

# Alfa Laval Twin screw

## Positive displacement pumps

### Introduction

The Alfa Laval Twin Screw Pump combines process duties typically handled by positive displacement with Cleaning-in-Place (CIP) duties typically handled by centrifugal pumps. This provides a robust and reliable platform that offers greater process flexibility.

Designed for process flexibility, the Alfa Laval Twin Screw Pump is built on a robust, reliable platform that meets stringent hygienic standards. It is capable of handling both product transfer and CIP. Its low pulsation characteristics and excellent solids-handling capability reduce the risk of product damage, thereby improving product quality.

The pump is designed according to the most stringent hygienic design standards and with verified, effective CIP.

### Applications

Designed for handling sensitive, abrasive and high and low viscosity fluids, the Alfa Laval Twin Screw Pump is ideal for use in hygienic applications across the dairy, food, beverage, and home and personal care industries. Quiet and virtually pulse-free, the pump provides smooth and gentle operation, making it an excellent choice for handling sensitive products.

Two-in-one operation provides easy handling of process media of varying viscosities as well as CIP fluids. This simplifies piping and pump control, cutting costs and minimizing contamination risks.

Superior suction performance with excellent lift capability and low NPSHr provides installation flexibility and increases product recovery.

The Alfa Laval Twin Screw Pump is available in twelve models based on four frame sizes. Each frame size is available with three different screw profiles for varying pressure, flow and solids-handling capabilities.

### Benefits

- Greater process flexibility.
- Ease of service, increased process uptime.
- Robust reliable design, reducing cost of ownership and increasing process uptime.
- Improved product quality.
- Exceptional hygiene and cleanability.

### Standard design

All media contacting steel components, like pump casing, front cover and feed screws are in W. 1.4404 (AISI 316L). Furthermore, the pump casing is diffusion hardened. A stainless steel gearbox, end cover and foot ensure increased life and assist in washdown.

The gearbox is designed with the timing gears located between the bearing sets, rather than external to them. This allows the bearing location to be optimized in order to provide maximum support to the shaft assembly, thereby providing a robust rigid design. The internal



gearcase design optimizes oil circulation to both sets of bearings and the timing gears with an oil sump design. This improves the lubrication effect on both bearings and timing gears, minimizing the energy produced due to friction and thereby reducing heat generation within the pump gearbox.

The front-loading, self-setting cartridge design makes it easy to replace the shaft seal while the pump is in place. Single, single flush and double mechanical cartridge seals are available. All options are fully front-loading and interchangeable.

The Alfa Laval Twin Screw Pump can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, shroud and a direct coupled motor or a gear motor for easy, plug-and-play installation.

### Working principle

The Alfa Laval Twin Screw Pump is a positive displacement pump. As the pump rotates, the intermeshing of the two contra-rotating screws, along with the pump casing, form volumetric chambers. These chambers fill with the pumped fluid and move the fluid axially from the suction side of the pump to the higher pressure discharge side.

## TECHNICAL DATA

### Standard specification

Pump casing	W. 1.4404 (316L), diffusion hardened
Screws, front cover, seal housing:	W. 1.4404 (316L)
Inside surface finish:	Mech Ra $\leq$ 32
Gear box:	Stainless steel
Base plate:	Stainless steel
Coupling guard:	Stainless steel
Product wetted elastomers:	EPDM
Other elastomers:	FPM
Shaft seal:	Single flush
Rotary seal face:	Silicon Carbide
Stationary seal face:	Silicon Carbide

### Shaft seals

Single, Single flush and double mechanical cartridge seals available. All options are fully front loading and interchangeable.

Max flush pressure, single flush:	7.25 psi
Max flush pressure, double mechanical:	232 psi (max 87 psi over product pressure)
Water consumption, single flush and double mechanical:	0.13 gallon/min
Flush connections, OS12-36:	G 1/4" or NPT 1/4"
Flush connections, OS42-46:	G 1/2" or NPT 1/2"

### Pressure

Max inlet pressure:	232 psi
Max discharge pressure:	232 psi

### Temperature

Max process temperature:	212°F
Max CIP/SIP temperature:	302°F

### Motor

Direct coupled motor, 4, 6 or 8 poles, or gear motor, 4 poles, to Nema standard, premium efficiency, suitable for frequency conversion.

### Warranty

Extended 3-years warranty on Alfa Laval Twin Screw pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used.

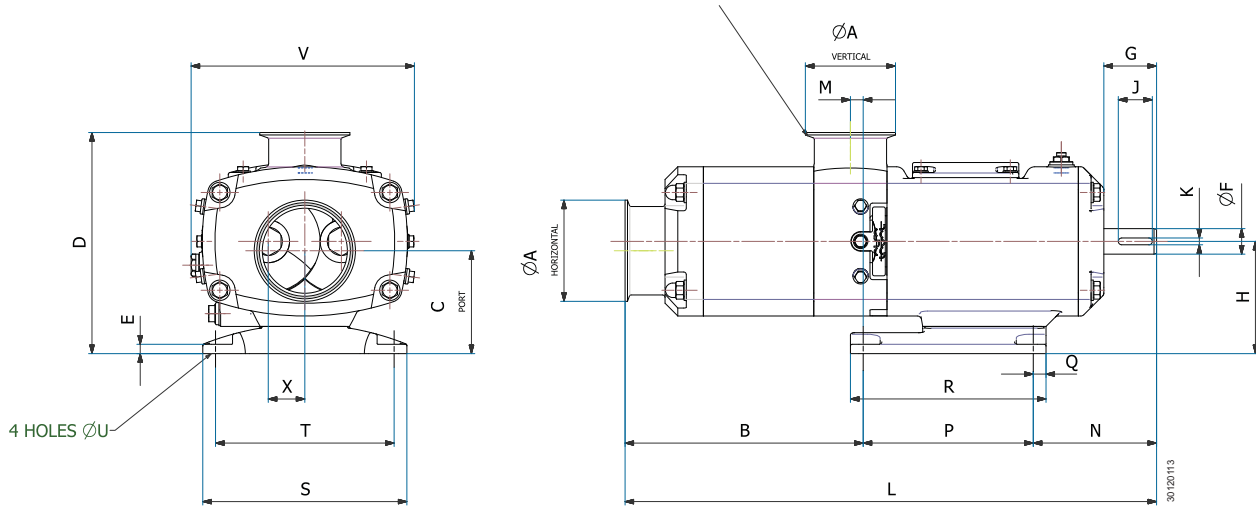
## Operating data

Model	Max Flow gpm	Max Differential Pressure psi	Max speed		Max Particle Size inch
			Process rpm	CIP rpm	
			OS12	27	
OS14	46	174	2800	3300	0.43
OS16	70	116	2800	3300	0.67
OS22	80	232	2500	3300	0.47
OS24	107	174	2500	3300	0.63
OS26	161	116	2500	3300	0.94
OS32	153	232	2200	3000	0.63
OS34	205	174	2200	3000	0.83
OS36	308	116	2200	3000	1.26
OS42	294	232	1800	2800	0.83
OS44	394	174	1800	2800	1.14
OS46	591	116	1800	2800	1.69



**Dimension**

PUMP SHOWN WITH TRI-CLAMP, SUCTION AND DISCHARGE CONNECTIONS



Model	ØA Vertical Inch	B Inch	D Inch	E Inch	F Inch	G Inch	H Inch	J Inch	K Inch	L Inch	M Inch	N Inch	P Inch	Q Inch	R Inch	S Inch	T Inch	U Inch	V* Inch	X Inch	
OS12	1																				
OS14	1½	6.69	7.09	0.28	0.71	1.97	3.54	1.57	0.24	15.94	0.39	4.33	4.92	0.39	5.70	6.10	5.31	0.35	7.42	1.10	
OS16	2																				
OS22	1½																				
OS24	2	8.76	8.66	0.35	0.79	21.46	4.41	1.57	0.24	19.88	0.49	4.63	6.50	0.49	7.48	7.87	6.89	0.43	8.50	1.30	
OS26	2½																				
OS32	2½																				
OS34	3	11.02	10.24	0.43	1.18	2.44	5.20	1.57	0.31	24.61	0.59	5.71	7.87	0.59	9.06	9.45	8.27	0.51	10.33	1.69	
OS36	3																				
OS42	3																				
OS44	4	14.17	13.78	0.59	1.77	3.43	5.51	2.76	0.55	31.10	0.79	7.09	9.84	0.79	11.42	12.60	11.02	0.68	13.62	2.28	
OS46	4																				

\* Dimension 'V' is with flush plugs installed - NPT adaptors will increase this dimension by ~0.4 inch.

Model	ØA Horizontal Inch	C Tri-Clamp Inch
OS12	1.5	2.77
OS14	2	3.02
OS16	2.5	3.27
OS22	2	3.49
OS24	2.5	3.74
OS26	3	4.00
OS32	3	4.23
OS34	4	4.71
OS36	4	4.71
OS42	4	5.80
OS44	4	5.80
OS46	6	6.77



**Options**

- A. Single mechanical shaft seal.
- B. Double mechanical shaft seal.
- C. Silicon Carbide/Carbon seal faces
- D. Product wetted elastomers in FPM or FFPM.
- E. Diffusion hardened screws.
- F. Heating jacket.
- G. Rectangular inlet.
- H. Hydrostatic testing with certificate.
- I. Reversed flow.
- J. Bottom inlet or outlet.
- K. Baseplate fitted with adjustable stainless steel ball feet.

**Pump sizing**

In order to correctly size a twin screw pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection. Specific CIP data are important as well.

## Product/Fluid Data

- Fluid to be pumped
- Viscosity
- Pumping temperature, minimum, normal and maximum
- Cleaning in Place temperature(s), minimum, normal and maximum

## Performance Data

- Flow rate, minimum, normal and maximum
- Discharge head/pressure (closest to pump outlet)
- Suction condition

**Note!**

For further details, see also 100000817.

This product has EHEDG certificate

Alfa Laval reserves the right to change specifications without prior notification.

**How to contact Alfa Laval**

Contact details for all countries are continually updated on our website. Please visit [www.alfalaval.us](http://www.alfalaval.us) to access the information direct.

**CSI**