

CRYOMAXX 
FAMILY OF EQUIPMENT



**Cryogenic Truck Mount
Tanks and MicroBulk
Delivery Systems**



Acme Cryogenics Group

800-422-2790 • 610-791-2402 (f)

www.acmecryo.com

ACMIE 
CRYOGENICS



About the CryoMaxx Family of Equipment

Acme's CryoMaxx family of liquid gas transportation equipment utilizes existing worldwide vessel designs and incorporates sophisticated cryogenic pumping, metering and supply technologies to provide a complete delivery unit that meets the demanding standards of our industry.

CryoMaxx Family

- CryoMaxx Cryogenic Transport Semi-trailers
- CryoMaxx LDV Truck Mount Tanks
- LoadMaxx Liquid Cylinder Filling System



CryoMaxx truck mount tanks and semi-trailers provide the highest product payloads without sacrificing equipment longevity. These units offer ease of maintenance to keep them on the road, not in the shop. CryoMaxx products incorporate the "Low Profile Quick Cool Down (QCD)" cryogenic pump design to ensure complete cool down procedures are followed allowing for pump seal longevity.

CryoMaxx systems are designed to perform under the most adverse road conditions. Standard CryoMaxx Transport Trailers' suspension systems are "air-ride" to minimize rear cabinet piping stresses that can lead to premature failure.

Using CryoMaxx Truck Mount Tanks, Acme has designed the CryoMaxx Liquid Delivery Vehicle (LDV), a cost-effective, user friendly microbulk delivery vehicle that offers significant benefits over traditional models.

CryoMaxx LDV Features

- Lower Set-up Costs
- Easy Operation
- Added Flexibility
- Simple, Lower-Cost Maintenance
- Can Be Trailer Mounted



Quality Assurance

Acme is staffed with the finest personnel available, including:

- P.E. Licensed Engineers
- Electrical Engineers
- Certified Welders (ASME Sect. IX, B31.3)
- Mechanics
- Expert Technical Support

Certifications

- DOT
- ASME "U" Certificate of Authorization
- National Board "R" Certificate of Authorization
- Quality System Audited to CSA B-51-1997, Appendix H



800-422-2790 • www.acmecryo.com



CryoMaxx Liquid Delivery Vehicle (LDV)



The Acme **CryoMaxx LDV** system offers a low-cost, manageable way for you to enter the small bulk marketplace. It delivers the **optimum product payloads and pumping capacities** you need at an **affordable price**.

The Acme **CryoMaxx LDV** makes it easy to **acquire a bulk delivery vehicle, grow your liquid/gas business, and save** through bulk source pricing - pick up your liquid and go!

The Acme CryoMaxx LDV features:

- **Lower Set-up Costs**
- **Easy Operation**
- **Added Flexibility**
- **Simple, Lower-Cost Maintenance**
- **Can Be Trailer Mounted**



CryoMaxx LDV units feature a 6 inch ACD Lectran Pumping System (left)

CryoMaxx LDV's Truck Mount Tanks are available in the **standard models** listed below. Acme offers models for Oxygen, Argon and Nitrogen service. Pressure transfer models are also available. The **CryoMaxx LDV** is constructed using a customer-supplied chassis.

Standard Models

<u>Model Number</u>	<u>Materials of Construction</u>	<u>Warm Water Capacity</u>	<u>Gas Service(s)</u>
CM-1500-AR	<ul style="list-style-type: none"> ● 304 SS Inner Vessel ● Carbon Steel Outer Vessel ● 304 SS Rear Head 	1500 Gallons	Maximized Argon
CM-2000-O₂	<ul style="list-style-type: none"> ● 304 SS Inner Vessel ● Carbon Steel Outer Vessel ● 304 SS Rear Head 	2000 Gallons	Maximized Oxygen
CM-3000-LN₂	<ul style="list-style-type: none"> ● 304 SS Inner Vessel ● Carbon Steel Outer Vessel ● 304 SS Rear Head 	3000 Gallons	Maximized Nitrogen

Model CM-1500-AR



The Model CM-1500-AR is designed for maximized argon service and is ideal for microbulk applications.

The Model CM-1500-AR features a “Low Profile QCD” cryogenic pump design and an ACD Lectran pumping system that maximizes product delivery capabilities in minimum time.

Optional equipment and custom models are also available. Contact factory for details.

Specifications

Warm Water Capacity	1500 US Gallons / 5678.12 Liters
Liquid Argon (95%)	1425 Gallons / 5394.21 Liters
Maximum Allowable Working Pressure (MAWP)	.40 PSIG / 3.7 Bar
Length (Nom)	.7 Feet 6 Inches / 2.286 Meters
Width (Nom)	.7 Feet 4 Inches / 2.2352 Meters
Height (Nom)	.7 Feet 10 Inches / 2.3876 Meters
Weight (Gross)	.3950 Pounds / 1791.69 Kilograms
Evaporation Rate	<1% @ 24 Hours
Design Code	.ASME Section VIII, Division I, CGA-341, US DOT

Testing

- 48 Hour Warm Vacuum Retention Test
- Cold Shock Test
- Complete Run Test
- 48 Hour Cold Vacuum Retention Test
- 25 Mile / 40 Kilometer Empty Road Test
- RT-2 Radiography Test

Model CM-I500-AR

Standard Equipment

Inner Vessel	.....S A 240-304 Stainless Steel
Baffle	.....Transverse Baffle Attached to Mounting Angle
Annular Piping	.....Schedule 10 SA 312-307 Stainless Steel
Manway	.....Welded, 16 inches / 406 Millimeters
Insulation	.....Super Insulation
Design Temperature	.....100° F to -320° C to -196° C
Outer Vessel	.....Carbon Steel Front, 304 Stainless Steel Rear
Outer Vessel Heads	...Carbon Steel Rear, SA 340-304 Stainless Steel Front
Doublers	.....Corten & Stainless Steel
External Piping	....Schedule 10 with Schedule 40 Threaded Connections, SA 312-304 Stainless Steel
CGA Connections	.....Acme Fittings, Customer Must Specify Size and Gas Service
Flow Meter	.....Sponsler T675
Fenders	.....Customer-supplied on Tractor
Pump Drive	.....ACD 6” Lectran
Wiring and Lighting	.....Customer-supplied on Tractor
Cabinet	..... Aluminum
Hose Tube	.....8 Inches x 14 Feet, Aluminum
Pressure Building	.....Aluminum Fin Tube
Mud Flaps	.....Customer-supplied on Tractor

Documentation

- Manufacturer’s Certificate of Origin
- Verified Road Test Report
- Operating and Maintenance Manuals (1 set)
- Certificate of Compliance to Applicable US DOT Certifications
- Vacuum Retention Log, Warm and Cold
- UI Manufacturer’s Data Report
- NER Test Results for Typical Model Unit
- Certified Weight Ticket, Total and Trailer Suspension



Model CM-2000-O₂

The Model CM-2000-O₂ is designed for liquid oxygen service.

The Model CM-2000-O₂ features a “Low Profile QCD” cryogenic pump design and ACD Lectran pumping system that maximizes product delivery capabilities in minimum time.

Optional equipment and custom models are also available. Contact factory for details.



Specifications

Warm Water Capacity .....	.2000 US Gallons / 7570 Liters
Liquid Oxygen (95%)	1900 US Gallons / 7192.28 Liters
Maximum Allowable Working Pressure (MAWP) .....	.40 PSIG /2.7579 Bar
Length (Nom)	12 Feet 1 Inch / 3.7 Meters
Width (Nom) .....	.6 Feet 7 Inches / 2 Meters
Height (Nom) .....	.6 Feet 7 Inches / 2 Meters
Weight (Gross)	18,128 - 20,570 Pounds / 8240 - 9350 Kilograms
Evaporation Rate	<1% @24 Hours
Design Code .....	.ASME Section VIII, Division I, CGA-341, US DOT

Testing

- 48 Hour Warm Vacuum Retention Test
- Cold Shock Test
- Complete Run Test
- 48 Hour Cold Vacuum Retention Test
- 25 Mile / 40 Kilometer Empty Road Test
- RT-2 Radiography Test

Model CM-2000-O₂

Standard Equipment

Inner Vessel	.....S A 240-304 Stainless Steel
Baffle	.....Transverse Baffle Attached to Mounting Angle
Annular Piping	.....Schedule 10 SA 312-307 Stainless Steel
Manway	.....Welded, 16 Inches / 406 Millimeters
Insulation	.....Super Insulation
Design Temperature	.....100° F to -320° C to -196° C
Outer Vessel	.....Carbon Steel Front, 304 Stainless Steel Rear
Outer Vessel Heads	...Carbon Steel Rear, SA 340-304 Stainless Steel Front
Doublers	.....Corten & Stainless Steel
External Piping	....Schedule 10 with Schedule 40 Threaded Connections, SA 312-304 Stainless Steel
CGA Connections	.....Acme Fittings, Customer Must Specify Size and Gas Service
Flow Meter	.....Sponsler T675
Fenders	.....Customer-supplied on Tractor
Pump Drive	.....ACD 6” Lectran
Wiring and Lighting	.....Customer-supplied on Tractor
Cabinet	.....Aluminum
Hose Tube	......8 Inches x 14 Feet, Aluminum
Pressure Building	.....Aluminum Fin Tube
Mud Flaps	.....Customer-supplied on Tractor

Documentation

- Manufacturer’s Certificate of Origin
- Verified Road Test Report
- Operating and Maintenance Manuals (1 set)
- Certificate of Compliance to Applicable US DOT Certifications
- Vacuum Retention Log, Warm and Cold
- UI Manufacturer’s Data Report
- NER Test Results for Typical Model Unit
- Certified Weight Ticket, Total and Trailer Suspension



The Sponsler T675 flow meter (above) is included with all CryoMaxx LDV Models.

Model CM-3000-N₂



The Model CM-3000-N₂ is designed for liquid nitrogen service.

The Model CM-3000-N₂ features a “Low Profile QCD” cryogenic pump design and ACD Lectran pumping system that maximizes product delivery capabilities in minimum time.

Optional equipment and custom models are also available. Contact factory for details.

Specifications

Warm Water Capacity	3000 US Gallons / 11,356 Liters
Liquid Nitrogen (95%)	.2850 US Gallons / 10,788.4 Liters
Maximum Allowable Working Pressure (MAWP)	.40 PSIG / 2.7579 Bar
Length (Nom)	14 Feet / 4.253 Meters
Width (Nom)	.7 Feet 4 Inches / 2.222 Meters
Height (Nom)	.7 Feet 4 Inches / 2.222 Meters
Weight (Gross)	26,829 - 30,063 Pounds / 12,195 - 13,665 Kilograms
Evaporation Rate	<1% @24 Hours
Design Code	.ASME Section VIII, Division I, CGA-341, US DOT

Testing

- 48 Hour Warm Vacuum Retention Test
- Cold Shock Test
- Complete Run Test
- 48 Hour Cold Vacuum Retention Test
- 25 Mile / 40 Kilometer Empty Road Test
- RT-2 Radiography Test

Model CM-3000-N₂

Standard Equipment

Inner Vessel	.....S A 240-304 Stainless Steel
Baffle	.....Transverse Baffle Attached to Mounting Angle
Annular Piping	.....Schedule 10 SA 312-307 Stainless Steel
Manway	.....Welded, 16 inches / 406 Millimeters
Insulation	.....Super Insulation
Design Temperature	.....100° F to -320° C to -196° C
Outer Vessel	.....Carbon Steel Front, 304 Stainless Steel Rear
Outer Vessel Heads	...Carbon Steel Rear, SA 340-304 Stainless Steel Front
Doublers	.....Corten & Stainless Steel
External Piping	....Schedule 10 with Schedule 40 Threaded Connections, SA 312-304 Stainless Steel
CGA Connections	.....Acme Fittings, Customer Must Specify Size and Gas Service
Flow Meter	.....Sponsler T675
Fenders	.....Customer-supplied on Tractor
Pump Drive	.....ACD 6” Lectran
Wiring and Lighting	.....Customer-supplied on Tractor
Cabinet	..... Aluminum
Hose Tube	.....8 Inches x 14 Feet, Aluminum
Pressure Building	.....Aluminum Fin Tube
Mud Flaps	.....Customer-supplied on Tractor



Documentation

- Manufacturer's Certificate of Origin
- Verified Road Test Report
- Operating and Maintenance Manuals (1 set)
- Certificate of Compliance to Applicable US DOT Certifications
- Vacuum Retention Log, Warm and Cold
- UI Manufacturer's Data Report
- NER Test Results for Typical Model Unit
- Certified Weight Ticket, Total and Trailer Suspension

Liquid Cylinder Filling System

The Acme Cryogenics **LoadMaxx** Liquid Cylinder Filling System works with Acme's **CryoMaxx** Liquid Delivery Vehicle to provide a **quick, convenient, accurate hidden cylinder filling system**.

Users place their cylinder on the load cell platform inside the customer's location and product is added using a fill box connection installed outside the facility. Connecting through the outside fill box, CryoMaxx fills the cylinder to a pre-set weight. A display box, located inside the fill box, signals when full capacity is reached via a red indicating light.

Because the LoadMaxx fills cylinders using weight as an indicator, customers are ensured **accurate, dependable fills**, reducing the risk of false readings. This technology also allows **existing cylinders** to be utilized, eliminating the need to purchase special purpose containers.

Load Cell Technology

The unit consists of a 46" x 48" platform that incorporates multiple load cells and a fill box housing both the connection and the display box.

During filling, the load cell sends signals to a summing box which interprets the messages and sends out a single 4-20ma signal to a weight read out display box.

A single red warning light located on the display box illuminates to indicate that the cylinder has been filled to its pre-determined set point. The box also features a zero set button to zero out the tare weight of the cylinder.

Components Include:

Load Cell

- 46" x 48" Platform
- Load Cell Group(attached to platform)

Fill Box

- Fill Valve
- Vent
- Pressure Gauge
- Display Box with Red Warning Light and Zero Set Button
- Summing Box



The unit's display, located inside the fill box, signals when cylinders are full.

LOADMAXX

System Benefits

- Accommodates cylinders of various weights and volumes
- Filling to weight ensures accuracy and prevents false readings