# C-Series

Claw Vacuum Pumps and Compressors

Elmo Rietschle


# Product Overview


**C-VLR** ZEPHYR
Vacuum pump

## C-VLR ZEPHYR

**Claw vacuum pumps**
Capacities ranging from 42 to 353 cfm and maximum continuous vacuum up to 27 in. HgV. Highly efficient, oil-less and contact free operation. Excellent pumping capacities throughout the entire vacuum range.
Integrated air cooling without the need for water cooling.
Available with optional variable speed drive.
Low maintenance; wide range of applications.


**C-DLR** ZEPHYR
Compressor

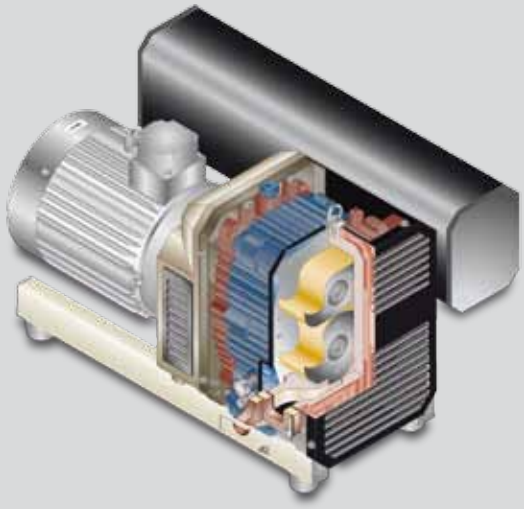
## C-DLR ZEPHYR

**Claw compressors**
Capacities ranging from 42 to 353 cfm; maximum pressure in continuous operation up to 32 psig. Highly efficient, oil-less and contact free operation. Excellent pumping capacities throughout the entire vacuum range. Integrated air cooling without the need for water cooling. Available with optional variable speed drive. Low maintenance; wide range of applications. ATEX versions available for biogas or methane compression.


**C-KLR** ZEPHYR
Pressure-vacuum pump

## C-KLR ZEPHYR

**Claw combination pressure-vacuum pumps**
Capacities ranging from 57 to 82 cfm. Vacuum up to 18 in. HgV and pressure up to 10 psig. Highly efficient, oil-less and contact free operation. Vacuum and pressure operating points are virtually independent of each other with excellent flow capabilites. Integrated air cooling without the need for water cooling. Integrated after cooler for low temperature compressed air delivery. Low maintenance; wide range of applications.



# Claw vacuum pumps, compressors and pressure-vacuum pumps

# Technical specifications

Our dry running C-Series generates contact free vacuum or compressed air efficiently and economically due to the principle of internal compression. This leads to considerable energy savings compared to the traditional rotary lobe design without internal compression.

**Wide spectrum of performance**
With the C-VLR claw vacuum pumps and C-DLR claw compressors, the following ultimate pressures are attainable during continuous operation; vacuum up to 27 in. HgV for permanent operation. Pressure up to 32 psig.

**Innovative claw technology**
The claws of the C-Series feature an optimized, high precision shape-claws roll together without contact, synchronised by a precision gear set. The compression is contact-less and oil free. Special seals separate the compression chamber and gearbox. The claw rotors control the transportation of the compressed gas by opening and closing the inlet and outlet channels. Thus no sealing fluid within the compression chamber is needed.

The overhung rotor design in all sizes up to model 300 is another outstanding feature of this technology. Gas tight versions with reduced leakage rates are available. We hold the patent on the newly designed triple lobe rotors with intermediate air compression; for the first time, vacuum and pressure are being created in one stage, simultaneously.

## Advantages at a glance

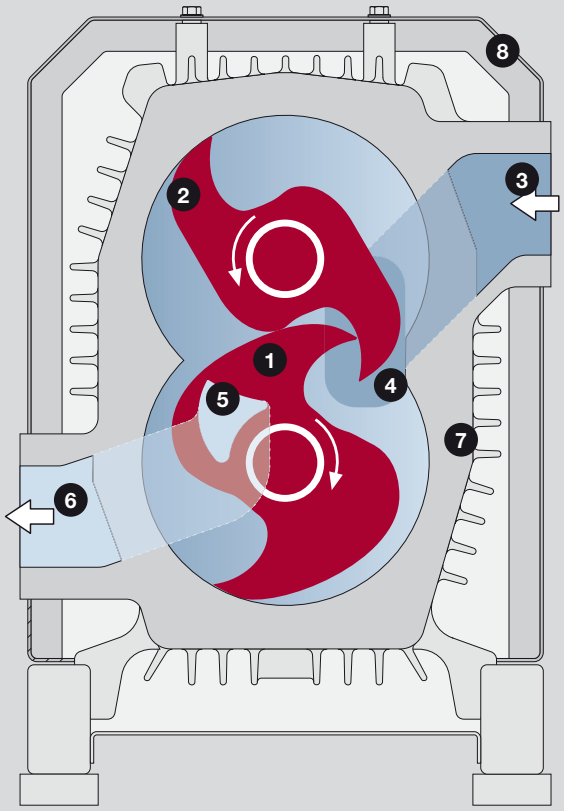
- High efficiency
- Contact-less oil-free operation
- No contamination to process gases
- Air Cooled
- Precision German designed and built
- Variable speed drives available
- Low sound level
- Patented triple lobe rotors (pressure/vacuum version)
- Pressure and vacuum combined in one compression stage

## Operating principle

Much like rotary vane and rotary lobe pumps, the claw compressors and vacuum pumps of the C-Series are based on a static compression system. In contrast to rotary lobes, compression happens internally by volume reduction.

A claw pump consists of two rotors **(1 and 2)**. They turn in opposite directions in a compressor housing **(7)** without contact with very tight clearances. They are synchronised via a precision gear. As the claw moves over the suction connection **(3)** and the axial suction channel inlet **(4)** the gas is sucked into the compression chamber.

As the rotors revolve, the gas moves from the suction side to the pressure side. It is then compressed by the reduction of the volume between the rotors until the lower rotor uncovers the discharge channel **(5)**. This “internal compression” leads to high differential pressures at efficiencies of more than 60 %. Afterwards the pre-compressed gas is discharged via the pressure connection **(6)**. To remove the heat generated by the compression process, cooling air is sucked in between the compression housing **(7)** and a silencing cover **(8)** before it leaves the pump.



# Applications

- Printing Industry and Graphic Arts
- Plastics
- Packaging
- Pneumatic Conveying
- Medical
- Chemical and Pharmaceutical
- Water Treatment
- Environmental
- General Industrial
- Food and Beverage Industry
- Woodworking

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