

# MAP

## Application Solutions

# Containerized Systems

## Background

The demand for nitrogen generated non-cryogenically on location continues to grow, fueled in part by creative custom designs for targeted applications where conventional cryogenic nitrogen supply schemes are expensive, impractical, or non-existent. These applications include:

- Portable or stationary high flow N2 systems, typically at moderate N2 purities of 93-97%
- Packaged systems, sometimes including compression, for harsh or remote environments
- Offshore systems, where compactness and inherent safety and reliability are critical
- Efficient high-purity systems designed for the same demanding applications

## Application / Case Study

A major nitrogen services company was seeking a means of supplying nitrogen for their Pacific Rim customers, and was bidding on the supply of onsite nitrogen for the pre-commissioning of a major pipeline on Sakhalin Island in Russia. The nitrogen supply had to be extremely reliable and cost-effective, but securing liquid nitrogen was almost logistically impossible and therefore too costly.

They relied on Parker Hannifin to design and build multiple high flow N2 membrane units to meet this critical demand, and were awarded the contract. Nitrogen pipeline operations included initial and final purging, cleaning, hydrostatic testing, integrity leak testing, dewatering, and drying of the entire pipeline system and similar operations at the LNG plant also built on the island. The same units have also been used in Singapore and Australia, and can easily be transported and utilized anywhere in the world.



Model FB-12ST15020

# Solutions

## Features and Benefits



Diesel Powered Feed Air Compressor

- Provides continuous on site production of dry, inert N2 to meet your purity, flow, and pressure specifications
- Generates high flow capacities in a compact, easily transportable container with membranes or PSAs
- Avoids the transportation logistics and costs associated with cryogenic-based N2 supply
- Can process low pressure air from conventional lubricated or oil-free compressors
- Built-in membrane air dryer is available to process saturated feed air without electrical power
- Simple process controls with N2 flow, purity and pressure readouts and signal outputs
- Rapid set-up, start-up, and derigging on location

## Performance Chart

### Parker HiFluxx® Containerized Membrane or PSA Systems, Model FB-C Membrane Series or CPSA Series

Pressures in psig, Performance based on actual feed air flow, pressure, temperature and required N2 purity. Consult factory for higher N2 purities or higher flow rates

Type	N2 purity design basis	Flow Rate (scfm)	Feed Pressure	Delivery Pressure	Dimensions (L x W x H, ft)	Weight (lbs)
Membrane	95	300-750	100-190	75-170	10 x 8 x 8.5	7500
Membrane	95	750-1200	100-190	75-170	(10-15) x 8 x 8.5	10,000
Membrane	95	1500-2000	80-190	60-170	20 x 8 x 8.5	15,000
Membrane	95	2000-3000+	80-115	60-100	(20-40) x 8 x 8.5	15K-25K
PSA	99+	50-200	100-150	60-110	(20-40) x 8 x 8.5	10K-30K

## Principal Specifications

### All Models

#### Nominal Conditions - All Models

Feed Pressure	100-190 psig
Feed Temperature	80°F (26°C)
Ambient Pressure	1 Atmosphere

#### Compressed Air Specifications

Maximum Pressure	190 psig membranes, 150 psig PSA
Temperature Range	60°F to 120°F (16°C to 49°C)
Recommended Dew point	-40°F pressure dp or lower
Residual Oil Content	Trace
Particles	<.01 micron

#### Ambient Conditions

Temperature	40°F to 110°F (4°C to 43°C)
Ambient Pressure	Atmospheric
Air Quality	Clean air without contaminants

## Ordering Information

For assistance call 410-636-7200, 8AM to 5PM Eastern Time

# Markets and Applications



## Pipeline

- Inerting for maintenance or testing
- Digging operations
- Drying operations

## Oil & Gas (Land-based / Offshore)

- Underbalanced drilling
- Inerting of oil/gas storage vessels
- Nitrogen injection for Enhanced Oil Recovery
- N2 Coiled Tubing operations
- Well workovers
- N2 gas lift operations
- Process gas for LNG liquefaction
- Natural Gas blending to reduce heating values
- Cylinder fill operations



## Process Industries

- Industrial plant turnarounds
- Catalyst regeneration
- Replacement option for liquid N2
- High purity applications
- Food grade and electronic grade N2

## Mining Industry

- Inert gas for coal mine fire fighting
- Coal and Mineral Ore Processing
- Inerting and sealing abandoned mines



## Marine Industry

- Blanketing and off-loading chemical tankers
- Inerting LNG carriers
- Shipboard utility nitrogen
- Inerting perishable foods and other cargo



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