

CLAWVAC SYSTEMS CP 600i, CP 900i and CP 1200i

DRY CLAW SYSTEMS

General description

Leybold has developed a new dry multi-claw vacuum pump, this solution is suitable for many applications for which durability and reliability are key. Claw vacuum pumps offer non-contact and dry pumping chambers with a high performance and power efficiency. In combination with its simplicity, low life cycle costs are the result.

The CLAWVAC SYSTEMS range is based on the CP 300 dry claw vacuum pumps. These original CP pumps (single stage, oil free and air-cooled pumps) are simple and durable pumps with very low maintenance for each rough vacuum application. These compact pumps deliver high reliability through a rugged and robust design. This is based on the stainless steel claws and a corrosion resistant pumping chamber, which result in a reliable operation even in harsh conditions.



CP 600i



CP 900i & 1200i

In terms of performance, the CP pumps are the market leader in achieving an ultimate vacuum and pumping speeds. The included variable speed drive assures that this system meets your demand effortlessly. Additionally, the system is foreseen of a rugged, durable and smart enclosure which protects the pumps, reduces noise and heat; and contains all the necessary control gear. Further it is compact, transportable, simple to install and space saving plus cost effective when compared to alternative on-site installation techniques. All these features ease the installation and handling of it.

Scope of supply

The CLAWVAC systems are standardly equipped with multiple CP 300 claw vacuum pumps which include:

- Element, gearbox and drive train all mounted on a common base frame;
- Vibration reducing feet;
- Integrated exhaust silencer;

- Inlet non-return check valve;
- Electric motor that is inverter rated;
- Motor coupling with integrated cooling fan;
- Vacuum relief valve;
- Robust material of construction with stainless steel claws and coated internals.

The CLAWVAC SYSTEM is foreseen of the following enclosure features:

- Strong internal chassis and external panels (with a powder coated finish);
- Fork lifting facilities for ease of transportation and manoeuvring;
- Integrated 'Hot and cold' internal design, to remove the heat from the main control centre
- Ventilation ducts and fans;
- Simple to remove service panels and internal chassis (designed to facilitate easy access to the pump);
- 1 Common flanged intake manifold at the inlet (DN100), connected with the individual pumps via a manual isolation valve and flexible connection;
- 1 Common flanged exhaust manifold at the outlet (DN100), connected with the single pump outlets. This incorporate an integral silencer for noise reduction;
- Individual inlet non-return valves preventing reverse rotation of the pumps and isolation from the process stream when not running;
- Condensate drain facility for each pump that is piped back to the external panel of the canopy;

The control system features:

- Ecocontrol user interface and controller;
- Set point control by utilizing a vacuum transducer to monitor the process duty point;
- Lead pump speed control using an inverter VSD controller operating between 20 and 60Hz;
- Duty / standby control of the remaining pumps with sequenced starting functions;
- The ability to monitor and measure actual performance with an expected energy saving of around 50% compared to conventional installations;
- Easy to manage maintenance schedules through its simple to operate menus;
- Ability to be expanded to multi-pump control plus the opportunity to upgrade to remote management.

Electric motor.

All motors are 3 phase high efficiency 'multi voltage/multi frequency'. For 60Hz supplies they are cUL/UL approved. The main motor options are;

- 400VAC/3/50Hz
- 460VAC/3/50Hz
- 380VAC/3/60Hz

The motors are suited to operate with Variable Speed Drive to have complete controllability and to reduce power consumption. This efficiency improvement leads to power reduction and consequently a lower carbon footprint. The CP-series has a market leading 'turn-down ratio' of 20-60Hz for a wide operating band to fit the demand coming from the process.

Maintainability

The CLAWVAC SYSTEM is a cleverly designed pump system. Its design principles offer simple,

long life and durable pump with a very low maintenance. Access to the pumps is easy via the removable service panels and should you need to remove, maintain or replace the pumps then they individually isolated, disconnected and slide out from the main chassis whilst maintaining vacuum system up-time



Process compatibility

Everything within the process will pass through or end up in the vacuum pump. To ensure the same durability and reliability that Leybold is known for. The Clawvac is equipped with corrosion resistance materials to be compatible with even the harshest applications

The CP series vacuum pumps come with stainless steel claws and a resistive and durable coating applied to the pumping chamber. It 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.

To summarize

A one-stop-shop solution to a vacuum systems need. Leybold's reputation for building quality and technically innovative and superior products extends throughout its vacuum pump and systems range.

Our solution offers:

- A Combined pumps solution with a maximum of four 300m³/h claw pumps in one package
- Complete flexibility and controllability for accurate duty point control
- Plug-and-play design based on existing compressor technology
- One control system, remote management possible
- One claw pump will be VSD controlled for energy saving & the other step / cascade controlled for accurate duty point control
- Better acoustic level control
- Compact, simple design
- More cost effective than traditional systems
- More efficient cooling and temperature control