

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06

Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Казахстан (772)734-952-31

Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Таджикистан (992)427-82-92-69

Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

<https://alaval.nt-rt.ru> || avb@nt-rt.ru

Миксеры для резервуаров

Alfa Laval Vortex PS Radial Educator®

Advanced tank mixing educator for fluid shearing

Introduction

In tank mixing and shearing of fluids is a necessary process in many industry applications that is often achieved via mechanical paddle agitators or a network of in tank piping with nozzles and recirculating pumps. Although these agitation methods are widely accepted, they are not always the best option. Mechanical agitators are often large, expensive and require the construction of additional support structure. Their moving parts must receive regular maintenance, and agitators often don't provide the level of fluid shearing required for full reactivity. Recirculation of tank fluid through piping with simple nozzles is a method of fluid agitation, but it leaves much to be desired in terms of overall turbulence generation and fluid mixing. A great alternative to these methods are tank mixing educators. These are small, simple devices that can be used to achieve highly effective fluid mixing and agitation. They use pressurized fluid energy to entrain, mix, and pump fluid in tanks, and they possess a number of benefits over the more traditional approaches. The Alfa Laval Vortex PS Radial Educator is a unique style of tank mixing educator that employs a proprietary nozzle design to dynamically shear fluid and achieve up to 3 times the total in tank fluid movement that can be had by simple nozzles. It can be used as the primary means of pit agitation, or as a complement to existing mechanical agitators for eliminating dead zones in corners of rectangular tanks.

Applications

The Alfa Laval Vortex PS Radial Educator is a high performance tank mixing educator that is optimized to operate in demanding tank mixing jobs with irregular shaped tanks, fluid shearing requirements, and high solids content. Applications that are ideal for Vortex Radial Educators include blending, reactor tanks, and chemical mixing. Industrial applications where PS Radial Educators are commonly used include oil and gas drilling fluid mixing, construction material production, chemical production, and mining.

Benefits

- Simple, robust design, no moving parts
- No maintenance
- Low cost alternative to mechanical paddle agitators
- Compact design



- Dynamically shears fluid. Enhances reactions
- Fully homogeneous tank fluid mix

Standard Design

The Alfa Laval Vortex PS Radial Educator consists of a uniquely designed body featuring the proprietary Lobestar Mixing Nozzle® molded from high density, abrasion resistant polyurethane. It has a stainless steel 76 mm (3 in) male NPT connection. Typically, one or more are mounted on a manifold inside of a tank, and the number of educators required is dependent on the vessel size and the necessary agitation or turnover rate (TOR.)

Working Principle

Fluid is pumped into the PS Radial Educator inlet where pressure builds at its nozzle. The fluid velocity increases at the nozzle, resulting in a pressure drop and strong vacuum that pulls surrounding fluid into the educator body through its six peripheral suction ports. The converging fluid streams are dynamically sheared by the nozzle in the educator's venturi throat and discharged into the tank as a high-energy plume. The PS Radial Educator can be utilized in any application where the motive fluid can be handled by a centrifugal pump.

Technical Data

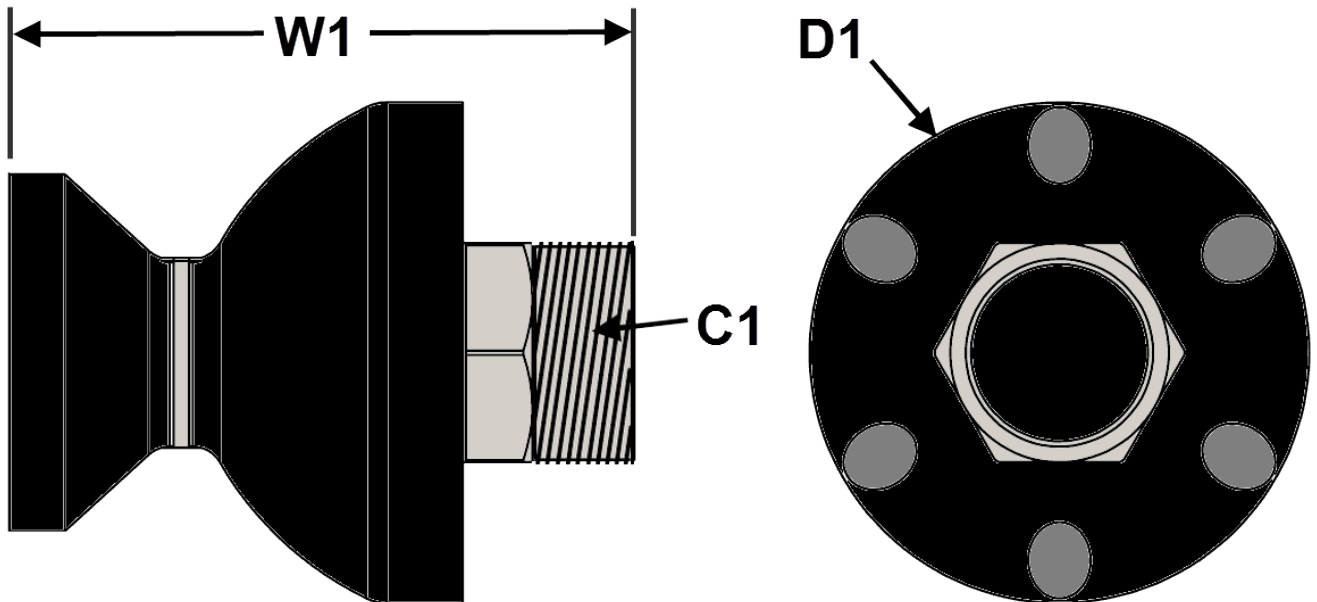
Model Number	PS3000
Connections	76mm (3in) MNPT
Connection material	304SS
Body material	Molded Polyurethane
Weight	4 kg (9 lbs)
Design Temperature	-28.8°C to 57°C (-20°F to 135°F)
Liquid Flow	360-587 lpm (95-155 gpm)
Differential Head Requirement	70-185 ft head (30-80 PSI) with water

Performance Data

Model	Flow Type	Pressure Differential – PSI					
		30	40	50	60	70	80
PS3000	Inlet	95 (360)	110 (416)	123 (466)	134 (507)	145 (549)	155 (587)
	Outlet	238 (901)	275 (1041)	307 (1162)	335 (1268)	363 (1374)	388 (1469)

Flowrates are with water and are shown in gallons per minute and liters per minute in parentheses

Dimensional Drawing



Model PS3000

W1	254 mm (10 in)
C1	76 mm (3 in) male pipe threads
D1	203 mm (8 in) diameter



Alfa Laval Vortex Radial Eductor®

Advanced tank agitation and mixing eductor

Introduction

Tank mixing and agitation is a necessary process in many industry applications that is often achieved via mechanical paddle agitators or a network of in tank piping with nozzles and recirculating pumps. Although these agitation methods are widely accepted, they are not always the best option. Mechanical agitators are often large, expensive and require the construction of additional support structure. Their moving parts must receive regular maintenance, and agitators often leave vortices and dead spots in tank fluids where stratification and solids settling can occur. Recirculation of tank fluid through piping with simple nozzles is an acceptable method of fluid agitation, but it leaves much to be desired in terms of overall turbulence generation and fluid mixing. A great alternative to these methods are tank mixing eductors. These are small, simple devices that can be used to achieve highly effective fluid mixing and agitation. They use pressurized fluid energy to entrain, mix, and pump fluid in tanks, and they possess a number of benefits over the more traditional approaches. The Alfa Laval Vortex Radial Eductor is a unique style of tank mixing eductor that employs a proprietary design to achieve up to four times the total in tank fluid movement that can be had by simple nozzles and can eliminate the dead zones left by mechanical agitators. It can be used as the primary means of pit agitation, or as a complement to existing mechanical agitators for eliminating dead zones in corners of rectangular tanks.

Applications

The Alfa Laval Vortex Radial Eductor is a high performance tank mixing eductor that is optimized to operate in demanding tank mixing jobs with irregular shaped tanks, rapid turnover requirements, and high solids content. Applications that are ideal for Vortex Radial Eductors include solids suspension, sludge mixing, blending, and chemical mixing. Industrial applications where Radial Eductors are commonly used include oil and gas drilling fluid mixing, construction material production, chemical production, and mining.

Benefits

- Simple, robust design, no moving parts
- No maintenance
- Low cost alternative to mechanical paddle agitators
- Compact design



- Fully homogeneous tank fluid mix
- Eliminates tank sludge and cleaning time

Standard Design

The Alfa Laval Vortex Radial Eductor consists of a tapered, nozzle housed inside of a uniquely designed body constructed of molded high density, abrasion resistant polyurethane with a fused stainless steel female NPT nut-style connection. It is offered in 25 mm (1 in.), 38 mm (1.5 in.) and 51 mm (2 in) connection sizes. Typically, one or more are mounted on a piping manifold inside of a tank. The number and size of eductors required is dependent on the vessel size and the necessary agitation or turnover rate (TOR.)

Working Principle

Fluid is pumped into the Radial Eductor inlet where pressure builds at its nozzle. The fluid velocity increases at the nozzle, resulting in a pressure drop and strong vacuum that pulls surrounding fluid into the eductor body through helical shaped suction ports. These unique suction ports shape a radially flowing, spiraled discharge plume that resembles a vortex. This plume is more stable, further reaching, and displaces a much greater volume of surrounding fluid than a plume from a standard nozzle or tank mixing eductor. The result is much greater fluid displacement and movement inside of tanks. The Radial Eductor can be utilized in any application where the motive fluid can be handled by a centrifugal pump.

Technical Data

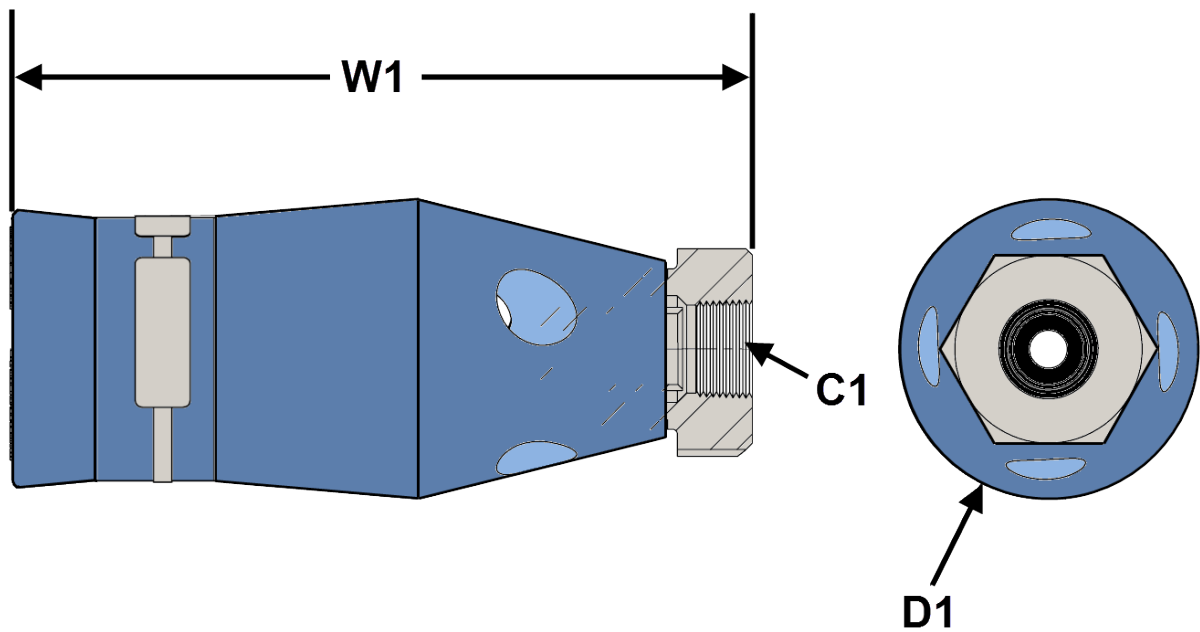
Model	RE1000	RE1500	RE2000
Connections	26 mm (1 in) FNPT	38 mm (1.5 in) FNPT	51 mm (2 in) FNPT
Connection material	304SS	304SS	304SS
Body material	Molded Polyurethane	Molded Polyurethane	Molded Polyurethane
Weight	1.13 kg (2.5 lbs)	1.13 kg (2.5 lbs)	2.72 kg (6 lbs)
Design temperature	-28.8°C to 57°C (-20°F to 135°F)	-28.8°C to 57°C (-20°F to 135°F)	-28.8°C to 57°C (-20°F to 135°F)
Differential Head Requirement (with water)	70-185 ft head (30-80 PSI)	70-185 ft head (30-80 PSI)	70-185 ft head (30-80 PSI)

Performance Data

Model	Flow type	Pressure Differential – PSI					
		30	40	50	60	70	80
RE1000	Inlet	38 (144)	45 (170)	50 (189)	55 (208)	59 (223)	63 (238)
	Outlet	95 (360)	135 (511)	150 (568)	165 (625)	177 (670)	189 (715)
RE1500	Inlet	60 (227)	69 (261)	78 (295)	85 (322)	92 (348)	98 (371)
	Outlet	150 (568)	207 (784)	234 (886)	255 (965)	276 (1045)	294 (1113)
RE2000	Inlet	118 (447)	136 (515)	152 (575)	166 (628)	180 (681)	192 (727)
	Outlet	295 (1117)	408 (1544)	456 (1726)	498 (1885)	540 (2044)	576 (2180)

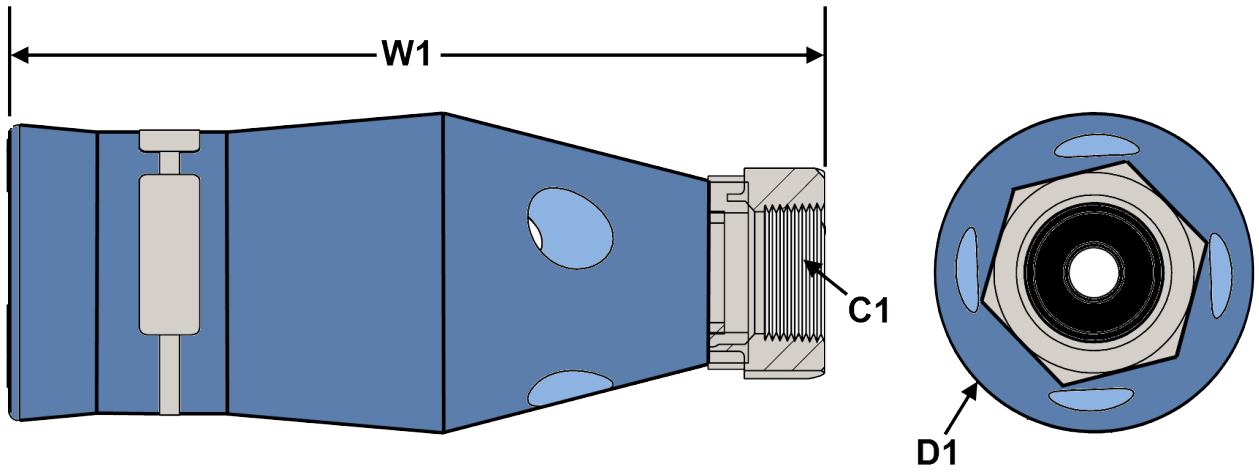
Flowrates are with water and are shown in gallons per minute and liters per minute in parentheses.

Dimensional Drawings



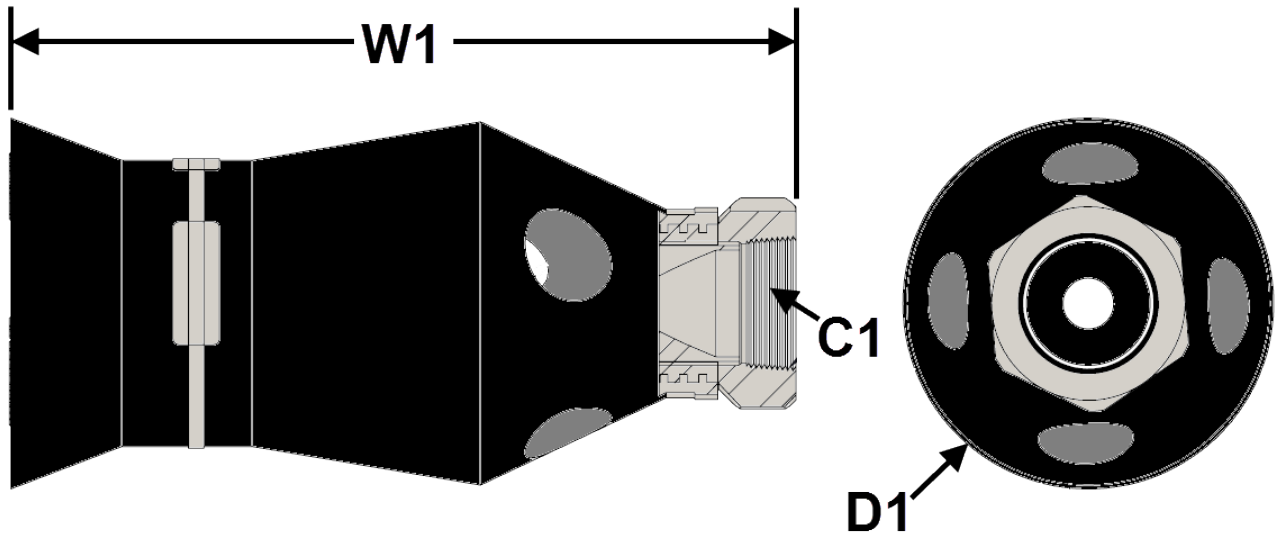
Model RE1000

W1	250 mm (9.8 in)
C1	26 mm (1 in) female pipe threads
D1	101 mm (4 in) diameter



Model RE1500

W1	258 mm (10.2 in)
C1	38 mm (1.5 in) female pipe threads
D1	101 mm (4 in) diameter



Model RE2000

W1	323 mm (12.7 in)
C1	51 mm (2 in) female pipe threads
D1	153 mm (6 in) diameter



Alfa Laval Vortex Snub Radial Eductor®

Advanced tank mixing eductor for fluid shearing

Introduction

In tank mixing and shearing of fluids is a necessary process in many industry applications that is often achieved via mechanical paddle agitators or a network of in tank piping with nozzles and recirculating pumps. Although these agitation methods are widely accepted, they are not always the best option. Mechanical agitators are often large, expensive and require the construction of additional support structure. Their moving parts must receive regular maintenance, and agitators often don't provide the level of fluid shearing required for full reactivity. Recirculation of tank fluid through piping with simple nozzles is a method of fluid agitation, but it leaves much to be desired in terms of overall turbulence generation and fluid mixing. A great alternative to these methods are tank mixing eductors. These are small, simple devices that can be used to achieve highly effective fluid mixing and agitation. They use pressurized fluid energy to entrain, mix, and pump fluid in tanks, and they possess a number of benefits over the more traditional approaches. The Alfa Laval Vortex Snub Radial Eductor is a unique style of tank mixing eductor that employs a proprietary nozzle design to dynamically shear fluid and achieve up to 2.5 times the total in tank fluid movement that can be had by simple nozzles. It can be used as the primary means of pit agitation, or as a complement to existing mechanical agitators for eliminating dead zones in corners of rectangular tanks.

Applications

The Alfa Laval Vortex Snub Radial Eductor is a high performance tank mixing eductor that is optimized to operate in demanding tank mixing jobs with irregular shaped tanks, fluid shearing requirements, and corrosive liquids. Applications that are ideal for Vortex Snub Radial Eductors include blending, reactor tanks, and chemical mixing. Industrial applications where Snub Radial Eductors are commonly used include vegetable oil, biodiesel, and chemical production.

Benefits

- Simple, robust design, no moving parts
- No maintenance
- Low cost alternative to mechanical paddle agitators
- Compact design
- Dynamically shears fluid. Enhances reactions



- Fully homogeneous tank fluid mix

Standard Design

The Alfa Laval Vortex Snub Radial Eductor consists of a uniquely designed, 304 stainless steel body with proprietary Lobestar Mixing Nozzle® insert and female NPT connection. It is offered in 38 mm (1.5 in.), 51 mm (2 in.), and 76 mm (3 in.) connection sizes. Typically, one or more are mounted on a manifold inside of a tank, and the number and size of eductors required is dependent on the vessel size and the necessary agitation or turnover rate (TOR.)

Working Principle

Fluid is pumped into the Snub Radial Eductor inlet where pressure builds at its nozzle. The fluid velocity increases at the nozzle, resulting in a pressure drop and strong vacuum that pulls surrounding fluid into the eductor body through its four peripheral suction ports. The converging fluid streams are dynamically sheared by the nozzle and discharged into the tank as a high-energy plume. The Snub Radial Eductor can be utilized in any application where the motive fluid can be handled by a centrifugal pump.

Technical Data

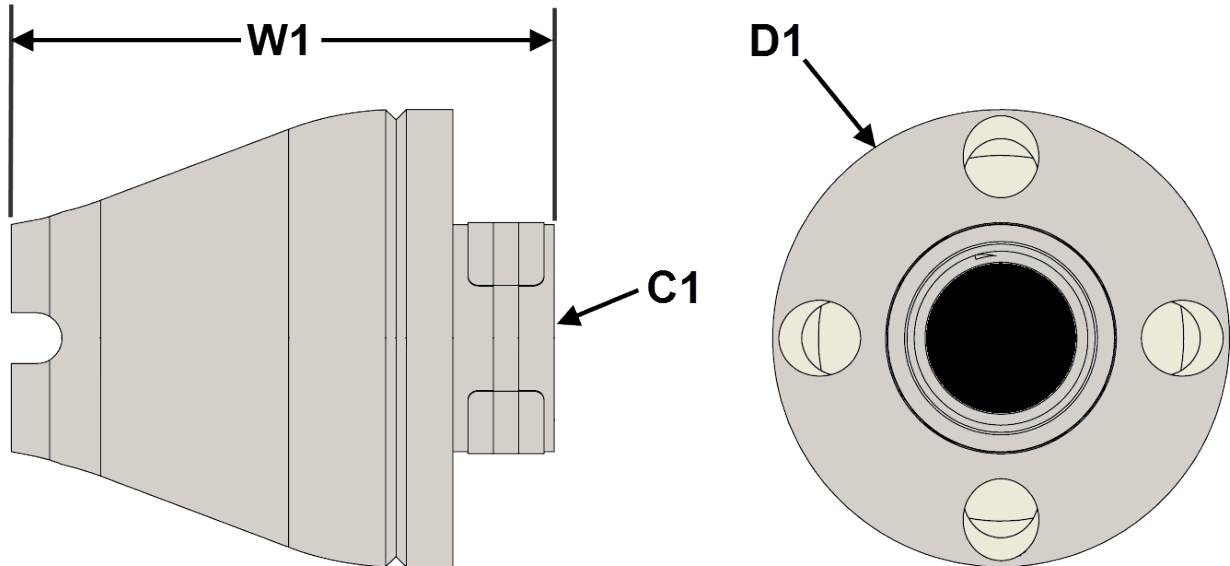
Model Number	SB1500	SB2000	SB3000
Connections	38 mm (1.5 in) FNPT	51 mm (2 in) FNPT	76 mm (3 in) FNPT
Body Material	304 stainless steel	304 stainless steel	304 stainless steel
Weight	2.72 kg (6 lbs)	6.35 kg (14 lbs)	7.3 kg (16 lbs)
Design Temperature	-40 to 82 C (-40 to 180 F)	-40 to 82 C (-40 to 180 F)	-40 to 82 C (-40 to 180 F)
Differential Head Requirement (with water)	70-185 ft head (30-80 PSI)	70-185 ft head (30-80 PSI)	70-185 ft head (30-80 PSI)

Performance Data

Model	Flow Type	Pressure Differential – PSI					
		30	40	50	60	70	80
SB1500	Inlet	37 (140)	43 (163)	48 (182)	53 (201)	57 (216)	61 (231)
	Outlet	93 (352)	108 (409)	120 (454)	133 (503)	143 (541)	153 (579)
SB2000	Inlet	73 (276)	84 (318)	94 (356)	103 (390)	111 (420)	119 (450)
	Outlet	183 (693)	210 (795)	235 (890)	258 (977)	278 (1052)	298 (1128)
SB3000	Inlet	95 (360)	110 (416)	123 (466)	135 (511)	145 (549)	155 (587)
	Outlet	238 (901)	275 (1041)	308 (1166)	338 (1279)	363 (1374)	388 (1469)

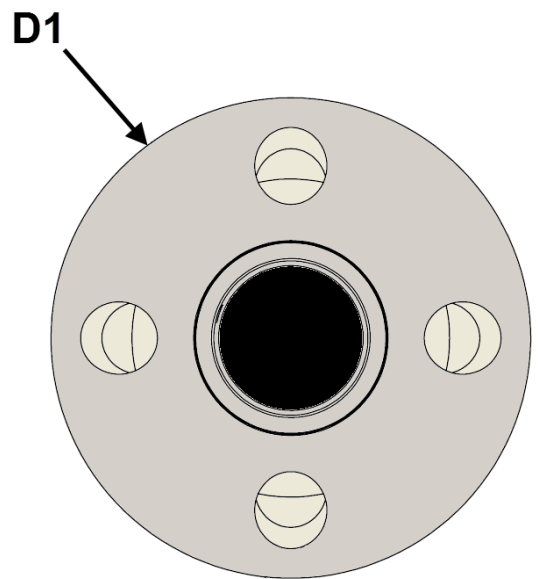
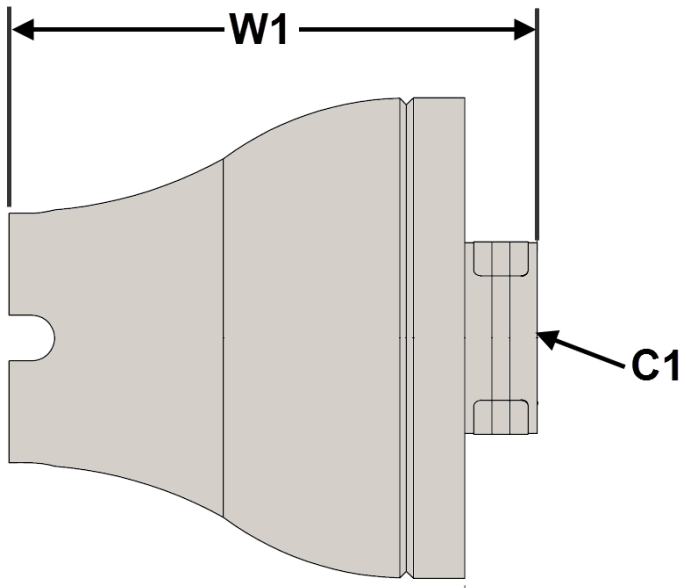
Flowrates are with water and are shown in gallons per minute and liters per minute in parentheses

Dimensional Drawings



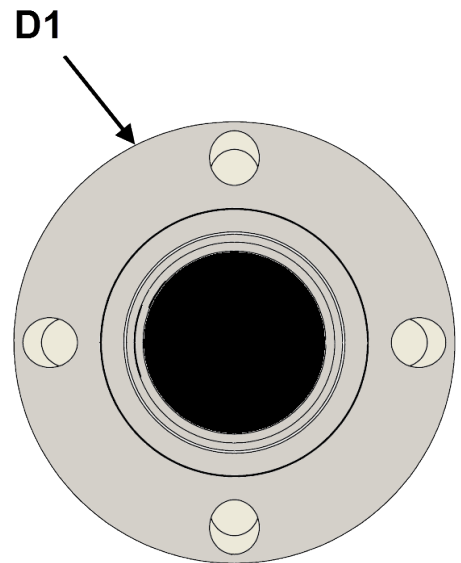
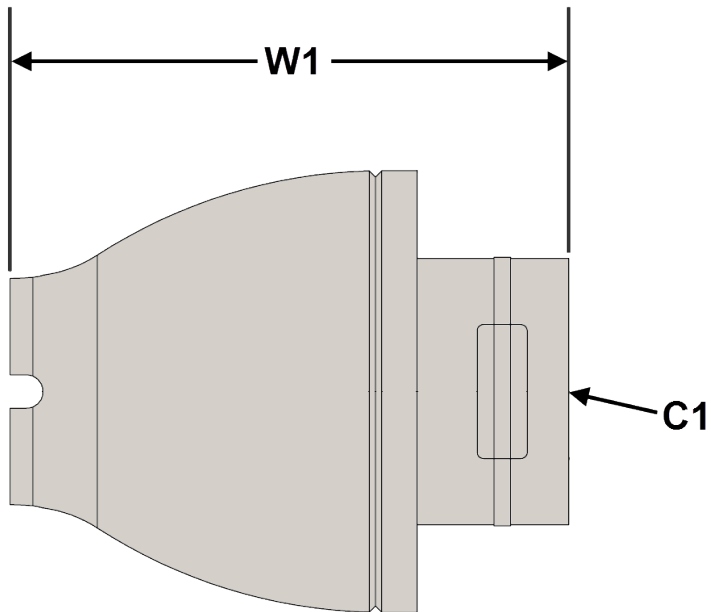
Model SB1500

W1	136 mm (5.4 in)
C1	38 mm (1.5 in) female pipe threads
D1	115 mm (4.5 in) diameter



Model SB2000

W1	185 mm (7.3 in)
C1	51 mm (2 in) female pipe threads
D1	168 mm (6.6 in) diameter



Model SB3000

W1	213 mm (8.4 in)
C1	76 mm (3 in) female pipe threads
D1	168 mm (6.6 in) diameter



Alfa Laval LeviMag® UltraPure, Magnetic Mixer

Levitated Magnetic Mixer

Application

Alfa Laval LeviMag UltraPure magnetic mixers offer effective mixing for multiple processes within Pharmaceutical and Biotech applications - eg. serums, vaccines, plasma fractions, bacteria and cell cultures and API's - where high demands on hygienic and aseptic design are required.

Depending on duty and media properties the LeviMag can be configured to be used in tanks from 30 l. to 40.000 l.

Working principle

A radial turbine installed inside the tank is rotated via the torque from a magnetic coupling. This creates mixing of the fluid inside the tank. The patented levitated design of the impeller makes the mixer fully drainable and able to run dry - hence it can mix to the last drop, securing maximum yield.

Unique features

Levitated design: Makes the bearing fully drainable and minimize wear of the bearing.

Replacable bearings: Both the female and the male bearing can be replaced by the end user on site.

High efficiency impeller: The impeller unit is flow optimized, which creates the possibility of gentle product treatment

Mixing to last drop: Dry running capability makes it possible to achieve maximum yield.

Available versions:

- Impeller with male/female bearing
- Impeller complete, with drive unit

Drive unit versions:

- Painted (fan ventilated)
- Clean room finish, Sealed Surface Conversion Treatment (smooth, closed, none fan ventilated)
- Extended console for insulated tanks



TECHNICAL DATA:

Internals:	
Product Wetted Surface finish:	Ra <0.5 µm Mech. polished and Electropolished
Working pressure:	-1 to 7 bar(g)
Impeller diameters:	100, 150, 200, 250 & 300 mm
Weld Plate:	
Size WP50:	For impeller size 100 & 150 mm
Size WP81:	For impeller size 200, 250 & 300 mm
Drive Unit:	
Motor:	
Integrated Permanent Magnet Synchron Motor (IPMSM) which has to be operated with a frequency inverter for IE4 motors. The frequency converter (not Alfa Laval supply) must be ordered for the voltage available at the place of operation.	
Efficiency class:	IE4
Enclosure / Motor protection:	IP66
Configuration:	Blue
Nominal Power:	1.1 kW
Nominal Voltage and frequency (from frequency converter):	Output 217 VAC, connected in delta, 70 Hz, 2100 RPM
Nominal Current:	3.59 A
Configuration:	Clean room, WP50
Nominal Power:	0,75 kW
Nominal Voltage and frequency (from frequency converter):	Output 199 VAC, connected in delta, 70 Hz, 2100 RPM
Nominal Current:	2.53 A
Configuration:	Clean room, WP81
Nominal Power:	1.1 kW
Nominal Voltage and frequency (from frequency converter):	Output 195 VAC, connected in delta, 70 Hz, 2100 RPM
Nominal Current:	3.61 A
Country Code:	All (one type covers all)
Gear:	
High efficiency helical bevel right angle gearbox.	
Lubricant:	Food compatible oil
Maximum mounting angle acc. to horizontal:	0° - 45° (Different angle intervals based on configuration - Note: Motor may not point down wards)
Surface finish drive unit, standard:	Painted Blue RAL 5010
Surface finish drive unit, Clean Room option:	Sealed Surface Conversion Treatment, Smooth Body (no fan)
Console/flange:	
Standard height or option for extended height for insulated tanks.	
Attachment, Size WP50:	Clamp connection
Attachment, Size WP81:	Flange-bolt connection

PHYSICAL DATA

Materials:	
Impeller and Weld plate:	AISI316L (UNS S31603)
Drive Rotor, shaft and console/flange:	AISI304 (UNS S30400)
Gear motor , Painted:	C2 according to DIN 12944 (NSF/ANSI 51-2009e)
Gear motor, Clean room	Permanent Bond Surface (nsd tupH) - compl. w. FDA Title 21 CFR 175.300
Male Bearing:	Zirconia YTZP
Female bearing:	Silicium Carbide (EN 12756)
Seals:	FEP/FKM
Gearbox oil:	USDA H1
Temperatures:	
During product Mixing, media:	Max. 90°C
During product Mixing, media WFI:	TBA
During CIP (max. 50 RPM):	Max. 95°C
During SIP (0 RPM):	Max. 150°C
Max. speed:	
Impeller size 100	800 RPM (81 Hz)
Impeller size 150	480 RPM (48.5 Hz)
Impeller size 200	480 RPM (83 Hz)
Impeller size 250	230 RPM (40 Hz)
Impeller size 300	200 RPM (34.5 Hz)

Documentation:

As standard with UltraPure Q-Doc including:

- Compliance with Regulation (EC) No.: 1935/2004
- Compliance to the EC Regulation for GMP
- 3.1 Material Certificates acc. to EN10204 (MTR) for all wetted parts
- Compliance to USP Class VI <88> for Zirconia YTZP and FEP/FKM seals
- Compliance to FDA CFR 21 (non-metallic parts) for elastomers, ceramics and gear oil.
- TSE (Transmissible Spongiform Encephalopathy) / ADI (Animal Derivative Ingredient) Declaration
- Surface finish compliance declaration

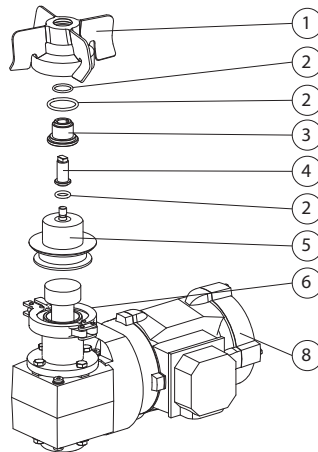
Options:

- Surface roughness measurements included
- Weld Log included

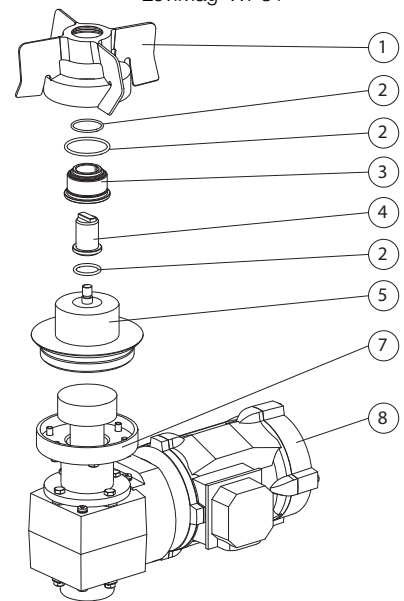
Build up:

1. Impeller
2. Seals
3. Female Bearing
4. Male Bearing
5. Weld Plate
6. Clamp ring connection (WP50 only)
7. Flange-Bolt Connection (WP81 only)
8. Drive unit

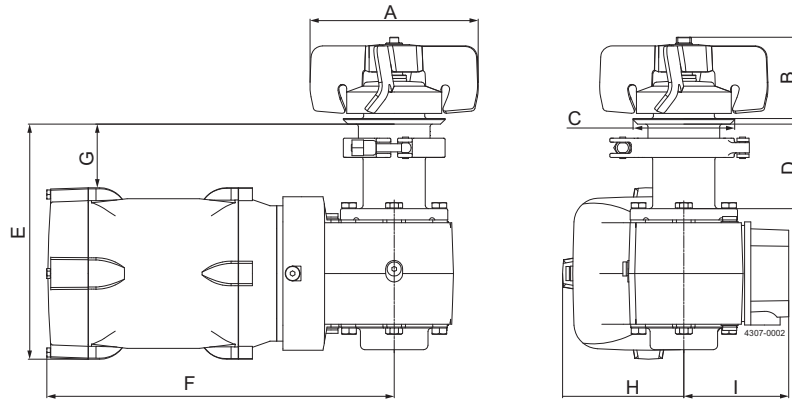
LeviMag WP50



LeviMag WP81

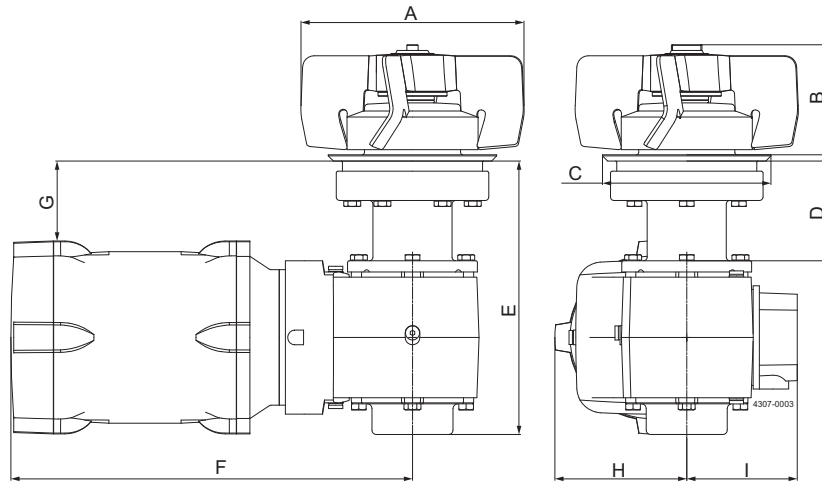


Dimensions:
LeviMag WP50



Model	Size WP50 - Ø100 impeller				Size WP50 - Ø150 impeller			
	Standard console	Extended console	Standard console	Extended console	Standard console	Extended console	Standard console	Extended console
Configuration	Height + Painted	Height + Painted	Height + Clean Room	Height + Clean Room	Height + Painted	Height + Painted	Height + Clean Room	Height + Clean Room
	Gear Motor	Gear Motor	Gear Motor	Gear Motor	Gear Motor	Gear Motor	Gear Motor	Gear Motor
A	Ø100	Ø100	Ø100	Ø100	Ø150	Ø150	Ø150	Ø150
B	72	72	72	72	72	72	72	72
C	Ø89	Ø89	Ø89	Ø89	Ø89	Ø89	Ø89	Ø89
D	75	125	75	125	75	125	75	125
E	215	265	209	259	215	265	209	259
F	340	340	308	308	340	340	308	308
G	50	100	57	107	50	100	57	107
H	114	114	108	108	114	114	108	108
I	111	111	93	93	111	111	93	93

LeviMag WP81



Model	Size WP81 - Ø200 impeller				Size WP81 - Ø250 impeller				Size WP81 - Ø300 impeller			
	Standard console	Extended console	Standard console	Extended console	Standard console	Extended console	Standard console	Extended console	Standard console	Extended console	Standard console	Extended console
Configuration	Height + Painted	Height + Painted	Height + Clean Room	Height + Clean Room	Height + Painted	Height + Painted	Height + Clean Room	Height + Clean Room	Height + Painted	Height + Painted	Height + Clean Room	Height + Clean Room
	Motor	Motor	Gear Motor	Gear Motor	Motor	Motor	Gear Motor	Gear Motor	Motor	Motor	Gear Motor	Gear Motor
A	Ø200	Ø200	Ø200	Ø200	Ø250	Ø250	Ø250	Ø250	Ø300	Ø300	Ø300	Ø300
B	98	98	98	98	98	98	98	98	98	98	98	98
C	Ø149	Ø149	Ø149	Ø149	Ø149	Ø149	Ø149	Ø149	Ø149	Ø149	Ø149	Ø149
D	89	139	89	139	89	139	89	139	89	139	89	139
E	243	293	243	293	243	293	243	293	243	293	243	293
F	354	354	357	357	354	354	357	357	354	354	357	357
G	74	124	70	120	74	124	70	120	74	124	70	120
H	114	114	117	117	114	114	117	117	114	114	117	117
I	111	111	98	98	111	111	98	98	111	111	98	98

Machine Selection:

LeviMag UltraPure can be sized and configured in Alfa Laval configurator.

Selection of size can also be done by use of the below selection charts.

Needed information for selection of size:

- Media Viscosity
- Tank Volume
- Tank diameter and tank bottom shape.
- Duty (see below Duty Levels)

Duty Level	Duty	Description
1	Keep media homogenous	Keeping fluids homogenous & low gradient heat transfer
2	Mild blending	Simple blending of miscible fluids & high gradient heat transfer, no specific request to mixing time, create suspension if deposit velocity is below 0.015 m/s
3	Mixing	Mixing of fluids, relative low mixing time, create suspension if deposit velocity is below 0.03 m/s
4	Powerful mixing	Dissolving solids, very low mixing time, create suspension if deposit velocity is below 0.06 m/s.

Preconditions for using the selection charts:

- Liquid height must be equal to or lower than 2 times the tank diameter
- if duty involves suspension of particles (see deposit velocity limits in the duty levels), the tank diameter D must be:

$$D \leq \sqrt[3]{\frac{V * 4}{\pi}}$$

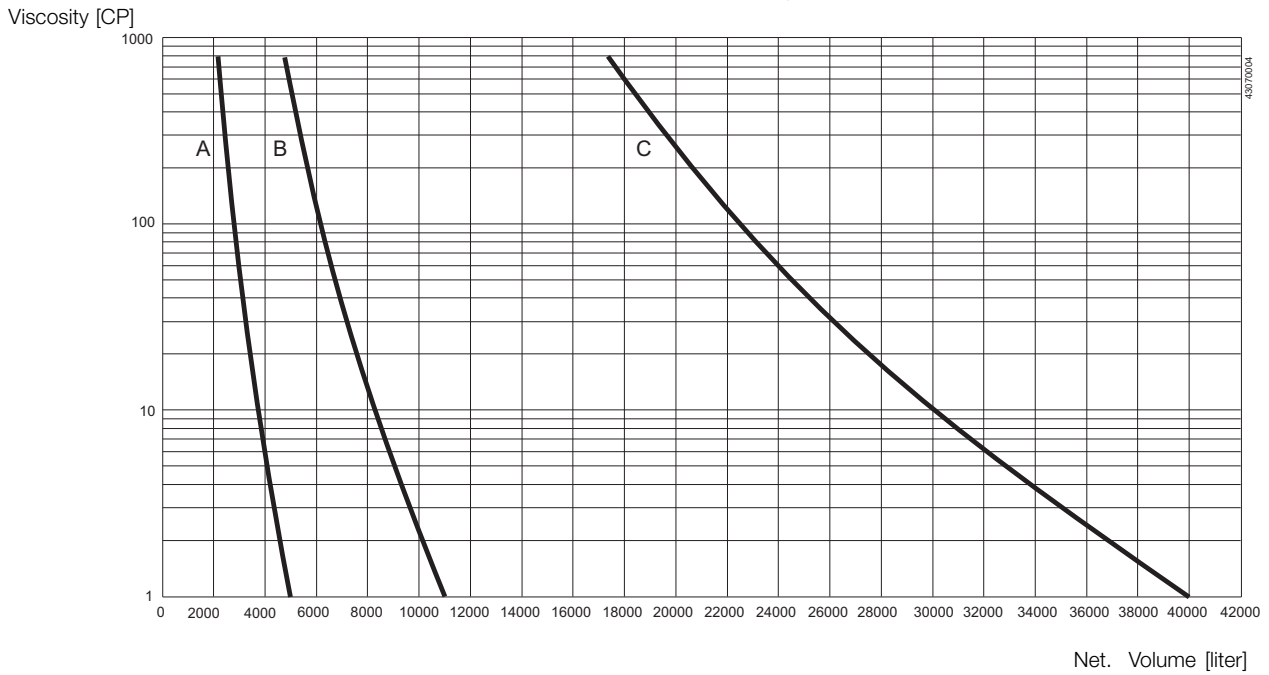
where V is the net. Volume.

- If preconditions are not fulfilled please contact Alfa Laval Global Technical Support

How to select:

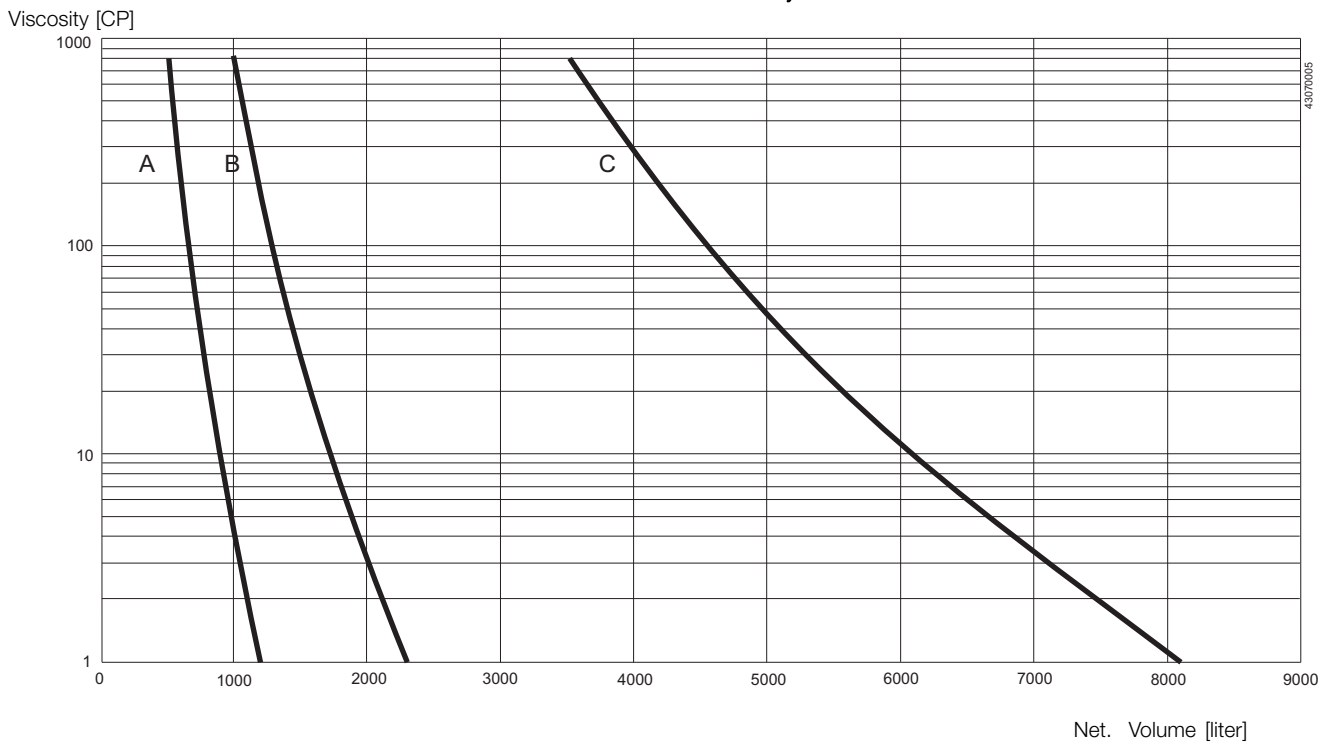
1. Select duty
2. Check preconditions
3. Go to the chart for the chosen duty
4. Read out the point for the requested tank volume (X-axis) and viscosity (Y-axis)
5. Choose the curve to the right from the point
6. If physically possible a larger impeller size can always be chosen -
eg. to obtain a gentler product treatment (operating at lower speed)

Duty Level 1: Keep media homogenous
Volume vs. viscosity



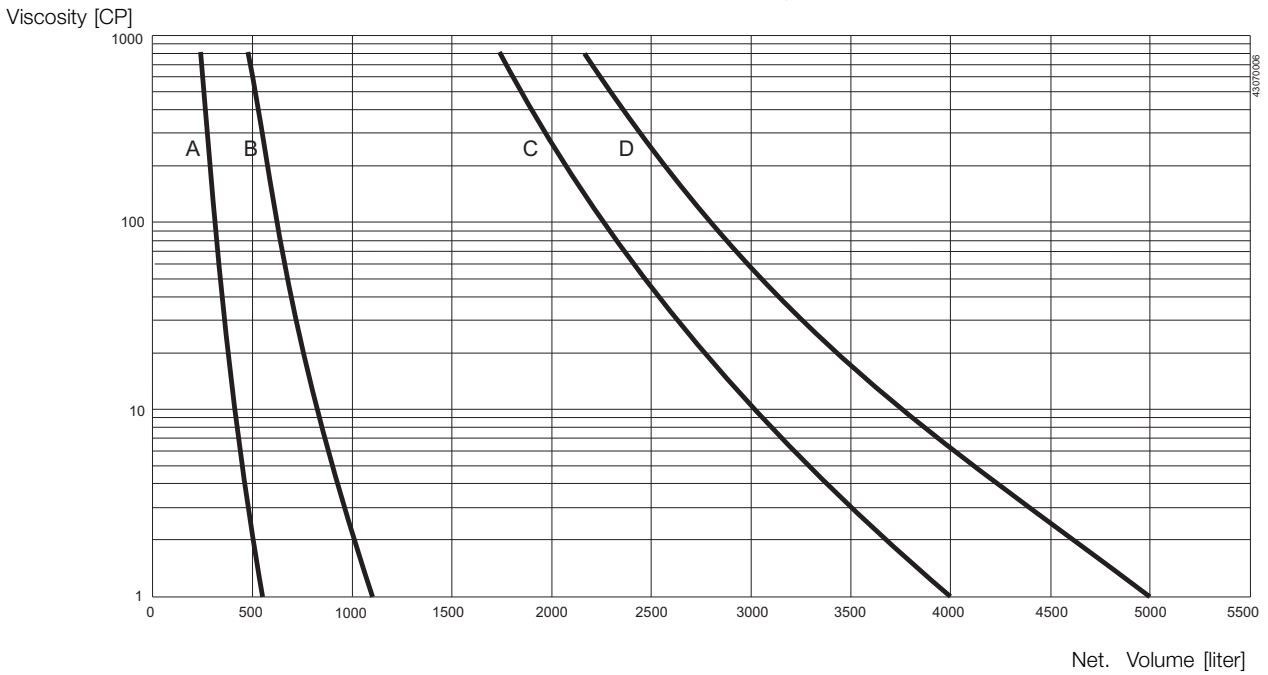
- A: LeviMag size 100 mm
- B: LeviMag size 150 mm
- C: LeviMag size 200, 250 and 300 mm

Duty Level 2: Mild blending
Volume vs. viscosity



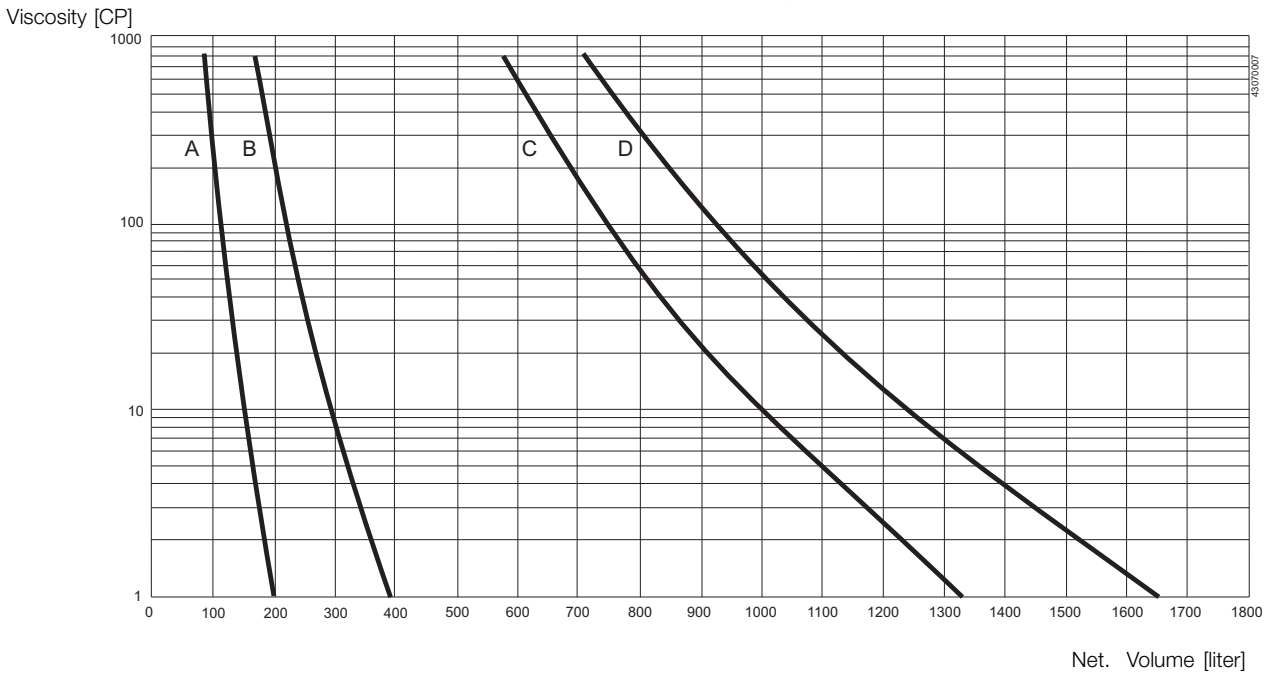
- A: LeviMag size 100 mm
- B: LeviMag size 150 mm
- C: LeviMag size 200, 250 and 300 mm

Duty Level 3: Mixing
Volume vs. viscosity



- A: LeviMag size 100 mm
- B: LeviMag size 150 mm
- C: LeviMag size 200, 250 mm
- D: LeviMag size 300 mm

Duty Level 4: Powerfull mixing
Volume vs. viscosity



- A: LeviMag size 100 mm
- B: LeviMag size 150 mm
- C: LeviMag size 200, 250 mm
- D: LeviMag size 300 mm



Alfa Laval IM 10 Rotary Jet Mixer

Superior mixing – Liquid, Gas and Powder

The patented IM 10 Rotary Jet Mixer (RJM) does not only mix fast, efficient and uniform but creates also the necessary process flexibility that makes it easy to switch to new product formulations with diverse viscosities, densities and volumes. Besides classic liquid to liquid mixing the RJM is excellent for gas and powder dispersion plus a superb tank cleaning machine.

Applications

Process and storage vessels between 1-10 m³ used in a wide range of industries such as: beer & beverage, food & ingredients, home & personal care, health care, biotech and chemical industry etc.

Operation

Secure that the mixer is positioned in the correct level and submerged into the liquid before round pumping or when adding any additional products from any up-stream pipe works.



TECHNICAL DATA

Lubricant: Self-lubricating with the mixing/cleaning fluid
 Standard thread: 1" BSP or NPT, female, Top cone 1" BSP with hygienic seal
 Min. tank opening: See dimension drawings

Pressure

Working pressure: 2-8 bar
 Recommended pressure during mixing: 2-6 bar
 Recommended pressure during CIP: 4-8 bar

PHYSICAL DATA

Materials

Materials: AISI 316L, AISI 316, SAF 2205 (UNS 31803), EPDM, PEEK, PVDF, PFA, Ceramics

Weight: 5.1 kg

Temperature

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

Certificates

2.1 material certificate.

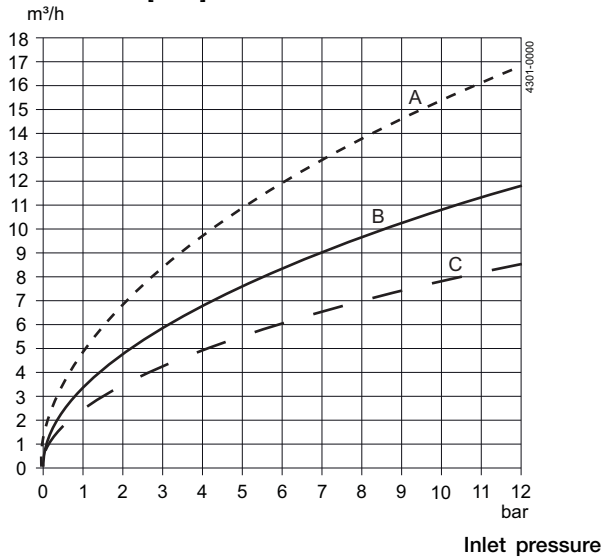
Benefits

Using the IM 10 Rotary Jet Mixer makes it possible, at a modest investment, to perform fast and efficient mixing in a hygienic system. In traditional systems, using propeller mixers, a rotating shaft penetrates the tank wall, and a mechanical seal and a gear box are installed. With the Rotary Jet Mixer technology the shaft, seal and gearbox are eliminated, and a more hygienic design is obtained. With the Rotary Jet Mixing technology good mixing is achieved without the use of baffles. The Rotary Jet Mixer can also be used for gas dispersion. The IM 10 can furthermore be used for efficient CIP when the tank is empty, saving liquid, chemicals and energy compared to a fixed spray ball CIP system.

Flow rate

Relationship between inlet pressure and flow rate for liquids with waterlike properties for the IM 10 Rotary Jet Mixer.

Volumetric flow rate [m³/h]

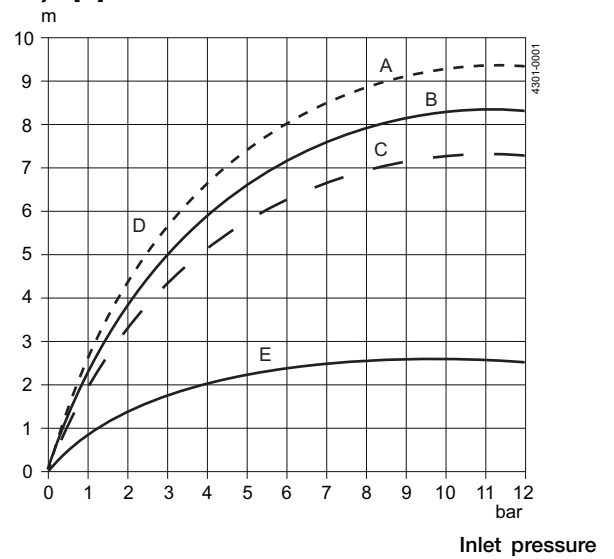


- Nozzles
 A) d = 5.5 mm
 B) d = 4.6 mm
 C) d = 3.9 mm

Reach of jet

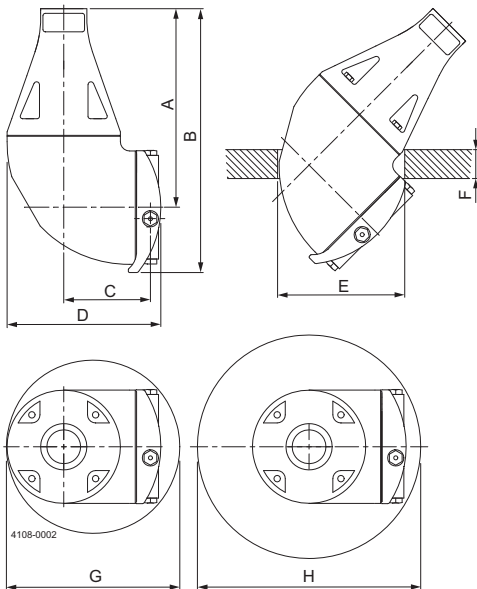
Reach of jet for the IM 10 during cleaning, and indicative reach of jet for mixing of liquids with water-like properties.

Reach of jet [m]

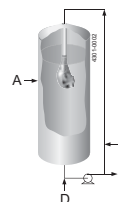


- Nozzles
 A) d = 5.5 mm
 B) d = 4.6 mm
 C) d = 3.9 mm
 D) Cleaning
 E) Mixing

Dimensions (mm)



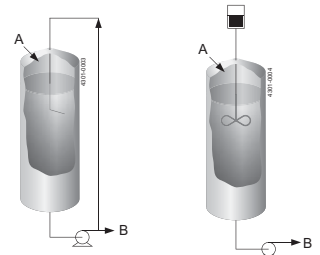
The Rotary Jet
Mixing technology



- A = Rotary Jet Mixer
 B = Gas
 C = Product
 D = Liquid feed

Traditional
Mixing technology

Round pumping Propeller mixing



- A = Liquid feed
 B = Product

A	B	C	D	E	F	G	H
173	230	75	133	ø110	Max. 25	ø150	ø200



Alfa Laval IM 15 Rotary Jet Mixer

Superior Mixing – Liquid, Gas and Powder

The patented IM 15 Rotary Jet Mixer (RJM) does not only mix fast, efficient and uniform but creates also the necessary process flexibility that makes it easy to switch to new product formulations with diverse viscosities, densities and volumes. Besides classic liquid to liquid mixing the RJM is excellent for gas and powder dispersion plus a superb tank cleaning machine.

Applications

Process and storage vessels between 2-100 m³ used in a wide range of industries such as: beer & beverage, food & ingredients, home & personal care, health care, biotech and chemical industry etc.

Operation

Secure that the mixer is positioned in the correct level and submerged into the liquid before round pumping or when adding any additional products from any up-stream pipe works.



TECHNICAL DATA

Lubricant: Self-lubricating with the mixing/cleaning fluid
 Connection: Standard thread 1.5" BSP or NPT, female
 Min. tank opening: See dimension drawings

Pressure

Working pressure: 2-12 bar
 Recommended pressure during mixing: 2-6 bar
 Recommended pressure during CIP: 5-6.5 bar



PHYSICAL DATA

Materials

Materials: AISI 316L, AISI 316, SAF 2205, PTFE, PEEK, Tefzel, Ceramics

Weight: 6.1 kg

Temperature

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

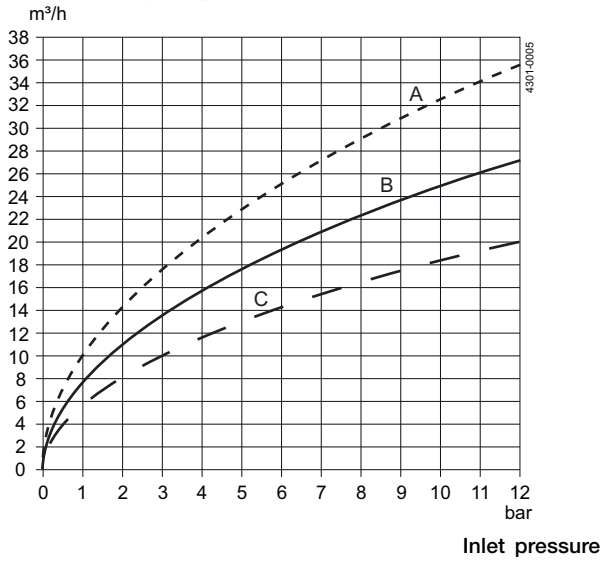
Benefits

Using the IM 15 Rotary Jet Mixer makes it possible, at a modest investment, to perform fast and efficient mixing in a hygienic system. In traditional systems, using propeller mixers, a rotating shaft penetrates the tank wall, and a mechanical seal and a gear box are installed. With the Rotary Jet Mixing technology the shaft, seal and gearbox are eliminated, and a more hygienic design is obtained. With the Rotary Jet Mixing technology good mixing is achieved without the use of baffles. The Rotary Jet Mixer can also be used for gas dispersion and for dispersion and dissolving of powder. The IM 15 can furthermore be used for efficient CIP when the tank is empty, saving liquid, chemicals and energy compared to a fixed spray ball CIP system

Flow rate

Relationship between inlet pressure and flow rate for liquids with waterlike properties for the IM 15 Rotary Jet Mixer.

Volumetric flow rate [m³/h]

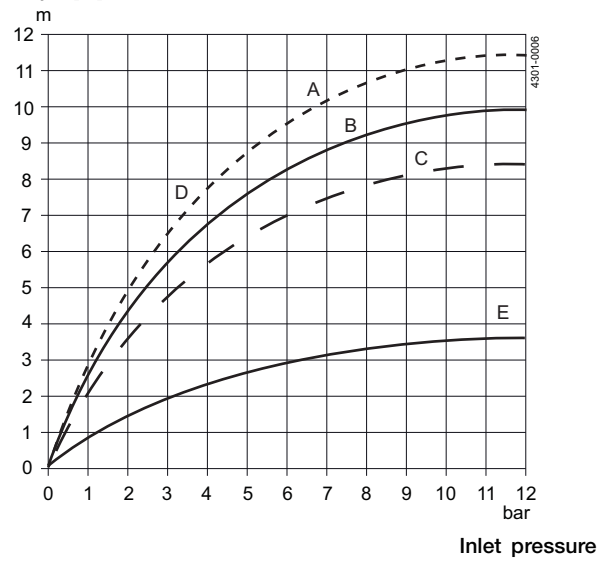


- Nozzles
- A) d = 8 mm
 - B) d = 7 mm
 - C) d = 6 mm

Reach of jet

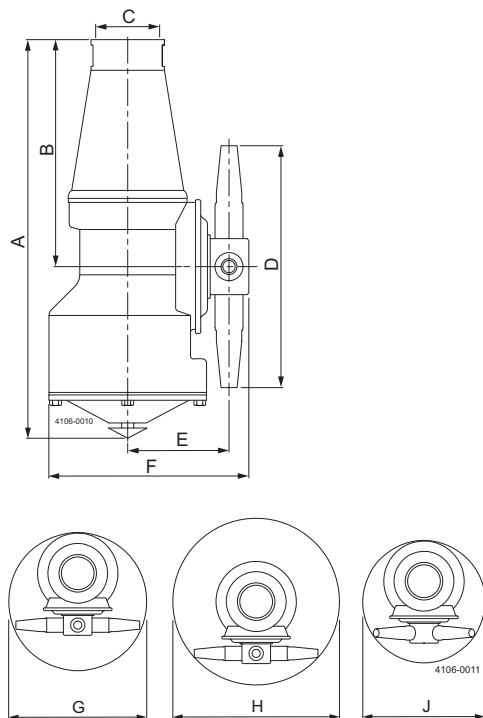
Reach of jet for the IM 15 during cleaning, and indicative reach of jet for mixing of liquids with water-like properties.

Reach of jet [m]



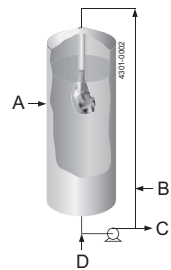
- Nozzles
- A) d = 8 mm
 - B) d = 7 mm
 - C) d = 6 mm
 - D) Cleaning
 - E) Mixing

Dimensions (mm)



A	B	C	D	E	F	G	H	J
297	170	50	204	78	152	ø216	ø264	ø180

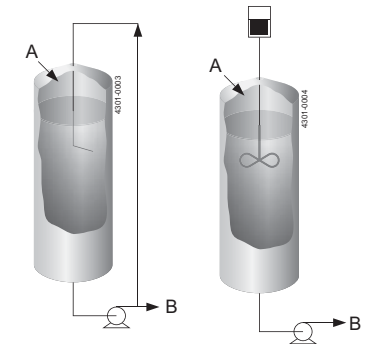
The Rotary Jet Mixing technology



- A = Rotary Jet Mixer
- B = Gas
- C = Product
- D = Liquid feed

Traditional Mixing technology

Round pumping Propeller mixing



- A = Liquid feed
- B = Product



Alfa Laval IM 20 Rotary Jet Mixer

Superior mixing – Liquid, Gas and Powder

The patented IM 20 Rotary Jet Mixer (RJM) does not only mix fast, efficient and uniform but creates also the necessary process flexibility that makes it easy to switch to new product formulations with diverse viscosities, densities and volumes. Besides classic liquid to liquid mixing the RJM is excellent for gas and powder dispersion plus a superb tank cleaning machine.

Applications

Process and storage vessels between 5-200 m³ used in a wide range of industries such as: beer & beverage, food & ingredients, home & personal care, health care, biotech and chemical industry etc.

Operation

Secure that the mixer is positioned in the correct level and submerged into the liquid before round pumping or when adding any additional products from any up-stream pipe works.



TECHNICAL DATA

Lubricant: Self-lubricating with the mixing/cleaning fluid
 Connection: Standard thread 2" BSP or NPT, female
 Min. tank opening: See dimension drawings

Pressure

Working pressure: 2-12 bar
 Recommended pressure during mixing: 2-6 bar
 Recommended pressure during CIP: 5-6.5 bar



PHYSICAL DATA

Materials

Materials: AISI 316L, AISI 316, SAF 2205, PEEK, PVDF, Tefzel, Ceramics

Weight: 12.2 kg

Temperature

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

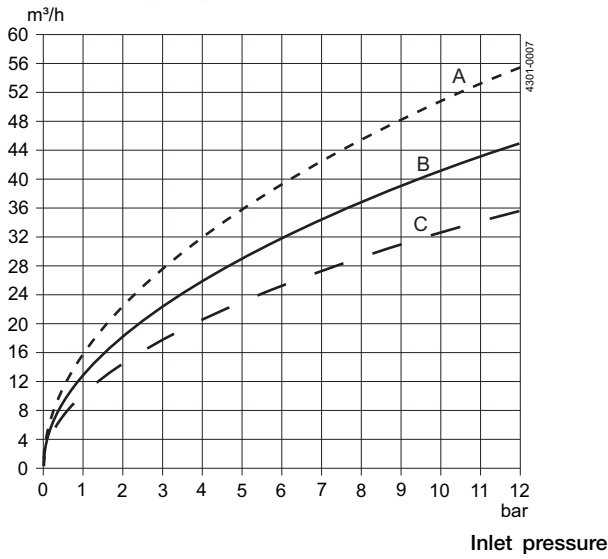
Benefits

Using the IM 20 Rotary Jet Mixer makes it possible, at a modest investment, to perform fast and efficient mixing in a hygienic system. In traditional systems, using propeller mixers, a rotating shaft penetrates the tank wall, and a mechanical seal and a gear box are installed. With the Rotary Jet Mixer technology the shaft, seal and gearbox are eliminated, and a more hygienic design is obtained. With the Rotary Jet Mixing technology good mixing is achieved without the use of baffles. The Rotary Jet Mixer can also be used for gas dispersion and for dispersion and dissolving of powder. The IM 20 can furthermore be used for efficient CIP when the tank is empty, saving liquid, chemicals and energy compared to a fixed spray ball CIP system.

Flow rate

Relationship between inlet pressure and flow rate for liquids with waterlike properties for the IM 20 Rotary Jet Mixer.

Volumetric flow rate [m³/h]

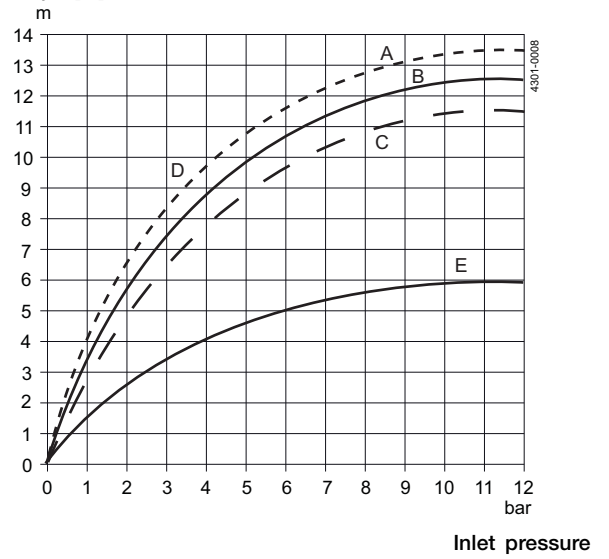


- Nozzles
- A) d = 10 mm
 - B) d = 9 mm
 - C) d = 8 mm

Reach of jet

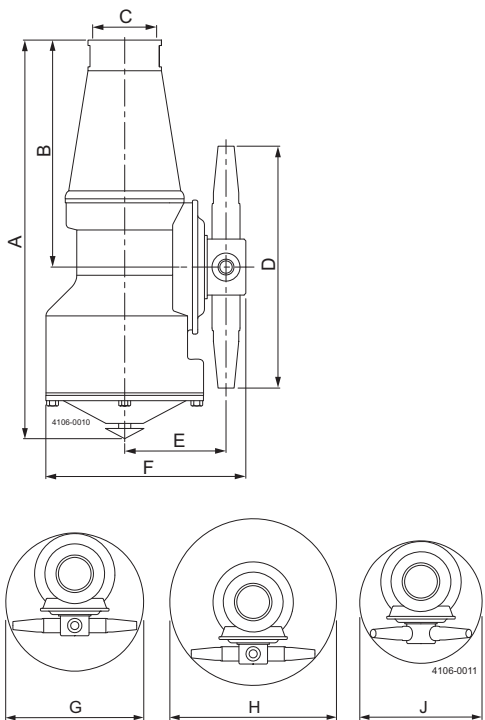
Reach of jet for the IM 20 during cleaning, and indicative reach of jet for mixing of liquids with water-like properties.

Reach of jet [m]



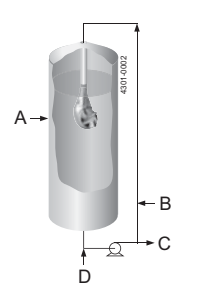
- Nozzles
- A) d = 10 mm
 - B) d = 9 mm
 - C) d = 8 mm
 - D) Cleaning
 - E) Mixing

Dimensions (mm)



A	B	C	D	E	F	G	H	J
356	220	65	268	98	195	ø280	ø343	ø232

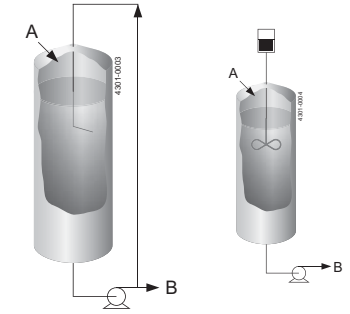
The Rotary Jet Mixing technology



- A = Rotary Jet Mixer
- B = Gas
- C = Product
- D = Liquid feed

Traditional Mixing technology

Round pumping Propeller mixing



- A = Liquid feed
- B = Product



Alfa Laval IM 25 Rotary Jet Mixer

Superior Mixing – Liquid, Gas and Powder

The patented IM 25 Rotary Jet Mixer (RJM) does not only mix fast, efficient and uniform but creates also the necessary process flexibility that makes it easy to switch to new product formulations with diverse viscosities, densities and volumes. Besides classic liquid to liquid mixing the RJM is excellent for gas and powder dispersion plus a superb tank cleaning machine.

Applications

Process and storage vessels between 10-1000 m³ used in a wide range of industries such as: beer & beverage, food & ingredients, home & personal care, health care, biotech and chemical industry etc.

Operation

Secure that the mixer is positioned in the correct level and submerged into the liquid before round pumping or when adding any additional products from any up-stream pipe works.



TECHNICAL DATA

Lubricant: Self-lubricating with the mixing/cleaning fluid
Connection: Standard thread 2.5" BSP, female
Min. tank opening: See dimension drawings

Pressure

Working pressure: 2-12 bar
Recommended pressure during mixing: 4-8 bar
Recommended pressure during CIP: 5-10 bar



PHYSICAL DATA

Materials

Materials: AISI 316L, AISI 316, SAF 2205, PEEK, PVDF, Carbon, Tefzel, Ceramics

Weight: 13.2 kg

Temperature

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

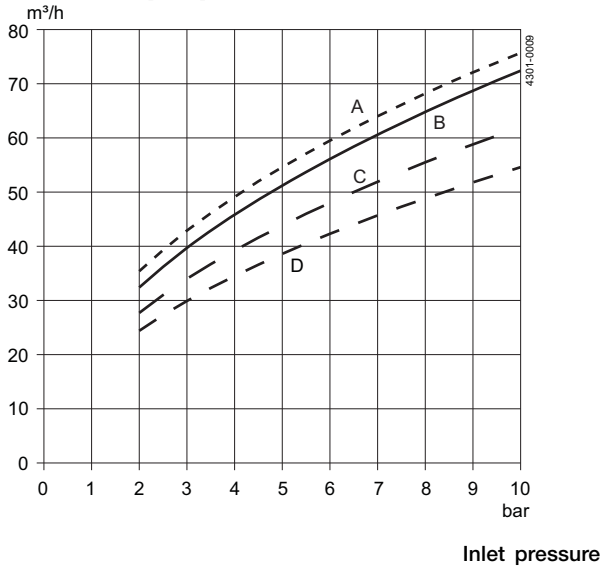
Benefits

Using the IM 25 Rotary Jet Mixer makes it possible, at a modest investment, to perform fast and efficient mixing in a hygienic system. In traditional systems, using propeller mixers, a rotating shaft penetrates the tank wall and a mechanical seal and a gear box are installed. With the Rotary Jet Mixing technology the shaft, seal and gearbox are eliminated, and a more hygienic design is obtained. With the Rotary Jet Mixing technology good mixing is achieved without the use of baffles. The Rotary Jet Mixing technology can also be used for gas dispersion and for dispersion and dissolving of powder. The IM 25 can furthermore be used for efficient CIP when the tank is empty, saving liquid, chemicals and energy compared to a fixed spray ball CIP system.

Flow rate

Relationship between inlet pressure and flow rate for liquids with waterlike properties for the IM 25 Rotary Jet Mixer.

Volumetric flow rate [m³/h]

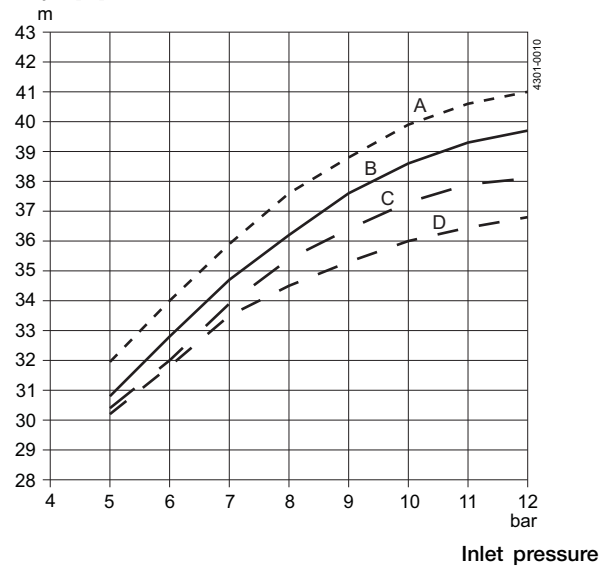


- Nozzles
- A) 2 x \varnothing 21 mm
 - B) 2 x \varnothing 19 mm
 - C) 2 x \varnothing 17 mm
 - D) 2 x \varnothing 15 mm

Reach of jet

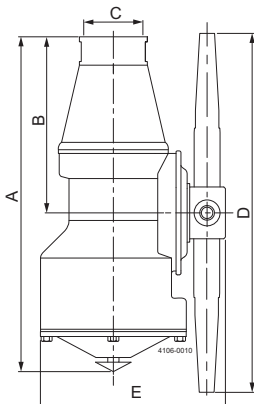
Reach of jet for the IM 25 during cleaning, and indicative reach of jet for mixing of liquids with water-like properties.

Reach of jet [m]

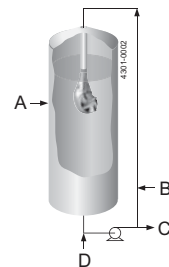


- Nozzles
- A) 2 x \varnothing 21 mm
 - B) 2 x \varnothing 19 mm
 - C) 2 x \varnothing 17 mm
 - D) 2 x \varnothing 15 mm

Dimensions (mm)

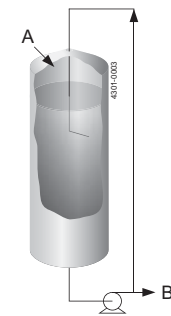


The Rotary Jet Mixing technology

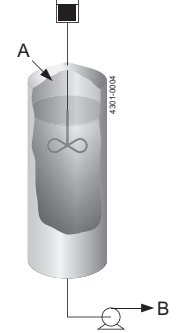


Traditional Mixing technology

Round pumping



Propeller mixing



B

Архангельск (8182)63-90-72
 Астана (7172)727-132
 Астрахань (8512)99-46-04
 Барнаул (3852)73-04-60
 Белгород (4722)40-23-64
 Брянск (4832)59-03-52
 Владивосток (423)249-28-31
 Волгоград (844)278-03-48
 Вологда (8172)26-41-59
 Воронеж (473)204-51-73
 Екатеринбург (343)384-55-89
 Иваново (4932)77-34-06

Ижевск (3412)26-03-58
 Иркутск (395)279-98-46
 Казань (843)206-01-48
 Калининград (4012)72-03-81
 Калуга (4842)92-23-67
 Кемерово (3842)65-04-62
 Киров (8332)68-02-04
 Краснодар (861)203-40-90
 Красноярск (391)204-63-61
 Курск (4712)77-13-04
 Липецк (4742)52-20-81
 Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13
 Москва (495)268-04-70
 Мурманск (8152)59-64-93
 Набережные Челны (8552)20-53-41
 Нижний Новгород (831)429-08-12
 Новокузнецк (3843)20-46-81
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 Омск (3812)21-46-40
 Орел (4862)44-53-42
 Оренбург (3532)37-68-04
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 Рязань (4912)46-61-64
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 Тверь (4822)63-31-35
 Томск (3822)98-41-53
 Тула (4872)74-02-29
 Тюмень (3452)66-21-18
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