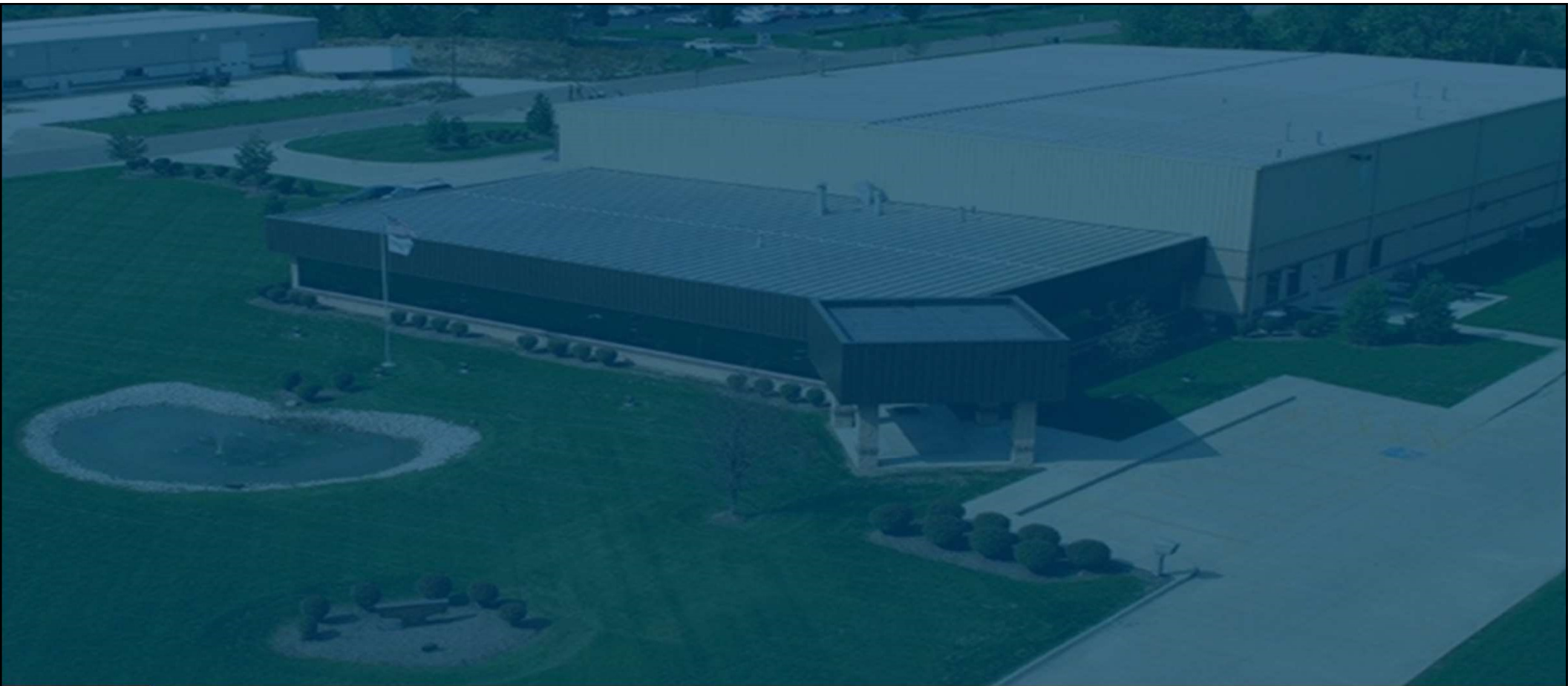


# Linden Polyurethane Company Overview

*Critical Applications.  
Components. Repairs.*





# COMPANY PROFILE

# COMPANY PROFILE



## Leader in Engineered Solutions

Founded in 1985, Linden is innovators in custom engineered and standard machinery systems for RIM, RRIM and ancillary polyurethane processing equipment.

## The Company

Linden Industries is an independent company producing world-class automation equipment and engineered solutions that allows its customers to continue to drive higher productivity and increased quality. We pride ourselves on customization, design, and adapting our products to custom-fit your processing requirements.

## Leadership

Jon Cocco is the owner & CEO of Linden Industries, LLC with a deep history in serving industrial OEMs around the globe. Experience has taught him that the secret to a successful business is to assemble and motivate a talented team while delivering value to customers every day.

# WHAT WE DELIVER



## Engineered Solutions

With over 35 years in business and a growing list of patents, Linden prides itself on solving the most complicated polyurethane processing challenges



## Increased Uptime

We understand that uptime is essential for our customers. With remote monitoring controls, first class service teams and world-class processing equipment, we use the latest technologies to keep our customers running 24/7



## Highest Quality

Linden has master craftsman with over 150 years of combined experience machining, building and repairing the finest equipment



## Lowest Cost of Ownership

The upfront cost is only part of the equation. We focus our efforts to deliver the lowest cost of ownership over the life of the project



## Life-time support & spare parts

Linden is committed to providing maintenance support and spare parts for the life of the equipment. Our repair and service department is known as the best in the industry

### Customer Quote:

“ We like the Linden (Metering) Machine so much we plan to upgrade all of our other machines  
~ Manitowoc Food Service ”

“ Thank you very much for your support to my impossible requests  
~ Heartland Automotive ”



# GLOBAL EXPERTISE WITH LOCAL EXPERTS



## Global Service & Support With Local Feel

Linden Polyurethane machines are used around the world and in numerous applications — from aerospace to sporting goods and everything between. Wherever you are, whatever the need, we'll help you create the ideal solution and keep it operating at peak performance.

**+1,300**  
Satisfied  
Customers

*From*

**20+**  
Countries



# MARKETS SERVED



Automotive

*For more than 30 years, Linden Polyurethane has partnered with organizations around the world for numerous advanced polyurethane foam applications and processing equipment. From aircraft and vehicles to football helmets and other consumer goods, so many of the things we all use on a daily basis rely on polyurethane for both protection and performance.*

The polyurethane (PU) market size is estimated at \$80 billion and is projected to grow at a CAGR of 7% from 2016 to 2025.



Aerospace



Electronics & Appliances



Sports Equipment



Military



Medical



Building

# PRODUCT & SERVICE OFFERINGS

## TOP - PRODUCTS



### Equipment & Services

Explore our metering, spray, bulk storage, chemical mixing, and Pentane systems.



### Mixing Heads

Find the right mix head to achieve the perfect blend — and your production goals.



### Repairs

Get 24/7 service and support for your equipment, regardless of the manufacturer.



### Test Lab

Develop and verify your next polyurethane need in our ISO certified testing facility.

# MARKET LEADING OFFERINGS

## TOP - PRODUCTS



### Metering Machines

- High Pressure Metering and Dispensing
- High Pressure Metering and Dispensing for Filled Systems
- Isotherm Small Shot Metering and Dispensing for Pour or Spray Operations
- Polytec Low Pressure, High Temperature, Multiple component Metering and Dispensing
- Turn key automation cells



### Bulk Storage & Blending Systems

- Bulk Storage Systems:
  - Custom engineered Systems
  - Systems up to 30,000 Gal
- Blending Systems:
  - Custom Engineered to suit each application
  - In-line liquid blending
  - Cyclopentane Blending



### Nucleation Systems

- The Pinnacle of Gas Infusion Technology
  - N2
  - CO2



### Parts, Services & Repairs

- New Mix Heads & spare parts
- Linden ProVue data acquisition and remote monitoring systems
- Rebuild / Repair Metering and Feed Pumps
- Installation and service
- 24/7 customer service



# HIGH PRESSURE METERING EQUIPMENT



## High Pressure Metering and Dispensing

- Ratio Range: 1:3 and 3:1
- Temperature Range: 70° - 120° F
- Viscosity Range: 50 – 1800 Cps
- Throughput Range:
  - 2 lbs./min. to over 1500 lbs./min.
- Max. Operating Pressure: 2850 PSIG
- Well equipped base models.
- Wide array of options available
- **LINDEN** ProcessVu-LDA data collection system
- **LINDEN** HOTLINE™ On-Line Service



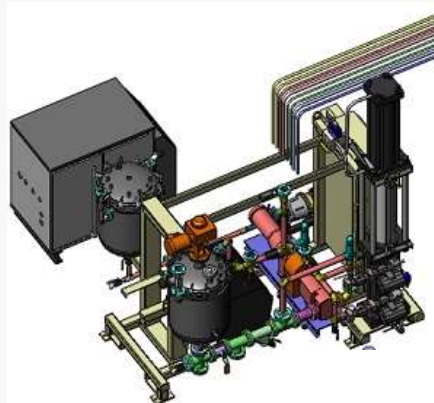
**LINDEN** INNOVATOR™ EP

# HIGH PRESSURE METERING EQUIPMENT



High Pressure Metering and Dispensing for Filled Systems

- Ratio Range: 1:10 and 10:1
- Temperature Range: 70° - 120° F
- Throughput Range: 30 lbs./sec.
- Wide array of options available



***LINDEN LANCER HYBRID***  
*High Pressure Cylinder Meter Machine*  
*Axial Pump (Iso) Cylinder (Poly)*



***LINDEN LANCER***  
*High Pressure Cylinder*  
*Meter Machine*

# HIGH PRESSURE SMALL SHOT & SPRAY EQUIPMENT



High Pressure, High Temperature,  
Small Shot Metering and Dispensing for  
Pour or Spray Operations

- Swiss Precision
- Ratio Range: 1:4 and 4:1
- Temperature Range: 95° - 200° F
- Viscosity Range: 5000 Cps
- Throughput Range: 3 g/sec to 160 g/sec
- Max. Operating Pressure: 2900 PSIG
- Manual or Automated
- Wide array of options available
- Oil heat traced to Mix Head
- Lance style servo cylinders
- Data collection system
- On-Line Support Service



**ISOTHERM PSM90**  
Small Shot



**ISOTHERM PSM3000**  
Continuous Shot

**ISOTHERM**



**ISOTHERM PSM700**  
Spray System

# LOW PRESSURE METERING EQUIPMENT



Low Pressure, High Temperature,  
Multiple component Metering and  
Dispensing

- Built in Austria
- Temperature: up to 300° F
- Throughput: up to 1000 l/min
- Manual or Automated
- Wide array of options available
- On-Line Support Service



**POLYTEC DG130**



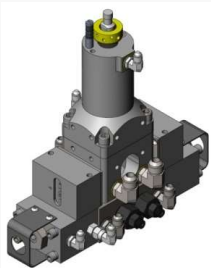
**POLYTEC DG200**





# LINDEN MIX HEADS

## EQUIPMENT



**Double L Style Mix Heads**



**Custom Mix Heads**



**Straight Style Mix Heads**

- Available Long or Short nozzle configurations



**L Style Mix Heads**

- Available Long or Short nozzle configurations

## The Pinnacle of Gas Infusion Technology

**LINDEN** offers the only system on the market that continuously monitors and regulates nucleation levels for unmatched accuracy “keeping the guess work out of the equation”.

- Uses cutting edge gas sensor technology
- Self-contained system can be coupled to any new or existing metering system regardless of manufacturer.

Dry Air, N<sub>2</sub> and CO<sub>2</sub>



# CYCLOPENTANE BLENDING EQUIPMENT



**Penta-Fusion**  
Inject Pentane at Polyol Day Tank



**Penta-Meter**  
Inject Pentane at Mix Head

# AIRCRAFT CARRIER FOAMING

## CRITICAL PROJECTS

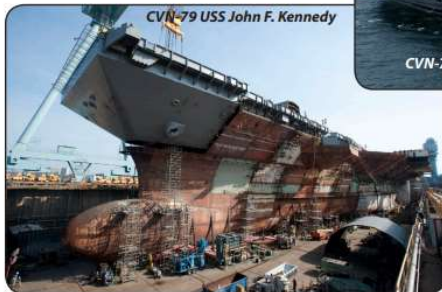


Polyurethane Metering Machine

CVN-77 USS George H. W. Bush



CVN-79 USS John F. Kennedy



CVN-78 USS Gerald R. Ford





# HIGH VOLUME GOLF BALL PRODUCTION

## CRITICAL PROJECTS

**LINDEN**  
POLYURETHANE



- High volume golf ball production
- Fifteen cells supplied
- Small shots
- Automated part handling system



# TURN KEY SYSTEMS

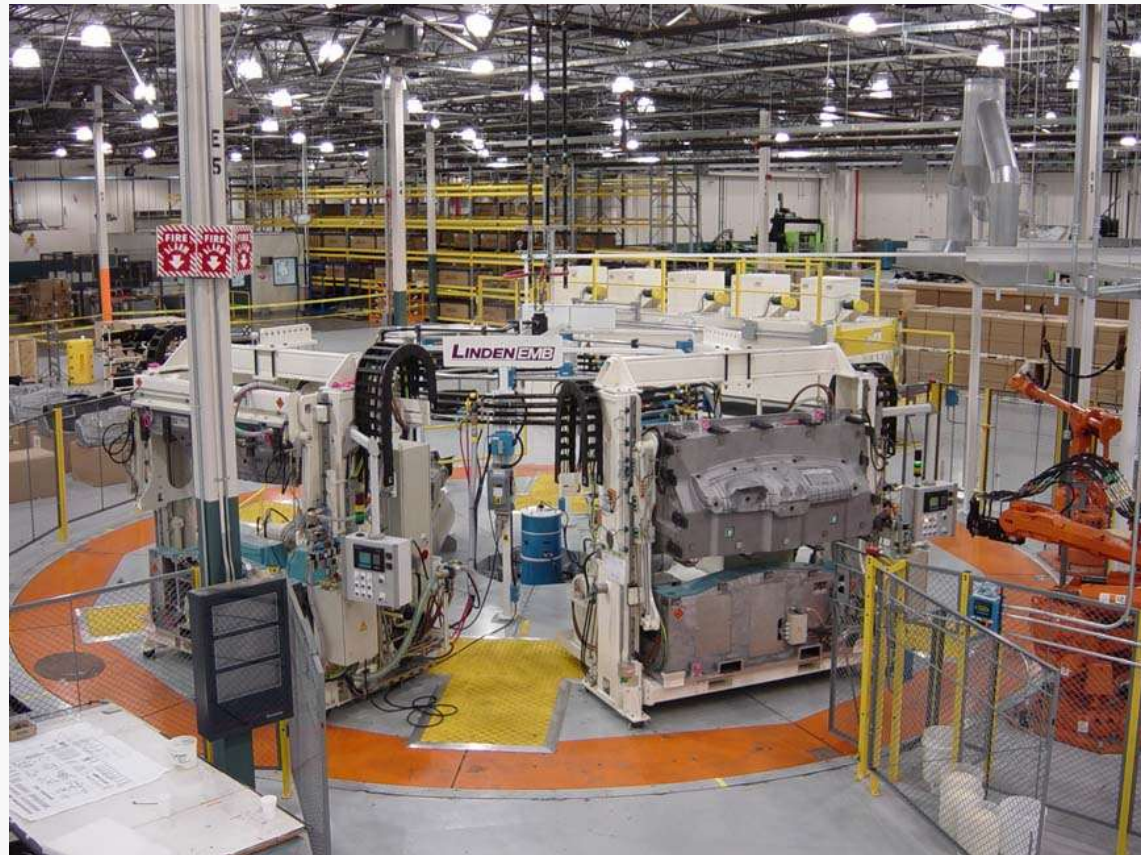
## CRITICAL PROJECTS



Pit Mounted “flush style” turntable with robotic part and mix head handling producing IP components.

(39 ft. dia., 100,000 lb. capacity, six IP carriers and continuous motion)

Robotic pour and mold release application - Linden Mold Carriers





# RING LINE PRODUCTION CELL

## CRITICAL PROJECTS



Remanufactured  
Complete Production  
Cell Including:

- Metering Machine
- Ring Line and Select Stations
- Mix Heads



# BULK STORAGE SYSTEM

## CRITICAL PROJECTS



8,000 Gal system

- Custom Engineered to suit each application
- Chemicals can be received from tank trucks or rail cars
- Systems up to 30,000 Gal
- Designed to ASME standards
- Chemical conditioning systems available



**WORLD CLASS** REPAIRS & SERVICE

**LINDEN**  
POLYURETHANE



# INDUSTRY LEADING REPAIR SERVICES

## CRITICAL REPAIRS & SERVICES



### Rebuild / Repair Metering and Feed Pumps

- Rexroth
- Hydromatic
- RHL Rotary Power
- Sam (Cannon)
- Viking

### Rebuild / Repair Mixing Heads

- |            |                     |
|------------|---------------------|
| • Admiral  | • Konel             |
| • Cannon T | • Krauss-Maffei     |
| • EMB      | • Linden Industries |
| • Graco    | • MHR               |
| • Gusmer   | • OMS/Impianti      |
| • Hennecke | • QCM               |
| • Hi-Tech  | • TOHO              |

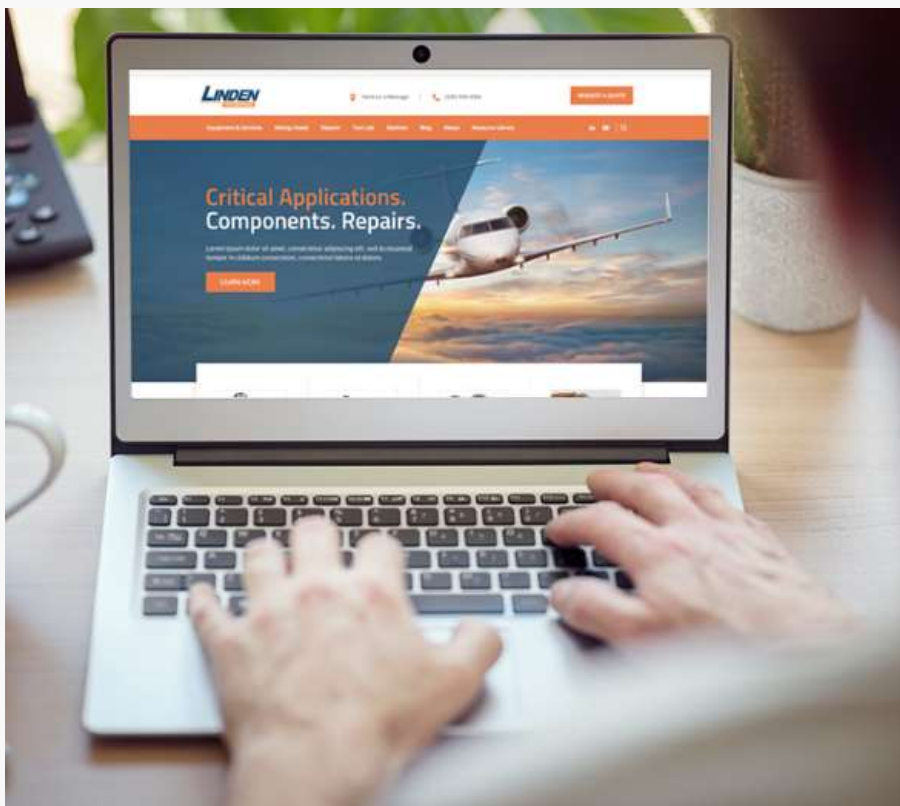


# **UNSURPASSED** SUPPORT

CRITICAL REPAIRS & SERVICES



- **24/7 Service Help Desk**
- **Expert Field Service Support**
- **Comprehensive Parts Inventory**
- **Pump and Mix Head Repair Capability**
- **Any manufacturer – not just Linden**
- ***HOTLINE*™ On Line Engineering Service Support**



Visit our website for more  
information:

[www.Lindenpolyurethane.com](http://www.Lindenpolyurethane.com)

Or Contact us directly at:

(330) 928-4064





**THANK YOU**