ELECTRONIC VARIABLE CLEARANCE POCKET (eVCP)

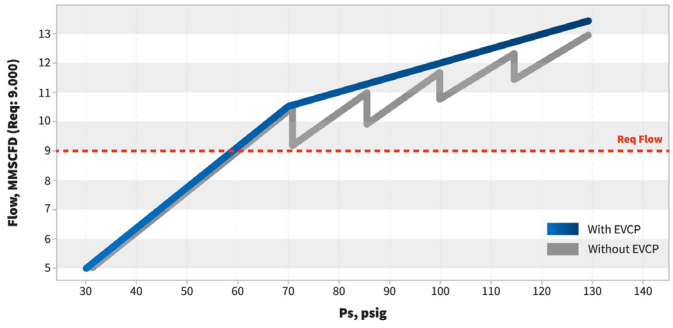
ARIEL | WORLD STANDARD COMPRESSORS

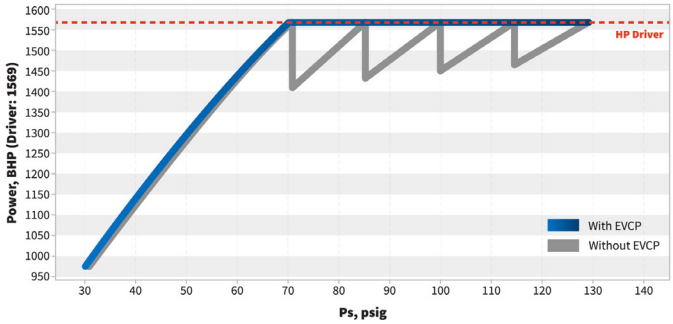
Get More Out of Every Available Horsepower

Ariel continues the next wave of resilient compressors by offering Electronic Variable Clearance Pocket (eVCP) capacity control technology. The eVCP is a head-end unloading device that dynamically adjusts to changing process conditions without shutting down compressor operations.

The eVCP is available for new orders or qualified retrofits using 9 ¼" Class and larger cylinders on KBK:T Class or larger frames. These devices allow an operator to adjust clearance volume to optimize available horsepower for even the smallest change in gas conditions. Fully automated eVCP use cylinder clearance to meet desired parameters such as engine load, flow, or discharge pressure with as few as one eVCP device per compressor station.

eVCP Power Data Charts





eVCP Benefits

The user benefits from maximized flow for any given suction and discharge pressures, which means higher revenue and fully meeting gas control targets. By eliminating HP sawtooth curves, compressor stations are reaching previously unachievable HP utilization by gaining all the additional areas under the curve.

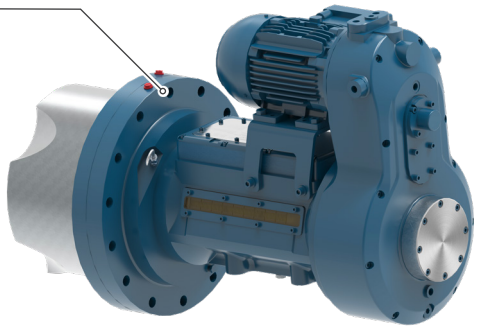
Putting the capabilities of the eVCP to work, your compressor and driver will never be underutilized again. The eVCP can increase flow by creating infinite load steps that unlock previously unavailable driver horsepower. Modernizing your infrastructure with the eVCP has been shown to increase efficiency or utilization by multiple percentage points and achieve project payback within months.

eVCP Features

The eVCP features an interface module and an available mass damping technology which ensure the innovative technology of the eVCP is operating accurately and reliably. The eVCP operating power options include: 50Hz, 60Hz electric motors, or pneumatic instrument air motor. You can experience the benefits of the eVCP with as few as one device per compressor station. Contact Ariel Applications Engineering or your local Ariel Regional manager to model your compression capabilities with the eVCP.

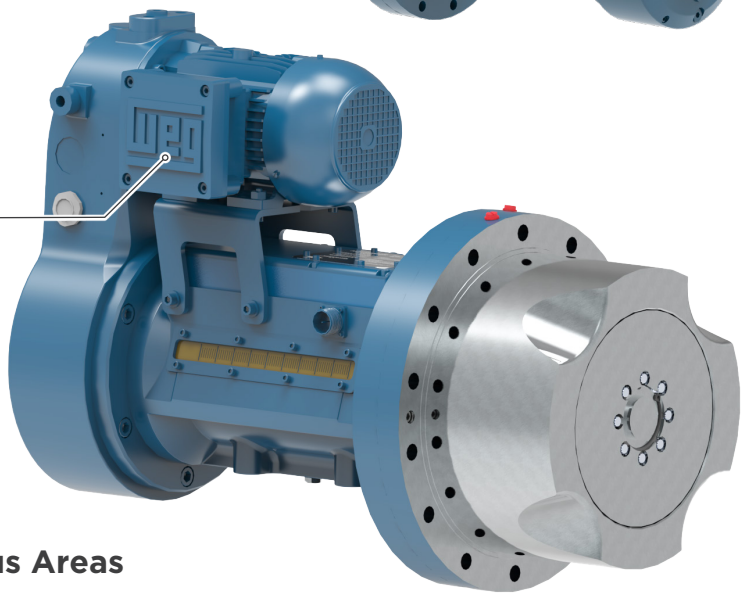
The eVCP motor connects to a gearbox which turns a spindle. This spindle moves the unloader piston to the precise point along its travel designated by the load step or conditions. Instrumentation communicates with the control panel in real-time and maintains operational feedback. An interface module houses the fault monitoring and safety logic that is wired into the control panel of the compressor. The eVCP operates with a micro-PLC, customized operation software, and Modbus protocol for easy installation.

eVCP General Specifications



- Max. Allowable eVCP Piston Rod Load: 90,000 lbf (400 kN)
- Max. Stroke: 9.0 in (228.6 mm) - Actual stroke varies by application.
- Piston Adjusting Speed: 2 in/min (50 mm/min) @ 1800 RPM
- Weight varies by application. See project-specific documentation for details.
- Min. Ambient Operation Temperature: -13°F (-25°C)
- Max. Ambient Operation Temperature: 140°F (60°C)
- Oil Type: Mobilgear SHC 220
- Oil Capacity: 1.5 US gallons (5.3 L)

Motor Specifications



- WEG AC electrical motor, 1.5hp, 3 phase, IP55 with the following options:
  - 460V / 60 Hz; 1750rpm
  - 380/400/415V / 50Hz; 1440/1445/1450 rpm
  - 600V /60Hz 1750rpm

Motor Classification for use in Hazardous Areas

- Class I, Div 1, Group C and D, Temperature code T3C
- Note: Air motors are available as an option.

Have Specific Questions? Ask our Applications Engineers. appeng@arielcorp.com