



OPERATING INSTRUCTIONS

Applicable for all low-pressure disposable systems
Professional Use Kits



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SETTING UP YOUR SYSTEM

IMPORTANT—FOLLOW ALL INSTRUCTIONS

VERSI-FOAM systems are factory tested to meet rigid performance standards. Proper function of the product is totally dependent upon strict adherence to the operating instructions included in this manual.

In all cases, kits should be operated in the upright position (with tank valves on top) and remain in the original cartons during operation. Failure to do so will result in loss of pressure.

Operator should always wear proper personal protective equipment including safety goggles, protective clothing, gloves and proper respiratory equipment.



SETTING UP THE MEDIUM SIZE VERSI-FOAM SYSTEMS

(Includes all varieties of the Systems 9, 10, 15, and 31)

COMPONENTS

The medium VERSI-FOAM Systems includes two chemical components (A-Component in the green tank and B-Component in the white tank), a gun attached to two 10-foot hoses, and a packet including 10 mixing nozzles, 3 fan tips, a pair of nitrile gloves, a wrench petroleum jelly, Operating Instructions, and Safety Data Sheet (SDS).

TO PREPARE FOR OPERATION

Attach hose labeled “A” to the green A-Component tank. Hand-tighten the collar nut (on the end of the hose assembly) to the tank and secure with the wrench. Do not over tighten. Over tightening could damage the valve threads or cause the valve stem to break. Repeat these steps to attach the other hose to the white B-Component tank.



SETTING UP THE LARGE SIZE VERSI-FOAM SYSTEMS

(Includes all varieties of the Systems 33, 50, 100, 350, and 700)

COMPONENTS

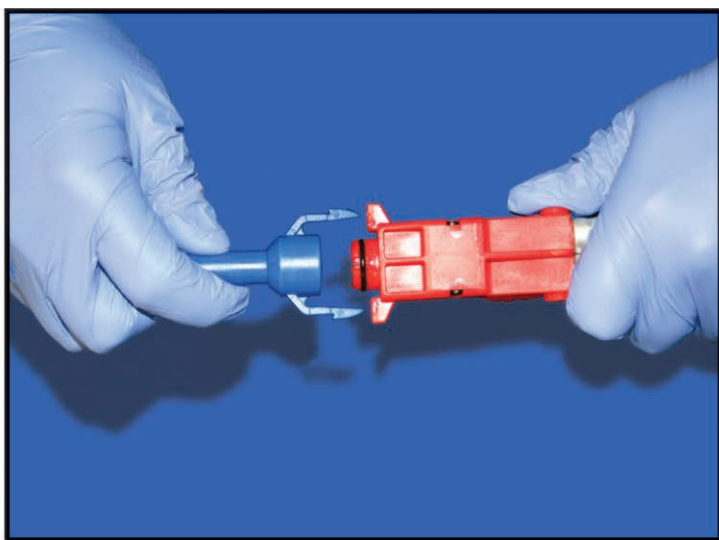
The large VERSI-FOAM Systems come in two separate cartons. One contains the blue A-Component tank, a gun attached to two 15-foot hoses, and a packet including 10 mixing nozzles, 3 fan tips, a pair of nitrile gloves, a wrench petroleum jelly, Operating Instructions, and Safety Data Sheet (SDS). The other carton contains the white B-Component tank.

TO PREPARE FOR OPERATION

Attach hose labeled “A” to the blue A-Component tank. Hand-tighten the collar nut (on the end of the hose assembly) to the tank and secure with the wrench. Do not over tighten. Over tightening could damage the valve threads or cause the valve stem to break. Repeat these steps to attach the other hose to the white B-Component tank.

OPERATING ALL SYSTEMS

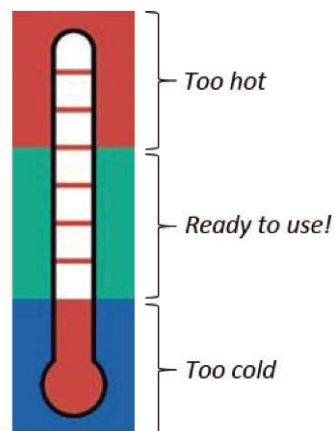
1. Shake each tank/box vigorously.
 2. Check the temperature strip on top of the white B-Component tank to see which section is highlighted in red. If only the **blue** section is highlighted, the chemical is too cold. Warm the kit prior to use. If the **red** section is highlighted, the chemical is too warm. Cool the kit prior to use. When the **green** section is highlighted, the kit is at the proper temperature and ready to use.
 3. Open valves slightly. Make sure there are no leaks. If a leak is detected, tighten the nut. If there are no leaks, open the valves completely.
 4. Before you begin, check operation of the kit by aiming the gun into a waste container. Disengage the safety. Dispense foam at full pressure to make sure chemical is feeding from both tanks and is reacting to make good quality foam.
 5. Using a small amount of petroleum jelly, lubricate the "O-ring" that surrounds the face of the gun. Install a mixing nozzle by lining up the locking arms with the slots in the gun body. Push firmly until you hear a "click" and the nozzle is firmly secured.
- To remove the nozzle, squeeze locking arms and pull the nozzle out.



FOAM SET-UP TIMES

VERSI-FOAM sets up tack-free or dry to the touch in less than one minute in temperatures between 70°F and 80°F (21°C-27°C). Higher temperatures will result in faster set-up times.

The mixing nozzle is where the two chemicals are actually mixed and become foam. If dispensing is interrupted for 30 seconds or more, the nozzle must be removed and changed prior to the next shot.



TEMPERATURE

Temperature is important in producing good quality foam, cure time, density, and physical properties.

Kits should be stored at temperatures between 40°F and 120°F (5°C-48°C).

For the best performance, chemical temperature must be between 65°F and 90°F (18°C-32°C). The temperature strip found on the B-Component (white) tank reflects the chemical temperature. When the **green** section is highlighted in red, the chemicals are at the proper temperature for use.

If only the **blue** section is highlighted in red, the chemicals are too cold for proper use. Dispensing when the chemicals are too cold will result in foam that is darker in color and will have a crunchy surface. Place the tanks in a warmer area until the green part of the temperature strip is highlighted red. This indicates that the chemicals are at the proper temperature for use.

If the **red** section is highlighted in red, the chemicals are too warm for proper use. Dispensing at this temperature will result in foam that is lighter in color and has a soft and spongy surface. Place the tanks in a cooler area until the green portion of the temperature strip is highlighted in red. This indicates that the chemicals are at the proper temperature for use.

Remember, cooler or warmer ambient temperatures will affect the chemical temperatures as the kit is being used.

Always monitor the temperature strip to ensure the chemicals are at the proper temperature.

Surface temperature will affect the expansion, cure time and possibly also the adhesion of the foam.

Ideally, the best results are obtained when the surface temperature is between 65°F and 90°F (18°C-32°C).

Cooler temperatures will result in less expansion and slower cure times.

Temperatures below 50°F may result in adhesion problems due to condensation. It is recommended that the surface temperature be raised artificially or that the project be delayed until a time when the sun or interior temperatures can warm the surface.

Higher temperatures will result in faster cure times, less expansion and in some instances, adhesion problems.

SPRAY TECHNIQUE

The patented U-CONTROL gun permits the user to meter the flow of material, dispensing only the amount of foam needed for the job at a convenient speed. Hold the gun like a pistol, pull the trigger **all the way** back, and then ease it forward until you find the position that gives you the best results.

For spray application, it is recommended that the gun be held 18 to 24 inches away from the surface to be foamed. If you wish to move closer to avoid splatter, adjust the pressure applied to the trigger.

Even coverage is obtained by moving the gun steadily back and forth and applying a constant trigger pressure. Attaching the fan tip (by screwing on to the threaded end of the mixing nozzle) will result in a wide, flat, fan pattern.

VERSI-FOAM closed cell foam expands up to six (6) times its original liquid volume when it cures (open cell foam expands up to twelve (12) times – important to remember this when applying a spray pattern or filling a cavity).

When estimating the amount of foam for a specific project, remember that published yields are theoretical, based on foam density and the weight of the chemicals packaged in the kits.

Allow for variations in material requirements. There are many factors that affect foam yield.

Chemical temperature and surface temperature cause variations. Other factors are surface irregularities, the number of layers needed to achieve the desired thickness, and free-rise, or enclosed, cavities. It is recommended to estimate that 10% to 25% more foam will be required than exact measurements indicate.

STORAGE & REUSE

Unopened systems are guaranteed up to the expiration date stamped on the carton (13 months from the date of manufacture). Once the kit is opened, it is recommended that the kit be used within 30 days, and it is required that the kit is used a minimum of once per week to keep fresh chemicals in the lines.

Store the kits in an environment of 40°F to 120°F (5°C-48°C), whether opened or unopened. Keep the kits dry and in the original cartons. Do not store in direct sun or near hot water pipes, furnaces, chimneys or heat ducts.

If they have been stored in cool temperatures, it is important that they are relocated in a warmer place until the chemicals reach a temperature between 65°F and 90°F (18°C-32°C). The temperature strip located on the B-Component tank will indicate when the chemical temperature is at the correct level to dispense good quality foam (See "Operating All Systems", Section 2).

STORAGE

1. Make sure to remove the used nozzle and discard it. Coat the face of the gun with a **GENEROUS** amount of petroleum jelly.
2. Apply petroleum jelly to the valve stems and close the valves.

3. Keep the cartons in their upright position. Store in temperatures of 40°F to 120°F (5°C-48°C).

4. In cases where the kit is used infrequently, it is required that the gun is used briefly a minimum of once per week to ensure that fresh chemical is in the lines. This helps to prevent gun blockage. Simply aim the gun—without a nozzle—into a waste container and spray for several seconds. Make sure there are streams of equal velocity from both chemical tanks. Agitate the two chemicals in the waste container to ensure they form a solid industrial waste. Reapply a **GENEROUS** amount of petroleum jelly to the face of the gun. The kit can be stored for another week.

REUSE

1. Open the valves, making sure fittings are still secure and there are no leaks.
2. Aim the gun—without a nozzle—into a waste container and make sure there are two streams of chemical of equal velocity. Agitate the two chemicals in the waste container to form a solid industrial waste. Make sure the chemical is feeding from both tanks and is reacting properly to make good quality foam.
3. Attach a new nozzle and dispense foam.

PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR LOW-PRESSURE FOAM SYSTEMS

VERSI-FOAM two-component spray foam systems are professional systems that should be used under proper health and safety conditions. All VERSI-FOAM Systems are low-pressure products, with a dispensed pressure of below 250/psi.

The suggested Personal Protective Equipment (PPE) for VERSI-FOAM Systems is as follows:

- Chemical resistant safety goggles
- Chemical resistant protective clothing to ensure there is no exposed skin
- Nitrile gloves (provided in all medium and large size VERSI-FOAM Systems)
- A NIOSH (National Institute of Safety and Health) approved respirator



There are many respirator options and the correct respirator may be determined based on the project conditions (e.g. ventilation) and/or the applicator preference. Several options include:

- Half-mask respirators with organic vapor cartridges and particulate filters (P100). Half-mask respirators require a fit test and cartridges/filters should be changed in accordance to a regular schedule.
- Full-mask respirators with organic vapor cartridges and particulate filters provide more protection than half-mask respirators. The face-shield protects face and eyes from irritants and contaminants. Full-mask respirators require a fit test and cartridges/filters should be changed in accordance to a regular schedule.
- Powered Air Purifying Respirator (PAPR) with an organic vapor cartridge. This type of respirator offers breathing comfort from a battery-powered fan which pulls air through filters and circulates air throughout helmet/hood.

For more respirator information, please visit www.osha.gov OSHA Regulation 29CFR 1910.134 Personal Protective Equipment.

FIRST AID FOR LOW-PRESSURE SPRAY FOAM SYSTEMS

For any first aid case, consult a physician.

EYES

Flush with water for at least 15 minutes.
Seek medical attention.

SKIN

Remove contaminated clothing.
Wash skin with plenty of soap and water.
Cured foam must be removed mechanically.
Seek medical attention if irritation develops or persists.

INHALATION

Move to fresh air. If breathing is difficult, give oxygen.
If breathing has stopped, administer CPR.
Seek immediate medical attention.

INGESTION

Drink large quantities of water.
Do not induce vomiting.
Contact a physician immediately in any first aid situation.

For more information about the health and safety considerations when using spray polyurethane foams, visit www.spraypolyurethane.org or refer to the Safety Data Sheet.

TROUBLESHOOTING



The foam you produce from your VERSI-FOAM kit should be dispensed at a 1:1 mix ratio of the two chemical components. The color of the foam and its texture will help you to determine if the foam you dispense is of good quality.

Good quality foam (on-ratio foam) is light beige in color. Foam that is dispensed with a 1:1 mix ratio will have a set up and tack free time of 30 to 40 seconds. After 20 minutes, the foam will be firm to the touch with consistent skin.

Poor quality foam (off-ratio foam) is not dispensed at a 1:1 ratio. Foam that is dispensed with too much A-Component will be darker brown in color and will have a crunchy, glassy surface. Foam dispensed with too much B-Component will be whiter and have a spongy surface.



The first step in diagnosing an off-ratio foam situation is to remove the mixing nozzle from the gun. After the mixing nozzle is removed, point the gun into a waste container and pull the trigger completely back for several seconds. Observe the chemical flow. You should see two chemical streams of equal velocity.

If you see more "B" than "A" chemical, the foam you are dispensing is probably lighter in color and spongy to the touch. First, check the temperature strip to be sure that the green section is highlighted in red. Chemical temperatures that are too warm will create additional pressure on the "B" side, causing it to dispense with more pressure than it should. If the temperature strip is in the red section, the chemicals are too warm and you will need to cool them down. Place the tanks in an air conditioned environment or in a cold water bath until the green portion of the temperature strip is highlighted in red. This indicates that the chemicals are at the proper temperature for use. Shake vigorously prior to use and perform another test shot.

If the chemicals were NOT too warm, then check the valve on the "A" tank. Is it completely open? Is there chemical in the tank? Be sure you didn't empty the "A" tank last time you used the kit.

If the valve is completely open, and there is chemical in the tank, the problem may be in the gun. Did you use the kit before? How long ago? Moisture can cause small crystals to form in the A-Component hoses. If crystals have formed, they are loosened when you pull the trigger and can clog the A-Component half of the gun, decreasing or completely blocking the flow. If the system is used a MINIMUM of once a week, crystals do not have a chance to form. The kit should not be allowed to sit unused for more than seven (7) days at a time, otherwise crystallization will occur. If the A-Component half of the gun becomes blocked, it will be necessary to purchase another gun/hose assembly to continue to use the kit.



More "B" chemical is being dispensed



More "A" chemical is being dispensed

If you see more "A" chemical than "B" chemical (more dark than light), the foam dispensed is probably darker in color and crunchy to the touch. First check the temperature strip. If the indicator is near to the blue section, or fully in the blue section, the chemicals are too cold. Place the tanks in a heated area or in a warm water bath until the green portion of the temperature strip is highlighted in red. This indicates that the chemicals are at the proper temperature for use. Shake vigorously prior to use and perform another test shot.

If the temperature strip indicates that the chemicals are at the right temperature, then check the valve on the "B" tank to be sure it is completely open. Also check to make sure there is chemical in the tank.

If the product is liquified, melted or foamed up, you are probably dispensing only one of the chemicals, most likely the white "B" chemical, due to blockage in the A-Component side. Re-read and follow the instructions on this page or review the troubleshooting section of our video or on our website, www.rhhfoamsystems.com.

*If the product looks foamed up,
liquified or melted...*



SAFETY PRECAUTIONS

Please refer to the Safety Data Sheet accompanying this shipment for safe use and handling of the individual components.

1. Operator should always wear proper personal protective equipment. In case of skin contact, flush with water. For eyes, flush with water for 15 minutes and get immediate medical attention.
2. Use only with adequate ventilation and respiratory protection.
3. Smoking must not be allowed during application. Open flame and/or the use of welding or electrical equipment in the vicinity of the application should also be prohibited.
4. Do not store in temperatures above 120°F (48°C). Keep the kits dry. Do not store in direct sun, near hot water pipes, furnaces, chimneys or heat ducts.
5. Keep out of the reach of children. Do not apply to materials or objects that children would touch.

CHEMICAL SPILLS

A-COMPONENT (Isocyanate):

Provide adequate ventilation. Wear suitable personal protective clothing and equipment.

Contain spill and collect using suitable absorbent material, such as sawdust. Shovel into waste container adding 10% to 20% decontaminate solution (90% water, 7% ammonia and 3% liquid detergent). Leave uncovered for 24 hours prior to disposal.

Dispose of as ordinary industrial waste in compliance with pertinent regulations.

B-COMPONENT (Polyols):

Provide adequate ventilation. Wear suitable protective clothing and equipment.

Contain spill and collect using a suitable absorbent material such as sawdust.

Dispose of as ordinary industrial waste in compliance with pertinent regulations. Wash areas containing residue with warm water and soap.

TANK DISPOSAL

DO NOT PUNCTURE OR INCINERATE TANKS. Drain any remaining chemical into a waste container. It is preferred that both chemicals are drained into a waste container, mixed to create a solid, then disposed of as ordinary industrial waste. If only one chemical remains, it must be absorbed (A-Component must also be neutralized) and disposed of. When the tanks are empty, they must be vented prior to disposal. To vent, turn the tanks upside down (valves down). Open the valves slowly, and let the pressure escape. Let the tanks vent for a minimum of 24 hours. Puncture the burst plug to prevent reuse. Chemical tanks are disposed of as ordinary industrial waste (sanitary land fill recommended) in compliance with pertinent regulations.

For chemical/medical emergencies, phone Chemtrec (Contract #18811)
1-800-424-9300 or 703-527-3887 (collect)

WARNINGS: Individuals with chronic respiratory diseases, asthma, or bronchial disorders should not work with these materials, nor should those with allergic diseases. The user is responsible for verifying that this material meets local building codes and/or any restrictions. It is also the user's responsibility to determine the fitness of this product for any intended application.

When this product is to be used in interior construction or in any confined area, it should be covered with another material to provide a fire rating of at least 15 minutes. A covering of a minimum of 1/2 inch cement, plaster or fire-rated gypsum wallboard or an equivalent fire barrier is advised. Do not use this urethane foam where it will come in contact with steam pipes, heat vents, or areas where surface temperature might exceed 250°F (121°C). No flame cutting or hot work should be conducted nearby. Where urethane foam is continually exposed to sun or water, it is recommended that a protective coating be applied over the foam to retard possible deterioration.

RHH FOAM SYSTEMS INC. warrants that the goods sold hereunder conform to its standard applications. NO REPRESENTATION OR WARRANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, IS MADE WITH RESPECT TO THE GOODS, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. NOTICE OF CLAIMS: Immediately upon receipt of this product, user should inspect it for any parts shortages or defects. Any claim for shortage of system components must be made with the distributor within 15 days after user learns of the facts upon which such claim is based, but in no event after the expiration date stamped on the carton. Otherwise, any claim is waived.

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