

# MOBILE FILL

## Doing Business Outside the Box...

By taking it on the road!  
Help your customers  
...AND reduce your costs  
and cylinder handling



Fill 100 or more cylinders at a time, on site at your customer's location

## CRYOVATION'S TURNKEY MOBILE FILLING SYSTEMS...

.... Gives you the competitive advantage! Simplify your distribution chain by bringing gas and liquid oxygen directly to your customers and filling their cylinders on site. Here's how:

Traditionally, the common medical "E" cylinder goes on a voyage from patient to DME provider, then from the provider to the gas supplier, then back to the DME company to be resold to the next patient. With CryoVation's mobile filling system, the gas supplier can bring the product to the DME provider, essentially meeting them halfway so that the cylinder never has to leave their possession. The benefits of this are:

1. **Reduction in cylinder handling**
2. **Reduction in costs**
3. **Improved sanitation/reduced infection risk**
4. **Reduction in cylinder inventory**
5. **Improved asset management/control of your oxygen inventory**

The freedom that mobility allows can also be an attraction. If you ever decide

to move your operations base, you can literally do that overnight. Our government also has realized the benefits of the mobile filling system for disaster relief, setting up multiple mobile oxygen deployments in the event of the next catastrophe like Hurricane Katrina.

It can feel like David vs. Goliath trying to compete for medical oxygen business in the current market. Price wars are common, driving the going market price for a medical E cylinder lower than you can justify. Consider the savings of eliminating warehouse space and added personnel for this operation, which can boost your bottom line.

CryoVation began building these systems in 2004, and since then the interest and demand has escalated. This brochure will shed light on some of the options and considerations for filling on the road.



Liquid Source Options:  
Standard VGLs that hold 180L of liquid oxygen are common, but larger vessels - up to 1,000L - may also be used.

# CUSTOMIZE



## We offer the choice of Cargo Trailer or Box Truck with interior layout options:

The design and layout of your mobile filling system is up to you, and we will help guide you through the process.

CryoVation will have the vehicle specially made to handle the weight of bulk oxygen. The power that operates the pump system is generated by a 5000-watt gasoline powered RV generator. This Onan generator is usually tucked away in an insulated vented compartment.

The walls and floors of the mobile unit are customized with diamond plating and fire-resistant materials. The sub-flooring is also reinforced, with thick steel where necessary to add stability for heavier equipment. A regulation ventilation system is installed. Florescent lighting, electrical outlets and switches are put in to complete the functional environment. A storage cabinet with workbench top makes a good location for FDA and cylinder prep supplies.

Be conscious of weight when selecting a vehicle

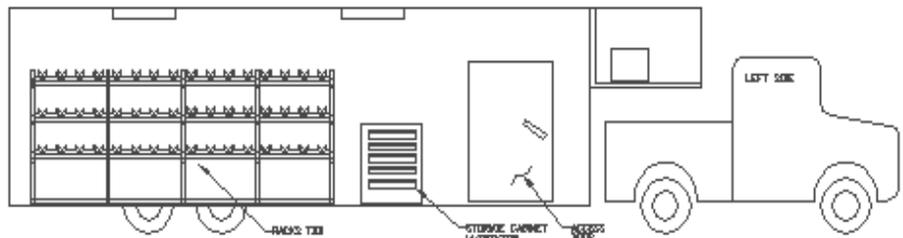
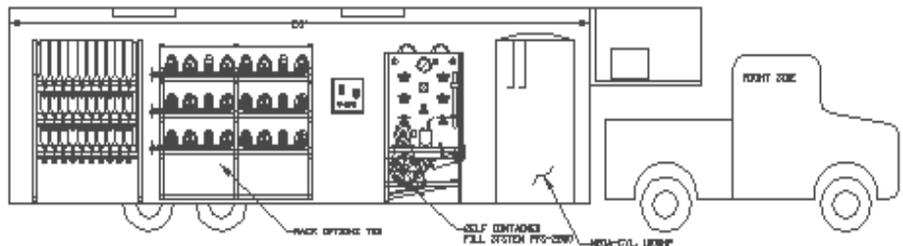
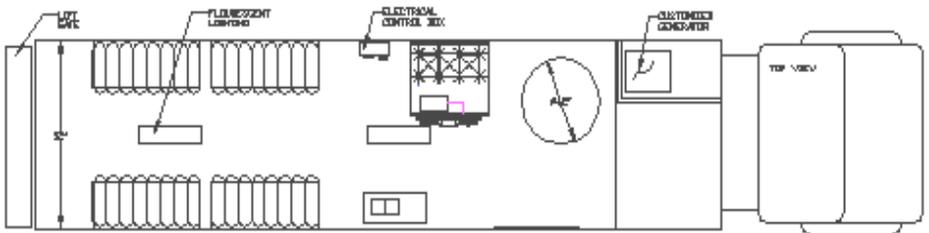
Safety is very important when handling oxygen, so the CryoVation system is equipped with pressure and temperature safeties. Additionally, all contacting surfaces are specially cleaned and the excess product is carefully vented outside through a muffler.

Once the system is installed and tested, CryoVation will provide 1-2 days of operational training to make sure that you are comfortable on your own. FDA training is also available to cover compliance issues and provide standard operational manuals as mandated by the FDA. Even though CryoVation's system is validated and designed to comply with the FDA, it is the responsibility of the owner/operator to perform due diligence with your local FDA officer or fire marshal.

CryoVation offers two types of fill racks: a traditional linear design (shown on page 4) or inverted fill racks (shown in the photo to the left and in the diagram below). Both allow you to customize the number of cylinders you fill at one time from 20 to 200.

### Customizable features:

- Built-in Generator
- Upgraded Racking
- 1000 L Liquid Tank
- Heat/Air Condition
- Analytical Station





**Self Contained Pump System**

CryoVation's "PPS-2500" cylinder fill system can deliver a flow rate of 2500 scfh and up to 3500 psi. It contains all the equipment needed to vent, evacuate and fill D and E cylinders directly from a portable liquid can. Best of all, this system is easily expandable as your production demands increase!

# CYLINDER FILLING: FAST & EFFICIENT

## “Mobile filling is the only way that I have been able to stay competitive”

The CryoVation system fills at a rate of 100 E cylinders per hour, or 2500 scfh. It can be upgraded at any time into a true bulk system or sped up for faster filling. This system will vent, evacuate and fill any size high-pressure cylinder with a selection of fill manifolds that meet your demands for capacity and space.

This fill system pumps from a standard liquid cylinder (45 gallon, 250 PSI) (or larger) to minimize product losses.

- Flow rate of 2500 SCFH (100 E cylinders per hour)
- Pump is standard design with over 30 years of

Reduce costs by more than 400% filling your own

production.

- Built-in safety features include over-pressure and under-temperature shut-off switches, high pressure safety relief valve and over-pressurization vacuum line safety relief
- Fills all size medical cylinders
- Includes a liquid oxygen pump and a vacuum pump

Fill your customer's smaller liquid vessels by transfilling liquid oxygen. CryoVation can customize

a liquid fill port with a hose to enable to you easily transfer liquid to and from your truck or trailer's liquid vessels.

BOX TRUCK	ACCESSIBILITY	LENGTH/WEIGHT	LICENSING	EQUIPPED WITH
	<b>Lift Gate</b> Pull cylinder carts onto a platform that is raised and lowered electrically	<b>Body length:</b> 18 ft. - 26 ft.  Max Load for 24' Isuzu is about 15,000 lbs.	<b>Factors:</b> 1) Installation of liquid vessel and weight 2) Air Brakes 3) Vehicle OAL	<b>Steel</b> reinforced floors, insulated white PVC walls and aluminum tread plate flooring
TRAILER	ACCESSIBILITY	LENGTH/WEIGHT	LICENSING	EQUIPPED WITH
	<b>Ramp Access</b> Roll cylinder carts down a ramp, the low profile is approximately 14"	20' Gooseneck, rated for an 6,800 lbs Net capacity. recommend truck with at least 4,200 lbs tongue weight	If standard VGL is used the weight of the liquid + container must be less than 999 lbs or Class B with HAZ is needed	<b>Steel</b> reinforced floors, insulated white aluminum walls and aluminum tread plate flooring

CryoVation offers comprehensive FDA training either at our Fort Myers Headquarters or at your facility. Our FDA Compliance/CGMP training will provide you with the latest FDA regulations and satisfy the documented training requirements of 21CFR 211.25.

**FDA  
Validation,  
Training and  
personalized  
SOP**

Get Trained in the following . . . .

- Quality Control
- Training
- Equipment Cleaning & Maintenance
- Control of Equipment
- Labeling
- Finished Product Testing
- Master/Batch/Lab Records
- Warehousing & Distribution

Be prepared for your next FDA inspection by knowing ahead of time where your plant may be at risk and how to resolve problems.

Includes . . . .

- Personalized SOP manual
- Customized Validation



## ACCESSORIZE



### The Complete Package . . .

CryoVation offers all the accessories needed to fully equip your mobile filling system, including Servomex analyzers, cylinder storage and transport carts, calibration gases, cylinder seals and labels, thermometers and more.

# CRYOVATION

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