



Alfa Laval SolidC UltraPure

Centrifugal pumps

Introduction

The Alfa Laval SolidC UltraPure Centrifugal Pump is designed for basic transport of fluids in high-purity applications where contamination safety is of paramount importance. With its hygienic design, cost-effective operation and quick, easy maintenance, the SolidC UltraPure offers excellent value for money.

Applications

The Alfa Laval SolidC UltraPure pump is designed to meet the stringent demands and regulations of high-purity applications across the biotechnology and pharmaceutical industries, which require equipment with the highest material integrity.

All pumps are delivered with a complete Alfa Laval Q-doc package for easier validation and provide proof of origin and compliance for inspection purposes according to Good Manufacturing Practice (GMP) and ASME BPE requirements.

The SolidC UltraPure pump is available in four sizes to handle capacities up to 75 m³/h and differential pressures up to 8 bar at 50Hz.

Benefits

- Low contamination risk: comes with full material traceability and USP Class VI elastomers to reduce the risk of process contamination from extractables.
- Cost-effective operation: consistent performance ensured.
- Quick and easy maintenance: wear parts changed in just a few minutes.
- Smooth qualification, validation and process control: material traceability, and pump supplied with Alfa Laval's Q-Doc package in line with Good Documentation Practices (GDP).

Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in W. 1.4404 (AISI 316L) with material traceability 3.1 according to EN 10204. Product wetted elastomers are specified to USP Class VI, 121°C Chapter 88, and Chapter 87. A stainless steel shroud protects the motor and four adjustable stainless steel legs support the complete unit.

The semi-open impeller with a special vane design and balance holes enhance circulation around the shaft seal and reduce axial forces. This maximizes cleanability while minimizing wear on the shaft seal and motor bearings.

As standard the SolidC UltraPure pump is equipped with a single mechanical shaft seal, but also is available with a single flushed mechanical shaft seal. The secondary seal of the flushed seal is a long-lasting lip seal. The front-loading shaft seal, with the spring and washers mounted on the atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced design minimizes the risk of seal opening during unforeseen pressure shock.



TECHNICAL DATA

Materials

| | |
|-----------------------------|---|
| Product wetted steel parts: | W. 1.4404 (316L) with material traceability 3.1 according to EN 10204 |
| Other steel parts: | Stainless steel |
| Inside surface finish: | Mech Ra \leq 0.5 |
| External finish: | Fiber brushed |
| Product wetted elastomers: | EPDM - USP Class VI, 121°C. Chapter 88, and Chapter 87 |
| Rotary seal face: | Silicon Carbide |
| Stationary seal face: | Silicon Carbide |

Motor

Foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm at 50/60 Hz, 4 poles = 1500/1800 rpm at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

Motor sizes

| | |
|-------|-------------|
| 50Hz: | 1.5 - 22 kW |
| 60Hz: | 1.5 - 22 kW |

Min/max motor speed

| | |
|----------|----------------|
| 2 poles: | 900 - 4000 rpm |
| 4 poles: | 900 - 2200 rpm |

Warranty

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

OPERATING DATA

Max inlet pressure

| | |
|-------------------------|----------------|
| SolidC UltraPure 1 - 4: | 400kPa (4 bar) |
|-------------------------|----------------|

Temperature

| | |
|--------------------|------------------------|
| Temperature range: | -10°C to +120°C (EPDM) |
| Flush media: | Max 70°C |

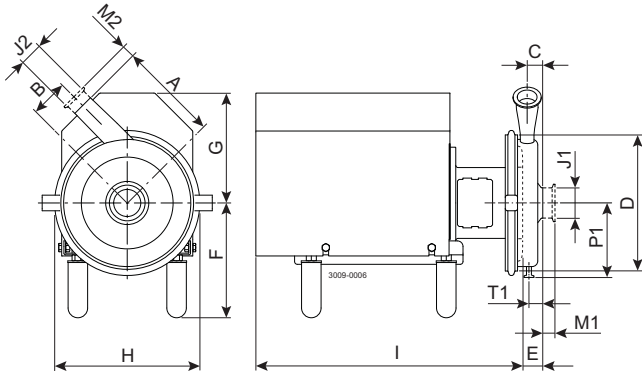
Flushed shaft seal

| | |
|-----------------------|------------------|
| Water pressure inlet: | Max. 1 bar |
| Water consumption: | 0.25 - 0.5 l/min |

Connections for flushed shaft seal

| | |
|-------------------------|--------|
| SolidC UltraPure 1 - 4: | 1/8" G |
|-------------------------|--------|

Dimensions (mm)



Pump specific measures

| Pump Model | SolidC-1 UltraPure | SolidC-2 UltraPure | SolidC-3 UltraPure | SolidC-4 UltraPure |
|------------|--------------------|--------------------|--------------------|--------------------|
| A | 180 | 200 | 210 | 230 |
| B | 67 | 94 | 121 | 120 |
| C | 28 | 35 | 31 | 27 |
| D | 238 | 227 | 311 | 333 |
| E | 40 | 47 | 44 | 44 |
| P1 | 130 | 150 | 164 | 175 |
| T1 | 21 | 27 | 23 | 21 |

Motor specific measures

| Motor IEC | IEC90 | IEC100 | IEC112 | IEC132 | IEC160 |
|-----------|---------|--------|--------|---------|---------------|
| Motor kW | 1.5/2.2 | 3.0 | 4.0 | 5.5/7.5 | 11/15/18.5/22 |
| F(max)* | 246 | 256 | 259 | 279 | 307 |
| G | 126 | 137 | 136 | 164 | 208 |
| H | 227 | 278 | 277 | 327 | 377 |
| I | 405 | 469 | 468 | 543 | 651 |

*Possible to reduce dimension F by min. 15 mm for all pump models. For smaller models it will be possible to reduce dimension F even further.

Motor overview

| Pump Model | SolidC-1 UltraPure | SolidC-2 UltraPure | SolidC-3 UltraPure | SolidC-4 UltraPure |
|-------------------|--------------------|--------------------|--------------------|--------------------|
| Motor range (IEC) | IEC90-IEC112 | IEC100-IEC160 | IEC132-IEC160 | IEC132-IEC160 |

Dimensional data are based on 2 pole, WEGmotors.

Connections

| Pump Model | | SolidC-1 UltraPure | SolidC-2 UltraPure | SolidC-3 UltraPure | SolidC-4 UltraPure |
|--------------------|----|--------------------|--------------------|--------------------|--------------------|
| Clamp ISO 2037 | M1 | 21 | 21 | 21 | 21 |
| | M2 | 21 | 21 | 21 | 21 |
| Clamp ASME BPE | M1 | 13 | 13 | 13 | 29 |
| | M2 | 13 | 13 | 13 | 13 |
| Clamp for ISO-1127 | M1 | 36 | 36 | 48 | 48 |
| | M2 | 36 | 36 | 36 | 36 |
| Clamp DIN 32676 | M1 | 21 | 64 | 64 | 64 |
| | M2 | 21 | 21 | 21 | 21 |
| J1* | | 51 / 2" | 63.5 / 2.5" | 76.1 / 3" | 76.1 / 3" |
| J2* | | 38 / 1.5" | 38 / 1.5" | 38 / 1.5" | 51 / 2" |

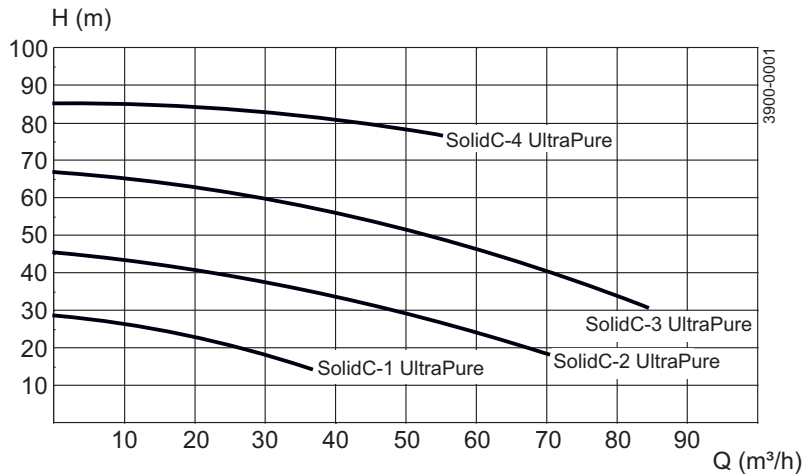
* Other dimensions available on request.

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| | TC Clamp | ISO 2037 Clamp |
|------|-------------|-------------------|
| 1/2" | 12.7 | 12.7 |

Flow chart

Frequency: 50 Hz. Speed /synchr.): 3000 rpm



Q-doc

Standard documentation package:

- Declaration of compliance with Regulation (EC) No.: 1935/2004
- Declaration of compliance to EN 10204 type 3.1 (MTR)
- Declaration of compliance to the U.S. Food & Drug Administration CFR 21 (non-metallic parts)
- Declaration of compliance to the U.S. Pharmacopeia (Elastomers and polymers) - EPDM only
- TSE (Transmissible Spongiform Encephalopathy) / ADI (Animal Derivative Ingredient) Declaration
- Declaration of surface finish compliance
- Declaration of passivation and electro polishing (if specified)
- 3.1 certification in accordance to EN10204
- Pump performance test certificate

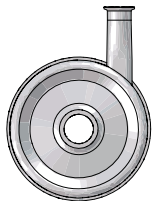
Optional documentation:

- Hydrostatic test certificate
- surface measurement report

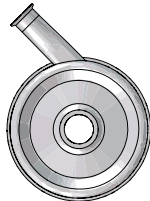
Options

- A. Impeller with reduced diameter.
- B. Motor for other voltage and/or frequency.
- C. Half speed motor.
- D. Flushed shaft seal.
- E. Horizontal drain connection.
- F. No drain.
- G. Product wetted surface finish mechanically polished to $Ra \leq 0.8 \mu\text{m}$.
- H. Product wetted surface finish electropolished to $Ra \leq 0.4 \mu\text{m}$.
- I. Product wetted elastomers FPM or FEP.
- J. Hydrostatic testing with certificate.
- K. Surface finish measurement with certificate.
- L. 0° , 90° or 270° outlet, see illustration below.

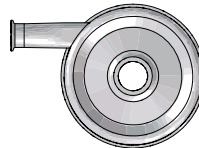
Available outlet positions



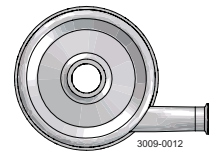
0°



45°

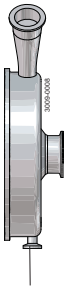


90°



270°

Available drain connections



1/2" vertical drain

Available connections:

- Tri-clamp for ASME
- Clamp for ISO 1127



1/2" horizontal drain

Available connections:

- Tri-clamp for ASME
- Clamp for ISO 1127

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.com to
access the information direct.