A WORLD OF COMPRESSORS FOR A WORLD OF DIFFERENCE
For over 90 years, Carlyle has lead the development of compressors for all sizes and types of refrigeration applications. Our current product lines include open drive and semi-hermetic reciprocating and screw compressors.

Today, with worldwide concern about the global warming potential (GWP) of common hydrofluorocarbon (HFC) refrigerants, we are applying our technological capabilities to the development of compressors that use alternative refrigerants, including natural, carbon-neutral refrigerants while still meeting the need for reliable, efficient operation and low life-cycle costs.

In addition to product innovation, Carlyle means worldwide reach. With sales and facilities around the globe, we are truly a global supplier, and fully prepared to address your needs wherever you and your customers are in the world.

<table>
<thead>
<tr>
<th>COMPRESSOR PRODUCT LINES</th>
<th>CAPACITY RANGE (CFM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Hermetic &amp; Open Drive Screw</td>
<td>33-819</td>
</tr>
<tr>
<td>Semi-Hermetic Reciprocating</td>
<td>8-99</td>
</tr>
<tr>
<td>Open Drive Reciprocating</td>
<td>12 - 346</td>
</tr>
<tr>
<td>Compound Cooling 2 stage</td>
<td>17-99</td>
</tr>
</tbody>
</table>
PARAGON TWIN SCREW COMPRESSORS
06TS, 06TT, 06TU, 06TV

Innovative Design
Carlyle’s Paragon Twin Screw compressor combines our vast refrigeration and cooling experience with sophisticated technology. Paragon’s patented rotor profile and optimized housing geometry design, result in exceptional efficiency and reliability.

Superior Serviceability
The Semi-Hermetic, Paragon Twin Screw compressors are designed with fewer parts which results in higher reliability and ease of serviceability.

Efficient Oil Management
Carlyle offers multiple oil separator options to fit the most challenging applications, as well as external, easy-to-service oil filters, level sensors and heaters to reduce installation labor and eliminate the need for an accessory oil pump.

Perfect Load Matching
All Paragon models utilize a continuous slide valve unloading system for capacity modulation from 25% to 100%, which allows for perfect load matching and superior seasonal efficiency. AC duty models can also be applied with variable speed drive (VFD).

Air-Cooled AC Duty

<table>
<thead>
<tr>
<th>137 - 819 CFM</th>
<th>R-134a</th>
<th>R-513A</th>
<th>R-1234ze</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</table>

Water Cooled AC Duty

<table>
<thead>
<tr>
<th>266 - 819 CFM</th>
<th>R-134a</th>
<th>R-513A</th>
<th>R-1234ze</th>
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</thead>
<tbody>
<tr>
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Refrigeration Duty

<table>
<thead>
<tr>
<th>137 - 356 CFM</th>
<th>R-404A</th>
<th>R-407A</th>
<th>R407F</th>
<th>R-507</th>
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</thead>
<tbody>
<tr>
<td></td>
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VARIABLE SPEED TWIN SCREW COMPRESSORS

Unequaled Performance
The latest in Carlyle’s long heritage of screw compressors is available now. With patented rotor profile geometry, optimized casting design, and a built-in Vi valve the Variable Speed Screw is the quietest and most efficient in the Carlyle line.

Rolling Element Bearings
The robust thrust bearing design exceeds 2 million hours of life at AHRI IPLV conditions. There is no in-service inspection required, nor is an oil pump is required.

Three frame sizes
Tonnage for tonnage, chassis are smaller than conventional twin screw models.

High Strength Motor
The high efficiency motor is suction cooled, with screen, for improved reliability. An integrated NTC winding sensor provides further thermal protection. And the motor is a slip fit for improved serviceability.

Perfect Load Matching
The Variable Speed Screw compressor is effective down to 20% load. Loads are matched with a VFD range from 17 Hz to 105 Hz (varies by frame size), and a built-in Vi valve provides optimal performance at both full and part-load conditions.

Air & Water Cooled AC Duty

<table>
<thead>
<tr>
<th>155 - 819 CFM</th>
<th>R-134a</th>
<th>R-513A</th>
<th>R-1234ze</th>
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<tr>
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SEMI-HERMETIC SCREW - 06T & OPEN DRIVE SCREW - 05T

Unique Design – Efficient and Durable
Carlyle’s small-space screw compressor provides better performance and reliability than reciprocating compressors without sacrificing energy. The twin-screw design is tolerant to liquid flood-back and is able to utilize liquid heat exchangers on all temperature applications, providing increased capacity and stabilized system performance.

Compact Size and Weight
They are 15% smaller and lighter than comparable reciprocating compressors, yet have up to 50% higher capacities reducing space required for mechanical rooms and reducing applied cost. Careful engineering minimizes vibration and sound levels while maximizing reliability.

Application Flexibility
Built new from the ground up, this product meets the needs of both commercial and industrial applications ranging from high to low temperatures in single, parallel, and externally compounded system designs. Our step up gear design is ideal for variable speed capacity control systems. Our C-Flange package simplifies compressor installation by self-aligning the motor and compressor.

Refrigerant Friendly
Carlyle 05T and 06T twin-screw compressors are proven reliable in a wide variety of refrigerant applications. Careful design considerations lead to improved performance when applied with R-134a, R-513A, R-404A, R448A, R-449A, R-507, and with POE oils.

<table>
<thead>
<tr>
<th>AC Duty</th>
<th>Refrigeration Duty</th>
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<tbody>
<tr>
<td>33 - 88 CFM</td>
<td>33 - 88 CFM</td>
</tr>
<tr>
<td>R-134a</td>
<td>R-513A</td>
</tr>
<tr>
<td>R-513A</td>
<td>R-457C</td>
</tr>
<tr>
<td>R-404A</td>
<td>R-447C</td>
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<td>✔️</td>
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05T

06T
SEMI-HERMETIC RECIPROCATING COMPRESSORS
06D & 06E

Efficient Performance by Design
The Carlyle design begins with a 2-cylinder model at 2HP and quickly increases to a 4-cylinder at 3HP and the 6-cylinder at 6.5HP. This design shifts the pumping action from “in-line” to “V” and “W” piston movement which provide lower vibrations, sounds and internal operating temperatures. These designs permit 50% capacity reduction for compressors as small as 3HP.

Efficient Capacity Control
The optional suction cut-off system prevents refrigerant from entering the cylinder to control the compressor capacity. This design eliminates the recompression of refrigerant, as used by competitors, reducing operating costs and assuring consistent capacity reduction in all ambient conditions.

Reliability by Design
Our crankcase venting system, combined with an oversized oil sump, results in equalized internal start-up pressures to eliminate nuisance oil trips and assures oil return to the compressor. The positive displacement oil lubrication system extends across the full range down to the 2HP model and combines high flow oil pump with an oil pressure regulator. This assures reliable lubrication with minimum oil circulation in the system.

Refrigerant Friendly
Carlyle reciprocating compressors are proven reliable in a wide variety of refrigerant applications. Careful design considerations in the valve plate, venting, and lubrication areas lead to improved performance when applied with R-134a, R-513A, R-404A, R-407C, R448A, R-449A, R-507, R-452A, and with POE oils.

<table>
<thead>
<tr>
<th>AC Duty</th>
<th>Refrigeration Duty</th>
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<tbody>
<tr>
<td>8 - 99 CFM</td>
<td>8 - 99 CFM</td>
</tr>
<tr>
<td>R-134a</td>
<td>R-404A</td>
</tr>
<tr>
<td>R-513A</td>
<td>R-507</td>
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<tr>
<td>R-407C</td>
<td>R-448A</td>
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COMPOUND COOLING 2 STAGE COMPRESSORS
06CC

Innovative Technology
Carlyle’s innovative design makes it literally two compressors in one, with both high and low stages built into one compressor. Our new narrow-seat valve design makes it the most efficient low temperature compressor in the market for both HCFC and HFC applications from the 5HP to 30HP range.

Higher Efficiency
Compound Cooling, Two-Stage compressors are dedicated to low temperature applications, operating as low as -60°F (-51°C). The Two-Stage design allows for lower compression ratios which results in increased capacity, the application of smaller HP motors and lower applied costs.

Optimized System Operation
Compatible with HFC refrigerants and POE oil in single, multiplexed, and parallel system design configurations. Utilizing liquid sub-cooling minimizes liquid temperature fluctuation to TXVs in systems incorporating floating condensing temperatures.

Refrigerant Friendly
Carlyle reciprocating compressors are proven reliable in a wide variety of refrigerant applications. Careful design considerations in the valve plate, venting, and lubrication areas lead to improved performance when applied with R-404A, R-407A, R448A, R-449A, R-507, R-452A, and with POE oils.

Low Temp Refrigeration Duty

<table>
<thead>
<tr>
<th>17 - 99 CFM</th>
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<tbody>
<tr>
<td>R-404A</td>
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</tbody>
</table>

06CC

![Image of milk and ice cream]
SEMI-HERMETIC RECIPROCATING COMPRESSORS
06M

Optimized Models For All Applications
Models are available for high temperature HVAC applications, and for medium and low temperature refrigeration applications.

Multiple Unloading Options
Apply the control that’s right for the job. Options include: Variable Frequency Drive (20 - 80 Hz), Step (with capacity control solenoid), PWM valve and control module.

Space Saving Footprint
In many cases, the narrow 06M footprint will fit to replace scroll compressors.

Flexible And Simple Application
Application is made easy with dual sight glasses, terminal box rotation, optional suction locations, and a standard mounting pattern across all models.

AC & Refrigeration Duty

<table>
<thead>
<tr>
<th>15 - 24 CFM</th>
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<tbody>
<tr>
<td>R-410A</td>
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</table>

06M
SEMI-HERMETIC RECIPROCATING COMPRESSORS FOR CO₂
06M FOR SUBCRITICAL DUTY
06V FOR TRANSCRITICAL DUTY

Non-Ozone Depleting, Sustainable Refrigerant for the future

CO₂ (R-744) is a carbon neutral, non-ozone depleting refrigerant and addresses today’s concerns about the global warming potential (GWP) of common hydrofluorocarbon (HFC) refrigerants. CO₂ is part of a small family of natural refrigerants found in the natural environment.

06M for CO₂

New 06M models optimized for subcritical CO₂ are easy to apply, with dual suction connection locations, a wide operating envelope, and a narrow footprint. Advanced factory-installed motor protection and low oil protection provide reliable service. And all CO₂ models are Variable Frequency Drive (VFD) capable.

06V for CO₂

New 06V models optimized for CO₂ employ the proven two-cylinder, two-stage design which allows for intercooling and mechanical subcooling between stages. Add a Variable Frequency Drive (VFD, 20-110Hz) for precise load matching. With a wide operating envelope and a small footprint, 06V for CO₂ are ideal for transcritical applications.
OPEN DRIVE COMPRESSORS FOR TRANSPORT AIR CONDITIONING
05G, 05K

Money Saving Flexibility
The automatic unloaded start capability makes expensive high-torque motors unnecessary, reducing initial expense.

 Dependable Performance
Positive pressure lubrication extends the life of the compressor. Compressors can be operated as a direct drive or belt drive with the ability to use a variety of motors – electrical, natural gas, and diesel to name a few. Multi-step unloading is available in both internal hydraulic and external electronic control configurations.

Energy Efficient Operation
The design of the crankcase casting, cylinder heads and valve plates allow for a smooth, unrestricted flow of refrigerant though the compressor, resulting in greater operating efficiencies.

Simple to Maintain
Some models are designed to be completely rebuilt on-site, including cylinder wall replacement.

Refrigerant Friendly
Carlyle reciprocating compressors are proven reliable in a wide variety of refrigerant applications. Careful design considerations in the valve plate, venting, and lubrication areas lead to improved performance when applied with R-134a, R-404A, R448A, R-449A, R-507, R-452A, and with POE oils.

AC Duty

<table>
<thead>
<tr>
<th></th>
<th>12 - 41 CFM</th>
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<tbody>
<tr>
<td>R-134a</td>
<td>✔</td>
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<tr>
<td>R-407C</td>
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</tbody>
</table>
OPEN DRIVE COMPRESSORS FOR REFRIGERATION
5F, 5H

Money Saving Flexibility
The automatic unloaded start capability makes expensive high-torque motors unnecessary, reducing initial expense.

Dependable Performance
Positive pressure lubrication extends the life of the compressor. Compressors can be operated as a direct drive or belt drive with the ability to use a variety of motors – electrical, natural gas, and diesel to name a few. Multi-step unloading is available in both internal hydraulic and external electronic control configurations.

Energy Efficient Operation
The design of the crankcase casting, cylinder heads and valve plates allow for a smooth, unrestricted flow of refrigerant though the compressor, resulting in greater operating efficiencies.

5H for Ammonia
Ammonia (R-717) is a carbon neutral, non-ozone depleting refrigerant and addresses today’s concerns about the global warming potential (GWP) of common hydrofluorocarbon (HFC) refrigerants. Ammonia is part of a small family of natural refrigerants found in the natural environment.

All components qualified for Ammonia operation.

New Factory Installed Features:
• Electric Solenoid Unloading
• Oil Pressure Safety Switch
• Suction & Discharge Service Valves

New Optional Accessories:
• Mufflers
• Oil Cooler Kit

AC Duty

<table>
<thead>
<tr>
<th>20 - 346 CFM</th>
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<tbody>
<tr>
<td>R-134a</td>
</tr>
<tr>
<td>✓</td>
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</table>

Refrigeration Duty

<table>
<thead>
<tr>
<th>20 - 346 CFM</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-404A</td>
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<tr>
<td>✓</td>
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</table>
COMPRESSOR UNLOADING ACCESSORIES

PWM VALVE & CONTROL MODULE

Larger Capacity Range Modulate compressor capacity from 20 – 100 percent with better low range capacity control than using a variable frequency drive (VFD) because the PWM valve does not reduce compressor motor speed, eliminating reduced oil pressure issues.

Lower Manufacturing Costs Since fixed compressors do not require step unloading, compressor costs are reduced. Also, a simplified system and control logic will result in lower fabrication costs.

Saves Energy with Precise System Control Load matching with tighter suction pressure control allows you to float the suction pressure while improving compressor efficiency.

Versatility The PWM valve is qualified to work with all low, medium, and high temperature applications. It can be used in either single or parallel compressor applications.

Carlyle Reliability The PWM valve underwent extensive high cycle qualification testing and use of the PWM valve reduces compressor cycling of the fixed compressors for the extended compressor life and reliability.

Even More Efficient Two Stage Compressors The Carlyle compound cooling compressor provides superior efficiencies for low temperature applications. With the PWM valve, your low temperature system will have the best of both worlds – precise capacity control and even greater energy efficiency, making Carlyle a clear choice for all your low temperature applications.

Compressor Application The PWM control module is designed to operate with 06D, 06E, 06CC and 06M compressor models for all low, medium and high temperature applications.

PARAGON CONTROL MODULE (PCM)

User Configurable The Paragon Control Module (PCM) is user configurable for both slide valve & compressor protection, slide valve control only, or compressor protection only. The control set-point can be specified for either pressure or temperature.

PCM Inputs The PCM has multiple sensors to control the controller set-point, the motor temperature, discharge temperature, and oil flow and level.

PCM Outputs The PCM monitors the slide valve unloader coils #1 and #2, the motor cooling valve, and the compressor start/stop circuit.

LED Fault Code Outputs Multiple fault code outputs alert to potential issues such as high motor temperature, high discharge temperature, loss of oil flow to the compressor, low oil level in the oil separator, or of a faulty sensor. The PCM is network capable with ModBus®, BacNet®, LonWorks®, N2 Open, and RS485 communications port.

Compressor Application The PCM is designed to operate with all Paragon compressor models.