



## Sundyne's PPI Line of Diaphragm Compressors For Environmentally Safe & Leak-Free Processing of Critical Gases

Available in multiple configurations and sizes, Sundyne's PPI Compressors can be customized to address a wide range of applications.



9000 Series



7000 Series



4000 Series



2000 Series

### A Legacy of Quality:

For almost 70 years, **Pressure Products Industries (PPI)** diaphragm compressors have been designed & manufactured in the United States and France. PPI is owned by Sundyne, and has been part of Sundyne's global family since 2014.

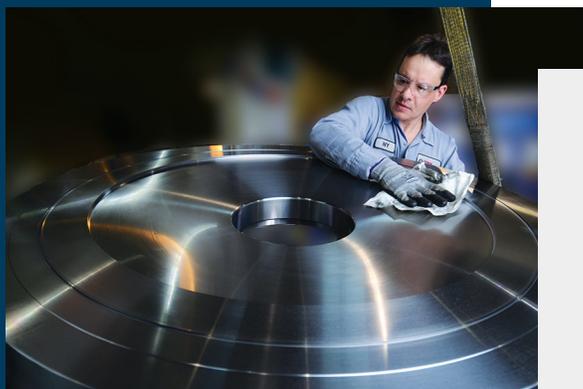
# Reliable Diaphragm Compression

## Diaphragm Compressors:

Sundyne's PPI diaphragm compressors deliver non-contaminating gas compression, through a leak-tight mechanism with static seals that do not need to be purged or vented. A set of metallic diaphragms isolates the process media from the piston & piston rings to completely eliminate the risk of cross contamination. Sundyne's PPI compressors present zero leakage threat to the atmosphere, providing an ideal solution for safely handling ultra-pure, corrosive and volatile gases.

All models can be built to meet API 618 standards where applicable to diaphragm compressors. These machines are available in a variety of flexible configurations and sizes, making them easily customizable to fit a wide range of applications in the Hydrogen processing, petrochemical, refining, electronic gas, specialty gas and poly-silicon production industries.

All process contacting parts are made from corrosion resistant alloys



## Durability:

Thousands of PPI compressors are installed in extreme operating environments around the globe. No matter where they are, diaphragm compressors deliver high performance, lubricant- and particulate-free compression of gases and mixtures.



◀ Sundyne's proprietary diaphragm technology and proprietary cavity design provide unmatched diaphragm life.

## Reliability from a Proven, Heavy-Duty Design:

Sundyne PPI diaphragm compressors feature heavy duty components that are custom-engineered for reliable operation. Every unit is extensively tested in the factory and detailed operating data is provided to meet each customer's specific service & operating parameters:

- Proprietary designs (from decades of field experience) assure reliability in the most demanding applications and environments.
- Extensive factory testing prior to shipment verifies guaranteed test points.
- Critical components, including the crankcase assembly & connecting rods, pulsation dampers, coolers, valves, instruments and an integrated control unit are engineered to fit precisely into each customer's workflow and are designed for long life with minimal maintenance.

## Longevity & Trouble-Free Operation:

With regular maintenance, Sundyne PPI compressors will run for years to meet exacting API 618 standards.

### Markets:

Energy & Fuel Cells  
Petrochemical  
Silicon Manufacturing  
R&D  
Pilot Plants

### Applications:

Hydrogen  
Fluorine  
Oxidizing  
Hazardous gases  
Corrosive gases

# Environmentally Safe & Leak-Free Processing of Critical Gases

## Application Experts:

Sundyne's PPI design team has decades of compressor engineering experience in the most demanding applications, such as hydrogen, fluorine, oxidizing, and other hazardous and corrosive gases. For every installation, Sundyne engineers consult with the customer to identify unique requirements for each application. The result is a customized system that been specifically designed to safely and efficiently handle critical gases.



## Cost Effective:

Sundyne's pricing is extremely competitive and takes into account the total cost of ownership; including purchase price for high quality components, efficient lifetime operating needs and maintenance costs, including genuine OEM parts and fluids.

## Delivery Times:

All parts are engineered, built and tested in the United States – helping to ensure prompt & efficient delivery times.

- One stop communication with construction, engineering and contract management teams.
- Sundyne's Project Management System ensures that equipment is delivered on schedule.

## Aftermarket Support:

Sundyne's worldwide Authorized Service Center network supports each customer, anywhere around the globe. Customers can rest assured, knowing that compressors will be properly maintained for continuous operation – and any issues will be quickly resolved using Sundyne Genuine Parts.



◀ **The heavy-duty crank case is designed for a long life with minimal maintenance.**

**Designed To International Standards:**

API, ATEX, CE, CSA, KHK, SQL, KGS, TSSA, EAC, DOSH

# Reliable Contamination-free Compression

Sundyne's PPI diaphragm compressors are designed to deliver higher purity gas compression than other compressor technologies. They utilize a set of metallic diaphragms to isolate the process media and totally eliminate the risk of cross contamination. Built to comply with API 618 standards, these machines are customized to meet the compression ratio & capacity of unique customer applications.

**Leak detection system:** Sundyne PPI originated the O-ring seal system for leak detection that has become an industry standard. Used in conjunction with triple diaphragm construction, it rapidly detects a potential diaphragm- or diaphragm-seal failure

**Check valves:** Ball, poppet or plate check valves are specified to match operating conditions and process gas. Valves are readily accessible for inspection, repair or replacement. They can be removed without disassembly of the compressor head.

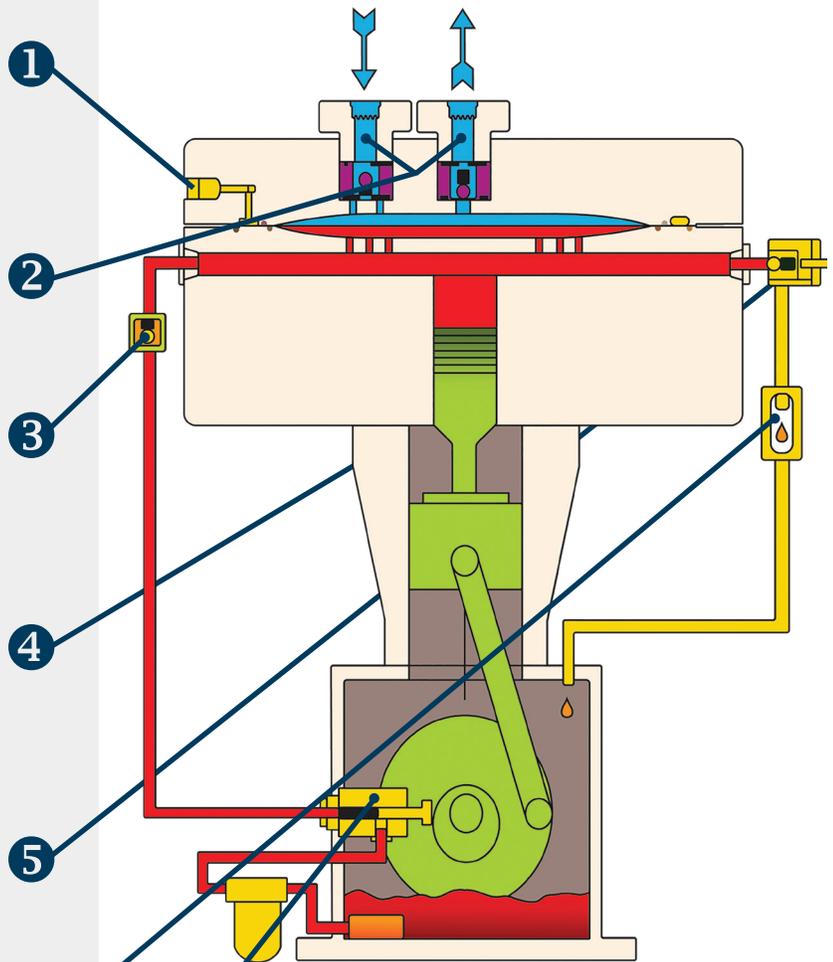
**Hydraulic inlet check valve:** Contains the injected hydraulic fluid within the head assembly. Valve body is stainless steel. Ball is 440 SS.

**Hydraulic pistons:** For design pressures to 3,000 psi (200 bar), pistons are sealed with high-quality cast iron or filled-plastic piston rings in a hardened, honed sleeve. For higher pressures, a pack-less, ring-less piston is lap-fitted to a hardened, honed sleeve and the hydrodynamic film between the two provides the lubrication and the pressure seal.

**Hydraulic Over-pump valves:** Controls the pressure of the hydraulic system. The loading of the die spring force determines the pressure range of the valve. Valve body is carbon steel. Poppet is hardened 17-4 tool steel.

**Over-Pump sight glass:** Provides visual indication that hydraulic fluid is being forced through the over-pump valve and that the hydraulic system is functioning properly.

**Hydraulic injection pump:** Driven by the crankshaft, the pump injects fluid into the hydraulic system. Pump plunger is spring-loaded and is matched to the sleeve. Plungers are cast iron; sleeves are alloy steel. (see more at [www.sundyne.com](http://www.sundyne.com).)



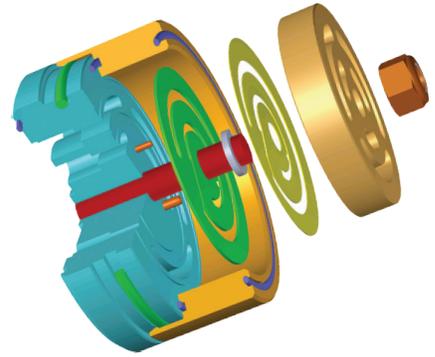
# Features & Benefits

- **High Compression Ratio:** PPI diaphragm compressors are designed to meet the pressures required by mobility applications and industrial de-carbonization projects. Multiple members in the product family ensure a custom-fit for a wide range of applications.
- **Product Purity:** PPI compressors feature triple diaphragm sets which ensure that the process gas is isolated from the hydraulic oil, providing absolute process purity, which is critical for applications like hydrogen processing.
- **Reliability:** Every process-contacting part in a PPI compressor is made from corrosion resistant alloys, making them ideal for hydrogen processing and other applications involving hazardous gasses.
- **Environmental Safety:** The static seals in PPI compressors ensure zero leakage of process gas to the atmosphere, and PPI's Leak Detection System immediately detects diaphragm or seal failure.
- **Lower Energy Costs:** PPI's rugged crank cases and drive trains are specially designed to deliver maximum compression at the lowest energy cost.
- **Support for Industry Standards:** All PPI compressors can be built to meet API 618 standards.
- **Explosion-Proof Certification:** To meet the various standards that address requirements for explosion-proof environments, around the globe.
- **Hydraulic Oil System:** The hydraulic system assures uniform diaphragm deflection, preventing knocks, vibration & cavitation, while yielding smooth, quiet compressor operation. Unique oil distribution techniques eliminate pressure differentials and gradients. The system utilizes an automatic priming pump, positive displacement high-pressure injection pump and an over-pump valve with bypass feature for effortless start-up.
- **Custom Engineering:** Sundyne collaborates with customers to manufacture customized PPI systems that are optimized for the gas pressure, molecular weight, heat, corrosion and velocity of each customer's application. Sundyne utilizes the latest technology in solids modeling and FEA analysis to ensure that all working components are designed & tested to minimize wear, improve sealing and reduce corrosive & erosive effects.
- **Global Support:** Sundyne's global network of channel partners provide prompt & complete support (and spare parts) anywhere around the globe.

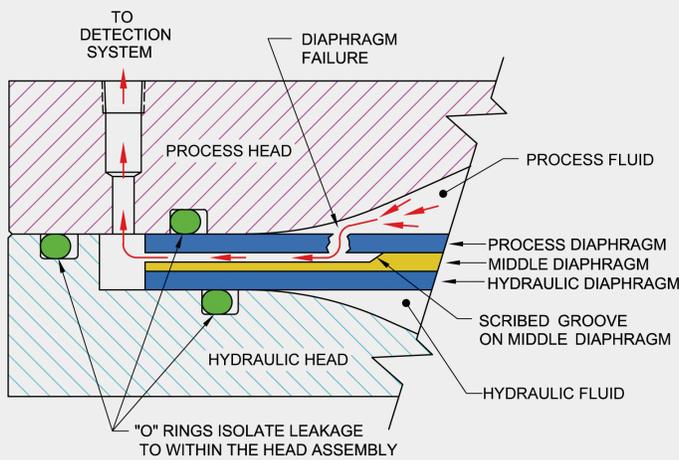


# Advanced Leak Detection

Sundyne PPI originated the O-ring seal system for leak detection, which has now become an industry standard. Used in conjunction with triple diaphragm construction, it rapidly detects a potential diaphragm or diaphragm-seal failure.



▲ State-of-the-art check valves are designed to work in concert with specific process conditions.



A matched set of three separate diaphragms, manufactured to precise requirements, guides any leakage to a containment system in the event of a failure. The outer two diaphragms are conventionally flat and smooth, while the specialty-coated middle diaphragm has scribed grooves, providing a path for gas or hydraulic fluid to flow to the detection system in the event of a failure.

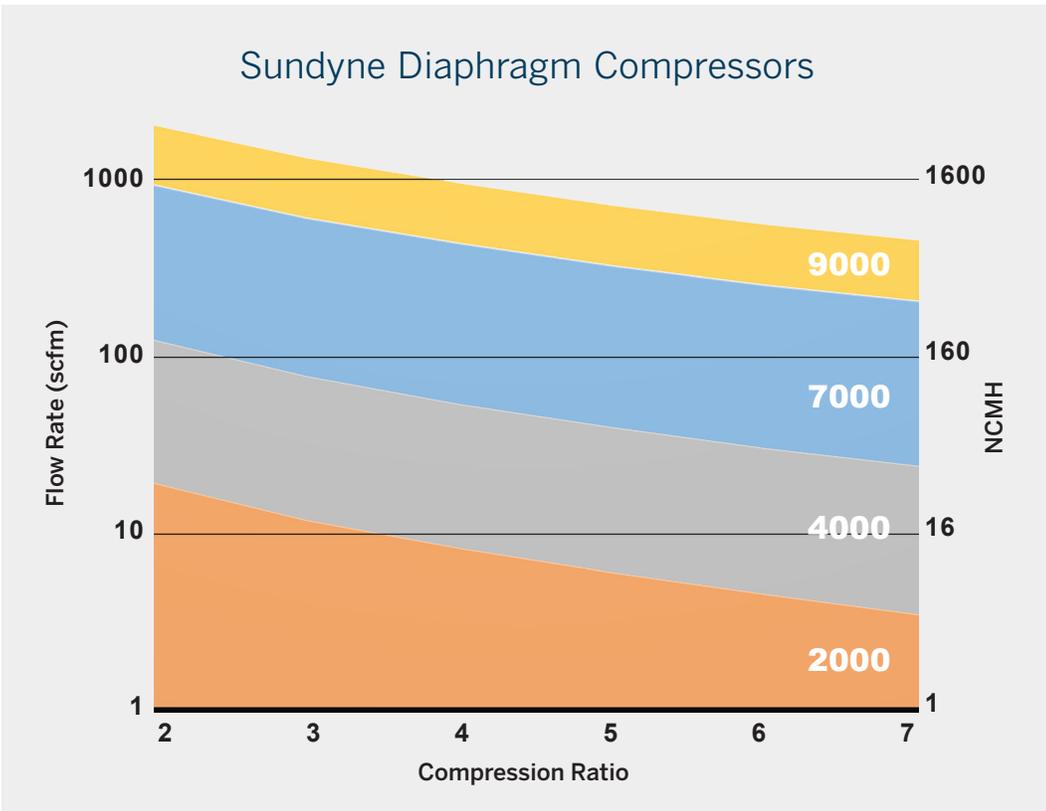
## Options & Accessories for Custom Systems:

Systems can include a wide range of components, including suction and discharge pulsation dampeners, process after coolers, crankcase heaters, custom valves and fittings. Process piping can also be customized, and butt-weld and orbital-weld techniques can be used.



# Product Line Specifications

|                                      | <br><b>9000 Series</b><br>Single Or Two-Stage Configuration | <br><b>7000 Series</b><br>Single Or Two-Stage Configuration | <br><b>4000 Series</b><br>Available in Several Sub-Series Models | <br><b>2000 Series</b><br>Single Or Two-Stage Configuration |
|--------------------------------------|--|--|--|--|
| <b>Maximum Working Pressure</b>      | 8,000 psi / 550 bar  | 6,250 psi / 431 bar  | 16,750 psi / 1,155 bar   | 15,000 psi / 1,035 bar   |
| <b>Maximum Motor Size</b>            | 250 hp / 185 kW  | 200 hp / 50 kW   | 40 hp / 30 kW  | 15 hp / 11 kW  |
| <b>Mounting</b>                      | H Configuration  | L or H Configuration   | L Configuration  | L Configuration  |
| <b>Speed Range</b>                   | 250 to 335 rpm   | 250 to 350 rpm   | 250 to 400 rpm   | 250 to 450 rpm   |
| <b>Maximum Discharge Temperature</b> | 450°F / 232°C  | 450°F / 232°C  | 450°F / 232°C  | 475°F / 246°C  |



## Backed By Global Support

Sundyne is more than just a manufacturer of high quality compressors and pumps. We offer some of the fastest delivery times in the industry, and we back each product shipped with a full range of aftermarket support services, extending the value of our highly engineered machines well beyond the point of sale.

And with our engineered solutions, worldwide presence and compact designs, installation and maintenance has never been more efficient.

The Sundyne service team is here to help protect your investment and provide a trouble-free customer experience at every turn. That's **RELIABILITY REALIZED.**

Our Aftermarket Programs Include:

- Gearbox Exchanges & Upgrades
- Maintenance Kits
- Conversion Programs
- On-Site SundSCHOOL
- Field Service Support
- Overhaul and Repair Services
- Site Surveys
- Emergency Expedite Services

## Sundyne: An OSHA VPP Star Site

At Sundyne, Environmental Health and Safety (EH&S) is integral to our culture of excellence, and providing a 100% safe work environment through the manufacturing and installation phases of a project is a core priority.

To learn more about our extended service offerings and specific application references, visit [www.sundyne.com](http://www.sundyne.com) or contact us toll free at 1-866-SUNDYNE.



For more information please  
visit [www.sundyne.com](http://www.sundyne.com)  
and fill out the  
Contact Me form.  
A Sundyne representative  
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