Polycontrols’ RSC & HPA pressure boosting systems provide a practical solution to ensure a reliable supply of N2, Helium or Argon in Plasma Atomization & high pressure Cold Spray Applications. Our Industrial Rotary Screw type compressor system (IRS) and High Pressure Booster (HPA) system are:

- An alternative to cryogenic pumps
- Cost-effective by reducing consumable costs (N2, He, Ar) compared to traditional installations
- Simple, reliable & fully automated
Advantages

Simplicity

- Available in two classic configurations:
  - IRS Series for low pressure applications (typically for Plasma Atomization and gas recovery application up to 220 psig/15 bar)
  - HPA Series for High Pressure application (typically for High Pressure Cold Spray application up to 5000 psig/350 bar)
- Gas supply on demand; no downtime required to get operating conditions or long cooling cycling time
- Seamless integration

Autonomy

- Fully redundant system
- Rugged components for long inspection intervals and low maintenance costs
- Highest safety standards, reliability and longevity - Large installed base in Powder production and Energy sector

Cost Saving

- Plasma applications:
  - Allows for the reduction of Argon consumption by a factor of 10 when used in conjunction with the Polycontrols’ ARS gas recovery system
- High Pressure Cold Spray applications:
  - Allows for N2 cost savings by a factor of 2 by waiving the engineering and construction costs of dedicated on-site cryogenic installations
  - Allows for Helium cost savings by a factor of 2 by the complete emptying of gas cylinders before returning them to the supplier

Technical specifications

Capacity

- IRS Series: Up to 180 scfm at 220 psig (290 nm3/h at 15 bar)
- HPA Series: Up to 70 scfm at 5000 psig (120 nm3/h at 350 bar)

Characteristics

- High efficiency cooling
- Maintenance free with oil & water separator
- Energy efficient
- Soft start, vibration dampening skid

Integrated Compressor Unit

- Compressor
- PLC Control & sensors for diagnostics and remote operation; Safety for all stages and all pressures
- Factory-tested and pre-packaged

Optional equipment

- Microfilter and condensate drains
- Heated compressor enclosure for outdoors operation in colder climate
- Insulation hood for noise reduction
- Filtration for high-purity gas
Technical data

Custom design to meet customer specifications.

- Electrical power with 460V or 600V @ 50/60 Hz
- Driving power: Typically 60 hp / 45 kW
- IRS Series:
  - Inlet pressure: From atmospheric to 100 psi (0-7 bar) to fit all standard N2 vaporiser
    - Optional: Vacuum inlet for gas recovery application
  - Outlet pressure: Up to 220 psig/15 bar
  - Nominal Flow Capacity: 120 nm³/h;
  - Maximal Flow Capacity: 290 nm³/h
- HPA Series:
  - Inlet pressure: From atmospheric to 100 psi (0-7 bar) compatible with most N2 vaporiser
    - Optional: Inlet pressure up to 1200 psi to empty gas cylinders (specific to helium application)
  - Outlet pressures up to 5000 psi/350 bars
  - Nominal Flow Capacity: 120 nm³/h to match demand of most commercially available high Pressure Cold Spray equipment plus provision for the preheating of the gun (typically 180nm³/h for 15 minutes)
- Process gas: N₂, Air, Helium, argon or inert gas mixture
- Operating temperature: -30 to +35°C
- Noise level: typically 90 dB (A)

Features

- Custom built to provide both high pressure & high volume gas required in specific Plasma Atomization and High Pressure Cold Spray applications
- Two or more compressor systems can operate in parallel to increase the gas throughput to better match your gas requirements. Gas tanks are also added to provide extra capacity for preheating of the Cold Spray gun.
- Compressor system can be installed directly indoors or outdoors in its own temperature controlled enclosure. These enclosures can operate in an outdoor temperature environment of -30°C to +35°C. This makes it the perfect solution where plant space is not available or limited.

Safety

We take your safety concerns seriously by complying with North American regulations concerning electrical and pressurized installations. (cULus, CSA, CE, ASME, CRN)