FROTH-PAK™ REFILL SYSTEMS MANUAL

INSTALL MANUAL | United States | Canada |
COMMERCIAL/RESIDENTIAL
2014 – 2015 EDITION

FROTH-PAK™ Refill Systems Manual

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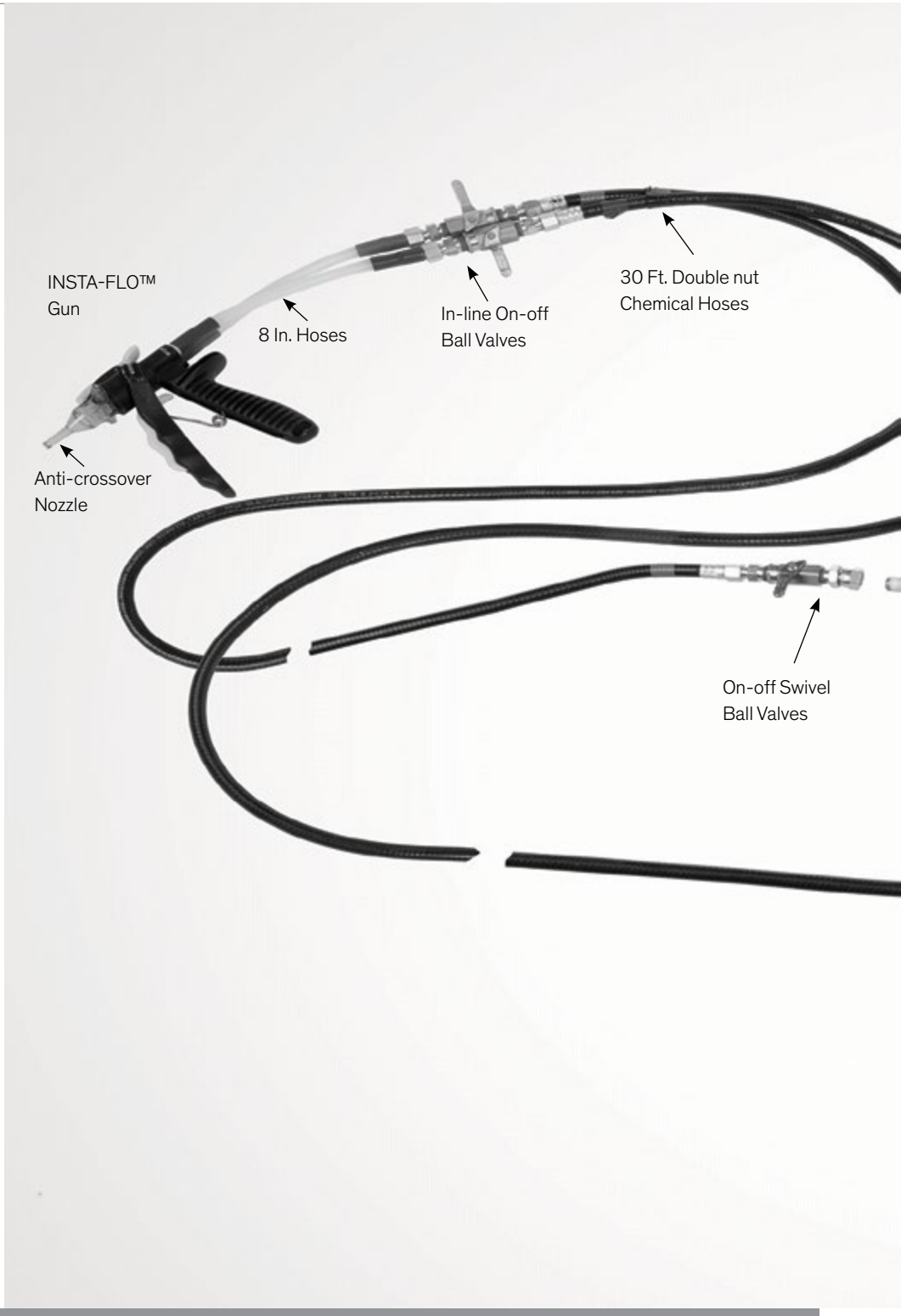
FROTH-PAK™ Refill System Installation



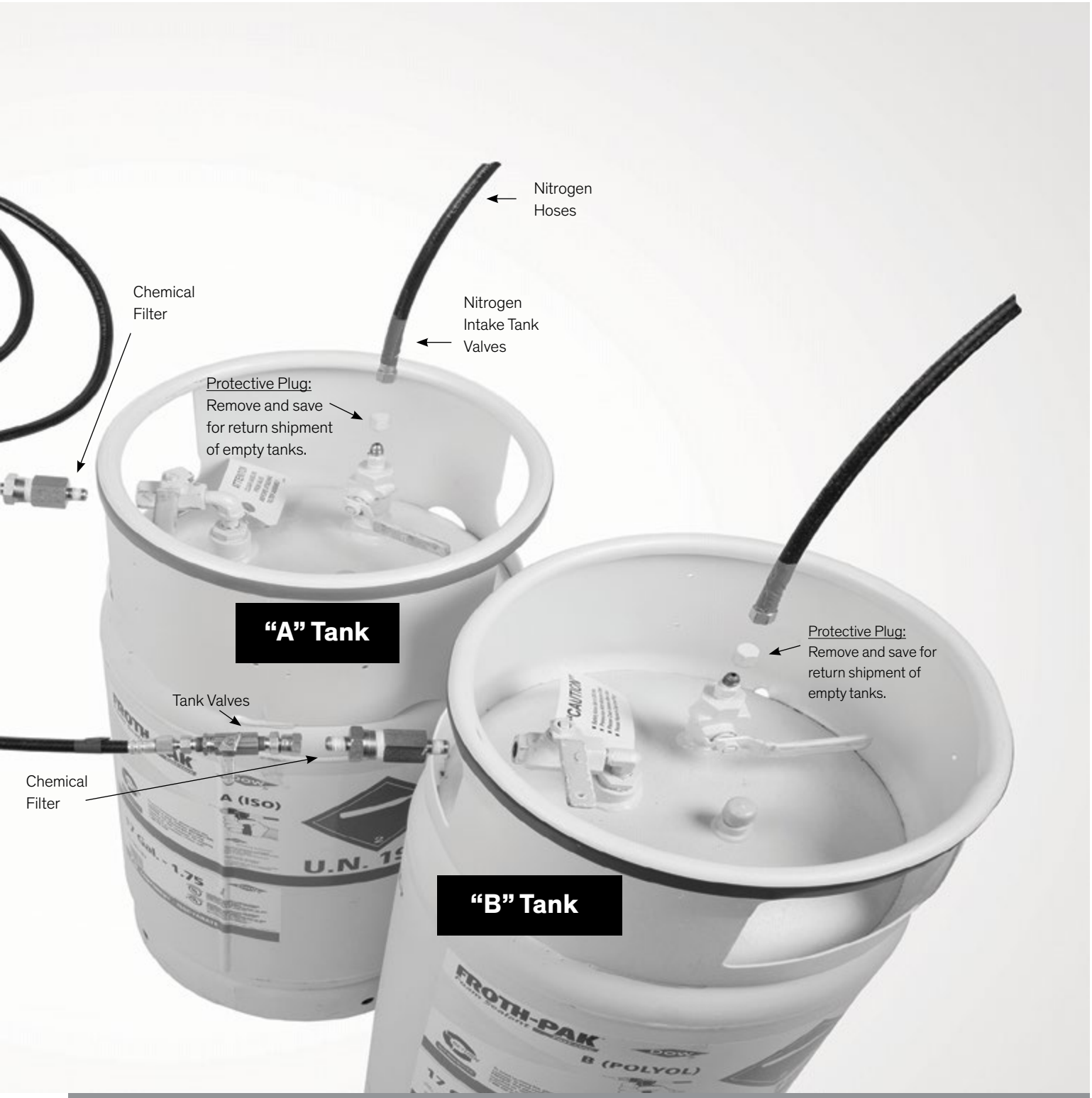
PRECAUTIONS:

DO NOT breathe vapor or spray. Proper Personal Protective Equipment and ventilation are required. See product (Material) Safety Data Sheet ((M)SDS) and Section 2 of this manual for further information. Follow all precautions for product.

DO NOT expose container to temperatures above 120°F (49°C).

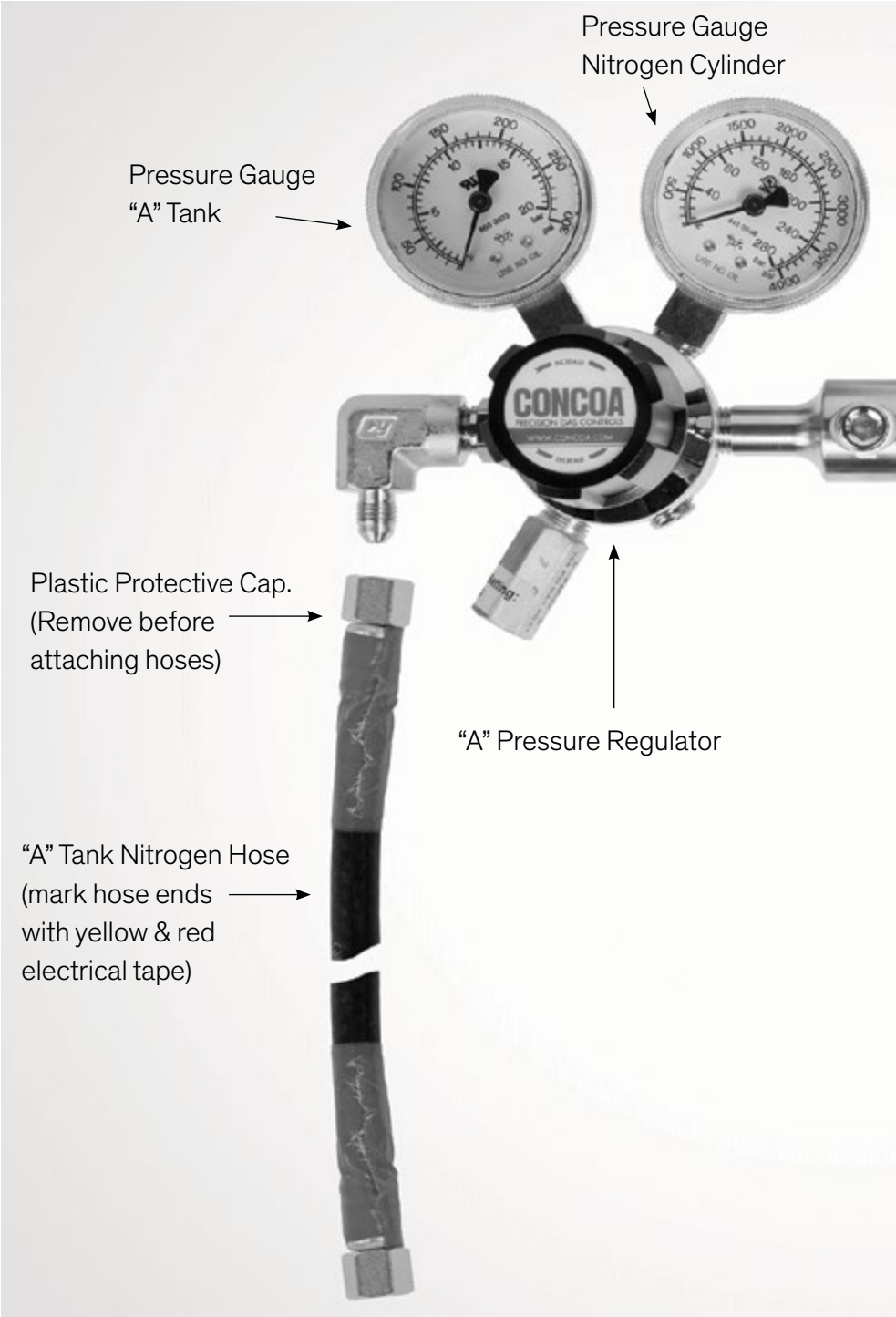
DO NOT incinerate, cut, puncture, or weld on or near container.

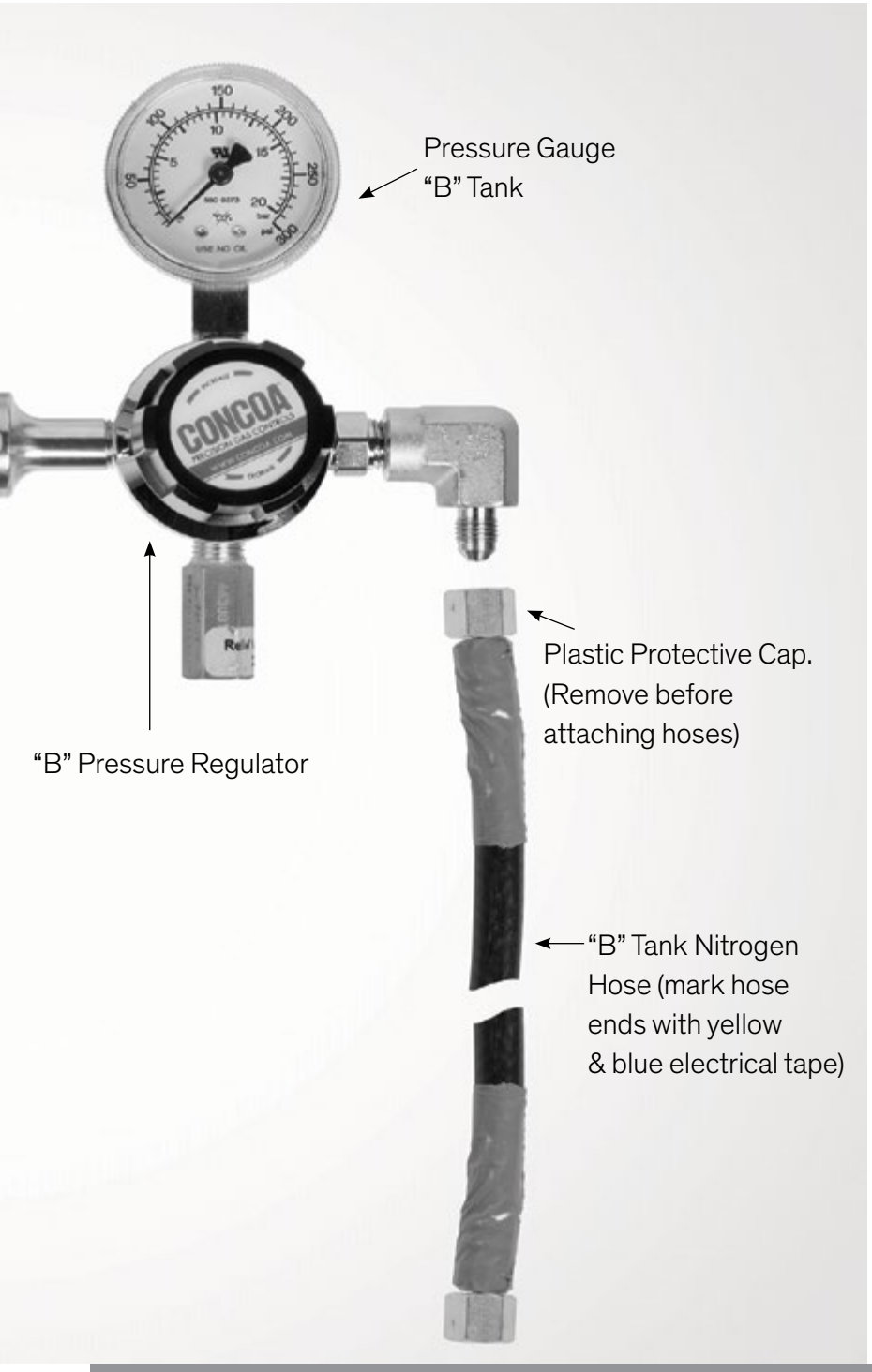
DO NOT expose container to sparks or flames.


Nitrogen
Hoses
Chemical
Filter
Nitrogen
Intake Tank
Valves
Protective Plug:
Remove and save
for return shipment
of empty tanks.
"A" Tank
Protective Plug:
Remove and save for
return shipment of
empty tanks.
Tank Valves
Chemical
Filter
"B" Tank
A (ISO)
FROTH-PAK
B (POLYOL)

Nitrogen Regulator Assembly

(7.5 ft. nitrogen lines sold separately.
Two lines required for system operation)





WARNINGS:

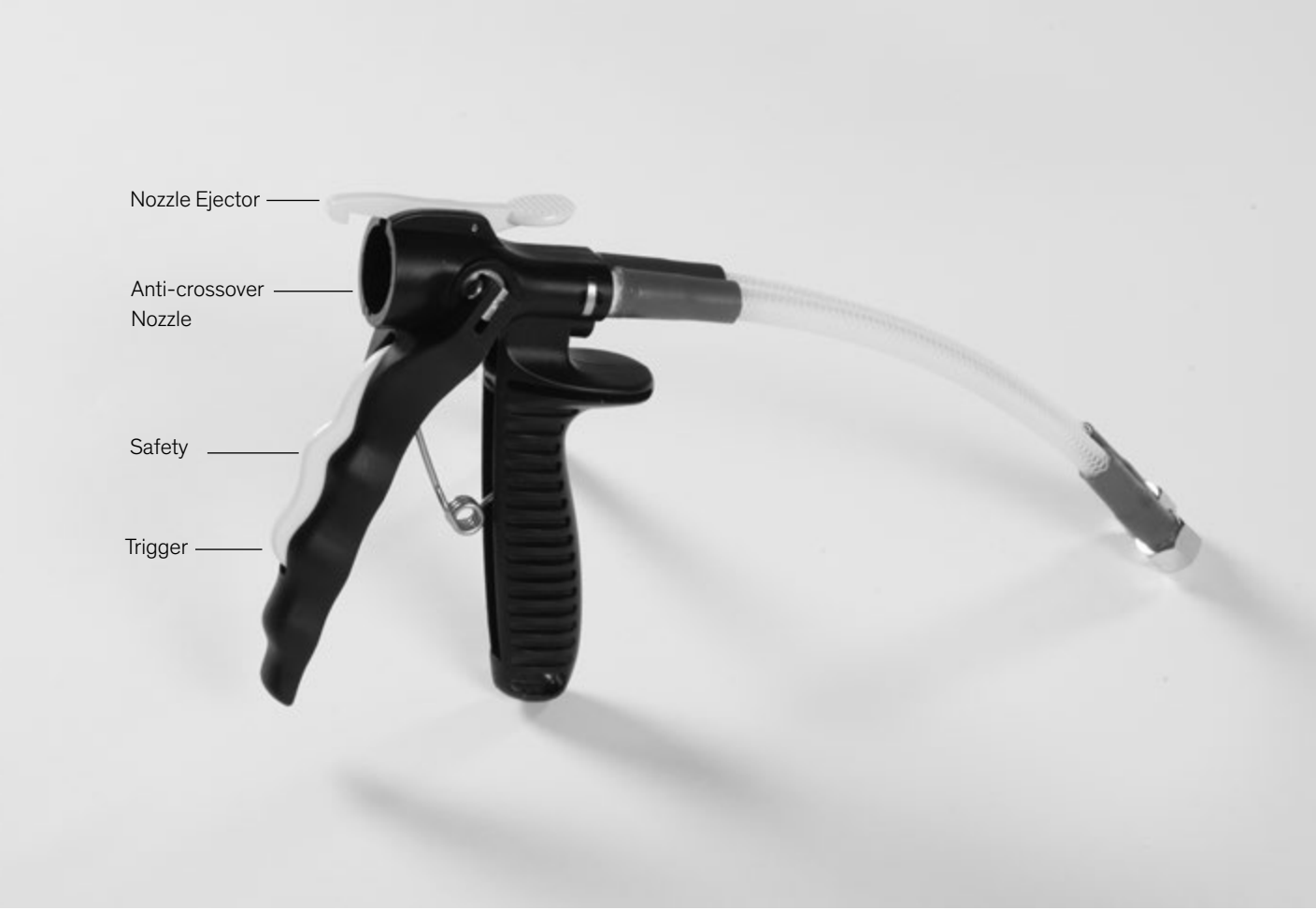
NEVER use oxygen regulators on cylinders of which the gas pressure exceeds 3,000 pounds per square inch.

NEVER use oil or petroleum base grease on regulator, inlet connection, or cylinder valve. An explosion or fire could result. The lubricant used on this regulator adjusting screw is Dow-Corning No. 44 silicone grease which is a non-petroleum base grease.

NEVER stand in front of, or behind a regulator while opening the cylinder valve.

DO NOT use WD-40 or DC-44 on any INSTA-FLO™ Gun parts.

INSTA-FLO™ Gun



Anti-crossover Nozzles

(See page 4 for part numbers)

Fan	Caulking	Cone	Pour	Calibration
				
Nozzle Opening	Nozzle Opening	Nozzle Opening	Nozzle Opening	Nozzle Opening
				

Introduction

The FROTH-PAK™ Refill System is a polyurethane foam dispensing system for users who require large quantities of foam. The system consists of "A" and "B" chemical tanks, chemical filters, a high pressure regulator, nitrogen lines, chemical dispensing hoses, and a Gun/Hose Assembly Kit. The system requires dry nitrogen for chemical tank pressurization and is not supplied.

The FROTH-PAK™ Refill System is designed for ease-of-use. The following instructions should be followed strictly to ensure maximum equipment performance and efficiency.

FROTH-PAK™ Refill Systems Manual

FROTH-PAK™ Foam Insulation and Sealant

Application guidelines as provided by Dow Building Solutions should be followed exactly in order to ensure compliance with building codes and worker safety regulations. Read all information bulletins, (Material) Safety Data Sheets ((M)SDS) and "Product Information" sheets. The SDS is available at www.building.dow.com/na/en/literature/index.htm.

Application of this product is considered a "low pressure" process. It is recommended that workers obtain spray foam training. Workers must be respirator fit tested. Employers must have a documented respiratory and personal protective equipment (PPE) plan. See Section 2 for further PPE information.

FROTH-PAK™ Foam Insulation and Sealant contain isocyanate, polyol and hydroflurocarbon blowing agents. See section 2 for further PPE information. Do not breathe vapor or spray. Use only with supplied air or an approved air purifying respirator equipped with an organic vapor sorbent and a particle filter to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. For situations where the atmospheric levels may exceed the level for which an air purifying respirator is effective, use a positive-pressure air supplying respirator. The spray foam applicator, and anyone within 25 feet of the applicator, must use an approved air purifying respirator equipped with an organic vapor sorbent and a particle filter at a minimum. If there is ever a doubt as to the potential limits for worker exposure, Dow always recommends using the highest level of worker protection. Additionally, use barrier tape to mark the working perimeter and install warning signs.

It is important to ensure that the spray area is well ventilated during application and one hour after spraying. Ventilation in Air Changes per Hour (ACH):

- During application a minimum of 10 ACH is required. Cross ventilation is recommended with negative pressure in the spray area and exhaust to a secured empty area. A commercial ventilation unit is recommended for increased ventilation rates.
- Continue to ventilate area for at least 1 hour after the job is completed at no less than 10 ACH.
- Re-entry into an application site less than 1 hour post spray with proper ventilation requires the use of an approved air purifying respirator equipped with an organic vapor sorbent and a particle filter.
- Ensure ventilation hose output is in a safe and secure location that will not be accessible to individuals without proper PPE in a 25 foot radius and is not near an air intake for a structure.

Safe Use and Training videos are available on line at:
http://building.dow.com/na/en/tools/training/

System Information

1.1 Ordering Information

System	Density / Type	"A" Tank Part# / Color	"B" Tank Part# / Color
17 Gallon System:	1.75 Foam Sealant 1.75 Foam Insulation (Class A)	341167 /white w/green stripe[1,2] 340334 /white w/green stripe[1,2]	345347/white w/blue stripe 11096260 /white w/purple stripe
27 Gallon System:	1.75 Foam Sealant 1.75 Foam Insulation (Class A)	11042106 /white w/green stripe[1,2] 11042108 / white w/green stripe	11042107/white w/blue stripe[1,2] 11096266 /white w/purple stripe
60 Gallon System:	1.75 Foam Sealant 1.75 Foam Insulation (Class A)	341165 /white w/green stripe[1,2] 340337 /white w/green stripe[1,2]	345344 /white w/blue stripe 11096263 /white w/purple stripe
120 Gallon System:	1.75 Foam Sealant 1.75 Foam Insulation (Class A)	341168 /white w/green stripe[1,2] 340336 /white w/green stripe[1,2]	345346 / white w/blue stripe 11096261/white w/purple stripe
350 Gallon System:	1.75 Foam Sealant 1.75 Foam Insulation (Class A)	341166 /white w/green stripe[1,2] 340338 /white w/green stripe[1,2]	345348 / white w/blue stripe 11096264 /white w/purple stripe

1 Formerly marked with a green colored stripe

2 Includes a Bill of Lading for tank return and a chemical filter

1.2 Refill Accessories

Part#	Description
158336	**INSTA-FLO™ Gun** (1 - INSTA-FLO™ Gun with 8" hoses)
158403	**30 ft. Refill Gun/Hose Assembly Kit** (1 - INSTA-FLO™ Gun with 8" hoses, 2 - 30 ft. double nut hoses, 2 - on-off in-line ball valves, 2 - on-off swivel ball valves, 1 - wrench 9/16")
238107	**Nitrogen Regulator Assembly –** (Requires two 7.5' hoses – 158420)
158428	**On/Off Valve, Chemical** (Tank to hose)
158432	**In Line On/Off Valve** (Hose to dispenser)
158420	**7.5 ft. Hose** (Use single hose for chemical and/or nitrogen)
158421	**15 ft. Hose** (Buy in pairs for both A and B sides of chemical)
158422	**30 ft. Hose** (Buy in pairs for both A and B sides of chemical)
259202	**Coupling – ACC Fitting 8 JIC** (Connects hoses)
216151	Replacement Tank Filter
11097204	**150' Arctic Pak Wrap Heated Hose Sysytem (includes wrap, controller assembly and 150' hoses) 150' hoses are only for use with white nozzles, gmids 259219 and 259216**
328508	**150' ARCTIC PAK Wrap and Controller Assembly** (Without hoses) 150' hoses are only for use with white nozzles GMID 259219 and 259216
328509	**ARCTIC PAK Wrap Controller Only**
334489	**150' ARCTIC PAK Replacement Hose Set** (A and B side **150'** length hoses) 150' hoses are only for use with white nozzles GMID 259219 and 259216
11111999	**120' ARCTIC PAK WRAP HEATED HOSE SYSTEM** (Wrap, Controller Assembly and 120' Hoses) 120' length can be used with any nozzle combination
11112001	**120' ARCTIC PAK WRAP AND CONTROLLER ASSEMBLY** (Without Hoses) 120' length can be used with any nozzle combination
11112002	**120' ARCTIC PAK REPLACEMENT HOSE SET** (A & B side 120' hoses) 120' length can be used with any nozzle combination
11112004	**120' ARCTIC PAK WRAP ONLY** 120' length can be used with any nozzle combination

1.3 Anti-crossover Nozzles (25 Pack)

Part#	Output / Lbs. Min	Nozzle Type	Front / Back - Nozzle Color
259212	Low / 2lbs. Min	Caulking	Green / Yellow
259219	Medium / 4lbs. Min	Cone	Clear / White (Included in FROTH-PAK kits)
259211	Medium / 4lbs. Min	Caulking	Green / White
259216	Medium / 4lbs. Min	Fan	Blue / White (Included in FROTH-PAK kits)
259218	High / 6-7lbs. Min	Cone	Clear / Gray
259215	High / 6-7lbs. Min	Fan	Blue / Gray
259217	Highest / 8-10lbs. Min	Cone	Clear / Black
259214	Highest / 8-10lbs. Min	Fan	Blue / Black
259220	Highest / 8-10lbs. Min	Pour	Clear / Black
259208	Dual Stream	Calibration	Clear / Yellow
259210	Dual Stream	Calibration	Clear / White
259207	Dual Stream	Calibration	Clear / Gray
259206	Dual Stream	Calibration	Clear / Black

1.4 Shipping Weights

System		
17 Gallon System:	Empty Tank with Fittings Chemical Total Tank Weight **Total System Weight**	60 lbs. Each 150 lbs. Net Each 210 lbs. Each **420 lbs**
27 Gallon System:	Empty Tank with Fittings Chemical Total Tank Weight **Total System Weight**	150 lbs. Each 239 lbs. Net Each 389 lbs. Each **780 lbs.**
60 Gallon System:	Empty Tank with Fittings Chemical Total Tank Weight **Total System Weight**	250 lbs. Each 500 lbs. Net Each 750 lbs. Each **1500 lbs.**
120 Gallon System:	Empty Tank with Fittings Chemical Total Tank Weight **Total System Weight**	400 lbs. Each 1125 lbs. Net Each 1525 lbs. Each **3050 lbs.**
350 Gallon System:	Empty Tank with Fittings Chemical Total Tank Weight **Total System Weight**	1000 lbs. Each 3200 lbs. Net Each 4200 lbs. Each **8400 lbs**

1.5 Tank Dimensions

Tank Size	Dimensions
17 Gallon:	15” Diameter x 34” Height
27 Gallon:	14.5” Diameter x 44” Height
60 Gallon:	24” Diameter x 57” Height
120 Gallon:	30” Diameter x 59” Height
350 Gallon	76” Length x 41” Diameter x 54” Height

1.6 Freight Classification for Tank Return

CAUTION:

The contents of both tanks are pressurized with Fluorinated Hydrocarbons (HFC's). The "A" tank contains polymeric isocyanates and the "B" tank contains polyols with amines.

Mark each bill of lading as follows:

Full Tanks

CHEMICAL UNDER PRESSURE, N.O.S.
(1,1,1,2-TETRAFLUOROETHANE),
Class 2.2, UN3500
Plastic Materials Other Than Expanded
NMFC#: 156240
ERG#: 126, Freight Class: 60
24-hour Emergency Contact Number:
Chemtrec 800-424-9300

Empty Tanks (17 gal., 27 gal., 60 gal., 120 gal.)

CHEMICAL UNDER PRESSURE, N.O.S.
(1,1,1,2-TETRAFLUOROETHANE), Class 2.2, UN3500
Cylinders: NMFC#: 41160 SUB 3
ERG#: 126, Freight Class: 55
24-hour Emergency Contact Number:
Chemtrec 800-424-9300

Empty Tanks (350 gal. only)

CHEMICAL UNDER PRESSURE, N.O.S.
(1,1,1,2-TETRAFLUOROETHANE), Class 2.2, UN3500
Tanks: NMFC # 181420 SUB 3
ERG#: 126, Freight Class: 85
24-hour Emergency Contact Number:
Chemtrec 800-424-9300

NOTE: Empty tanks should be marked "EMPTY". A non-flammable gas label (green diamond, Class 2) must be on each tank. Return bills of lading are provided on each tank. An 'X' must be marked in the HM (hazardous materials) column.

All other appropriate information must be filled in as outlined above.

Section 2

Safety Precautions

WARNING:
The FROTH-PAK™ cylinders contain isocyanate, hydrofluorocarbon blowing agent and polyols under pressure. Read and follow these instructions and the Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) carefully before use. The safety precautions and personal protective equipment indicated below are designed to protect the user and allow for the safe use and handling of the spray system. Follow all applicable federal, state, local and employer regulations.

IMPORTANT: Proper Personal Protective Equipment (PPE) consists of respirator, chemical resistant gloves, protective suit with hood/coveralls, and chemical goggles which must be worn by all participants prior to the nitrogen and chemical valves being opened and during operation.

2.1 Respiratory Protection

Workers must be respirator fit tested. Employers must have a documented respiratory and PPE plan.

DO NOT breathe vapors or spray. Use only in a well ventilated area with visible air movement away from the point of application. Depending on the area of spray, the amount of foam being sprayed, the amount of ventilation and the type of spray nozzle used, respiratory protection equipment may differ in order to offer optimum protection to the applicator from exceeding established exposure limits of isocyanate and other components. Supplied air or an approved air purifying respirator equipped with an organic vapor sorbent cartridge and a P-100 particulate filter may be required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure, air supplying respirator (air line or self-contained breathing apparatus). The spray foam applicator, and anyone within 25 feet of the applicator, must use approved respiratory protection. If there is ever a doubt as to the potential limits for worker exposure, Dow always recommends using the highest level of protection. Use barrier tape and warning signs to mark the working perimeter for respiratory hazards until 1 hour post spray.

- During application a minimum of 10 Air Changes per Hour (ACH) is required. Cross ventilation is recommended with negative pressure in the spray area and exhaust to a secured empty area. A commercial ventilation unit is recommended.
- Continue to ventilate area for at least 1 hour after the job is completed at no less than 10 ACH.
- Re-entry into an application site occurring less than 1 hour post spray with proper ventilation requires the use of an approved air purifying respirator equipped with an organic vapor sorbent and a particle filter.
- Ensure ventilation hose output is in a safe and secure location that will not be accessible to individuals without proper PPE in a 25 foot radius and is not near an air intake for a structure..

2.2 Isocyanate-induced Occupational Asthma

Inhalation of vapors or mist at concentrations in excess of permissible limits may result in an allergic respiration response and the development of sensitization. Skin contact with diisocyanates may play a role in respiratory sensitization. Anyone who has been sensitized in the past should not operate nor be in close proximity to the operation of these systems as isocyante concentrations below exposure guidelines may cause allergic respiratory reactions in individuals who are already sensitized. Asthma-like symptoms may include coughing, difficulty breathing, and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life-threatening. Follow all ventilation and PPE guidelines.

2.3 Safety Clothing

Personal Protection Equipment required when using FROTH-PAK™ includes chemical goggles and chemical resistant gloves preferably made from nitrile, neoprene, butyl or PVC. Long sleeves and pants or chemical resistant coveralls/protective suit with hood should be worn. Shoe covers may also be worn.

2.4 Skin Contact

Avoid ALL contact with skin. May cause irritation or sensitization. If skin contact occurs, remove contaminated clothing; carefully remove uncured material without spreading; wash skin with soap and water. If irritation occurs or persists, seek medical attention.

2.5 Eye Contact

Avoid ALL contact with eyes. Causes irritation. If contact with eyes occurs, flush with clean, low pressure water for 15 minutes while holding eyelids open. Seek medical attention.

2.6 Ingestion

If swallowed, give large amounts of liquids. **DO NOT** induce vomiting. Seek medical attention.

2.7 Removal of Cured Foam on Skin

FROTH-PAK™ foam will adhere to most surfaces and skin. Avoid ALL skin contact. Wear gloves and protective clothing. Cured foam is difficult to remove. Cured foam must be mechanically removed or allowed to wear off in time.

2.8 Overfilling Restricted Spaces

Avoid overfilling restricted spaces. The reaction of these chemicals causes expansion and may exert enough force to cause an uncontrolled stream of foam, spraying the work area and possibly the operator.

2.9 Chemical Information

For more specific information about the chemical components "A" and "B", refer to the appropriate SDS. KEEP OUT OF REACH OF CHILDREN.

2.10 Chemical Spills

Consult SDS section 6 for Accidental Release Measures.

2.10.1 "A" Chemical

If "A" liquid spills from the tank, hose, or INSTA-FLO™ Gun, provide proper ventilation, wear all PPE and isolate the spill area. Keep unnecessary and unprotected personnel from entering the area. Dike the area and soak up the spill with an oil absorbent material (vermiculite, sawdust, etc.). Neutralize the spillage area with a solution of 90% water, 2% dishwashing detergent, and 8% ammonia. The amount of this solution should be in excess of the volume of the spill. Allow the mixture to react for at least 10 minutes. Collect in an open top waste container and treat with additional ammonia solution. Remove the container to a safe and secure location that will not be accessible to individuals without proper PPE, loosely cover, and allow it to stand at least 24 hours. Dispose of the waste container in accordance with federal, state, and local regulations.

2.10.2 "B" Chemical

If the "B" chemical spills from the tank, hose, or INSTA-FLO Gun, wear all PPE, dike and isolate the spill area. Keep unnecessary and unprotected personnel from entering the area. Soak up the residue from the surface with soap and water. Discard in accordance with federal, state, and local regulations.

2.11 Cautions

2.11.1 Storage Temperature

Recommended storage temperature:
60°– 80°F (16°–27°C).
Storage below 60°F (16°C) is not recommended.
Do not store at temperatures above 120°F (49°C).

2.11.2 Building Codes

In many areas, building codes may restrict the use of cellular plastics or polyurethane foam in exposed, interior finishing material applications. Under certain application code, the use of these materials may be prohibited. The foam produced by this product is organic and may constitute a fire hazard if improperly applied. Consult local building codes.

2.11.3 Surface Temperature Restrictions

Polyurethane foam should not be used in direct contact with chimneys, heat vents, steam pipes, or other surface areas that exceed 240°F (116°C). The foam should not be left exposed or inadequately protected for both interior and exterior finishing materials. It is strongly recommended in all applications that the foam be protected by approved facings and coatings.

2.11.4 Open Flame / Spark Source

Do not smoke or operate the system in close proximity to an open flame or spark source. Ensure pilot lights are off. Welding on or near cured polyurethane foam requires special precautions. Consult The Dow Chemical Company for instructions.

2.11.5 Excessive Foam Dispensing

Do not apply excessive thicknesses at one time as this may result in spontaneous combustion. For thickness greater than two inches of cured foam, dispense foam in multiple layers, allowing the heat from foaming to dissipate between sprayings.

2.12 Training

It is recommended that product users receive spray foam training. Safe use and training videos are available at: http://building.dow.com/na/en/tools/training/. For hands on training information contact your Dow sales representative.

Further information is available at http://www.spraypolyurethane.org/

Section 3

System Installation

NOTE: Dry nitrogen is used for pressurizing the Refill System and is not supplied. It may be obtained for a nominal rental charge from any local welding supplier. Order standard size (industrial grade) cylinder with CGA 580 nitrogen fitting. Refer to FROTH-PAK™ Refill System Installation drawing, page A1.

3.1 Initial Tank Set-up

1) Be sure that the tanks are at the optimum temperature of 75-90 degrees F (24-32 degrees C) minimum 65 degrees F (18 degrees C). If they are below this range, utilize heating blankets or a box heater to bring them up to the proper range. This is very important! Consult your Dow Rep or Dow Technical Service if you need assistance.
2) Color code all hoses with electrical tape (the nitrogen and chemical transfer hoses, as well as the gun) red for the A Side (ISO) and blue for the B Side (Polyol) to prevent chemical cross contamination. Place colored tape at each end of the hoses for proper identification.
3) Attach the nitrogen regulator to nitrogen tank.
   a) Order a five (5) foot high nitrogen tank. At this height the regulator is much easier to view.
   b) Make sure nitrogen regulator handles are all turned out (counterclockwise) until they cannot be turned any more. This is the closed position.
   c) Hand tighten the regulator to the tank and level the regulator for easy viewing purposes.
   d) Once level, fully tighten regulator with an adjustable wrench. You will need about 30 lb-ft of force. Do not over tighten.
4) Attach the nitrogen hoses to the nitrogen regulator.
   a) Remove the two protective caps from the nitrogen tank regulator where the hoses will be connected.
   b) The A side (red) should be on the operator's left side as you are facing the nitrogen tank/regulator. Attach red/yellow-coded nitrogen hose to the regulator with about 30 lb-ft of force. Do not over tighten.
   c) Note that all the hose connections are flare fittings. These do not require any sealant or Teflon tape. They just need to be tight.
   d) The B side (blue) should be on the operator's right side as you are facing the nitrogen tank/regulator. Attach blue/yellow-coded nitrogen hose to the regulator with about 30 lb-ft of force. Do not over tighten.
5) Attach the nitrogen hoses to the chemical tank.
   a) Remove cap covers from chemical tank connection on the A side (red) and attach nitrogen hose to the flare fitting on the valve that is in a vertical position (pointing straight up). Tighten to about 30 lb-ft of force. Do not over tighten. (Save the cap covers for when the tanks are returned to Dow.)
   b) Remove cap from chemical tank connection on the B side (blue) and attach nitrogen hose to the flare fitting on the valve that is a vertical position (pointing straight up). Tighten to about 30 lb-ft of force. Do not over tighten. (Save the cap covers for when the tanks are returned to Dow.)
6) Attach the filters to the chemical valve connections.
   a) Remove the chemical valve plug on the A side (red). Save the plug for return shipment to Dow, just leave inside the ring on the top of the tank. On the A side only, it is necessary to clean the petroleum jelly from the inside of the valve with a cotton swab. (If you don't have cotton swabs, take the small cloth bag that the filter came in and wrap it over the end of a screwdriver. Use this to clean the petroleum jelly out of the valve.) Next, connect the filter with the arrow (arrow is engraved on the valve) flowing out or away from tank and tighten to about 30 lb-ft. Note that the filter is pipe thread and DOES need sealant or Teflon tape. It should be taped from the factory but just check to be sure.
   b) Remove the chemical valve plug on the B side (blue) from the chemical tank. Save the plug for return shipment to Dow, again just leave it in the ring on the top of tank. Connect filter with arrow (arrow is embossed on the valve) flowing out or away from tank and then tighten to about 30 lb-ft. Again, this is pipe thread and DOES require seal ant or tape. Do not over tighten.
7) Attach the ball valves to the chemical filters.
   a) At the end of the filter, attach a ball valve. Tighten both ball valves on the A and B side to about 30 lb-ft but do not over tighten. Again, this is pipe thread.
8) Attach the chemical hoses to the ball valve on the chemical tanks.
   a) Attach the A side (red) hose to the A side ball valve and make sure to keep the ball valve in the upward position and in the closed position. Tighten to about 30 lb-ft. Do not over tighten.

b) Attach the B side (blue) hose to the B side ball valve and make sure to keep the ball valve in the upward position and in the closed position. Tighten to about 30 lb-ft. Do not over tighten.

9) Unroll chemical hoses and remove any kinks in the hose.
   a) Attach the shutoff valves to the end of the hoses on the A and B side. Make sure the arrow on the shutoff valves is directed towards the gun. Tighten to about 30 lb-ft but do not over tighten.
   b) Attach the gun to the two shutoff valves at the end of the hose. Keep the ball valve in the upward position and in the closed position. Complete this for both the A and B sides.
   c) Use black electrical tape to tape the A and B side hoses together. Start this taping process at the gun end and work your way back towards the tanks. Tape the hoses together every 18 inches.
   d) Tighten the ball valves to about 30 lb-ft but do not over tighten.
   e) At this point, check to make sure all hose, valve and filter connections have been properly tightened to assure no nitrogen or chemical leaks.

Note: If a 30' hose extension is required, you will need to attach a coupling to the end of the hose coming from the chemical tank and connect the hose sections together. A standard ¼" male flare coupling from a hardware store works just fine. Tighten to about 30 lb-ft but do not over tighten. Complete for both the A and B sides (total hose length is not recommended to exceed 120 feet). Once the hose extensions have been added, attach the shutoff valves to the end of the hose extensions where the gun is connected.

Note: If you are using the Arctic Pak heated hose assembly, it is recommended that you remove the yellow insulation during the summer months) from the hoses and store it to prevent wear and tear on the insulation. This will extend the life of the insulation. During the colder temperature months, place the yellow insulation back over the hoses. If you remove the yellow insulation during the warm weather months, continue taping the A and B side hoses together every 18 inches.

3.2 Tank Positioning

1. Position the "A" tank to the left and the "B" tank to the right. This is the standard in the polyurethane industry.

2. Place a nitrogen cylinder between the "A" and "B" tanks.

3. Secure the nitrogen cylinder to prevent it from falling if bumped.

3.3 Nitrogen Regulator Information

1. Remove the orifice protector on the nitrogen cylinder. Insert the nitrogen regulator assembly stem into the orifice and hand tighten. Snug firmly using an adjustable wrench. Be careful not to strip the brass fitting.

2. Verify that the valve stems are freewheeling. This indicates that the regulator stems are backed out.

3. Remove the thread protectors on the bottom of the nitrogen regulator.

4. Connect a yellow & red-taped nitrogen line to the left fitting on the nitrogen regulator assembly. Snug firmly with an adjustable wrench.

5. Locate the yellow-coded nitrogen intake valve on the "A" tank. Verify that the valve is closed. The handle should be perpendicular to the valve. Loosen and remove the nitrogen intake cap on the "A" tank.

6. Connect the other end of the yellow & red-taped-coded nitrogen line to the nitrogen intake valve of the "A" tank. Snug firmly with an adjustable wrench.

7. Connect the other yellow & blue-taped nitrogen line to the right fitting on the nitrogen regulator assembly. Snug firmly with an adjustable wrench.

8. Locate the yellow-coded nitrogen intake valve on the "B" tank. Verify that the valve is closed. The handle should be perpendicular to the valve. Loosen and remove the nitrogen intake cap on the "B" tank.

9. Connect the other end of the yellow & blue-taped coded nitrogen line to the nitrogen intake valve of the "B" tank. Snug firmly with an adjustable wrench.

3.4 Chemical Hose Installation

1. Verify that the chemical tank valves are closed. The handle should be perpendicular to the valve. Remove the chemical valve plugs from the "A" and "B" tanks and place the plugs on top of the tank.

2. Carefully remove all of the vaseline in the "A" chemical tank valve.

3. Remove the chemical filters from the canvas bags on top of each tank. Verify that the filter and the cartridge are free by shaking the filter until you hear a clicking sound.

   NOTE: Air blown into end in the direction of arrow will pass freely through the filter.

4. Connect a chemical filter to each tank valve with the filter arrow pointing away from each tank. The arrow represents the chemical flow. Tighten the filters with an adjustable wrench. The filter prevents chemical from flowing back into the tank.

5. Take the on-off valves with the swivel ends and connect them to each tank filter. Tighten the connections with an adjustable wrench.

6. Uncoil the chemical lines. Tape them together every few feet with tape.

7. Connect the "A" labeled chemical hose to the "A" tank on-off valve. Tighten the connection with an adjustable wrench.

8. Connect the other chemical hose to the "B" tank on-off valve. Tighten the connection with an adjustable wrench.

9. Connect an in-line on-off valve to the other end of each chemical hose. Verify that the arrow on each valve points away from the hose being connected – arrow indicates chemical flow. Tighten each connection with two adjustable wrenches.

10. Connect the Gun/Hose Assembly to the in-line valve of each hose, "A" labeled hose to "A" labeled hose, the unlabeled hose to the unlabeled hose. Tighten each connection using two adjustable wrenches.

Section 4

Start-up Procedure

DO NOT breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

4.1 System Pressurization

1. Verify that the valve stems on the regulator are backed out and are freewheeling.

2. Open the nitrogen bottle valve by turning the knob on top of the cylinder counterclockwise. If a hissing sound occurs, further tighten the nitrogen regulator valve stem with an adjustable wrench.

3. Verify the nitrogen cylinder pressure using the center gauge of the nitrogen regulator assembly. The system WILL NOT operate efficiently if the pressure falls below 500 psi. If below 500 psi, replace the nitrogen cylinder.

4. Turn the left regulator stem clockwise to the proper pressure setting of the "A" tank (see section 12). If a hissing sound occurs, further tighten the yellow-coded nitrogen line connection to the nitrogen regulator assembly and/or the nitrogen intake valve connection on the "A" tank using an adjustable wrench. If the left gauge fails to indicate a pressure setting, contact your Dow Chemical Sales Representative.

5. Turn the right regulator stem clockwise to the proper pressure setting of the "B" tank (see section 12). If a hissing sound occurs, further tighten the yellow-coded nitrogen line connection to the nitrogen regulator assembly and/or the nitrogen intake valve connection on the "B" tank using an adjustable wrench. If the right gauge fails to indicate a pressure setting, contact your Dow Chemical Sales Representative.

6. Slowly open the nitrogen intake valve of each tank. The valve handles should be parallel with the nitrogen lines.

7. Slowly turn on the chemical valve of each tank. The valve handles should be parallel to the chemical lines. Verify that the filter connection of each tank is tight and that no chemical leaks are present.

8. Slowly turn on the on-off valves. The handles should be parallel to the chemical lines. Verify that the connections of each valve are tight and that no chemical leaks are present.

9. Slowly turn on the in-line on-off valves. The handles should be parallel to the chemical lines. Verify that the connections of each valve are tight and that no chemical leaks are present.

10. Remove the used nozzle by pushing down the nozzle ejector.

4.2 Calibration Instructions

Equipment needed: PPE, scale capable of weighing in grams, paper bags (lunch bags), calibration nozzles, and pressure gauges.

1. Collect items needed for calibration (scale that weighs in grams or ounces, lunch bags, marker, calculator, pen, writing pad, petroleum jelly)

2. Ensure chemical temperature in tanks and lines are 75-90 degrees F (24-32 degrees C) , minimum 65 degrees F (18 degrees C).

3. Pressurize the system.
   a) Fully open the valve on the nitrogen bottle.
   b) Ensure the tank has at least 500 PSI pressure on the main tank pressure gauge. If at or below this, order a new tank. Do not operate under 300 PSI.

Recommended Starting Pressures

	A side	B side
Insulation Class A	150	130
Sealant	160	140

   c) Now set the A and B side regulators to their initial pressure. Turn the handle clockwise to increase the pressure. Higher hose lengths will require higher pressures. Follow the nitrogen hoses to the tank and slowly open the nitrogen valves on the tank to pressurize the tanks. You will hear the nitrogen flowing as it pressurizes the cylinders. Check for nitrogen leaks as you are pressurizing the tanks.
   d) Slowly open the chemical valves on both the A and B sides at the tanks to pressurize the hoses. For each side, there are two valves to open; one valve at the tank and one ball valve at the filter/hose connection. On the A-side, open the tank valve first and then open the ball valve. Repeat for the B side. Check for chemical leaks as you are pressurizing the hoses.

Note: Should you experience any nitrogen or chemical leaks, immediate close all chemical and nitrogen valves and correct the situation before proceeding.

4. Set pressures at recommended settings.

5. Check the gun to make sure it is working properly.
   a) Open the two chemical valves at the gun. You will see chemical flowing into the gun when they are opened.
   b) Fully depress the gun trigger and spray the gun into a lined waste receptacle to purge the gun and chemical lines of nitrogen. You should see two good chemical streams coming from the gun.

c) Spray GREAT STUFF PRO™ gun cleaner into the face of the gun to clean away any chemical residue. It is important to keep the gun face clean to avoid plugging of the chemical flow and to ensure that the nozzle makes a leak proof connection.
d) Place a small amount of petroleum jelly on outside face of gun where the nozzle fits in to ease the process of attaching the nozzle.

6. Attach the appropriate calibration nozzle. The calibration nozzle has 2 tubes protruding from the front of the nozzle. For calibration purposes, the back cap color of calibration nozzle should match the color of the spray nozzles that you intend to use.

7. The nozzles are a tight fit. Typically you will hear two clicks. Ensure that the yellow catch is fully latched over the extension on the nozzle.

8. Label 2 bags; one bag A and one bag B. Place the A side nozzle in the bag labeled A and the B side nozzle in the bag labeled B. Fully depress the gun trigger and spray the chemical into the 2 bags for 5–10 seconds or until the bags are about 2/3 full.

9. Weigh the A side first and record the weight (in grams). Next, weigh the B side and record the weight (in grams or – be sure to use the same units on the A and B side).

10. Calculate the A to B ratio from the data you recorded. Enter the A Side weight into the calculator and divide it by the B Side weight. An A to B ratio of 1.10 to 1.20 is ideal for class A insulation. An A to B ratio of 1.00 to 1.1 is ideal for the sealant.

180 divided by 162 equals 1.11 ratio

	A)	(B)
Weight	188gms	170gms
Bag Weight	-08gms	-08gms
	180gms	162gms

11. Once the tank set has been calibrated, remove the calibration nozzle, clean the gun face and insert the new spray nozzle (of the same color). This calibration is good until the sets are empty or until you need to replace the nitrogen tank as long as there are no significant temperature changes to the tanks and their contents. When in doubt, recalibrate.

Note: If the foam is off ratio (outside of the 1.10 to 1.20 range), adjustment of the nitrogen regulator will be required.

- If the ratio is below 1.10 for FROTH-PAK™ Class A Foam Insulation (1.00 for FROTH-PAK™ Foam Sealant)
- If the ratio is above 1.20 for FROTH-PAK™ Class A Foam Insulation (1.1 for FROTH-PAK™ Foam Sealant).
- Do not operate the system above 220 PSI on either side, 200 PSI gives an even larger safety factor to avoid opening the pressure relief valves on the tanks. If you are near this pressure, then the pressure on the opposite side will need to be reduced. So if the A Side is near 200 PSI and the ratio is still too high, bleed down the B Side tank to increase the differential pressure between the tanks.
- To do this, shut the main nitrogen tank valve and shut the nitrogen inlet valve on the product tank.
- Slowly loosen the nitrogen hose connection at the regulator. Do this slowly to let the pressure bleed off.
- Hold the end of the hose in one hand and direct it towards the ground and away from any people. With the other hand, slowly open the nitrogen inlet valve on the tank to bleed down the pressure. Be patient and do this slowly. It may take a few minutes. You do not need to bleed off all the pressure. Never bleed below 100psi. Shut the tank valve.
- Go back to the regulator for the hose you disconnected and turn the handle counterclockwise all the way out.
- Reconnect the nitrogen line and tighten.
- Go back to the regulator for the hose you disconnected and turn the handle counterclockwise all the way out.
- Reconnect the nitrogen line and tighten.
- Open the tank valve and read the pressure on the tank. It should be at least 40 – 50 PSI lower than when you started.
- Slowly turn the regulator handle clockwise until the pressure just starts to increase. You are just bringing the regulator to the tank pressure. Now set the pressure 20 – 30 PSI lower than when you last calibrated as a starting point. When in doubt, go lower, you can easily increase it if needed. Repeat as needed until the A to B ration is between 1.10 and 1.20.

  Note: The pressure settings are just a starting point. There are many factors that impact the actual ratio, including material temperature, hose age and possible partial blockage, and gun condition. Likewise each set of gauges has a small range of accuracy. The important thing to remember is that the ratio calculated during calibration is the FINAL WORD, the tank pressures are the means to get on ratio. If you need to go outside the ranges listed above (assuming they are under 220 PSI MAX) that is fine as long as you get the ratio in range.

Section 5

4.3 System Purging and Testing

1. **DO NOT** breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

2. Dispense chemicals in an appropriate container. This is to verify proper chemical flow.

3. Clean any chemical from the INSTA-FLO™ Gun face using a rag.

4. Insert an unused nozzle with the key slot down. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle.

5. Dispense foam to verify proper chemical mixing. If improper mixing or poor foam quality, refer to the Troubleshooting section, Section 10 of this manual.

4.4 Nozzle Replacement

1. The life of a nozzle depends on elapsed paused spraying time and chemical temperature. Replace a previously used nozzle if the elapsed paused spraying time is exceeded using the chart on the right as a guide. This chart is for the cone and fan type nozzles. Other specialty nozzles may have different elapsed paused times.

Chemical Temp	Elapsed Paused Spraying Time
70°F (21°C)	35 Seconds
75°F (24°C)	30 Seconds
80°F (27°C)	25 Seconds
85°F (29°C)	20 Seconds

2. To replace the used nozzle, push down the nozzle ejector. The used nozzle should eject.

3. Insert an unused nozzle with the key slot down. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle. The refill system is ready to operate.

DO NOT breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

5.1 Spraying

1. Once the calibration is complete, chose the nozzle with the pattern and flow rate appropriate for the job. Attached the nozzle.

2. Practice on scrap material or plastic sheet to get the feel of spraying and to ensure you are making good foam.

3. Hold the gun a consistent distance from the work and perpendicular to the work. Move in a steady side to side stroke. Avoid swinging the gun, it will result in variable thicknesses of foam. The speed of your movement and the distance from the work will determine the thickness of the foam.

4. Always fully engage the trigger of the gun. Partial engagement can result in off ratio foam.

5. Let the foam cure (a minute or two) Look for an even tan color foam. Watch to see that it rises 3 or 4 times the original thickness. Make sure the foam has cured and is firm.

6. If the foam looks unusual, verify the calibration settings and that the tanks are 70 -80 degrees. (Minimum 60-65 degrees). Then remove the nozzle and purge material into a waste container for 15-30 seconds. Clean the face of the gun, insert a new nozzle and perform a test spray again.

7. If problems persist call your Dow rep or Dow Technical service.

8. While spraying, always watch for signs of unusual looking foam. Troubleshoot as outlined above.

9. Watch for any bubbles in the translucent hoses near the gun and listen for any sputtering. This may be a sign of an empty tank.

Section 6

5.2 INSTA-FLO™ Gun Operation

The INSTA-FLO Gun provides greater flow control and minimizes waste when used properly. The following operating instructions ensure maximum efficiency and performance of the INSTA-FLO Gun.

1. **DO NOT** breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

2. To insert an unused nozzle, verify that the key slot on the nozzle is in the down position. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle.

3. To meter the INSTA-FLO™ Gun, engage the trigger one-third to one-half. This should be done sparingly due to the ratio of the foam being affected.

4. The life of a nozzle depends on elapsed paused spraying time and chemical temperature. Replace a previously used nozzle if the elapsed paused spraying time is exceeded using the chart on the right as a guide.

   This chart is for the cone and fan type nozzles. Other specialty nozzles may have different elapsed paused spraying times.

Chemical Temp	Elapsed Paused Spraying Time
70°F (21°C)	35 Seconds
75°F (24°C)	30 Seconds
80°F (27°C)	25 Seconds
85°F (29°C)	20 Seconds

5. When spraying is completed, remove the used nozzle by pushing down on the nozzle ejector.

6. Apply petroleum jelly to the face of the INSTA-FLO Gun.

7. Reinsert the used nozzle. This provides an airtight seal during storage.

Refer to INSTA-FLO™ Gun drawing, page A3

Shut Down

1. When shutting down the refill system for the day, leave the cured nozzle attached to the gun to keep moisture from penetrating the hoses.

2. Shut off the A and B side valves on gun and the two sets of valves on the chemical tanks for the A and B sides.

3. Leave all hoses attached.

4. Shut off the main nitrogen valve at the nitrogen tank. Do not adjust the regulator levels that were established during calibration. These settings can be used until the chemical tanks are empty or the nitrogen tank is replaced as long as there are no big temperature swings.

5. Remove the used nozzle by pushing down on the nozzle ejector.

6. Apply petroleum jelly to the face of the INSTA-FLO™ Gun.

7. Reinsert the used nozzle. This provides an airtight seal during storage.

8. Turn off the in-line on-off valves. The valve handles should be perpendicular to the chemical lines.

9. Turn off the on-off valves located near the chemical filters. The valve handles should be perpendicular to the chemical lines.

10. Turn off the chemical tank valves of the “A” and “B” tanks. The handles should be perpendicular to the valves.

11. Turn off the yellow-coded nitrogen intake valves of the “A” and “B” tanks. The handles should be perpendicular to the valves.

12. Turn off the nitrogen cylinder by turning the valve on the top of the nitrogen cylinder in a clockwise direction.

13. Back out both nitrogen regulator valve stems until they are freewheeling.

14. Coil the chemical lines to prevent possible tripping and damage.

15. Unplug Arctic Pak Controller if being used.

Section 7

Storage

1. Store in a dry area.
2. Store between 60°–80°F (16°–27°C).
3. Short term storage between 45°–60°F (7°–16°C) is permitted.
4. **DO NOT** store at temperatures above 120°F (49°C).
5. **DO NOT** not store near steam or hot water pipes.
6. **DO NOT** store near chimneys or heat vents.
7. If a partially used system remains inactive for a period of time, the system should be pressurized and purged every two weeks. This will prevent crystallization of the chemical in the hoses.
8. Unopened chemical tanks have a shelf life of approximately one year.

Section 8

DO NOT breathe vapor or spray. Proper Personal Protective Equipment and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

Re-Start-Up

1. Open the nitrogen valve fully to pressurize the system. and re-set the regulators to previous pressures.
2. Open the two sets of valves on the chemical tanks for the A and B sides and then the valves on the gun.
3. Remove the cured nozzle that you left attached to the gun.
4. Spray into a waste container. Ensure that you have good flow from both the A and B side hoses.
5. Clean the face of the gun. Attach a new nozzle.
6. Spray a test sample to ensure good quality foam.
7. Resume spraying.

Re-start Procedure

8.1 System Pressurization

1. Verify that the valve stems on the regulator are backed out and are freewheeling.
2. Open the nitrogen bottle valve by turning the knob on top of the cylinder counter-clockwise. If a hissing sound occurs, further tighten the nitrogen regulator valve stem with an adjustable wrench. Use only in well ventilated areas. Wear suitable respiratory protection.
3. Verify that the nitrogen cylinder pressure using the center gauge of the nitrogen regulator assembly. The system WILL NOT operate efficiently if the pressure falls below 500 psi. If below 500 psi, replace the nitrogen cylinder.
4. Turn the left regulator stem clockwise to the proper pressure setting of the “A” tank (see section 12).

   If a hissing sound occurs, further tighten the yellow/red-coded nitrogen line connection to the nitrogen regulator assembly and/or the nitrogen intake valve connection on the “A” tank using an adjustable wrench. If the left gauge fails to indicate a pressure setting, contact your Dow Sales Representative.
5. Turn the right regulator stem clockwise to the proper pressure setting of the “B” tank (see section 12).

   If a hissing sound occurs, further tighten the yellow/blue-coded nitrogen line connection to the nitrogen regulator assembly and/or the nitrogen intake valve connection on the “B” tank using an adjustable wrench. If the right gauge fails to indicate a pressure setting, contact your Dow Sales Representative.
6. Slowly open the nitrogen intake valve of each tank. The valve handles should be parallel with the nitrogen lines.
7. Slowly turn on the chemical valve of each tank. The valve handles should be parallel to the chemical lines. Verify that the filter connection of each tank is tight and that no chemical

Section 9

leaks are present.

8. Slowly turn on the on-off valves. The handles should be parallel to the chemical lines. Verify that the connections of each valve are tight and that no chemical leaks are present.

9. Slowly turn on the in-line on-off valves. The handles should be parallel to the chemical lines. Verify that the connections of each valve are tight and that no chemical leaks are present.

10. Remove the used nozzle by pushing down the nozzle ejector.

8.2 System Purging and Testing

1. **DO NOT** breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

2. Dispense chemicals in an appropriate container. This is to verify proper chemical flow. When using 120' to 150' lines install the calibration nozzle to check the flows. For 30' and 60' lines the flow can be checked with no nozzle attached.

3. Clean any chemical from the INSTA-FLO™ Gun face using a rag or paper towel.

4. If there has been a temperature change of more than 5°F from the last time the system was used, re-calibrate.

5. Insert an unused nozzle with the key slot down. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle.

6. Dispense foam to verify proper chemical mixing. If improper mixing or poor foam quality, refer to the Troubleshooting section, Section 10 of this manual.

Tank Change-over

1. **DO NOT** breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

2. Putting on a fresh set of tanks is essentially the same process as the initial start-up. One big difference is that the lines have chemicals in them. If exposed to the atmosphere for more than a few minutes, the A Side line will become plugged. So keep the lines hooked up to the empty tanks until you are ready to put on the fresh set.

3. Double check that the nitrogen tank is above 500 PSI.

4. Prep the new tanks as outlined above right to the point of hooking up lines. Use the new filters supplied with the new tanks.

5. When ready for this, be sure the tank valves are closed on the empty tanks. Bleed off any pressure in the lines by pulling the trigger of the gun while aimed into a waste container.

6. Disconnect the lines and transfer to the new set. Be sure to have on proper protective equipment as some residual material will be in the lines.

7. Back out the regulator valve handles (counterclockwise) and then proceed with the calibration process as outlined above.

8. Replace the plugs and caps on the tank connections. Attach the Bill of Lading to the empty tanks and call them in to be picked up along with the paperwork that came with the tanks.

9. Remove the used nozzle by pushing down on the nozzle ejector.

10. Turn off the chemical tank valves. The handles should be perpendicular to the valves.

11. Depressurize the chemical lines by engaging the trigger, dispensing the chemical in an appropriate container.

12. Clean any chemical on the INSTA-FLO™ Gun face with a rag.

13. Turn off the on-off valves located near the tank filter. The valve handles should be perpendicular to the chemical lines.

14. Turn off the yellow-coded nitrogen intake valves of the "A" and "B" tanks. The handles should be perpendicular to the valves.

15 Turn off the nitrogen cylinder by turning the valve in a counter-clockwise direction.

16. Back out both nitrogen regulator valve stems until they are freewheeling.

9.1 "A" Tank Change-over

1. Position the new "A" tank next to the empty "A" tank.

2. Verify that the nitrogen intake and chemical valves of the new "A" tank are closed. The handles should be perpendicular to the valves.

3. Remove the yellow-coded cap on the nitrogen intake valve of the new "A" tank.

4. Close the valve on the nitrogen cylinder. Relieve the nitrogen pressure by loosening and removing the yellow/red coded nitrogen regulator line from the nitrogen intake valve of the empty "A" tank using an adjustable wrench.

5. Reconnect the "A" yellow/red coded nitrogen line to the nitrogen intake valve of the new "A" tank. Tighten the connection with an adjustable wrench.

6. Remove the chemical valve plug of the new "A" tank and place the plug on top of the new "A" tank.

7. Carefully remove the vaseline in the "A" chemical tank valve.

8. Remove the fluid filter from the canvas bag on top of the new "A" tank. Verify that the filter and the cartridge are free by shaking the filter until you hear a "clicking sound".

   NOTE: Air blown into end in the direction of arrow will pass freely through the filter.

9. Connect the filter to the new "A" tank chemical valve with the filter arrow pointing away from the tank. The arrow represents the chemical flow. Tighten the filter with an adjustable wrench. The filter prevents chemical from flowing back into the tank.

CAUTION: When disconnecting chemical lines, always cover the connections with a rag to minimize chemical spray or spillage.

10. Disconnect the "A" on-off valve from the filter of the empty "A" tank, covering the connection with a rag.

11. Reconnect the "A" on-off valve to the filter of the new "A" tank. Tighten with an adjustable wrench.

12. Remove the filter from the empty "A" tank and dispose accordingly.

13. Reconnect the plug on the empty "A" tank to the chemical valve. Tighten with an adjustable wrench.

14. Depressurize the empty "A" tank by slowly opening the nitrogen intake valve.

15. When the tank has been depressurized, close the nitrogen intake valve of the empty "A" tank and reconnect the yellow-coded cap. Tighten with an adjustable wrench.

16. Remove the empty "A" tank and position the new "A" tank in its place.

17. Write "EMPTY" on the empty "A" tank

9.2 "B" Tank Change-over

1. Position the new "B" tank next to the empty "B" tank.

2. Verify that the nitrogen intake and chemical valves of the new "B" tank are closed. The handles should be perpendicular to the valves.

3. Remove the yellow-coded cap on the nitrogen intake valve of the new "B" tank.

4. Close the nitrogen valve. Relieve the nitrogen pressure by loosening and removing the yellow/blue coded nitrogen regulator line from the nitrogen intake valve of the empty "B" tank using an adjustable wrench.

5. Reconnect the "B" yellow/blue coded nitrogen line to the nitrogen intake valve of the new "B" tank. Tighten the connection with an adjustable wrench.

6. Remove the chemical valve plug of the new "B" tank and place the plug on top of the new "B" tank.
7. Remove the fluid filter from the canvas bag on top of the new "B" tank. Verify that the filter and the cartridge are free by shaking the filter until you hear a "clicking sound." NOTE: Air blown into this end will pass freely through the filter.

8. Connect the filter to the new "B" tank chemical valve with the filter arrow pointing away from the tank. The arrow represents the chemical flow. Tighten the filter with an adjustable wrench. The filter prevents chemical from flowing back into the tank.

CAUTION: When disconnecting chemical lines, always cover the connections with a rag to minimize chemical spray or spillage.

9. Disconnect the "B" on-off valve from the filter of the empty "B" tank, covering the connection with a rag.

10. Reconnect the "B" on-off valve to the filter of the new "B" tank. Tighten with an adjustable wrench.

11. Remove the filter from the empty "B" tank and dispose appropriately.

12. Reconnect the plug on the empty "B" tank to the chemical valve. Tighten with an adjustable wrench.

13. Depressurize the empty "B" tank by slowly opening the nitrogen intake valve.

14. When the tank has been depressurized, close the nitrogen intake valve of the empty "B" tank and reconnect the yellow-coded cap. Tighten with an adjustable wrench.

15. Remove the empty "B" tank and position the new "B" tank in its place.

16. Write "EMPTY" on the empty "B" tank.

9.3 Tank Return

1. Complete the bill of lading on the empty tanks as described on page 5 of this manual.

9.4 System Pressurization

1. Open the nitrogen bottle valve by turning the knob on top of the cylinder counter-clockwise. If a hissing sound occurs, further tighten the nitrogen regulator valve stem with an adjustable wrench.

2. Verify that nitrogen cylinder pressure using the center gauge of the nitrogen regulator assembly. The system WILL NOT operate efficiently if the pressure falls below 500 psi. If below 500 psi, replace the nitrogen cylinder.

3. Re-calibrate the system referring to section 4.2

4. Turn the left regulator stem clockwise to the proper pressure setting of the "A" tank. If a hissing sound occurs, further tighten the yellow-coded nitrogen line connection to the nitrogen regulator assembly and/or the nitrogen intake connection on the "A" tank using an adjustable wrench. If the left gauge fails to indicate a pressure setting, contact your Dow Sales Representative.

5. Turn the right regulator stem clockwise to the proper pressure setting of the "B" tank. If a hissing sound occurs, further tighten the yellow-coded nitrogen line connection to the nitrogen regulator assembly and/or the nitrogen intake valve connection on the "B" tank using an adjustable wrench. If the right gauge fails to indicate a pressure setting, contact your Dow Sales Representative.

6. Slowly open the nitrogen intake valve of each tank. The valve handles should be parallel with the nitrogen lines.

7. Slowly turn on the chemical valve of each tank and the on-off valve of each chemical line. The valve handles should be parallel to the chemical lines. Verify that the filter connection of each tank is tight and that no chemical leaks are present.

9.5 System Purging and Testing

1. Dispense chemicals in an appropriate container. This is to verify proper chemical flow. Check the flow with a calibration nozzle attached for 120' or 150' hoses.

2. Clean any chemical from the INSTA-FLO™ Gun face using a rag.

3. Insert an unused nozzle with the key slot down. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle.

4. Dispense foam to verify proper chemical mixing. If improper mixing or poor foam quality, refer to the Troubleshooting section, Section 10 of this manual.

Section 10

Troubleshooting

The FROTH-PAK™ Refill System is virtually maintenance-free and many problems can be corrected through simple troubleshooting techniques. When troubleshooting, confirm that the system is pressurized correctly, and that all nitrogen and chemical valves are in the open position. One closed valve can cause a system shut-down.

10.1 Temperature

Chemical temperature can affect foam quality. If the chemical temperature is below 65°F (18 degrees C), poor quality foam may result. The ideal temperature range is 75-90 degrees F (24-32 degrees C) , minimum 65 degrees F (18 degrees C).

10.2 Foam Color and Quality

Changes in foam quality indicate an off-ratio foam. If the foam is crusty after curing, the foam is "A" rich and a blockage of "B" chemical exists.

If the foam is mushy, and remains soft after two minutes, the foam is "B" rich and a blockage of "A" chemical exists.

To identify and correct the problem, initiate the following procedure:

1. **DO NOT** breathe vapor or spray. Proper PPE and ventilation are required. See product SDS and Section 2 of this manual for further information. Follow all precautions for product.

2. Remove the used nozzle by pushing down the nozzle ejector. Use only in well ventilated areas. With insufficient ventilation, wear suitable respiratory protection.

3. Dispense chemicals in an appropriate container and examine the chemical streams. If using 120' or 150' lines install a calibration nozzle. If the streams are equal, the problem existed in the nozzle. Continue with steps 4-7 below. If the problem is not corrected, the blockage exists in the system. Continue with CAUTION – below step 7.

4. Clean any chemical from the INSTA-FLO™ Gun face using a rag.

5. Insert an unused nozzle.

6. Dispense chemical in an appropriate container.

7. Check the quality of the foam. If the foam is good, the system is ready to operate. If the problem is not corrected, the blockage exists in the system.

(Continued from step 3)

CAUTION: When disconnecting chemical lines, always cover the connections with a rag to minimize chemical spray or spillage.

8. Turn off the "A" and "B" lines with the in-line on-off valves. The valve handles should be perpendicular to the chemical lines.

9. Depressurize the Gun/Hose Assembly by pulling the trigger, dispensing chemicals in an appropriate container.

10. Disconnect the INSTA-FLO Gun from the in-line on-off valve using two adjustable wrenches.

11. While holding the chemical line over an appropriate container, carefully open the valve of the "A" hose and dispense chemical into the container. Check the flow. Repeat for the 'B' hose.

12. If the flow was adequate from both hoses, the problem was with the INSTA-FLO™ Gun/Hose Assembly. Discard the old INSTA-FLO Gun/Hose Assembly and replace with a new one according to steps 13-20. If a blockage persists, continue with step 21.

13. Connect the new INSTA-FLO Gun/Hose Assembly.

14. Tighten all connections with two adjustable wrenches.

15. Verify that all chemical line valves are on. The valve handles should be perpendicular to the chemical lines.

16. Dispense chemicals in an appropriate container to verify proper chemical flow. Check the flow with a calibration nozzle attached for 120' or 150' hoses.

17. Clean any chemical from the face of the INSTA-FLO Gun with a rag.

18. Insert an unused nozzle with the key slot down. Push in firmly until the nozzle ejector is seated over the back rim of the nozzle.

19. Dispense chemicals in an appropriate container.

20. Check the quality of the foam. If the foam quality is good, the system is ready to operate. If problems persist, go back to step 2.

21. Turn off the on-off valve located near the tank filter of the blocked line.

22. Turn on the in-line on-off valve of the blocked line to depressurize the hose, allowing the chemical to dispense in an appropriate container.

23. Close the in-line on-off valve when the hose has depressurized.

24. Disconnect the obstructed chemical hose from the on-off valve located next to the tank filter.

25. Re-open the on-off valve located near the filter and allow the chemical to flow in an appropriate container. If the chemical flow is unobstructed, the blockage exists in the chemical hose which must be replaced.

26. If the blockage persists, examine the tank filter. The arrow on the filter should be pointing away from the tank. If not, change the filter direction, steps 31-41. If the filter was installed correctly, continue with step 42.

27. Close the on-off valve.

28. Close the chemical tank valve.

29. Open the on-off valve located near the filter to depressurize the filter.

30. Disconnect the on-off valve from the filter.

31. Disconnect the filter from the chemical tank valve.

32. Reconnect the new filter with the arrow pointing away from the tank.

33. Reconnect the on-off valve with the swivel to the filter.

34. Tighten all connections with an adjustable wrench.

35. Verify that the on-off valve is closed. The handle should be perpendicular to the valve.

36. Open the chemical tank valve.

37. Open the on-off valve and allow the chemical to flow in an appropriate container. If the flow is full, reconnect the chemical hose and Gun/Hose Assembly and perform steps 16-23. If the flow is weak the problem exists in the tank. Contact your Dow Sales Representative for assistance.

Section 11

Yield Notes

Board foot yields are based on the free rise of the total weight of the chemicals in the tanks. Many factors affect the yield in field applications.

11.1 Operator Technique

For best results, apply multiple layers of foam. When spraying, apply one-quarter to one-half inch thickness of uncured foam. This will produce a one to one-and-one-half inch thickness of fully cured foam.

11.2 Application

Avoid spraying over rising foam.

11.3 Temperature

To ensure proper chemical mix, reaction, cure, and optimum yields, chemicals should not be dispensed if the chemical temperature is below 65°F (18°C). Insufficient operating temperatures can cause improper mix, extend cure time, and adversely affect final physical properties and yields.

NOTE: When using polyurethane foam, estimate 10% more foam than is required. This yield buffer is recommended so that you will not run out of chemical on a job site.

Section 12

Recommended Starting Pressures

	A side	B side
Insulation Class A	150	130
Sealant	160	140

Section 13

Anti-crossover Nozzles

The Dow Chemical Company provides various anti-crossover nozzles with various spray patterns for use with the INSTA-FLO™ Gun. For best results, operate the INSTA-FLO Gun between 6 and 36 inches from the surface being sprayed. Move the INSTA-FLO Gun in a steady but relatively slow back and forth motion. This will provide an even coverage. Do not spray over rising foam.

The cone type nozzle provides a round spray pattern for multiple applications and surfaces.

The fan type nozzle provides a fine fan spray pattern resulting in a smooth foam surface (paint spray finish).

The caulking type nozzle provides a bead pattern for ultra fine coverage and has less overspray.

Refer to INSTA-FLO Gun and Anti-Crossover Nozzle drawings, pages A3-A4.

Section 14

Nitrogen Regulator

14.1 Important - Safety Information

1. **NEVER** use regulators on cylinders of which the gas pressure exceeds 3000 pounds per square inch

2. NEVER set chemical tank pressure over 225psi.

3. NEVER use oil or petroleum base grease on regulator, inlet connection, or cylinder valve. An explosion or fire could result. The lubricant used on this regulator adjusting screw is Dow-Corning No. 44 silicone grease which is a non-petroleum base grease.

4. NEVER stand in front of, or behind a regulator while opening the cylinder valve.

14.1.1 Instructions

1. Before attaching the regulator to the nitrogen cylinder valve outlet, open the valve for a few seconds, allowing the gas to force out any possible foreign matter.

2. Attach the regulator to the Nitrogen cylinder valve and tighten the inlet nut securely with an adjustable wrench.

3. Before opening the cylinder valve, turn the adjusting screws (valve stems) to the left until no tension is felt.

   NOTE: NEVER open cylinder valve until spring tension on the valve stems have been released.

4. Open cylinder valve slowly. DO NOT stand in front of or behind regulator while opening the cylinder valve.

5. Turn valve stems clockwise until the low pressure gauge registers the desired working pressure.Nitrogen Regulators are available through The Dow Chemical Company or:

   Airgas North Central Inc.
   1250 W. Washington Street
   West Chicago, IL 60185
   Phone: (630) 231-9260

Refer to Nitrogen Regulator Assembly drawing, page A-2. The regulator is not pressure releasing - turning the regulator to a lower psi will not reduce pressure in the tank until the pressure is manually vented.

Section 15

Tank Heating

15.1 Usage

In places where the FROTH-PAK™ Refill System is used where the ambient temperature is below 65°F (18°C), an external source to heat the chemical in the tanks may be required.

Heating bands are available for both the 17 gallon and the 60 gallon tanks, through:

McMaster-Carr
www.mcmaster.com
630-600-3600

The heater band McMaster model numbers are as follows:

17 gallon: 3545K42
60 gallon: 3545K44

Control boxes are available through:

Glas-Col Apparatus Company
711 Hulman Street, P.O. Box 2128
Terre Haute, IN 47802
812 - 235 - 6167

The model number for the control box is PL-312.

During the initial start-up, the controls for the heater bands can be set at 3 or 4 for two hours. However, for continuous operation, “LO” would be the desired setting, unless extremely low temperatures are experienced.

15.2 Installation Procedure - Tank Heater Band

1. Wrap and clamp heater band around tank prior to switching on.

2. Pull on spring, at the same time hold end of heater against the tank.

3. Place a loop of the spring over the hook.

4. The heater should not be clamped in dented areas of the tank.

5. The heater must be in full contact with the tank and below the level of the liquid while in operation.

6. DO NOT bend the heater sharply as this may cause internal damage to the heating element.

7. DO NOT use outside insulation.

   NOTE: Heaters are available for other tank heating operations, refer to Electro-Flex Heat, Inc.

15.3 POWERBLANKET® warming equipment

POWERBLANKET warming equipment also keeps your jobs on schedule during the colder months, delivering a barrier of insulated heat to the spray foam. Powerblanket creates an optimal application environment. For more information, call Customer Service at 877-398-7407.

To order, call 801-456-8013 and refer to the item numbers below:

- DOW-17 (17-gallon tank heater)
- DOW-27 (27-gallon tank heater)
- DOW-60 (60-gallon tank heater)
- DOW-620 (620& 650 -bf single-component cylinder heater)
- DOW-200 (200 & 210 -bf A & B disposable box heater)
- DOW-55RR (Rapid Ramp 55-gallon drum heater)
- DOW-55PRO (Pro series 55-gallon drum heater and thermostatic controller)
- DOW-GHT (Digital thermostatic controller)

15.4 Glas-Col Power Control Description and Operation

The Glas-Col Minitrol is a manually adjusted power control of percentage timer design. Minitrol is designed to proportion full output power 5.5% to 100% of time depending on the dial setting. The "Off " position positively breaks both sides of the line .

Dial Setting	Percent of time on
Off	0
Lo	5.5 (approx.)
4	35 (approx.)
6	52 (approx.)
Hi	100

The control can be used on any non-inductive fused resistance load up to 15 amps and 120 volts. Smaller fuses may be used for protection of very small loads. Simply plug device into a 3-wire outlet of the control and insert plug of Minitrol cord into a wall receptacle. The pilot light is connected across the output side of the control and indicates power to the load.

Minitrol's operation and control is adjusted by the operator and does not utilize a sensing element. After a desired temperature has been determined on the initial run, a simple resetting of the dial offers control for repeat operations.

This control effectively regulates heating mantles, tapes and cords. Minitrol may also be used for small furnaces or ovens, hot plates, dies or other applications requiring infinite control. The control should not be exposed to ambient temperatures above 125°F (52°C).

In addition to Minitrol, stock is maintained on variable transformers and automated controls. Write to the address below for more information:

Glas-Col Apparatus Company
711 Hulman Street
Terre Haute, Indiana 47802
812 – 235 – 6167

Section 16

Arctic Pak Hose Replacement Set

16.1 General Information

In ambient temperatures below 65°F (18°C), use of Arctic Pak heated chemical hoses is often required for consistent, quality results. The Arctic Pak will keep the chemicals at an even, warm temperature to allow uniform processing.

This product is primarily intended to keep already warmed materials at temperature during transit to the dispensing INSTA-FLO™ Gun. Chemical tanks should be stored in a warm location until use, and may require use of a tank heater band set (please see Section 15).

The Arctic Pak is used in place of unheated chemical transport lines where described throughout this manual (Sections 3.3 and elsewhere).

DO NOT use standard 30 foot FROTH-PAK hoses in an Arctic Pak heated jacket.

DO NOT use Arctic Pak hoses in place of nitrogen lines or for conveying non-polyurethane chemicals of any type.

DO NOT use the Arctic Pak with any flammable materials.

Standard unheated chemical lines are 30 feet in length, but are often connected in series to produce longer lengths as job needs require. Locate unneeded hose (if any) out of the traffic path to prevent a trip hazard. Never attempt to cut the Arctic Pak to a shorted length or to splice in additional hose.

The Arctic Pak is fully pressure checked and is flushed with nitrogen at the factory prior to shipment. To keep the hoses from having moisture or other undesirable materials introduced into them, please keep the hose end plugs in place until beginning installation.

16.2 Preparing and Installing the Arctic Pak

1. Unpack and examine your Arctic Pak for possible shipping damage. Do not use if damage has occurred.

2. As per Section 3.3, connect your Gun/Hose Assembly to the in-line on-off valves.

3. Remove plugs from the dispenser end of the hose. The dispenser end is the end without the electrical cord entering it. Connect the in-line on-off valves to the dispenser end of the Arctic Pak hoses and tighten securely. Close the on-off valves if not already closed.

4. The electrical cord servicing the heaters enters at the tank end of the jacket. Remove plugs from the tank end of the hose.

5. Connect the tank end of each hose to the appropriate chemical tank on-off valve. The hose with the red colored sleeve and blue body should connect to the isocyanate tank. The blue sleeved, black bodied hose should connect to the polyol tank. Close the on-off valves if not already closed.

6. Follow the remaining operating manual instructions for Chemical Hose Installation (Section 3.3). Also execute the instructions regarding System Pressurization (Section 4.1), and System Purging and Testing (Section 4.3) as they are the same for both heated and unheated hoses. The only difference here is to make sure whenever checking the flow or purging an Arctic Pak hose make sure that a grey backed or white backed calibration nozzle is attached to the gun.

7. Now that chemical is contained within the hoses, turn the controller to its lowest setting and plug the heater controller into a standard 110vAC outlet capable of continuously providing 15 amps of service. As with any electrical device, care should be taken to keep the system out of wet areas and to avoid mechanical damage to the controller, electrical lines, heated hose jacket, and other electrically charged parts.

8. Follow Calibration Instructions (Section 4.2) noting the exiting chemical temperature, which should be 70°F (21°C) or higher. Adjust the controller as needed to provide the heat desired. This temperature will depend on ambient conditions, type of application, and the chemical system being used. Let the process results be your final guide in deciding a set point temperature.

9. Shut-Down, Re-Start, Tank Change procedures, etc. are the same as outlined in this manual for standard unheated hose.

10. When changing the tanks or whenever leaving the system unmanned for long periods of time (overnight, for example), it is good practice to unplug the heater controller.

11. When storing the system, and between work sessions, it is best practice to leave chemical in the hoses, and to have all valves closed. Leaving a hose open, or having air within the hose will cause crystallization of the isocyanate and subsequent hose blockage. If stored in a warm place above 60F warm up time will be significantly reduced.

16.3 Spare Parts and Maintenance

The Arctic Pak is available as a complete system (hoses, heater jacket and controller) which is Dow Chemical part number GMID 328507.

Also available for field support from your Dow distributor are the controller (GMID 328509), and replacement heated jacket and controller combination (GMID 328508).

An internal replacement chemical hose may be made in the field from four standard, unheated hoses using standard, steel ¼" JIC Male couplers to join them. Four hoses may be used from two of the standard hose and Gun Hose Assembly Kits, GHA30, which is Dow Chemical part number GMID 158403. It is, however, not recommended to heat these hoses.

Alternately, heated replacement hoses to be used inside the jacket may also be sourced from any Parker Hannifin distributor as follows:

Isocyanate Hose:

The isocyanate hose is terminated at each end with Parker Series 55 ¼" JIC Female Swivel fittings (carbon steel or stainless steel only). Red end of hose color coding shall be maintained using colored tape, or a colored heat shrink sleeve as used in the electrical industry, or by other means.

Fittings shall be crimped in place using Parker approved tooling and procedures. The resulting assembly shall be pressure tested at 500 psi without using water internally to the hose assembly.

WARNING: Water reacts aggressively with isocyanate. Reactions within a confined space such as within a hose may present a safety concern. Even small amounts of water vapor may cause a blockage or an adverse reaction.

Polyol Hose:

The polyol hose is terminated at each end with Parker Series 55¼" JIC Female Swivel fittings (carbon steel or stainless steel only). Blue end of hose color coding shall be maintained using colored tape, or a colored heat shrink sleeve as used in the electrical industry, or by other means.

Fittings shall be crimped in place using Parker approved tooling and procedures. The resulting assembly shall be pressure tested at 500 psi without using water internally to the hose assembly.

To replace the internal hose or hoses:

1. Close chemical tank valves, and tank on-off valve.

2. Close nitrogen valves and relieve system nitrogen pressure.

3. Carefully and completely bleed the chemical from lines through the INSTA-FLO Gun into separate appropriate waste containers by activating one hose at a time.

4. Lay the hose reasonably straight with the hook-and-loop seam upwards, as this will greatly help the hose exchange. Unfasten the jacket from around the hoses by parting the hook-and-loop strips which hold the jacket in place. This is most easily accomplished with two or more people.

5. Verify there is no pressure remaining in the hoses and that the tank valves are closed. Lay the new hose along the old one in the open jacket. Cover the connections of the old hose with a rag and remove the hose from the tank end. Cap the old hose to reduce potential for spillage. Connect the new hose to the tank end.

6. Repeat the procedure, using a rag, for the dispenser end of the hose.

7. Remove the old hose from the jacket by clipping the cable ties and lifting it away. Discard the old hose using an appropriate waste stream as you would for other polyurethane waste products.

8. Re-tie the new hoses about every ten feet to each other using cable ties. This helps in handling and coiling the hose later.

9. Re-close the hook-and-loop strips, bringing the heated jacket up evenly around the paired hoses.

10. Re-establish the system to the operational state using the installation, pressurization, calibration, and other procedures found in this manual.

Section 17

Warranty

The Dow Chemical Company warrants only that the product shall meet its specifications. This warranty is in lieu of all other written or unwritten, expressed or implied warranties and The Dow Chemical Company expressly disclaims any warranty of merchantability, or fitness for a particular purpose. The buyer assumes all risks as to the use of the material. Buyer's exclusive remedy as to any breach of warranty, negligence or other claim shall be limited to the refund of the purchase price of the material. Failure to strictly adhere to any recommended procedures shall release The Dow Chemical Company of all liability with respect to the materials or the use thereof. The information herein is not intended for use by non-professional designers, applicators or other persons who do not purchase or utilize this product in the normal course of their business.

WARNING: Water reacts aggressively with isocyanate. Reactions within a confined space such as within a hose may present a safety concern. Even small amounts of water vapor may cause a blockage or an adverse reaction. Water carried within the polyol hose to the point where blending with isocyanate occurs must be avoided.

NOTES

In the U.S.
The Dow Chemical Company
Dow Building Solutions
1605 Joseph Drive, 200 Larkin Center
Midland, Michigan 48674

In Canada
Dow Chemical Canada ULC
Dow Building Solutions
Suite 2100, 450 – 1st St., SW
Calgary, AB T2P 5H1

Technical Information:
1-866-583-BLUE (2583) (English)
1-800-363-6210 (French)

Sales Information:
1-800-232-2436 (English)
1-800-565-1255 (French)

dowbuildingsolutions. com
sprayfoamatdow.com

Dow Polyurethane Foam Insulation and Sealants
CAUTION: When cured, these products are combustible and will burn if exposed to open flame or sparks from high-energy sources. Do not expose to temperatures above 240°F (116°C). For more information, consult SDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada. When air sealing buildings, ensure that combustion appliances, such as furnaces, water heaters, wood burning stoves, gas stoves and gas dryers are properly vented to the outside. See website: http://www.epa.gov/iaq/homes/hip-ventilation.html. In Canada visit: http://archive.nrc-cnrc.gc.ca/eng/ibp/irc/bsi/83-house-ventilation.html.

Read the instructions and (Material) Safety Data Sheet ((M)SDS) carefully before use. FROTH-PAK™ spray polyurethane foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Do not breathe vapor or mist. Use only with adequate ventilation. It is recommended that applicators and those working in the spray area wear respiratory protection. Increased ventilation significantly reduces the potential for isocyanate exposure, however, supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particulate filter may still be required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure, air-supplying respirator (air line or self-contained breathing apparatus). Spraying large amounts of foam indoors may require the use of a positive pressure, air-supplying respirator. Isocyanate is irritating to the eyes, skin and respiratory system, and may cause sensitization by inhalation or skin contact. FROTH-PAK™ foam will adhere to most surfaces and skin. Do not get foam on skin. Wear protective clothing (including long sleeves), gloves, and goggles or safety glasses. Cured foam must be mechanically removed or allowed to wear off in time. The contents are under pressure. FROTH-PAK™ foam should not be used around heaters, furnaces, fireplaces, recessed lighting fixtures or other applications where the foam may come in contact with heat-conducting surfaces. Cured FROTH-PAK™ foam is combustible and will burn if exposed to open flame or sparks from high-energy sources. Do not expose to temperatures above 240°F.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

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