



C-Series Claw



**Elmo
Rietschle**
A Gardner Denver Product



Claw

vacuum pumps, compressors and pressure-vacuum pumps

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 50 mbar (abs.) and pressure up to 2.2 bar. Combination pressure-vacuum pumps provide underpressure up to - 0.6 bar and overpressure up to + 1.0 bar.

Innovative claw technology

The claws of the C-Series feature an optimized, high precision shape and roll together without contact, synchronised by a precision gear set. The compression is achieved dry and wear free. Special seals separate the compression chamber and gearbox. The claw rotors control the transportation of the medium 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 charging of air – for the first time vacuum and pressure are being created in one stage.

Explosion proof versions with reduced leakage are available as well as ATEX compliant vacuum pumps and compressors.

Advantages at a glance

- High efficiency
- Dry, contact free operation
- Process safe and reliable
- Cooling air can be discharged
- Robust housing
- Variable speed drives available
- Low sound level
- Patented triple lobe rotors
- Pressure and vacuum combined in one stage
- ATEX available



C-VLR ZEPHYR
Vacuum pump



C-DLR ZEPHYR
Compressor



C-KLR ZEPHYR
Pressure-vacuum pump



Applications

Central vacuum systems

Chemical industry

- Gas compression

Environmental engineering

- Aeration
- Drying
- Dust extraction
- Gas compression
- Soil remediation

Industrial applications

- Drying systems
- Dust extraction systems
- Industrial furnaces

Medical industry

Packaging industry

Pneumatic conveying

Post-Press applications

- Air supply cabinets
- Book-binding machines
- Collating machines
- Cutting machines
- Folding machines

Printing industry

- Air supply cabinets
- Central customized systems
- Drying machines
- Ionization
- Rotary offset machines
- Sheet offset machines

Woodworking industry

- Clamping
- Dust extraction
- Holding

Product overview

C-VLR ZEPHYR

Claw vacuum pumps

Capacities ranging from 60 to 1,000 m³/h and maximum continuous vacuum up to 50 mbar (abs.). Highly efficient, dry and contact free. Steady performance curve over the entire operating range. Integrated air cooling without additional cooling medium. Available with optional variable speed drive. ATEX compliant versions available upon request. Low maintenance; wide range of applications.

C-DLR ZEPHYR

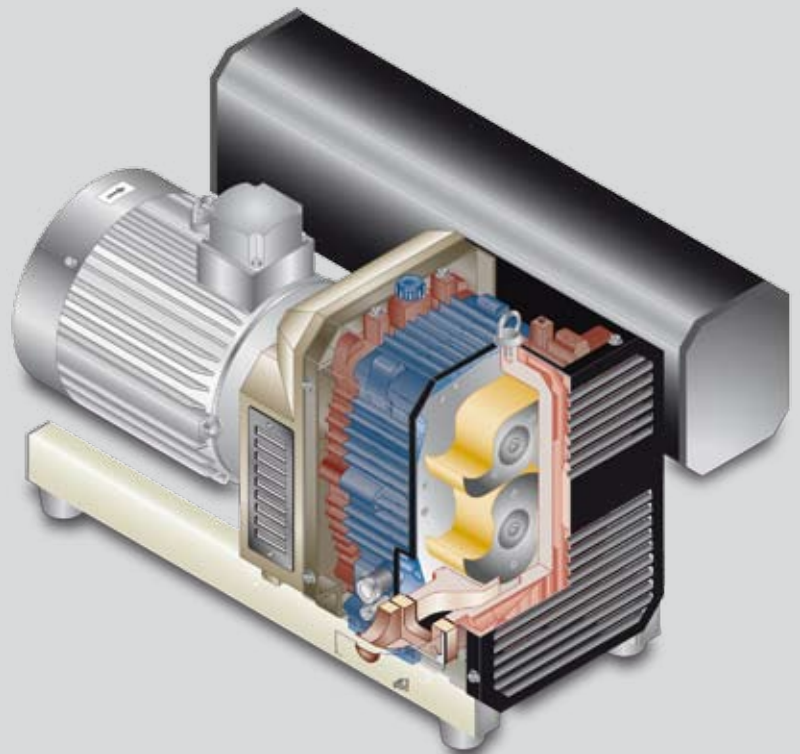
Claw compressors

Capacities ranging from 60 to 600 m³/h; maximum pressure in continuous operation up to 2.2 bar. Highly efficient, dry and contact free. Steady performance curve over the entire operating range. Integrated air cooling without additional cooling medium. Available with optional variable speed drive. ATEX compliant versions available upon request. Low maintenance; wide range of applications.

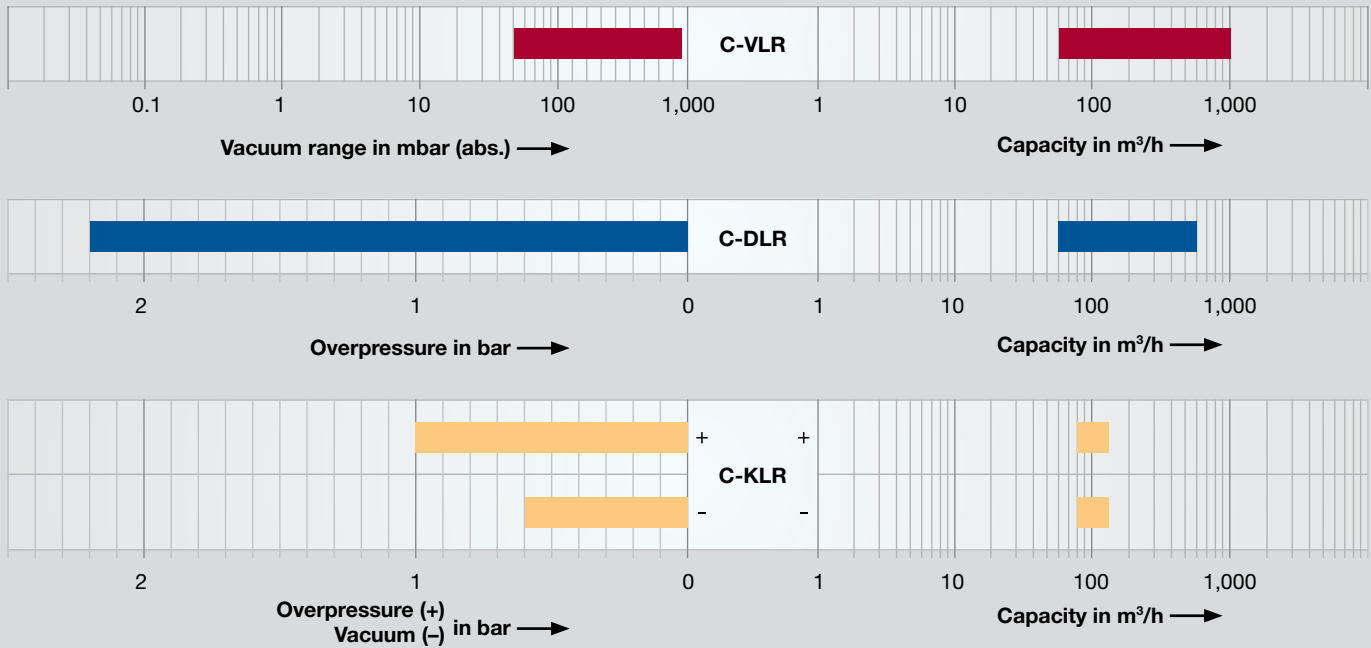
C-KLR ZEPHYR

Claw combination pressure-vacuum pumps

Capacities ranging from 80 to 140 m³/h. Vacuum up to - 0.6 bar and pressure up to + 1,0 bar. Highly efficient, dry and contact free. Vacuum and pressure operating points are virtually independent of each other. Integrated air cooling without additional cooling medium and built-in compressed air after-cooler lead to low exhaust temperature. Low maintenance; wide range of applications.



Technical specifications

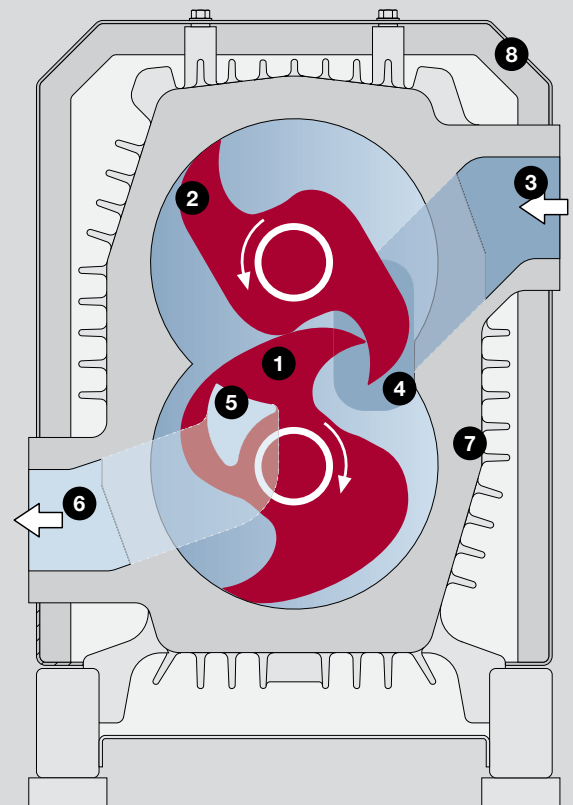


Operating principle

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 contraction.

A claw pump consists of two rotors (**1 and 2**). They turn in opposite directions in a compressor housing (**7**) without contact observing 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. Then it is 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.





Technologies for all vacuum and pressure applications



F-Series Radial



G-Series Side Channel



L-Series Liquid Ring



V-Series Rotary Vane



R-Series Rotary Lobe



C-Series Claw



S-Series Screw



X-Series Systems

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