

CHEMICAL PUMPS SINCE 1992

LIQUID RING VACUUM PUMPS

LIQUID RING VACUUM PUMPS SUITABLE FOR TOXIC, OBNOXIOUS AND DANGEROUS GASES & VAPOURS.

- TYPE: VPM (magnetic drive design).
- TYPE: VPS (close coupled with mechanical seal).
- TYPE: VPL (long coupled with mechanical seal).

GEMMECOTTI liquid ring vacuum pumps types VPM, VPS, and VPL, are constructed in a conventional overhung impeller design. They are suitable for operating with both toxic and dangerous gases. GEMMECOTTI liquid ring vacuum pumps attain high levels of vacuum by means of isothermal compression. They can evacuate most gases and vapors and are especially suitable for the evacuation of gases containing both condensate and liquid compositions for arduous applications. GEMMECOTTI liquid ring vacuum pumps generally operate without contact between internal rotating parts, with the exception of the mechanical seal rings for pumps VPS and VPL and the rotating bushes for pump VPM (magnetic drive). Due to their inherent design, contact is required, however, the service liquid ensures that both the mechanical seal and bushes are lubricated sufficiently in these designs. VPM, VPS, and VPL models are also capable of operating without the need for an external lubrication source, as the standard design uses sealed for life bearings. Vibration and noise levels are minimized and fall well below industry requirements on all models within the range. VPM, VPS and VPL have the capability to incorporate automatic drain and anti-cavitation valves.

DESIGN

VPM range: Sealless pump, magnetic drive. Support is guaranteed by standard design of silicon carbide

slide bearing.

VPS range: available in close coupled design and fitted with single mechanical seal. Supported by means of standard bearings fitted to the electric motor.

VPL range: Standard execution with single mechanical seal. For more arduous duties it is also possible to install a double mechanical seal with an external flushing system. Support by a robust bearing bracket complete with sealed for life ball bearings. GemmeCotti can also install an oil lubricated ball bearing design for this construction if requested.

OPERATIONS

In order to operate successfully all vacuum pumps have to be filled in with a suitable service liquid (usually water or a compatible liquid suitable for the gas to be evacuated). This allows a constant gas compression for the application and also removes the heat generated during operation of the cycle. Continuous service liquid has to be fed to the pump for the vacuum level to be maintained and for the pump to operate efficiently. There are three standard designs of service liquid feed that can be used with any vacuum pump:

- Open Circuit (often referred to as total loss or oncthrough).
- Closed Circuit (often referred to as total recirculation).
- Semi-Open Circuit (often referred to as partial recirculation).

LIQUID RING VACUUM PUMPS



FEATURES

- Cast casing and impeller in Stainless Steel AISI 316, Titanium, Hastelloy C.
- Cast Iron/Carbon Steel bracket (VPL & VPM only).
- No contact between internal rotating parts, except for mechanical seal rings (pumps VPS and VPL) and rotating bushes (pump VPM magnetic drive).
- No need for external lubrication source to operate.
- Easy maintenance.
- High efficiency with reduced dimensions.
- Minimum vibration values/low noise
- Versatile for different applications.
- Design temperature: 100°C.
- Pressure rating: NP 10.

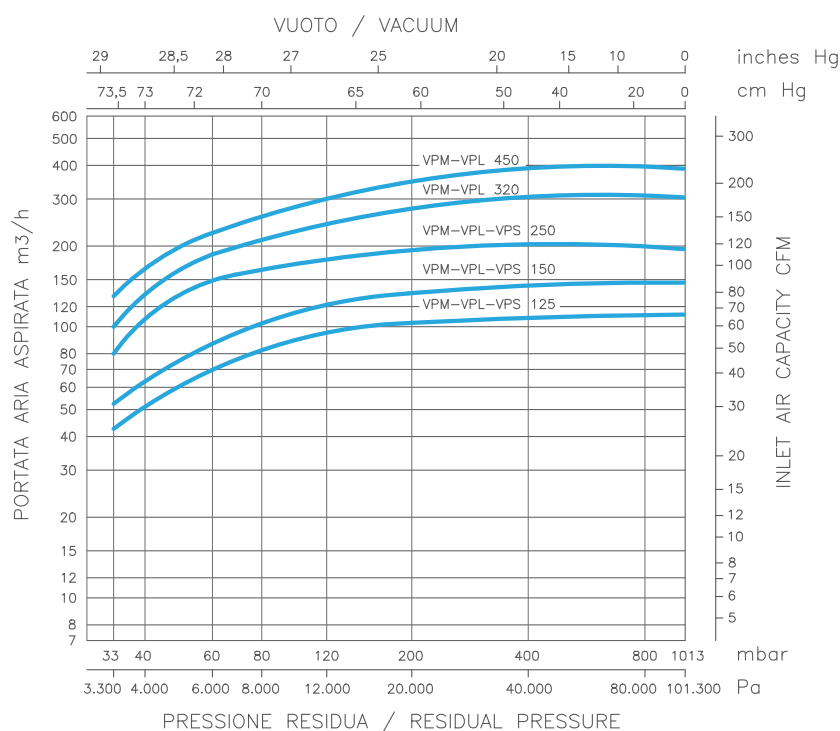
STANDARD

- Overhung impeller design.
- Isothermal Compression.

OPTIONAL

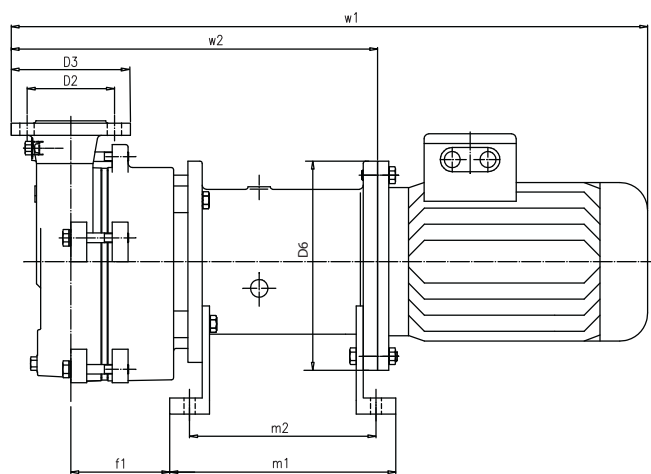
- Automatic drain and anti-cavitation valves.
- Graphite/Ceramic mechanical seal.
- Oil lubricated ball bearing (only VPL).
- ATEX Certification.

PERFORMANCE CURVES 50HZ - 1450 RPM

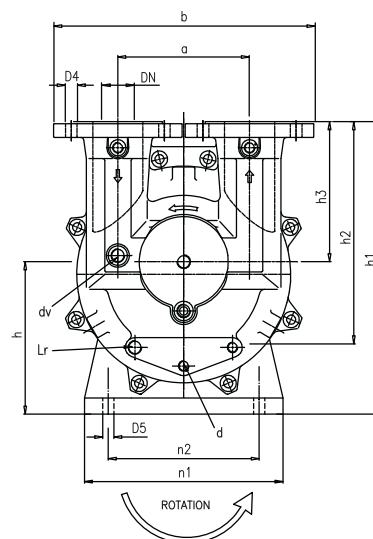


VPM / VPS / VPL TECHNICAL DATA

PUMP SIZE	MATERIAL	Q MAX (M3/H)		SUCTION CONNECTION (DN)	DISCHARGE CONNECTION (DN)	SUITABLE MOTOR POWER (Kw) - 1450 rpm
		50HZ (m3/h)	60HZ (m3/h)			
VPM/VPL 125	AISI316	120	140	40	40	3
VPM/VPL 150	AISI316	150	200	40	40	4
VPM/VPL 250	AISI316	200	250	80	80	5,5
VPM/VPL 320	AISI316	300	400	80	80	7,5
VPM/VPL 450	AISI316	400	510	80	80	11
VPS 125	AISI316	120	140	40	40	3
VPS 150	AISI316	150	200	40	40	4
VPS 250	AISI316	200	250	80	80	5,5

VPM 125, 150, 250, 320, 450
DIMENSIONS

MOTOR: MOUNTING B5, 4 POLES, 50/60 CYCLES



DIMENSIONS - mm -																		Weight Kg *	Service Fluid m 3/h	
VPM	IEC	Kw	Hz	RPM	A	B	D6	F1	H	H1	H2	H3	M1	M2	N1	N2	W1	W2		
125	100	3	50	1450	180	330	250	110	180	355	305	175	240	200	230	190	700	385	115	0,8
	112	4	60	1750				710									120		0,8	
150	112	4	50	1450			300	125									725	400	130	0,8
	132 S	5,5	60	1750				745									420	170	0,8	
250	132 S	5,5	50	1450	205	405	300	219	230	445	345	215	340	300	300	240	920	535	240	1,2
	132 M	7,5	60	1750				960									250		1,2	
320	132 M	7,5	50	1450			350	275									998	575	257	1,4
	160 M	11	60	1750				1085									297		1,4	
450	160 M	11	50	1450			350	312									1120	611	307	1,5
	160 L	15	60	1750													1145		322	1,5

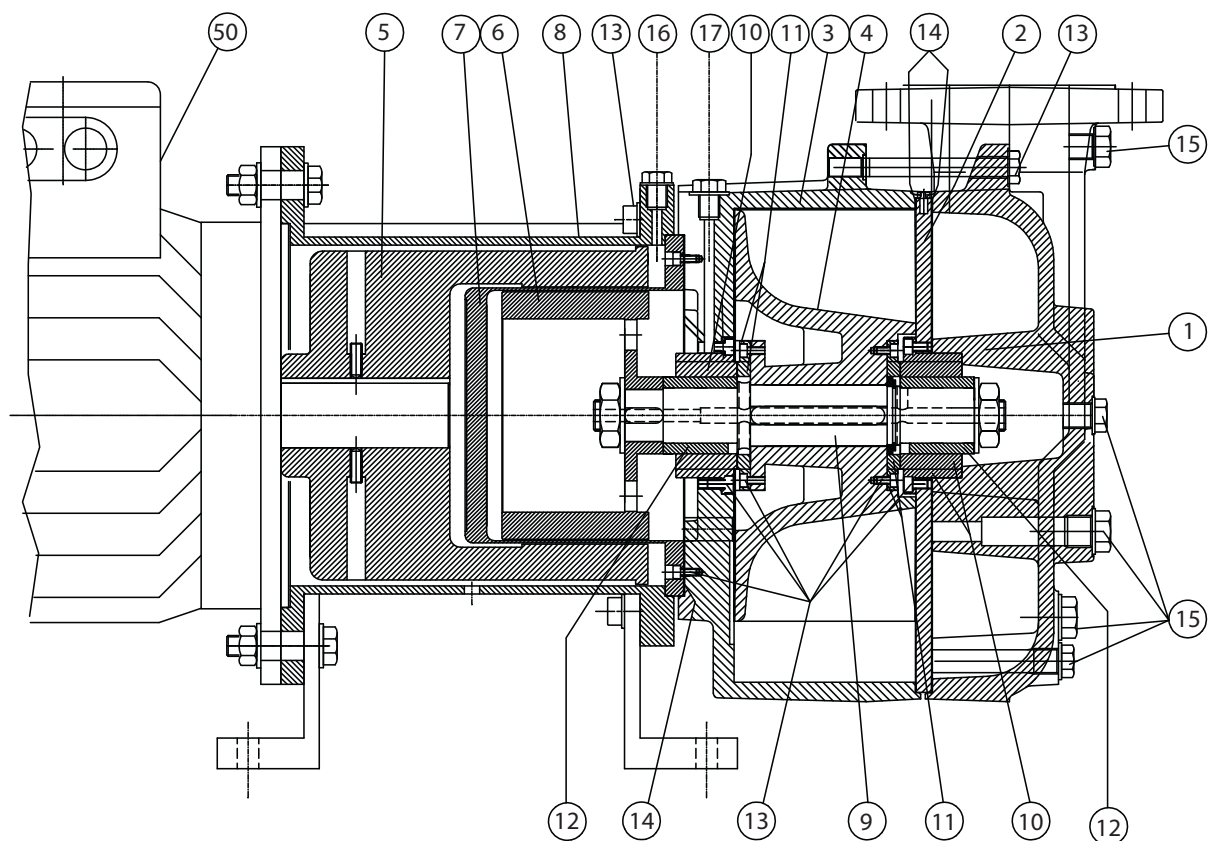
* Weight refers to AISI 316 pump.

FLANGES DN PN 10/16 (mm)					
VPM	DN	D2	D3	D4	D5
125 - 150	40	110	150	18	18
250 - 320 - 450	80	160	200	19	18

d	DRAIN CONNECTION	3/8" G.
dv	AUTOMATIC DRAIN VALVE CONNECTION	1/2" G.
Lr	LIQUID RING CONNECTION	1/2" G.

VPM 125, 150, 250, 320, 450

SECTION AND PART LIST



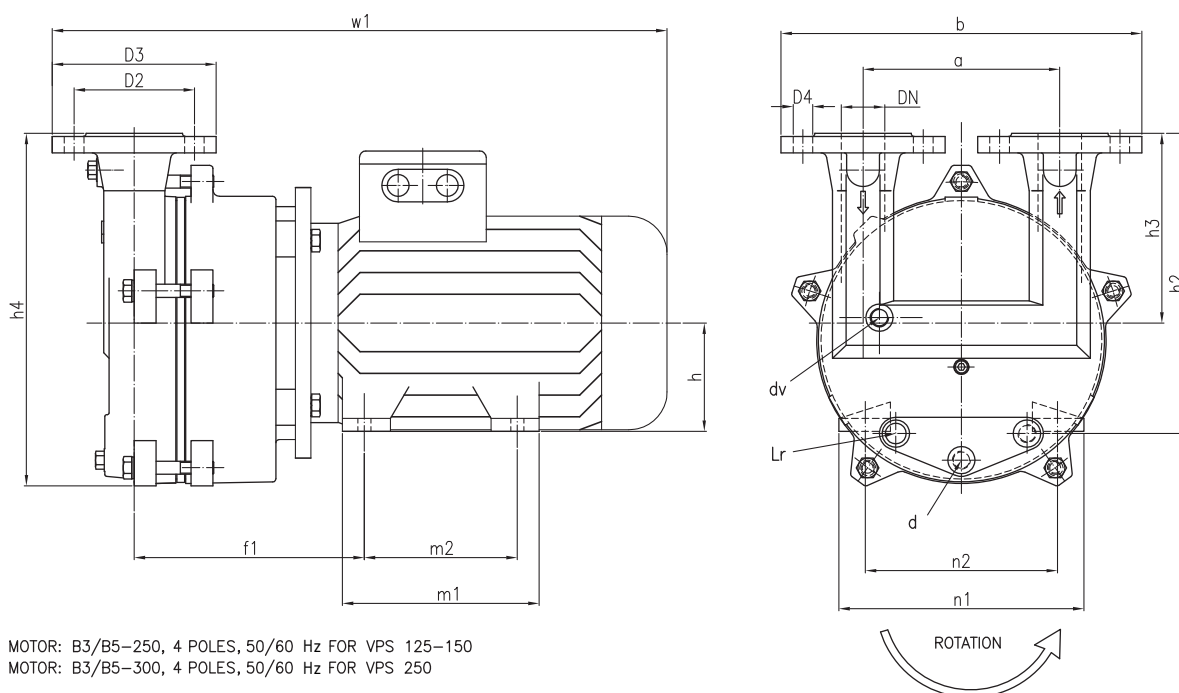
POS.	DESCRIPTION
1	END SHIELD
2	PORT PLATE
3	CASING
4	IMPELLER
5	EXT. MAGNET
6	INT. MAGNET

POS.	DESCRIPTION
7	REAR CASING
8	BRACKET
9	SHAFT
10	SET STATIC BUSHING
11	SET AXIAL THRUST BUSHING
12	SET ROTATING BUSHING

POS.	DESCRIPTION
13	SET SCREW
14	SET CASING GASKET
15	SET CASING GASKET
16	PT 100 REAR CASING
17	PT 100 STATIC BUSHING
50	MOTOR

LIQUID RING VACUUM PUMPS

VPS 125, 150, 250 DIMENSIONS



MOTOR: B3/B5-250, 4 POLES, 50/60 Hz FOR VPS 125-150
MOTOR: B3/B5-300, 4 POLES, 50/60 Hz FOR VPS 250

DIMENSIONS - mm -																	Weight	Service			
VPS	IEC	Kw	Hz	RPM	A	B	F1	H	H2	H3	H4	M1	M2	N1	N2	W1	Kg *	Fluid m³/h			
125	100	3	50	1450	180	330	211	100	305	175	340	175	140	200	160	523	75	0.8			
	112	4	60	1750			218	112				180		245	190	558	80	0.8			
150	112	4	50	1450			232	132				200		280	216	572	90	0.8			
	132 S	5,5	60	1750			273									643	95	0.8			
250	132 S	5,5	50	1450			200	390				266				132	345	215	420	238	178
	132 M	7,5	60	1750	701	130			1,2												

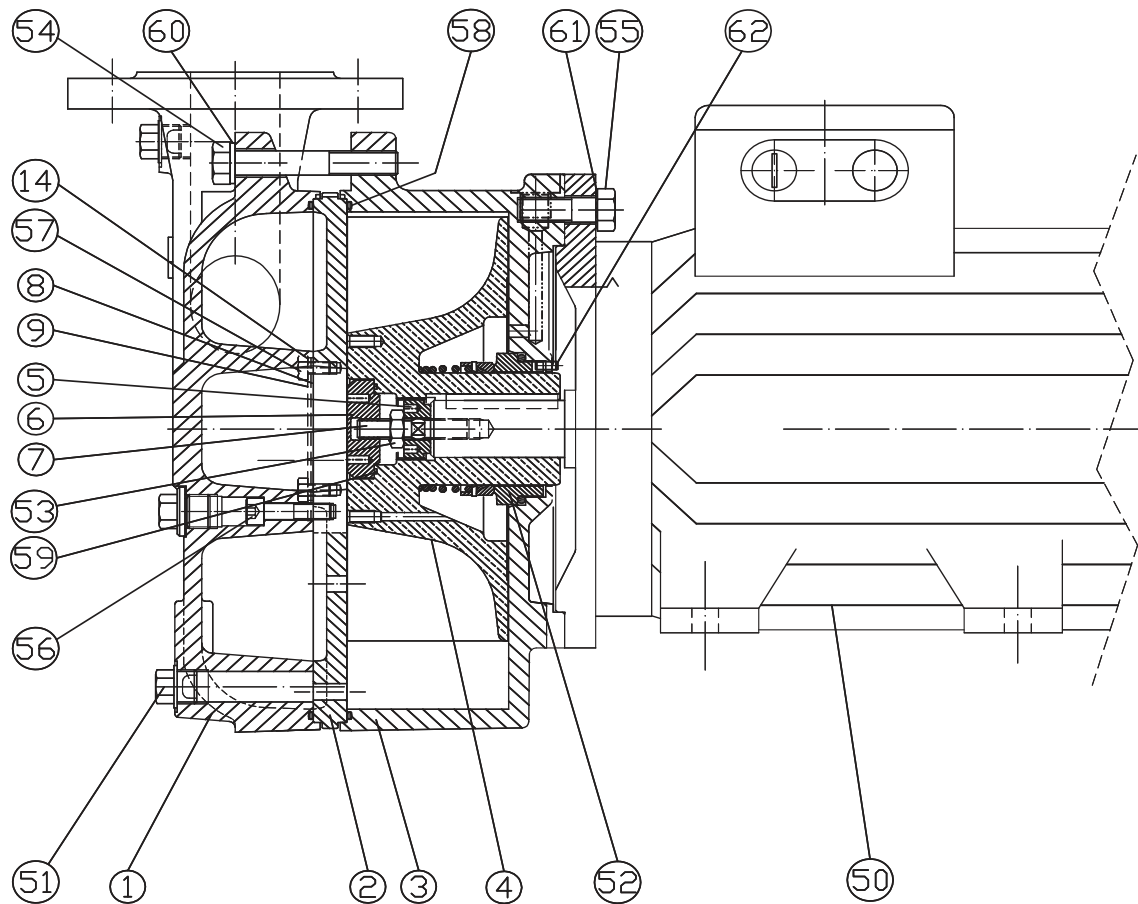
* Weight refers to AISI 316 pump

FLANGES DN PN 10/16 (mm)				
VPS	DN	D2	D3	D4
125 - 150	40	110	150	18
250	80	145	190	18

d	DRAIN CONNECTION	3/8" G.
dv	AUTOMATIC DRAIN VALVE CONNECTION	1/2" G.
Lr	LIQUID RING CONNECTION	1/2" G.

VPS 125, 150, 250

SECTION AND PART LIST

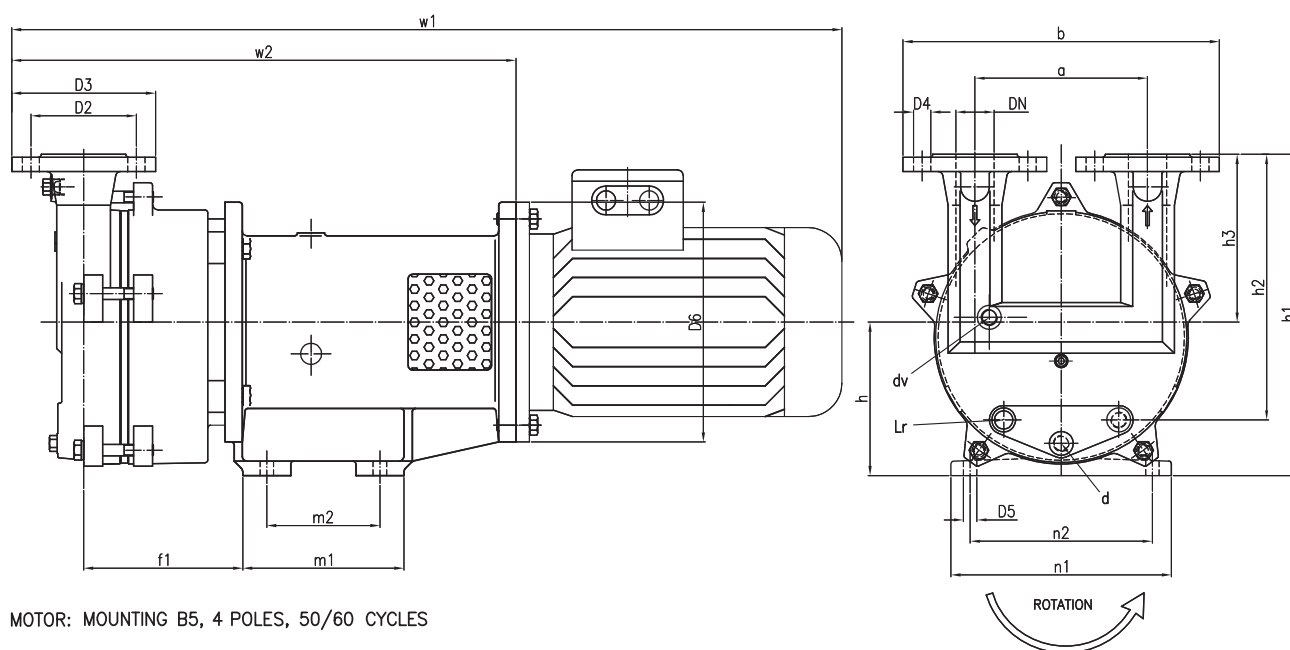


POS.	DESCRIPTION
1	END SHIELD
2	PORT PLATE
3	CASING
4	IMPELLER
5	SET COLLAR
6	COVER PLATE
7	STUD BOLT
8	VALVE

POS.	DESCRIPTION
9	VALVE PLATE
14	WASHER
50	MOTOR
51	LOCKING SCREW
52	MECHANICAL SEAL
53	NUT
54	SCREW
55	SCREW

POS.	DESCRIPTION
56	SCREW
57	SCREW
58	O-RING
59	O-RING
60	WASHER
61	WASHER
62	PIN

VPL 125, 150, 250, 320, 450 DIMENSIONS



DIMENSIONS - mm -																		Weight	Service
VPL	IEC	Kw	Hz	RPM	A	B	F1	H	H1	H2	H3	M1	M2	N1	N2	W1	W2	Kg *	Fluid m ³ /h
125	100	3	50	1450	180	330	191	160	335	305	175	168	118	230	190	826	521	88	0,8
	112	4	60	1750			205									861	521	95	0,8
150	112	4	50	1450	180	330	205	160	335	305	175	168	118	230	190	928	535	100	0,8
	132 S	5,5	60	1750			205									965	535	132	0,8
250	132 S	5,5	50	1450	200	390	219	190	375	345	215	229	160	280	240	991	598	168	1,2
	132 M	7,5	60	1750			219									1028	598	178	1,2
320	132 M	7,5	50	1450	200	390	275	190	405	345	215	229	160	280	240	1133	704	185	1,4
	160 M	11	60	1750			275									1202	704	225	1,4
450	160 M	11	50	1450	200	390	312	190	405	345	215	229	160	280	240	1240	741	235	1,5
	160 L	15	60	1750			312									1284	741	250	1,5

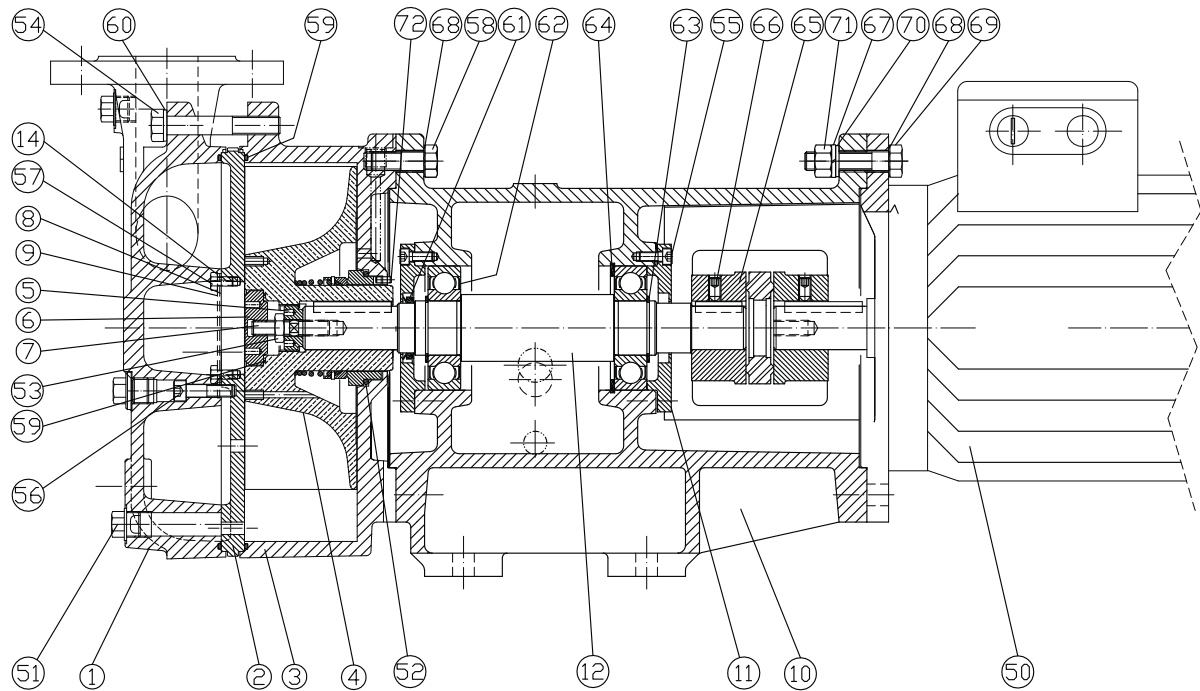
* Weight refers to AISI 316 pump.

FLANGES DN PN 10/16 (mm)				
VPL	DN	D2	D3	D4
125 - 150	40	110	150	18
250 - 320 - 450	80	145	190	

d	DRAIN CONNECTION	3/8" G.
dv	AUTOMATIC DRAIN VALVE CONNECTION	1/2" G.
Lr	LIQUID RING CONNECTION	1/2" G.

VPL 125, 150, 250, 320, 450

SECTION AND PART LIST



POS.	DESCRIPTION
1	END SHIELD
2	PORT PLATE
3	CASING
4	IMPELLER
5	SET COLLAR
6	COVER PLATE
7	STUD BOLT
8	VALVE
9	VALVE PLATE
10	PUMP BRACKET
11	BEARING COVER
12	SHAFT

POS.	DESCRIPTION
14	WASHER
50	MOTOR
51	LOCKING SCREW
52	MECHANICAL SEAL
53	NUT
54	SCREW
55	SCREW
56	SCREW
57	SCREW
58	SCREW
59	O-RING
60	O-RING

POS.	DESCRIPTION
61	VA - RING
62	BALL BEARING
63	RETAINING RING
64	RETAINING RING
65	ELASTIC COUPLING
66	SCREW
67	WASHER
68	WASHER
69	SCREW
70	WASHER
71	NUT
72	PIN

**GEMMECOTTI SRL**

Via A. Volta 85/A
20816 Ceriano Laghetto MB
ITALY
EUROPEAN UNION

Ph: +39 02.96460406

Fax: +39 02.96469114

info@gemmecotti.com

www.gemmecotti.com

