

**REXARC ACETYLENE  
CYLINDER FILLING SYSTEMS.  
SAFE, EFFICIENT,  
OPERATIONS**

***Rexarc***

Thank you for your interest in Rexarc Acetylene Cylinder Filling Systems. In addition to the equipment listed in this brochure, we offer supplementary services that can reduce your installation time, increase your production, and reduce the risk of accidents.

- **Installation** – We offer Rexarc Certified Installation for all of our systems. Knowledgeable installers can reduce the time it takes to start production. Though certain labor regulations may arise, our installers let you spend less time installing equipment and more time producing acetylene.
- **Operations** – Knowledgeable operators can keep acetylene productivity at its maximum. The only way operators become knowledgeable is with proper training. We offer training in our West Alexandria headquarters and at your site.
- **Safety** – Accidents can stop production, cost you money, and cost workers their lives. Reduce the risk of accidents by making sure your system meets all safety codes with Rexarc's Certified Safety Inspection. We will visit your plant and identify any aspects of operations that may pose safety hazards or violations. From this, we will recommend upgrades and improvements to enhance your operations and reduce the risk of accidents.

Please call or e-mail us if you have any questions about our equipment or our services. We look forward to working with you to improve your profitability.

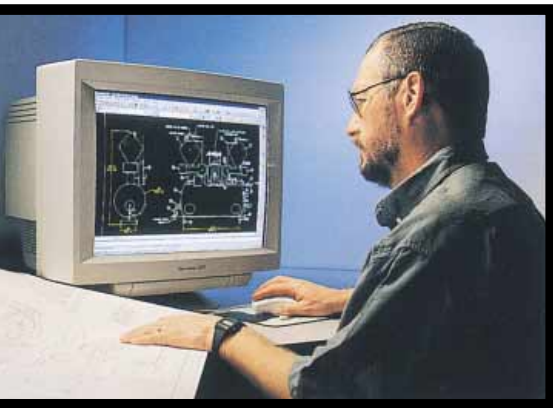
The logo for Rexarc, featuring the word "Rexarc" in a bold, red, italicized sans-serif font. The letters are slightly shadowed, giving it a three-dimensional appearance.

# CONTENTS

The complete solution...only from Rexarc .....	4
Features that make you more efficient .....	4
Rexarc's medium pressure advantages .....	5
Components	
Intrinsically safe digital scale .....	6
Acetone pump .....	6
Acetylene atmosphere monitoring system .....	6
Motor control center (MCC) .....	6
Acetylene generator .....	6
Automatic lubricator .....	6
Carbide fill hopper .....	7
Process skid .....	7
Acetylene compressor .....	7
High pressure driers .....	7
Cylinder filling manifolds .....	7
Rexarc...the one name to remember for replaceable parts .....	8
Specifications .....	8
Upgrading your system .....	8

## THE COMPLETE SOLUTION... ONLY FROM REXARC

With over 80 years of experience in acetylene cylinder filling plant construction, Rexarc has become the world's leader in safe, low-cost, high production design. We provide a complete system for producing acetylene, from the generator to the manifolds that fill the cylinders.



When you invest in a Rexarc Acetylene Cylinder Filling System, you get professional guidance on every aspect of plant design, including building construction, utility requirements, and specific installation needs. Also, if you need installation and training assistance, we can provide a skilled technician to help you get started.

The Rexarc system is so efficient, it quickly pays for itself. The simplicity of operation allows the system to be run only when acetylene is required. If you're looking for the best in safety, productivity and flexibility... Rexarc is the one name to remember.

## FEATURES THAT MAKE YOU MORE EFFICIENT

Rexarc's closed system offers up to 25% more efficiency than other systems because it prevents wasted acetylene and helps maximize carbide yields. A programmable logic controller monitors operating conditions and provides information to keep the system running at optimum efficiency.

*Acetylene Generator*

*Process Skid*

*Acetylene Compressor*

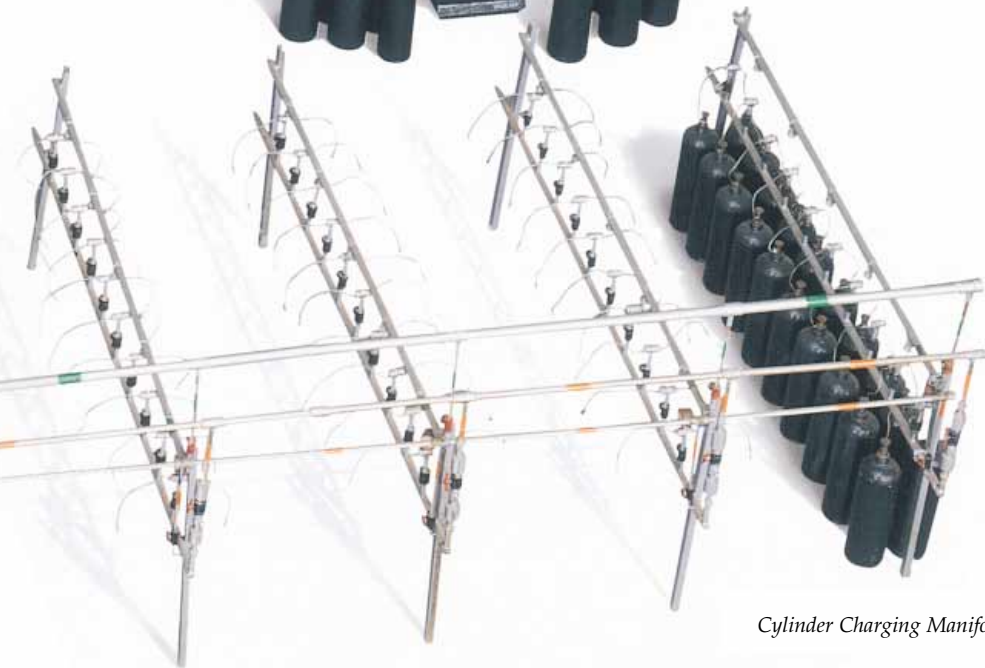


## REXARC MEDIUM PRESSURE ADVANTAGES

Carbide acetylene gas can be produced by either a low pressure or medium pressure system. Rexarc uses the medium pressure technique for the following reasons:

- No gas accumulators are needed. Gas holders use water that absorbs the acetylene and later release it to the outside air, causing wasted acetylene and objectionable odors.
- Rexarc systems are faster and easier to install because they arrive prepped and on skids.
- The system's compact size increases efficiency by reducing excess walking and cylinder rolling.
- Onsite filling reduces the need for additional cylinders by using them more efficiently.
- The system's simple and flexible operation permits fast start-up and shut-down.

*Digital Scale*



*Cylinder Charging Manifolds*

**Rexarc**

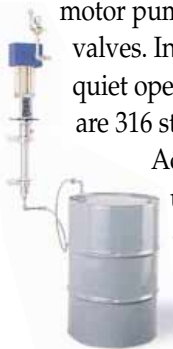
## INTRINSICALLY SAFE DIGITAL SCALE

The electronic digital scale is designed for weighing cylinders in locations classified as hazardous. The indicator is Factory Mutual Approved. The 100% keyboard calibration and program setup makes the weighing in of the empty cylinders easy to determine the correct amount of acetone required for each cylinder. The keyboard allows direct digital tare input of known values for easy cylinder weigh out. Operating power is supplied from the Motor Control Center (MCC).



## ACETONE PUMP

Heavy duty industrial air-motor pump with air booster valves. Includes a muffler for quiet operation. Wetted parts are 316 stainless steel and Teflon. Acetone pump can be used with a 55 gallon drum or an underground tank.



## ACETYLENE ATMOSPHERE MONITORING SYSTEM

Rexarc offers a complete acetylene gas detection system for continuous monitoring of the cylinder filling room. When there is a high concentration of acetylene, an audible alarm will sound and the "ALARM" light will turn on. Under normal conditions, the monitor provides a constant "SAFE" light status indicating the monitor is on.

Operating power is supplied from the Rexarc Motor Control Center (MCC).



## MOTOR CONTROL CENTER (MCC)

Controls the components function through the programmable logic controller (PLC). A message center provides information to keep the components operating at peak performance. Industrial solid state electrical components and intrinsically safe relays permit the use of low-voltage electrical switches for a safer operation. An add-on section is all that is required to expand the MCC to the next size system.



## ACETYLENE GENERATOR

The generator is manufactured in accordance with Section 8 of the ASME Code and produces acetylene gas at less than 0.6 bar (8 psig) pressure. Two hoppers are used alternately to provide an uninterrupted flow. The simplicity of operation allows the generator to be run only when acetylene is required.

The generator will provide enough acetylene to supply five Rexarc compressors when the proper modification to the screw-feed systems are made.

## AUTOMATIC LUBRICATOR

The automatic lubricator is an air operated displacement type lubricator. The twin valve control dispenses equal amounts of lubrication to each end of the generator agitator shaft, reducing the wear on the seals and shafts.

The solid state timer provides time cycles that can be set from 12 seconds to 13 minutes and is to be installed close to the MCC.

Operating power can be supplied from the motor control center.



## CARBIDE HOPPER FILL CART

The carbide hopper fill cart is constructed for heavy-duty service. The filling slide valve is made of non-sparking brass. Carts are available in two sizes, 544kg. (1200 lbs.) and 11.34 kg. (2800 lbs.). Two of the three wheels are fixed and the third is moveable.



The ammonia scrubber removes over 99% of the ammonia that develops during the acetylene generating process. Removing the ammonia prevents amines from forming and clogging cylinders.

The medium pressure drier controls the moisture content of the purifying material for proper filtering of the acetylene.

The purifier contains a bed of purifying material. Flowing the acetylene through this material removes the ammonia, hydrogen, phosphorus, and sulphur, to produce acetylene that is 99.5% pure.

The purified acetylene increases the useful life of the cylinders, flame arresters and check valves.

The purifier scrubber washes the acetylene, removing any purifying material that may be carried in the acetylene.



## HIGH PRESSURE DRIERS

The set of three high pressure driers are ASME coded vessels. The first drier separates oil. The second and third driers remove moisture from the acetylene stream that may be carried over after compressing.

## CYLINDER FILLING MANIFOLDS

The cylinder filling manifolds are protected with flame arresters placed before and after each shut-off valve. The cylinder filling leads are also protected with stem reverse flow check valves which allow cylinders with uneven pressures to be connected to the cylinder lead.

Cylinders will not cascade into one another but will start filling when the manifold reaches the cylinder pressure.

The manifolds are equipped with water sprays to keep the cylinders cool while filling.



## PROCESS SKID

The process skid consists of a cooler condenser, ammonia scrubber, medium pressure drier, purifier and a purifier scrubber. The components are mounted on a skid, pre-plumbed and sized for 56 M3 (2000 CFH) flow. The cooler condenser reduces the 63° C (145° F) moist acetylene from the generator to room temperature, condenses the water vapor and removes residual lime.



## ACETYLENE COMPRESSOR

Acetylene comes from the process skid at 0.4 Bar (6 psig) and is compressed up to 25 Bars (370 psig). Three stages of compression maintain the acetylene at a safe temperature by having the compressor, cooling coils and moisture traps submerged in a water tank with the water temperature being maintained at 27°C (80°F) to 32°C (90°F).

**REXARC...THE ONE  
NAME TO REMEMBER FOR  
REPLACEABLE PARTS**

Rexarc's Acetylene Cylinder Filling System is built to last...and expand. Unlike other systems, Rexarc systems

can be expanded with just a few added components. All of our parts are retrofittable, so your system will never become obsolete. And because we use standard Rexarc parts, you can easily get replacements if they

should ever break. Export shipments are containerized right at our factory and do not need to be opened until they arrive at your site.

**SPECIFICATIONS**

**Model 18      Model 36      Model 54      Model 72      Model 90**

<b>Monthly Production Capacity (One shift per day)</b>					
Total Acetylene Production, Kg	10,000	20,000	30,000	40,000	50,000
Cylinder (6 Kg Capacity)	1,666	3,332	4,998	6,664	8,330
Acetone Required, Kg	450	900	1,350	1,800	2,250
Water Supply (2.5 Kg/Cm <sup>2</sup> ), LPM*	83	166	249	332	415
Carbide Size (Max 15% Dust) Mm	25 X 50	25 X 50	25 X 50	25 X 50	25 X 50
Hourly Acetylene Capacity, Kg	56	112	168	224	280
Carbide Required, Approx. MT	32	64	96	128	160
Electrical (380V, 50Hz, 3PH)**, Kw	17	32	52	66	80
Building Size, M <sup>2</sup>	297	604	650	650	813

\*Can be reduced approximately 85% with recirculating systems.  
\*\*Electrical requirements for your local electrical power supply can be supplied.

**ALL REXARC ACETYLENE CYLINDER FILLING SYSTEMS CAN BE UPGRADED TO THE NEXT SIZE BY ADDING THE CORRECT NUMBER OF THE FOLLOWING COMPONENTS:**

- Process Skid
- Pumping Skid
- Cylinder Filling Manifolds
- Additional Pigtails Assemblies
- Outlet Assemblies
- Acetone pump
- Electrical Controls
- Interconnecting Piping
- Digital Scale
- Purifying Material
- Calcium Chloride

Installation drawings and instructions are included with each system upgrade.



*Innovative Gas and Welding Solutions Since 1924*  
35 East Third Street | P. O. Box 7  
West Alexandria, Ohio 45381 | USA  
Tel: 877.Rexarc.1 | Fax: 877.Rexarc.3  
International Tel: +1.937.839.4604 | Fax: +1.937.839.5897  
www.Rexarc.com | info@Rexarc.com