



SPECIALTY GAS

EQUIPMENT, AUTOMATION & SUPPORT



WELDCOA

LEADING THE INDUSTRY WITH THE HIGHEST QUALITY EQUIPMENT, SERVICES AND SUPPORT FOR SPECIALTY GAS FILLING

TABLE OF CONTENTS

Digital Automation Overview	2
Modern Manufacturing Overview	4
Training and Education	6
Preparation Products	7
<ul style="list-style-type: none">• High Integrity Prep System• Automated Bake Out Oven• High Integrity Bake Out Oven	
Filling Products	10
<ul style="list-style-type: none">• Manual Specialty Gas Gravimetric Fill System• Automated Specialty Gas Gravimetric Fill System	
Post Filling Products	14
<ul style="list-style-type: none">• Cylinder Inverter System	
Gas Purification Products	15
<ul style="list-style-type: none">• Helium Gas Purifier System	
Gas Analysis Products	16
<ul style="list-style-type: none">• Cryotrap Helium Gas Purifier• Packaged Lab Sampling Systems• Digital Lab Assistant	
NEW Specialty Gas Products	20
<ul style="list-style-type: none">• Manual Liquid Hydrocarbon Blend Cell• Cylinder Passivation System• Disposable Cylinder Filling Manifold	





WE'RE WITH YOU EVERY STEP OF THE WAY.

W Specialty Gas Equipment, Automation and Support, a division of Weldco, is a reliable one stop shop for the highest quality equipment and services for the production of specialty gases, allowing distributors to implement, upgrade, or add new capabilities. Weldco can help you prepare a budget, design a facility, aid in project management, manufacture the equipment, program and develop your automation, install the fill systems, train your staff and support your business long term with proper documentation and validation of your equipment.

A Long History of Innovation

For over 50 years we have made it our mission to support gas distributors. From palletization to specialty gas filling and automation, we have continually innovated solutions that have reshaped our industry. Now we all move more efficiently, fill more consistently and work more productively. That's why so many gas distributors turn to Weldco for ways to improve their business.

The Service You Deserve

Become a Weldco client and gain access to our knowledgeable team of industry experts. Everyone at Weldco is focused on providing you with the highest possible level of service and support.

Focused on Your Success

Everything we do is driven by our motivation to improve your business.

- Reduce costs
- Improve safety
- Increase capacity
- Increase productivity
- Maximize uptime
- Minimize waste
- Ensure long-term performance
- Gain competitive advantage
- Maximize ROI

Your customers will value the difference it makes in their business.

- Consistent mixes
- Broader offerings
- Faster turnaround

Proudly Made in the USA

We are a true U.S. manufacturer with the people, equipment and experience necessary to design, manufacture and test a wide range of products for the compressed gas industry.

Our process control and automation ensure the highest quality and consistency. All of our specialty gas equipment and automation is engineered, designed, programmed, fabricated, wired, assembled and thoroughly tested at our Aurora, Illinois USA facility.

GAS CONTROL SYSTEMS THAT MAKE YOUR PRODUCTION AND YOUR BUSINESS MOVE FASTER AND MORE EFFICIENTLY.

Maximize your equipment investments, while increasing production levels, with our digital automation solutions.

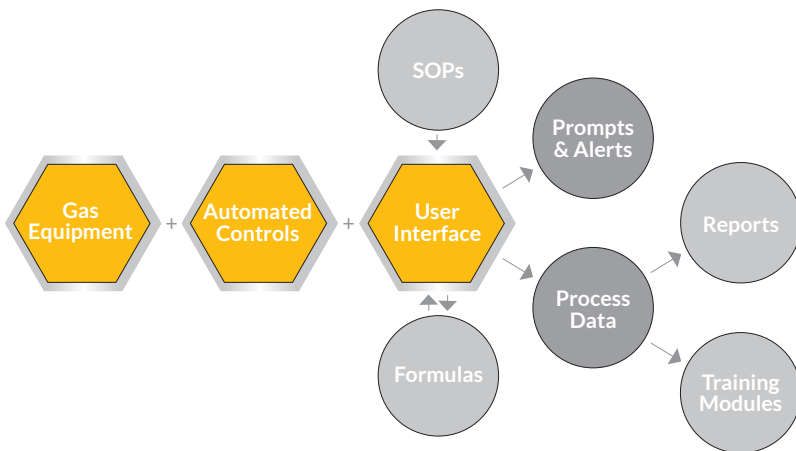
When you capitalize on the combination of our compressed gas equipment and technology, for the automation of processes that would otherwise be performed manually, you will realize significant benefits throughout your business.

How it Works

Within your environment, we can provide an independent system that includes our gas equipment, customizable control automation and intuitive user interface to deliver a complete digital automation solution for your gas process.

This gas control system automates many steps in the gas process to increase productivity, and provides prompts and alerts for system operators, ensuring a safe and optimal performance environment.

The system also allows for the incorporation of your company's standard operating procedures (SOPs), and may be customized in many ways to provide for uniform language and information that is unique to your organization.





If Your Business Involves the Use of Gases, You Can Automate It.

We offer comprehensive Digital Automation systems for any company that uses gases in the production of their products. And we do this on a regular basis.

Our independent system combines our time-tested equipment and proven automated controls. Together they deliver the highest level of value to your production environment and your business.

Many of our gas systems are available as independent plug and play solutions that can have you up and running quickly, and enjoying all of the benefits of automation.

Our patented digital automation solutions apply to many industries and have countless applications, virtually anywhere gas is used.

THE BENEFITS OF DIGITAL AUTOMATION ARE WIDESPREAD

The Benefits of Digital Automation are Widespread.

When you implement Digital Automation, your production *and your business* move faster and more efficiently.

Smarter

- Optimized Equipment Performance
- Increased Performance and Reduced Costs
- Elevated Communication
- Streamlined Data and Document Management
- Fool-Proof User Interface
- Measureable Employee Activity

Faster

- Maximized Efficiencies

Better

- Process Fluidity
- Consistent Product Quality
- Greater Access and Control
- Improved Safety
- Enhanced Training and Education
- Employee Retention
- Fully Customizable
- Increased Value to Your Customers

MADE IN THE USA. A MODERNIZED MANUFACTURING FACILITY WITH AUTOMATED OPERATIONS.

Ensure that the products and services you depend on are of the highest quality, and will be there when you need them, time and time again.

We've adapted to a new way of working, in order to meet new expectations. We're better, stronger, and will respond with greater agility. More than ever before, we are committed to delivering quality, Made in the USA products and services, that you can always depend on, and that will contribute to the success of your business.

As we embrace a new order of business, our mindset remains unchanged: *quality in - quality out*. That means constant evaluation, constant rethinking, constant innovation, constant improvement. And that is what we have accomplished.

We have reimagined our facility, our manufacturing environment and our processes, all in an effort to provide products and services that provide a greater value to you.





Advanced Manufacturing Execution System

The Epicor Advanced MES (Manufacturing Execution System) delivers the most advanced level of production and process monitoring available today. Our implementation of this Industry 4.0 solution brings a host of benefits to the products and services we provide to you. The system provides accurate data directly from machines and operators to deliver real-time production metrics, analytics and tracking, allowing us to turn data into actionable insights. Built-in best practices bring our overall process to another level of efficiency.

Robotic Welders

The accuracy and consistency provided by the use of robotic welding is paramount to meeting our high quality standards. We have recently doubled the amount of robotic welders at our Aurora, IL facility, generating greater output of our most popular products, including pallets, carts and other equipment components.

Digital Laser Cutting

In our constant effort to control quality throughout our manufacturing process, we recently added additional laser cutting capabilities within our facility. Our automated laser cutting provides for accuracy, high output and reduced waste. Many of our equipment components are now cut on our lasers.

Check Point Quality Inspections

Automation of our complete process has allowed more time for our staff to perform additional quality inspections at various stages throughout the process. All inspections become part of the data within our system which is immediately available and actionable.



**MODERN IMPROVEMENTS TO OUR FACILITY.
A POSITIVE IMPACT ON YOUR BUSINESS.**

ONLINE AND ON-DEMAND TRAINING AND EDUCATION



Gain Knowledge in Industry Specific Content, Virtually, and for Free!

Our exclusive Gas Masters™ Webinar Training is designed specifically for Fill Plant Operations.

Join us once a month on “Weldcoa Wednesday” for our Gas Masters™ Series of free training webinars featuring popular topics that we’re often asked about. These educational topics are presented by experts who have significant in-the-field experience and have valuable gas industry tribal knowledge. Safety tips and considerations are addressed on each topic.

This is a great tool to help cross-train employees and/or learn some helpful tips from experts who see and deal with these common topics day in day out.

SAMPLING OF TRAINING TOPICS

Fill Plant Layouts and Cylinder Fill Suggestions

How to Set Up a Specialty Gas Lab

Process Piping in Your Fill Plant

Cylinders 101

How to Fill Industrial Gas Mixtures

The Importance of Purity and How To Obtain It

Managing Cryogenic Liquid Usage and Calculating Losses



GAS MASTERS™ TRAINING ACCESS
EXCLUSIVE PRESENTATIONS ON
NEW PRODUCTS AND TECHNOLOGIES
DEMOS AND MAINTENANCE VIDEOS

Get All Access to Critical Industry Training When and Where You Need It!

Keep your team up to speed on safe equipment operation and maintenance, new products, and much more with this one-of-a-kind subscription-based service. Take full advantage of a CONTINUALLY growing e-library of successful training webinars and videos produced by experienced Weldcoa staff and industry experts.

Running a business while keeping your staff educated and safe can be a challenging task. Having industry specific training videos On Demand allows you and your employees to watch the selected content at your convenience. With Weldcoa On-Demand, viewers can pause, play, fast-forward, rewind, and re-watch the videos as much as necessary.

The Weldcoa On-Demand subscription includes access to over 35 videos on:

- Weldcoa Gas Masters™ Training for Fill Plant Operations
- Weldcoa Exclusive Presentations on New Products and Technologies
- Weldcoa Demos and Maintenance Videos



1 Year Weldcoa On-Demand Subscription

Access to the entire Weldcoa e-library.
Available now for gas distributors only.

HIGH INTEGRITY PREP SYSTEM



Efficiently Prep Cylinders for Blending

The High Integrity Prep System is used to prepare the cylinders for processing prior to going to the blend cell for filling. Each system includes a control panel, linear manifold and vacuum pump system. Our system is engineered and designed to be high integrity, with all welded construction and VCR or VCO connection points. This allows a lower ultimate vacuum to be reached which would result in high purity straight gas or more stable reactive gas mixture.

Features and Benefits

- Our system is engineered and designed to be high integrity, with all welded construction and VCR or VCO connection points. This allows a lower ultimate vacuum to be reached which would result in high purity straight gas or more stable reactive gas mixture.
- Efficiently preps cylinders for blending
- Provided with flexible metal hoses with VCR welded fittings
- Durable, powder-coated frame
- Valves are provided for vent, purge, vacuum and static vacuum operation
- The entire manifold assembly, including the leads, are 100% hydrostatically pressure tested to 1.5 times the MAWP, 100% nitrogen leak tested, 100% oxygen cleaned, dried, bagged to the highest safety standards.
- System is delivered assembled, oxygen cleaned, pressure tested and ready to go. Simply uncrate the unit, position it in place, anchor it to the floor and connected it to the existing plumbing.
- Made in the USA



TYPES AVAILABLE

Oxidizer/Inert Gases (For low concentrations of O₂ below 23.5%)

Inert Gases

Flammable/Inert Gases

AUTOMATED BAKE OUT OVEN



TYPES AVAILABLE

Standard automated 12-cylinder unit

Designed specifically for non-flammable gases, available in either 240 Volt or 480 Volt. Other voltage options are available upon special request. A vacuum pump is not included with standard unit but is available, with or without a stand.

Up to Three Purge Gases

This option allows the customer to pipe argon, helium, and nitrogen to the oven and use the same purge gas that the cylinder will be put into service.

Efficiently Remove Moisture and Any Trace Contaminants

The Automated Bake Out Oven provides an efficient means to prepping cylinders for industrial, medical and specialty gas mixtures and/or pure gas grades of 99.999% purity levels or better by removing moisture and any trace contaminants from cylinders being put into service. The system uses a cycle of heat, vacuum and purge gas to remove the contaminants.

PLC Controlled with Safety in Mind

A custom PLC monitors the vacuum pressure, cylinder wall temperature, oven temperature, and purge pressure. The unit also provides multiple safety parameters and alarms for situations such as if the vacuum is taking too long, overheating, no purge gas is available, etc. If a vacuum pump is also ordered, a custom vacuum pump motor starter and thermal over load are included to simplify connecting the vacuum pump of your choice.

Features and Benefits

- Can have purge pressures up to 200 PSI, drastically improving the efficiency and reducing the time required in the cylinder preparation process
- Convenient double door design provides quick and easy access for loading and unloading cylinders with no ramps to roll cylinders up or down on
- Designed with a 1" stainless steel pipe header, all welded, eliminating the potential for leak points
- Provided with an operator touchscreen interface with PLC for full automatic control of the entire bake out process
- Durable, powder-coated frame
- Automatic valves are provided for vacuum pump isolation, purge gas and vent operations
- Provided with Weldcoa made flexible post-sintered Teflon lined leads
- The entire manifold assembly, including the leads, are 100% hydrostatically pressure tested to 1.5 times the MAWP, 100% nitrogen leak tested, 100% oxygen cleaned, dried, bagged to the highest safety standards
- System is delivered assembled, oxygen cleaned, pressure tested and ready to go. Simply uncrate the unit, position it in place, anchor it to the floor and connected it to the existing plumbing.
- Made in the USA

HIGH INTEGRITY BAKE OUT OVEN



TYPES AVAILABLE

Standard automated 12-cylinder unit

Designed specifically for non-flammable gases, available in either 240 Volt or 480 Volt. Other voltage options are available upon special request. A vacuum pump and stand is provided with the vacuum piping for all standard High Integrity Bake Out Oven models.

Up to Three Purge Gases

This option allows the customer to pipe argon, helium, and nitrogen to the oven and use the same purge gas that the cylinder will be put into service.

Automatically Vacuum Cylinders Under Intense Heat

The High Integrity Bake Out Oven represents the highest level of automated process for the vacuuming of cylinders under intense heat. The automation walks you through the step by step process of choosing how long to vacuum, at which level of vacuum and at what temperature. A variety of gases can be programmed to purge the cylinders at different intervals, of your choosing. The result is a higher level of achieved purity, within the cylinders, with the least amount of labor and within the most efficient amount of required time.

Features and Benefits

- Two PLC controlled modes of operation with the standard unit:
 - **Automatic Operation** in which the oven automatically proceeds to the next step of operation without operator input once a pre-determined operating parameter has been achieved.
 - **Manual Operation** in which the operation is still controlled by the touchscreen, however the system will only perform a function specified by the operator and will not proceed to a next step without input. This mode is particularly useful to Pre-Bake cylinders.
- Convenient double door design provides quick and easy access for loading and unloading cylinders with no ramps to roll cylinders up or down on
- The cylinder manifold is manufactured at Weldcoa out of all welded 2" stainless tube header and is available with flexible metal stainless steel pigtail leads for cylinder connections using high integrity face seal fittings.
- Provided with an operator touchscreen interface with PLC for full automatic control of the entire bake out process
- Durable, powder-coated frame
- Automatic valves are provided for vacuum pump isolation, purge gas and vent operations
- Transducers monitor the vacuum, cylinder wall temperature and purge pressure
- The unit will also sound alarms if the vacuum is taking too long, overheating or has no purge gas available
- We also offer the option of providing up to three purge gases. This allows the customer to pipe argon, helium, and nitrogen to the oven and use the same purge gas that the cylinder will be put into service.
- The entire manifold assembly, including the leads, are 100% hydrostatically pressure tested to 1.5 times the MAWP, 100% nitrogen leak tested, 100% oxygen cleaned, dried, bagged to the highest safety standards
- System is delivered assembled, oxygen cleaned, pressure tested and ready to go. Simply uncrate the unit, position it in place, anchor it to the floor and connected it to the existing plumbing.
- Made in the USA

MANUAL SPECIALTY GAS GRAVIMETRIC FILL SYSTEM



GAS TYPES AVAILABLE

Oxidizer/Inert Gases

Inert Gases (with limited Oxygen 500 PSI or less)

Flammable/Inert Gases

Flammable gases as defined by CFR-49. Gases that pose a hazard of ignition when combined with an oxidizer

Reactive/Corrosive and Inert Gases

For gases that may react due to other components due to their acidity or alkalinity

BLEND PANELS AVAILABLE

Gases Filled By High Pressure Pumps

- Requires master shut off valves
- 1/2" brass pipe or stainless steel tube header
- Swing arm with CPV type connections

Gases Filled From Gas Storage

- (banks or single cylinders)
- Uses diaphragm packless valves
 - 1/4" stainless steel or monel tube header
 - VCR connections for most mechanical joints
(Oxidizer will have brass compression fittings)

Produce Mixtures From % Down to PPB Concentrations

Our Manual Gravimetric Fill Systems for specialty gas is designed to produce mixtures, (from up to 17 source gases) from percent down to ppb concentrations. Weldcoa provides a long list of technical options ensuring that your system is customized to meet your specialty gas filling needs. Each unit is fully assembled, pre-engineered, oxygen cleaned and tested before it is delivered, making sure there are no leaks in the common piping. Installation is quick and easy.

Safety Features and Benefits

- Designed to produce mixtures with components from percent down to ppb concentrations from multiple source gases
- All process piping has been hydrostatically tested to 5250 PSIG to ensure quality and safety
- Self-contained cabinet aids in reducing environmental influences to scale
- Orbital fill head provides equal flow to each cylinder connected to manifold
- A digital vacuum compound gauge, digital high pressure gauge and digital micron meter are all included for accurate readings
- Relief valves are installed for over pressure protection during the fill process
- All components are orbital welded and mostly VCR connections. (Oxidizer/Inert model has monel tubing with compression fittings)
- All piping components manufactured by Weldcoa have been cleaned for oxygen service per: PSGP Oxygen Cleaning Procedure #PSMB-O2 CLEAN
- All GasFlow manual valves and check valves have been cleaned by GasFlow per CGA G4.1-2009 (practive for cleaning methods and cleanliness levels for material and equipment used in oxygen-enriched environments)
- Valves are high integrity diaphragm packless type (Oxygen model has mechanically sealed monel/brass)
- The entire manifold assembly, including the leads, are 100% hydrostatically pressure tested to 1.5 times the MAWP, 100% nitrogen leak tested, 100% oxygen cleaned, dried, bagged to the highest safety standards.
- Installation is quick and easy. System is delivered assembled, oxygen cleaned, pressure tested and ready to go. Simply uncrate the unit, position it in place, anchor it to the floor and connected it to the existing plumbing.
- Made in the USA



Every System Includes

- Powder-coated, custom cabinet (pit or ramp style)
- Custom Blend Panel with swing arm for up to 9 supply gases
- 6 or 12 cylinder orbital manifold with pigtailed/leads
- Sartorius high accuracy scale and scale indicator
- Digital pressure gauge for high pressure readings
- A compound vacuum gauge for vacuum readings
- Pirani vacuum gauge for micron readings
- Typical interconnection piping is orbitally welded with VCR end connections

Additional Options

- Source Gas Cylinder Storage Rack
- Micro-Cylinder for producing ppm components
- Swing arm for premix cylinders for making diluted mixtures
- A vacuum pump, stand, and/or vacuum pump starter control box

WARNING:

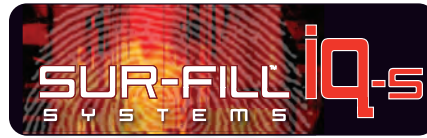
Our Manual Gravimetric Fill Systems are not intended or designed for blending flammable and oxidizer gases together. These gases MUST be kept separate from any one Manual Gravimetric Fill System otherwise there is a potential for a flash or explosion. The concern is having residual hydrocarbons on valve seats and then having high-pressure oxygen passing through those valves.

AUTOMATED SPECIALTY GAS GRAVIMETRIC FILL SYSTEM



Every System Includes

- Operator Console with HMI Touch Screen, Keyboard and Mouse, Printer and Audible Speaker
- Powder-coated Steel Reference Enclosure With Load Centering Sartorius 150 kg x 0.1g Gravimetric Scale
- Source Gas Cylinder Storage Rack Built into Base
- 6 or 10 Cylinder 316 Stainless Steel Orbital Manifold
- All units with CGA 580 Fittings Supplied for Connecting to Target Cylinders
- Up to (10) Supply Gases With Double Block & Bleed
- Max. Service Pressure 3045 PSIG MAWP
- Pirani Vacuum Gauge With O-ring Flange Connection For Micron Readings
- 1/4" or 1/8" Rigid Stainless Steel Leads
- Individual Pneumatically Operated Cylinder Isolation Valves on Leads
- Static or Dynamic Vacuum
- Integrated with the most recent version of AsteRisk's Specialty Gas Manager Software
 - Generates recipes for complex mixtures (% , PPM, PPB)
 - Automatically transfers to filling system software including pre-fill and post fill procedures
 - Produces DOT, FDA, OSHA and CGA Compliant cylinder labels
 - Performs post fill component calculations (actual)
 - Produces Certificates of Analysis



Produce Mixtures From % Down to PPB Concentrations, Including EPA Protocol Gases

The Sur-Fill iQ-s™ Automated Specialty Gas Gravimetric Fill System puts automated technology at your fingertips. This easy to use system has touch screen technology that guides you through the specialty gas filling process, providing greater productivity and accuracy. The Sur-Fill iQ-s™ is capable of producing mixtures (from up to 10 gases) from percent down to ppb concentrations, including EPA Protocol Gases. Our system is integrated with AsteRisk's Specialty Gas Manager software program.

Safety Features and Benefits

- Designed to produce mixtures from percent down to ppb concentrations, including EPA Protocol gases.
- Unlimited number of recipes can be stored with up to 10 source gas supply stations
- Intuitive HMI touch screen with self prompting features
- Produces ultra-consistent mixtures
- Uses significantly less labor to produce highly accurate mixtures
- Runs unattended after the cylinders are connected and the mixture recipe is selected
- Add-on feature provides remote monitoring capability and support
- Includes a start-up and power loss recovery validation mode
- Performs pigtail/lead deflection test prior to producing each mixture
- Software keeps track of pressure and service cylinder contents
- All process piping has been hydrostatically tested to 5250 PSIG to ensure quality and safety
- Self-contained cabinet aids in reducing environmental influences to scale
- Orbital fill head provides equal flow to each cylinder connected to manifold
- Every morning, when logged into, the system performs an integrity check prior to starting the unit
- Relief valves are installed for over pressure protection during the fill process
- All components are orbital welded and mostly VCR connections. (Oxidizer/Inert model has monel tubing with compression fittings)
- Valves are high integrity diaphragm type stainless steel (Oxygen model has diaphragm packless monel/brass)
- The entire manifold assembly, including the leads, are 100% hydrostatically pressure tested to 1.5 times the MAWP, 100% nitrogen leak tested, 100% oxygen cleaned, dried, bagged to the highest safety standards.
- Installation is quick and easy. System is delivered assembled, oxygen cleaned, pressure tested and ready to go. Simply uncrate the unit, position it in place, anchor it to the floor and connected it to the existing plumbing.
- Made in the USA



GAS TYPES AVAILABLE

Inert Model

Designed for Inert Gas Service. Source Gas Mixtures that contain over 23% of Oxidizer are limited to 500 PSI. 580 and 590 CGA connections are used with this unit.

Flammable Model

Designed for Flammable Gas Service. 580 and 350 CGA connections are used with this unit. The included Sartorius 150 kg x 0.1g Gravimetric Scale and 0-4000 PSIG Pressure Transmitter are rated (explosion proof) for this model. Features a purge assembly designed specifically for putting an inert gas purge into the electrical enclosure, which is mounted on the cabinet, in order to prevent the possibility of a fire hazard. Please note, with this model, the console must be rated in order to be in the same room.

Inert Model

Designed for Inert Gas Service. Source Gas Mixtures that contain over 23% of Oxidizer are limited to 500 PSI. 580 and 590 CGA connections are used with this unit.

Flammable Model

Designed for Flammable Gas Service. 580 and 350 CGA connections are used with this unit. The included Sartorius 150 kg x 0.1g Gravimetric Scale and 0-4000 PSIG Pressure Transmitter are rated (explosion proof) for this model. Features a purge assembly designed specifically for putting an inert gas purge into the electrical enclosure, which is mounted on the cabinet, in order to prevent the possibility of a fire hazard. Please note, with this model, the console must be rated in order to be in the same room.

Additional options:

- Source Gas Cylinder Storage Rack for Small Cylinders
- A vacuum pump, stand, and a vacuum pump starter control box are also available options. All sold separately.

CYLINDER INVERTER SYSTEM



TYPES AVAILABLE

Standard automated 3 or 6-cylinder unit

Available in either 240 Volt or 480 Volt. Other voltage options are available upon special request.

Pneumatically controlled 3 or 6-cylinder model

Also available for rated areas. Please note this system does not include the safety light beam features as well as the touchscreen interface.

An Accepted Method Ready For Change

In the industrial and specialty gas industry, the accepted method for ensuring a homogeneous mixture with mixed gas cylinders is to place them on a mechanical roller in the upright position and rotate them into a horizontal position. The cylinder is then agitated with a spinning action that is reversed periodically during the mixing process.

While this method has been effective for achieving a homogeneous mixture in a relatively short period of time, it has led to several problems including deterioration in the appearance of the cylinder and additional costs associated with painting and replacement of damaged labels. Cylinders must also be taken out of service for this process, decreasing available inventory. Cylinder rolling is also an issue with aluminum cylinders (used in specialty applications) because appearance and contamination are a significant risk.

A Solution for the Industry Mixer Issues

Our six-cylinder platform system allows cylinders to be repeatedly inverted while holding them in a fixed position. The cylinder is placed in an upright position and rests on a hard plastic pad in a V shaped holder with a padded adjustable stop that rests against the cylinder cap. This prevents the cylinder from being marked by the typical roller bands and eliminating the tearing or marring of the label.

The inverter uses an air piston to invert the cylinder. Control of the process is accomplished by computer control that allows for the selection of the number of inversion cycles and the length of time the cylinder is held in the inverted and upright position. Electronic eyes are placed in the cylinder path to prevent accidental injury if the operator steps into the inverter mechanism.

Features and Benefits

- Used for mixing gas mixtures after filling to ensure a homogeneous mixture for the industrial and specialty gas industry
- 3 or 6 cylinder models are available
- Automatic model is provided with an operator touchscreen interface for full automatic control of the entire mixing process
- Durable, powder-coated frame
- A pneumatically controlled model is available for rated areas. This system does not include the safety light beam features as well as the touchscreen interface.
- Loading ramp design creates an easier loading and unloading condition
- The unit will sound alarms and show an alert of the touchscreen if the emergency stop button is engaged, if there is an issue with the safety light beam in front of the unit or if there is low pressure issue.
- The time required to effectively mix the gas mixtures on our inverter system is comparable to the roller method. Even at higher concentrations of a dense minor component such as carbon dioxide complete mixing can be obtained within approximately 15 minutes.
- System is delivered assembled, oxygen cleaned, pressure tested and ready to go. Simply uncrate the unit, position it in place, anchor it to the floor and connected it to the existing plumbing.
- Made in the USA

HELIUM GAS PURIFIER SYSTEM



Every System Includes

- Aluminum Skid Mounted Base
- 260 Liter Open Top Dewar with an Activated Carbon Bed Material Assembly Installed Inside
- Control Panel with a Selector Arm for Process and Regeneration Operations
- 3000 SCFH Low Boy Ambient Vaporizer, 4000 PSI
- Back Pressure Regulator
- Activated Carbon Filled Filter Cluster
- All components are pre-piped with Stainless Steel tubing and face seal connections wherever possible
- This system is production capacity sized
- Rated 3500 PSI MAWP

Note: A 1/2" Female VCR connection is provided for field connection. The fill manifold is not supplied with the standard model however is available as an add-on option. Please note, the integrity of the fill manifold will be a key factor in the purity of the helium from the system.

Economically Purify Industrial Grade Helium

The Weldcoa Helium Gas Purifier System is designed specifically to purify Helium. It uses an activated carbon bed immersed in a liquid Nitrogen bath. It will remove the following impurities by freezing or liquefying: water, Carbon Dioxide, Oxygen, Argon and hydrocarbons. It will impede the flow of Nitrogen significantly to produce a very clean outlet stream of the source gas. This unit includes a powerful regeneration system to remove the impurities trapped within it, allowing for repeated use of the purifier traps.

Features and Benefits

Makes it easy and economical to purify industrial grade helium (4.8) into grade 5.0, 6.0 or even better and compress it into cylinders right at your facility.

- Produce 5.0, 6.0 or possibly 7.0 grade Helium from your current source of product. The ultimate purity achievable is dependent on the level of contamination in the source gas and the flow rate through the purifier
- Unit includes a regeneration system, allowing for repeated use of purifier traps
- Versatile and Easy to Use
- It is not necessary to place the purifier unit in a permanent location. The purifier will operate without electricity or Nitrogen gas. The unit may be placed in proximity to cylinder filling operations and moved for regeneration
- Skid mounted, turnkey solution is easy to set-up and start producing
- Dual Swing Arm is provided to switch between purification mode and regeneration mode and ensure no cross contamination between Helium and Nitrogen
- All process piping is orbitally welded where possible utilizing VCR connections to ensure high integrity and to prevent any potential leak points
- Each unit is shipped fully assembled and pre-tested.
- Made in the USA

Additional Options Available

- Cylinder Securement Rack for 12 cylinders
- Vacuum Pump System that includes a vacuum pump, stand and start/stop control box. All three items sold separately.

Regeneration Details

This unit includes a powerful regeneration system to remove the impurities trapped within it, allowing for repeated use of the purifier trap. Here is a list of the requirements needed:

- 240 Volt Single Phase
- High Volume Low Pressure Nitrogen (Carrier Gas)
 - 100 PSI MAWP
 - 5 SCFM Nitrogen for 8 Hours

CRYO TRAP HELIUM GAS PURIFIER



Drastically Improve Your GC Performance

Our Cryo Traps purify the helium carrier gas being supplied to a Gas Chromatograph (GC) significantly improving the GC performance especially for PPM or PPB analysis. The Cryo Trap Purifier uses an activated carbon or molecular sieve bed immersed in a liquid nitrogen bath. It will remove impurities by freezing and plating out contaminants on the bed material. The helium will not freeze out and continue to flow to the gas chromatograph providing better analysis.

Features and Benefits

- The gas purifier uses low temperature deposition of impurities in Helium to trap out gases such as Nitrogen, Argon, and CO₂ as well as trap out moisture and hydrocarbons
- This is a simple, low cost, highly effective way to increase the purity level of the helium carrier gas
- Will purify helium to a very low PPB level of contaminants providing a good background gas as close to zero as possible for better analysis results
- The purifier bed material can be regenerated to allow years of use without media replacement
- Each unit is shipped fully assembled and pre-tested.
- Made in the USA

Exchange Program

When the purifier requires regeneration, we offer a Cryo Trap Exchange Program in where we will ship you a replacement unit and the used unit is shipped back to us for proper regeneration. For more details, call us at 1 (630) 806-2000.

OPTIONS AVAILABLE

Activated Carbon or Molecular Sieve bed material

Connections for the inlet and outlet of the helium carrier gas and for media replacement

30 liter liquid nitrogen dewar The unit is made to rest in the mouth opening of a liquid nitrogen dewar container.

PACKAGED LAB SAMPLING SYSTEMS



3 LAYOUT OPTIONS AVAILABLE

Analytical Wall-Mounted System for Lab Room Environments

- Easy access to instruments
- A more economical option than the cabinet models
- A wall-mounted lab can help you showcase a professional look to your customers
- Organized and professional looking
- Allows room for expansion

Analytical Cabinet System for Plant Floor Environments

- Specially equipped with fans, filters and vents to keep the instruments clean and cool
- A compact, sealed enclosure
- Ideal for a facility that has limited space and/or currently does not have a designated lab area

Analytical Cabinet System for Lab Room Environments

- For a climate controlled designated lab area
- Compact, space saving design

Make the sampling process operator friendly with one of our packaged labs. Each one is designed, manufactured, oxygen cleaned and pressure tested at Weldcoa's facility before we ship them out.

Features and Benefits

Designed specifically to make the sampling process more organized easy to use and operator friendly.

- Closed piped system eliminates most make and break connections, reducing the possibility of contaminants in the system
- Each instrument has its own control panel for selecting purge, sample or calibration gases
- System is designed to keep the instruments ready for use with constant purge when not in use
- Piping layout allows selection from one sample source to another to be performed within a matter of seconds
- Allows for sample to simultaneously go to more than one instrument at a time
- This system does not have data recording capabilities
- Each unit is shipped fully assembled and pre-tested.
- Made in the USA

Additional Add-On Features

Sample Racks and/or Regulator Stations

- Sample racks can be either single or double sided
- Regulator Stations for samples, calibration and support gases
- Designed, built, oxygen cleaned and pressure tested at Weldcoa before shipment

Push Button Add On Feature

- For each gas analysis, the Operator will have the ability to manually select the zero, the span and then select the sample source for each instrument via push button interface
- This function allows the operator to electrically switch a sample source with a push of a button instead of physically disconnecting and reconnecting the line to the desired sample port.
- The push button feature is what triggers the 16 port selector valve to connect the chosen source to sample source 1 or 2
- This is a higher integrity system due to 16 port selector valve feature

DIGITAL LAB ASSISTANT



Deploy State-of-the-Art Analyzation Technology

The Digital Lab Assistant (DLA) provides a new level of automation for industrial, medical and specialty gas filling analysis. The DLA is a revolutionary system that can be programmed to capture sample and record analyses simultaneously and with certainty.

The D.L.A. software is designed to provide a uniform, consistent analysis on a repetitive basis. You can take 16 samples from all over your fill plant to the lab. Samples can come from your fill island, fill racks, bulk tanks, liquid fills, e-racks, etc. Then you can send those samples to process instruments/analyzers as long as they have an output signal. This system allows you to send two other samples to GC's or alternate instruments as well. Please note, the D.L.A. software is not designed to monitor or record data from any gas chromatograph.

Features and Benefits

- Provides uniform, consistent results that increase analyses throughput on a daily basis, in return **reducing lab labor cost.**
- Operator friendly which makes it easy to use and to quickly train personnel
- The D.L.A. **can be remotely supported** by Weldcoa for any updates, changes, new personnel training or trouble-shooting
- Provides analysis as work methods to perform repetitive tests
- System communicates with the process instruments
- The software has the ability to zero and span instruments with user inputted zero and standard gases that are ultimately stored into the system.
- Additional features include the ability to create and edit profiles for the different analysis types and the ability to enter test specifications to provide D.L.A. fail criteria.
- The system's software also allows for constant N2 purge 24/7 to instruments to keep them **in standby mode "ready for use" at all times.** This also helps to lower the maintenance on instruments.
- Can quickly change from one sample source to another within seconds without upsetting the instruments.
- Can send a sample to multiple instruments **simultaneously to reduce time to perform analysis.**
- Provides means to purge out sample lines prior to sending sample to instrument which **reduces the upset to the instrument for a faster analysis response time.**
- Can set up profiles for commonly performed analysis.
- Each unit is shipped fully assembled and pre-tested.
- Made in the USA





INCLUDED WITH EVERY SYSTEM

Touchscreen

A touchscreen PC operator interface with custom D.L.A. software installed

PC

A PLC in a separate electrical control cabinet to control all the valves, timers and sampling functions

Mounting Panels

The PC is mounted onto two Stainless Steel Wall Mounting Panels with all of the sampling equipment and process piping installed and piped. Includes:

- 16 electronically controlled inlets
- 2 GC Sample Outputs
- 6 electronically controlled instrument zones:
 - THC Analyzer
 - 8 THC Reference Gases (4 Zero, 4 Span)
 - Percent Oxygen Analyzer
 - Calibration (Zero and Span)
 - Moisture Analyzer
 - Binary Gas Analyzer (Thermo Conductivity)
 - 2 Reference Gases (Nitrogen & Argon)
 - Trace Oxygen Analyzer
 - Calibration (Span)
 - Extra Analyzer

Printer, Keyboard and Mouse

ADD-ON FEATURES

Remote Manual Sample Racks

- Sample racks can be either single of double sided
- Designed, built, oxygen cleaned and pressure tested at Weldcoa before shipment

Regulator Stations

- For sample sources or calibration gases
- Designed, built, oxygen cleaned and pressure tested at Weldcoa before shipment

Analyzers

- A variety of Analyzers can also be provided by Weldcoa upon request

The operator can use the D.L.A. in the Manual mode or the Auto mode:

- Manual Mode gives the user the **ability to run one-of tests for quick results** that do not calibrate or record any data.
- In the Auto Mode the software gives the user the **ability to program profiles, perform sampling on multiple instruments, and create reports of the entire process.**

Provides a wide range of Calibration and Record Keeping benefits including:

- The Digital Lab Assistance provides a platform for the filler to enter COA (Certificate of Analysis) data directly into a touchscreen, **significantly reducing paperwork handling and time performed doing traditional manual data entry**
- **Captures, records, and can print out results of analysis.** This includes being able to print out a COA (Certificate of Analysis). Again this eliminates recording this by hand and keeping files (except for medical gases).
- **Captures, records, and can print out calibration** of each instrument. Includes documentation of calibration cylinders by serial number.
- **Keeps history and logs of calibrations** as opposed to recording this by hand and keeping files (you can be paperless!)
- Operator screen shows personnel the last time the instrument was calibrated for quick reference.
- **Timers are provided for both the calibration process and analysis.**
 - When using zero and span cylinders to calibrate an instrument, a time period can be programmed so it shuts off flow after a period of time. This way a calibration gas can't accidentally go empty.
 - Timers also are used for the proper amount of purging when preparing a sample to be sent to an instrument/s.

NEW PRODUCTS: KEEPING YOU ON THE FOREFRONT OF SPECIALTY GAS FILLING.

MANUAL LIQUID HYDROCARBON BLEND CELL



Easily and Consistently Produce Mixtures from Simple to Complex

Now you can blend liquid hydrocarbons ranging from 2 components with wide blend and analytical tolerances (commonly used in the extraction industry) to 20+ component mixtures with very tight blend and analytical tolerances (commonly used in the petrochemical and natural gas industry). Many of the concepts behind filling these liquid mixtures differ significantly from those associated with gaseous phase mixtures and therefore the blending system must be application specific. Weldcoa designed this system to work specifically with liquid phase components, even those with near atmospheric vapor pressures, by making sure that the manifold design allowed for easy movement of components. It utilizes a high precision, high accuracy scale to help create high quality, repeatable mixtures.

Features and Benefits

- Optimized process piping for liquid phase components.
- System accommodates up to 18 source gas connections but can be expanded further with remote stand.
- High integrity Gasflo valves.
- Orbitally welded 316L SS process piping.
- Swagelok VCR connections throughout system.
- Pneumatic isolation valve on fill lead to prevent interference during fill.
- Laser cut and formed steel enclosure helps isolate the vessel being filled.
- 3600PSIG MAWP on entire system.
- All process piping hydrostatically and pneumatically leak tested to ensure performance.
- Enclosure designed to accommodate vessels from 100 pound LP cylinders all the way to Piston cylinders.
- Plug and play design allows all connections to be easily made to the unit in the field (electrical and mechanical) within a short period of time.
- Ergonomic setup of the control panel makes this system easy to use, and a swingarm for gas selection helps to prevent gas contamination.

CYLINDER PASSIVATION SYSTEM



Ensure the Highest Level of Cylinder Preparation

Our new cylinder passivation system is designed for applications that require the highest level of prep before a fill, such as reactive gas mixtures for environmental monitoring that may be in the single part per million range with a very tight blend tolerance. This system would be used to further prepare cylinders that have already been processed through a bake out oven or similar prep system.

Features and Benefits

- All process piping orbitally welded and constructed of high quality 316L stainless steel
- High integrity connections throughout for a leak free system
- ½" high integrity diaphragm valves designed for high flow through system
- Vacuum pump and all process piping installed and tested to ensure system can reach single digit micron/mTorr vacuum levels
- Manifold designed to allow for purging and vacuuming of 100% of the process piping upstream and downstream of all valves/ regulators to allow the use of pyrophoric gasses (gasses that spontaneously combusts in the presence of air)
- Large diameter process piping for high vacuum conductance
- Integrated manifold for connecting "Pickling" gases to manifold for purging
- All connections (electrical and mechanical) easily made in the field
- 10 cylinder linear manifold incorporated
- m/Torr digital vacuum gauge suitable for rated environments.

The cylinders that come off of this unit can be under a deep vacuum and sent to fill right away or purged with positive pressure and stored for later.



DISPOSABLE CYLINDER FILLING MANIFOLD



Turnkey Solution for Your Disposal Cylinder Filling Needs

Working closely with real world operators, this system was designed to be the industry's first dedicated manifold for filling of disposable cylinders. As a "Plug and Play" style system, it requires minimal work to incorporate into your facility.

Several styles are available to accommodate various gas applications:

- Inert Disposable Cylinder Filling
- Flammable Disposable Cylinder Filling
- Oxidizer Disposable Cylinder Filling
- Reactive Disposable Cylinder Filling

These units can have up to six 300T style cylinders connected at a time for filling, and also have a source of house nitrogen connected for filling and purging. In addition, the units have all process piping stubbed to the top of the unit for field connections to be made. A vacuum system is incorporated into the manifold and can come equipped with a variety of vacuum pumps installed and wired for use.

Features and Benefits

- Multiple safety relief setpoints
- Individual cylinder isolation valves prevent loss of product during operations
- Regulated gas supply for precise gas pressure delivery
- Cylinder rest incorporated to reduce side loading on valve when connected
- Pneumatic valves used for cylinder isolation to allow partial lots to be filled
- All manifold components exceed the latest industry guidelines.
- Cylinders can be prepared for filling on same manifold if desired
- Additional cylinder preparation equipment available
- High integrity valves for filling control



**EMPOWERING
PRODUCTIVITY**

WELDCOA

PREPARE • DESIGN • MANUFACTURE • INSTALL • TRAIN • SUPPORT

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