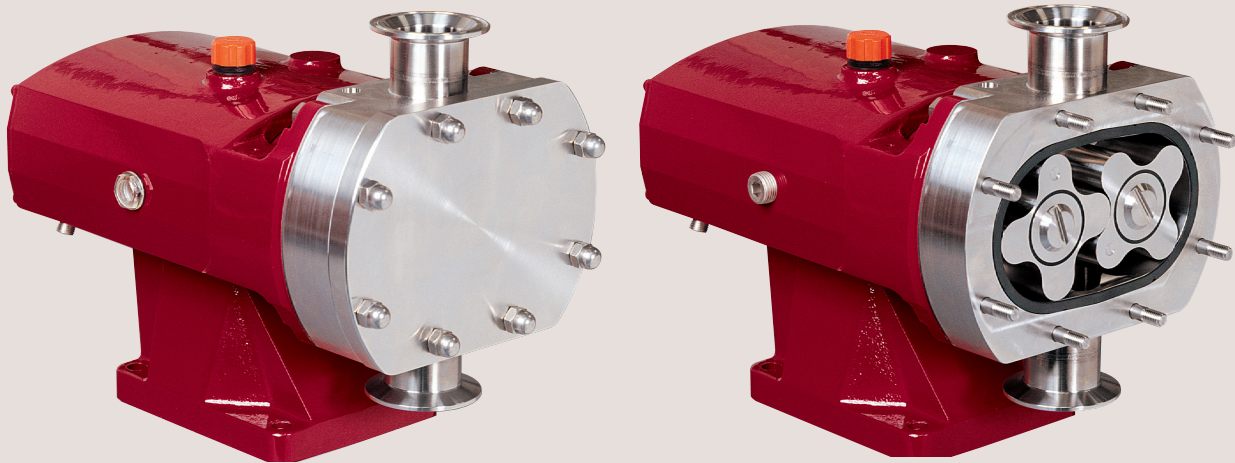




Series X

Rotary Lobe Pumps for high level cleanability



SSP Series X stainless steel rotary lobe pumps provide the ultimate in clean pumping. Series X pumps complement the SSP Series S pumps, which are used throughout industrial and clean processes worldwide. Series X pumps are EHEDG accredited (European Hygienic Equipment Design Group) for the highest level of cleanability.

Handling from low to high viscosity pumped media the characteristic smooth, low shear pumping action is ideal for gentle transfer of delicate and sensitive media.

Series X pumps are suitable for CIP (Cleaning In Place) and SIP (Sterilisation In Place) and conform to USA 3A Sanitary Standard. In addition Series X pumps are also classified for use in

User Benefits

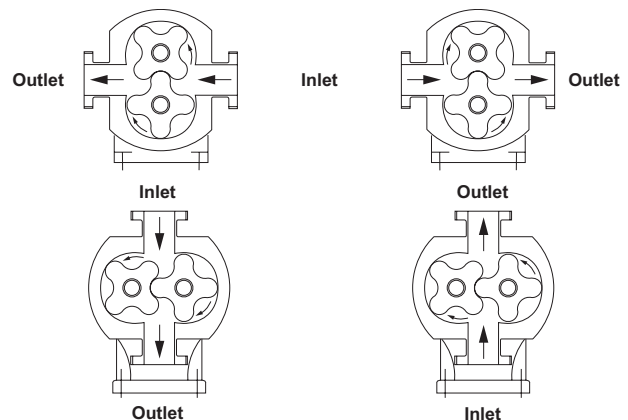
- High efficiency
- Low energy consumption
- Compact size
- Robust construction
- Smooth flow
- Reversible operation
- Low shear pumping
- Minimal pumped media agitation
- Easy maintenance
- Self draining
- EHEDG accreditation
- ATEX compliance

potentially explosive atmospheres under the ATEX Directive 94/9/EC Group II, Categories 2 & 3, with temperature classification T1 to T4.



Operation

The positive displacement of the Series X pump is provided by noncontacting, contra rotating four-lobe rotors within a fully swept pump chamber. All Series X pumps are capable of bi-rotational flow without modification.



Performance

The Series X pump range has fourteen pump head displacements ranging from 0.05 litres/rev to 3.80 litres/rev.

- Flow rates up to 115 m³/h
- Differential pressures up to 15 bar
- Port sizes from 25 mm to 150 mm diameter

Computational Fluid Dynamics (CFD) has been used to establish mathematically exact geometry for the rotors and rotorcase, ensuring high efficiency transfer with low pulsation, low shear and low noise characteristics.

Low NPSH – The Series X pump has full through-bore inlet and outlet ports to International Standards. This reduces inlet and outlet port losses, thereby lowering NPSH requirements.

Basic Design

Pumphead – All metallic pumped media wetted components are manufactured in 316L stainless steel. The Series X has four-lobe rotors allowing the pump to be operated at a maximum temperature of 150°C for both process and CIP/SIP. A unique self-cleaning design rotor retention device incorporates

a high integrity cup seal to fully isolate splines from the pumped media. The precise involute splines ensure accurate rotor synchronisation.

Shafts – Manufactured from high strength duplex stainless steel.

Gearbox – The Series X pump has a robust cast iron gearbox with a universal design for models X1 to X4. This gives the flexibility of mounting pumps with the inlet and outlet ports in either a vertical or horizontal plane by changing the foot and its position. The Series X in sizes 5 & 6 has dedicated gearbox castings, which also allows the inlet and outlet ports to be in either the vertical or horizontal plane. The X7 has a dedicated gearbox casting allowing inlet and outlet ports in a vertical plane only.

Pump Model	Inlet and Outlet Connection size International standard mm	Displacement litres/rev	Differential Pressure bar	Maximum Speed rev/min	Weight Bare Shaft Pump	
					Horizontal Porting kg	Vertical Porting kg
X1-0005	25	0.05	6	1200	15	16
X1-0005	25	0.05	12	1200	15	16
X1-0007	40	0.07	7	1200	16	17
X2-0013	40	0.128	5	1000	32	33
X2-0013	40	0.128	15	1000	32	33
X2-0018	50	0.181	7	1000	33	34
X3-0027	50	0.266	5	1000	57	59
X3-0027	50	0.266	15	1000	57	59
X3-0035	65	0.35	7	1000	59	61
X4-0046	50	0.46	5	1000	107	110
X4-0046	50	0.46	15	1000	107	110
X4-0063	65	0.63	5	1000	113	116
X4-0063	65	0.63	10	1000	113	116
X5-0082	65	0.82	15	600	-	155
X5-0115	80	1.15	10	600	-	165
X6-0140	80	1.40	15	500	-	278
X6-0190	100	1.90	10	500	-	290
X7-0250	100	2.50	15	500	-	340
X7-0380	150	3.80	10	500	-	362

Specification Options



Heating / Cooling device

A rotorcase cover jacket is used for heating the pumphead so as to maintain the pumped media viscosity and reduce risk of any crystallisation/solidification. This may also be used for cooling purposes when required.

Surface finish

The standard surface finish of $0.8\mu\text{m Ra}$ for the pumphead and rotors can be enhanced for overall cleanability by electro polishing $\leq 0.8\mu\text{m Ra}$ with option of $0.5\mu\text{m Ra}$ from mechanical and electro polishing. Higher surface finishes are available on request.

Full material traceability

To meet the stringent demands of sensitive applications requiring integrity of materials and/or safety, pumps may be supplied with full material traceability to BSEN 10204.

Pumped media seals

The optimum primary seal configuration and material combinations can be chosen to match the pumped media and duty conditions. All sealing options are fully front loading and fully interchangeable without the need for additional housings or pump component changes. This enhances cleanability, simplifies access and significantly reduces maintenance downtime. Single or double mechanical seals include flushed or aseptic variants. For arduous duties hard faced seal materials such as silicon carbide can be used. The seal seat/face material combinations and EPDM/FPM elastomers are all EHEDG compliant.

All pumped media wetted elastomers are controlled compression joints, the latest technology where static and dynamic elastomer seals are used to prevent pumped media leakage – materials are EPDM, MVQ, FPM all FDA conforming.

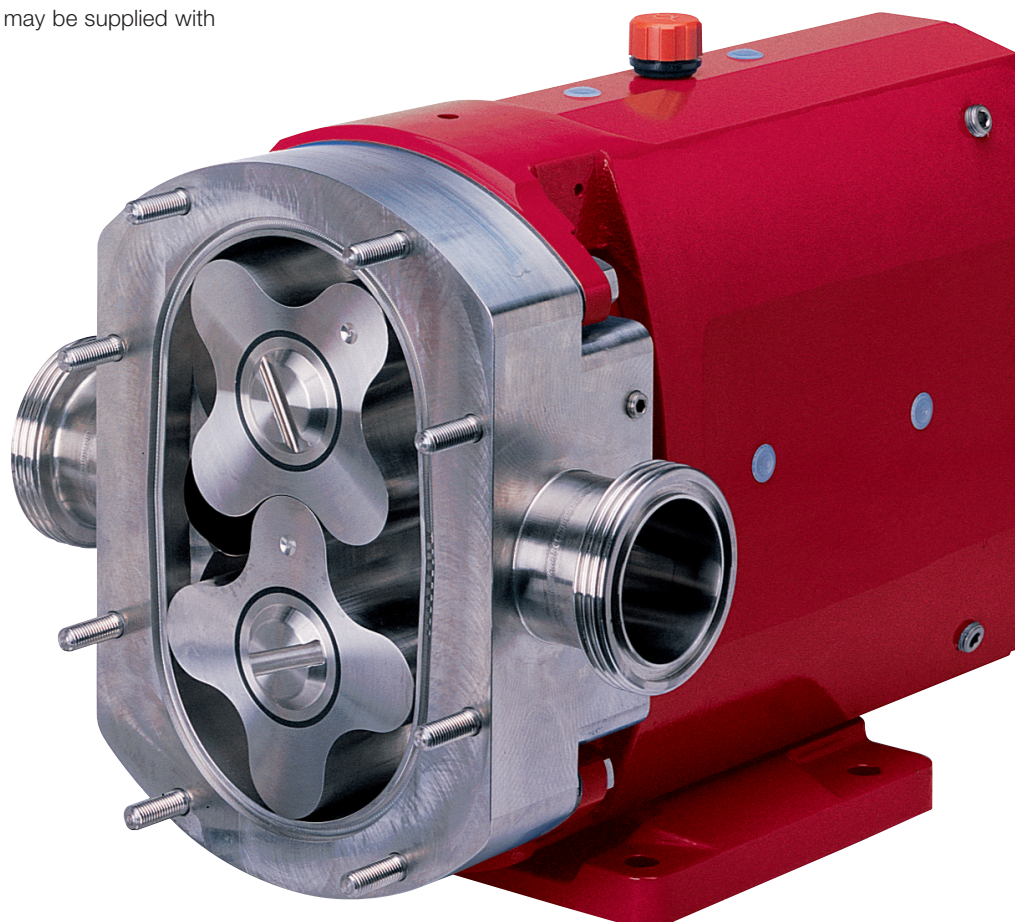
Connections

Comprehensive choice covering

- Screwed male connections to all major standards including DIN11851, ISS/IDF, RJT, SMS, and Tri-clamp.
- Aseptic male connections to DIN11864-1 Form A (ISO2037/BS4825).

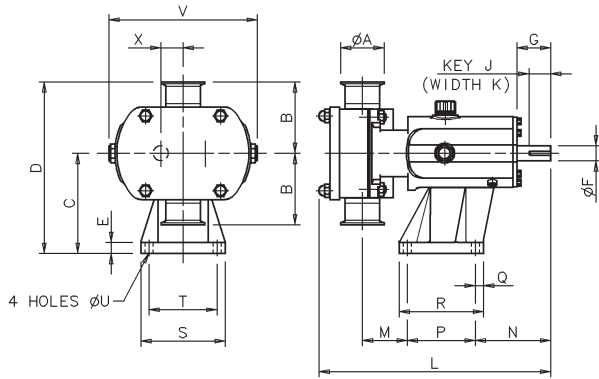
Motorised pump units

Pumps may be supplied fully motorised with fixed or variable speed drives including appropriate control systems if required, mounted on either mild or stainless steel baseplates. In addition to electric motor drives, hydraulic, pneumatic, diesel or petrol powered prime movers can be fitted.

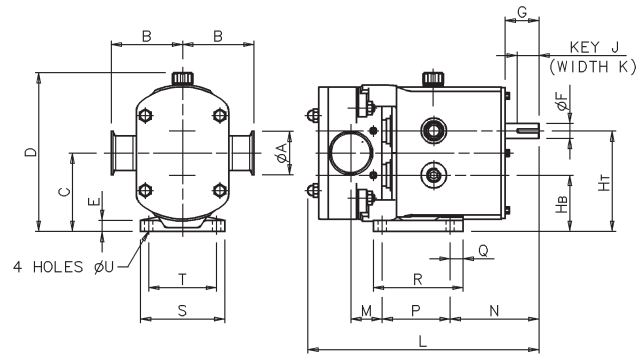


Bareshaft Pump Dimensions

Vertically ported



Horizontally ported



Vertically ported

All dimensions in mm

Pump Model	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	R	S	T	U	V	X
X1-0005	25	95	113	208	15	16	40	30	5	281	53	100	80	22	114	104	80	10	174	23.5
X1-0007	40	95	113	208	15	16	40	30	5	294	60	100	80	22	114	104	80	10	174	23.5
X2-0013	40	105	147	252	15	22	50	32	6	325	59	111	100	12	124	124	100	12	213	32.5
X2-0018	50	105	147	252	15	22	50	32	6	341	66	111	100	12	124	124	100	12	213	32.5
X3-0027	50	125	175	300	22	28	61	40	8	431	71	142	155	15	185	155	125	14	246	37.5
X3-0035	65	125	175	300	22	28	61	40	8	447	77	142	155	15	185	155	125	14	246	37.5
X4-0046	50	150	213	363	25	38	80	63	10	514	74	174	200	17	234	184	150	14	301	49.5
X4-0063	65	150	213	363	25	38	80	63	10	533	81	174	200	17	234	184	150	14	301	49.5
X5-0082	65	175	256.5	431.5	30	45	110	70	14	599	61	264	200	20	240	220	180	14	344	60
X5-0115	80	175	256.5	431.5	30	45	110	70	14	626	81	264	200	20	240	220	180	14	344	60
X6-0140	80	190	295	485	30	48	110	70	14	687	77	267	260	20	300	250	210	14	400	70
X6-0190	100	190	295	485	30	48	110	70	14	715	89	267	260	20	300	250	210	14	400	70
X7-0250	100	205	365	570	30	60	110	90	18	763	94	288	280	25	330	290	240	18	475	81.5
X7-0380	150	205	365	570	30	60	110	90	18	817	121	288	280	25	330	290	240	18	475	81.5

Horizontally ported

All dimensions in mm

Pump Model	A	B	C	D	E	F	G	HB	HT	J	K	L	M	N	P	Q	R	S	T	U
X1-0005	25	95	90.5	189	10	16	40	67	114	30	5	281	29	124	80	10	100	100	80	10
X1-0007	40	95	90.5	189	10	16	40	67	114	30	5	294	36	124	80	10	100	100	80	10
X2-0013	40	105	115	233	15	22	50	82.5	147.5	32	6	325	39	131	100	19	132	124	100	12
X2-0018	50	105	115	233	15	22	50	82.5	147.5	32	6	341	46	131	100	19	132	124	100	12
X3-0027	50	125	137.5	272	18	28	60	100	175	40	8	431	68	175	125	30	181	154	125	14
X3-0035	65	125	137.5	272	18	28	60	100	175	40	8	447	74	175	125	30	181	154	125	14
X4-0046	50	150	163	325	20	38	80	113.5	212.5	63	10	514	74	225	150	35	202	184	150	14
X4-0063	65	150	163	325	20	38	80	113.5	212.5	63	10	533	81	225	150	35	202	184	150	14
X5-0082	65	175	195	376	20	45	110	135	255	70	14	599	46	279	180	35	275	210	180	14
X5-0115	80	175	195	376	20	45	110	135	255	70	14	626	66	279	180	35	275	210	180	14
X6-0140	80	190	225	429	20	48	110	155	295	70	14	687	78	266	260	40	370	220	190	14
X6-0190	100	190	225	429	20	48	110	155	295	70	14	715	90	266	260	40	370	220	190	14

P/102/1001

The information contained herein is correct at the time of issue, but may be subject to change without prior notice.

Alfa Laval Ltd.
 SSP Pumps
 Birch Road, Eastbourne
 East Sussex BN23 6PQ, England
 Tel: +44(0)1323 414600
 Fax: +44(0)1323 412515
 www.sspumps.com