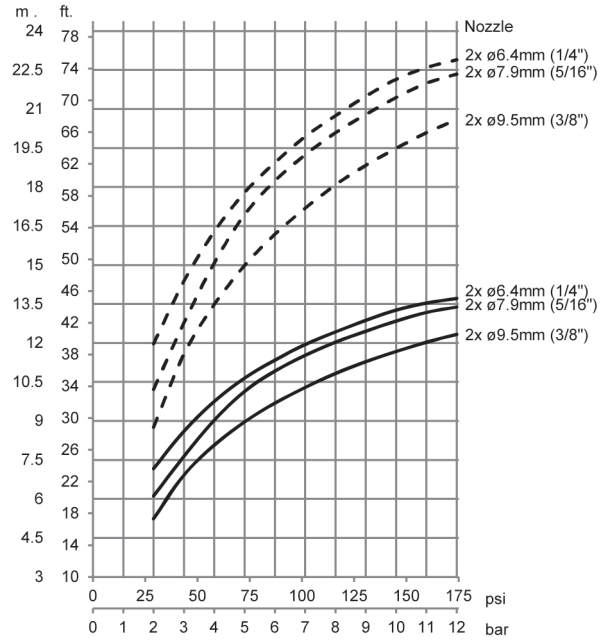
Avoid hydraulic shock, hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, a filter in the supply line is recommended. Do not use for gas evacuation or air dispersion. For steaming we refer to the manual.

Flow Rate



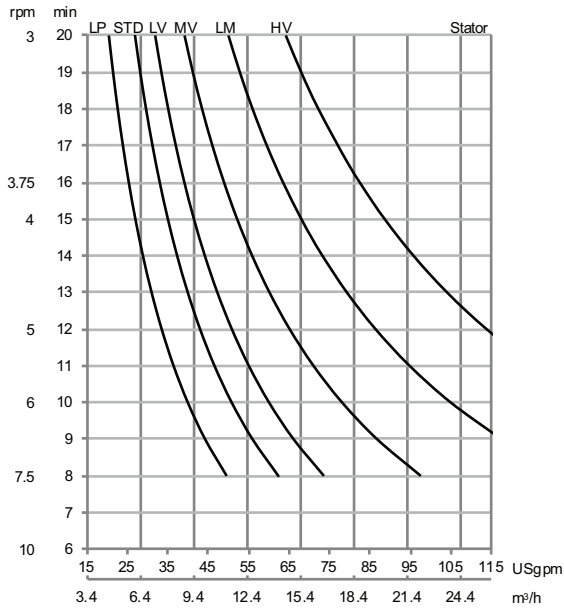
Inlet pressure

Impact Throw Length

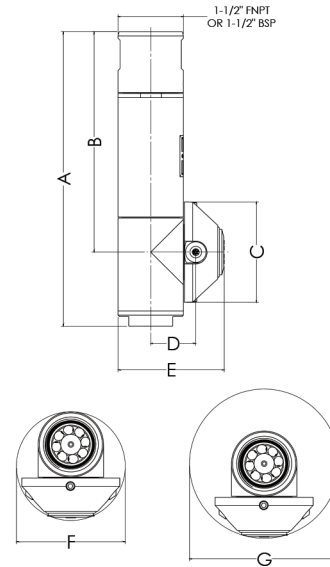


Inlet pressure
- - - Wetting, — Impact cleaning

Cleaning Time



Dimensions



Dimensions

	A	B	C	D	E	F	G
mm	272	204	93	42	98	100	138
in	10.7	8	3.7	1.7	3.9	3.9	5.4

Standard Design

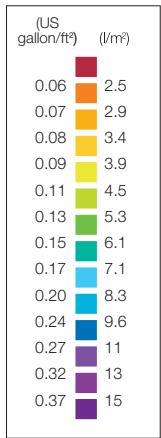
The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure. As standard documentation, the Alfa Laval GJ 10 can be supplied with a "Declaration of Conformity" for material specifications.

TRAX simulation tool

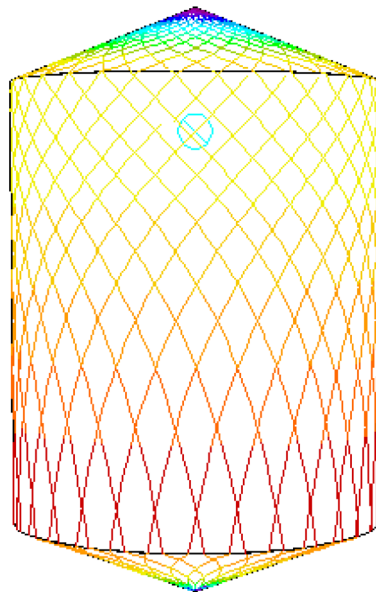
TRAX is a unique software that simulates how the Alfa Laval GJ 10 performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning device and the correct combination of flow, time, and pressure to implement.

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

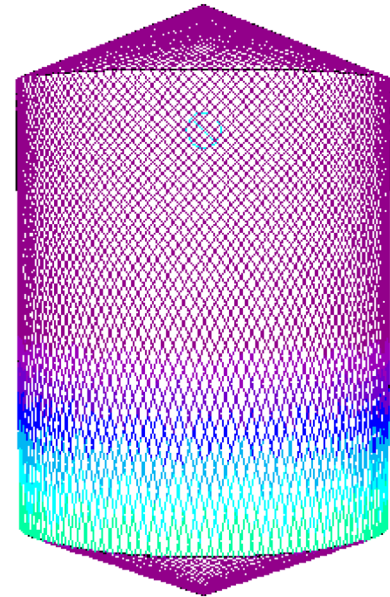
Wetting Intensity



TD 523-208



D6.1m (240"), H9.7m (380"), 2xØ7.94mm (2xØ5/16") Time = 3.75 min.



D6.1m (240"), H9.7m (380"), 2xØ7.94mm (2xØ5/16") Time = 15 min.

Alfa Laval TZ-89

Low Flow Impact Cleaning

Application

The Toftejorg TZ-89 rotary jet head provides 3D indexed low flow impact cleaning over a defined time period. It is suitable for processing, storage and transportation tanks and vessels between 0.5 and 10 m³.

Working principle

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 coarse pattern on the tank surface. The subsequent cycles gradually make the pattern more dense, until a full pattern is reached after 8 cycles. The drive mechanism is located outside the tank or process equipment, leaving a minimum of parts to be submerged into the product.



TECHNICAL DATA

Lubricant: Self-lubricating with the cleaning fluid

Standard Surface finish:

Product contact parts: Ra 1.0µm

Max throw length: 4-7 m

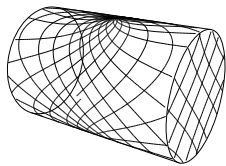
Impact throw length: 2.5-4 m

Pressure

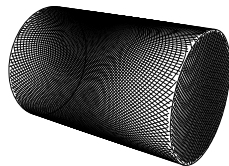
Working pressure: 2-7 bar

Recommended pressure: 5-6.5 bar

Cleaning Pattern



First cycle



Full pattern

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.

Certificates

2.1 material certificate

PHYSICAL DATA

Materials

316L (UNS S61603), Duplex steel (UNS N31803), PTFE, PEEK, FEP/Silicone

Temperature

Max. working temperature: 95°C

Max. ambient temperature: 140°C

Weight: 5.5 - 8.5 kg

Connections

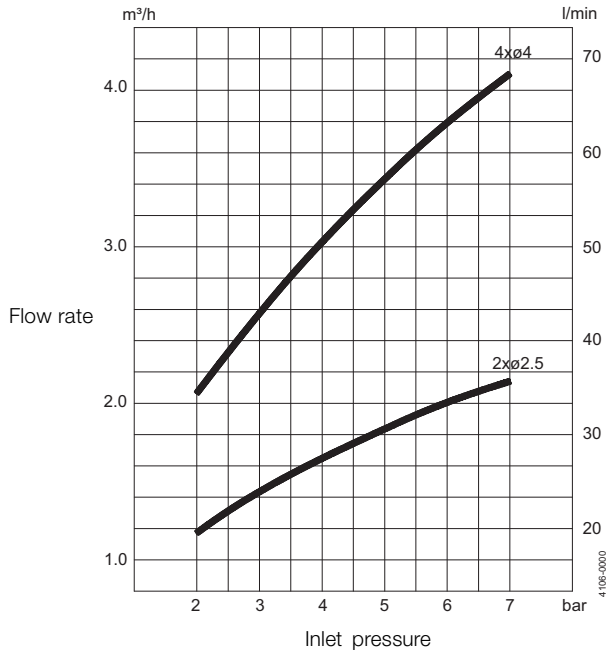
Inlet connections: Thread: 3/4" Rp (BSP) or NPT, male or
Clamp: 1" ISO 2852

Tank connection: Flange: 50 DN6 DIN 2501, or 3" ANSI B 16.5 or
Clamp: 3" or 4" ISO2852

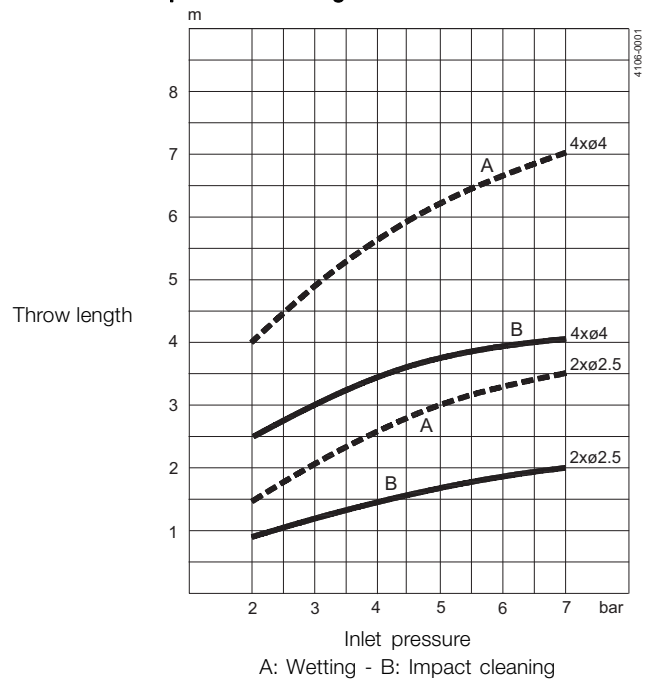
Caution

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.

Flow Rate

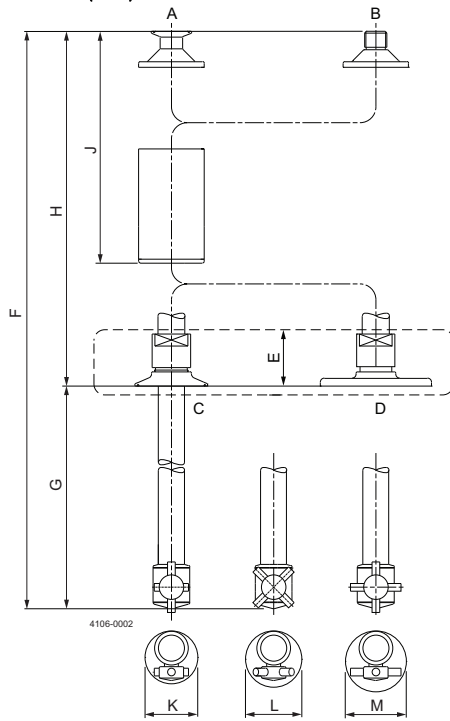


Impact Throw Length



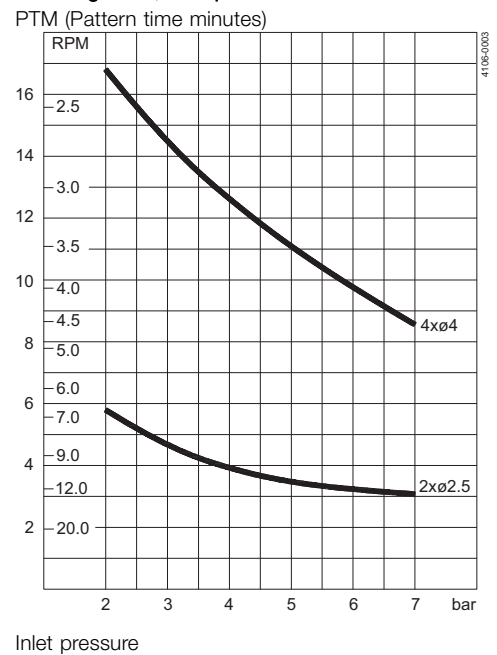
A: Wetting - B: Impact cleaning

Dimensions (mm)



- A: Clamp 1" ISO
- B: Thread 3/4" Rp (BSP) / NPT
- C: Clamp 3" ISO

Cleaning Time, Complete Pattern



- D: Flange 50ND6, DIN2501 Do=140/PC=110/Db=4xø14 Flange 3" ANSI 16.5 1991 Do=190.5/PC=152.4/Db=4xø19
- E: Adjustable

F	G-DPL	H	J	K	L	M
350	Min. 62 Max. 96	Max. 288 Min. 254	190	ϕ69	ϕ72	ϕ79.5
500	Min. 62 Max. 246	Max. 438 Min. 254	190	ϕ69	ϕ72	ϕ79.5
750	Min. 62 Max. 496	Max. 688 Min. 254	190	ϕ69	ϕ72	ϕ79.5
1020	Min. 62 Max. 766	Max. 958 Min. 254	190	ϕ69	ϕ72	ϕ79.5
1270	Min. 62 Max. 1016	Max. 1208 Min. 254	190	ϕ69	ϕ72	ϕ79.5
1500	Min. 62 Max. 1246	Max. 1438 Min. 254	190	ϕ69	ϕ72	ϕ79.5

Standard Design

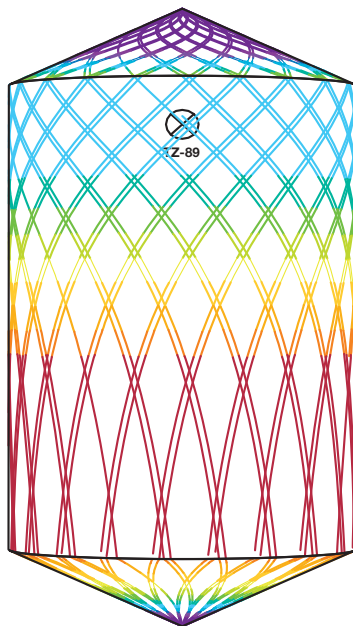
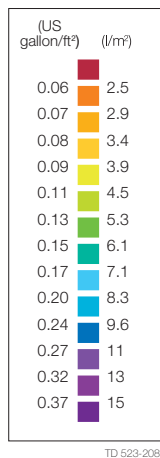
Special versions include Tri-Clamp connections and ultra-low flow with fast rotation. As standard documentation, the Toftejorg TZ-89 can be supplied with a "Declaration of Conformity" for material specifications.

TRAX simulation tool

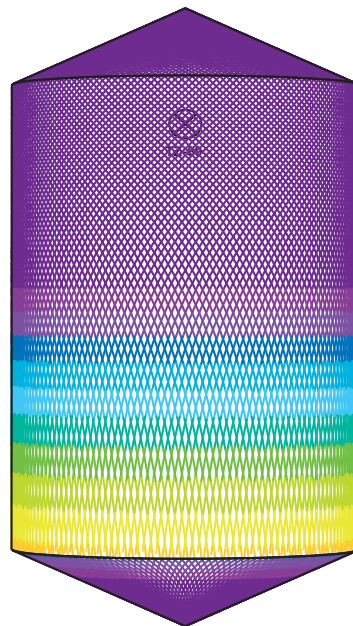
TRAX is a unique software that simulates how the Toftejorg TZ-89 performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning machine and the correct 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 TZ-89, 4 x ϕ4 mm Time = 2.8 min., Water consumption = 159 l



D2m H3m, Toftejorg TZ-89, 4 x ϕ4 mm Time = 11.1 min., Water consumption = 637 l

Alfa Laval GJ A6

Optimal tank cleaning for hygienic applications

Application

Setting high standards for cleanliness is critical for product quality and plant productivity. The Alfa Laval GJ A6 tank cleaning device delivers powerful tank cleaning with reliable, repeatable, and verifiable results to meet the stringent hygienic demands of the food, beverage and personal care industries. Designed to fit through a 7.62 cm (3") sanitary fitting, the Alfa Laval GJ A6 is ideal for retrofit applications to replace resource-heavy static spray balls and costly manual cleaning.

Working principle

The GJ range of high impact tank cleaning devices combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point at which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which blasts contaminants from the surface, scouring the tank interior. In conjunction with this impact, the device is engineered to rotate in a precise, repeatable and reliable, 360° pattern. This full-coverage, global indexing pattern ensures the entire tank interior is cleaned, every time.



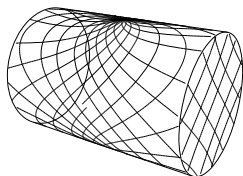
TECHNICAL DATA

Lubricant Self-lubricating
 Max. throw length 2 - 6 m

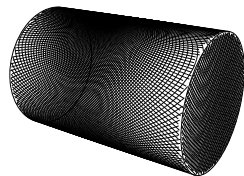
Pressure

Working pressure 2 - 27+ bar
 Recommended pressure 2 - 10 bar

Cleaning Pattern



First Cycle



Full Pattern

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.

Certificate

2.1 material certificate



PHYSICAL DATA

Materials

1.4404 (316L), PEEK*, EPDM* (FKM* and FFKM*), PPS*
 * FDA compliance 21CFR§177

Temperature

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

Weight 1.8 kg

Surface finish 0.8 µm

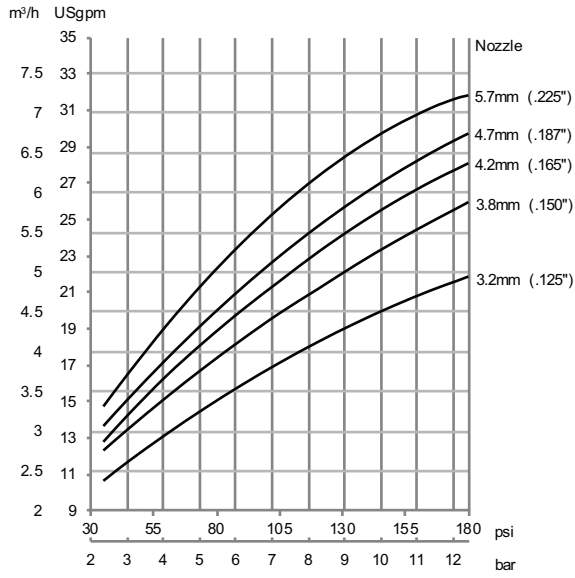
Connections

Standard thread 1" US BPE SCH 5/IDØ25,7
 Clip-on
 Available option DN25 Clip-on DIN 11850
 range 1,
 DN25 Clip-on DIN 11850
 range 2,
 ODØ38,1/1½" ISO 2037
 Weld-on

Caution

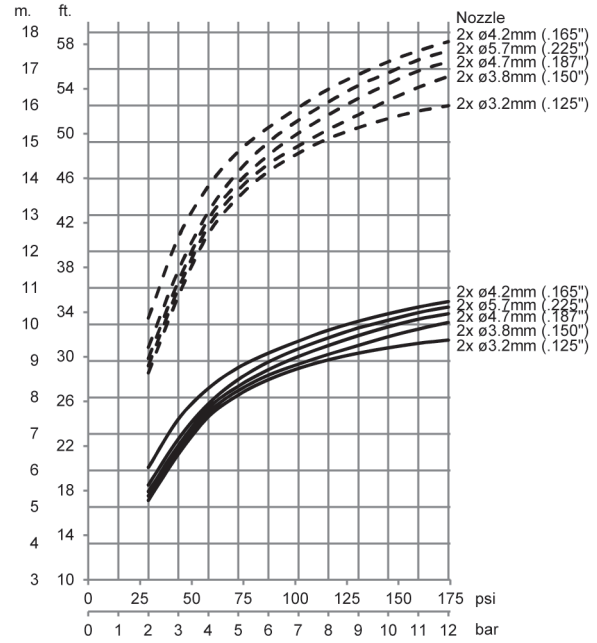
Avoid hydraulic shock, hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, a filter in the supply line is recommended. Do not use for gas evacuation or air dispersion. For steaming we refer to the manual.

Flow Rate



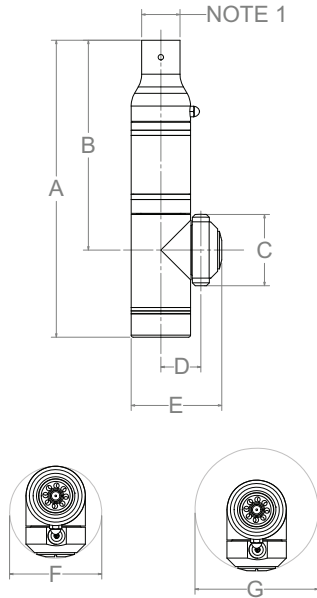
Inlet pressure

Impact Throw Length

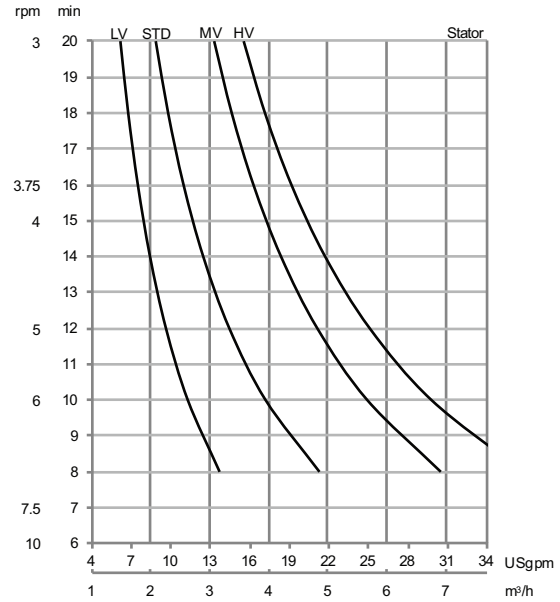


Inlet pressure
- - - Wetting, — Impact cleaning

Dimensions



Cleaning Time



	A	B	C	D	E	F	G
mm	223	158	54	30	68	70	93

NOTE 1: 1" R-CLIP COLLAR OR 1-1/2" BUTT WELD

Standard Design

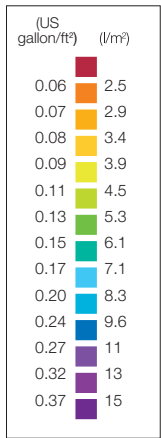
The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure. As standard documentation, the Alfa Laval GJ A6 can be supplied with a "Declaration of Conformity" for material specifications.

TRAX simulation tool

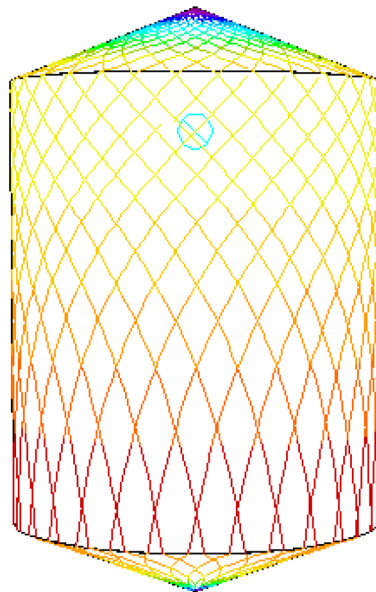
TRAX is a unique software that simulates how the Alfa Laval GJ A6 performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning device and the correct combination of flow, time, and pressure to implement.

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

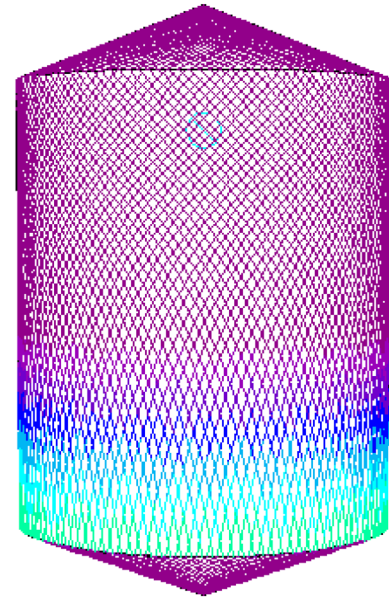
Wetting Intensity



TD 523-208



D3m (120"), H4.8m (190"), 2xØ4.76mm (2xØ3/16") Time = 3.25 min.



D3m (120"), H4.8m (190"), 2xØ4.76mm (2xØ3/16") Time = 13 min.

Alfa Laval SaniJet 20

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 (patented solution) 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

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
 Air supply pressure: max. 7 bar
 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 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

- Electronic rotation sensor to verify 3D coverage
- Improved surface finish
- 3.1 certification for metallic parts by request
- With FFKM or FPM seal ring
- ATEX

Caution

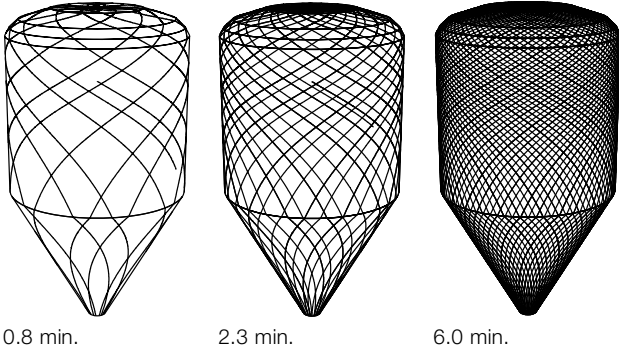
Avoid hydraulic shock, hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, a filter in the supply line is recommended. Do not use for gas evacuation or air dispersion. For steaming we refer to the manual.

Standard Design

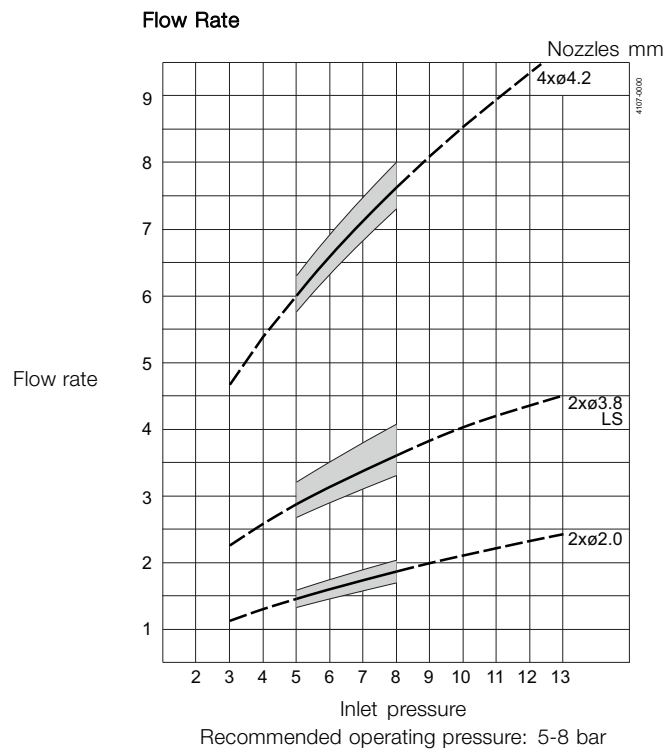
The Toftejorg SaniJet 20 is available in media-driven or air-driven version. Air-driven versions are equipped with a magnetic clutch for leakage-proof transmission. The air motor provides an effective drive for low flow machines in rough environments and for use in explosive hazard zones, provided it is installed according to safety instructions. The air motor has variable speed to adjust cleaning intensity.

Cleaning Pattern

Example - 2xø3.8LS



Flow Rate (Media & Air driven)



Qualification Documentation (Q-doc)

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:

Catagory 1 for installation in zone 0/20 in accordance to Ex II 1 GD c T 140°C.

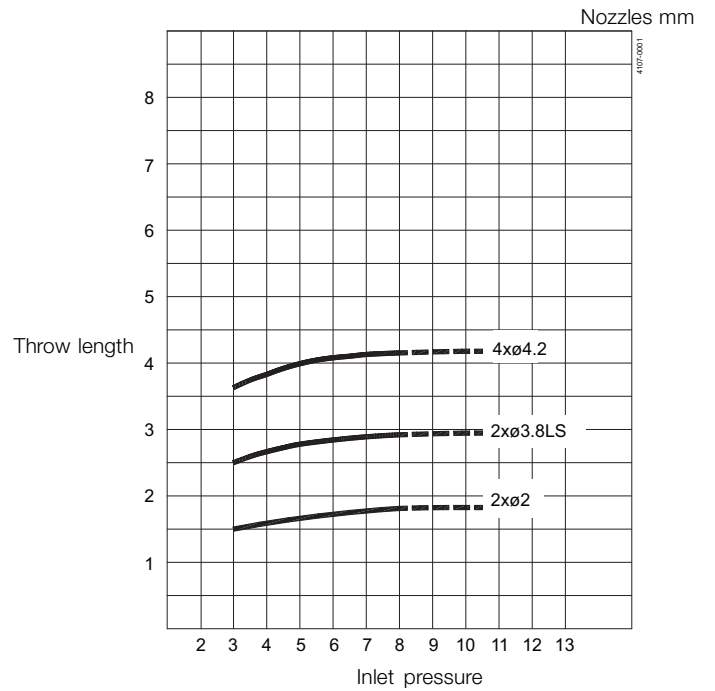
Air driven version:

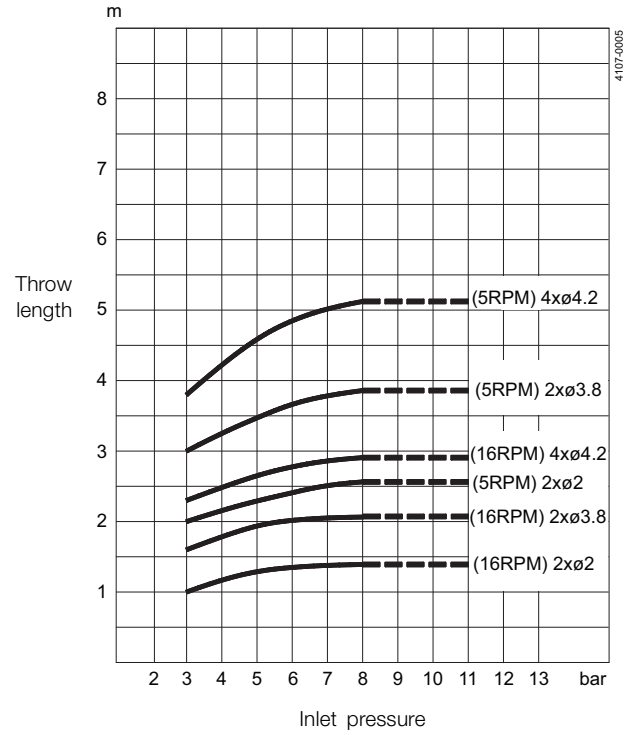
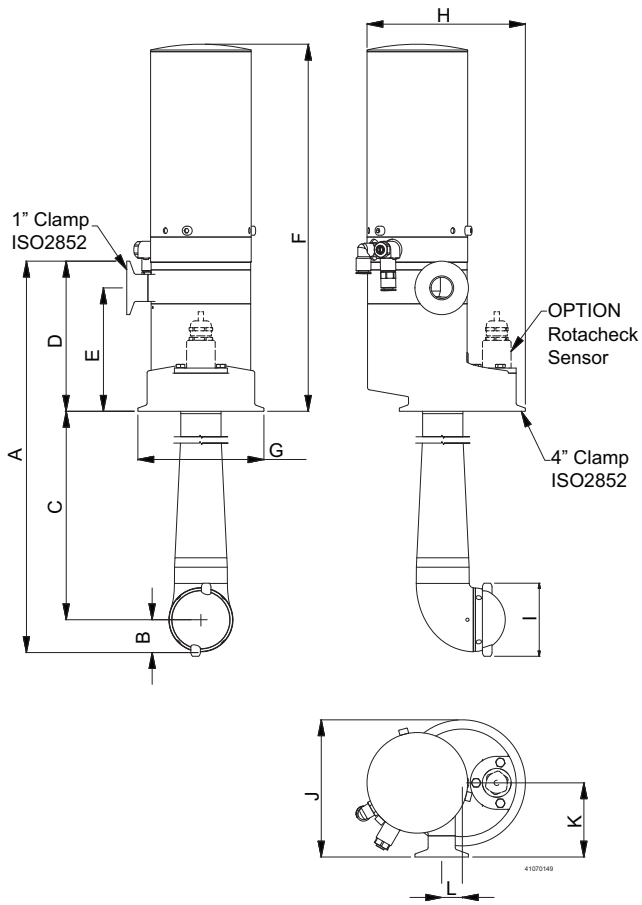
ATEX Catagory 1 for installation in zone 0/20 in accordance to Ex II 1 GD c T140°C.

Air driven unit:

Catagory 2 for installation in zone 1/21 in accordance to Ex II 2 GD c IIC T4 Tamb -20°C to +40°C

Impact Throw Length, Media Driven



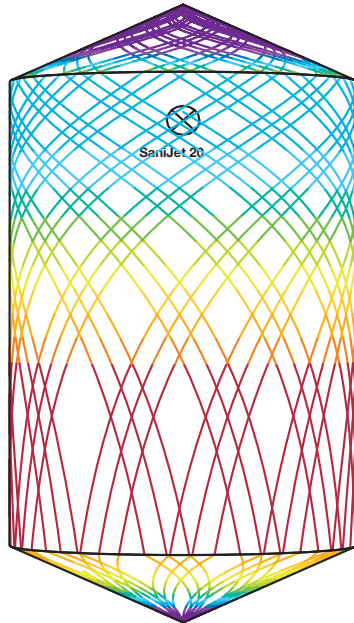
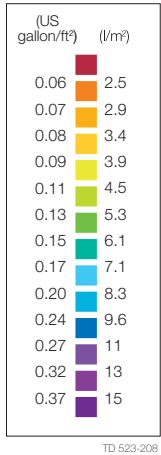


	A	B	C	D	E	F	G	H	I	J	K	L
mm	523 - 673 - 873 - 1173 - 1376 - 1673	31	360 - 500 - 700 - 1000 - 1200 - 1500	142	117	340	Ø119	168	Ø69	130	70	19.5

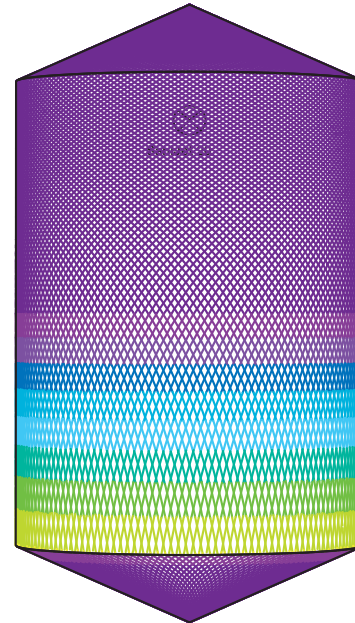
TRAX simulation tool

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.

Golden Section Cleaning Pattern Traditional Cleaning Pattern

