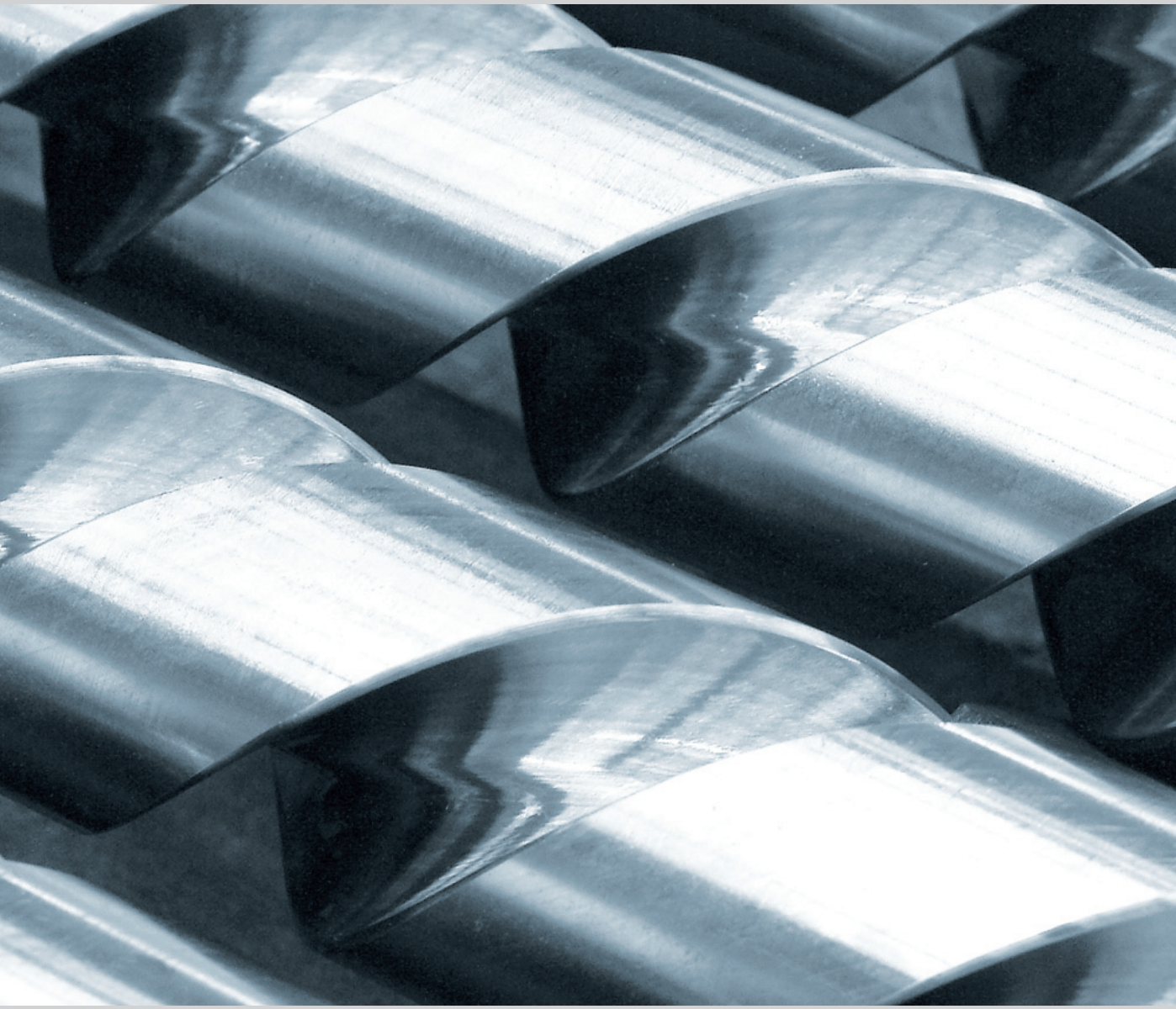
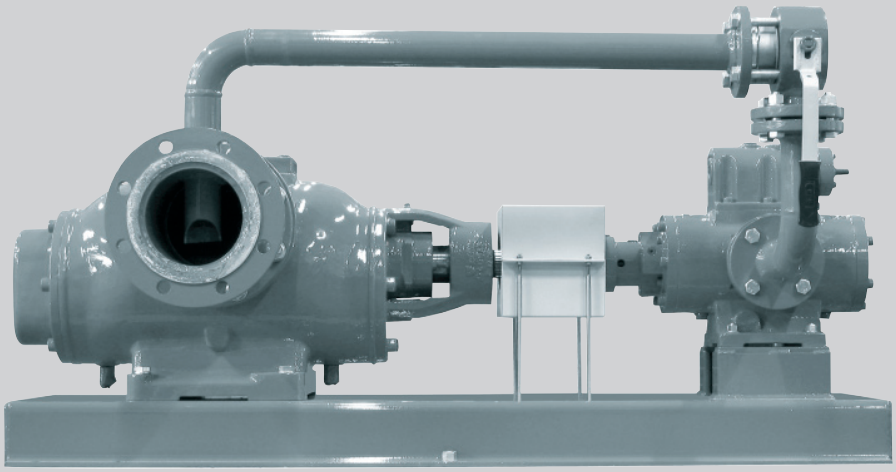
Leistritz

LEISTRITZ PUMPEN GMBH

Screw Pumps & Systems





Leistritz Proportioning System L23NG

Principle of Operation

The Leistritz Proportioning Systems of the Serial L23NG produce extinguishing foam in Fire – Fighting plants, by mixing foam concentrate with water.
The operation is self-powered, as it uses the energy of the available water in pressure.
The principle is known as “Coupled Water-Motor / Pump”, and it is recognized and described by NFPA 11 edition 2005 at Par. 3.3.3 and A3.3.25.2(c).
The speed ω of the water motor 1 is proportional to the water flow Qw.
The flow of AFFF concentrate Qf driven by the foam concentrate injection pump 2 is proportional to the speed, thus to the water flow.
By acting on the 3-way valve 3 it is possible either to actually inject the foam concentrate into the water flow (normal functioning), or to let the foam concentrate recirculate in its tank A (simulated functioning).
The required percentage of the foam concentrate in the foam solution is obtained with a proper selection of the unit capacities of both hydraulic motor and injection pump.

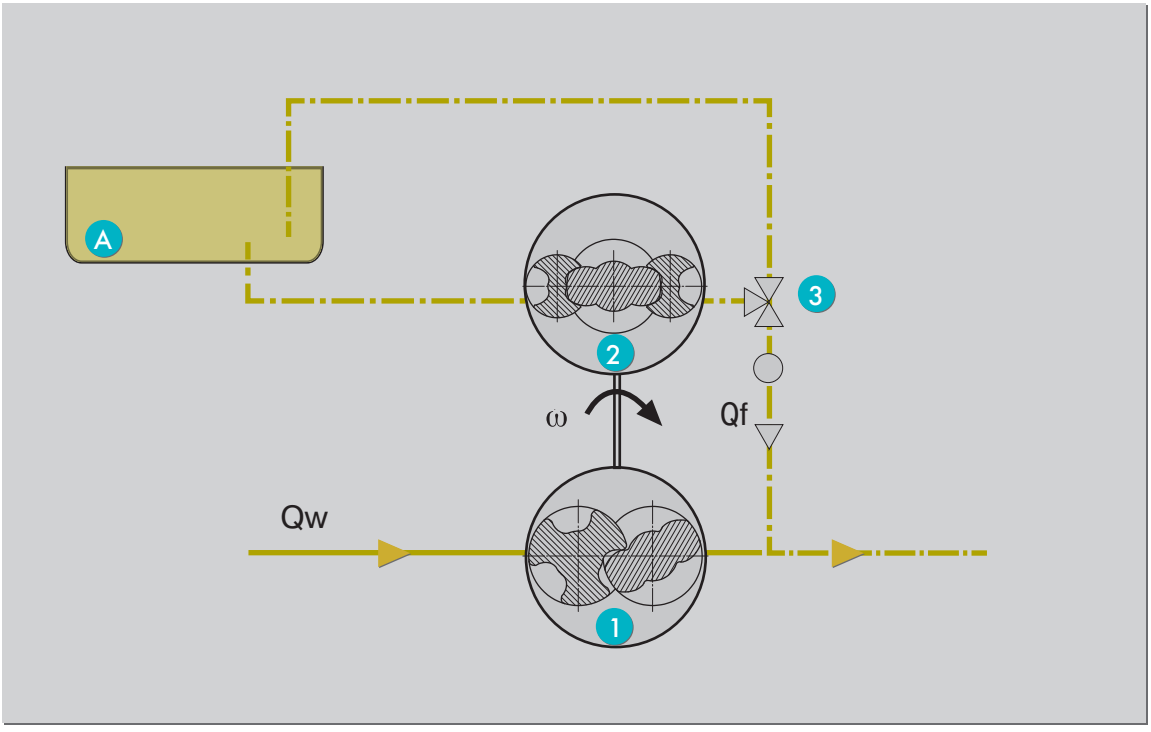


Fig. 1

Leistritz Supply

In details, a Leistritz L23NG proportioning system consists (see Fig. 1) of a volumetric water motor 1 driven by the water flow, which commands a foam concentrate injection pump 2, also volumetric.
The pump injects in the water flow through the 3-way valve 3 the foam concentrate, stored in the concentrate tank A.
The water motor and the injection pump are both derivative of the Leistritz Screw Pumps, series L2NG and L3MF, respectively, being appreciated since decades for their legendary reliability.
The typical supply of Leistritz is shown at Fig. 1. Consists of the water motor, the injection pump, the three-way valve and the injection piping, complete water of a non – return valve.
All parts are assembled on a common base plate and are fully inter-connected.
The two main machines are coupled by an elastic coupling, tolerating large misalignment, with a coupling guard.
OEM versions are also available.

User Advantages and Materials

User Advantages

- Atmospheric Foam Tank
- Self Calibrated
- Viscosity Insensitive
- Field Testable
- NFPA 11 Compliant
- 11 Sizes, 1%, 3%, 6% Concentration
- Seawater Operation
- Water Resistant Injection

Operating Range and Mix Values

- Nominal Foam Flows Ranging From 120 to 900 m^3/h. (2000 to 15,000 l/min)
- Larger Nominal Foam Flow Rates are Available on Request
- Mixing Rate within the NFPA 11 Tolerances from about 10-15% to about 110 % of the Nominal Foam Flow
- Percentages of Foam Concentrate: 1%*, 3% and 6%

* 1% concentration is available on lager sizes

Materials of Construction

Water motor for codes W1 and W2

Body:	Cast Iron, Epoxy Coated (Full Bronze on Smaller Sizes)
Drive Rotor:	Cr- Stainless Steel
Idler Rotor:	Bronze

Above materials allow the use of the water motor with fresh industrial water, salty water and seawater.

Foam Concentrate Injection pump for code W1

Body:	Cast Iron GJL-250 , internally Teflon-Graphite Coated
Rotors:	Nitrogen Hardened Alloy Steel

Above materials show a good resistance against corrosion by most commonly used foam concentrates, like AFFF, AR-AFFF, Fluoro-Protein - Protein, Synthetic and Plastic. However they are NOT compatible with water.

Foam Concentrate Injection pump for code W2

Body:	Cast Iron GG25 – Internally Teflon-Graphite Coated
Rotors:	Cr-Stainless Steel

Above materials increase the resistance against corrosion by the most commonly used foam concentrates, like: AFFF, AR-AFFF, Fluoro-Protein - Protein, Synthetic and Plastic. They allow the use of water for testing and flushing injection pumps

Code and Performances

Leistritz Series Code

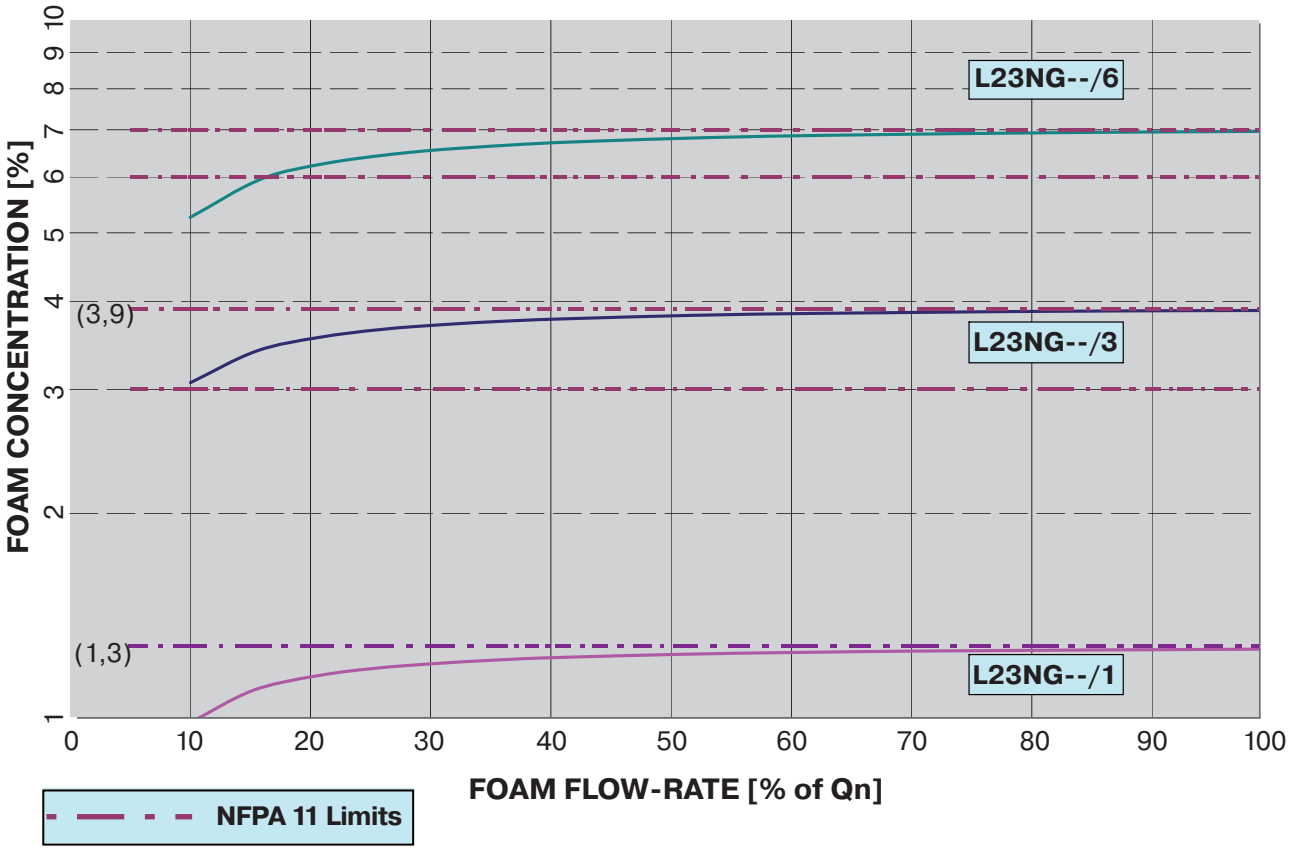
Leistritz	2 Pumps (Twin & Triple Screw)	Low Pressure	Horizontal Shafft	Nominal foam flow		Concentration in the foam in %				foam concentrate		
L	23	N	H	m³/h	non standard	1%	3%	6%	non standard: 9	compatible injection pump	and water compatible injection pump	Non-standard materials
L	23	N	H	120	999	1	3	6	9	W1	W2	WX
L	23	N	H	150	999	1	3	6	9	W1	W2	WX
L	23	N	H	240	999	1	3	6	9	W1	W2	WX
L	23	N	H	300	999	1	3	6	9	W1	W2	WX
L	23	N	H	360	999	1	3	6	9	W1	W2	WX
L	23	N	H	450	999	1	3	6	9	W1	W2	WX
L	23	N	H	600	999	1	3	6	9	W1	W2	WX
L	23	N	H	750	999	1	3	6	9	W1	W2	WX
L	23	N	H	900	999	1	3	6	9	W1	W2	WX

Example: L23NG H 300 3 W1

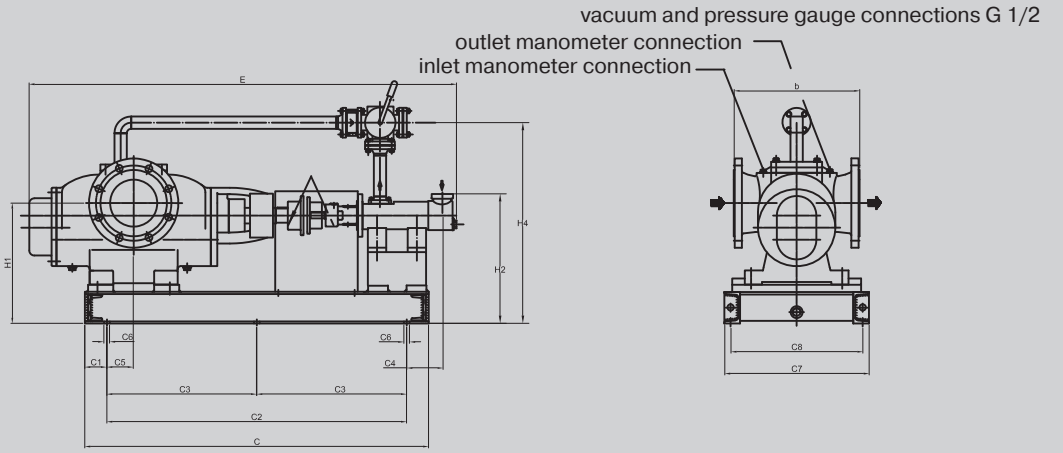
Horizontal shaft · Nominal foam flow 300 m³/h · 3% foam concentrate ·Injection pump foam concentrate compatible

Typical Mixing Performances

Exact performances on individual curve



Dimensions



suction and discharge flange water

arrrangement for 4 holes
arrrangement for 8 holes
arrrangement for 12 holes

D3 = number of holes

suction flange foam

subject to change, not valid for construction

Pump Size	Pump Dimensions														Suction Flange Foamer		Suction and Discharge Flange Water	
	b	C	C1	C2	C3	C4	C5	C6	C7	C8	E	H1	H2	H4	DN	PN	150lb RF	RS	DN
120.3	320	892	55	782	391	90	115	12	370	330	1115	316	358	574	100	16	4“	SAE 1 1/4“	32
120.6	320	925	55	815	407.5	97	115	12	370	330	1155	316	358	574	100	16	4“	SAE 1 1/4“	32
150.3	370	994	60	874	437	102	135	14	420	380	1249	371	403	615	125	16	5“	SAE 1 1/4“	32
150.6	370	1071	60	951	475.5	86	135	14	420	380	1310	371	403	615	125	16	5“	SAE 1 1/2“	40
240.1	400	1046	60	926	463	95	155	14	420	380	1310	383	423	615	150	16	6“	SAE 1 1/4“	32
240.3	400	1079	60	959	479.5	102	155	14	420	380	1350	383	423	615	150	16	6“	SAE 1 1/4“	32
240.6	400	1215	60	1095	547.5	87	155	14	420	380	1476	383	433	615	150	16	6“	SAE 2“	50
300.1	440	1112	60	992	496	90	170	14	460	420	1398	423	443	700	150	16	6“	SAE 1 1/4“	32
300.3	440	1222	60	1102	551	81	170	14	460	420	1449	423	443	700	150	16	6“	SAE 1 1/2“	40
300.6	440	1281	60	1161	580.5	82	170	14	460	420	1564	423	453	700	150	16	6“	SAE 2“	50
360.1	460	1175	70	1035	517.5	107	180	14	460	420	1478	423	458	820	200	16	8“	SAE 1 1/4“	32
360.3	460	1311	70	1171	585.5	92	180	14	460	420	1604	423	468	820	200	16	8“	SAE 2“	50
360.6	460	1330	70	1190	595	130	180	14	460	420	1674	423	478	820	200	16	8“	SAE 2 1/2“	65
450.1	480	1265	70	1125	562.5	107	195	14	500	450	1594	458	493	820	200	16	8“	SAE 1 1/4“	32
450.3	480	1401	70	1261	630.5	92	195	14	500	450	1720	458	503	820	200	16	8“	SAE 2“	50
450.6	480	1420	70	1280	640	130	195	14	500	450	1790	458	513	820	200	16	8“	SAE 2 1/2“	65
600.1	520	1329	70	1189	594.0	107	210	18	550	500	1691	483	533	850	250	16	10“	SAE 1 1/4“	32
600.3	520	1484	70	1344	672.0	130	210	18	550	500	1887	483	553	850	250	16	10“	SAE 2 1/2“	65
600.6	520	1556	70	1426	713	116	210	18	550	500	1955	483	563	850	250	16	10“	SAE 3“	80
750.1	550	1422	70	1282	641	91	210	18	550	500	1779	478	548	850	300	16	12“	SAE 1 1/2“	40
750.3	550	1500	70	1360	680	130	210	18	550	500	1914	478	568	850	300	16	12“	SAE 2 1/2“	65
750.6	550	1662	70	1522	761.0	110	210	18	550	500	2067	478	593	850	300	16	12“	SAE 4“	100
900.1	740	1579	75	1429	714.5	91	245	18	680	620	1969	633	658	880	300	16	12“	SAE 1 1/2“	40
900.3	740	1657	75	1507	753.5	130	245	18	680	620	2104	633	688	880	300	16	12“	SAE 2 1/2“	65
900.6	740	1819	75	1669	834.5	110	245	18	680	620	2257	633	703	880	300	16	12“	SAE 4“	100

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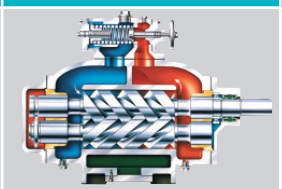
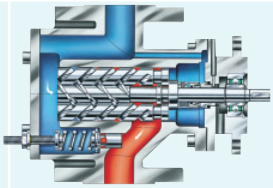
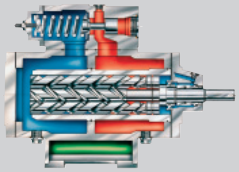
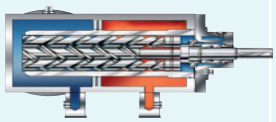
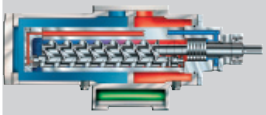
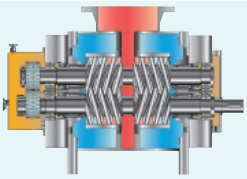
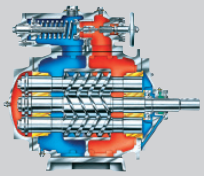
Leistritz Screw Pump Program

Series	Use for	Leistritz Screw Pump	Max. Performance Data			
			Capacity	Differential Pressure	Viscosity	Pumping Temperature
L2	Low pressure duty, suitable for transport of light abrasive and corrosive, high or low viscous fluids with poor or good lubricity.		900 m^3/h [3,960 gpm]	16 bar [232 psi]	100,000 cSt [mm^2/s]	280°C [536°F]
L3N	Low pressure duty, suitable for transport of non abrasive lubricating fluids.		700 m^3/h [3,100 gpm]	16 bar [232 psi]	15,000 cSt [mm^2/s]	180°C [356°F]
L3M	Medium pressure duty, suitable for transport of non abrasive lubricating fluids.		300 m^3/h [1,320 gpm]	80 bar [1,160 psi]	10,000 cSt [mm^2/s]	280°C [536°F]
L3H	High pressure duty, suitable for transport of non abrasive lubricating fluids.		200 m^3/h [880 gpm]	160 bar [2,320 psi]	10,000 cSt [mm^2/s]	280°C [536°F]
L3V/U	Ultra high pressure duty suitable for transport of light abrasive and corrosive, high or low viscous fluids with poor or good lubricity.		180 m^3/h [792 gpm]	280 bar [4,060 psi]	1,000 cSt [mm^2/s]	280°C [536°F]
L4	Low, medium and high pressure duty, suitable for transport of abrasive/non abrasive, corrosive/non corrosive, lubricating/non lubricating, high or low viscous fluids.		5,0000 m^3/h [22,000 gpm]	150 bar [2,175 psi]	150,000 cSt [mm^2/s]	350°C [662°F]
L5	Low pressure duty, suitable for transport of light abrasive and corrosive, high or low viscous fluids with poor or good lubricity.		1,700 m^3/h [7,500 gpm]	10 bar [145 psi]	100,000 cSt [mm^2/s]	280°C [536°F]

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