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**Serving  
industry  
since 1971**

## VOC Reduction

by Gordon Reeves

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# G. P. Reeves sprayer reduces VOCs by 50% by using common compressed air as propellant

### EPA

In the Pollution Prevention Act of 1990 (PPA), the U. S. Congress passed legislation to make pollution prevention a major part of the national environmental policy and required the United States Environmental Protection Agency (EPA) to facilitate the adoption of source reduction techniques by industries. Following the PPA, the U. S. Congress passed the Clean Air Act Amendments of 1990 (CAAA), which require the EPA to establish a basic engineering research and technology program to develop, evaluate, and demonstrate non-regulatory strategies and technologies for reduction of air pollution. **One such research program required the assessment of emissions and pollution prevention options for several consumer categories, including mold release agents (MRAs).** The United States EPA defines VOCs as “any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions”.

### PROBLEM

Mold release agent (MRA) is often sprayed from aerosol cans. The VOCs contained in the propellants necessary for aerosol can operation are often a high percentage of the contents of the spray-can. One manufacturer of a paintable MRA in spray-cans lists the propellants as 34% propane and 16% butane and because of that, every 12 oz. spray-can of his MRA provides only 6 oz of MRA and pollutes our atmosphere with 6 oz. of VOC. Percentages of VOCs contained in aerosol can propellants vary with products and manufacturers. Contact the manufacturer of your MRA for more information.

### SOLUTION

G. P. Reeves Inc., located in Holland, Michigan, offers a MRA sprayer that uses normal shop compressed air as the propellant. With our sprayer, 100% of the sprayed MRA is useful as MRA because the propellant is normal compressed air. Compressed air is common air (the same air we all breathe) that has been compressed to approximately six times atmospheric pressure. Compressed air should not contain any VOCs.

### BENEFITS

1. Reduce Volatile Organic Compounds (VOCs). The G. P. Reeves sprayer eliminates the aerosol can and its associated release of propellants (often propane and butane) into your atmosphere.
2. Reduce labor cost. An automatic sprayer can eliminate the need for a worker to be at or near the spraying location.
3. Less down time. The automatic sprayer and can be programmed to spray smaller amounts of mold release with increased frequency resulting in more consistent machine operation.
4. Reduced MRA cost. MRA purchased in bulk, even in small one-gallon containers, is much less expensive than purchasing it in aerosol cans.

### COMPETITORS' SPRAYERS THAT DON'T WORK

Competitors' mold release sprayers use paint spray gun technology. Their extremely small orifices, needle valves, and adjustable low fluid pressures are necessary for LOW FLOW, but often contribute to NO FLOW. Adjustment to obtain a specific flow rate is impossible. Knowing actual flow rate is almost impossible. Intermittent operation is especially difficult because, at low flow settings, starting the flow is much more difficult than maintaining the flow.

***“With this sprayer, you get what you get”***



Pressurized reservoir



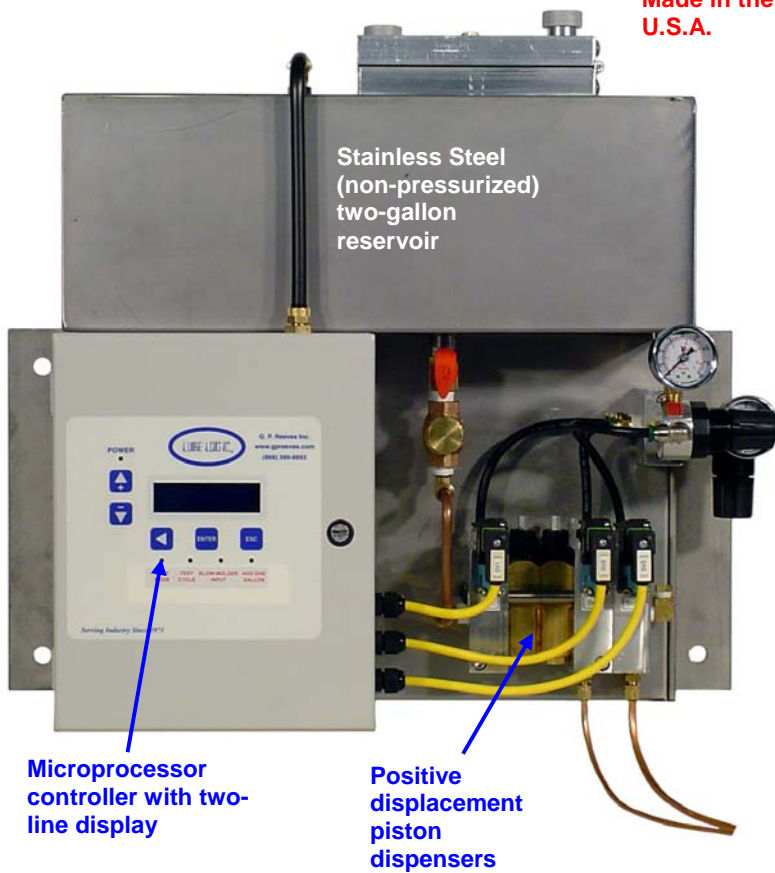
Paint spray type nozzle

**HOW THE G. P. REEVES SPRAYER WORKS**

The G. P. Reeves MRS1000 automatic sprayer uses microprocessor controlled alternately cycling positive displacement piston pumps to measure and dispense the MRA to the spray nozzle. Every pump cycle of each of the two pumps causes 0.065 cc of MRA to be delivered to the nozzle where air is introduced to cause it to spray. The MRA flow rate can be programmed by the operator in 0.05 cc increments between a minimum of 0.20 and a maximum of 0.50 cc per second. **The MRS1000 sprayer accurately controls the mold release flow rate through the nozzle. The flow rate will always be the programmed amount as shown on the microprocessor screen.** The spraying of the mold release at the nozzle is controlled by an air pressure regulator. The mold release flow rate will not be changed by increases or decreases in spray air pressure or changes in mold release viscosity. **The MRS1000 is dependable because mold release flow is based on volumetric piston displacement, not pressure drop caused by small orifices or needle valves. Every piston stroke has the potential to develop more than 800 p.s.i. to force the mold release through our nozzle and our MRS1000 sprayer doesn't have any mold release orifices smaller than 0.046" in diameter.**

**MRS1000 Mold Release Sprayer**

**Made in the U.S.A.**



MRS1000 mold release sprayer has wall mountable frame, sealed two-gallon stainless steel reservoir with low level sensor, microprocessor controller in NEMA 12 enclosure, three solenoid valves, two positive displacement lubricant piston dispensers with Viton seals, 10 feet of air and lubricant tubing, and a block mounted coaxial spray nozzle. The controller is capable of operating the dispensers to cause from 0.20 to 0.50 cc per second of mold release to be sprayed at a user programmed frequency. OFF time can be adjusted from 1 to 20 minutes with one decimal place and ON time can be adjusted from 3 to 20 seconds with one decimal place. Electrical input from the blow molder assures that OFF and ON times are based on machine operation and also eliminates spraying when the blow molder is not operating. Sprayer retains memory during power interruptions and is designed to cause a complete lubrication cycle upon power restoration. Mold release sprayer dimensions are approximately 18" wide x 16" high x 8" deep.



**Plug-in coaxial spray nozzle**

**"With this sprayer, you get what you ask for"**

**For more information, please call G. P. Reeves Inc. at 888-399-8893.**