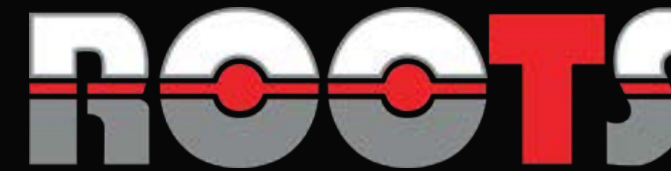
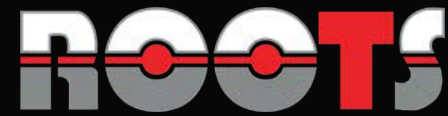


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## ROTARY LOBE

# COMPRESORS & BLOWERS FOR CARBON CAPTURE

- 🌀 OIL FREE TO PROCESS
- 🌀 API 619 COMPLIANT
- 🌀 UP TO 365 BAR INLET PRESSURE
- 🌀 UP TO 4.5 BAR DP
- 🌀 MORE THAN 2 PRESSURE RATIO (CO<sub>2</sub>)



*Your plant needs Roots...*



## CARBON DIOXIDE

Roots Systems is the leading supplier of CO<sub>2</sub> blowers, having supplied many CO<sub>2</sub> blowers and skid mounted packages over the past 40 years for various applications. We can offer you a fully tailor-made solution for your carbon capture project.



### Typical carbon capture applications:

- Amine-Based Carbon Capture:**  
Rotary lobe blowers deliver reliable, oil-free gas flow to circulate flue gas through absorption towers. Their ability to overcome pressure drops across absorber packing ensures stable operation and efficient CO<sub>2</sub> capture.
- Compression/Dehydration Trains (Pre/Post-Capture):**  
Before high-pressure CO<sub>2</sub> compression, blowers provide steady, clean flow for dehydration and contaminant removal. Proven in low-pressure duties, they maximize uptime and ensure dependable gas conditioning.
- CO<sub>2</sub> Transport Systems:**  
For gaseous-phase CO<sub>2</sub> transport, rotary lobe blowers deliver consistent pressure control for injection, recirculation, and pipeline boosting—enhancing system reliability through positive displacement performance.
- Direct Air Capture (DAC):**  
Capturing CO<sub>2</sub> from the atmosphere demands moving massive air volumes. Rotary lobe blowers excel in continuous, high-capacity service with exceptional durability and low maintenance, driving capture efficiency.
- Bioenergy with Carbon Capture (BECCS):**  
In biomass processes, blowers support CO<sub>2</sub> recovery by circulating flue gas, enriching streams, and feeding separation units. Their robustness and versatility make them an ideal fit for sustainable energy applications.

From capture to compression, we deliver tailor-made solutions for every carbon capture process - *our blowers can handle it.*

## COMPRESSING TODAY'S CO<sub>2</sub> FOR TOMORROW'S NET ZERO

More and more energy companies around the world are seeing the benefits of Roots Systems' gas blower packages as they move towards their goal of achieving a 'net zero' carbon footprint.



Catox booster, HP CO<sub>2</sub> Compressor

### Key Design Considerations:

- Simplicity in design & configuration:**  
A straightforward, robust design with minimal moving parts makes rotary lobe blowers easy to install, operate, and maintain.
- Corrosion resistance:**  
CO<sub>2</sub> and amines can form carbonic acid, requiring appropriate materials of construction (e.g., 316 SS, protective coatings). NACE-compliant options are available for sour gas service.
- Seal integrity:**  
Gas-tight sealing is essential for safe, reliable operation with wet or pressurized CO<sub>2</sub>.
- Process gas properties:**  
Moisture, acid gases, temperature, and composition are carefully factored into material and configuration selection.
- Efficiency:**  
With energy costs driving OPEX, blower efficiency and optimized flow control are critical to reducing lifecycle costs.

*Your plant needs Roots...*

