



I Application

The SLRT pump is a positive displacement rotary lobe pump designed to discharge food and sanitary products from a truck cistern as it can be driven by a hydraulic motor. The pump is characterised by a compact design, reduced weight and interchangeable connections to facilitate its assembly to a truck. The SLRT pump is designed to pump liquid products with or without delicate solid particles that require gentle pumping causing no damage to the product.

I Design and features

The SLRT rotary lobe pumps basically consist of bi-lobe rotors which rotate synchronously inside a casing without touching each other. As the rotors rotate, the spaces between the lobes and the casing are successively filled with the product and a fixed amount of the displaced product is conveyed to the discharge nozzle. The pumped product forms a continuous flow thanks to the clearances between the lobes and the pump casing, thus, ensuring an efficient pumping.

The pump casing and the lobes are manufactured in stainless steel. The design of the attachments of the lobes is sanitary. The shaft is hollow with spline SAE 6B 1". The SLRT rotary lobe pump is supplied with a sanitary mechanical seal. It is characterised by easily cleaning and maintenance.

I Technical specifications

Materials:

Parts in contact with the product	AISI 316L
Support	GG 25
Legs	AISI 304
Gaskets	EPDM

Mechanical seal:

Rotary part	SiC
Stationary part	C
Gaskets	EPDM

Internal surface finish	Ra<0,8 µm
External surface finish	Matt

Connections:	DIN (interchangeable connections)
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I Technical specifications

Operating limits:

Maximum flow	63 m ³ /h	277 US GPM
Maximum pressure	7 bar	102PSI
Maximum working temperature	120 °C	248 °F
Maximum speed	950 rpm	
Weight	70 kg	

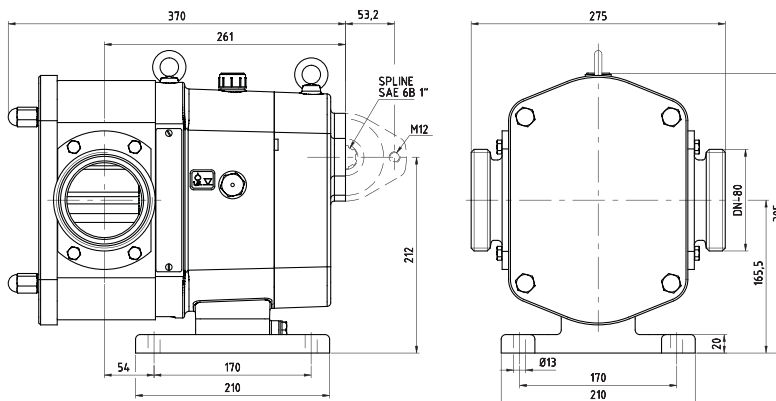
I Options

- Mechanical seal: SiC/SiC or TungC/SiC.
- Shaft seal: PTFE.
- Gasket: FPM.
- Relief valve on the front cover or external bypass.
- Bare shaft for electrical drive.
- Vertical support.
- Connections: Clamp, SMS, RJT, etc.
- Heating jacket.

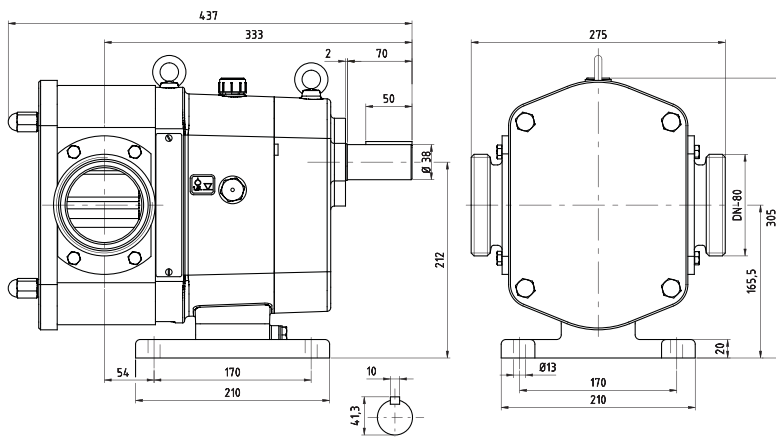


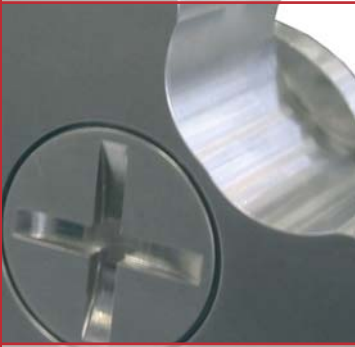
I Dimensions

Pump designed for hydraulic drive



Pump with bare shaft





I Application

The HLR pump is a lobe rotor pump designed in compliance with the EHEDG specifications for plants and processes that comply with the strictest hygienic requirements. Due to the low working speed, the pump is characterised by a gentle pumping and low shear of the product causing less damage possible. It is an ideal pump for the transfer of all types of liquids (from 1 to 1.000.000 cP) and liquids with solid particles (curd, biologic cultivations, etc.). The pump is adequate for the food-processing, cosmetic and pharmaceutical industries.

I Operating principle

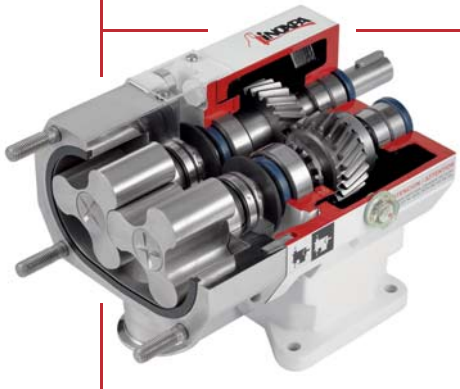
The HLR pump basically consists of two lobe rotors which rotate inside the casing without touching each other. As the rotors rotate, the space between the lobes and the casing is successively filled with the product which is driven to the discharge nozzle displacing a fixed amount of product. The pumped product forms a continuous stream due to the adjusted tolerances of the lobes and the pump casing thus ensuring an efficient pumping.

I Design and features

- Vertical support.
- Bare-shaft construction.
- Self-drainable pump.
- Tri-lobe rotors.
- Hygienic design of the attachment of the lobes.
- Sanitary mechanical seal, internal assembly.
- The seal is disassembled from the frontal part without disassembling the casing of the pump.
- Gaskets with deformation limiters prevent any dead leg.
- Easy cleaning and maintenance.
- Standard connection: clamp.
- Pump certified according to the EHEDG standards.

I Materials

Investment casting casing and lobes	AISI 316L
ball bearing support	GG-25
Gaskets	EPDM according to FDA 177.2600
Mechanisa seal	SiC/C/EPDM
Internal surface finish	Ra \square 0,8 \square μ m
External surface finish	bright polish



I Options

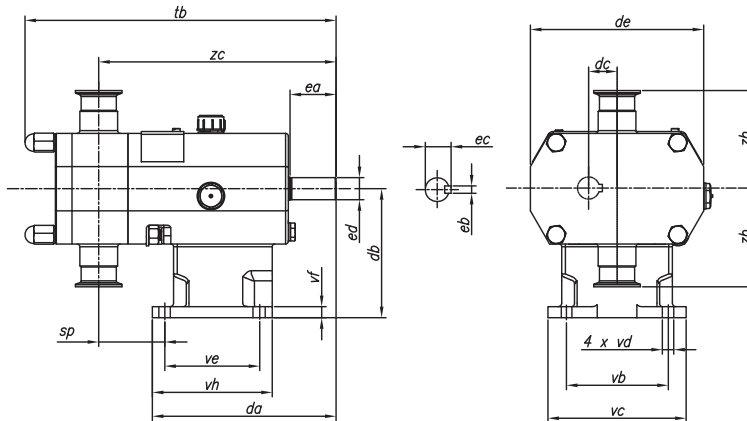
- Mechanical seal: SiC/SiC, TuC/SiC.
- Flushed or balanced mechanical seal.
- Gaskets: FPM or FFPM.
- Bi-wing lobes.
- Relief valve or external by-pass.
- Heating jacket.
- Ra \square 0,5 \square 0,1 μ m surface finish for pharmaceutical applications.
- Horizontal assembly (no EHEDG certificate).
- Various types of drives and protections (gear motor with frequency converter, etc.).
- Assembly on a 304 stainless steel baseplate on silent-blocks, sanitary design.
- Trolley and control panel.
- Connections: Clamp DIN32676, DIN 11864-1, DIN 11864-2, etc.
- Material certificates (3.1), roughness certificate.
- The pump can be ATEX certified.



I Technical specifications

Max. flow	115 m ³ /h	507 US GPM
Max. differential head	12 bar	174 PSI
Max. working pressure	16 bar	232 PSI
Max. working temperature	-10 °C to +120 °C (EPDM)	14 °F to 248 °F
	+140 °C (SIP, max. 30 min)	284 °F
Mx. speed	950 rpm	

I General dimensions



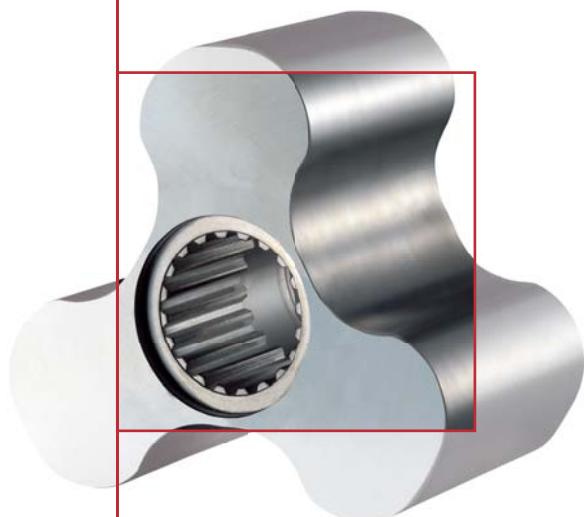
HLR	DN	da	db	dc	de	ea	eb	ec	ed	sp	tb	vb	vc	vd	ve	vf	vh	zb	zc
0-20	3/4"	160	80	20	115	30	5	16,2	14	73	271	102	118	9	50	9	65	67,5	227
	1"									77	280							76,5	230
1-25	1"	165	112	25	160	40	6	21,6	19	69	289	115	135	9	85	10	105	94,5	222
1-40	1 1/2"									75	301							228	
2-40	1 1/2"	200	140	31	190	50	8	27	24	71	338	125	150	11	105	12	130	106	258
2-50	2"									77	350							264	
3-50	2"	280	190	46,5	250	80	10	41,4	38	86	428	170	210	13	130	14	170	133,5	342
3-80	3"									99	450							355	
4-100	4"	433	225	60	333	110	16	58,9	55	77,8	617	256	346	18	280	9	320	161,5	491
4-150	6"									104	666							168	517



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I Application

The SLR pump is a positive displacement lobe rotor pump of a sanitary design suitable for use in the dairies, food-processing, beverage, cosmetics, pharmaceutical and fine chemicals industries.

This pump is perfect for managing all kinds of fluid, of either low or high viscosity, as well as for filtering and bottling applications. Products containing fragile solids such as junket can be pumped without damage thanks to the specially designed lobes.

I Operating principle

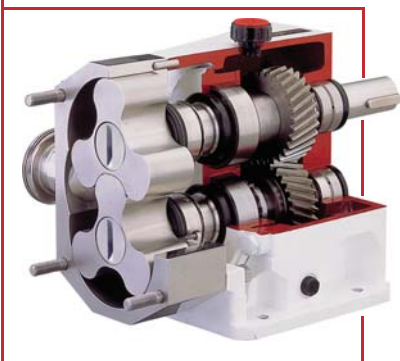
The SLR pumps basically consist of two lobe rotors which rotate synchronously inside a casing without touching each other.

As the rotors rotate, the spaces between the lobes and the casing are successively filled with the product, which is transported to the discharge nozzle with a fixed amount of displacement.

The pumped fluid forms a continuous stream thanks to the tolerances between the lobes and the pump casing, thus ensuring an efficient pumping.

I Design and features

- Horizontal support.
- Bare-shaft construction.
- Stainless steel casing and lobes.
- Tri-lobe rotors.
- Sanitary design of the attachment of the rotors.
- Sanitary mechanical seals.
- Easy cleaning and maintenance.
- Standard connections: DIN 11851.



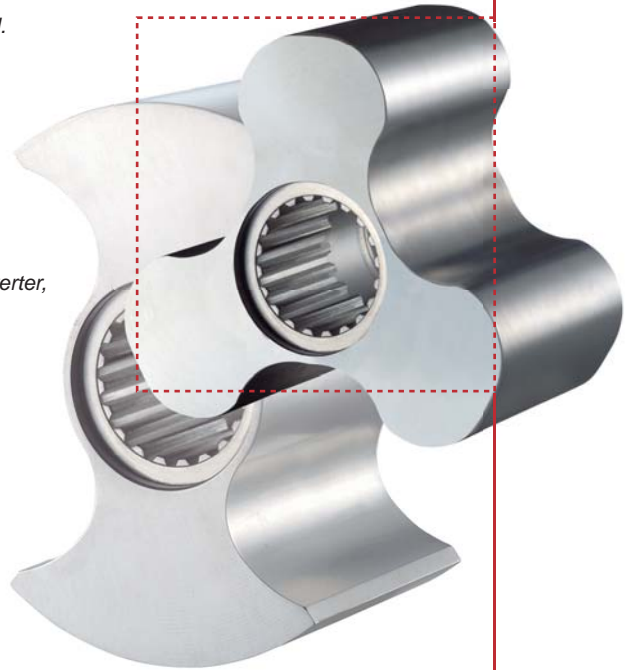
I Materials

Parts in contact with the product	AISI 316L
Bearing support	GG 25
Gaskets	EPDM according to FDA 177.2600
Mechanical seal	SiC/C/EPDM
Internal surface finish	Ra \square 0,8 \square 0,4
External surface finish	bright polish



I Options

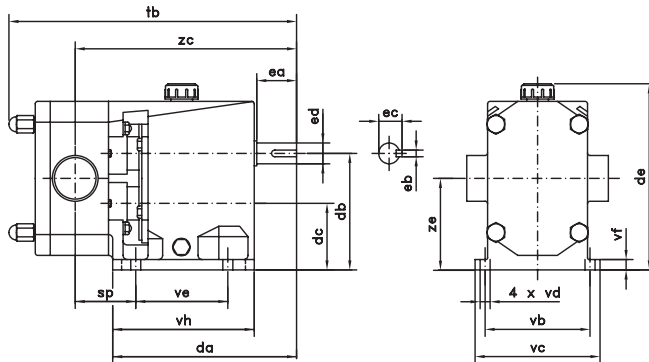
- Mechanical seals: SiC/SiC or TuC/SiC.
- Cooled mechanical seal, pressurised double mechanical seal, lip seal or O-ring seal.
- Gaskets in FPM and PTFE.
- Relief valve on the front cover or external by-pass.
- Bi-wing lobes.
- Heating chamber.
- Isolation can.
- Vertical support.
- Rectangular nozzle.
- Various kinds of drives and protections (gearbox drive with optional frequency converter, pulley/mechanical drive speed selector).
- Trolley and/or control panel.
- Connections: clamp, SMS, RJT, etc.
- ATEX version available.



I Technical specifications

Max. flow	160 m ³ /h	705 US GPM
Max. differential pressure	12 bar	174 PSI
Max. working pressure	16 bar	232 PSI
Max. working temperature	-10 °C - +120 °C (EPDM)	14 °F - 248 °F
	+140 °C (SIP, max. 30 min)	284 °F
Max. speed	950 rpm	

I General dimensions

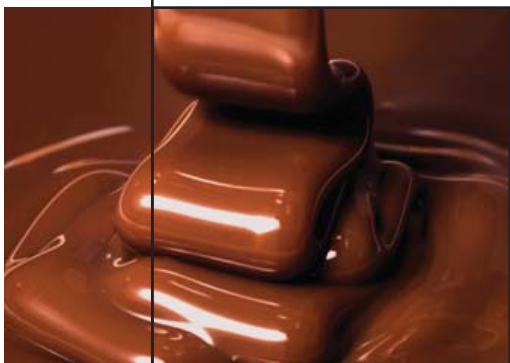


SLR	DN	da	db	dc	de	ea	eb	ec	ed	sp	tb	vb	vc	vd	ve	vf	vh	zc	ze
0-20	20-3/4"	160	80	40	138	30	5	16,2	14	64	261	102	118	9	50	9	65	216	60
										68	269							220	
1-25	25-1"	187	112	62	186	40	6	21,6	19	64	280	115	135	9	85	10	145	218	87
										70	292							224	
2-40	40-1 1/2"	221	140	78	224	50	8	27	24	74	337	125	150	11	105	12	169	261	109
										80	349							267	
3-50	50-2"	297	190	97	289	80	10	41,4	38	91	430	170	210	13	130	14	214	348	143,5
										101	452							360	
4-100	100-4"	433	240	120	366	110	16	58,9	55	92	627	260	290	18	280	15	320	505	180
										117	677							530	
5-125	125-5"	567	350	178	508	140	18	64,3	60	118	793	380	420	18	373	29	423	660	264
										130	818							672	



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I Application

Pumping chocolate (as well as compound chocolate, creams and cocoa paste) can be a delicate process. For this reason, a number of factors have to be taken into account.

I INOXPA solution

Because the viscosity of the fluid can be very high, it is essential to select the appropriate pumps. We recommend using rotary lobe pumps: in addition to being capable of pumping high-viscosity products efficiently, they are hygienic and easy to clean.

Maintaining a constant temperature is very important. Too high a temperature can cause caramelisation of the product, whereas too low a temperature can lead to solidification or crystallisation, resulting in a reduced flow and the corresponding loss in efficiency and /or equipment damage. This could even cause the pump to become completely blocked.

To maintain the temperature of the chocolate and avoid it solidifying inside the pump we recommend fitting a heating jacket to the front cover and/or to the pump body.



SLR rotary lobe pump with double mechanical seal, automatic lubricator and front-mounted heating jacket



SLR rotary lobe pump with heating jacket fitted to the front cover and to the body of the pump

In some cases, the chocolate might contain suspended solids, such as almonds, hazelnuts, toffee, etc. In these cases we would recommend fitting bi-wing lobes to minimize damage to the solids.



Chocolate is an abrasive, shear-sensitive product prone to caramelising, which means that aggressive pumping could damage both the product and any materials that are in contact with it. For this reason, we recommend low working speeds, always taking into account the type of chocolate and the sealing system being used.

I Seals

Guaranteeing that the product is contained within a well-sealed pump is particularly important. For chocolate pumping applications, we offer various options (all in compliance with FDA and EC-1935/2004):

a. Lip seal: the most economical option: maximum working pressure of 4 bar. Only recommended for very fluid and relatively non-abrasive chocolates, otherwise the useful life of the seals could be very short.

b. Lip seal with automatic or manual lubricator: maximum working pressure of 4 bar.

c. Mechanical seal with quench and automatic or manual lubricator: maximum working pressure of 4 bar. It consists of single mechanical seals (SiC/SiC/Viton) with lip seal in the rear chamber.

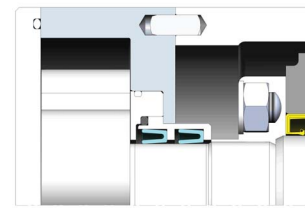
d. Double mechanical seal with automatic lubricator: maximum working pressure limit depends on the pump model.

The lubricator is a high precision system with electromagnetic actuator, which pressurizes the chambers of the mechanical seals with food-grade grease certified according to USDAH1.

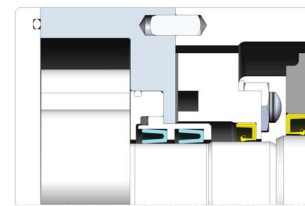
The flow of lubricating grease can be adjusted according to the requirements of the equipment being lubricated, potentially lasting up to 12 months. Hence, the friction faces of the mechanical seals will always work with clean grease between the contact surfaces rather than chocolate, which is abrasive and can caramelize, leading to rapid wear of the surfaces.

For the low-pressure options (b and c), either a manual or an automatic lubricator may be fitted. The manual option is battery powered and must be started and stopped by the operator. The automatic option works via an external power supply, hence it is possible to link it directly to the pump.

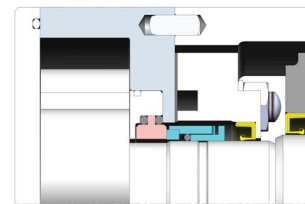
For the high-pressure option (d), only automatic lubricators are fitted. In addition, a relief valve is included to eject the grease from the chamber, avoiding any damage occurring due to excess pressure.



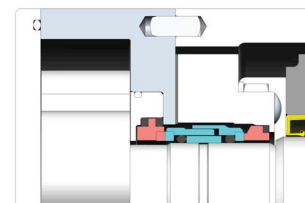
Viton lip seal



Cooled Viton lip seal



Quench



Double mechanical seal



FA-SLR chocolate: 1.EN-0614

