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# Technology for you

Technology is the engine of the world, the linchpin that helps to improve the lives of us all. Technology is the soul of our Company inspiring a corporate culture based on three key points:

- listening to customers and responding by realizing a product specifically tailored to their needs;
- professionalism which translates into research, development and innovation;
- value of the person who is involved at every stage of the production process and puts man at the centre of our objectives.

For DVP, people are always at the centre of our concern and our focus.

Our technology is for you.

**Company**



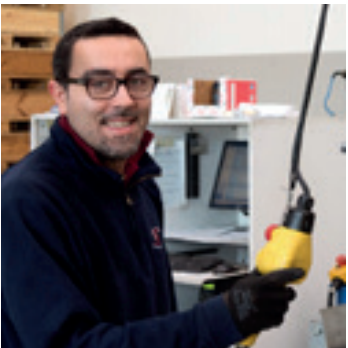
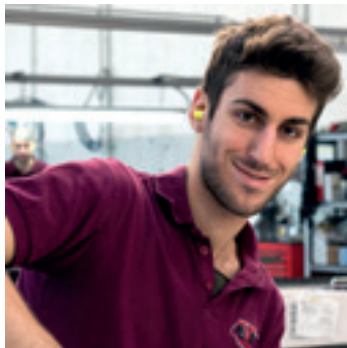
# PEOPLE

*A precious resource for a company.*

Our people with their organizational skills represent our most valuable asset. For such reasons, our day to day work must be based above all on trust, proactiveness and interaction.

We encourage the work ethic which expects everyone to take responsibility both for their individual tasks and as part of a team. All those working for DVP from the most senior manager to the most junior intern are indispensable cogs in the wheel and define our business and style.

Both the social and professional relationship between individuals drive the group for the success of the Company.







## THERE IS A KNOWLEDGE IN OUR HANDS

*An international success that combines craftsmanship with industrial practice.*

Ours is an history of both practical and applied knowledge. A know-how that over time has developed products of increasing quality transformed by the genius of craftsmanship into industrial practice transforming intuition into a brand. Every technical or constructive detail belongs to us; we are involved in development in the industry and we share the aspirations of our customers.

Ours is the story of success, gradual yet unstoppable born from two typical areas of Italian expertise: craftsmanship and industrial practice and developed over the last 40 years through a close relationship between our customer and our technical resources.

A story that unfolds around the world. Headquartered in San Pietro in Casale, Bologna, the Company also has subsidiaries in Europe and in Central America and is present on all continents with a comprehensive network of sales and customer service reflecting a high capacity for further development.





## PRODUCTION PROCESSES

*From craftsmen to production process engineers.*

DVP has been operating for almost 40 years in its plants based in San Pietro in Casale (Bo), producing vacuum pumps and compressors for use in several fields such as chemical, environment, health, food and many others. Here, each stage of the production cycle is managed carefully in order to meet its strict standards.

The system design is optimised by using the latest generation operating system, thus reducing the time to market, whilst our innovative flow simulation software is able to identify technical problems in temperature, pressure, noise, vibration, wear and tear, as early as the design phase.

Processing uses FMS centres and our fully automated turning stations, connected to the business ERP system forecasts the availability of components, to simulate changes in the processes necessary to meet customers' requirements and achieve maximum production flexibility. The coating is realized within a fully automated plant, using water based ecological paints. Our quality control covers every stage of the process and each individual product and records the results before it is released to the shipping department.

Our customer relations are managed by advanced CRM and business intelligence software by the network of regional agents, distributors, subsidiaries, both in Europe and worldwide. Post-sales service support is guaranteed by our internal technical staff and our sales staff, who are always up to date with our refresher courses and retraining. Our after-sales support activity is recorded and analysed and thus generates statistics used by Research and Development in order to implement continuous improvement.

Our company embraces the most advanced dynamic industrial organisation allowing us to respond to the most ambitious goals in harmony with our customers and responding to them in real time.

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# Applications



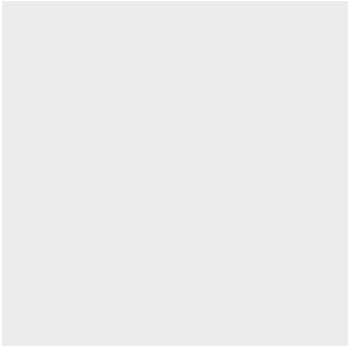
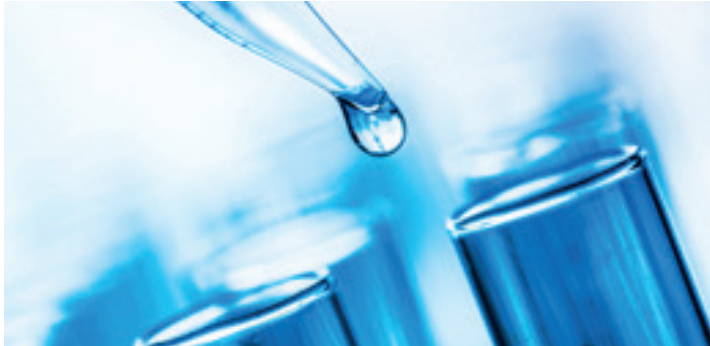
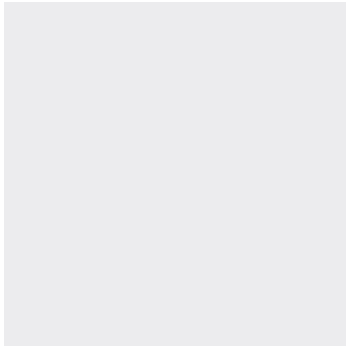
# APPLICATIONS

*In every field to improve the quality of life for all.*

Environment, chemical, health, food processing, plastics, packaging, glass, metallurgy, ceramics, printing and many others. DVP products can be found in every industrial sector. Of this we are justifiably proud because the wide use of our pumps and our compressors is the sign of a technology that helps the production process making it safe and efficient it is for Man.

For us, we are not just spectators but architects both inside and outside the business. Our personal work tasks have a collective aspect and the Company has a social aspect. This is our idea of what a company should be. Giving our best to create a better life for everyone.

Thus the “vacuum” that our machines create generates the “plenum” of life. From the environmental to the chemical industry, from health to food processing and many others.





# TECHNOLOGY FOR ENVIRONMENT

## Environment

*Useful tools for water, waste and solar power.*

Vacuum technology can be very useful in order to protect and preserve the environment.

In this sector DVP has a specific response. Our products are used for many different applications such as the oxygenation and purification of waste water, landfill sites, and solar panels construction.

Our technology also makes an important contribution in compressors for biogas digesters, extraction of gas pollution from soil and in many other fields.



■ Claw Pump PA.155



■ Oil Free Rotary Vane Pump SC.140





# TECHNOLOGY FOR CHEMICAL INDUSTRY

## Chemical Industry

*From solid to liquid to gas: vacuum uses and applications.*

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

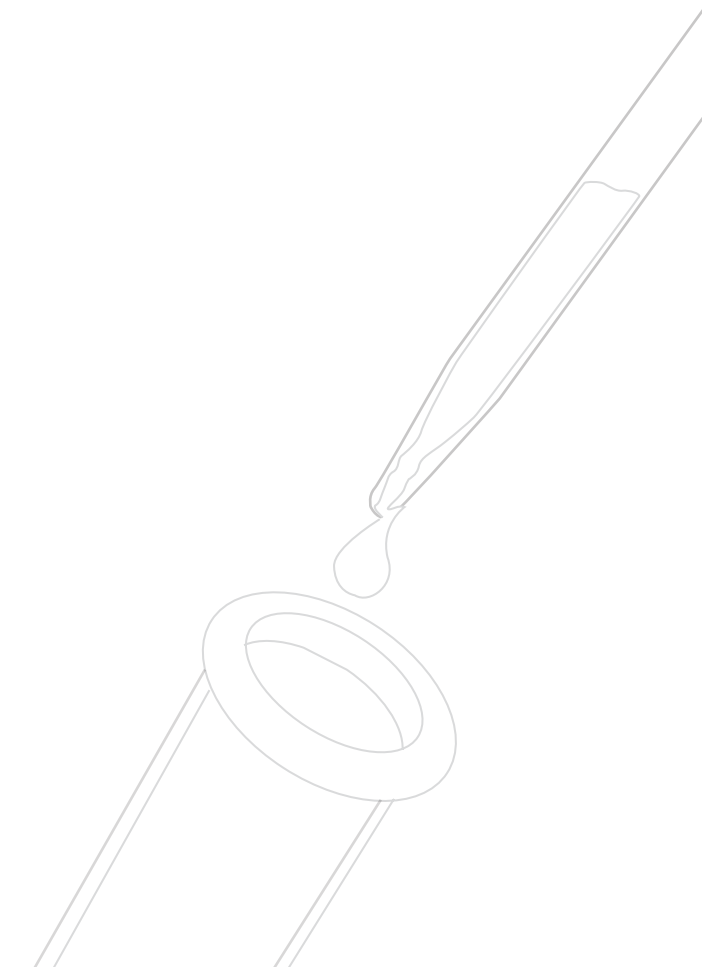
Among the recommended uses for vacuum pumps are distillation, drying and degassing. DVP technology can also be used for the evaporation of thin layers and for coating.



■ Oil Lubricated Vane Vacuum Pump  
LC.20



■ Oil Lubricated Vacuum Pump  
RC.50M





## TECHNOLOGY FOR FOOD AND BEVERAGE

### Food and Beverage

*Vacuum and its “flavours”.*

The food sector and bottling are some of the fields where vacuum technology is principally used. We can always find a vacuum pump in the most common applications like food processing or ovens. But we can also find them in more specific applications such as the humidification of tobacco, cleaning vegetables, ham drying, aeration of potatoes, salmon processing machines, sausage making machines.

Other uses are in dairy processing, coffee roasting and sugar production. Each of these fields uses the vacuum technology in which DVP has over 40 years' experience.



■ Oil Lubricated Vane Vacuum Pump  
LC.106



■ Oil Free Vane Vacuum Pump SB.16







TECHNOLOGY FOR  
PACKAGING INDUSTRY

## Packaging

*Vacuum packing.*

Vacuum technology is essential in food packaging: in filling and sealing machines, in food packing and food processing, and in the production of PET containers. DVP technology is also used in more specific sectors like the removal of waste and packing in different atmospheric conditions.

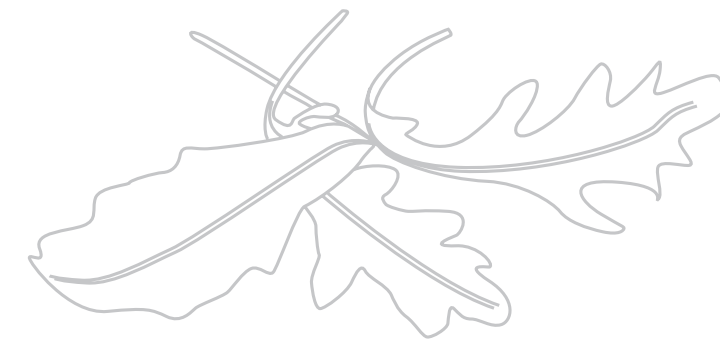
Vacuum technology is also essential in non-food packaging. Air cushion machines, blister machines, filling and sealing machines tub sealing and production of paper bags are only few of the applications where it's easy to find a DVP vacuum pump.



■ Oil Free Vane Pump SC.140



■ Oil Lubricated Vane Pump LC.60







## TECHNOLOGY FOR PARTS CLEANING INDUSTRY

### Industrial Cleaning

*Cleanliness improves your productivity.*

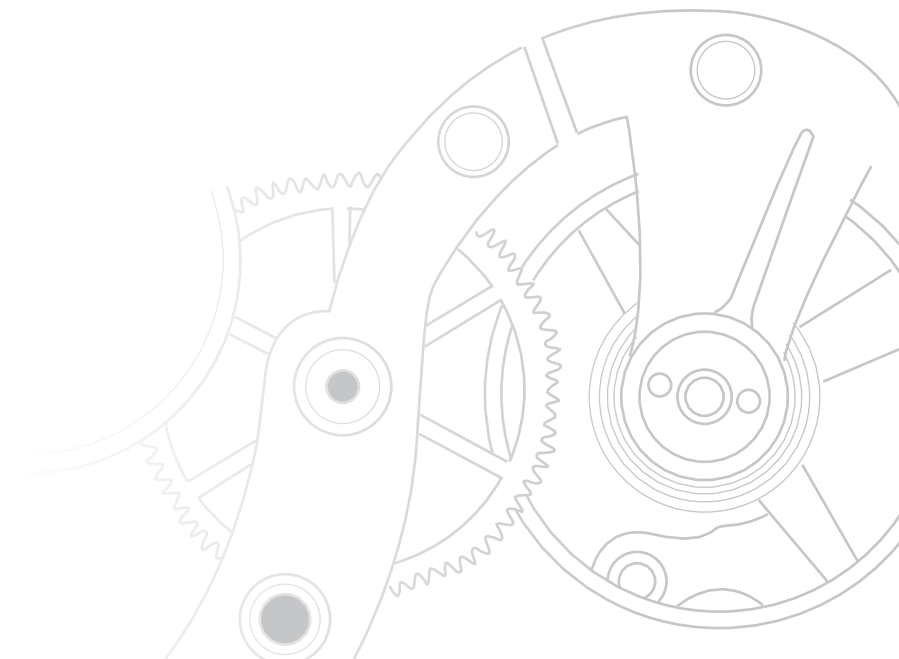
Residual dirt can compromise the functioning and safety of a product; moreover, the sequential processes of the production line require a clean surface. For these reasons vacuum technology can be used for cleaning specific industrial components: de-oiling under vacuum, sandblasting, dry cleaning, vacuum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



■ Oil Lubricated Vane Pump  
LC.40WR



■ Oil Bath Vacuum Pump DC.8D







## TECHNOLOGY FOR PLASTIC AND RUBBER

### Plastic, Rubber and Resin

*From clingfilm to composite materials.*

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.



■ Oil Lubricated Vane Vacuum Pump  
LC.20



■ Claw Pump PA.155





## TECHNOLOGY FOR PAPER AND PRINTING INDUSTRY

## Printing and Paper Industry

*Paper comes to life.*

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.

DVP's experience guarantees the use of advanced products in this sector too.



■ Oil-Free Vane Vacuum Pump SB.25



## TECHNOLOGY FOR CLAY AND CERAMIC INDUSTRY

### Ceramics

*A necessary step, with DVP it's better.*

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, designed by our researchers and which can also be used in post-production and in the pick and place of products and materials.



■ Oil Lubricated Vane Vacuum Pump  
LC.40WR





# TECHNOLOGY FOR GLASS, STONE, WOODWORKING INDUSTRY



## Glass, Stone, Wood

*CNC Routing Machines and much more.*

*Versatility on the fringe of Art.*

Vacuum technology is very important in glass, stone and wood processing, especially for CNC (computer numerical control) routing machines.

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. In this sector DVP technology has always been successful and our strong market position has been achieved through the strength of our results over the years.



■ Oil Lubricated Vane Vacuum Pump  
LC.40WR



■ Oil-Free Vane Vacuum Pump  
SC.140







## TECHNOLOGY FOR MEDICAL INDUSTRY

### Medical Industry

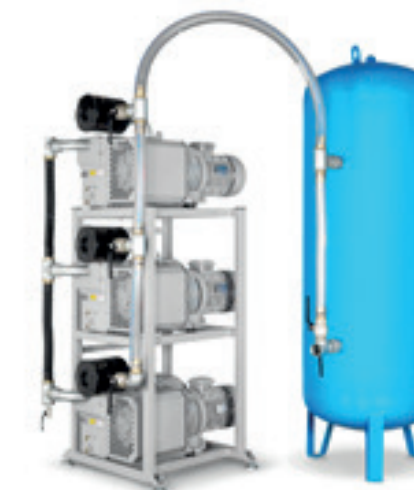
*Pneumatic beds, surgery aspirators, autoclaving.  
All the best for our health.*

Vacuum technology plays a main role in the production of and accessories used in the medical field. Our contribution to health is something we are very proud of.

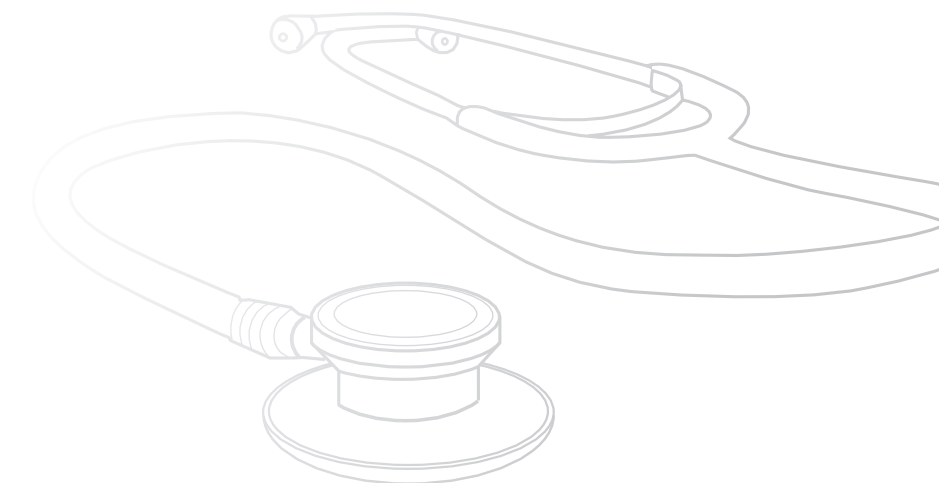
Pneumatic beds, chair hoists, central vacuum systems, steam sterilisers (autoclaving), technical and medical respiratory devices and surgical aspirators are only some of the products we manufacture using vacuum technology. Vacuum is also very important in the dentistry and orthopaedics sectors.



■ Rocking Piston Pumps ZA.20CC



■ Portable Vacuum Systems  
CPA.3H x 305





## Pneumatic Conveying

*Your productivity is in movement.*

Vacuum pumps and compressors play a main role in the pneumatic conveying field using both aspiration and compression.

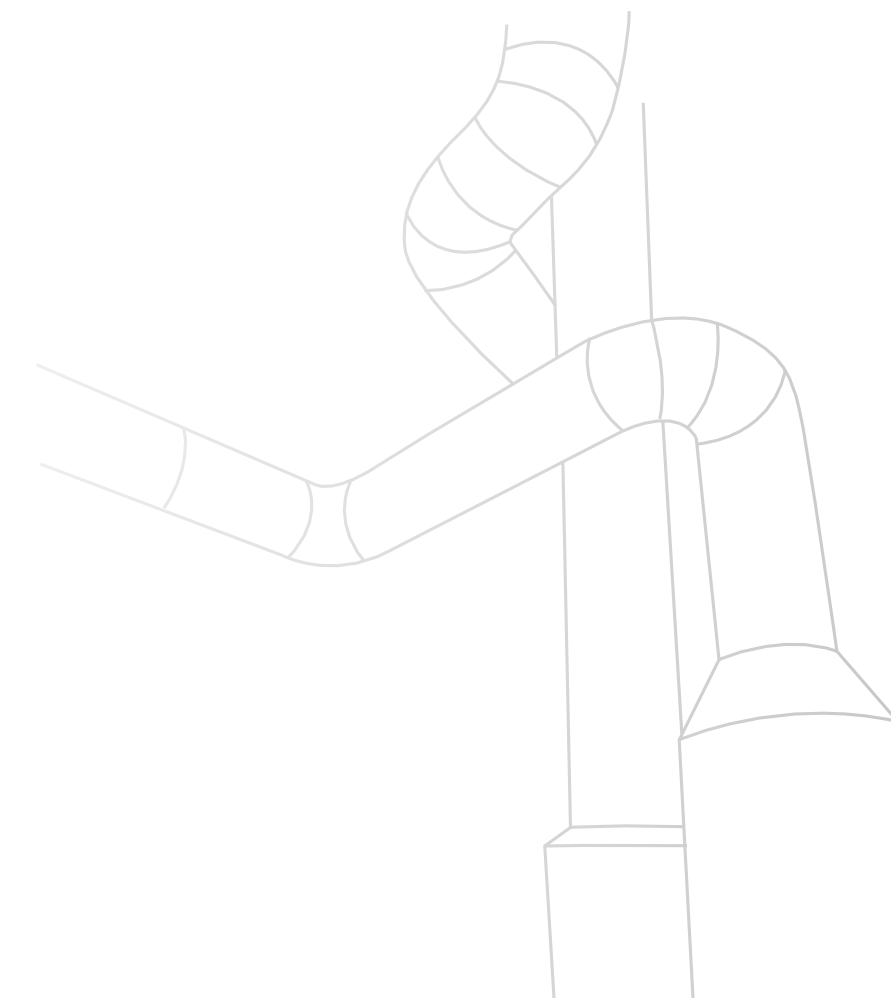
Our 40 years' experience allows us to respond to all requests, ensuring quality and efficiency.



■ Oil-Free Vane Vacuum Pump  
SC.140



■ Claw Pump PA.155



TECHNOLOGY FOR  
CONVEYING



# TECHNOLOGY FOR CONDITIONING AND REFRIGERATION INDUSTRY

## Refrigeration and Air-Conditioning

*Protecting the environment, ensuring functionality.*

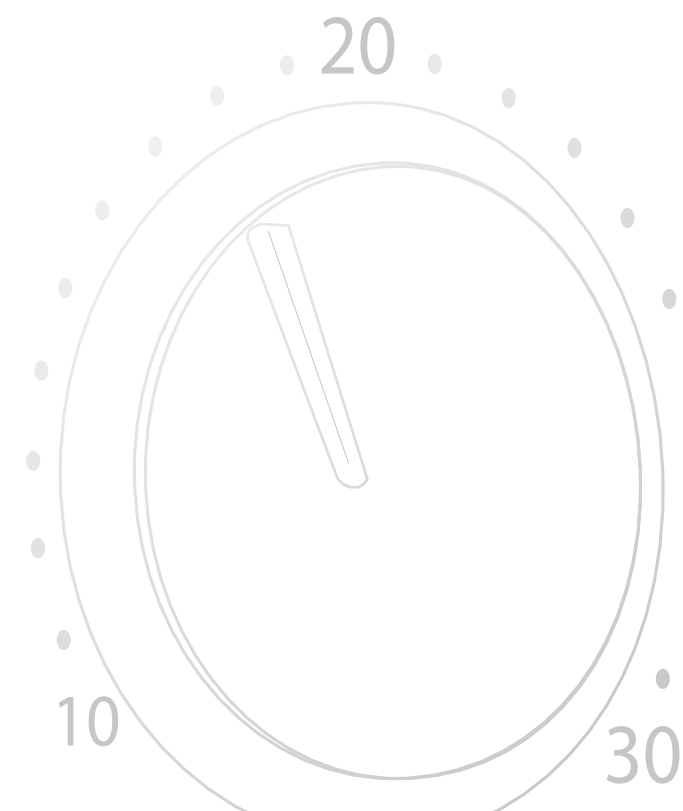
In the refrigeration and air-conditioning field, DVP vacuum pumps play a major role. They are used both in the residential and automotive sectors to aspirate air and eventual moisture to guarantee proper functioning of the air-conditioning.



■ Oil Bath Vacuum Pump RC.8D



■ Oil Bath Double Stage Vacuum Pump DC.4D







## TECHNOLOGY FOR METALLURGICAL APPLICATIONS

### Metallurgy, Metallization, Semiconductors

*Because every metal is precious.*

DVP has developed a series of products that efficiently answer market needs. A continuous research and development process ensures a standard top level position for our products.

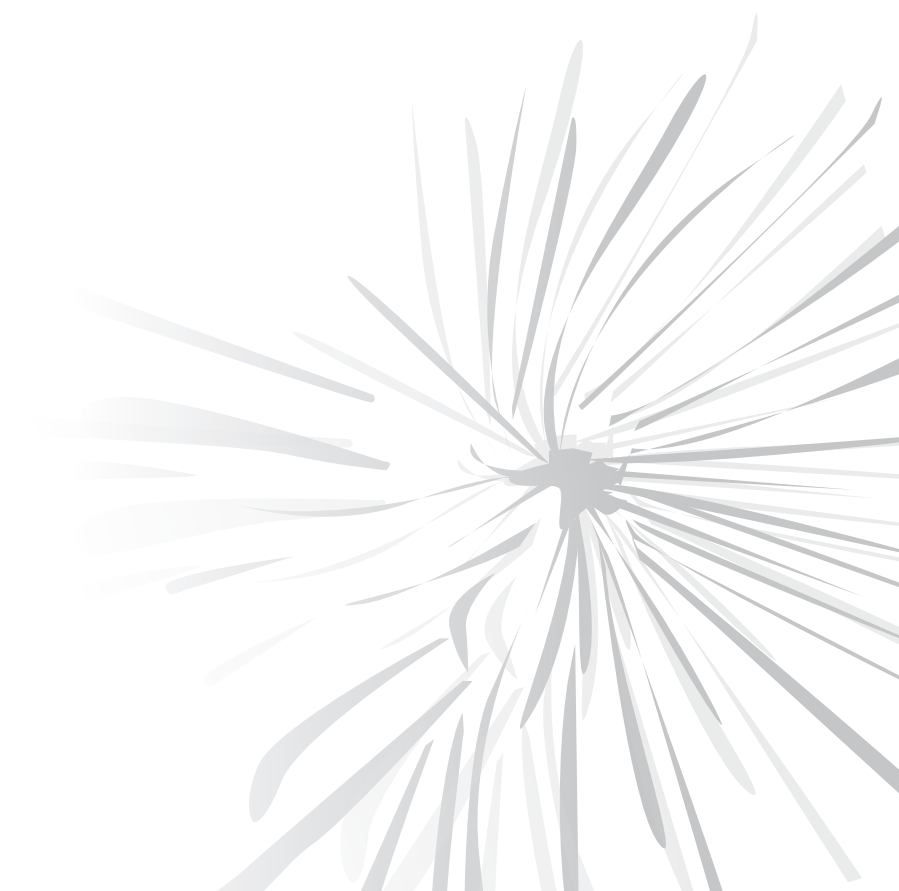
Some of the fields where pumps or compressors are found: particle accelerators, dactyloscopy (fingerprint analysis), optoelectronics, tribology. Other applications include: glass coating, magnetic storage, optical coating, decorative coating, optical storage, Glove Box applications, welding technology.



■ Oil Lubricated Vane Vacuum  
Pump LC.60



■ Oil Bath Vacuum Pump DC.8D.







## TECHNOLOGY FOR ANALYTICAL FIELD

### Analytical Field

*From microbiology to the immensity of space.*

There are three macro-groups in the analytical sector: organic, inorganic, biological.

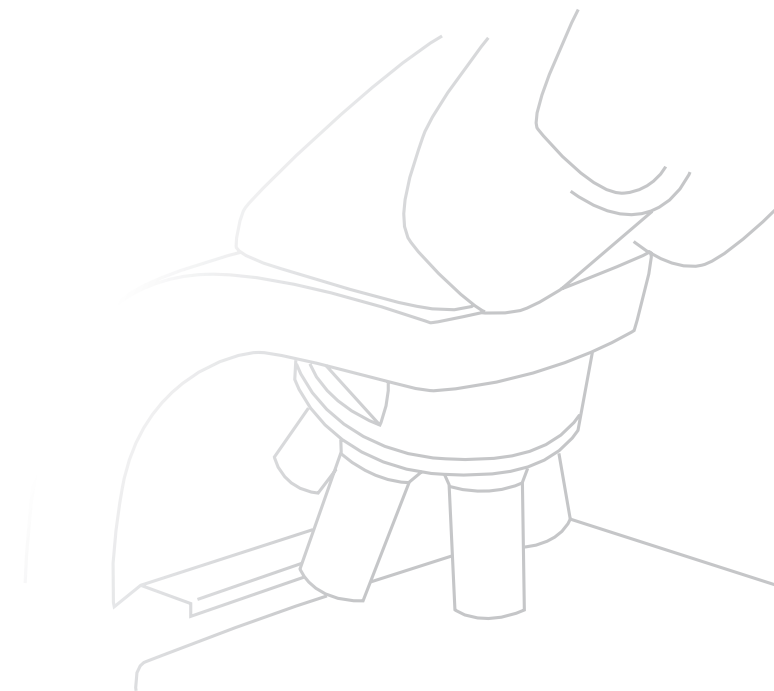
DVP vacuum technology can be applied in some fields of the analytical sector: laser, leak detectors, freeze dryers, mass spectrometers and chromatography, laboratory autoclaves, microscopy, space simulators, under vacuum distillers, gel dryers, centrifuges and laboratory autoclaves.



■ Oil Bath Vacuum Pump DC.16D



■ Oil Bath Vacuum Pump RC.4M

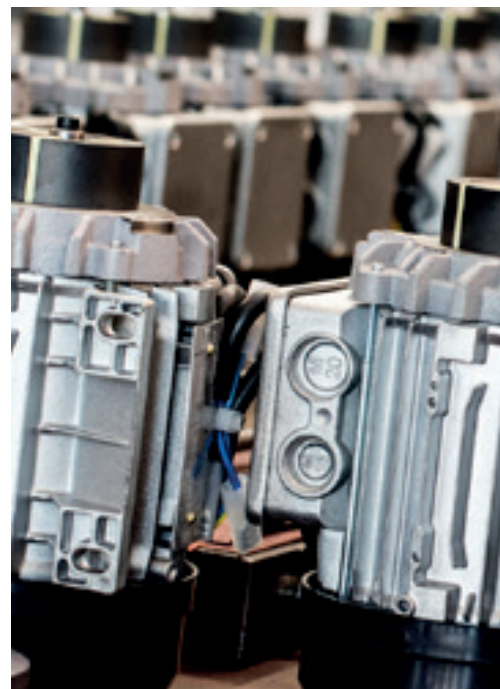




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# Technologies





## TECHNOLOGIES

### *Tools for better living.*

It is the invention that translates into action, the intuition that becomes application, the individual that multiplies. With a new perspective, technology becomes the projection of the machine, - the object, the tool in the life of humankind.

Here in DVP we believe that technology represents an unique opportunity to promote the growth of the individual and the community.

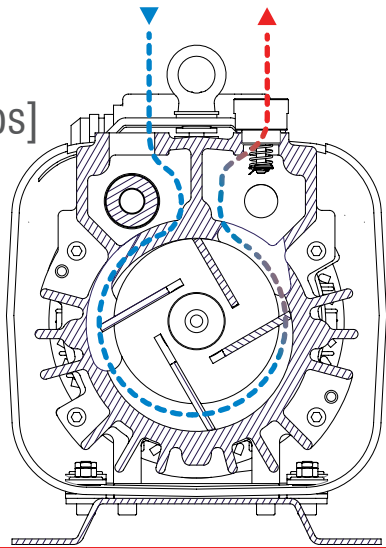
For us, the whole production process for which we give our enthusiasm and energy on a daily basis, is the way that we are able to make the wheels turn, and transform mechanisms, skills, passions and specificity into thousands and thousands of applications that make life better for individuals and contribute to the progress of society as a whole.

Our products provide benefits to the environment, food, health, agriculture, housing, communications, electronics and many other fields. This makes us proud but also aware of the responsibility that each day translates into research, commitment, professionalism, caring.

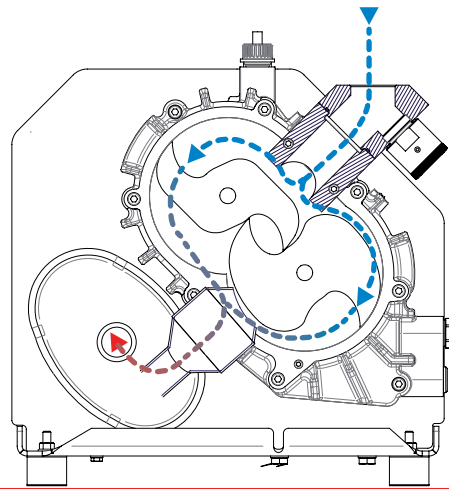
The technology is the way that man has invented to improve life; we all have a space, a dimension, a profile. We reside there with the aim of giving back in return the contribution of our values.



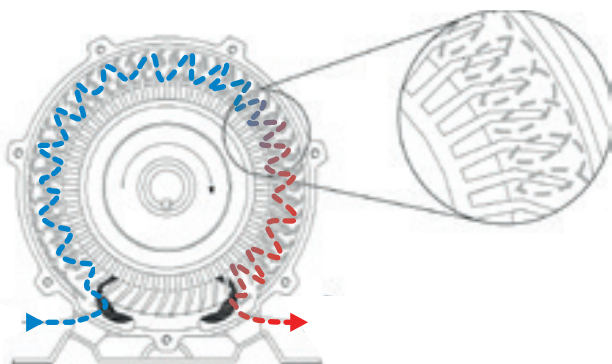
[oil free rotary vane pumps]



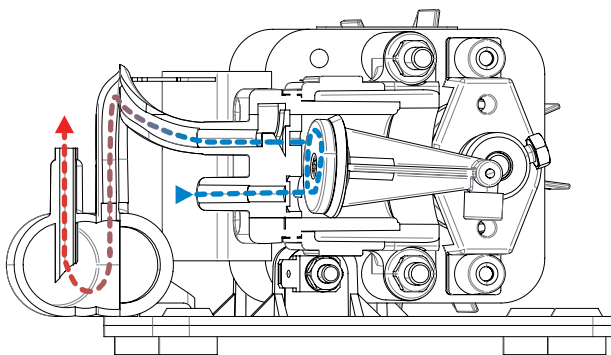
[claw pumps]



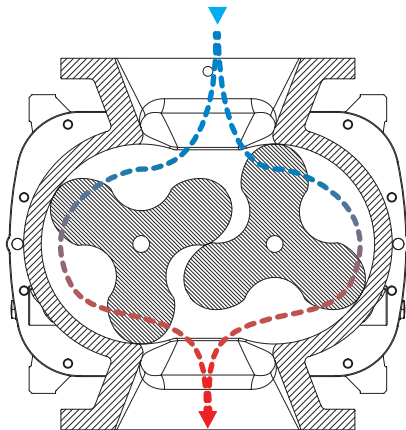
[blowers]



[piston pumps]



[lobe pumps]



# 1. DRY VACUUM PUMPS

- Oil free rotary vane pumps
- Claw pumps and compressors
- Blowers
- Piston pumps
- Lobe pumps

Dry Vacuum Pumps can run continuously exclusively with clean, dry air. Unlike other kinds of pumps, the dry rotary vane pumps can run at any pressure.

Maintenance is very easy and consists of replacing the vanes and cleaning the filters.

The main application fields include: suction cup movements, automatic machines, packing machines, woodworking machines, vacuum presses for wood or plastic, money counting machines. In the field of construction these pumps are used for plaster mixing, painting systems and pneumatic conveying.

Dry vane vacuum compressors have no particular restrictions on their use, except for the maximum operating pressure which should not exceed the rated value. For this reason it is always recommended that a safety valve be used.



DRY VACUUM PUMPS



SC.140

Oil Free Rotary Vane Pumps

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”. If used as a compressor, the aspirated air is channelled to the drain.

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. The advantage of rotary compressors is that a certain pressure they supply air without pulsations. Thus, they don't need a storage tank.

The oil free rotary pumps SC.60 140 can be accessorised with a FBX-S noise reduction box upon request.

OIL FREE VANE VACUUM PUMPS

	mbar(abs)	bar 50/60 Hz	m³/h @ 50/60 Hz	kW @ 50/60 Hz	kg
SB.6	120		6/7	0,25/0,3	7,5
SB.6TV	120		6/7	0,25/0,3	7,5
SB.10	120		10/12	0,37/0,45	14
SB.10TV	120		10/12	0,37/0,45	14
SB.12	120		12/14	0,37/0,45	13,5
SB.16	120		16/19	0,55/0,66	27,5
SB.25	120		25/29	0,75/0,9	28,5
SB.40	120		40/48	1,5/1,8	37,5
SC.5	120		5/6	0,12/0,15	5,4
SC.5CC-24VDC	150	0,5	5	0,09	4,5
SC.60	120		60/70	1,5/1,8	66
SC.80	120		80/90	2,2/2,7	71
SC.100	120		100/115	3,3/3,7	87
SC.140	120		130/150	4/4,4	95
SB.6CC-24VDC	150		6	0,28	9,5
CB.6		0,8/0,8	6/7	0,25/0,3	7,5
CB.10		0,6/0,6	10/12	0,37/0,45	14
CB.12		0,6/0,6	12/14	0,37/0,45	13,5
CB.16		0,6/0,6	16/19	0,55/0,66	27,5
CB.16-1		1/1	16/19	0,75/0,9	29
CB.25		0,6/0,6	25/29	0,75/0,9	28,5
CB.40		0,8/0,8	40/48	1,5/1,8	37,5
CC.60-1		1/0,8	60/70	2,2/2,7	70
CC.80-1		1/0,5	80/90	3,3/3,7	74
CC.100-1		1,3/0,8	100/115	4/4,4	93
CC.140-1		1,1/0,6	130/150	5,5/6,6	97
CB.6CC-24VDC		0,8	6	0,28	9,5



DRY VACUUM PUMPS



PA.155

Claw Pumps  
and Compressors

The new PA.155 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.

PA.155 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. The standard equipment of our new PA.155 Claw pumps includes shock mounts and a vacuum control valve.

CLAW PUMPS					
	mbar(abs)	bar 50/60 Hz	m³/h @ 50/60 Hz	kW @ 50/60 Hz	kg
VA.155		1,2/1,0	155/186	5,5/6,6	146
VA.155-1		2/--	155/--	7,5/--	156
VA.155-1		--/1,8	--/186	--/9	166
PA.155	150		155/186	3/3,6	135
PA.315	150		300/360	5,5/6,6	200



DRY VACUUM PUMPS



K04-MS

Blowers

The operating principle of the blowers is pretty simple: a rotor equipped with small wings 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 only operate continuously within certain ranges of pressure.

To prevent damage to the motor it is 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. The main application fields include: pneumatic conveying, suction cups conveyors, purification or water oxygenation.

SIDE CHANNELS BLOWERS

	1	3	kW @50/60 Hz	m³/h @ 50/60 Hz	mbar @ 50 /60 Hz		Ø inlet/outlet	kg
06R-MS		*	0,2/0,23	55/66	-82/+90	-80/+80	G 1"	7,1
K03-MS		*	0,37/0,43	74/89	-120/+130	-120/+120	G 1" 1/4	12
K03-MS	*		0,37/0,37	74/89	-120/+130	-120/+120	G 1" 1/4	12
K04-MS	*	*	0,75/0,9	137/166	-140/+140	-120/+120	G 1" 1/2	19,5
K04-MS		*	1,5/1,75	137/166	-225/+250	-250/+250	G 1" 1/2	19,5
K04-MS	*	*	1,1/1,3	137/166	-200/+200	-175/+175	G 1" 1/2	19,5
K05-MS		*	1,5/1,7	219/265	-175/+175	-160/+160	G 2"	30,5
K06-MS		*	2,2/2,60	304/366	-180/+180	-150/+150	G 2"	41
K06-MS		*	3/3,5	304/366	-250/+250	-220/+220	G 2"	41
K06-MS		*	4/4,8	304/366	-270/+340	-325/+325	G 2"	41
K08-MS		*	4/4,6	536/647	-180/+180	-150/+150	G 3"	68
K08-MS		*	5,5/6,3	536/647	-275/+275	-250/+250	G 3"	68
K08-MS		*	7,5/9	536/647	-350/+400	-375/+375	G 3"	68
K12-MS		*	9,2/10,6	1022/1234	-150/+150	-100/+100	G 4"	132
K12-MS		*	15/17,4	1022/1234	-300/+300	-275/+275	G 4"	132
R30-MD		*	1,1/1,3	89/108	-300/+350	-300/+300	G 1" 1/4	26
K04-TD		*	1,5/1,75	140/169	-250/+250	-215/+215	G 1" 1/2	29,5
K04-TD		*	2,2/2.55	140/169	-275/+400	-300/+350	G 1" 1/2	29,5
K05-TD		*	3/3,45	215/260	-350/+350	-300/+300	G 2"	43,5
K05-TD		*	4/4,6	215/260	-400/+475	-400/+475	G 2"	43,5
K06-TD		*	4/4,6	312/377	-275/+275	-225/+225	G 2"	61,5
K06-TD		*	5,5/6,3	312/377	-425/+425	-350/+350	G 2"	61,5
K08-TD		*	7,5/8,7	518/625	-350/+350	-290/+290	G 3"	105,5
K08-TD		*	15/17,4	518/625	-450/+650	-475/+650	G 3"	105,5
K09-TD		*	9,2/10,6	657/793	-300/+300	-240/+240	G 4"	115,5
K09-TD		*	15/17,4	657/793	-450/+575	-475/+500	G 4"	130
K10-TD		*	15/17,4	804/970	-450/+450	-375/+375	G 4"	138
K10-TD		*	18,5/21,5	804/970	-500/+600	-500/+525	G 4"	165
K11-TD		*	15/17,4	903/1089	-375/+375	-280/+280	G 4"	145
K11-TD		*	18,5/21,5	903/1089	-450/+475	-400/+400	G 4"	172
K12-TD		*	18,5/21,5	1007/1216	-350/+350	-275/+275	G 4"	171
K12-TD		*	22/25,5	1007/1216	-425/+475	-375/+375	G 4"	181



DRY VACUUM PUMPS



Piston Pumps  
and Compressors

Piston pumps may be used in presence of moisture and have no particular restrictions on use. Versions (series ZA box) are also available with a safety guard and intake filter for use as mobile units.

The operating principle of piston pumps and compressors is based on a piston that moves alternately in a cylinder. The cylinder is equipped with valves that inhale air (when the piston goes down) and exhale it outside (when the piston rises). When its head is integral with the piston rod the piston is defined oscillating. Unlike membrane pumps, the piston pump chamber is not completely sealed and does not guarantee a perfect airtight circuit.

If used as compressors, these pumps create a pulsating flow that requires the presence of a reservoir.

ZA.20CC

PISTON PUMPS

	mbar(abs)	bar 50/60 Hz	m³/h @ 50/60 Hz	kW @ 50/60 Hz	kg
ZA.12 (1)	250/210	1	12/14	80/80	1,3
ZA.12CC	250	-	12	30	0,6
ZA.12C (1)		3	12/14	80/80	1,3
ZA.12C-CC	-	3	12	30	0,6
ZA.15S (1)	50		15/18	140/140	1,8
ZA.20CC (1)	250		22	30/36	0,65
ZA.30CC (1)	150	0,2	36	48	0,8
ZA.30P (1)	200	1	30/35	140/140	1,9
ZA.32	110	3	32/38	200/200	7,1
ZA.60S	10		60/70	270/270	8,7
ZA.100P	60		100/120	270/270	8,9
ZA.32BOX	110		32/38	200/200	13,5
ZA.60 BOX	10		60/70	270/270	15,3
ZA.100 BOX	60		100/120	270/270	15,3

(1)IEC 34-1:S3-25%



DRY VACUUM PUMPS



CBL.305/1500

Lobe Pumps

The volumetric roots pumps Bora - BA series are equipped with three lobe rotors having a singular geometrical shape that emphasizes the positive aspects of this design and cancelling out the negative ones (i.e.: gas recirculation). Moreover, the shaft seal 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.

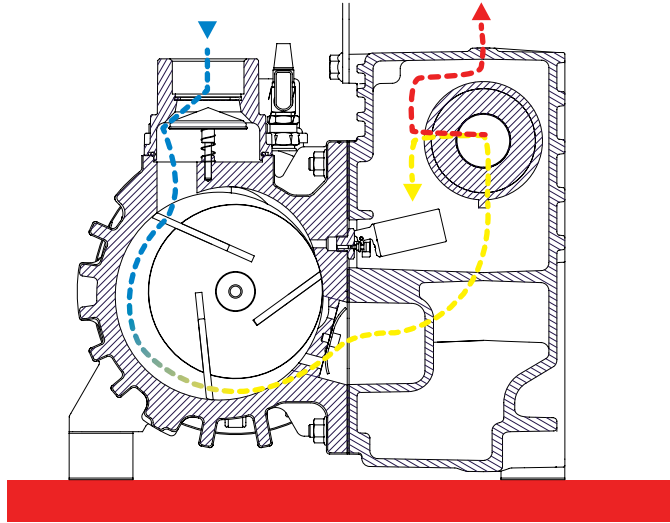
LOBE PUMPS

	m³/h @ 50/60 Hz	Δ p max	kW 50/60 Hz	RPM 50/60 Hz	DN	kg
BA.500	500/600	60	2,2/2,6	2800/3300	80	113
BA.900	900/1080	60	3/3,6	2800/3300	100	130
BA.1500	1450/1740	60	4/4,8	2800/3300	150	165
BA.2000	2000/2400	60	5,5/6,6	2800/3300	150	212

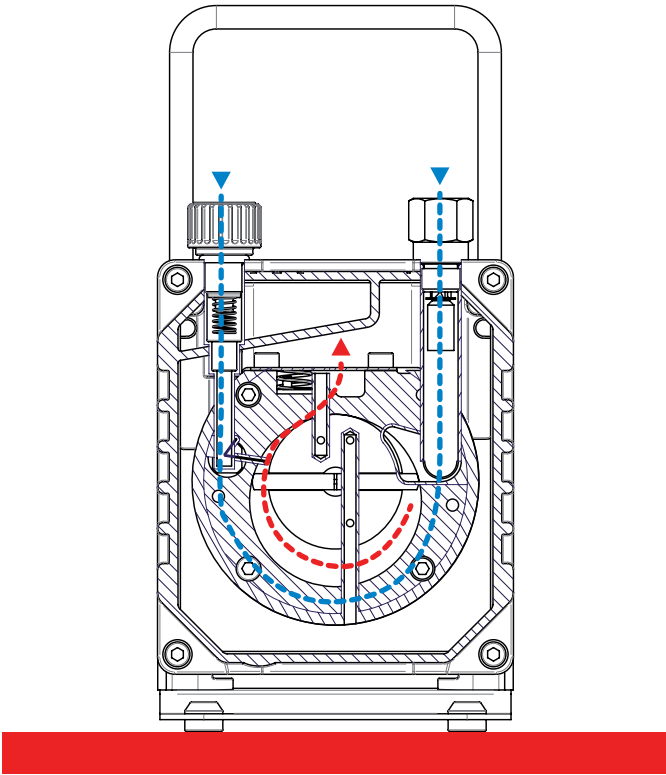
	First stage	m³/h a 5 mbar (A) 50/60 Hz	Lobe Pump	P mbar (A)	kW 50/60 Hz	kg
CBL.151/500	LC.151	450/500	BA.500	0,03	5,5/6,3	320
CBL.205/900	LC.205	750/860	BA.900	0,03	8,5/10,2	400
CBL.305/900	LC.305	750/860	BA.900	0,03	10,5/12,2	410
CBL.305/1500	LC.305	1050/1300	BA.1500	0,03	11,5/13,4	450



[oil lubricated rotary vane pumps]



[oil bath vacuum pumps]



## 2. OIL LUBRICATED VACUUM PUMPS

Oil Lubricated Rotary Vane Pumps  
Oil bath vacuum pumps

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 containers to be emptied, whose volume is appropriately sized for the pump flow rate.

Long-term use at atmospheric pressure is not recommended.

We recommend using the WR versions whenever the amount of intake vapour is considerable. The main application fields include: vacuum sealed packaging, thermoforming machines, glass or marble working machines, medical equipment, food-grade pastes or clay extruders, refrigeration and conditioning appliances for laboratories, freeze-drying, mass spectrometry, spin dryer. Special Pneurop inlet connections are available to connect the different elements that are on the machine.

OIL LUBRICATED VACUUM PUMPS



LC.106

Oil Lubricated Rotary Vane Vacuum Pumps

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. D.V.P. developed a WR pump version with an improved and reinforced Gas Ballast system.

The WR version of the L series of the pump has a system that separates oil and water condensate and expells it when the pump is stopped. 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.

OIL LUBRICATED VACUUM PUMPS

	mbar(abs)	vapour tolerance kg/h	m³/h @ 50/60 Hz	kW @ 50/60 Hz	kg
LC.2	10	-	2/2,5	0,12/0,15	5,4
LC.4	2	-	4/4,8	0,12/0,15	5,4
LB.5	10	0,11	5/6	0,25/0,25	11,5
LB.6	2	-	6/7	0,25/0,3	9
LB.8	2	-	8/9	0,25/0,3	9
LC.12	2	0,3	12/14	0,45/0,54	12,5
LC.20	2	0,25	20/24	0,75/0,9	17
LC.25	0,5	0,7	25/29	0,75/0,9	25
LC.40	0,1	0,5	40/48	1,1/1,35	42
LC.60	0,1	0,7	60/72	1,5/1,8	44
LC.106	0,1	1	106/127	2,2/2,7	70,5
LC.151	0,1	1,4	151/181	3,3/3,7	80
LC.205	0,5	3,5	205/245	5,5/6,6	170
LC.205HV	0,1	2,1	205/245	5,5/6,6	170
LC.305	0,5	5	305/365	7,5/8,6	180
LC.305HV	0,1	3,5	305/365	7,5/8,6	180
LB.5WR	10	0,11	5/6	0,37/0,45	12,5
LC.25WR	4	1,1	25/29	0,75/0,9	25,5
LC.40WR	4	1,3	40/48	1,1/1,35	42
LC.60WR	4	2,4	60/72	1,5/1,8	44
LC.106WR	4	3,2	106/127	2,2/2,7	71
LC.151WR	4	5	151/181	3,3/3,7	80,5
XC.405 (1)	0,5	7	410	2X5,5	450
XC.605 (2)	0,5	10	610	2X7,5	470
XC.905 (3)	0,5	15	915	3X7,5	740

(1)2xLC.205 IE2    (2) 2xLC.305 IE3    (3) 3xLC.305 IE3



OIL LUBRICATED VACUUM PUMPS



RC.8D

Oil Bath Vacuum Pumps

R and D series 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, for a long time 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. However, in this case, the stator is immersed in the lubrication oil which has also the function of sealing the air loss. The pressure levels reached by this type of pump are higher than any other rotary vane pump. These pumps are equipped with a Gas Ballast system to avoid the condensation of the water vapour.

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.

OIL BATH VACUUM PUMPS

	mbar(abs)	stages	m³/h @ 50/60 Hz	kW @ 50/60 Hz	kg
RD.2D	<0,5	2	1,8/2	0,12/0,15	5
RC.4M	0,1	1	4/4,6	0,37/0,37	9
RC.4D	0,01	2	4/4,6	0,37/0,37	10
RC.8M	0,1	1	8/9,5	0,37/0,37	10
RC.8D	0,01	2	8/9,5	0,37/0,37	11,2
RC.4MSM	0,1	1	4/4,6		4,5
RC.4DSM	0,01	2	4/4,6		5,5
RC.8MSM	0,1	1	8/9,5		6
RC.8DSM	0,01	2	8/9,5		7
RC.50M	0,05	1	50/60	1,1/1,35	33,5
DB.2D	0,005	2	2/2,4	0,25/0,3	10
DC.4D	0,005	2	5,6/6,4	0,55/0,66	19,5
DC.8D	0,005	2	8,2/9,6	0,55/0,66	20,5
DC.16D	0,005	2	16/17	0,55/0,66	22,5
DC.16DEX (1)	0,005	2	16/17	0,55/0,66	22,5

(1) Model complying with European Directive 94/9/EC ( ATEX ) with making CE EX II 3/-G IIC c T4 X ( internal Atex )

A large, solid red triangle is positioned in the bottom right corner of the page. Within this triangle, there is a smaller, dark red triangle that points towards the bottom left, creating a layered geometric effect.

# Systems





## SYSTEMS

*When a group of products is greater than their sum.*

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 a 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.

The automatic vacuum systems are available in various versions: SIMPLEX, with a single pump; DUPLEX, with double pump; TRIPLEX, with triple pump. DVP also manufactures portable systems, mainly used in construction. In addition, we develop production systems with air-liquid separation.

The standard version of the systems consists of two or three lubricated pumps, complete with electric motor and oil separator filter mounted on the horizontal or vertical tank, complete with ball valve for drainage of the condensate; integrated check valve in suction of each pump to maintain vacuum in the tank when the pumps are stopped; FCM cartridge filters to protect the pumps from the aspiration of impurities; a ball valve on the intake of each individual pump to isolate from the system during maintenance; a ball valve on the tank fitting to isolate it; an electrical control panel which allows the start up and the operation of the pumps in manual or automatic along with control of operating parameters. The air-liquid separator systems are designed to be used on glass and marble processing machines and machines suitable for the aspiration of non aggressive liquids.

As well as any other segment of our production activity, the systems can be customized to meet any customer requirement. Systems are equipped with a large range of accessories and kits that allow more customization and versatility.

SYSTEMS



CPV.60/25

Industrial Systems

The pump reservoir group series CPV have been designed for a wide range of application needs, and are available in various versions. The centralized vacuum equipment models CPA are available in three different configurations SIMPLEX - DUPLEX - TRIPLEX depending on the number of pumps installed. These products are equipped with a control panel controlling the pressure inside the receiver and guiding the pump start-up.

Developed according to European standards, the panels also include the hour counter and the pump wear balancing device.

INDUSTRIAL SYSTEMS						
	8 dm <sup>3</sup>	25 dm <sup>3</sup>	100 dm <sup>3</sup>	300 dm <sup>3</sup>	500 dm <sup>3</sup>	1000 dm <sup>3</sup>
LC.4						
LB.5		*(1)				
LC.12		*	*	*/**/**		
LC.25		*(1)	*	*/**	***	
LC.40		*(1)	*	*/**	*/**/**	
LC.60		*(1)	*	*	*/**/**	***
LC.106					*/**/**	***
LC.151						**/**
LC.205					*	**/**
LC.305					*	

(1)WR version pump  
\* Simplex  
\*\* Duplex  
\*\*\* Triplex





SYSTEMS



CPA.3H X 305

Hospital Systems

CPA3H vacuum hospital systems are mainly used in a hospital environment. Manufactured based on the TRIPLEX systems, the CPA3H series has been developed according to the requirements of EN ISO 7396-1 Standard.

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. All the tanks supplied with CPA3H vacuum systems are equipped with by-pass system.

Upon request, a wide range of accessories are available to be installed between the CPA3H system and the user system as envisaged by EN ISO 7396-1 Standard, such as antibacterial filters with by-pass system (GFB).

HOSPITAL SYSTEMS

	CPA-H			Antibacterial filters unit
	300 dm <sup>3</sup>	500 dm <sup>3</sup>	1000 dm <sup>3</sup>	
LC.25	***	***		GFB.51
LC.40		***		GFB.80
LC.60		***		GFB.121
LC.106		***	***	GFB.121
LC.151			***	GFB.201
LC.205			***	GFB.201
LC.305			***	GFB.201

\*\*\* CPA Triplex

# Accessories





## ACCESSORIES

*Perfectionism is in the detail.*

Like every detail of our production, the accessories are an essential piece of our work. Our care and dedication aim at improving ergonomics, functionality and availability of our pumps and our compressors.

With our entirely dedicated research department, we develop specific solutions creating accessories with care and quality for a comprehensive and diversified range. The accessories available for pumps and compressors are different and divided into classes. Each one has been designed and selected to best suit the range of pumps and compressors built by DVP.

The main accessories are listed below:

- Filters
- Exhaust mufflers
- Miscellaneous threaded and Pneurop fittings
- Vacuum and pressure regulator valves
- Check valves
- Vacuum and pressure gauges

ACCESSORIES



**AV – Shock Mount**

Necessary to attenuate the pump vibration and reduce the noise level.



**FAS – Intake filter**

This filter has been developed specifically for use on the intake of side-channel blowers and compressors. Its special construction makes it easy to maintain and replace the filter cartridge.



**FBO – Oil bath filter**

Developed to allow vacuum pumps to operate even in very dusty environments. Filtration is provided by a special metal mesh cartridge inserted at the bottom of the filter, which also contains the oil that serves to trap the smallest dust particles.



**FCM – Filters with metal bowl**

Mounted at the pump or compressor intake to protect them from dust or solids. The housing is made of metal and a rapid opening system makes it easy to replace the filter cartridge.



**FCT – Filters with transparent bowl**

Mounted on the pump or compressor intake to protect them from dust or solids. The clear housing allows the status of the filter cartridge to be checked quickly.



**FMB – Antibacterial filters for medical vacuum**

Recommended when the removal of microorganisms and/or any other types of contamination is necessary, helping to decontaminate the intake volume as well as protect the pump and the surrounding atmosphere.



**FSC – Condensation separator filter**

These prevent condensable fumes or liquids from the system from being taken in. The housing is transparent to visually check the level of the intercepted liquid and the drainage valve on the bottom of the cap allows it to be expelled.



**SIF – Clogged exhaust filter indicator**

This device was developed for use on lubricated vacuum pumps and measures the increase in load loss in an oil separator filter.



## ACCESSORIES



### VCS – Vacuum Switch

This accessory is able to open or close an electrical contact based on the pressure at which is set.

### VD – Digital Vacuum Gauges

Developed to facilitate measuring the vacuum of pumps or vacuum systems.



### VNE – Non return valves

These are made of bronze with gaskets of NBR rubber and with no springs to avoid any load loss.



### VRF – Vacuum regulator valves

These valves permit the adjustment of the pump residual pressure. Also available in version for the pressure regulation.

8701021 Rev.0

Headquarters  
**D.V.P. Vacuum Technology S.p.A.**  
Via Rubizzano, 627  
40018 S. Pietro in Casale (BO) - Italy  
+39 051 18897111  
info@dvp.it

[www.dvp.it](http://www.dvp.it)

