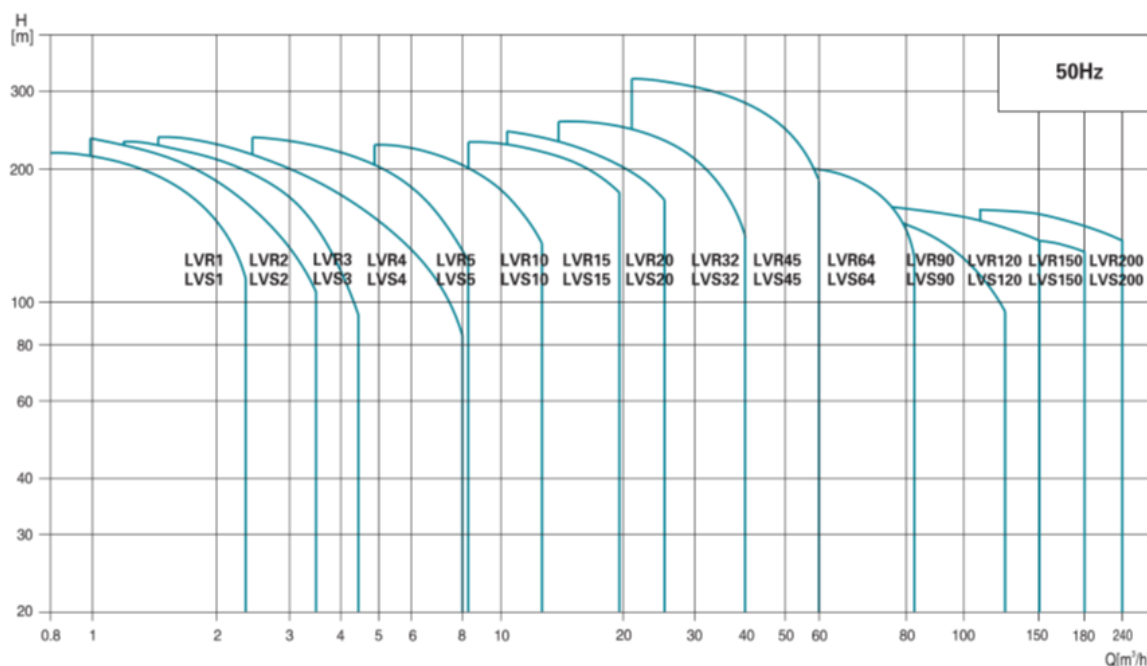


Scope of Performance LVS (R)

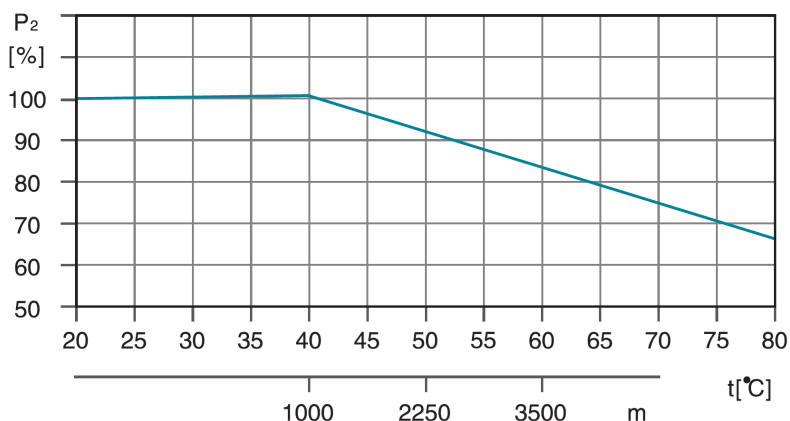


Product Range

MODEL	LVR(S)1	LVR(S)2	LVR(S)3	LVR(S)4	LVR(S)5	LVR(S)10	LVR(S)15	LVR(S)20	LVR(S)32	LVR(S)45	LVR(S)64	LVR(S)90	LVR(S)120	LVR(S)150	LVR(S)200
DESCRIPTION															
Rated flow [m³/h]	1	2	3	4	5	10	15	20	32	45	64	90	120	150	200
Flow range [m³/h]	0.7-2.4	1.0-3.5	1.2-4.5	1.5-8	2.5-8.5	5-13	8-23	10.5-29	15-40	22-58	30-85	45-120	60-150	80-180	100-240
Max. pressure [bar]	22	23	24	21	24	22	23	25	28	33	22	20	16	16	16
Motor power [kW]	0.37-2.2	0.37-3	0.37-3	0.37-4	0.37-4	1.1-7.5	1.1-15	1.1-18.5	1.5-30	3-45	4-45	5.5-45	11-75	11-75	18.5-110
Temperature Range [°C]	-20°C--+120°C (Note: Both the Max. permissible pressure and liquid temperature range refer to the pump capacity.)														
Max. pump efficiency [%]	45	46	55	59	60	65	70	72	78	79	80	81	74	73	79
Pipe connection-LVR															
Oval flange	G1	G1	G1	G1 1/4	G1 1/4	-	-	-	-	-	-	-	-	-	-
DIN flange	DN25	DN25	DN25	DN32	DN32	DN40	DN50	DN50	DN65	DN80	DN100	DN100	DN125	DN125	DN150
Pipe connection-LVS															
Oval flange	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DIN flange	DN32	DN32	DN32	DN32	DN32	DN40	DN50	DN50	DN65	DN80	DN100	DN100	DN125	DN125	DN150
Clamp connector	φ42	φ42	φ42	φ42	φ42	-	-	-	-	-	-	-	-	-	-
Threaded connector	R ₂ 1 1/4	R ₂ 1 1/4	R ₂ 1 1/4	R ₂ 1 1/4	R ₂ 1 1/4	-	-	-	-	-	-	-	-	-	-

Ambient Temperature

An ambient temperature of over 40 ° C or an installation at an altitude above 1000 meters above sea level requires an oversized motor. Due to low air density and poor cooling, the output power P₂ decreases, as shown in the table below:



For example, when the pump is installed at an altitude of 3500 meters, P₂ will decrease by 88%. And when the ambient temperature is 70 ° C, P₂ will decrease by 78%.

Maximum Operation pressure (bar)

The table below shows the maximum discharge pressures of the various LVS (R) pumps. The suction pressure of the pump + the set pressure must always be lower than the maximum operating pressure of the pump. If the maximum working pressure is exceeded, it can damage the motor bearings and reduce the service life of the mechanical seal.

Model	LVR Max. Operation pressure [bar]		LVS Max. Operation pressure [bar]
	Oval Flange	DIN Flange	
LVR (S) 1	16	25	25
LVR (S) 2	16	25	25
LVR (S) 3	16	25	25
LVR (S) 4	16	25	25
LVR (S) 5	16	25	25
LVR (S) 10		25	25
LVR (S) 15		25	25
LVR (S) 20		25	25
LVR (S) 32-1-1 - 32-7	16		16
LVR (S) 32-8-2 - 32-14	30		30
LVR (S) 45-1-1 - 45-5	16		16
LVR (S) 45-6-2 - 45-11	30		30
LVR (S) 45-12-2 - 45-13-2	33		33
LVR (S) 64-1-1 - 64-5	16		16
LVR (S) 64-6-2 - 64-8-1	30		30
LVR (S) 90-1-1 - 90-4	16		16
LVR (S) 90-5-2 - 90-6	30		30
LVR (S) 120-1 - 120-7	20		20
LVR (S) 150-1-1 - 150-6	20		20
LVR (S) 200-1-D - 200-4	20		20

NPSH

Minimum Inlet Pressure–Npsh

Calculation of the inlet pressure “H” is recommended in these situations:

- The liquid temperature is high.
- The flow is significantly higher than the rated flow.
- Water is drawn from depths.
- Water is drawn through long pipes.
- Inlet conditions are poor.

To avoid cavitation, make sure that there is a minimum pressure on the suction side of the pump. The maximum suction lift “H” in meters head can be calculated as follows:

$$H = P_b \times 10.2 - NPSH - H_f - H_v - H_s$$

P_b = Barometric pressure in bar. (Barometric pressure can be set to 1 bar). In closed systems, P_b indicates the system pressure in bar.

NPSH = Net Positive Suction Head in meters head. (To be read from the NPSH curve at the highest flow the pump will be delivering.)

H_f = Friction loss in suction pipe in meters head. (At the highest flow the pump will be delivering.)

H_v = Vapor pressure in meters head. (To be read from the vapor pressure scale. “ H_v ” depends on the liquid temperature “ t_m ”)

H_s = Safety margin=minimum 0.5 meters head.

If the “H” calculated is positive, the pump can operate at a suction lift of maximum “H” meters head.

If the “H” calculated is negative, an inlet pressure of minimum “H” meters head is required.



t_m [°C]	H_v [m]
190	126
180	100
170	79
160	62
150	45
140	40
140	35
130	30
130	25
120	20
110	15
100	12
100	10
90	8.0
90	6.0
80	5.0
80	4.0
70	3.0
60	2.0
50	1.5
50	1.0
40	0.8
40	0.6
30	0.4
30	0.3
20	0.2
10	0.1
0	0

Note: To avoid cavitation, never select a pump with a duty point too far to the right on the NPSH curve. Always check the NPSH value of the pump at the highest possible flow.

LVR2 Vertical multicellular pump, water box and pump base in cast iron



LVR

Application

- Transfer of liquids with low viscosity, non-flammable and non-explosive, not containing solid particles or fibers. These liquids must not chemically attack the materials of the pump.
- Water supply for tall buildings, pumping stations, overpressure
- Washing stations, heating water circulation, air conditioning water circulation, water treatment systems
- Distillation systems, municipal swimming pools
- Irrigation: sprinkling, drip
- Industry
- Fire fighting systems

Pompe

- Liquid temperature: from -20°C to $+120^{\circ}\text{C}$
- Nominal flow: $2\text{ m}^3/\text{h}$
- maximum pressure: 23 bars
- pH between 4 and 10

Moteur

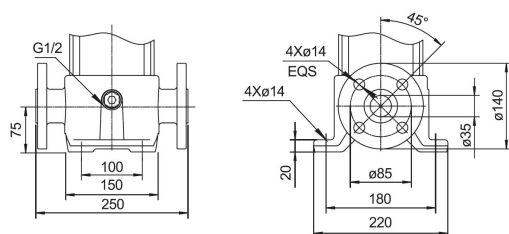
- IE3 motor
- Protection class: IP55
- Maximum ambient temperature: $+40^{\circ}$

Identification codes

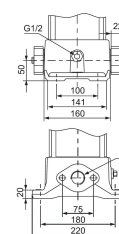
LVR m 2 -10 -B /F(A, K, G)

- DIN flange (oval, clamp fitting, threaded fitting)
- inox 316 (by default, inox 304)
- number of turbines
- Nominal flow (m^3/h)
- Single-phase motor
- Vertical multicellular pump

Options



DIN flange (/F)

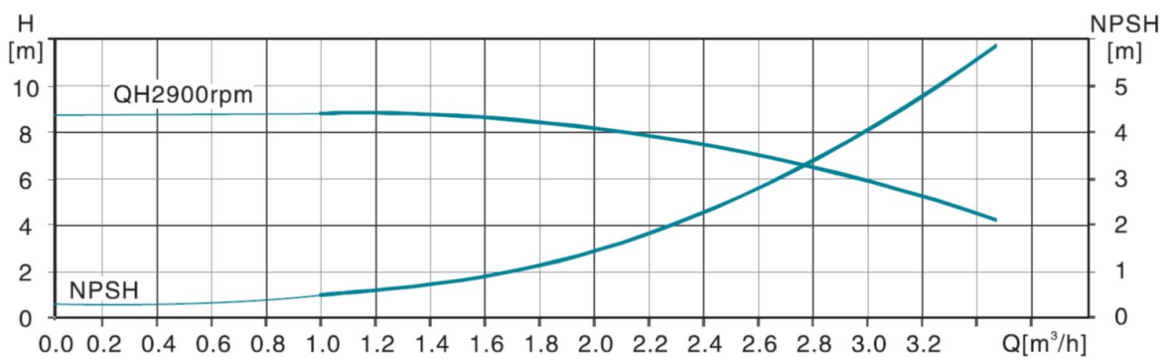
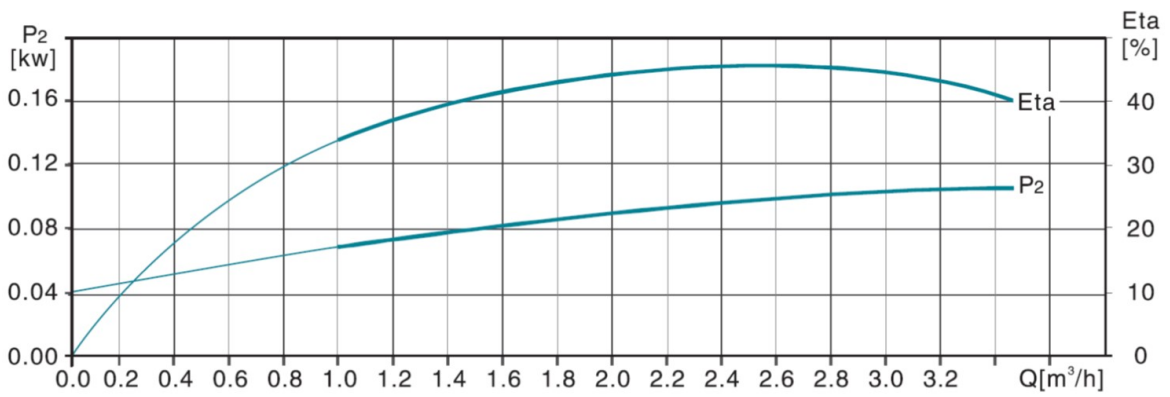
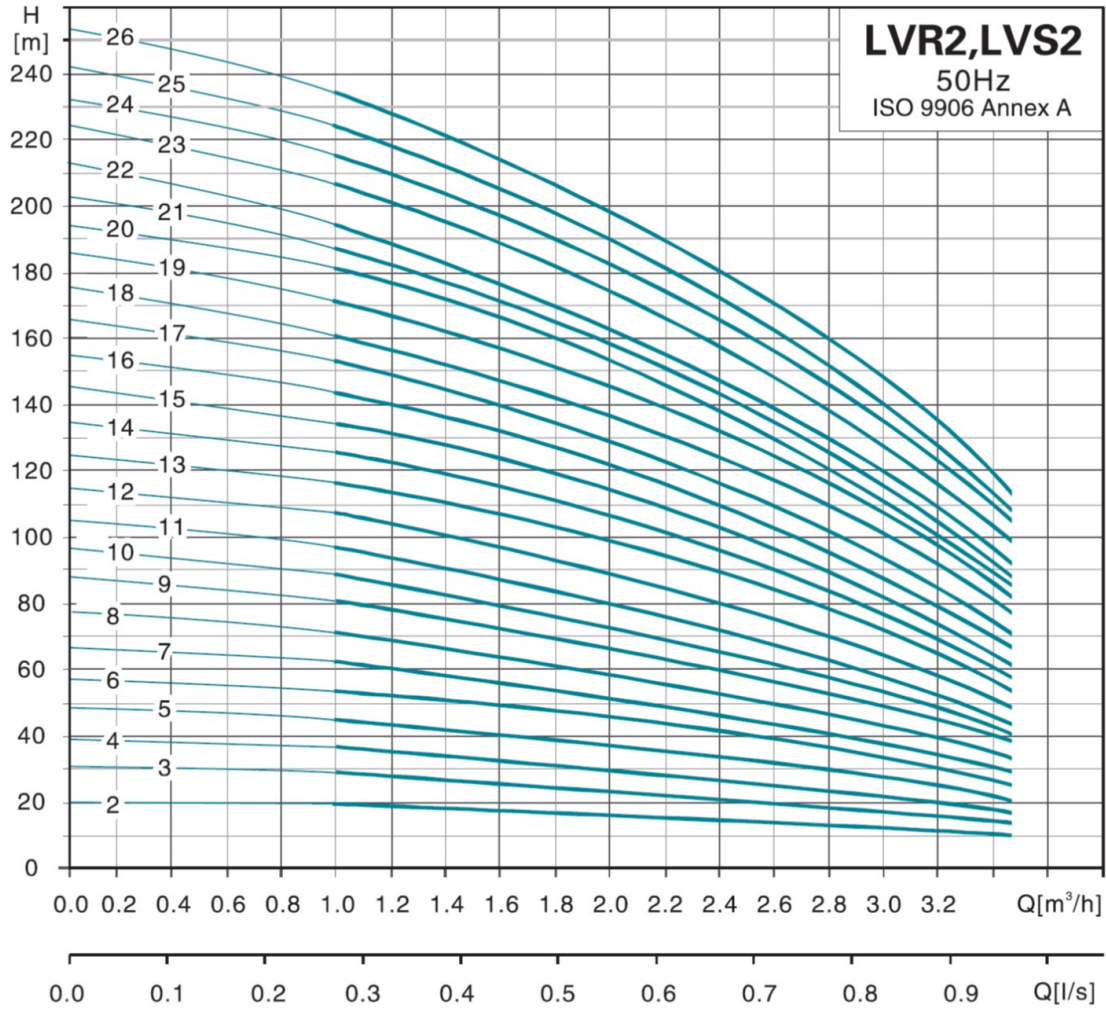


Oval flange (/A)

Technical data

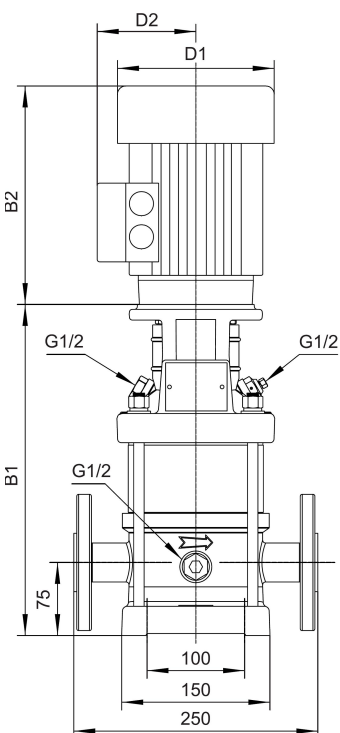
MODEL	kW	Q (m³/h)	1	1.2	1.6	2	2.5	2.8	3.2	3.5
		Q (l/min)	17	20	27	33	42	47	53	58
LVRm2-2	0.37		18	17	16	15.5	13.5	12	10	8
LVR2-2	0.37		18	17	16	15.5	13.5	12	10	8
LVRm2-3	0.37		27	26	24	22.5	19.5	18	15	12
LVR2-3	0.37		27	26	24	22.5	19.5	18	15	12
LVRm2-4	0.55		36	35	33	30.5	27	24	17	16
LVR2-4	0.55		36	35	33	30.5	27	24	17	16
LVRm2-5	0.55		45	43	40	37	32.5	30	24	20
LVR2-5	0.55		45	43	40	37	32.5	30	24	20
LVRm2-6	0.75		53	52	50	45.5	40	36	30	24
LVR2-6	0.75		53	52	50	45.5	40	36	30	24
LVRm2-7	0.75		63	61	57	52	45.5	41	35	28
LVR2-7	0.75		63	61	57	52	45.5	41	35	28
LVRm2-8	1.1		71	69	65	59	51	47	40	33
LVR2-8	1.1		71	69	65	59	51	47	40	33
LVRm2-9	1.1		80	78	73	68.5	60	54	45	37
LVR2-9	1.1		80	78	73	68.5	60	54	45	37
LVRm2-10	1.1		89	86	81	74	65	59	49	40
LVR2-10	1.1		89	86	81	74	65	59	49	40
LVRm2-11	1.1		98	95	89	82	71.5	64	54	44
LVR2-11	1.1		98	95	89	82	71.5	64	54	44
LVRm2-12	1.5		107	103	97	90	78	71	59	47
LVR2-12	1.5		107	103	97	90	78	71	59	47
LVRm2-13	1.5		116	114	106	98	86.5	78	65	52
LVR2-13	1.5		116	114	106	98	86.5	78	65	52
LVRm2-14	1.5		125	122	114	105	92	84	69	57
LVR2-14	1.5		125	122	114	105	92	84	69	57
LVRm2-15	1.5		134	130	123	112	98	90	73	60
LVR2-15	1.5		134	130	123	112	98	90	73	60
LVRm2-16	2.2		143	139	131	120	104	96	79	66
LVR2-16	2.2		143	139	131	120	104	96	79	66
LVRm2-17	2.2		152	148	139	128	111	102	85	70
LVR2-17	2.2		152	148	139	128	111	102	85	70
LVRm2-18	2.2		161	157	148	136	122	108	91	76
LVR2-18	2.2		161	157	148	136	122	108	91	76
LVRm2-19	2.2		170	165	156	143	128	113	95	81
LVR2-19	2.2		170	165	156	143	128	113	95	81
LVRm2-20	2.2		179	174	164	150	134	119	100	85
LVR2-20	2.2		179	174	164	150	134	119	100	85
LVRm2-21	2.2		188	183	172	157	140	124	105	88
LVR2-21	2.2		188	183	172	157	140	124	105	88
LVRm2-22	2.2		197	192	180	165	145	130	110	90
LVR2-22	2.2		197	192	180	165	145	130	110	90
LVRm2-23	3		205	201	188	173	153	137	105	97
LVR2-23	3		205	201	188	173	153	137	105	97
LVRm2-24	3		214	210	197	181	160	144	120	105
LVR2-24	3		214	210	197	181	160	144	120	105
LVRm2-25	3		223	219	205	189	168	151	125	107
LVR2-25	3		223	219	205	189	168	151	125	107
LVRm2-26	3		232	228	214	198	176	158	130	110
LVR2-26	3		232	228	214	198	176	158	130	110

Hydraulic performance



Total manometric height (m)

Dimensions



MODEL	B1/bride-ovale	B1+B2/bride-ovale	B1/bride-DIN	B1+B2/bride-DIN	D1	D2	poids
LVRm2-2	256	470	282	496	130	105	22.3
LVR2-2	256	470	282	496	130	105	22.3
LVRm2-3	256	470	282	496	130	105	22.5
LVR2-3	256	470	282	496	130	105	22.5
LVRm2-4	274	488	300	514	130	105	22.3
LVR2-4	274	488	300	514	130	105	22.3
LVRm2-5	292	506	318	532	130	105	22.8
LVR2-5	292	506	318	532	130	105	22.8
LVRm2-6	314	582	340	608	149.5	124.5	26.6
LVR2-6	314	582	340	608	149.5	124.5	26.6
LVRm2-7	332	600	358	626	149.5	124.5	27.1
LVR2-7	332	600	358	626	149.5	124.5	27.1
LVRm2-8	350	618	376	644	150	124.5	29.1
LVR2-8	350	618	376	644	150	124.5	29.1
LVRm2-9	368	636	394	662	150	124.5	29.5
LVR2-9	368	636	394	662	150	124.5	29.5
LVRm2-10	386	654	412	680	150	124.5	30
LVR2-10	386	654	412	680	150	124.5	30
LVRm2-11	404	672	430	698	150	124.5	30.4
LVR2-11	404	672	430	698	150	124.5	30.4
LVRm2-12	438	756	464	782	163.6	127	35.9
LVR2-12	438	756	464	782	163.6	127	35.9
LVRm2-13	456	774	482	800	163.6	127	36.2
LVR2-13	456	774	482	800	163.6	127	36.2
LVRm2-14	474	792	500	818	163.6	127	37.8
LVR2-14	474	792	500	818	163.6	127	37.8
LVRm2-15	492	810	518	836	164	127	38.1
LVR2-15	492	810	518	836	164	127	38.1
LVRm2-16	510	828	536	854	164	127	40.9
LVR2-16	510	828	536	854	164	127	40.9
LVRm2-17	528	846	554	872	164	127	40.9
LVR2-17	528	846	554	872	164	127	40.9
LVRm2-18	546	864	572	890	164	127	41
LVR2-18	546	864	572	890	164	127	41
LVRm2-19	564	882	590	908	164	127	42.2
LVR2-19	564	882	590	908	164	127	42.2
LVRm2-20	582	900	608	926	164	127	42.7
LVR2-20	582	900	608	926	164	127	42.7
LVRm2-21	600	918	626	944	164	127	43.1
LVR2-21	600	918	626	944	164	127	43.1
LVRm2-22	618	936	644	962	164	127	46.6
LVR2-22	618	936	644	962	164	127	46.6
LVRm2-23	640	980	666	1006	185.5	120	50.4
LVR2-23	640	980	666	1006	185.5	120	50.4
LVRm2-24	658	998	684	1024	185.5	120	50.8
LVR2-24	658	998	684	1024	185.5	120	50.8
LVRm2-25	676	1016	702	1042	185.5	120	51.2
LVR2-25	676	1016	702	1042	185.5	120	51.2
LVRm2-26	694	1034	720	1060	185.5	120	51.6
LVR2-26	694	1034	720	1060	185.5	120	51.6

Exploded view

No.	Type	Materials
1	Lower water box	cast iron HT200
2	Drain plug	AISI 304 stainless steel
3	Diffuser	AISI 304 stainless steel
4	Diffuser with bearing	AISI 304 stainless steel
5	Intermediate diffuser	AISI 304 stainless steel
6	Impeller	AISI 304 stainless steel
7	Final scroll	AISI 304 stainless steel
8	Lantern	cast iron HT200
9	Filling plug	AISI 304 stainless steel
10	Coupling	
11	Engine	
12	Coupling protection housing	AISI 304 stainless steel
13	Cartridge mechanical seal	
14	Drain plug	AISI 304 stainless steel
15	Pump shaft	AISI 304 stainless steel
16	Jacket	AISI 304 stainless steel
17	Flange	cast iron HT200

