TECHNOLOGY FOR YOU

VACUUM PUMPS

COMPANY

History

DVP Vacuum Technology, one of the main players of the vacuum technology sector for almost fifty years, competes on a global scale in the production of Vacuum Pumps and Compressors, which can be used in several industrial sectors.

Based in San Pietro in Casale (Bologna, Italy), DVP has branches in USA, Germany, Spain and Brazil and a widespread sales and service network in every continent.

Listening and caring of the customer represent a real business mission and reach the highest levels in unique solutions: products and processes customized upon specific requests and tailored thanks to the research of DVP LAB.

DVP LAB

By combining determination, experience and open mindedness, DVP created DVP LAB, an innovative laboratory that stands out as a real technological mini-hub: from engineering to physics, from mechanics to chemistry, without ever forgetting electronics, mechatronics, and IT simulation.
DVP aims to strengthen its cooperation with scientific hubs, industrial partners and universities, to develop innovative scenarios and to stand out as excellence in vacuum technologies.

APPLICATIONS

The best results in any industrial sector

The wide use of DVP pumps and compressors is the sign of a technology that helps the production process making it safe and efficient.
Environment, chemical, health, food processing, plastics, packaging, glass, metallurgy, ceramics, printing and many others: DVP products can be found in every industrial sector.

Environment

In this sector pumps are used for many different applications such as the oxygenation and purification of waste water, landfill sites and solar panel construction.
This technology also makes an important contribution in compressors for biogas digesters, extraction of gas pollution from soil and in many other fields.

Food and Beverages

The food sector and bottling are some of the fields where vacuum technology is principally used. In fact, pumps can be applied in the most typical food processing, in cooking and bottling machines, as well as in different sectors for vegetables cleaning, ham drying, potato aeration, salmon processing machines, and sausage making machines. Vacuum pumps can also be used in milk processing, coffee roasting, and sugar production.

Chemical Industry

In the chemical industry DVP technology applications are relevant for processing primary materials for production on an industrial scale and transfer of gases, chemical substances, mixtures and other types of material.
Among the recommended uses for vacuum pumps are distillation, drying and degassing.

Packaging

Vacuum technology is essential in food packaging: in filling machines, in sealing machines, in packing machines, in processing machines, in the production of PET containers and in the removal of waste and packing in different atmospheric conditions. Vacuum technology is also essential in non-food packaging: in air cushion machines, in blister machines, in filling machines, in sealing machines and in the production of paper bags.

Industrial Cleaning

Residual dirt can compromise the functioning and safety of a product; moreover, the sequential processes of the production line require a clean surface.
For these reasons vacuum technology can be used for cleaning specific industrial components: de-oiling under vacuum, sandblasting, dry cleaning, vacuum drying.

Plastic, Rubber and Resin

DVP products also find applications in technology for plastic, rubber and resin processing. Some examples: calibration, contact-free turning of plastic film, dryers, vacuum processing, production of composite material, manufacture of expanded polystyrene foam.

Printing and Paper Industry

Centralised air and vacuum systems are used during the various phases of production of cardboard to realize a finished product. Furthermore in each step of printing and paper production, including the prepress, printing and post-production stages, the use of pressure and vacuum technology is essential.

Ceramics

Outgassing, a procedure for the removal of gases, is a very important stage in the creation of ceramics, and it's done with vacuum pumps, which can also be used in post-production and in the pick and place of products and materials.

Glass, Stone, Wood

In the wood field, vacuum technologies are used for the preservation, drying and vacuum pressing of the wood; in the stone and glass fields they are used for holding and lifting. The whole movement process uses pick and place technology.

Medical Industry

Vacuum technology plays a main role in the production of equipment and accessories used in the medical field: pneumatic beds, chair hoists, central vacuum systems, steam sterilizers (autoclaving), technical and medical respiratory devices and surgical aspirators.

Pneumatic Conveying

Vacuum pumps and compressors play a main role in the pneumatic conveying field using both aspiration and compression. Some examples: transportation of dusts, powders, granulates, such as sand or cement. In addition, vacuum technologies are used in the plastics processing industry and in the food industry.

Refrigeration and Air-Conditioning

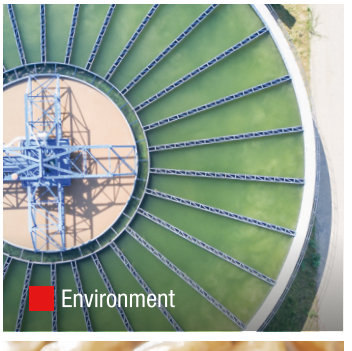
In the refrigeration and air-conditioning field, DVP vacuum pumps are used in the automotive sector to aspirate eventual moisture to guarantee proper functioning of the air-conditioning.

Metallurgy, Metallization, Semiconductors

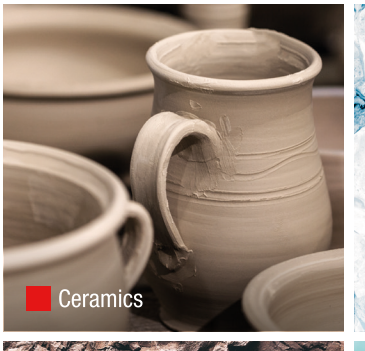
In these fields, vacuum technologies are used in particle accelerators, dactyloscopy, optoelectronics, tribology, glass coating, magnetic storage, optical coating, decorative coating, optical storage, Glove Box applications and welding technology.

Analytical Field

DVP vacuum technology can be applied in some fields of the analytical sector: laser, leak detectors, freeze dryers, mass spectrometers and chromatography, laboratory autoclaves, microscopy, space simulators, vacuum distillers, gel dryers, centrifuges and laboratory autoclaves.


Environment


Industrial Cleaning


Ceramics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Chemical Industry


Pneumatic Conveying


Analytical Field

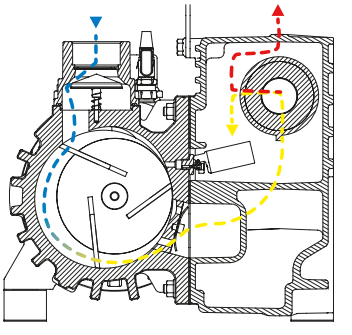
PRODUCTS

Oil Lubricated Technology

OIL LUBRICATED ROTARY VANE PUMPS

NOMINAL CAPACITY: 1.5 – 215 CFM

The lubrication allows this pumps to intake water vapour. To avoid a condensation of the water vapour, the pumps are equipped with a system called “Gas Ballast” that introduces air in the compression stage and changes the vapour saturation pressure thus avoiding the condensation. DVP developed a WR pump version with an improved and reinforced Gas Ballast system.
The characteristics of this series are: Gas Ballast always inserted; external pirex tube to constantly maintain oil level, oil condition and oil viscosity under control; manual water and oil drain valve; switch for the maximum liquid (water-oil) level in the tank.

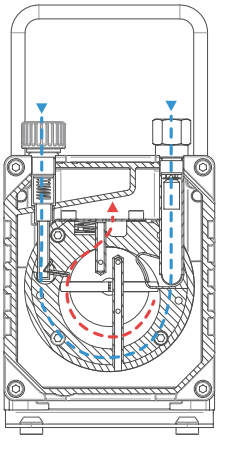


Lubricated vacuum pumps are used when the intake flow may contain moisture, or when a better final pressure is required. These pumps may run continuously within certain pressure ranges, or connected to appropriately sized containers for the pump flow rate and that can be emptied.

MODEL	NOMINAL CAPACITY (CFM)	TOTAL FINAL PRESSURE (Torr)	(inHg)	MOTOR POWER (HP)	WEIGHT (Lbs.)
LC 2	1.5	7.5	29.63	0.2	11.9
LC 4	2.8	1.5	29.86	0.2	11.9
LB 5	3.5	7.5	29.63	0.3	25.4
LB 6	4.1	1.5	29.86	0.4	19.8
LB 8	5.3	1.5	29.86	0.4	19.8
LC 12	8.2	1.5	29.86	0.7	27.6
LC 20	14.1	1.5	29.86	1.2	37.5
LC 25	17.1	0.4	29.91	1.2	55.1
LC 40	28.3	0.1	29.92	1.8	92.6
LC 60	42.4	0.1	29.92	2.4	97.0
LC 106	74.8	0.1	29.92	3.6	155.5
LC 106 Kzero	74.8	3.0	29.80	3.6	155.5
LC 151	106.6	0.1	29.92	5.0	176.4
LC 151 Kzero	106.6	3.0	29.80	5.0	176.4
LC 205	144.3	0.4	29.91	8.9	374.9
LC 205HV	144.3	0.1	29.92	8.9	374.9
LC 305	215.0	0.4	29.91	11.5	396.9
LC 305HV	215.0	0.1	29.92	11.5	396.9
LB 5WR	3.5	7.5	29.63	0.6	27.6
LC 25WR	17.1	3.0	29.80	1.2	56.2
LC 40WR	28.3	3.0	29.80	1.8	92.6
LC 60WR	42.4	3.0	29.80	2.4	97.0
LC 106WR	74.8	3.0	29.80	3.6	156.6
LC 151WR	106.6	3.0	29.80	5.0	177.5
XC 405	241.5	0.4	29.91	2x 8.9	992.3
XC 605	359.3	0.4	29.91	2x 11.5	1036.4
XC 905	538.9	0.4	29.91	3x 11.5	1631.7

OIL SEALED VACUUM PUMPS

NOMINAL CAPACITY: 1.2 – 35.3 CFM



High vacuum pumps are used when the final absolute pressure required is very low. These pumps may run continuously connected to closed containers to be emptied, and may not run continuously at length, at atmospheric pressure. The exhaust from these pumps is not filtered, thus, special purifiers are available for fumes.

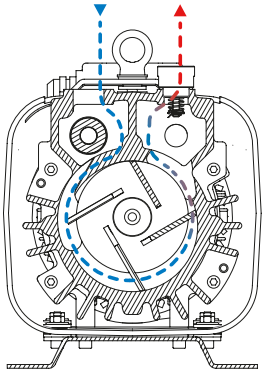
The operating principle of these pumps is similar to that of the lubricated pumps.

These kind of pumps can be made of a single rotor-stator group and are called Single Stage; or they can be made of two rotor-stator groups connected in series so the first group drain is connected to the second group intake system. The latter are called Double Stage.

MODEL	NOMINAL CAPACITY (CFM)	TOTAL FINAL PRESSURE (Torr)	(inHg)	MOTOR POWER (HP)	WEIGHT (Lbs.)
RD 2D	1.2	< 0.375	< 29.90	0.2	11.0
RC 4M	2.7	0.075	29.92	0.5	19.8
RC 4D	2.7	0.008	29.92	0.5	22.1
RC 8M	5.6	0.075	29.92	0.5	22.1
RC 8D	5.6	0.008	29.92	0.5	24.7
RC 4MSM	2.7	0.075	29.92		9.9
RC 4DSM	2.7	0.008	29.92		12.1
RC 8MSM	5.6	0.075	29.92		13.2
RC 8DSM	5.6	0.008	29.92		15.4
RC 50M	35.3	0.038	29.92	1.8	73.9
DB 2D	1.4	0.004	29.92	0.4	22.1
DC 4D	3.8	0.004	29.92	0.9	43.0
DC 8D	5.7	0.004	29.92	0.9	45.2
DC 16D	10.0	0.004	29.92	0.9	49.6

OIL-FREE ROTARY VANE PUMPS

NOMINAL CAPACITY: 3.5 – 88.4 CFM



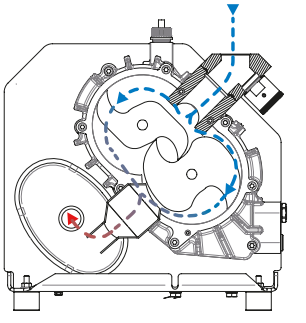
These pumps consist of a rotor in an eccentric position rotating inside a cylindrical body. This rotor is equipped with grooves in which the vanes are inserted. As a consequence of the centrifugal force, during the rotation the vanes are pushed into contact with the body, creating close spaces that increase their volume drawing air from the container to be emptied and expelling it from the "outlet duct".

Oil-free rotary vane pumps can run continuously both at atmospheric pressure and at the highest vacuum. However, they cannot be used when the aspirated air contains moisture, oil or other traces of liquid. All versions can be used as compressors.

MODEL	NOMINAL CAPACITY (CFM)	TOTAL FINAL PRESSURE (Torr)	(inHg)	MOTOR POWER (HP)	WEIGHT (Lbs.)
SC 5	3.5	90.0	26.38	0.2	11.9
SC 8	5.3	112.5	25.50	0.4	18.7
SC 8CC	4.7	112.5	25.50	0.4	24.3
SB 10	7.1	90.0	26.38	0.6	30.9
SB 10TV	7.1	90.0	26.38	0.6	30.9
SB 12	8.2	90.0	26.38	0.6	29.8
SB 16	11.2	90.0	26.38	0.9	60.6
SB 25	17.1	90.0	26.38	1.2	62.8
SB 40	28.3	90.0	26.38	2.4	82.7
SC 5CC-24VDC	2.9	112.5	25.50	0.1	9.9
SC 60	41.2	90.0	26.38	2.4	145.5
SC 80	53.0	90.0	26.38	3.6	156.6
SC 100	67.7	90.0	26.38	5.0	191.8
SC 140	88.4	90.0	26.38	5.9	209.5
CB 10	7.1			0.6	30.9
CB 12	8.2			0.6	29.8
CB 16-1	11.2			1.2	63.9
CC 60-1	41.2			3.6	154.4
CC 80-1	53.0			5.0	163.2
CC 100-1	67.7			5.9	205.1
CC 140-1	88.4			8.9	213.9

CLAW PUMPS

NOMINAL CAPACITY: 109.6 – 176.7 CFM



Claw Pumps create air volume and transfer it through the intake duct to the outlet duct by means of the rotation of two claw shaped rotors in a moulded chamber.
The dry running contactless rotation of the rotors is synchronized by gears without any lubricant present, thus avoiding any residue generated by friction or rubbing during rotation.
The gear wheels themselves are lubricated with oil and are enclosed in two compartments separated from the rotation chamber by gaskets.

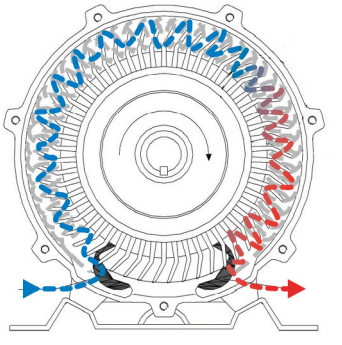
Claw Pumps guarantee low operating costs thanks to moderate energy consumption and high efficiency. Maintenance is minimized and the level of performance is maintained for longer by virtue of the lack of friction between the moving rotors. All versions can be used as compressors.

MODEL	NOMINAL CAPACITY (CFM)	TOTAL FINAL PRESSURE (Torr)	(inHg)	MOTOR POWER (HP)	WEIGHT (Lbs.)
PA 155	109.6	112.5	25.50	4.8	297.7
PA 315	176.7	150.0	24.02	8.7	441.0
VA 155	109.6			8.7	321.9
VA 155-1	109.6			12.3	324.1
VA 315	147.3			10.1	352.8
VA 315-1	147.3			12.3	390.3
CPAP 2x155	182.6	112.5	25.50	2x 4.0	1146.6
CPAP 2x315	294.5	150.0	24.02	2x 7.4	1256.9
CPAP 3x155	273.9	112.5	25.50	3x 4.0	1455.3
CPAP 3x315	441.8	150.0	24.02	3x 7.4	1609.7

BLOWERS

NOMINAL CAPACITY: 35.3 – 765.7 CFM

The operating principle of the Blowers is pretty simple: a small wings equipped rotor rotates inside a stator. Small vortexes of air created by the centrifugal force and the rotation are dragged by the vanes from the aspiration toward the drain. There are no parts in contact, thus the Blowers do not require routine maintenance but, since the intake air is also used as cooling fluid, they can operate continuously only within certain ranges of pressure. To prevent a damage of the engine it is indeed necessary to install vacuum and pressure limiting valves.



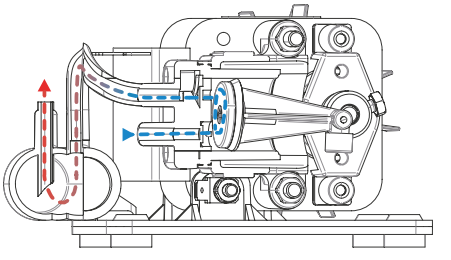
This product is very versatile and is not particularly delicate. If used as a compressor, the output flow is clean and free of pulsations.

MODEL	1~	3~	NOMINAL CAPACITY (CFM)	MOTOR POWER (HP)	VACUUM (inH_2O)	PRESSURE (inH_2O)	WEIGHT (Lbs.)
TSC 40	*	*	35.3	0.3	-30.1	32.2	15.4
TSC 80	*	*	63.6	0.6	-56.3	68.3	26.5
TSC 150	*	*	103.1	1.2	-56.3	56.3	38.4
TSC 150-1		*	103.1	2.0	-82.4	88.4	41.9
TSC 210	*	*	147.3	2.4	-84.4	88.4	58.2
TSC 310		*	212.0	3.6	-88.4	88.4	82.5
TSC 310-1		*	212.0	4.8	-112.5	112.5	88.2
TSC 310-2		*	212.0	6.4	-120.6	120.6	90.4
TSC 550		*	388.7	8.7	-112.5	104.5	183.9
TSC 550-0		*	388.7	6.2	-72.3	80.4	183.9
TSC 550-1		*	388.7	12.1	-124.6	120.6	198.5
TSC 1100		*	765.7	14.8	-80.4	72.3	269.0
TSC 1100-1		*	765.7	20.1	-116.6	116.6	293.3
TDC 80	*	*	63.6	1.2	-98.5	98.5	37.5
TDC 150	*	*	103.1	2.4	-120.6	128.6	65.9
TDC 150-1		*	103.1	3.6	-140.7	174.8	71.7
TDC 210		*	147.3	4.8	-160.8	140.7	96.1
TDC 210-1		*	147.3	6.4	-164.8	201.0	99.7
TDC 310		*	212.0	6.4	-156.8	156.8	123.5
TDC 310-1		*	212.0	8.7	-168.8	209.0	127.9
TDC 550		*	388.7	12.1	-132.6	124.6	264.6
TDC 550-1		*	388.7	17.4	-180.9	241.2	328.5

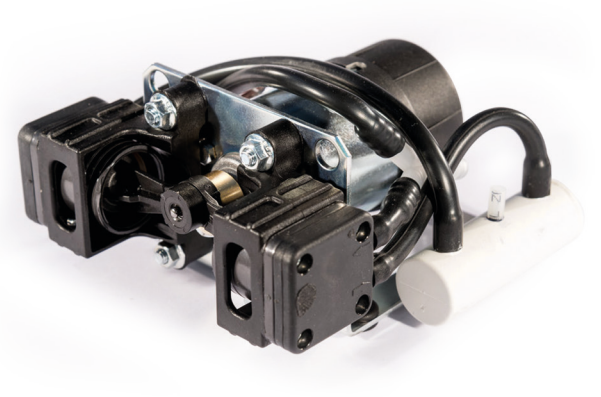
PISTON PUMPS

NOMINAL CAPACITY: 0.4 – 7.9 CFM

Piston Pumps may be used in presence of moisture and have no particular restrictions on use. Versions are also available with safety guard and intake filter for use as mobile units. The operating principle of Piston Pumps is based on a piston that alternatively moves in a cylinder. The cylinder is equipped with valves that inhale air and exhale it outside. If used as compressors, these pumps create a pulsating flow that requires the presence of a reservoir.



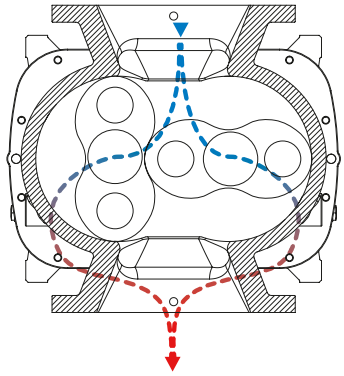
MODEL	NOMINAL CAPACITY (CFM)	TOTAL FINAL PRESSURE (Torr)	(inHg)	MOTOR POWER (HP)	WEIGHT (Lbs.)
ZA 12	0.5	157.5	23.73	1.1	2.9
ZA 12CC	0.4	187.5	22.55	0.4	1.3
ZA 12C	0.5			1.1	2.9
ZA 12C-CC	0.4			0.4	1.3
ZA 15S	0.6	37.5	28.45	1.9	4.0
ZA 20CC	0.8	187.5	22.55	0.5	1.4
ZA 30CC	1.3	112.5	25.50	0.6	1.8
ZA 30P	1.2	150.0	24.02	1.9	4.2
ZA 32	1.3	82.5	26.68	2.7	15.7
ZA 60S	2.5	22.5	29.04	3.6	19.2
ZA 100P	4.2	60.0	27.56	3.6	19.6
ZA 32 BOX	1.3	82.5	26.68	2.7	29.8
ZA 60 BOX	2.5	7.5	29.63	3.6	33.7
ZA 100 BOX	4.2	45.0	28.15	3.6	33.7
ZA 200P	7.9	45.0	28.15	7.8	25.4



LOBE PUMPS

NOMINAL CAPACITY: 196.7 – 2040.9 CFM

The volumetric Lobe Pumps are equipped with two lobe rotors having a singular geometrical shape that emphasizes the positive aspects of this design and annulling the negative ones (i.e.: gas recirculation). Moreover, the shaft sealing is ensured by a dynamic gasket preventing any leakage.



These pumps should always be used together with a primary pump increasing the total flow rate at low operating pressures and reaching a great improvement of the final pressure. The new CBL Systems are equipped with the innovative AdaptShield technology.

AdaptShield is a new device that optimally manages the functioning of CBL systems by guaranteeing the automatic protection of the BCA lobe pump and the primary lubricated pump in case of critical events such as plant leaks, loss of performance and over temperature. AdaptShield optimizes the absorbed energy according to system conditions and ensures improved performance. Everything is under control with AdaptShield, even from a smartphone with the app that monitors the operating parameters, error individualization and remote support.

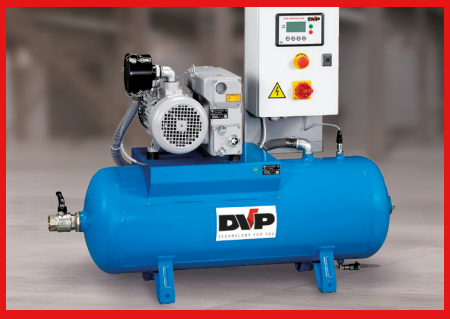
MODEL	NOMINAL CAPACITY (CFM)	MAX PRESSURE DIFFERENCE (Torr)	(inHg)	MOTOR POWER (HP)	WEIGHT (Lbs.)
BCA 300	196.7	60.0	27.56	2.0	187.4
BCA 500	356.3	60.0	27.56	4.0	286.7
BCA 1000	712.7	60.0	27.56	5.4	529.2
BCA 1500	1013.1	49.5	27.97	7.4	595.4
BCA 2000	1445.4	37.5	28.45	10.1	793.8
BCA 3000	2040.9	30.0	28.74	14.8	882.0

MODEL	PRIMARY PUMP	CAPACITY @ 3.75 torr	(inHg)	LOBE PUMP	FINAL PRESSURE Torr	(inHg)	INSTALLED POWER (HP)	WEIGHT (Lbs.)
CBL 106/300	LC 106	185÷218	22.66÷21.37	BCA 300	0.005	0.0002	5.1	454.2
CBL 205/500	LC 205	346÷405	16.32÷13.99	BCA 500	0.007	0.0003	11.8	771.8
CBL 305/1000	LC 305	654÷767	4.20÷-0.23	BCA 1000	0.007	0.0003	17.4	1036.4
CBL 2x305/1500	2x LC 305	989÷1170	-8.99÷-16.10	BCA 1500	0.007	0.0003	29.5	1667.0
CBL 2x305/2000	2x LC 305	1335÷1583	22.59÷-32.33	BCA 2000	0.007	0.0003	31.5	1865.4
CBL 3x305/3000	3x LC 305	1962÷2344	-47.22÷-62.27	BCA 3000	0.007	0.0003	46.3	2350.5

SYSTEMS

The Systems are designed and manufactured to be used in all the same applications as the individual pumps, and mainly in centralized vacuum systems, as units suitable for creating and maintaining a certain vacuum within the system that allows proper operation of the equipment connected to it.

The installation of a central production vacuum is advantageous especially in terms of energy savings, because the pumps automatically switch on only when needed by the user.



Industrial Systems

The pump reservoir group series CPV have been designed for a wide range of application needs, and are available in various versions. These products are equipped with a control panel controlling the pressure inside the receiver and guiding the pump start-up. The panels also include the hour counter and the pump wear balancing device.

MODEL	2.1 U.S. GAL	6.6 U.S. GAL	26.4 U.S. GAL	79.3 U.S. GAL	132.1 U.S. GAL	264.2 U.S. GAL
LC 4	1X					
LB 5		1X *				
LC 12		1X				
LC 25		1X *	1X	1X / 2X / 3X	3X	
LC 40		1X *	1X	1X / 2X	1X / 2X / 3X	
LC 60		1X *	1X	1X / 2X	1X / 2X / 3X	
LC 106			1X	1X	1X / 2X / 3X	3X
LC 151						3X
LC 205				1X	1X	2X / 3X
LC 305				1X	1X	2X / 3X

1X = Simplex; 2X = Duplex; 3X = Triplex

** WR version pump*

Hospital Systems

These vacuum hospital systems are mainly used in hospital environment. The pumps installed on these systems are controlled by a panel divided into two sections. The main section, managed by the PLC, controls the start up, checks the operation parameters and the manual or automatic pump operation. The second section checks the automatic or manual operation of the emergency pump.

MODEL	TANK CAPACITY 79.3 U.S. GAL	132.1 U.S. GAL	264.2 U.S. GAL	ANTIBACTERIAL FILTER UNITS
LC 25	3X	3X		GFB 51
LC 40		3X		GFB 80
LC 60		3X		GFB 121
LC 106		3X	3X	GFB 121
LC 151			3X	GFB 201
LC 205			3X	GFB 201
LC 305			3X	GFB 201

1X = Simplex; 2X = Duplex; 3X = Triplex

TECHNOLOGY FOR YOU

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