



## 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 28 in. HgV for short time operation and 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 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.

## 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



C-VLR ZEPHYR  
Vacuum pump



C-DLR ZEPHYR  
Compressor



C-KLR ZEPHYR



## 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

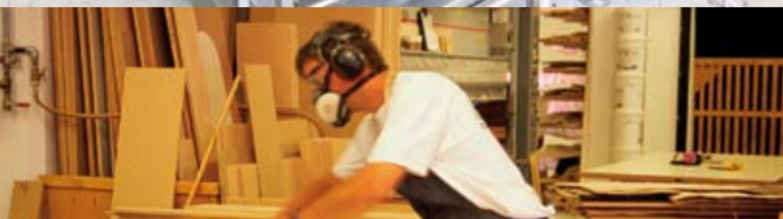
- Air supply cabinets
- Book-binding machines
- Collating machines
- Cutting machines
- Folding machines

#### 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 42 to 706 cfm and maximum continuous vacuum up to 27 in. HgV. 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. Low maintenance; wide range of applications.

## C-DLR ZEPHYR

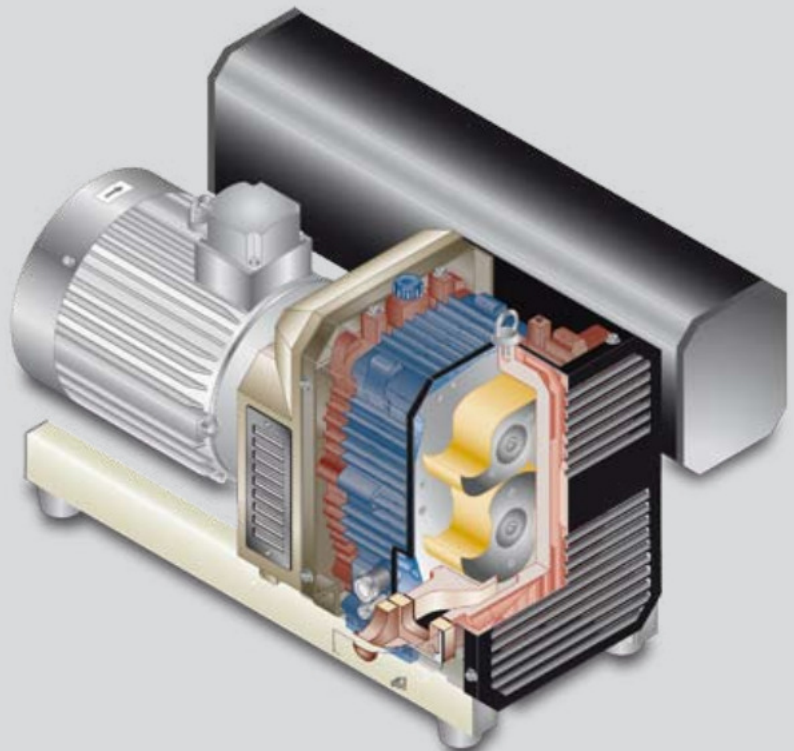
### Claw compressors

Capacities ranging from 42 to 353 cfm; maximum pressure in continuous operation up to 32 psig. 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. Low maintenance; wide range of applications.

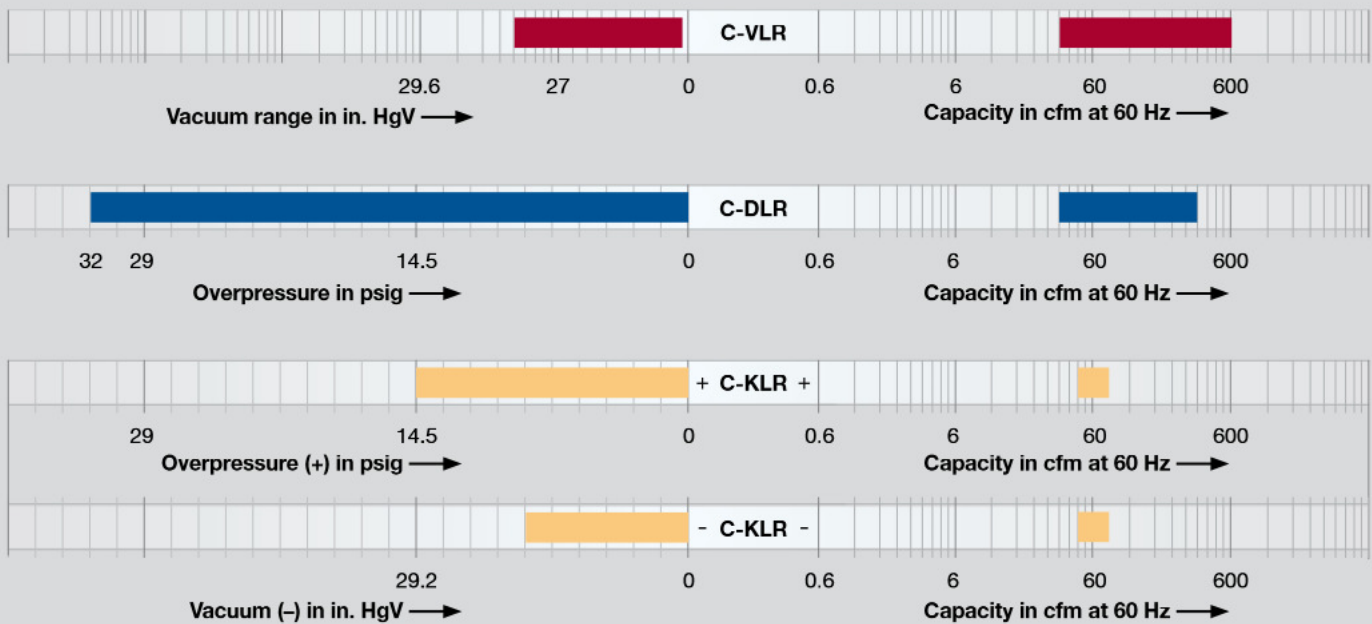
## C-KLR ZEPHYR

### 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, 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



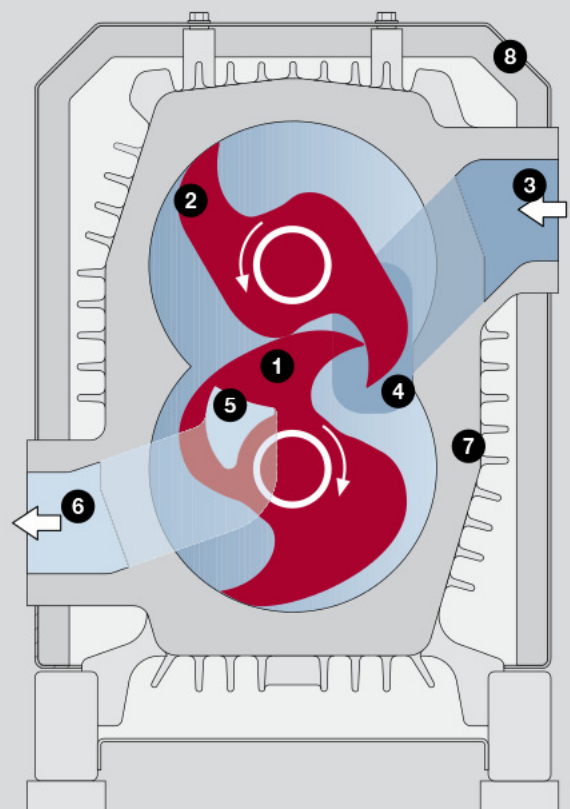
## Operating principle

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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