

# CLAWVAC CP/CPI

The claw benchmark  
in rough vacuum





# A cornerstone for rough vacuum applications

The unique product features of the **CLAWVAC** product range offers great advantages for the rough vacuum industry. The pump design enables extreme robustness, especially for challenging applications which include handling of particles and vapour contaminated gases. Therefore, the user will experience a trouble-free and cost-saving operation.



## ✓ **Food Processing**

- Bottling
- Dairy products (e.g. milking)
- Tumbling / Mixing
- Concentration / Extraction
- Beverage production

## ✓ **Food Packaging**

- Thermoforming of foil container
- Tray sealing
- Modified Oxygen Packaging (MAP)

## ✓ **Woodworking**

- Holding & lifting
- CNC router
- Drying & impregnation

## ✓ **Degassing**

- Li-battery slurry
- Ceramics & bricks

## ✓ **Plastic Industry**

- Composite manufacturing
- Granulate conveying
- Extruder degassing (e.g. PP, PE, PS)
- Gluing

## ✓ **Thermoforming**

- Deep drawing e.g. of bath tubs





✓ **Material Transport & Holding**

- Print & paper (press & post-press)
- Vacuum conveying
- Vacuum clamping

✓ **Environmental Engineering**

- Sewage degassing
- Biogas production
- Soil remediation



# CLAWVAC CP 65-300



## Harshest Applications Ready

- Built-in corrosion resistance
- Completely cleanable
- Segregated gearbox design avoids oil contamination of the process
- Cooled and designed to guarantee the highest uptime
- Special variant to handle up to 100 % of O<sub>2</sub>

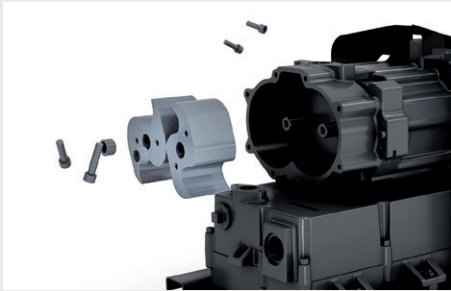


## Extended Uptime

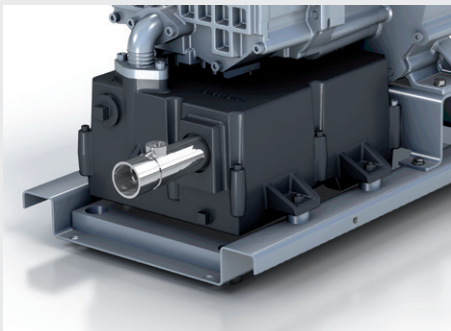
- Wear free pump chamber
- Durable and dependable components for extended lifetime
- Long service intervals:
  - 20,000 hr between oil changes
  - Major overhauls extended to 48,000 hrs

## Completely cleanable

The user has full and easy access to all media touched surfaces. Housing and claws can be disassembled without need for resetting of the gear timing.

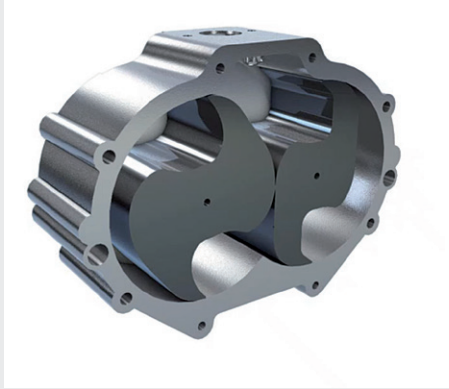


The built-in silencer allows condensate draining and can be removed and opened for cleaning.





## Innovative product features



### Outperforming

- Best-in-class performance
- Continuous operation at any inlet pressure
- Low power consumption



### Excellent Cleaning

- Convenient flushing to clean the pump internals and remove even soft layers
- Quick & easy flushing procedure



### FC Ready

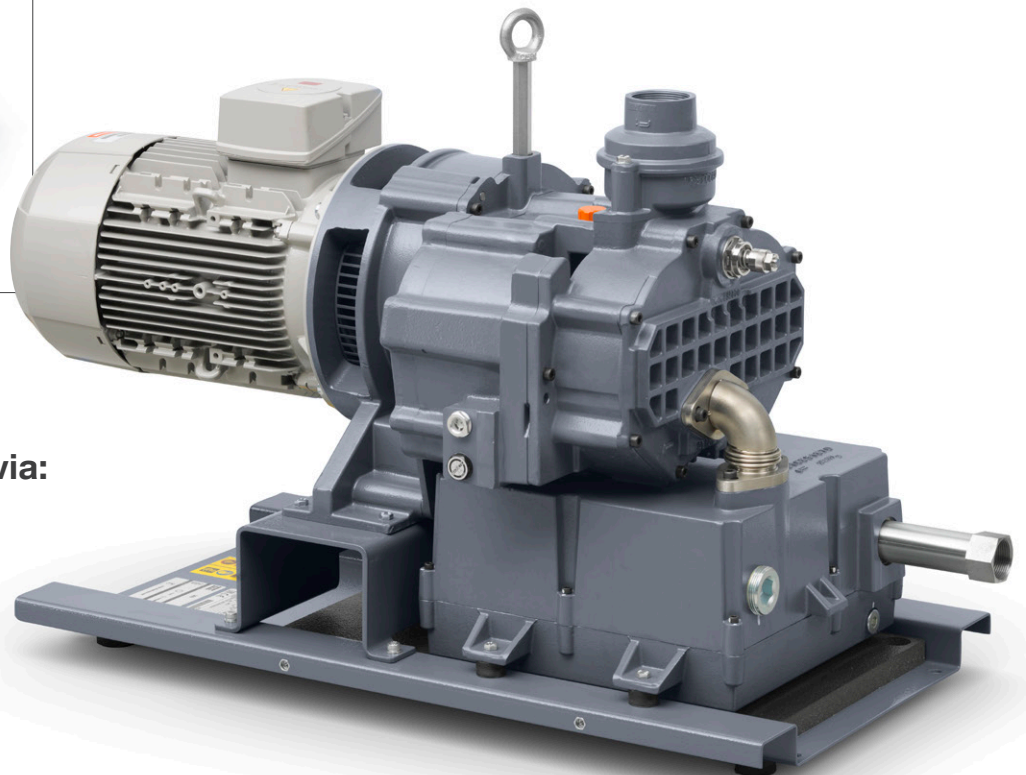
- Compatible with a Frequency Converter and the setpoint control of **VAControl™**

## Built-in corrosion resistance



### High capability for demanding applications via:

- Corrosion resistant stainless steel claws
- Resistance to high water vapor or water slugs
- Coated and corrosion resistant pumping chamber
- Drainable silencer





# CLAWVAC CP 500-1000



## Harsh applications ready

- Coated pumping chamber results in an extended corrosion & wear protection
- No oil contact with process media
- High water vapor resistance
- Suitable for high temperatures



## Plug & Pump

- Different accessories available (incl. bare shaft variant)
- Extended uptime via long service intervals
- Easy to use



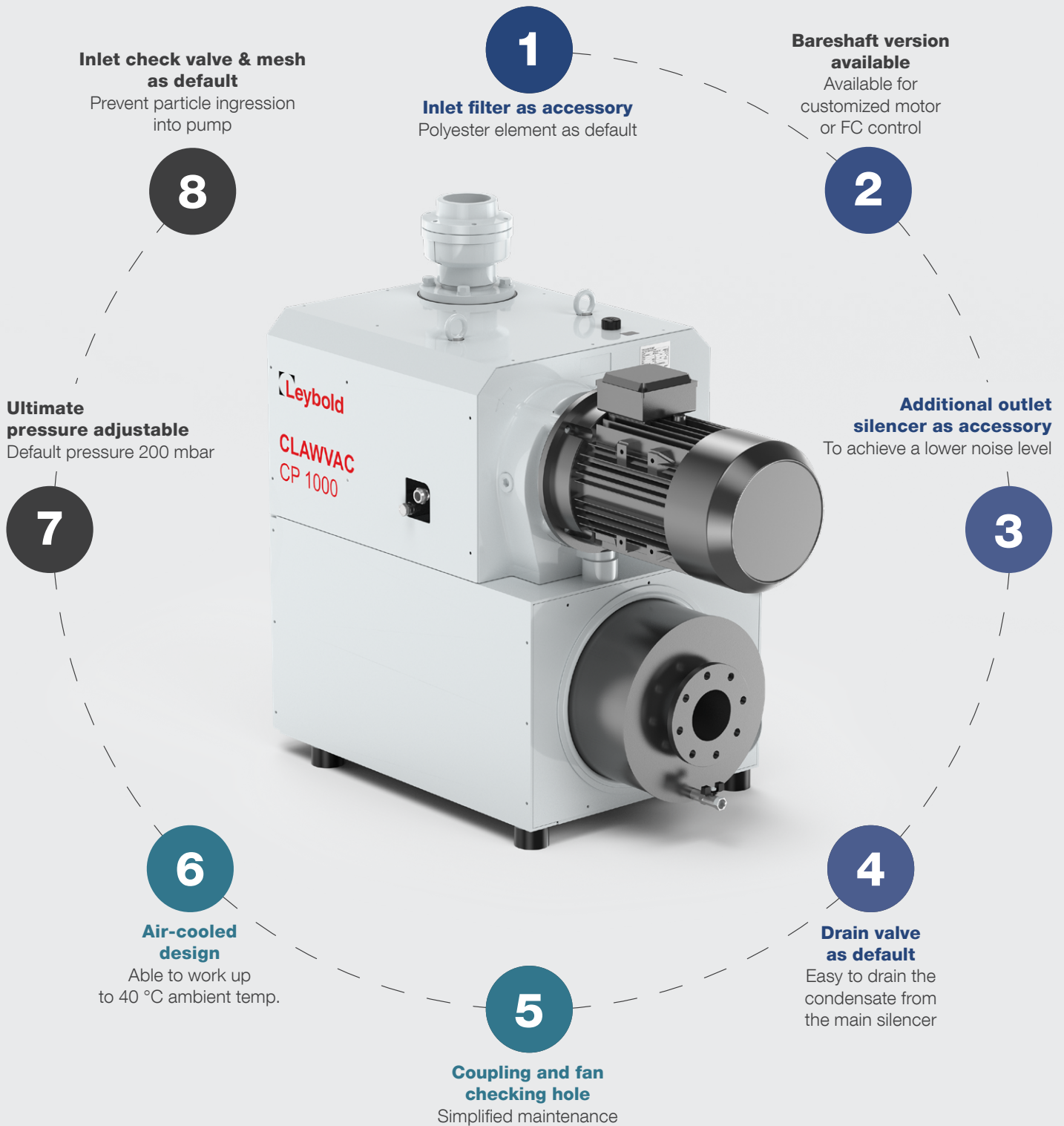
## Energy efficient

- IE4 motor as default
- Availability for FC control / ELEC CAB up to 60Hz





## Unique CLAWVAC CP 500-1000 features





# CLAWVAC CPi System

The **CLAWVAC System** is a one-stop-shop solution, where Leybold's reputation for building quality and superior products extends throughout its vacuum pump and systems range. **CLAWVAC System** is ideal, if the application requires a high level of redundancy.

## Complete & Dry Solution



### Energy Efficient

- Only the required vacuum performance will be delivered
- Up to 50% energy savings in comparison with a fixed speed solution



### IOT Ready

- Constant logging of critical pump parameters
- All included controller which smartly controls the system and communicates with the customer



### Extended Uptime

- Firstly, based on the original CLAWVAC
- Additionally, the innovative control principle provides a maximal redundancy



### Plug & Pump

- Simple to install, connect and start
- A smartly designed, compact and easy accessible system with an included controller



### Environment Friendly

- Dry pumps with minimal impact on the environment
- Even more silent than one CP 300





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# CLAWVAC CPi System

## Design Principle

The CP i series is a dry, variable speed driven, multi **CLAWVAC** vacuum pump system.

The systems consists out of 2-4 parallel installed CP 300 pump elements, each driven by its own motor. The vacuum pumps are controlled by the built-in controller which is fitted in the front door. The electrical cabinet comprises fuses, transformers, relays etc

The vacuum pumps use FC (Frequency Converter) technology in combination with cascade switching of fixed speed units. This means: automatic adjustment of the motor speeds of the FC lead pump in combination with cascade switching of fixed speed pumps, depending on the process demand. The vacuum pumps are air cooled and are enclosed in a sound-insulated body work.

## Technical features

**CLAWVAC System** is mechanical-ly optimized for each application:

- Strong internal chassis with fork lifting facilities to ease transportation and manoeuvring
- Integrated 'Hot and cold' enclosure design, to make the pump able to work continuously at every pressure in ambient temperatures until 40 °C
- Easy accessibility and removability of the pumps for simple service
- Common manifolds for the inlet and outlet, connected to the single pumps
- Integrated exhaust silencer
- Non-return valves prevent reverse rotation of the pumps and guarantees that the system is isolated from the process during pump standstill
- Condensate drain facilities
- Monitoring and control facilities

## Process Compatibility

To ensure the durability and reliability for which Leybold is known for, the **CLAWVAC System** is equipped with corrosion resistance materials to be compatible with even the harshest applications. The **CLAWVAC** series vacuum pumps come with stainless steel claws and a resistive and durable coating for the pumping chamber. This is based on years of extensive development and endurance testing. It also features a simple but effective labyrinth sealing arrangement for long life and durability.

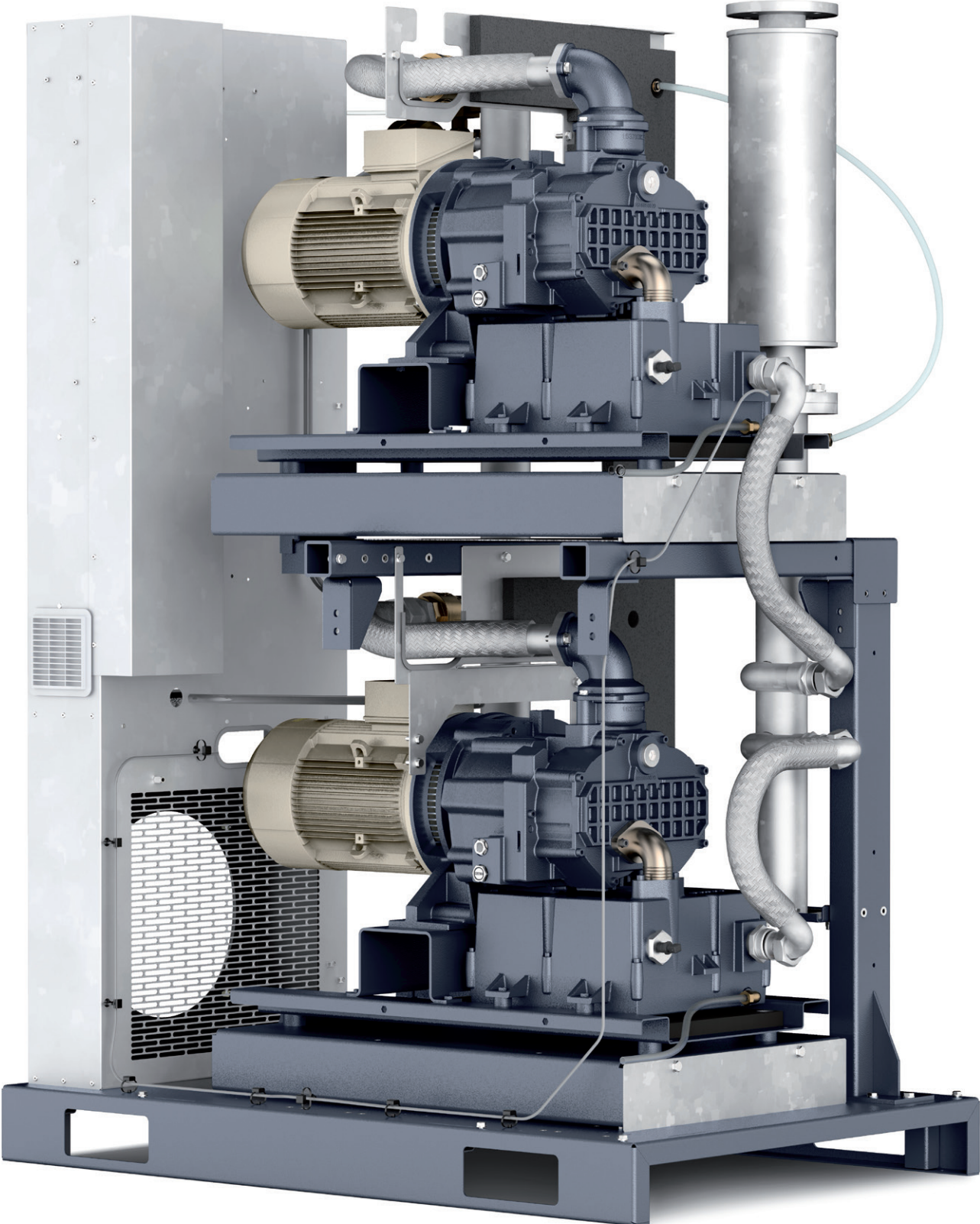
## Maintainability

The **CLAWVAC System** is a cleverly designed pump system. That counts also for its maintainability. Its design principles offer a simple, long life and durable pump with a very low maintenance need. Access to the pumps is easy via the removable service panels.

Additionally the up-time is maximised, as in the **CLAWVAC System** pumps can easily be removed, maintained or replaced by individually isolating, disconnecting and sliding them out from the main chassis and whilst maintaining, the **CLAWVAC System** can keep on running.







Typical design of a CLAWVAC System CP 600 i



# Technical Data

## Ordering Information

		CLAWVAC				
		CP 65	CP 150	CP 300	CP 500	CP 1000
Pumping speed (50/60 Hz)	m <sup>3</sup> /h	65/79	150/184	300/347	500/600	950/1140
Ultimate vacuum	mbar / Torr	50/37.5	50/37.5	140/105	200/150	200/150
Permissible ambient temperature range	°C / °F	0 – 40 / 32 – 104				
Operation range	Hz	20 – 60				
Noise level <sup>1)</sup> (50/60 Hz)	dB (A)	66/77	75/80	77/84	76/78	82/85
Motor power (50/60 Hz)	kW	1.8/2.2	3.7/4.4	6.2/ 7.5	9.2/11	18.5/22
Weight	kg	120	160	252	309	615
Connections	Inlet Outlet	G 1 1/4" or NPT G 1 1/4" or NPT		G 2" or NPT G 1 1/4" or NPT	G 3" G 2 1/2"	DN100 PN6 DN100 PN10

Ordering Information *	CP 65	CP 150	CP 300	CP 500	CP 1000
Motor version (200/230/380/400/460/575V, 50/60Hz, 3PH)	178065V01~V08	178150V01~ V08	178300V01~ V08	10790500V02~V04	10791000V02~V04
O <sub>2</sub> version	178065V12~V17	178150V12~V17	178300V12~V17	–	–
W/O motor version	178065V21~V22	178150V21~V22	178300V21~V22	10790500V00~V01	10791000V00~V01

		CLAWVAC System		
		CPi 600	CPi 900	CPi 1200
Pumping speed (50/60 Hz)	m <sup>3</sup> /h	112 - 604/112 - 650	112 - 874/112 - 966	112 - 1143/ 112 - 1283
Pumping pressure range	mbar Torr	150 - 1000 112 - 750		
Permissible ambient temperature range	°C / °F	0 – 46/32 – 115		
Protection class	IP	54		
Noise level <sup>1)</sup> (50/60 Hz)	dB (A)	74/75	73/74	73/74
Motor power (50/60Hz)	kW	13.7/ 15.2	19.9/ 21.4	26.1/ 30
Weight	kg	1096	1521	1821
Connections	Inlet / Outlet	DN80 PN6	DN100 PN10	

Ordering Information *	CPi 600	CPi 900	CPi 1200
400V, 50Hz, 3PH	178600V01	178900V01	1781200V01
380/460V, 60Hz, 3PH	178600V02~V03	178900V02~V03	1781200V02~V03

<sup>1)</sup> According to DIN EN ISO 2151

\* Over pressure variants are also available for CP65, CP150, and CP300. For detailed information on our full scope of CLAWVAC pumps and motor versions, please refer to our general catalog. Visit our webshop [www.leyboldproducts.com](http://www.leyboldproducts.com).

**Please contact us for technical details on the entire CLAWVAC Systems range.**



Pioneering products. Passionately applied.