



SPXFLOW INDUSTRIAL GAS



Providing Engineered Solutions
for the Drying and Purification
of Industrial Gases







SPXFLOW

Industrial Gas

SPX FLOW helps customers across the rapidly growing industrial gas market meet key business challenges, including the increasing demand for processing and purification of industrial gases being produced from the US shale oil basin.

We provide the solutions needed to support these gas processing applications, and leverage our expertise in aftermarket services to ensure the optimization of ongoing operations – as we strive to minimize environmental impact and provide efficient and low-cost products. Leveraging vast global experience with dehydration and purification technology, we apply our innovative, proven product designs to provide unique, cost effective solutions that can be engineered to customers exacting specifications.

Wherever industrial air and gas purification is needed in the world, SPX FLOW is ready with the technologies, services and product solutions to make it happen.

SPX FLOW'S PNEUMATIC PRODUCTS BRAND – PROVIDING ENGINEERED SOLUTIONS FOR YOUR INDUSTRIAL GAS PURIFICATION NEEDS



Engineered Industrial Gas Purification Equipment

KNOWLEDGE

With decades of experience in the compressed air and gas industry, SPX FLOW's Pneumatic Products brand has a reputation of providing equipment of the highest quality and dependability.

Our dedicated team of experienced dehydration and filtration engineers utilize their process and mechanical design skills to provide high quality, reliable, cost effective solutions to meet your industrial gas purification needs.

TECHNOLOGY

Pneumatic Products standard dryers are designed to meet the extreme industrial gas environments, can be custom engineered to solve specialized applications and be built to meet customers' exact specifications.

Leveraging application solution experience ranging from small high pressure hydrogen dryers for lab use to a large 20,000 SCFM CO₂ dryer for underground carbon sequestration, SPX Pneumatic Products can provide an engineered solution for your industrial gas purification need.

Dryer technologies leveraged to solve your unique application include:

- Heatless Pressure Swing (DHA/CHA/CDA Series)
- Externally Heated Blower (IBP/CAB Series)
- Exhaust Heated Purge (PHD Series)
- Internally Heated (DEA Series)
- Closed Loop Blower Purge (CLB Series)
- Closed Loop Cooled (CLC Series)
- Split Stream (CPC/CPL Series)
- Heat of Compression (NRG Series)

SERVICE

SPX FLOW through its Pneumatic Products brand prides itself in supplying best in the industry after the sale support. We understand that even the most reliable products require the highest quality support.

A dedicated Aftermarket Fulfillment Center (AFC) provides same day shipment of maintenance and critical service parts needed to maximize uptime and maintain equipment performance.

A network of factory trained service representatives is there to provide expert local support. Our factory service team also stands ready to provide direct service at the equipment or via phone.

Delivery of your SPX FLOW, Pneumatic Products equipment is the beginning of our commitment to providing the highest quality service and support.



SPX FLOW Engineered Solutions

Providing cost effective engineered solutions for your industrial gas processing needs.

HELIUM PURIFICATION - AIRSHIP SERVICE

Application:

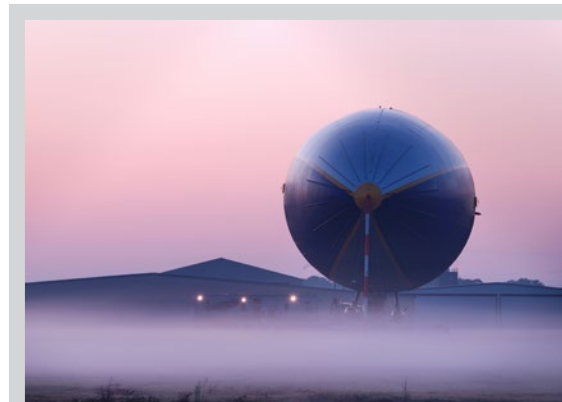
Helium gas purification for airship use

Description:

Over time the helium gas used to provide lift for airships can be contaminated by leaks that can add water vapor and contaminants, reducing airship lift. A system was designed using Pneumatic Product equipment to dry and purify airship helium during refilling or when airship maintenance is required.

The SPX FLOW Engineered Solution:

Pneumatic Products provided an energy efficient system consisting of equipment modified for high pressure helium use. A refrigerated air dryer coupled to a long cycle, externally heated, exhaust purge desiccant dryer processes the helium back to dew point specification while a filtration and condensate management system removes the remaining contaminants. By leveraging current SPX FLOW designs modified for helium service, SPX FLOW provided a compact, cost effective solution for this application.



NATURAL GAS PURIFICATION

Application:

Compressed natural gas fueling station dryers

Description:

A full line of CNG fueling station dryers (FSD), from compact non-regenerative single tower dryers to high capacity fully automated twin tower dryers, are needed to provide clean dry fuel for the rapidly expanding US CNG vehicle infrastructure.

The SPX Engineered Solution:

The SPX FLOW FSD series of CNG fueling station dryers provide a complete purification solution for any size CNG fueling station. Leveraging our closed loop blower desiccant experience used in larger natural gas, propane and hydrogen fuel drying applications, SPX FLOW has designed a complete line of dryers specifically engineered to meet CNG fueling station requirements. Our standard FSD series dryers provide a high quality, cost effective design that can be custom engineered to customer specifications.



SPX FLOW Engineered Solutions

CO₂ – CARBON CAPTURE/PURIFICATION

Application:

CO₂ gas drying and purification as part of a gas reclamation process for carbon emission recycling .

Description:

A process called gasification is used to produce a cleaner burning gas for power generation using a readily available substance that is less expensive than typical fuels such as coal and natural gas. This gasification process also produces byproducts that can be useful in other industries. One of these byproducts is CO₂, but that CO₂ must be filtered and dried/purified before it can be useful.

The SPX FLOW Engineered Solution:

Pneumatic Products provided multiple drying/purification systems to purify the CO₂ captured from the gasification process, making it useful for other industries and a product that is salable by our customer.

Pneumatic Products was selected due to our proven designs and years of experience in the drying and purification CO₂ for the food and beverage market.

ETHYLENE PROPYLENE PURIFICATION

Application:

Feed gas drying and purification

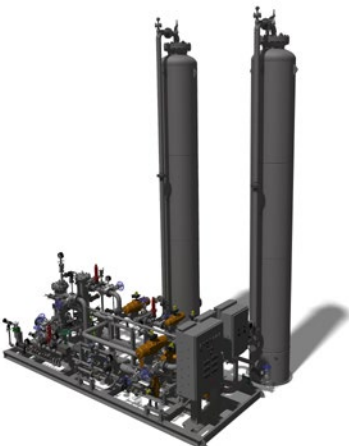
Description:

Custom engineer and build drying and purification systems to support the growing number of feed gas applications spurred by the abundance of gas being produced from the US shale basin

Value Added

Pneumatic Products has designed and built custom dehydration and purification systems to support natural gas off gases used as feed gases for feedstock for the manufacture of industrial chemicals , gases and polymers.

Ethylene Propylene purification would be an example of a system that was engineered to support the production of vinyl chloride and urethane products.



SPX FLOW Engineered Solutions

CORE INDUSTRIAL GASES AND THEIR COMMON APPLICATIONS

Natural Gas

Fleet fueling stations, power generation, steam generation, feedstock for synthesis gas (base for manufacturing methanol, hydrogen, etc.), industrial co-firing fuel, manufacture of plastics, fertilizer, antifreeze and fabrics

Methane

Industrial process fuel gas, used as a feedstock for the manufacture of ammonia, acetylene, methyl chloride, hydrogen sulfide, methanol, formaldehyde and other industrial gases and liquids, a component of Coke-oven gas.

Propane

Agricultural drying, air heating, oven/furnace/boiler/kiln fuel gas, direct flame (singeing, burn-off, etc.), small engine fuel

Hydrogen

Feedstock in the production of ammonia and methanol, oil refining (reforming), fuel cell production, industrial process fuel gas, generator turbine cooling purge

Butane/Ethylene/Ethene

Petrochemical feedstock for ethylene production by steam cracking, production of polymers (polyethelene, vinyl chloride, phenylethene and ethyl benzene), production of other chemicals (ethanol and epoxyethane)

Nitrogen

Flammable raw material blanketing to prevent combustion, protective food atmosphere to prevent spoilage

Carbon Dioxide

Ingredient in the production of urea and methanol, food additive used as a propellant and acidity regulator in the food industry, used to carbonate soft drinks, soda water and beer, atmosphere for MAG welding, pressurized tool propellant, dry ice production



Argon Dryer
INERT GAS BLANKETING



Liquid Solvent Dryer
RECYCLING SOLVENT RECOVERY



Natural Gas Dryer
CNG FUEL STATION SERVICE



Internally Heated CO₂ Dryer
CARBONATION FOOD & BEVERAGE



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