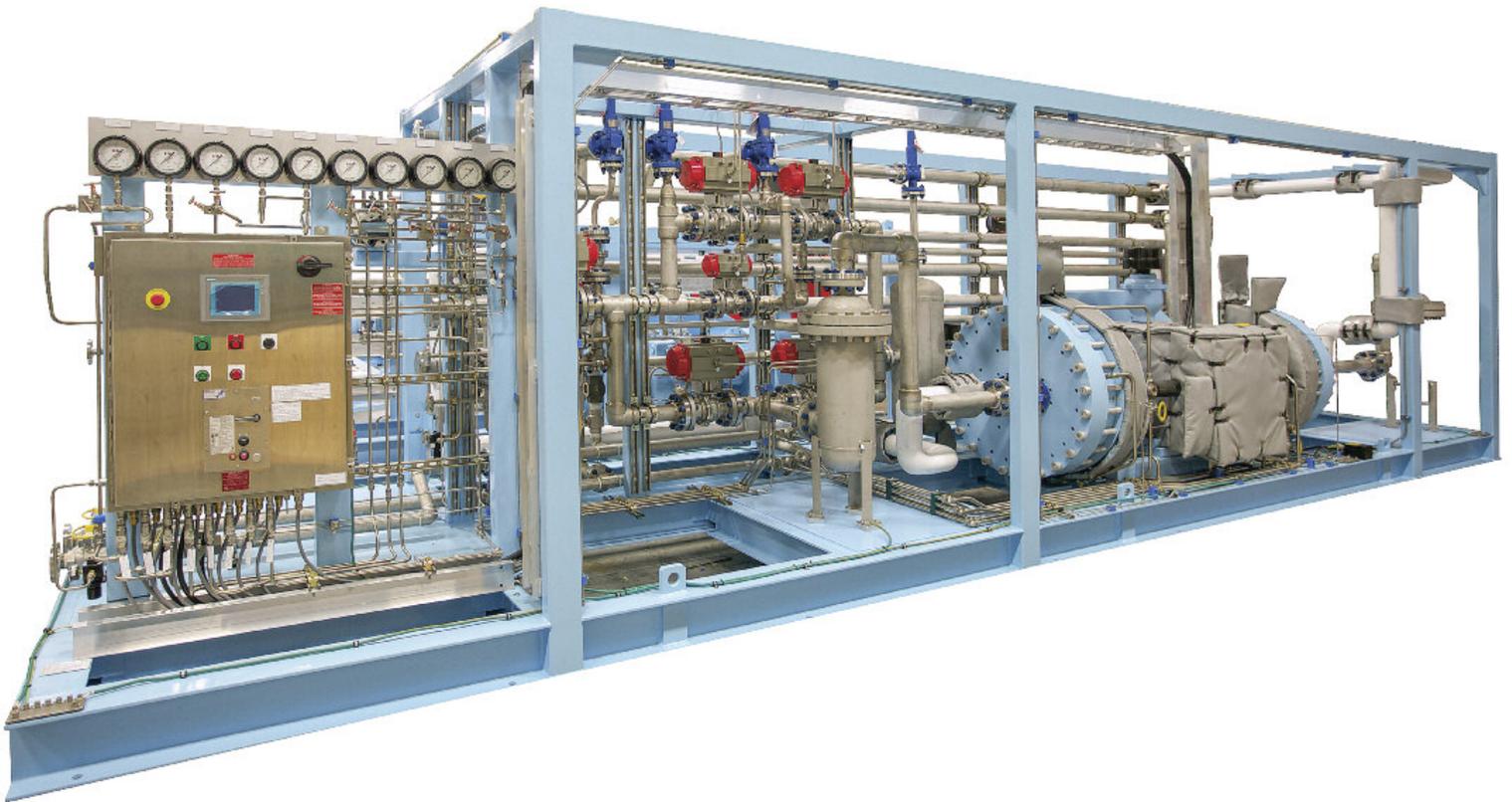


Diaphragm Compressors

Designed and Constructed for High Reliability and Low Maintenance



An ISO 9001:2015 certified company.

We perform
under pressure.

Providing World-Class Diaphragm Compressors

This is accomplished through a unique combination of:



In-House Engineering and Design

PDC's engineers utilize the latest engineering software and our own customized software packages to shorten the delivery cycle and increase productivity. We design our compressor systems to comply with local and international codes and standards.



Modern Manufacturing Facility

PDC is committed to continuously improving its manufacturing process, utilizing the latest lean manufacturing techniques to streamline our operations, keep costs down, and decrease lead times. We utilize fifteen computerized, numerically controlled machining centers to easily perform the most complicated machining operations.



Stringent Quality Control

To ensure our products exceed our customer's expectations, PDC is 9001:2015 ISO certified and adheres to a strict Quality Assurance/Quality Control program at each stage of the manufacturing process.

PDC Machines has been manufacturing diaphragm compressors since 1977. Today PDC is a 2nd generation family-owned and operated business that is rooted in innovation, business discipline and fair pricing with a deep commitment to our employees, clients, and the communities we serve. We have earned a reputation for delivering the highest quality compressors quickly at the lowest cost possible.

Model selection Guide

PDC-4-800(100%)-3000(100%)

PDC = Manufacturer

4 = Compressor Series,
(-3, -4, -13, -P)

800 = 1st head discharge
pressure rating, (psig)*

(100%) = 1st head loading factor,
(35 to 150%)**

3000 = 2nd head discharge
pressure rating, (psig)*

(100%) = 2nd head loading factor,
(35 to 150%)**

* If head pressure rating are equal, compressor is a single stage/duplex

** Loading factor does not have to be identical for both heads



Integrated Assembly and Testing

A majority of our components are sourced within PDC, providing complete control over manufacturing, quality and delivery schedule, bringing ultimate value to our clients

Serving Many Industries

PDC Machines state-of-the-art diaphragm compressors are the preferred choice for any application where high purity and leak-tight compression are required. Our compressors are found in virtually every industry worldwide.

These include:

General industrial
Specialty gas
Industrial gas
Alternative energy
Bio gas
Power
Chemical processing
Petrochemical
Oil and gas refining
Universities and research
Government
Pharmaceutical
Food & beverage
Semi conductor industry



Typical applications

Include any gas which may be hazardous, toxic, carcinogenic, explosive, environmentally damaging, pyrophoric, corrosive, rare or of high purity. Examples include Ar, CH₂, CO₂, CO, He, H₂, H₂S, Kr, NO, O₂, N₂, NF₃, PH₃, SiH₄ and Xe.



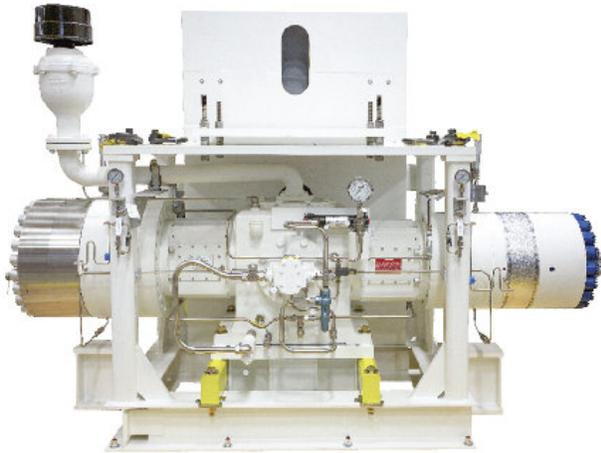
Triple Metal Diaphragm benefits

- Leak free compression
- Non contaminating
- High Compression ratios
- High discharge pressures
- Able to process corrosives gases
- High reliability



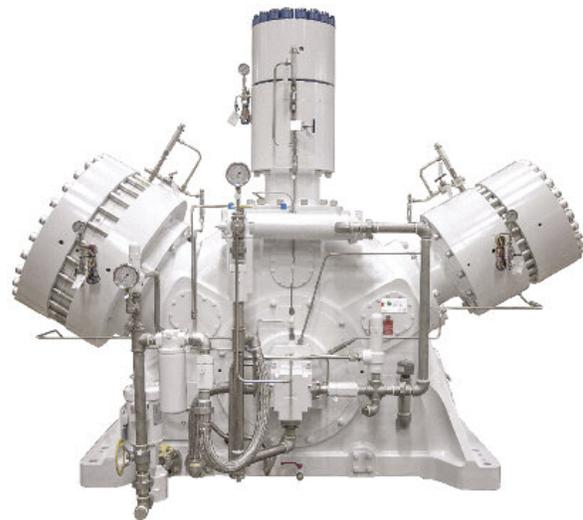
PDC Machines technology for use in Hydrogen energy and refueling

PDC Machines has long been a proponent of hydrogen as an energy carrier. Over the years we have partnered with gas producers, technology companies, research companies and component suppliers to create practical and commercial world-wide acceptance of this concept. PDC specializes in providing complete hydrogen compression solutions in hydrogen energy installations for fuel cell vehicles, buses and material handling vehicles. We offer an extensive line of standard compressors and turn-key designed compression systems to meet an array of applications ranging from single sites to full-scale commercial stations.



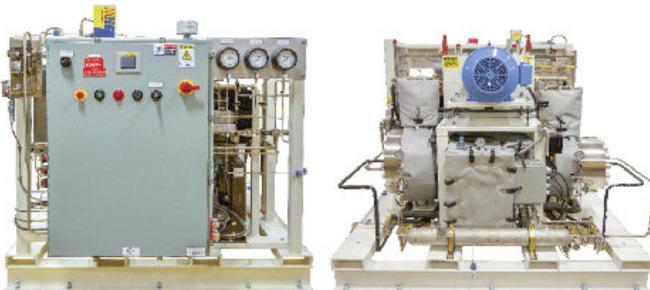
Vehicle Fueling:

A wide variety of models are available that can meet discharge pressures ranging from 3,500 psig to 15,000 psig (241 barg to 1,034 barg) and flow rates ranging from 5 kg/day to 2,500 kg/day and beyond.



Bus, Medium and Heavy Duty Truck Fueling:

Compressors are available that can meet discharge pressures up to 15,000 psig (1,034 barg) and flow rates beyond 2,500 kg/day.



Material Handling Vehicles:

PDC Machines compressors have been integrated into distribution infrastructures for fuel cell material handling equipment. Models are available to boost pressures to 7,000 psig (482 barg) and beyond and flow rates from 5 kg/day to 2,500 kg/day.



Component and Systems Integration:

With decades of experience in high pressure hydrogen compression systems, integration and process knowledge PDC is the preferred source for component and system packaging in hydrogen fueling applications.

SimpleFuel Hydrogen generation and dispensing

A consortium team of technology innovators comprised of PDC Machines and IVYS Energy Solutions, which make up SimpleFuel™, developed a cost effective and reliable fueling solution in order to make hydrogen fuel more accessible to fuel cell vehicle customers in the automotive, fleet and industrial sectors.

SimpleFuel™ is designed as an all-in-one hydrogen generation, compression, storage and dispensing solution capable of delivering up to 10 kg/day of hydrogen to vehicles at pressures up to 700 barg (10,150 psig). 5 kg of hydrogen fuel is enough to fill one fuel cell electric vehicle (FCEV) for 300-360 miles.



simple.fuel.™
your on-site hydrogen fueling solution

PDC 3

Series

Suction Pressure Range

Sub atmosphere and above

Discharge Pressure Psig/Barg

Representative
Transfill Applications:
6,000/413

Representative
Industrial Applications:
6,500/482

Representative Hydrogen
Energy Applications:
14,500/1,000

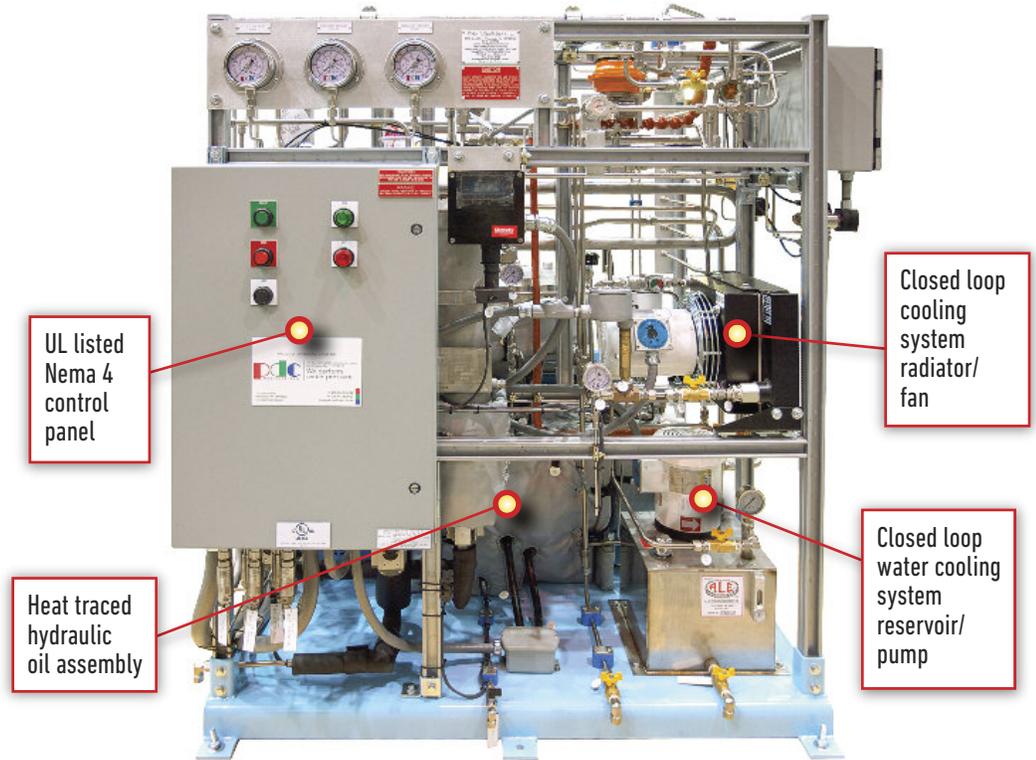
Flow Rate

Up to Scfm/ Nm3/hr:
30/48

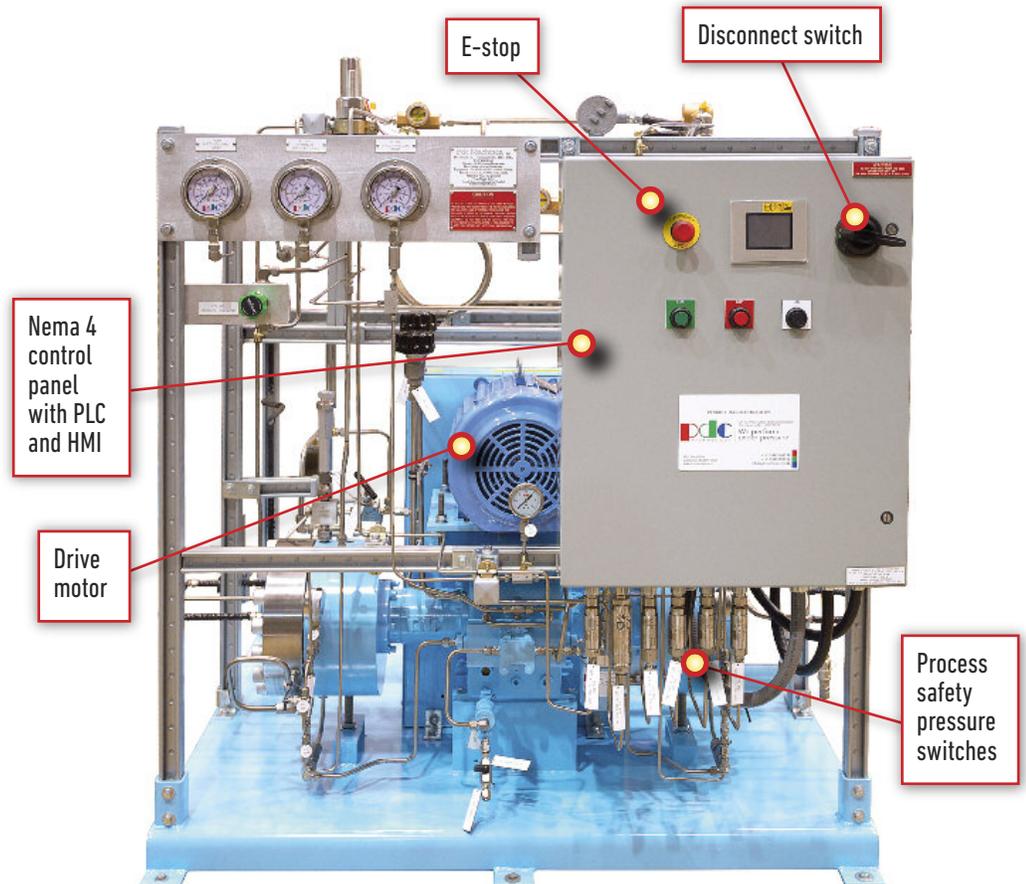
Horse Power

Up to Hp/kW:
15/10

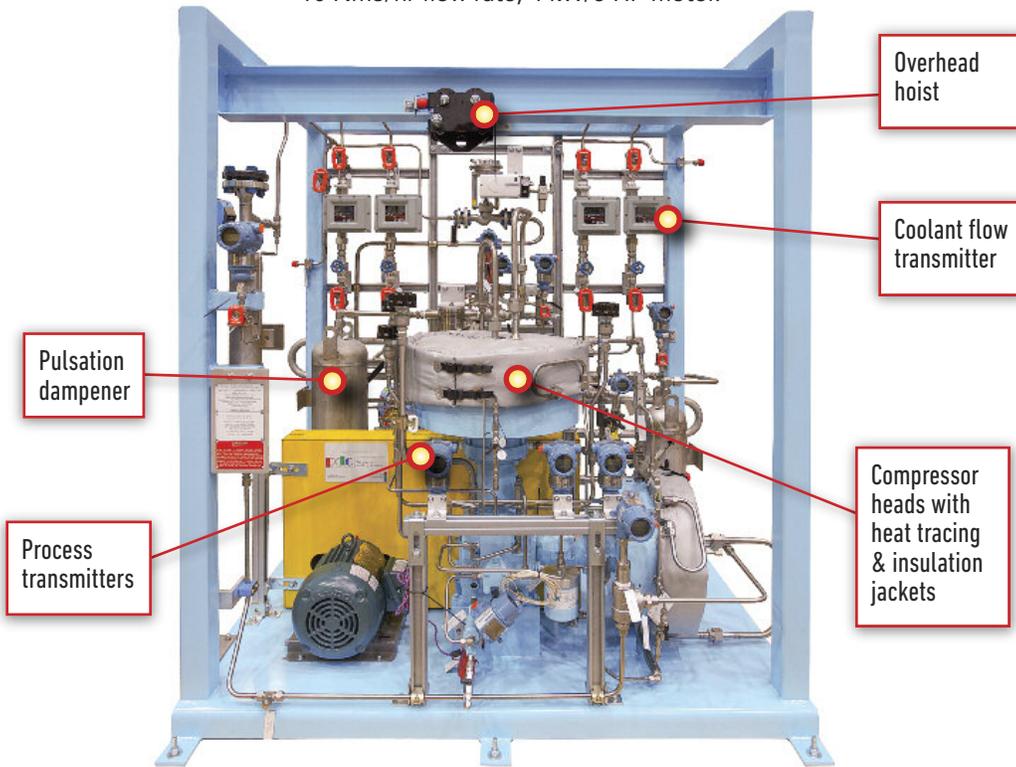
PDC-3-300-600 two-stage compressor, deuterium gas, Specialty Gas Industry, 30 barg/435 psig discharge pressure, 8 Nm3/hr flow rate, 7.5 kW/10 HP motor.



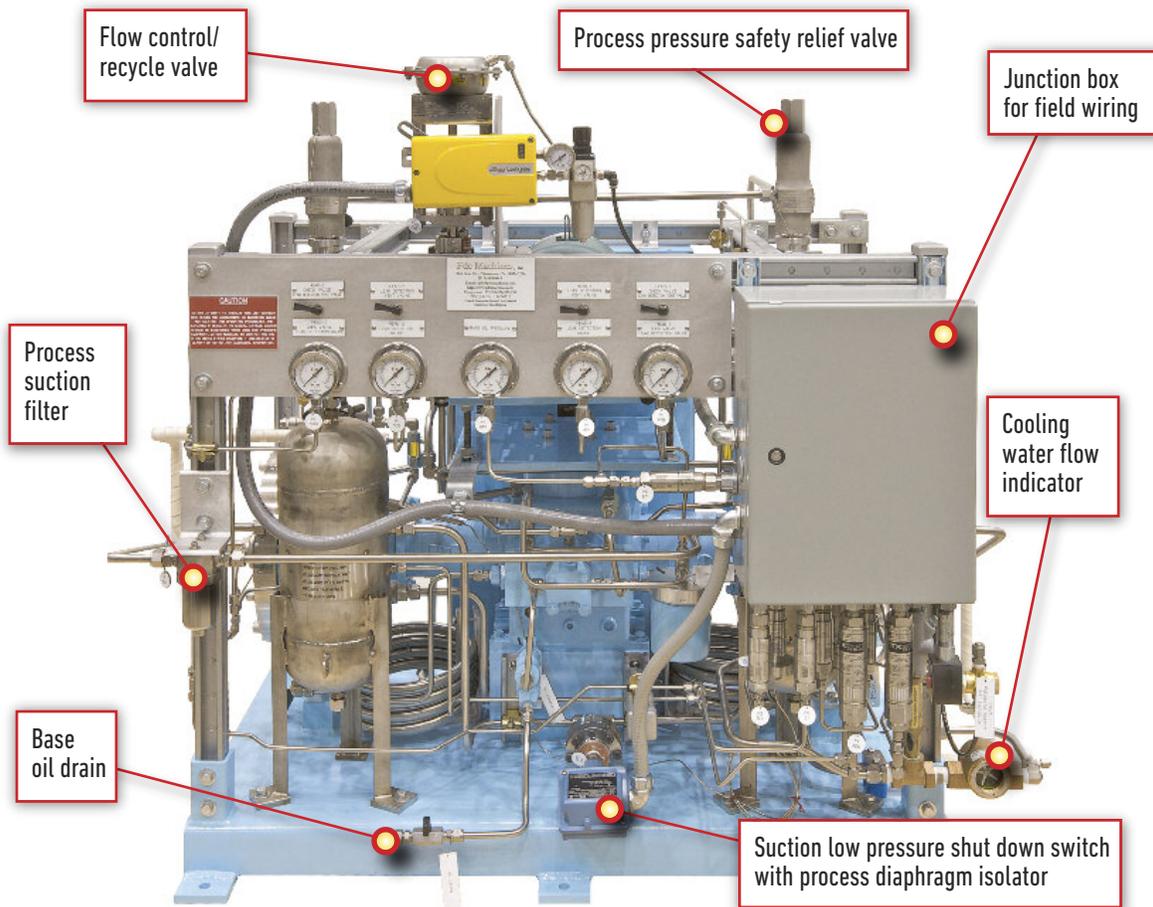
PDC-3-300-7500 two-stage compressor, helium gas, Industrial Gas Industry, 517 barg/7,500 psig discharge pressure, 20 Nm3/hr flow rate, 7.5 kW/10 HP motor.



PDC-3-300-1000 two-stage compressor, tetrafluoroethylene (TFE) gas,
Chemical Industry, 48 barg/700 psig discharge pressure,
10 Nm³/hr flow rate, 4 kW/5 HP motor.



PDC-3-550-550 (50) single-stage duplex compressor, silane gas,
Semi-Conductor Industry, 9 barg/135 psig discharge pressure,
5 Nm³/hr flow rate, 4 kW/5 HP motor.



PDC

4

Series

Suction Pressure Range

Sub atmosphere and above

Discharge Pressure Psig/Barg

Representative
Transfill Applications:
6,000/413

Representative
Industrial Applications:
6,500/448

Representative Hydrogen
Energy Applications:
14,500/1,000

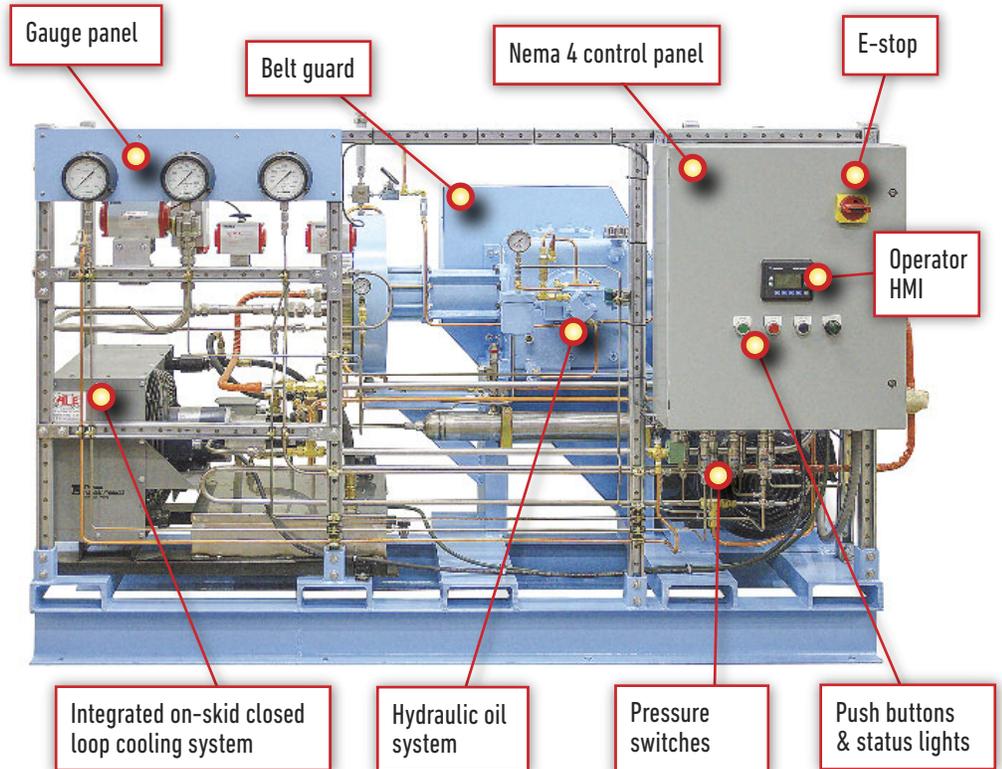
Flow Rate

Up to Scfm/ Nm³/hr:
150/241

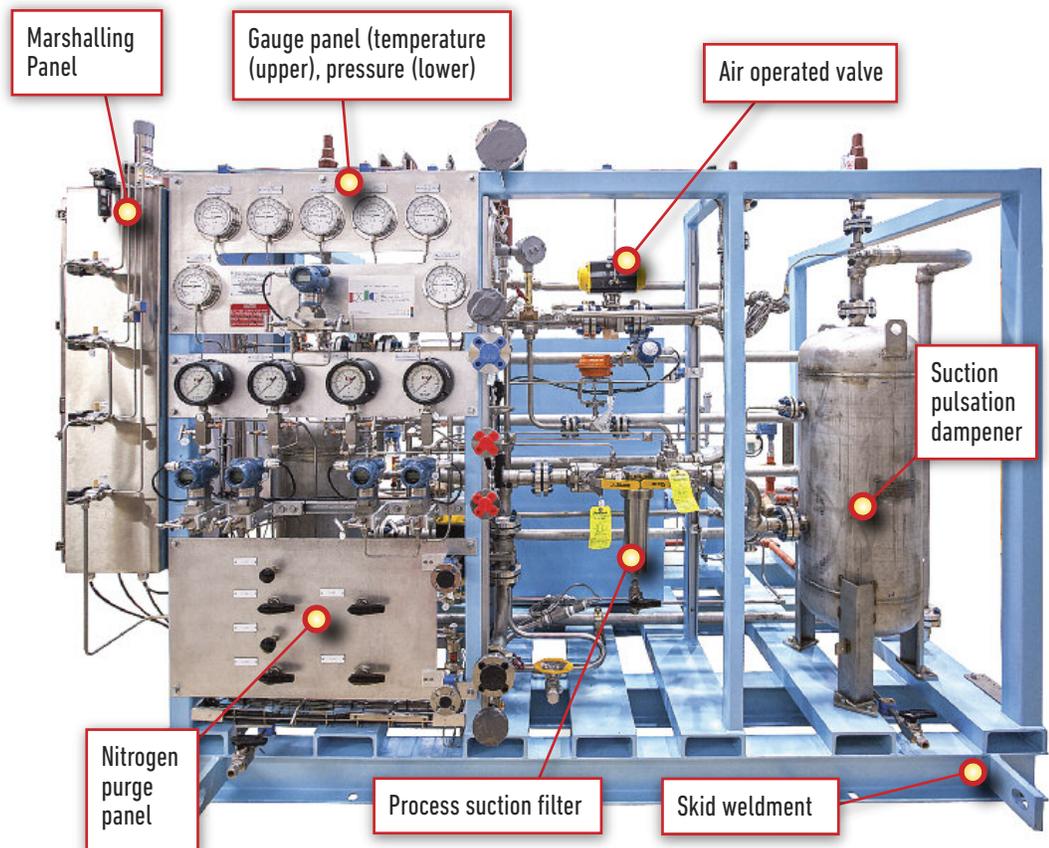
Horse Power

Up to Hp/kW:
40/30

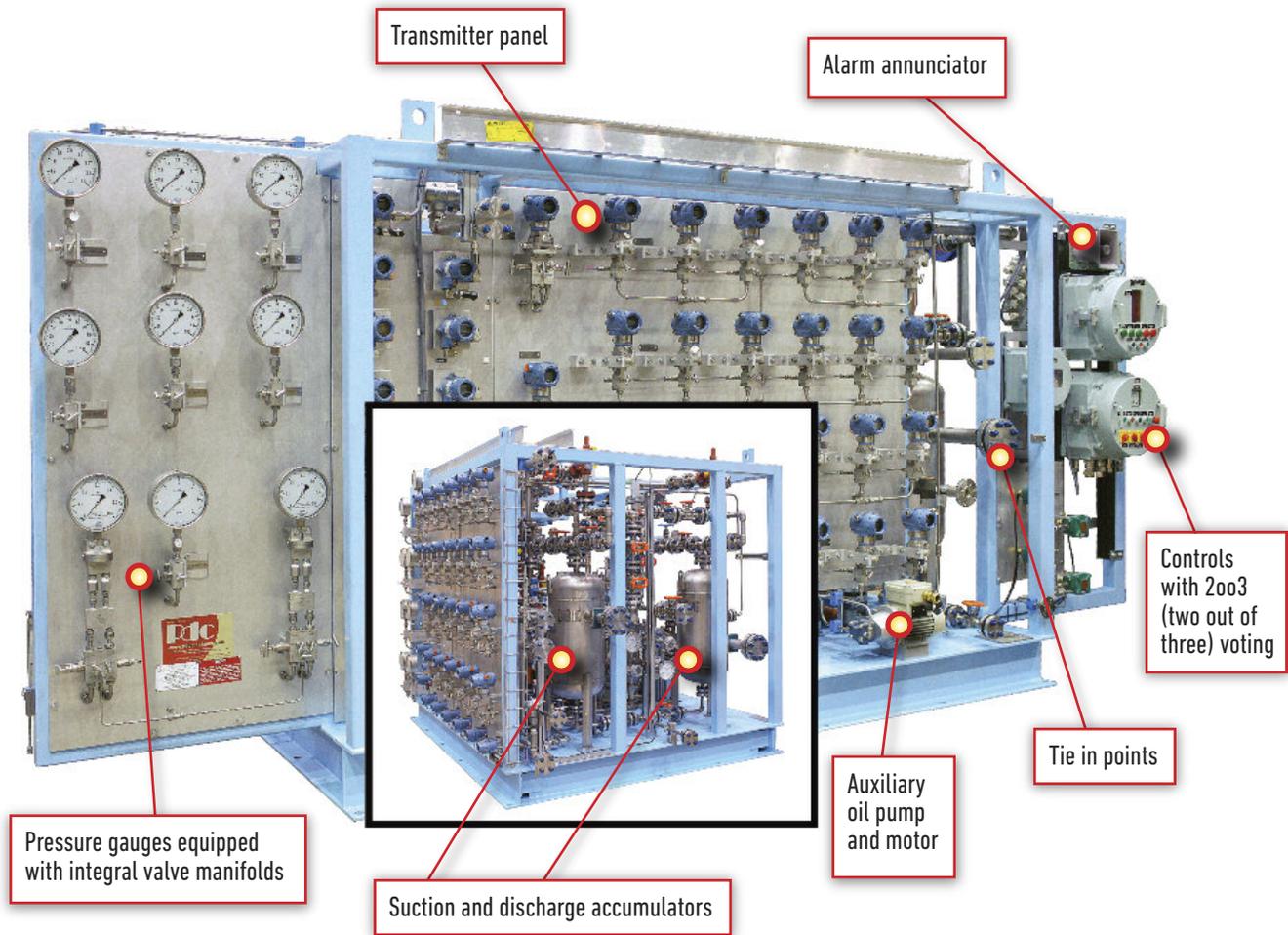
PDC-4-800-3500 two-stage compressor, oxygen service, Industrial Gas Industry, 240 barg/3,500 psig discharge pressure, 123 Nm³/hr flow rate, 15 kW/20 HP motor.



PDC-4-300-300 single-stage duplex compressor, natural gas, Research & Development, 18 barg/261 psig discharge pressure, 90 Nm³/hr flow rate, 15 kW/20 HP motor.



PDC-4-600-600 (150) duplex compressor, hydrogen, Petrochemical Industry,
40 barg/580 psig discharge pressure, 350 Nm³/hr flow rate,
22 kW/30 HP motor.



PDC

13

Series

Suction Pressure Range

Sub atmosphere and above

Discharge Pressure Psig/Barg

Representative
Transfill Applications:
6,000/413

Representative
Industrial Applications:
6,500/448

Representative Hydrogen
Energy Applications:
14,500/1,000

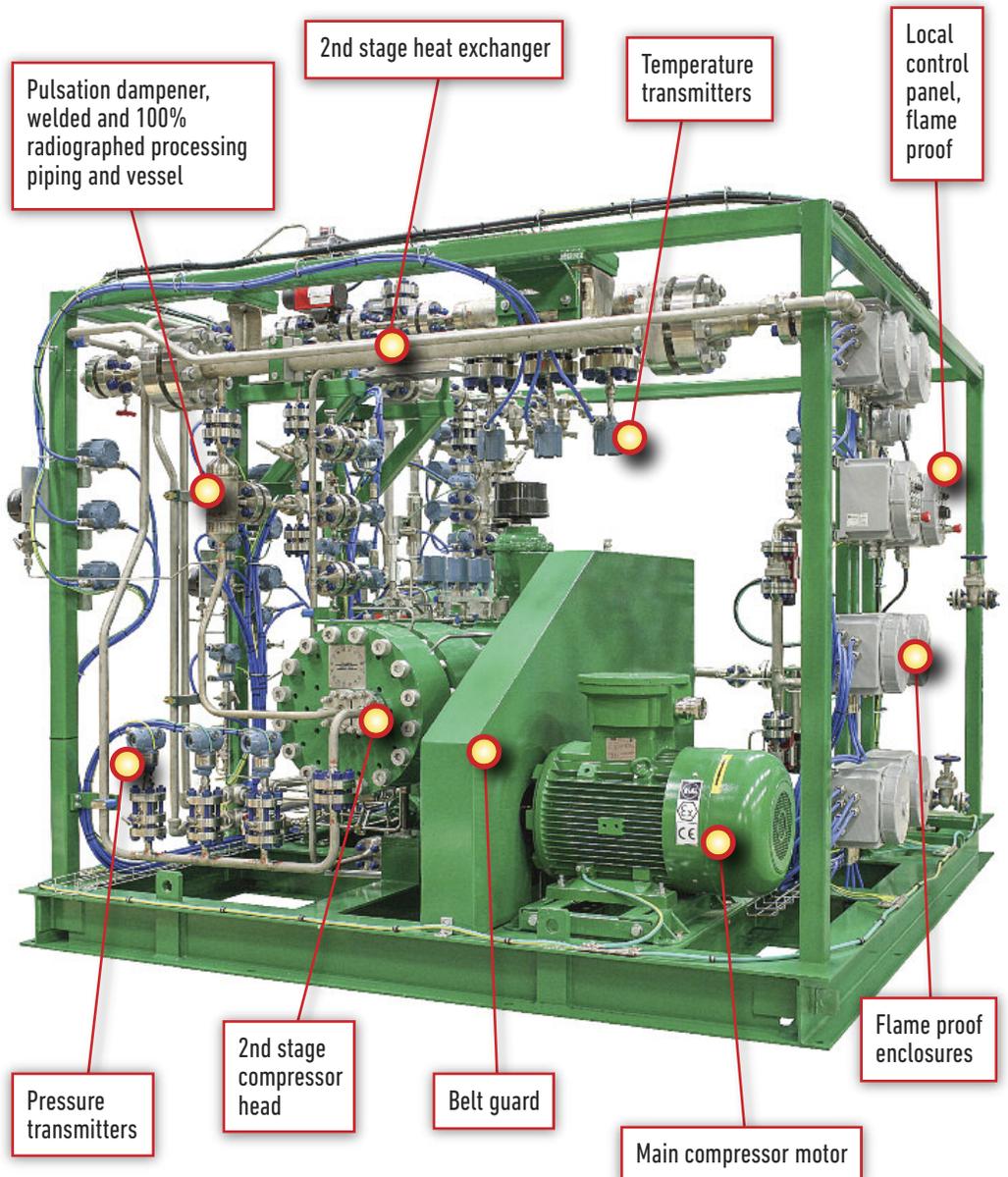
Flow Rate

Up to Scfm/ Nm³/hr:
1,875/3,000

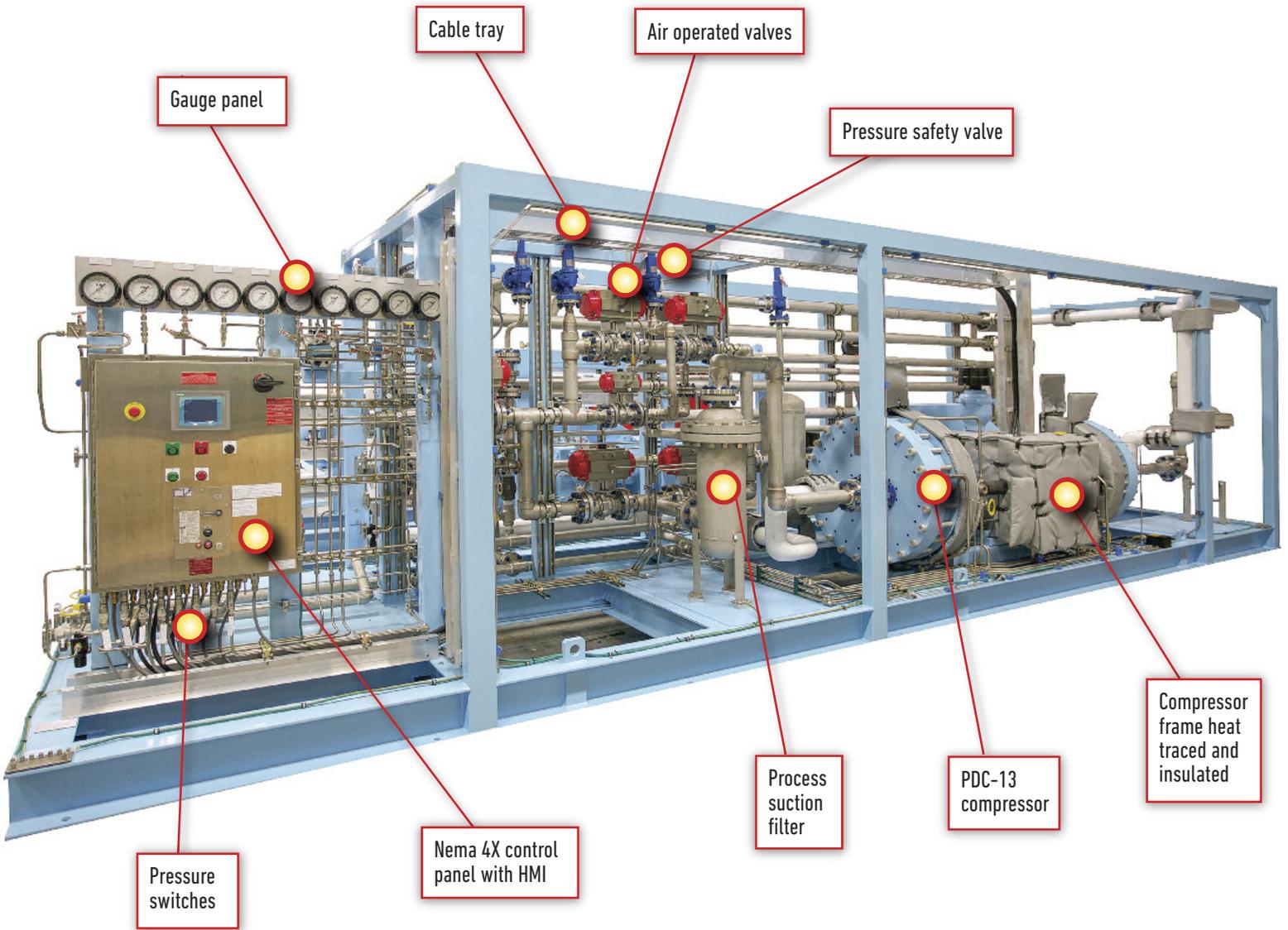
Horse Power

Up to Hp/kW:
250/175

PDC-13-1000-3500 two-stage compressor, hydrogen gas, Oil & Gas Refining Industry, 200 barg/2,900 psig discharge pressure, 200 Nm³/hr flow rate, 90 kW/125 HP motor.



PDC-13-300-500 two-stage compressor, syngas, Bio-gas Industry,
30 barg/435 psig discharge pressure, 750 Nm³/hr
flow rate, 90 kW/125 HP motor.



PDC

P

The world's only fully contamination-free and fully leak-free three stage diaphragm compressor

Suction Pressure Range

Sub atmosphere and above

Discharge Pressure Psig/Barg

Representative
Industrial Applications:
6,500/448

Representative Hydrogen
Energy Applications:
14,500/1,000

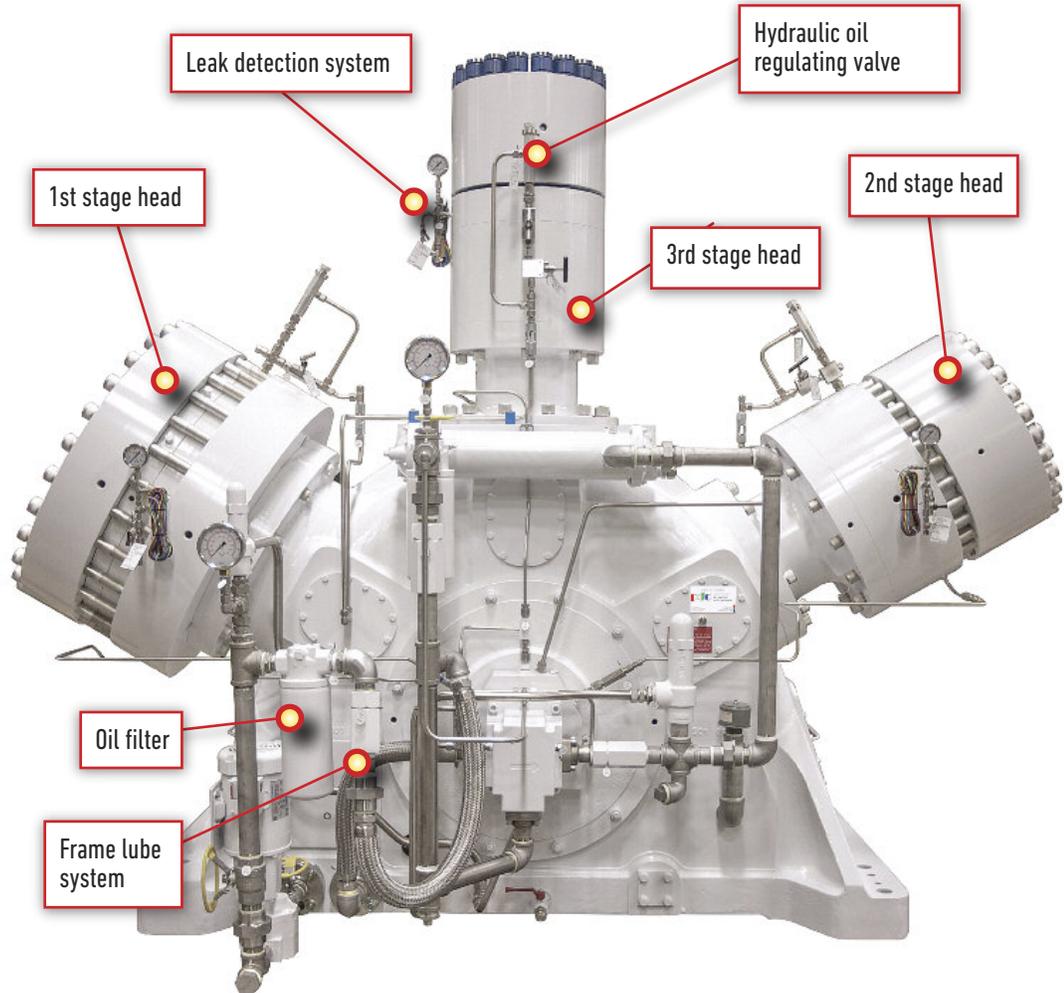
Flow Rate

Up to Scfm/ Nm³/hr:
2,500/4,000

Horse Power

Up to Hp/kW:
300/224

PDC-P-900-5000-15000 three-stage compressor, hydrogen gas, Vehicle Filling, 950 barg/14,000 psig discharge pressure, 50 kg/hr flow rate, 180 kW/240 HP motor.

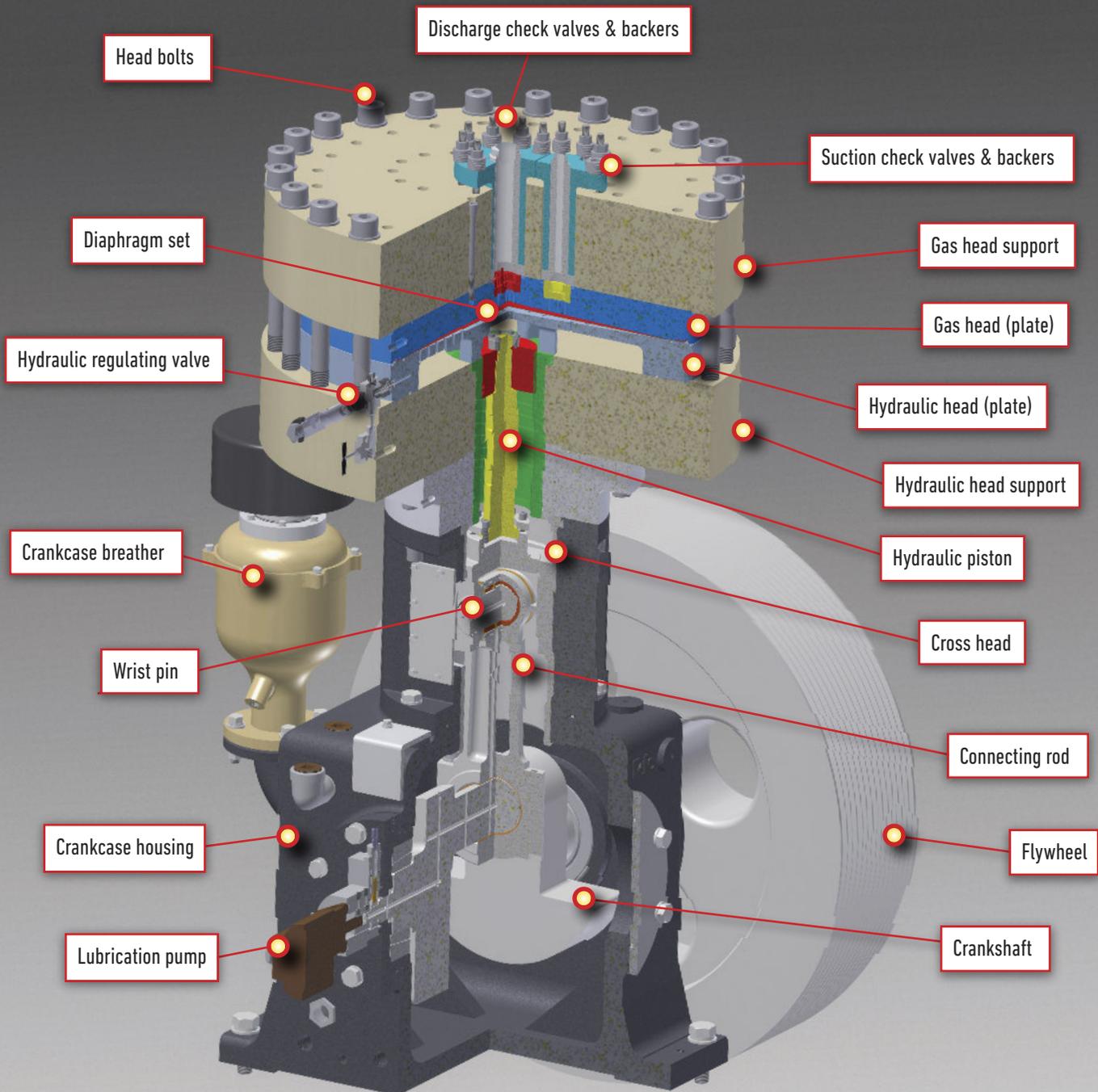


Triple Metal Diaphragm Compressors: Theory of Operation

A diaphragm compressor is a positive displacement machine which consists of a hydraulic system and a gas compression system. Diaphragm compressors are somewhat traditional in the sense that the hydraulic system uses a linear reciprocating piston attached to a crank shaft that is driven by an electric motor. The hydraulic piston travels through a cylinder which moves a column of oil. This oil is used to lubricate the lower end running gear and to energize the gas processing system.

The gas processing system consists of the gas head assembly, three metal diaphragm plates and the compressor check valves. When the hydraulic oil is pumped to the underside of the diaphragm set they flex through a contoured cavity in the gas head as the compressor check valves allow for the process gas to flow in & out of the compressor.

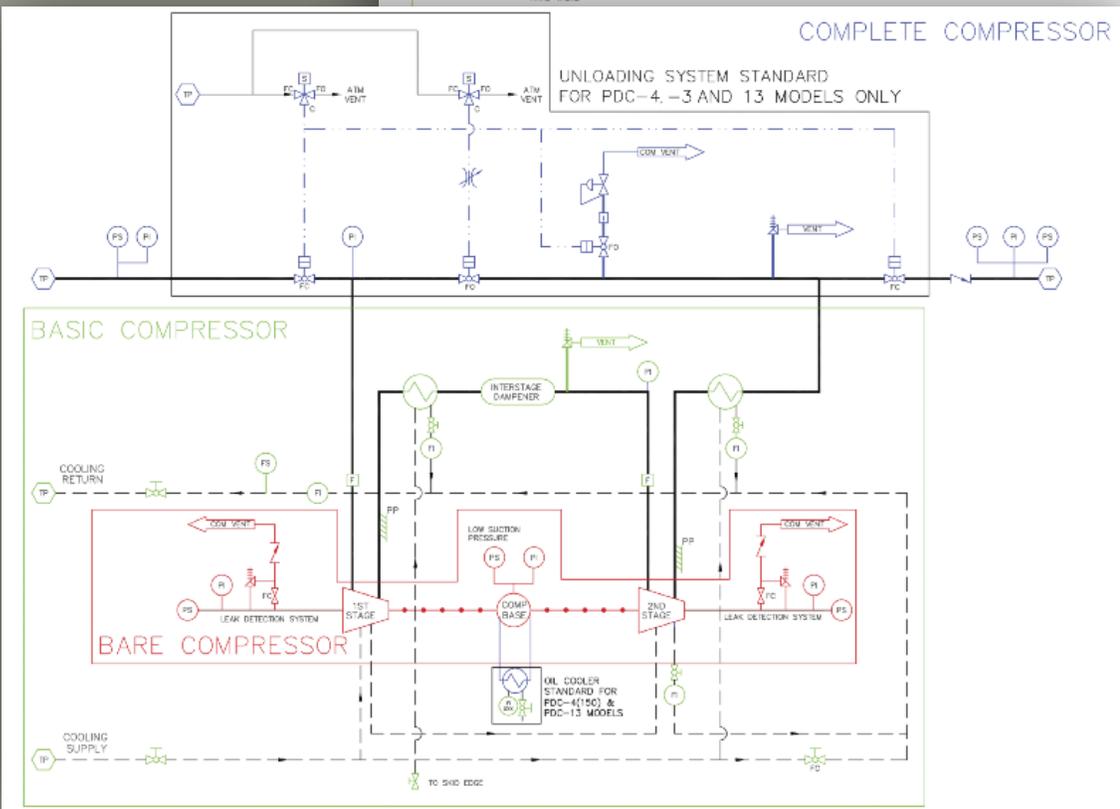
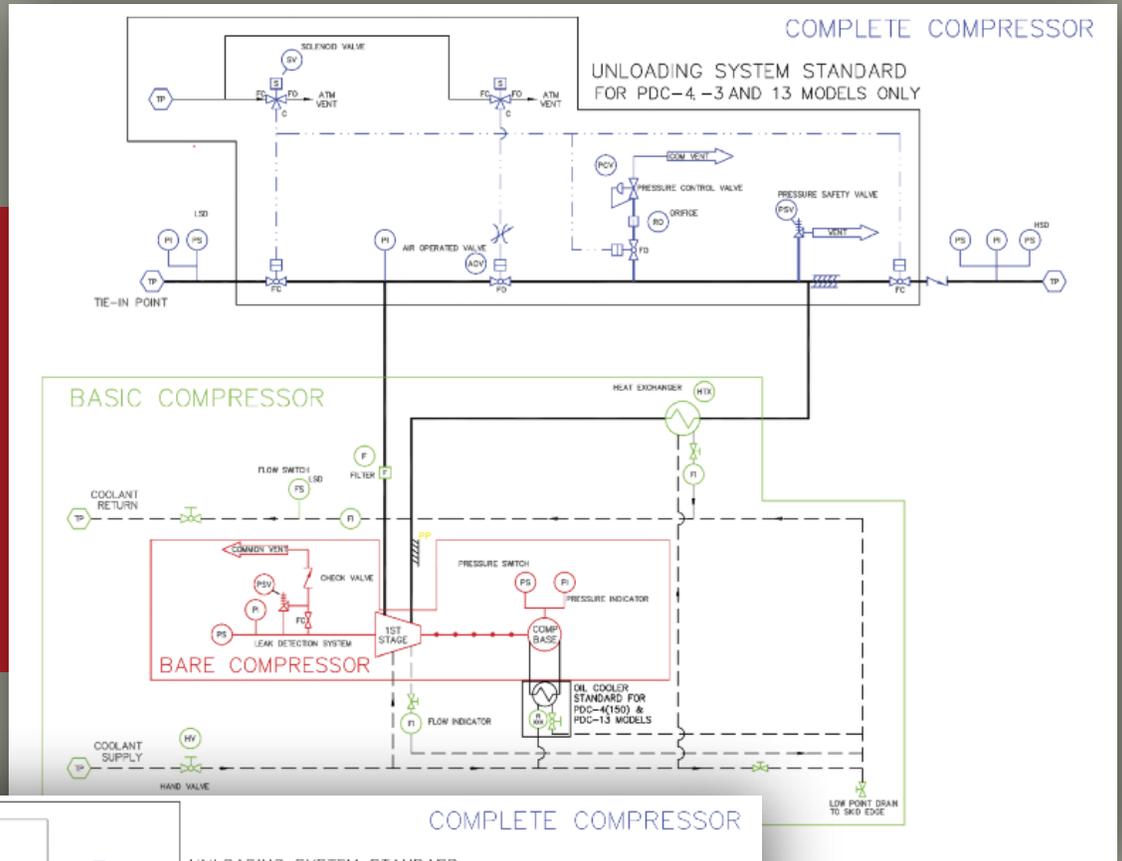
Triple metal diaphragm compressors are unique because they are leak free and non-contaminating since they do not utilize dynamic seals and the diaphragm set completely isolates the process gas from the hydraulic system. Each compressor also includes a leak detection system that monitors the integrity of the diaphragms and static o-rings. Breaches in these components can signal an alarm and or automatically shut down the compressor.



A Wide Range of

P&ID SINGLE STAGE

Typical P&ID for a standard bare unit, basic and turnkey system for a single and duplex compressor



P&ID TWO STAGE

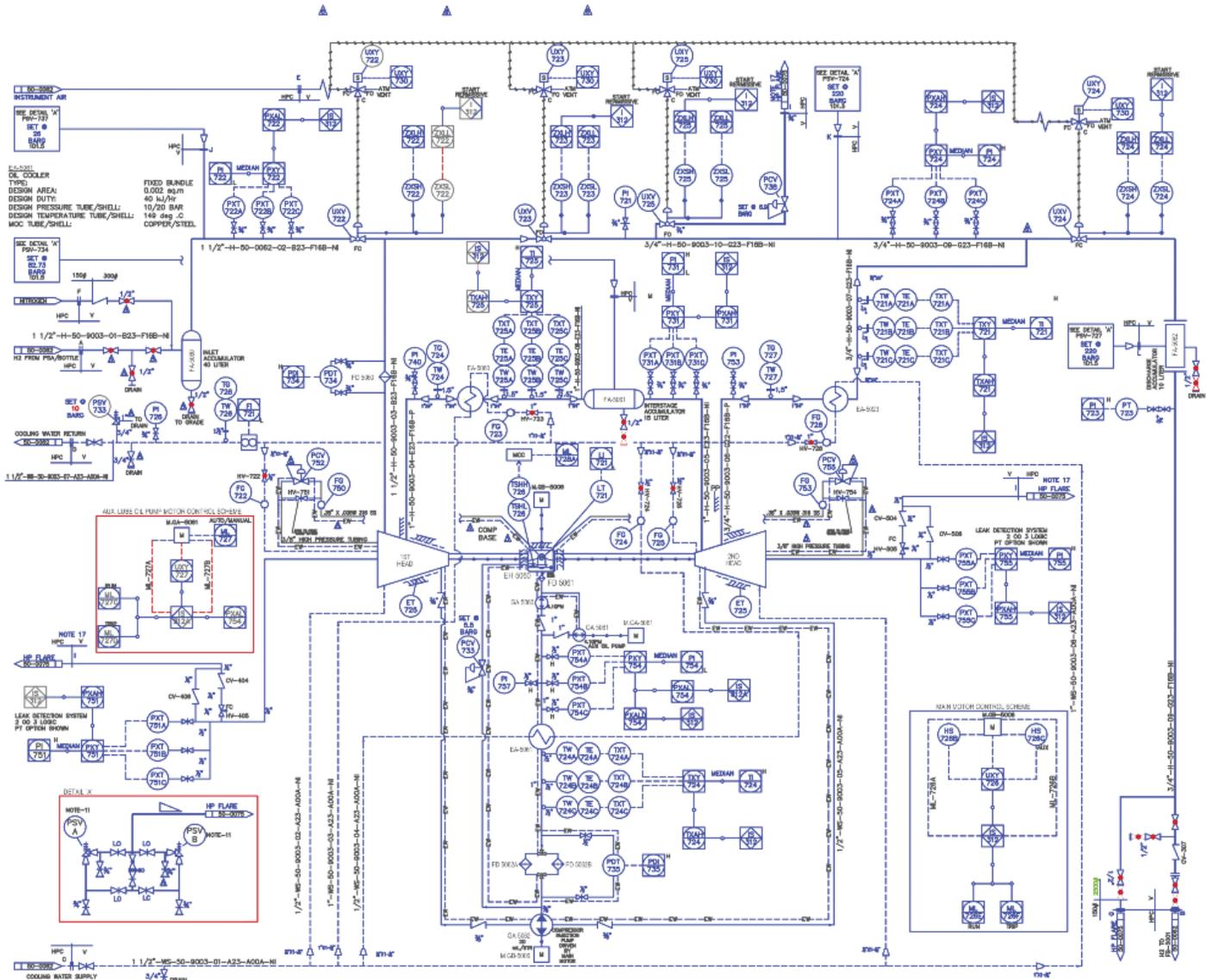
Typical P&ID for a standard bare unit, basic and turnkey system for a two-stage compressor

Compressor Solutions

PDC Machines provides standard and custom-designed diaphragm compressors with a comprehensive assortment of options.

COMPLEX CUSTOMIZED PROCESS SOLUTIONS

A customized compressor consists of the standard system in addition to a wide variety of piping accessories, instrumentation and controls which are typically defined by the customer.



Customer Support Services

PDC Machines provides outstanding customer support for all our clients. Our compressors are backed by a team of factory service technicians, engineers and a global support network to ensure maximum uptime of our customer's operations. As an added value to our customers, PDC provides parts for compressors of other diaphragm compressor manufacturers.



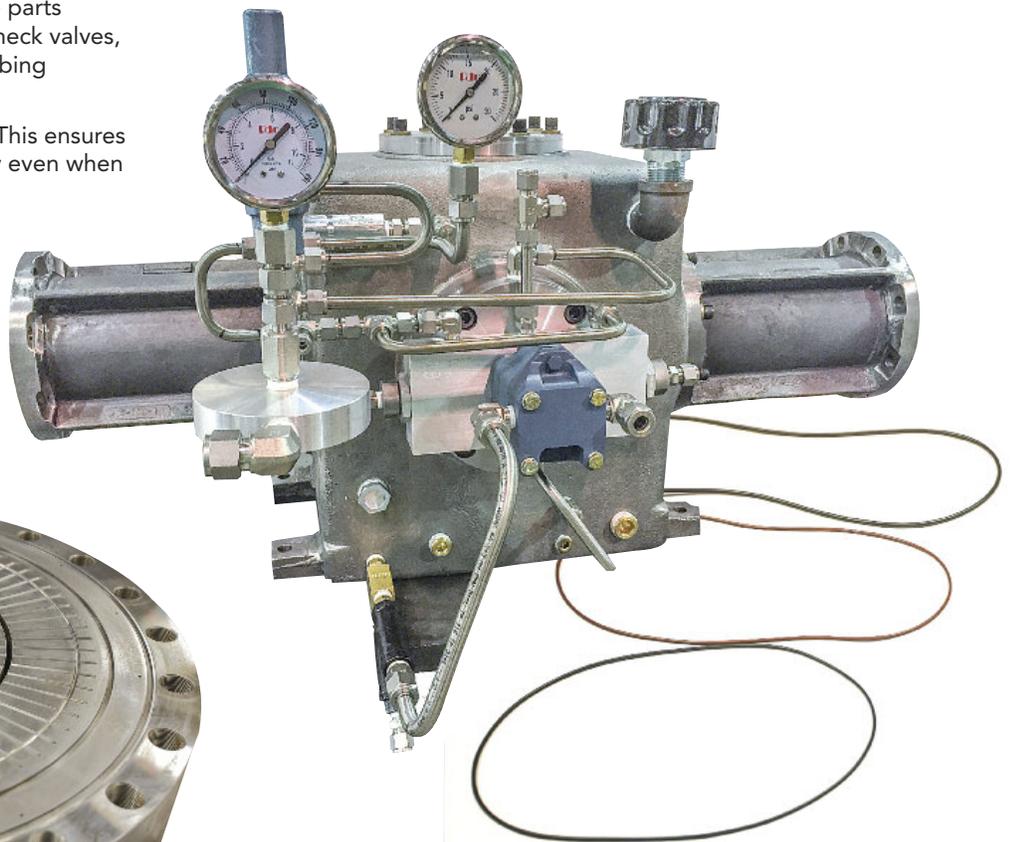
Ready-to-ship parts

PDC stocks a full selection of consumable parts including diaphragms, O-rings, process check valves, hydraulic check & oil regulating valves, tubing components and more.

Typical shipping is within 24 to 48 hours. This ensures our users are back up and running quickly even when they experience unexpected downtime.

We also have available complete crankcases and crankcase components as well as select process heads for immediate shipment.

PDC spare part orders are processed quickly, labeled clearly for ease of identification and are 100 % inspected for quality and accuracy.





An ISO 9001:2015 certified company.

**We perform
under pressure.**

1875 Stout Drive
Warminster, PA 18974
USA

+1-215-443-9442
info@pdcmachines.com
www.pdcmachines.com

