

Series L Catalog

Lobe Pumps

STURSAN



Stursan.com



Contents

Pages

| | |
|---|--------|
| ✓ Typical Applications | - 3 - |
| ✓ SL03S | - 4 - |
| Technical specifications | - 4 - |
| Technical characteristics | - 5 - |
| Outline drawing | - 6 - |
| ✓ Series L | - 7 - |
| Lobe pumps | - 8 - |
| Technical specifications | - 8 - |
| Schematic diagram | - 8 - |
| Rotor configurations | - 9 - |
| Spiral self-priming rotor | - 10 - |
| Flexible spiral rotor material selection | - 10 - |
| Inlet and outlet connections | - 11 - |
| Pump inlet/outlet connections standard | - 11 - |
| Lobe pumps mechanical seal design | - 12 - |
| Mechanical seal configurations | - 12 - |
| Lobe pumps selection table | - 13 - |
| Lobe pumps various configurations | - 14 - |
| Models descriptions | - 15 - |
| Series L Dimensions | - 16 - |
| Series L Dimensions | - 17 - |
| Comprehensive graph | - 18 - |

Typical applications



Food & Beverage

Soup, stew, ketchup, vegetables, condiments, chocolate, fat and oil, cream filling, brewery, wort, soft drink/fruit juice



Dairy

Cream, milk, cheese curds and whey, cottage cheese, yogurt



Medicine/Cosmetic

Ointment, syrup, extractive, Serum, Face Creams & Lotions, Hair Styling Gels % Liquids, Dyes and alcohols, Soap, Cosmetic.



Chemical/Industrial

Solvent, paint, fuel, resin, polymer & sludge, oil & lubricant.



✓ SLO3S

Flexible solution for bi-directional reversible inlet/outlet, high viscosity, low viscosity, low pulse, liquid conveyance



SLO3S Lobe Pump is a miniature displacement cam rotor pump, widely used to convey various high-viscosity and low-viscosity liquids. Design features of the pump are the small size, low noise, wide speed range, simple maintenance and economical, all stainless steel exterior, high internal cleanliness and so on. All stainless steel exterior meets external flushing requirements. The pump is mainly used in biopharmaceuticals, fine chemicals, beer & beverages, laboratories and etc. It is not only suitable for various hygienic environments, but also industrial fluid conveyance.





Technical Specifications

| Technical Specifications | |
|--------------------------|---|
| Max. flow rate | 3000l/h |
| Max. pressure | 12 bar |
| Speed range | 10-1450 R.P.M |
| Temperature | -40 °C to 150 °C |
| Surface treatment | Ra ≤ 0.6 μm, Ra ≤ 0.4 μm |
| Material | 316 stainless steel, product contact part 316 L |
| Certification | Certification: CE - FDA - EC 1935/2004 |
| Viscosity | From 500 to 1.000.000 cps |

Technical Characteristics

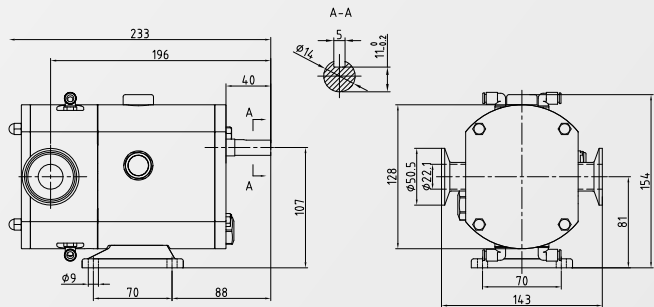
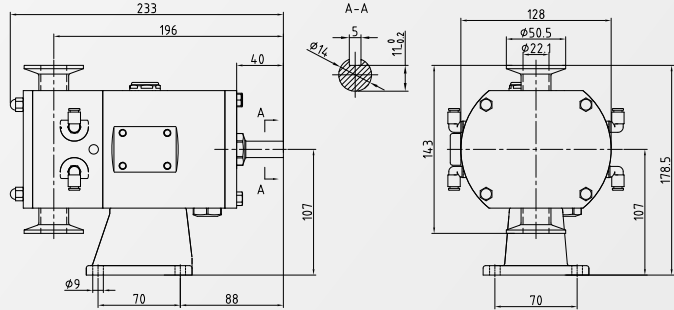


| Model | Flow per rotation (L/r) | Max speed (RPM/min) | Max flow rate (L/h) | Suggested speed range (RPM) | Suggested range flow (L/h) | | Recommended speed (RPM) | Recommended flow (L/h) | Inlet/Outlet size | Max pressure (bar) | Weight (KG) |
|---|-------------------------|---------------------|---------------------|-----------------------------|----------------------------|------|-------------------------|------------------------|-------------------|--------------------|-------------|
|  <p>Technical parameters-Selection table for 3-lobes mini rotor pump</p> | | | | | | | | | | | |
| SL03S | 0.035 | 1450 | 3045 | 50-700 | 105 | 1470 | 500 | 1050 | 1"-DN25 | 12 | 10.6 |
| | | | | | | | | | 3/4"-DN15 | | |
|  <p>Technical parameters-Selection table for 6-lobes mini rotor pump</p> | | | | | | | | | | | |
| SL03S | 0.030 | 1450 | 2610 | 50-700 | 90 | 1260 | 500 | 900 | 1"-DN25 | 12 | 10.6 |
| | | | | | | | | | 3/4"-DN15 | | |

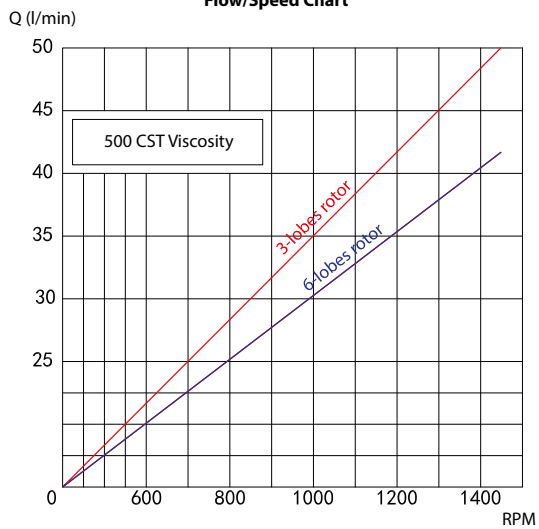


Schematic Diagram

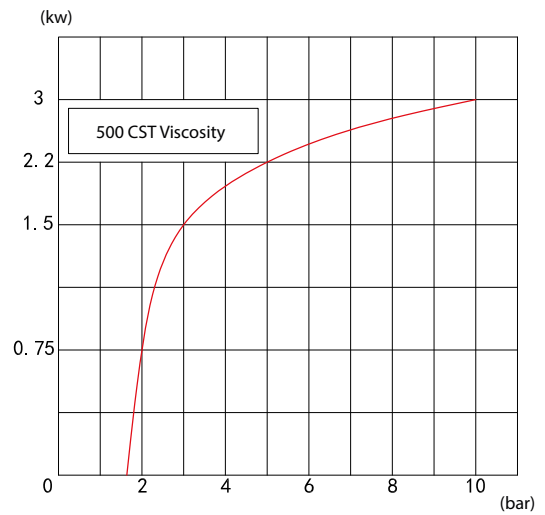
SLO3S



Flow/Speed Chart



Pressure/power curve



✓ Series L

A highly clean solution for bi-directional reversible, high-pressure, high- and low-viscosity, solid particle conveyance.



Series L

Series L is a standard rotor pump with a cast iron gearbox. The other parts are made of stainless steel.



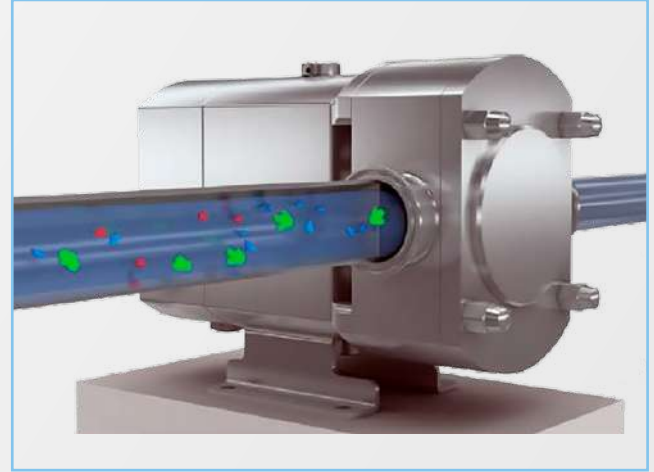
Series SL

Series SL is an all stainless steel rotor pump. Except for rubber, mechanical seal, gear and bearing assembly, the other parts—including the gearbox—are made of stainless steel.



Lobe Pumps

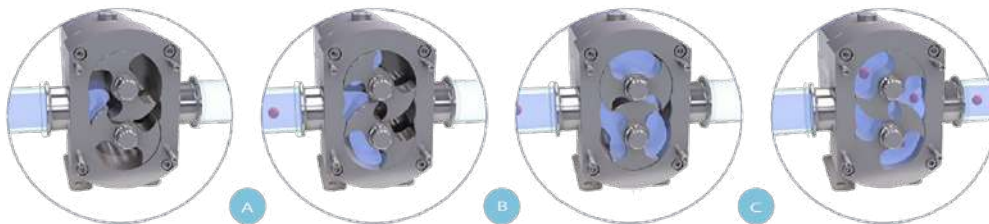
Stursan series L offers a variety of configurations and the whole pump is made of stainless steel. They are positive displacement rotary lobe pumps designed according to FDA & EC 1935/2004 standard, very suitable for the conveyance of high- and low-viscosity liquids such as in food processing and pharmaceutical manufacturing. The pump can also be used for the CIP & SIP system to convey materials with solid particles. This pump offers performance that other volumetric pumps do not have, such as low pulses, high pressure, bi-directional reversible inlet/outlet and flexible function combination.



Technical Specifications

| | |
|--------------------------|---|
| Max. flow | 70 m ³ /h/ 308 GPM |
| Max. pressure | 15 bar/220 Psi |
| Max. temperature | 150 °C/302 °F |
| Max. rev | 500 rpm |
| Surface treatment | ≤ Ra 0.8 μm, ≤ Ra 0.6 μm, ≤ Ra 0.4 μm |
| Material | 316L, 1.4404, ASME BPE 316L, 1.4435 NB2 Fe ≤ 0.5% |
| Certification | CE ; FDA : EC 1935/2004 |
| Viscosity | From 500 to 1.000.000 cps |

Schematic Diagram

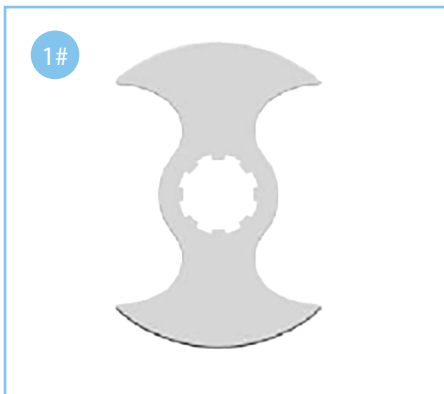


- As the blades rotate, the increase in the distance between the two blades creates additional space at the suction end, which creates a partial vacuum, drawing fluid into the pump cavity.
- According to the principle of the shaft, each lobe continuously sends air to bring the fluid to the delivery end. The gap between the two lobes and between the lobes and the wall of the pump body is properly filled.
- After the pump body is completely filled, the fluid escapes through the lobes. This completes the entire working process of the pump.

Rotor Configurations

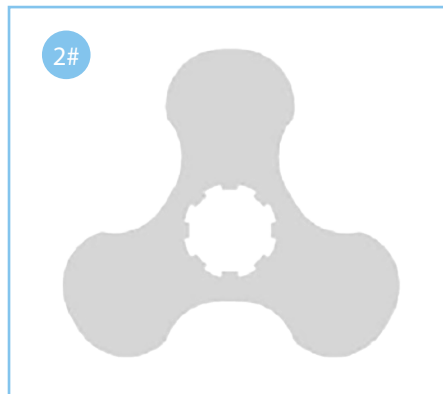


Butterfly rotor (recommended)



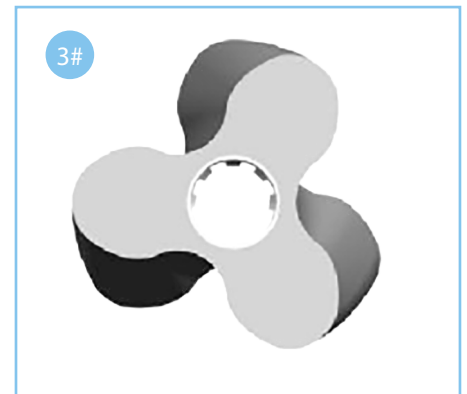
With low particle crushing rate and small pulses, suitable for conveying materials with particles (recommended)

3-lobes rotor (optional)



With higher particle crushing rate and smaller pulses than the butterfly rotor, suitable for conveying all kinds of materials.

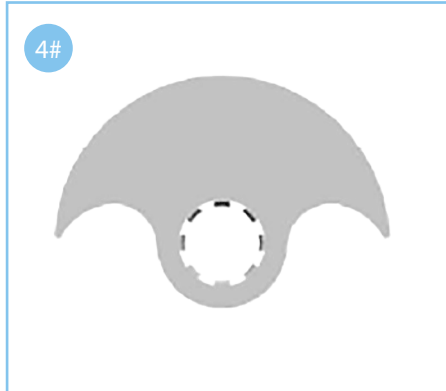
Spiral-lobe rotor (optional)



Low particle crushing rate, very small pulses and high cost, suitable for conveying all kinds of materials.

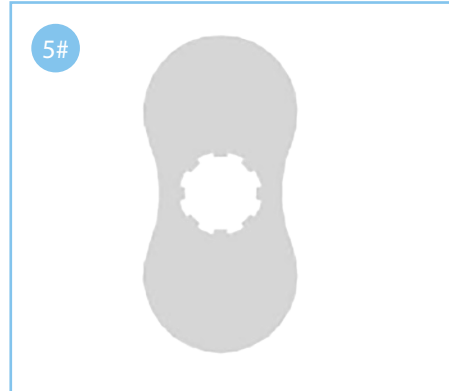


Single butterfly rotor (optional)



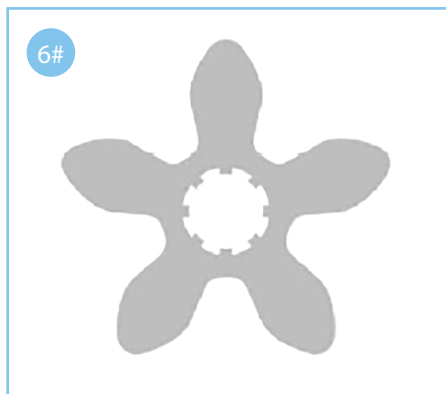
With low large particle crushing rate, big pulses, low pressure and small volume, suitable for conveying materials with large particle.

2-lobes rotor (optional)



With normal particle crushing rate, large pulse, low pressure and small volume, suitable for conveying all kinds of materials.

5-lobes rotor (optional)



With high particle crushing rate, very small pulse and smaller flow, suitable for conveying all kinds of materials.



The lobe pump with a spiral self-priming rotor has all the technical features and functions of a standard rotor pump. In addition, it also has a strong self-priming capacity of 0.8 bar (suction stroke 8m).

Spiral Self-Priming Rotor

With strong self-priming ability, it can convey gas-liquid mixture, oil loading and unloading, dairy products and etc. It can also extract and convey sewage, sludge, cow dung, pig dung and other materials in complex working conditions. The conveying pressure is stable without pulsation. It can be used as a metering pump when configured with a frequency converter and a flow meter.

Flexible Spiral Rotor Material Selection

FKM= FDA 177.2600; 3-A-18-03; USP Class VI Chapter 88 GB 4806.11

EPDM= FDA 177.2600; 3-A-18-03; Class II GB 4806.11

HNBR= FDA 177.2600; 3-A-18-03; Class I



Inlet and Outlet Connections

Clamp

Union Nut

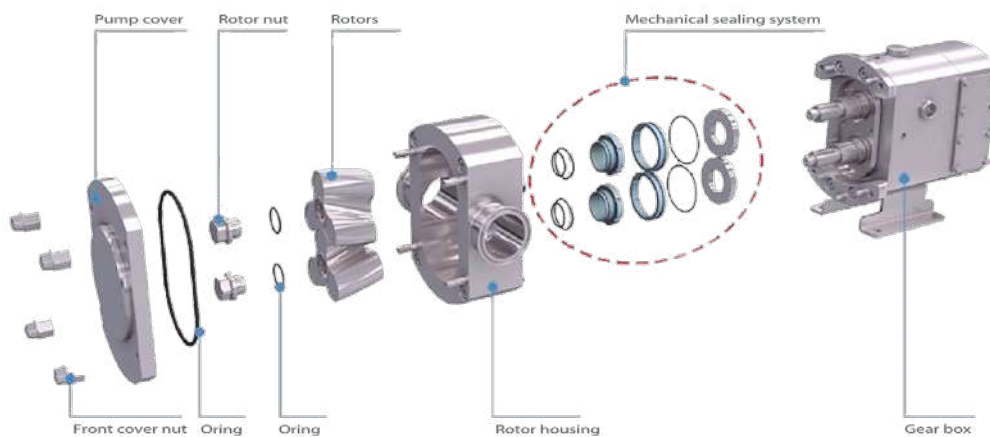
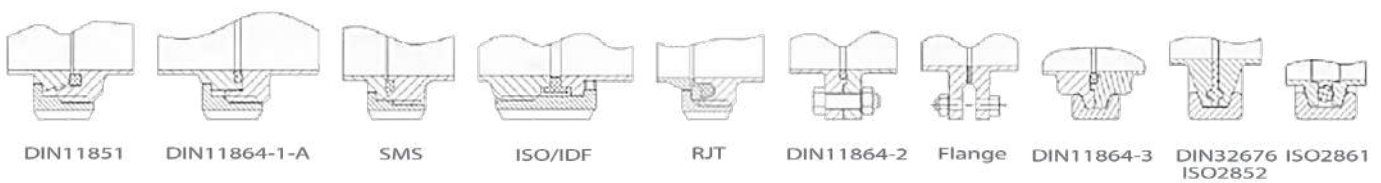
Threaded

Flange

Normal Flange

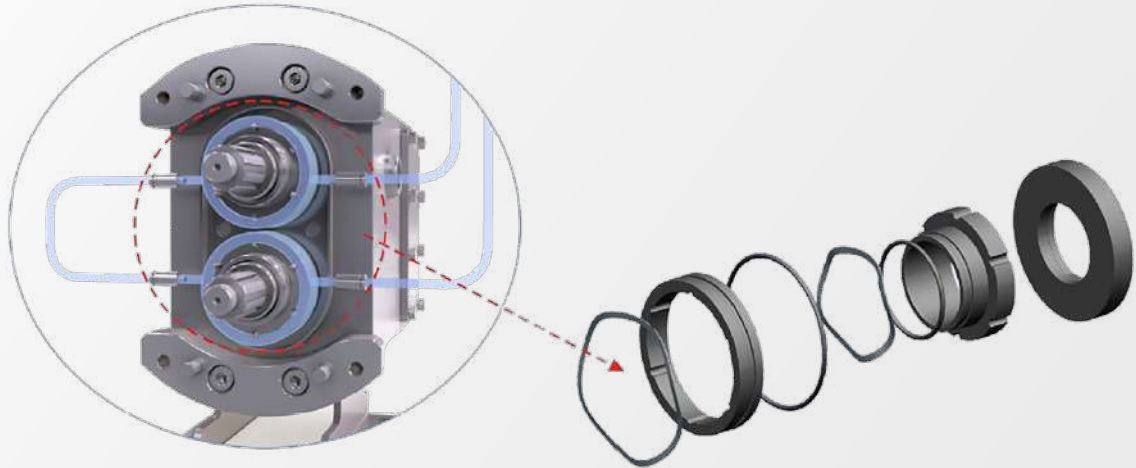


Pump Inlet/Outlet Connections Standard





Lobe Pumps Mechanical Seal Design



STURSAN mechanical seal design is optimized so that repair and maintenance do not require professionals or tools. This can save costs, improve efficiency, and provide many material configurations to choose from.

Mechanical Seal Configurations



- | | | |
|---------------|-----------------|---------------|
| 1. SIC/C/EPDM | 4. SIC/SIC/EPDM | 7. TC/TC/EPDM |
| 2. SIC/C/FKM | 5. SIC/SIC/FKM | 8. TC/TC/FKM |
| 3. SIC/C/HNBR | 6. SIC/SIC/HNBR | 9. TC/TC/HNBR |

Note: The above configuration is suitable for both single seal and double seal.



| Power(kw) | Voltage | Power(kw) | Voltage |
|-----------|--|-----------|--|
| 0.55kw | 210V-230V/50HZ 360V-400V/50HZ 420V-460V/60HZ | 4.0-5.5kw | 360V-400V/50HZ 630V-690V/50HZ 420V-460V/60HZ |
| 0.75kw | | 7.5-1.1kw | |
| 1.1-1.5kw | | 15-18.5kw | |
| 2.2-3.0kw | | 22-30kw | |

Note: The motor has IEC EN IE3 energy efficiency class, PTC thermistor.

Note: Please contact STURSAN for other motor power, voltage, frequency and etc.

Lobe Pumps Selection Table



| Model | Inlet/Outlet | Max pressure (bar) | Max speed per minute | Suggested speed range per minute | Flow per revolution (L/R) | Max flow (m ³ /h) | Suggested Flow (m ³ /h) | | Flow per revolution (L/R) | Max flow (m ³ /h) | Suggested Flow (m ³ /h) | |
|---------|--------------|--------------------|----------------------|----------------------------------|---------------------------|---|------------------------------------|------|---------------------------|---|------------------------------------|------|
| | | | | | 1# |  | | | 2# |  | | |
| L-12 | 1"-DN25 | 15 | 700 | 50-450 | 0.12 | 5.0 | 0.36 | 3.2 | 0.11 | 4.6 | 0.33 | 2.9 |
| L-17 | 1.5"-DN40 | 15 | 700 | 50-450 | 0.17 | 7.1 | 0.50 | 4.5 | 0.15 | 6.5 | 0.46 | 4.2 |
| L-24 | 2"-DN50 | 15 | 700 | 50-450 | 0.24 | 10.1 | 0.72 | 6.5 | 0.22 | 9.1 | 0.65 | 5.8 |
| L-39 | 2"-DN50 | 15 | 700 | 50-400 | 0.39 | 16.4 | 1.17 | 9.4 | 0.34 | 14.1 | 1.01 | 8.1 |
| L-48 | 2.5"-DN65 | 12 | 700 | 50-400 | 0.49 | 20.5 | 1.47 | 11.7 | 0.42 | 17.7 | 1.26 | 10.1 |
| L-55 | 2.5"-DN65 | 12 | 500 | 50-350 | 0.55 | 16.5 | 1.65 | 11.5 | 0.48 | 14.3 | 1.43 | 10.0 |
| L-61 | 3"-DN80 | 10 | 500 | 50-350 | 0.61 | 18.2 | 1.82 | 12.7 | 0.53 | 1.58 | 1.58 | 11.1 |
| L-141 | 3"-DN80 | 15 | 500 | 50-350 | 1.41 | 42.4 | 4.24 | 29.7 | 1.21 | 3.63 | 3.63 | 25.4 |
| L-141-2 | 3"-DN80 | 15 | 500 | 50-350 | 1.41 | 42.4 | 4.24 | 29.7 | 1.21 | 3.63 | 3.63 | 25.4 |
| L-181 | 4"-DN100 | 10 | 500 | 50-350 | 1.81 | 54.4 | 5.44 | 38.1 | 1.55 | 4.65 | 4.65 | 32.6 |
| L-230 | 5"-DN125 | 10 | 500 | 50-350 | 2.30 | 69.1 | 6.91 | 48.3 | 1.97 | 59.1 | 5.91 | 41.3 |

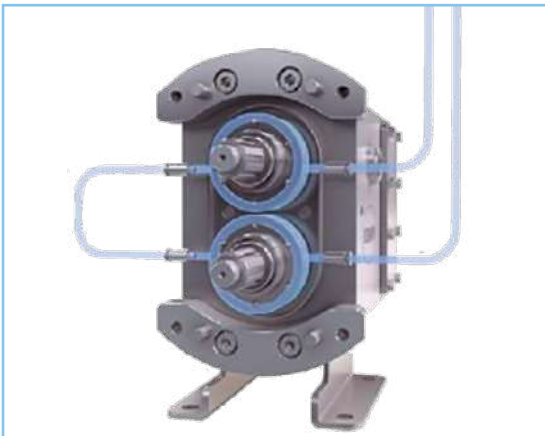


Lobe Pumps, Various Configurations



Lobe pump with heat jacket

Lobe pump with heat jacket is widely used for conveying materials which will solidify or perish at room temperature, such as chocolate, candy, gum, etc. According to process requirements, a front cover thermal insulation or surrounding thermal insulation structure can be installed.



Double mechanical seal (water-cooled flushing) lobe pump

Lobe pump with water-cooled flushing mechanical seal is suitable for high temperature, high viscosity and continued operation. It is an ideal choice when there is sudden stop of liquid while the machine is running. Make sure the coolant is circulating.



Lobe pump with built-in safety valve

Lobe pump with built-in safety valve effectively reduces the possibility of pump failure due to pipeline pressure exceeding the safety value or other equipment faults during conveyance. Feature: The built-in safety valve automatically opens when the pressure exceeds the preset value. It can also be forced to open by gas.

Options: air/air, spring/air, pressure from 1 bar to 6 bar.

Model Descriptions

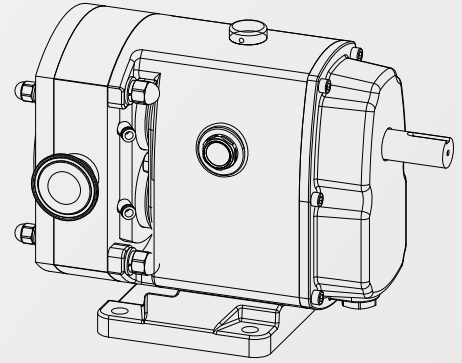
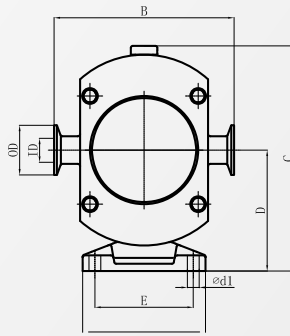
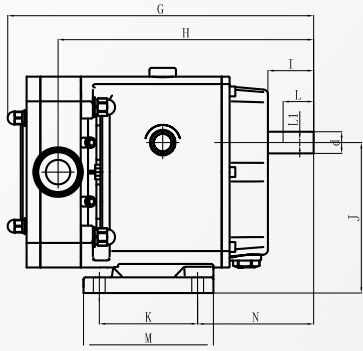
L24S-1200E

| Pump Size | PORTS SIZES = Last character of the base code (e.g. L25L-) | CODE | PORTS STANDARD = First digit of the build code | CODE | SEALS OPTIONS = Second digit | CODE | ROTORS OPTIONS = Third digit | CODE | END COVERS OPTIONS = Fourth digit | CODE | PUMP HEAD ELASTOMERS OPTIONS=Suffix letters | CODE | MISCELLANEOUS OPTIONS | CODE |
|-----------|---|------|--|------|---|------|------------------------------|------|--|------|---|------|---|------|
| SL03 | Standard ports | S | DIN 11851 | 1 | Double mechanical seal, Flushed SiC/ SiC primary, C/SiC secondary | 1 | Butterfly (Scimitar) | 0 | Plain | 0 | EPDM | E | Horizontal ports / bottom shaft drive | B |
| L-12 | Reduced ports | R | SMS | 2 | Single front-loaded SiC/SiC mechanical seal | 2 | 3-lobe | 1 | Pressure Relief Valve | 1 | FKM | F | Stainless steel bearing & gear housing | S |
| L-17 | Enlarged ports | L | DIN 11864-1-A | 3 | Single front-loaded C/SiC mechanical seal | 3 | 3-lobe Spiral | 2 | End Cover and Pump Head Jackets | 2 | HNBR | H | Vertical ports & self-draining rotor case | U |
| L-24 | | | Flange DIN 11864-2 | 4 | Double mechanical seal, Flushed TC/ TC primary, TC/TC secondary | 4 | Single Butterfly | 3 | Heating / cooling jacket on end cap (Not available with Pressure Relief Valve) | 3 | | | Electropolishing to 0.6 micron | Y |
| L-39 | | | Clamp DIN 11864-3 | 5 | Single front-loaded TC/TC mechanical seal | 5 | 2-lobe | 4 | Pump head jackets (mounted on end cap) | 4 | | | Internal polish & electropolishing to 0.5 micron | Z |
| L-48 | | | Clamp DIN 32676 | 6 | Single front-loaded Flushed SiC/SiC mechanical seal | 7 | 5-lobe | 5 | Relief valve and Pump head jackets (both mounted on end cap) | 5 | | | Certification (Cert. of Conformance, 3.1B material certs, test curve) | & |
| L-55 | | | Other Requirements | X | | | 6-lobe | 6 | | | | | | |
| L-61 | | | | | | | Flexible Spiral Rotor FKM | 7 | | | | | | |
| L-141 | | | | | | | Flexible Spiral Rotor EPDM | 8 | | | | | | |
| L-141-2 | | | | | | | Flexible Spiral Rotor HNBR | 9 | | | | | | |
| L-181 | | | | | | | | | | | | | | |
| L-230 | | | | | | | | | | | | | | |

Basic part number 316L with standard ports and upper shaft / Electropolishing to 0.8 micron

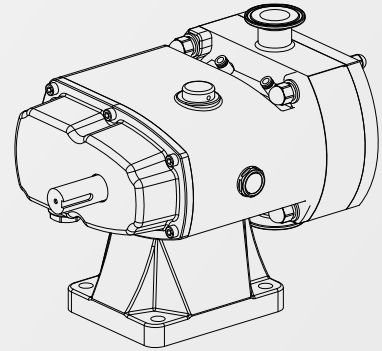
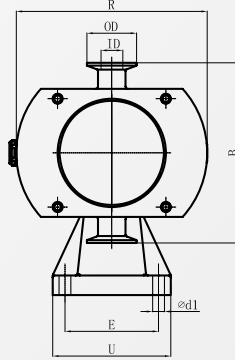
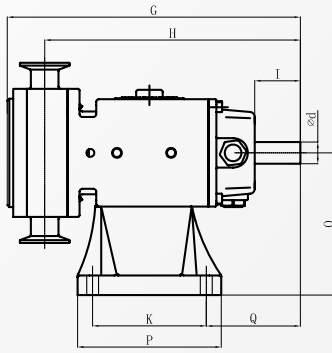


Series L



| Model | Inlet | Outlet | B | C | D | E | | G | H | I | J | K | | L | L1 | M | N | d | d1 |
|---------|-----------|-----------|-----|-----|-----|-----|-----|-------|-------|------|-------|-----|-------|----|----|-----|-------|----|----|
| | | | | | | L | SL | | | | | L | SL | | | | | | |
| L-12 | 1"-DN25 | 1"-DN25 | 183 | 229 | 123 | 100 | 95 | 311 | 260 | 46.5 | 153 | 100 | 115.5 | 31 | 6 | 132 | 118 | 22 | 12 |
| L-17 | 1,5"-DN40 | 1,5"-DN40 | 183 | 229 | 123 | 100 | 95 | 315.5 | 264.5 | 46.5 | 153 | 100 | 115.5 | 31 | 6 | 132 | 118 | 22 | 12 |
| L-24 | 2"-DN50 | 2"-DN50 | 183 | 229 | 123 | 100 | 95 | 325 | 274 | 46.5 | 153 | 100 | 115.5 | 31 | 6 | 132 | 118 | 22 | 12 |
| L-39 | 2"-DN50 | 2"-DN50 | 212 | 271 | 149 | 125 | 125 | 432.5 | 357 | 56 | 186.5 | 125 | 172 | 40 | 8 | 181 | 181.5 | 28 | 12 |
| L-48 | 2.5"-DN65 | 2.5"-DN65 | 212 | 271 | 149 | 125 | 125 | 438.5 | 363 | 56 | 186.5 | 125 | 172 | 40 | 8 | 181 | 181.5 | 28 | 12 |
| L-55 | 2.5"-DN65 | 2.5"-DN65 | 212 | 271 | 149 | 125 | 125 | 443.5 | 368 | 56 | 186.5 | 125 | 172 | 40 | 8 | 181 | 181.5 | 28 | 12 |
| L-61 | 3"-DN80 | 3"-DN80 | 212 | 271 | 149 | 125 | 125 | 447.5 | 372 | 56 | 186.5 | 125 | 172 | 40 | 8 | 181 | 181.5 | 28 | 12 |
| L-141 | 3"-DN80 | 3"-DN80 | 276 | 390 | 224 | 193 | 194 | 525.5 | 439 | 76.5 | 284 | 208 | 207 | 64 | 8 | 275 | 172 | 42 | 18 |
| L-141-2 | 3"-DN80 | 3"-DN80 | 276 | 390 | 224 | 193 | 194 | 525.5 | 439 | 76.5 | 284 | 208 | 207 | 64 | 8 | 275 | 172 | 42 | 18 |
| L-181 | 4"-DN100 | 4"-DN100 | 276 | 390 | 224 | 193 | 194 | 534.5 | 448 | 76.5 | 284 | 208 | 207 | 64 | 8 | 275 | 172 | 42 | 18 |
| L-230 | 4"-DN125 | 4"-DN125 | 276 | 390 | 224 | 193 | 194 | 548.5 | 462 | 76.5 | 284 | 208 | 207 | 64 | 8 | 275 | 172 | 42 | 18 |

Series L

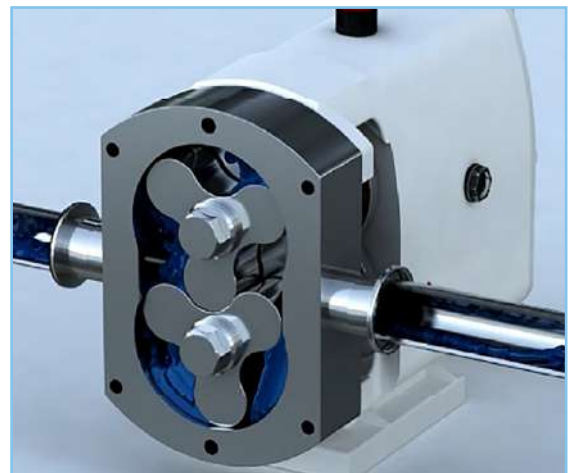
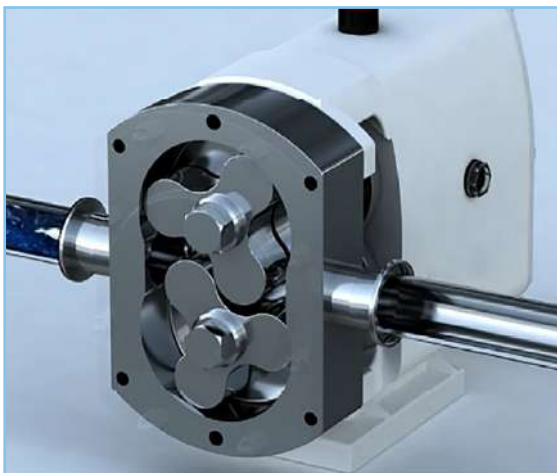
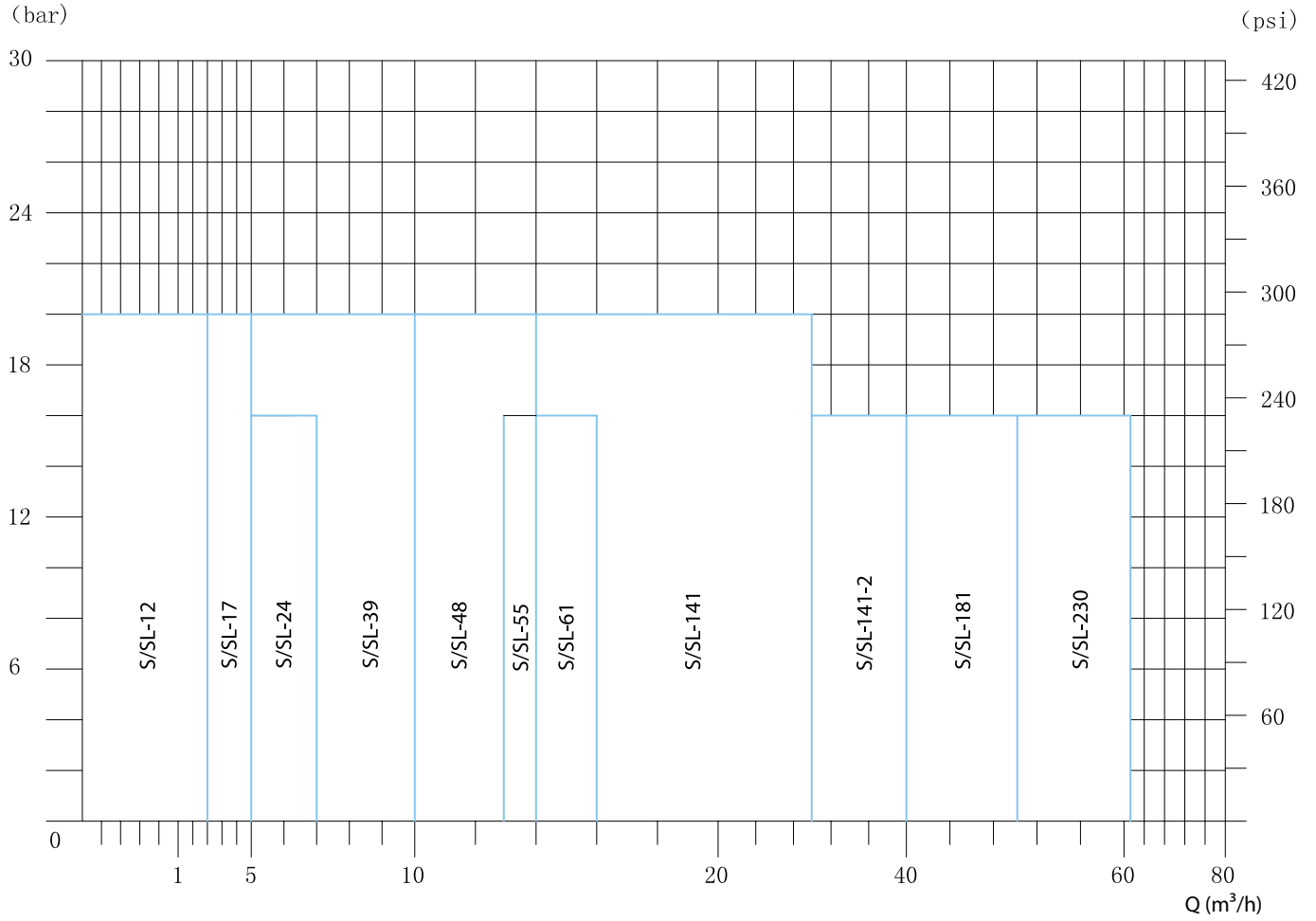


| Model | Inlet | Outlet | B | E | | G | H | I | K | | O | P | Q | R | U | OD | ID | d | d1 |
|---------|-----------|-----------|-----|-----|-----|-------|-------|------|-----|-------|-------|-----|-------|-----|-------|-------|------|----|----|
| | | | | L | SL | | | | L | SL | | | | | | | | | |
| L-12 | 1"-DN25 | 1"-DN25 | 183 | 100 | 95 | 311 | 260 | 46.5 | 100 | 115.5 | 144.5 | 146 | 96 | 194 | 120 | 50.5 | 25 | 22 | 12 |
| L-17 | 1,5"-DN40 | 1,5"-DN40 | 183 | 100 | 95 | 315.5 | 264.5 | 46.5 | 100 | 115.5 | 144.5 | 146 | 96 | 194 | 120 | 50.5 | 35 | 22 | 12 |
| L-24 | 2"-DN50 | 2"-DN50 | 183 | 100 | 95 | 325 | 274 | 46.5 | 100 | 115.5 | 144.5 | 146 | 96 | 194 | 120 | 64 | 47.8 | 22 | 12 |
| L-39 | 2"-DN50 | 2"-DN50 | 212 | 125 | 125 | 432.5 | 357 | 56 | 125 | 172 | 179.5 | 210 | 116.4 | 230 | 155 | 64 | 47.8 | 28 | 12 |
| L-48 | 2.5"-DN65 | 2.5"-DN65 | 212 | 125 | 125 | 438.5 | 363 | 56 | 125 | 172 | 179.5 | 210 | 116.4 | 230 | 155 | 77.5 | 59.5 | 28 | 12 |
| L-55 | 2.5"-DN65 | 2.5"-DN65 | 212 | 125 | 125 | 443.5 | 368 | 56 | 125 | 172 | 179.5 | 210 | 116.4 | 230 | 155 | 91 | 66 | 28 | 12 |
| L-61 | 3"-DN80 | 3"-DN80 | 212 | 125 | 125 | 447.5 | 372 | 56 | 125 | 172 | 179.5 | 210 | 116.4 | 230 | 155 | 91 | 72.2 | 28 | 12 |
| L-141 | 3"-DN80 | 3"-DN80 | 276 | 193 | 194 | 525.5 | 439 | 76.5 | 208 | 207 | 238.5 | 275 | 135 | 332 | 233.5 | 91 | 72.2 | 42 | 18 |
| L-141-2 | 3"-DN80 | 3"-DN80 | 276 | 193 | 194 | 525.5 | 439 | 76.5 | 208 | 207 | 238.5 | 275 | 135 | 332 | 233.5 | 106 | 72.2 | 42 | 18 |
| L-181 | 4"-DN100 | 4"-DN100 | 276 | 193 | 194 | 534.5 | 448 | 76.5 | 208 | 207 | 238.5 | 275 | 135 | 332 | 233.5 | 119 | 97.6 | 42 | 18 |
| L-230 | 4"-DN125 | 4"-DN125 | 276 | 193 | 194 | 548.5 | 462 | 76.5 | 208 | 207 | 238.5 | 275 | 135 | 332 | 233.5 | 144.5 | 25 | 42 | 18 |




Comprehensive Graph

Flow rate Q (m³/h) - Pressure (bar) graph





 sturhygienic@stursan.com

 www.stursan.com