USER MANUAL

Glas Craft
DISPENSING EXCELLENCE

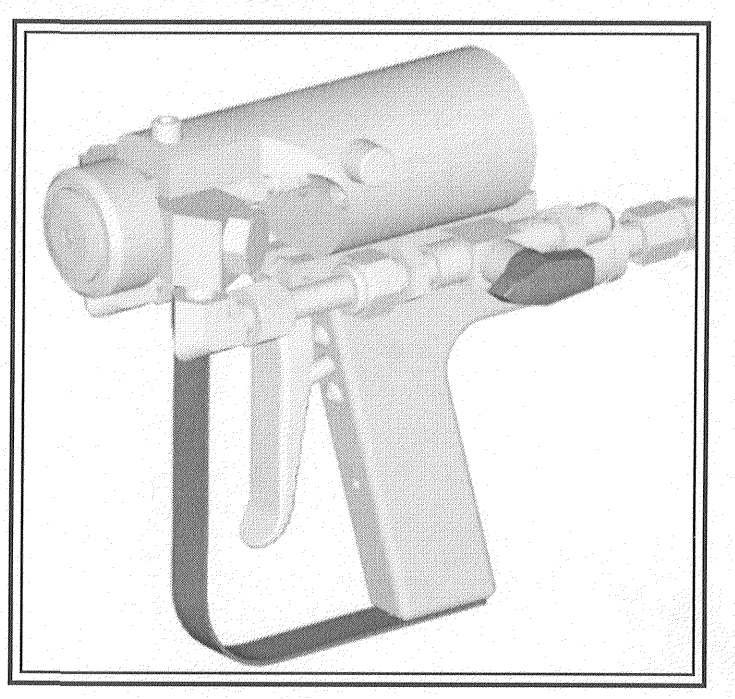
LS 23700-

Dispense Gun

23700-00 ROUND
23700-01 FLAT

INCLUDES:

23700
GUN ASSEMBLY



Glas Craft
DISPENSING EXCELLENCE

5845 WEST 82nd STREET
INDIANAPOLIS, INDIANA 46278 U.S.A.
Phone (317) 875-5592
Fax (317) 875-5456
E-Mail gcisales@glascraft.com
Web www.glascraft.com

CE CERTIFIED

Glas Craft
An ISO 9001 Approved Company

CONTENTS

INTRODUCTION

About This Manual

Before operating, maintaining or servicing any **Glas-Craft** system, read and understand all of the technical and safety literature provided with **Glas-Craft** products. If you do not have the manuals and safety literature for your **Glas-Craft** system, contact your **Glas-Craft** distributor or **Glas-Craft, Inc.**

In this **Glas-Craft** technical and safety publication, the following advisories will be provided where appropriate:

NOTE
Is information about the procedure in progress.

CAUTION
Is imperative information about equipment protection.

WARNING
Is imperative information about personnel safety.

The information in this document is intended only to indicate the components and their normal working relationship typical use. Each assembly should be directed by a **Glas-Craft** distributor or made from the **Glas-Craft** assembly instructions provided.

This manual provides information for the assembly, operation, maintenance and service of this **Glas-Craft** product as used in a typical configuration. While it lists standard specifications and procedures, some deviations may be found.

In order to provide our users with the most up-to-date technology possible, we are constantly seeking to improve products. If technological change occurs after a product is on the market, we will implement that technology in future production and, if practical, make it available to current users as a retrofit, up-date or supplement. If you find some discrepancy between your unit and the available documentation, contact your **Glas-Craft** distributor to resolve the difference. **Glas-Craft, Inc.** reserves the right to change or modify this product as it deems necessary.

Careful study and continued use of this manual will provide a better understanding of the equipment and process, resulting in more efficient operation, longer trouble-free service and faster, easier trouble-shooting.

Related Manuals

For detailed component installation, operation and maintenance, refer to the following component manuals:

	COMPONENT	MANUAL NUMBER
Maxi II	**System**	**GC-1324**
Mini III	**System**	**GC-1265**
MX	**System**	**GC-1230**
MX II	**System**	**GC-1266**
MH	**System**	**GC-1239**
MH II	**System**	**GC-1267**

Contact your local authorized **Glas-Craft** distributor for more information on these and other manuals available from **Glas-Craft**.

PARTS & ILLUSTRATIONS

Cleaning Drill Chart

ROUND MIXING MODULE	FLAT MIXING MODULE		MIXING CHAMBER NOZZLE CLEANING DRILLS	
23722-00	23723-00		14963-22	.011" / .3 MM
23724-00	23725-00		14963-23	.026" / .7 MM
DRILL PIN VISE 17672-00				

Service & Repair Parts Kits

23737-00 ROUND SPRAY **23740-00** FLUID KIT

23736-00 FLAT SPRAY **23741-00** AIR KIT

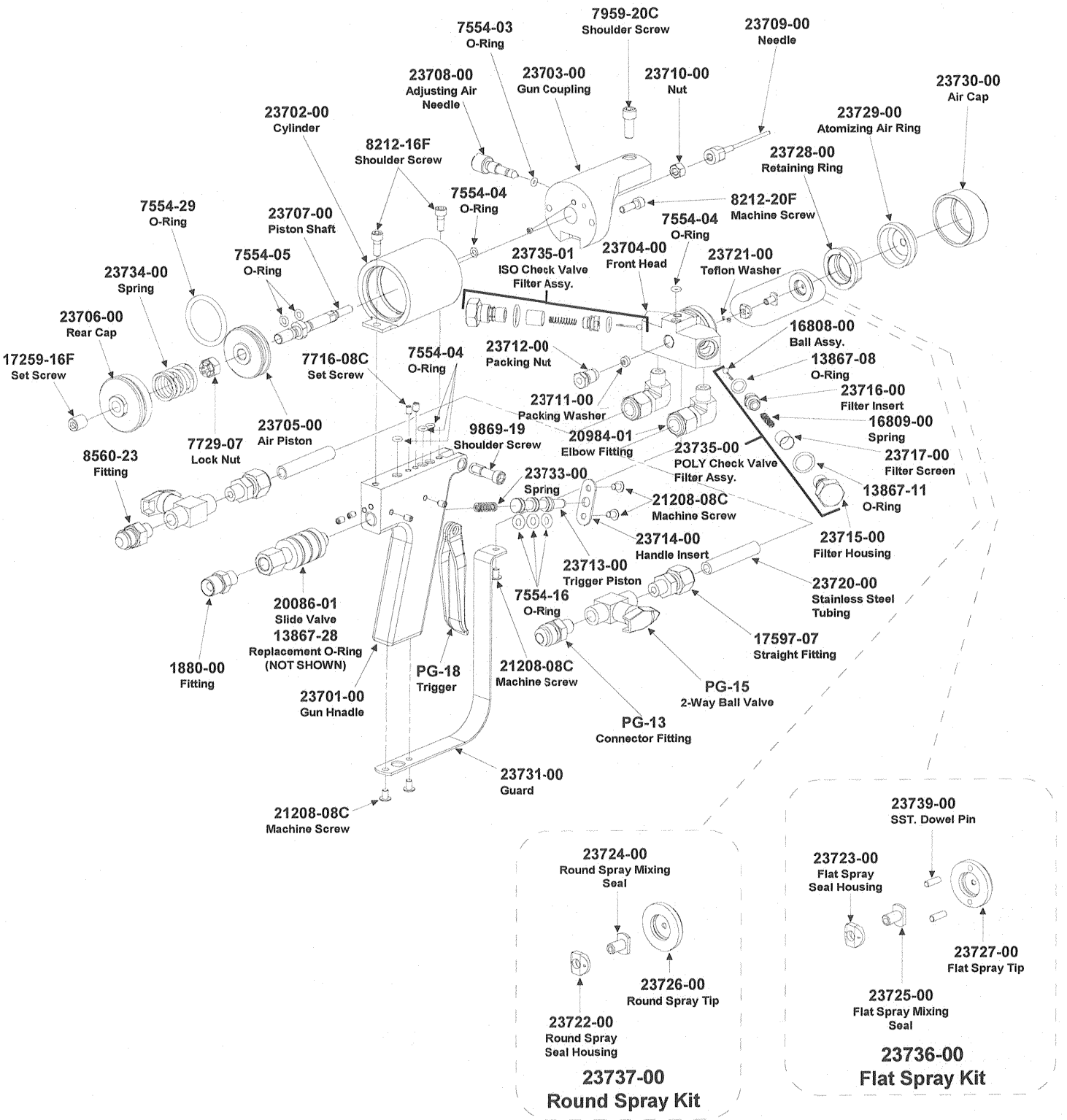
23737-00 ROUND SPRAY		
23724-00	Mixing Seal	1 ea
23722-00	Housing Seal	1 ea
23726-00	Spray Tip	1 ea

23736-00 FLAT SPRAY		
23725-00	Mixing Seal	1 ea
23723-00	Housing Seal	1 ea
23727-00	Spray Tip	1 ea
23739-00	Dowel Pins	2 ea

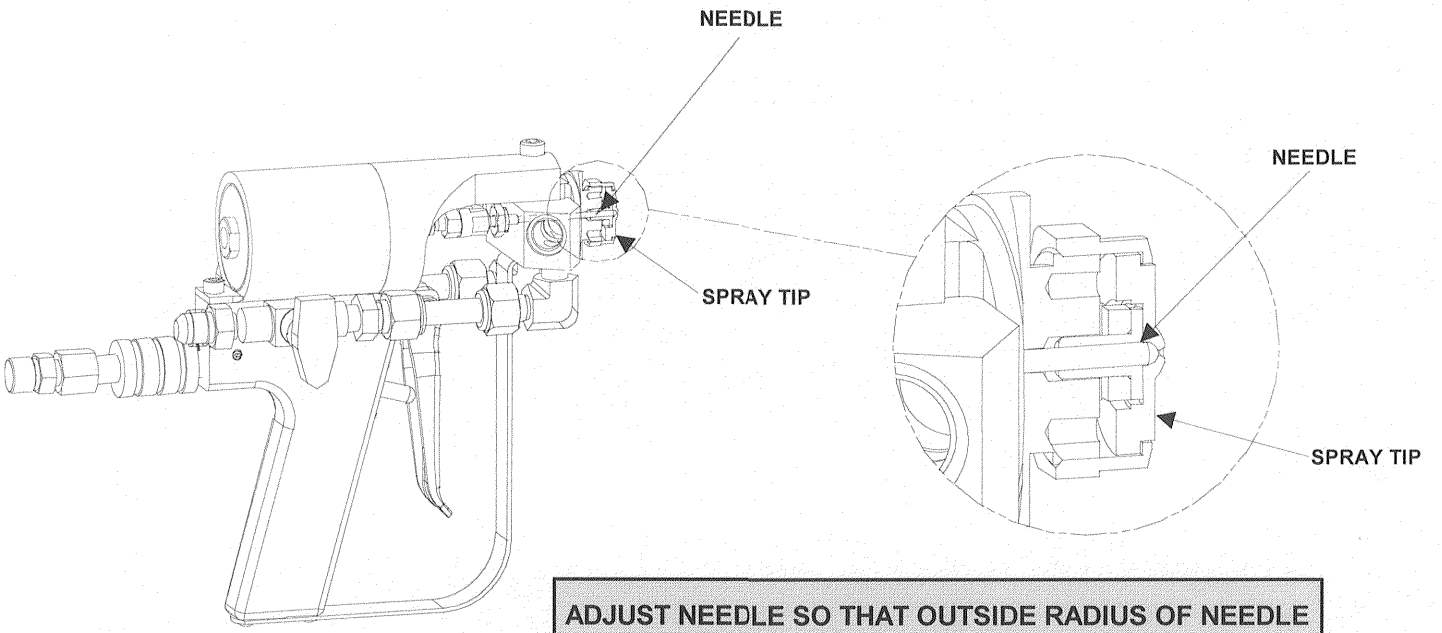
23740-00 FLUID KIT		
23721-00	Teflon Washer	2 ea
16808-00	Check Ball Assy.	2 ea
16809-00	Spring	2 ea
13867-08	EPR O-Ring	2 ea
13867-11	EPR O-Ring	2 ea
23717-00	Filter Screen	2 ea
23711-00	Packing Washer	1 ea

23741-00 AIR KIT		
7554-04	O-Ring	5 ea
7554-03	O-Ring	1 ea
7554-05	O-Ring	2 ea
7554-29	O-Ring	1 ea
7554-16	O-Ring	3 ea
13867-28	O-Ring	2 ea

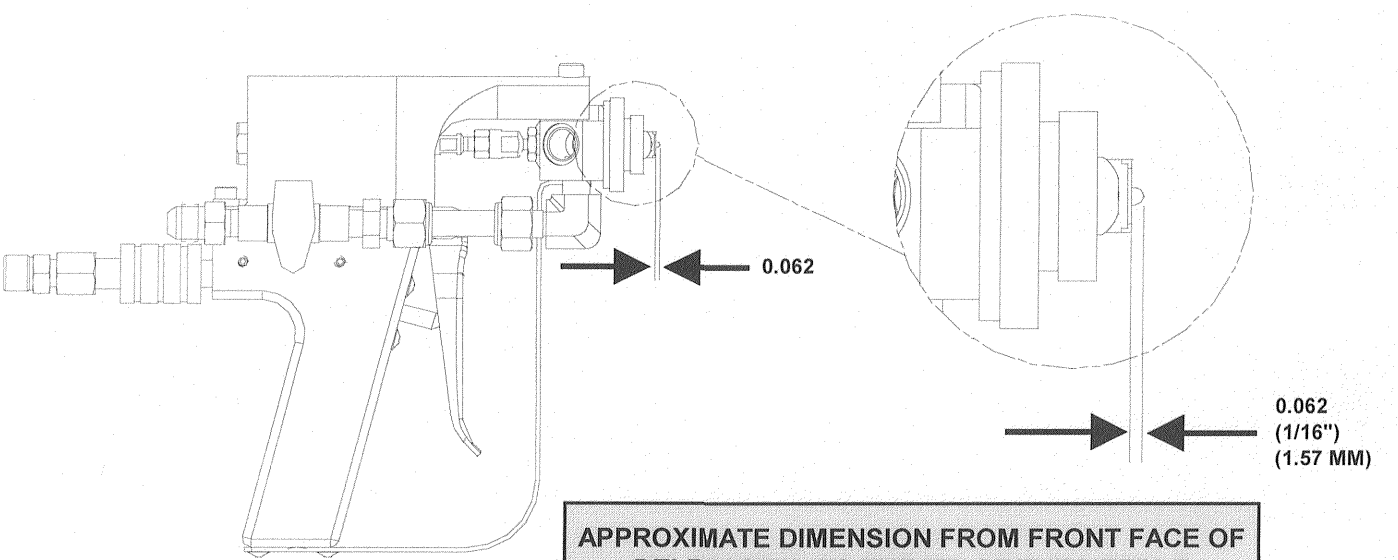
23700 LS GUN ASSEMBLY



NEEDLE ADJUSTMENT



ADJUST NEEDLE SO THAT OUTSIDE RADIUS OF NEEDLE TOUCHES INSIDE RADIUS OF THE SPRAY TIP.



APPROXIMATE DIMENSION FROM FRONT FACE OF DELRIN SEAL TO THE TIP OF THE NEEDLE

MIXING MODULE ASSEMBLY

AT END OF DAY, PUSH DELRIN SEAL OUT OF SEAL HOUSING ENOUGH TO CLEAN HOLES AS SHOWN. AFTER HOLES ARE FREE OF MATERIAL, PUSH DELRIN SEAL BACK INTO SEAL HOUSING.

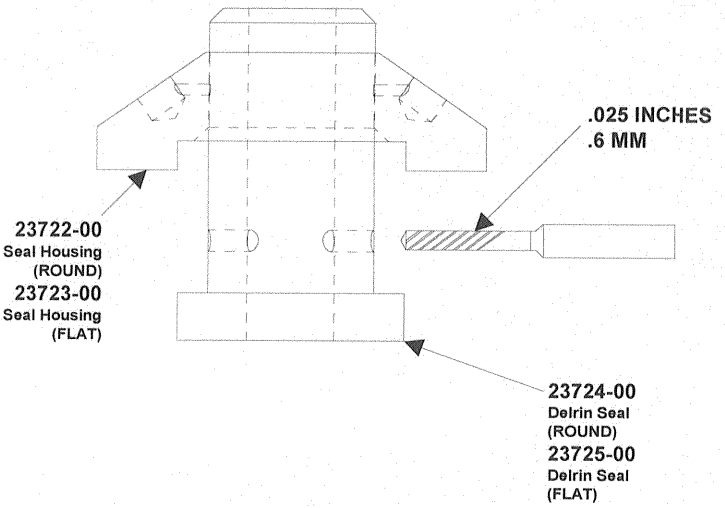
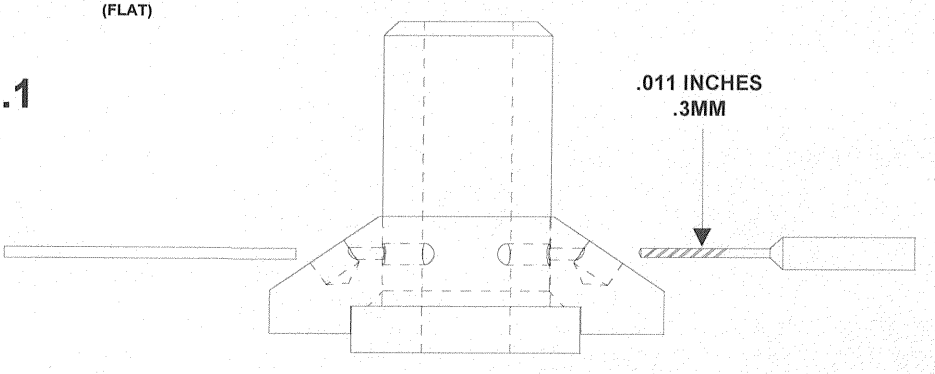
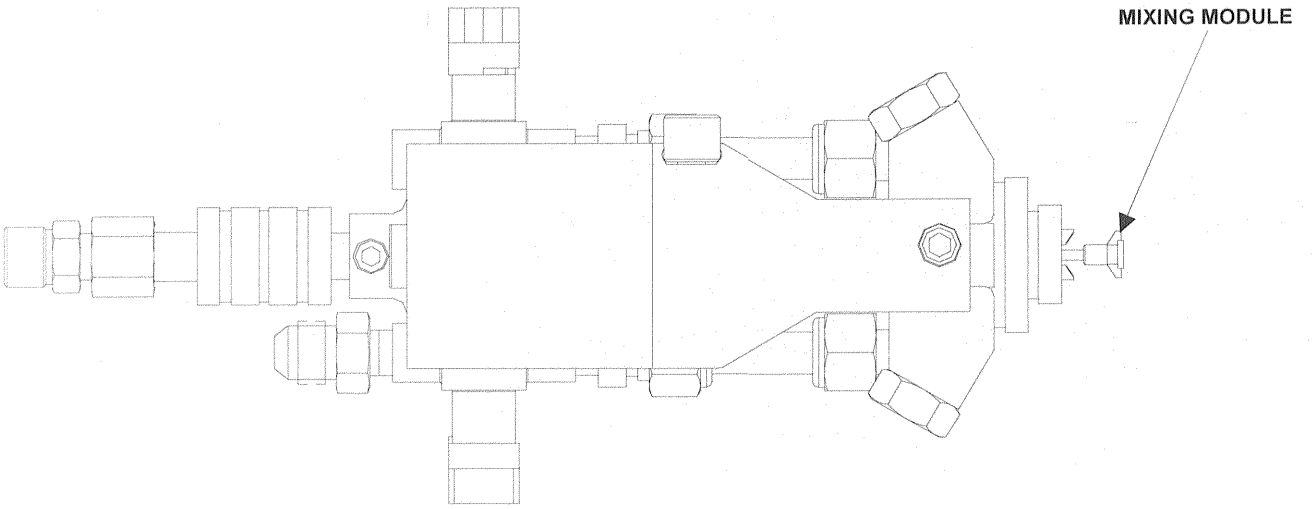


FIG.1



IF THE MIXING MODULE ASSEMBLY GETS CLOGGED WHILE SPRAYING, USE A DRILL BIT OR THIN WIRE TO CLEAN ORFICES AS SHOWN.

TRIGGER MODULE



1. PLACE MIXING MODULE ON END OF NEEDLE.
2. PULL TRIGGER BACK TO ALIGN MIXING MODULE TO FRONT HEAD.
3. PLACE SPRAY TIP OVER MIXING MODULE AND TIGHTEN THE RETAINING RING TO 100 IN. LBS. (17,860 GRAMS/CM).
4. CAUTION, DO NOT EXCEED 140 IN. LBS. ON RETAINING NUT DUE TO THE POSSIBILITY OF DAMAGE TO THE SPRAY TIP.

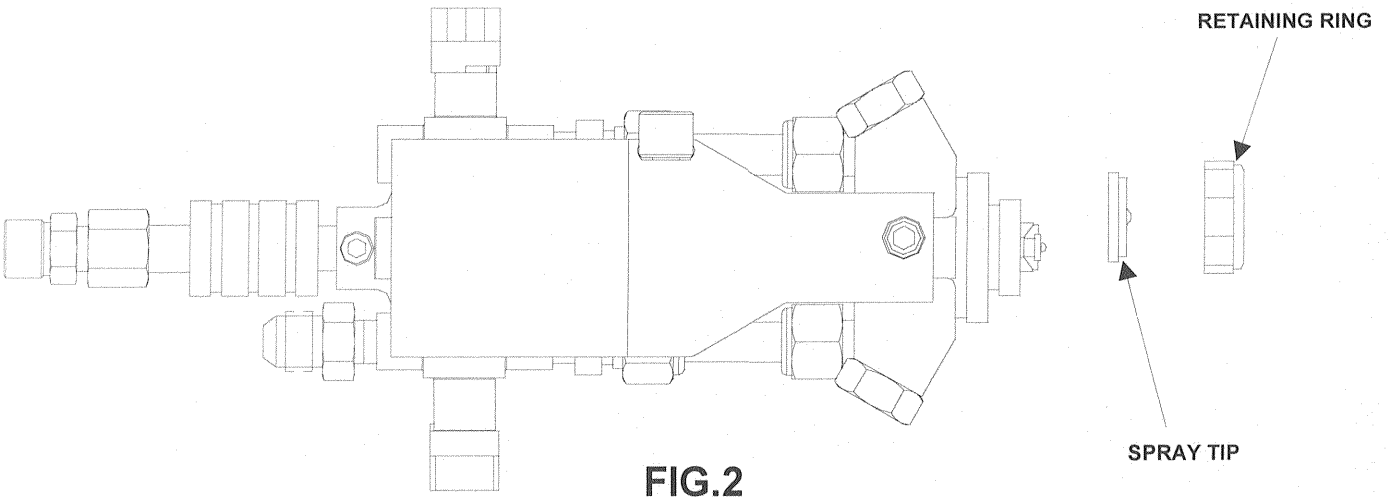
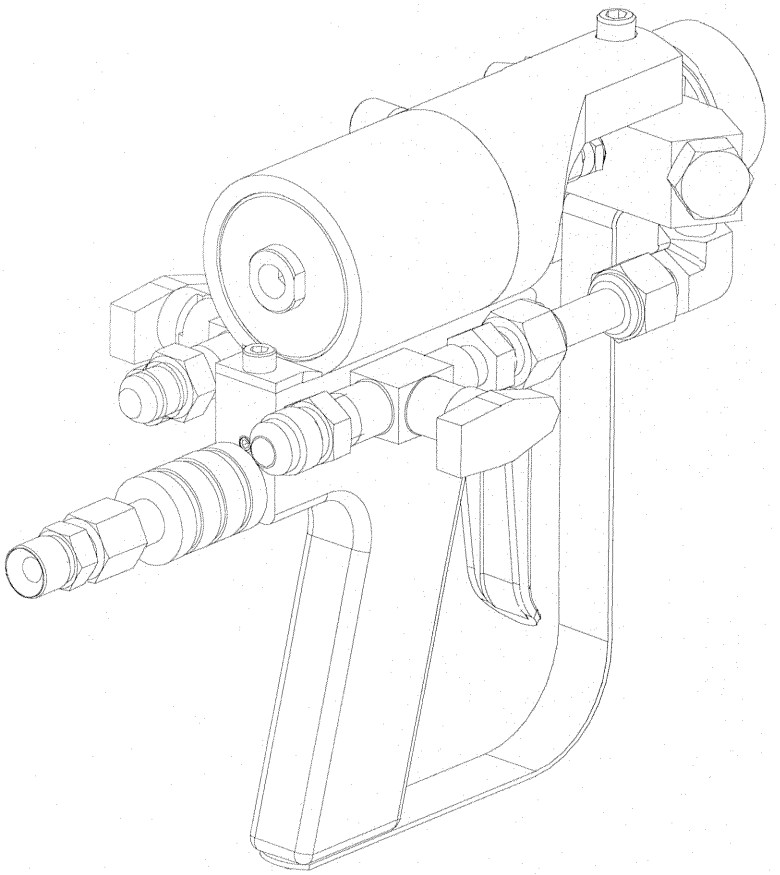


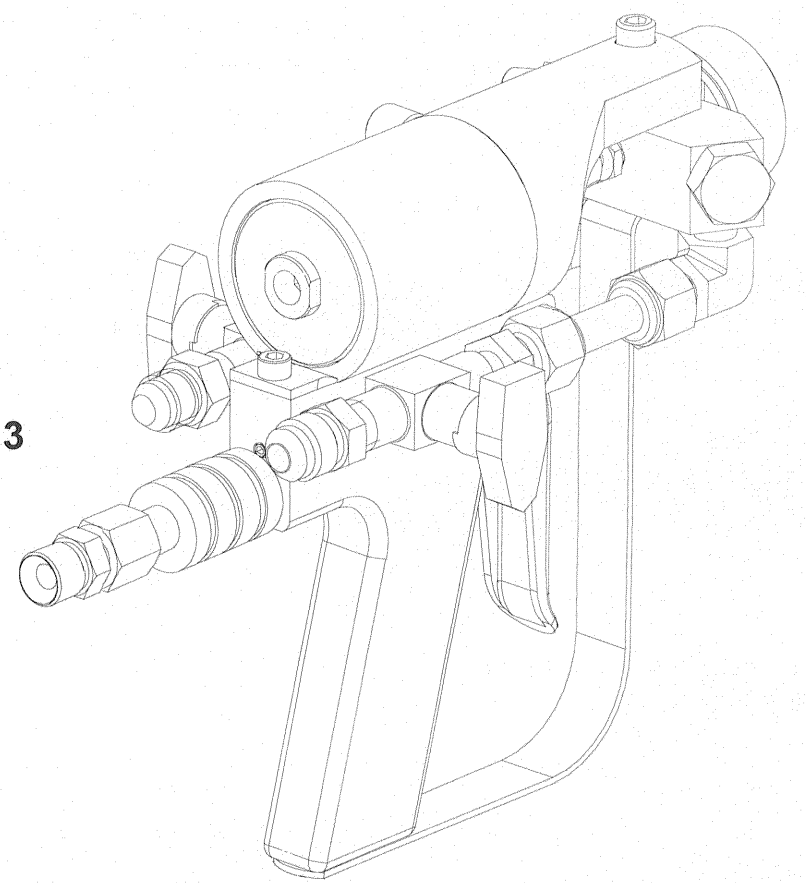
FIG.2

BALL VALVES



BALL VALVES ON

FIG.3



BALL VALVES OFF

AIR NEEDLE

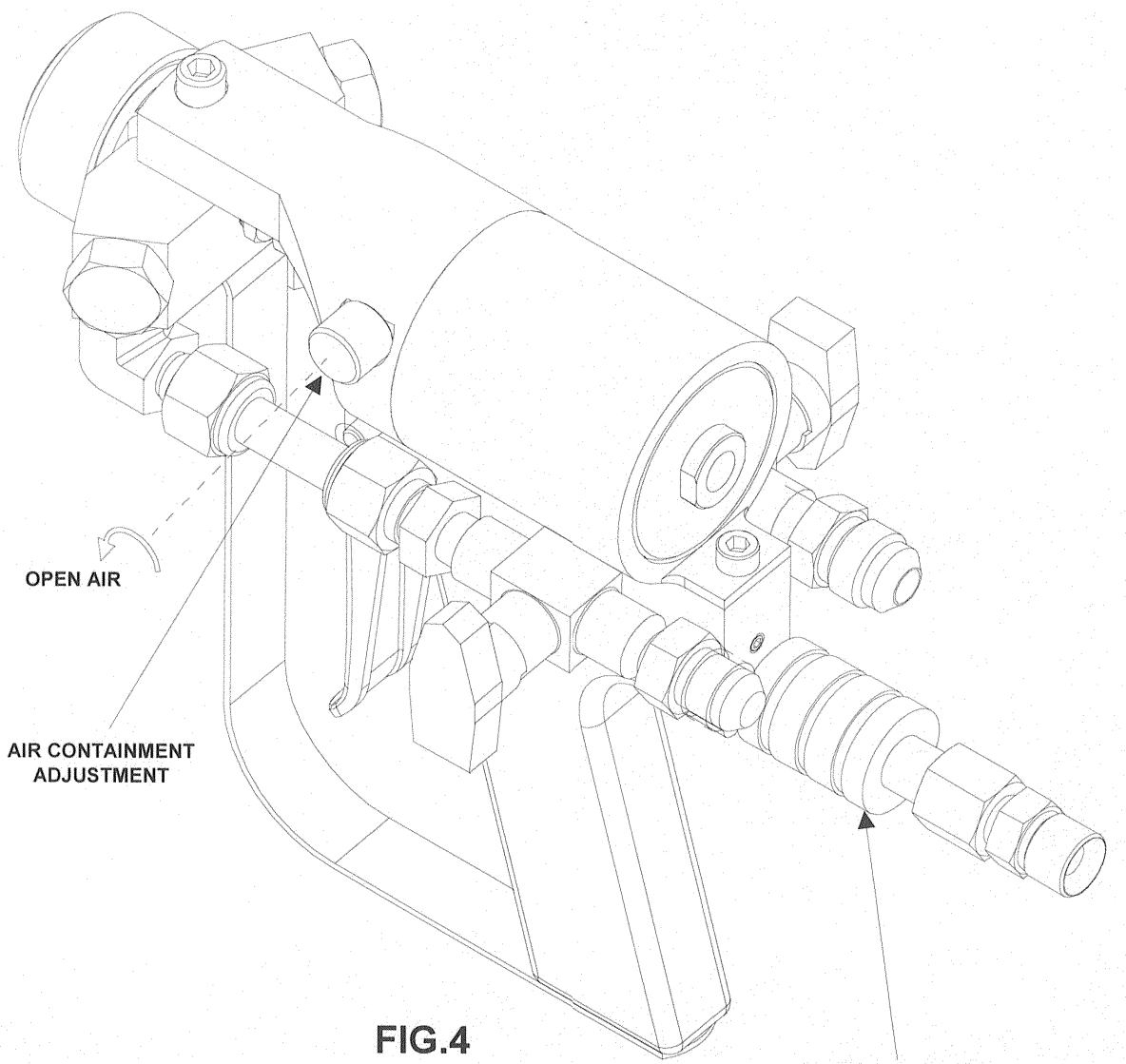
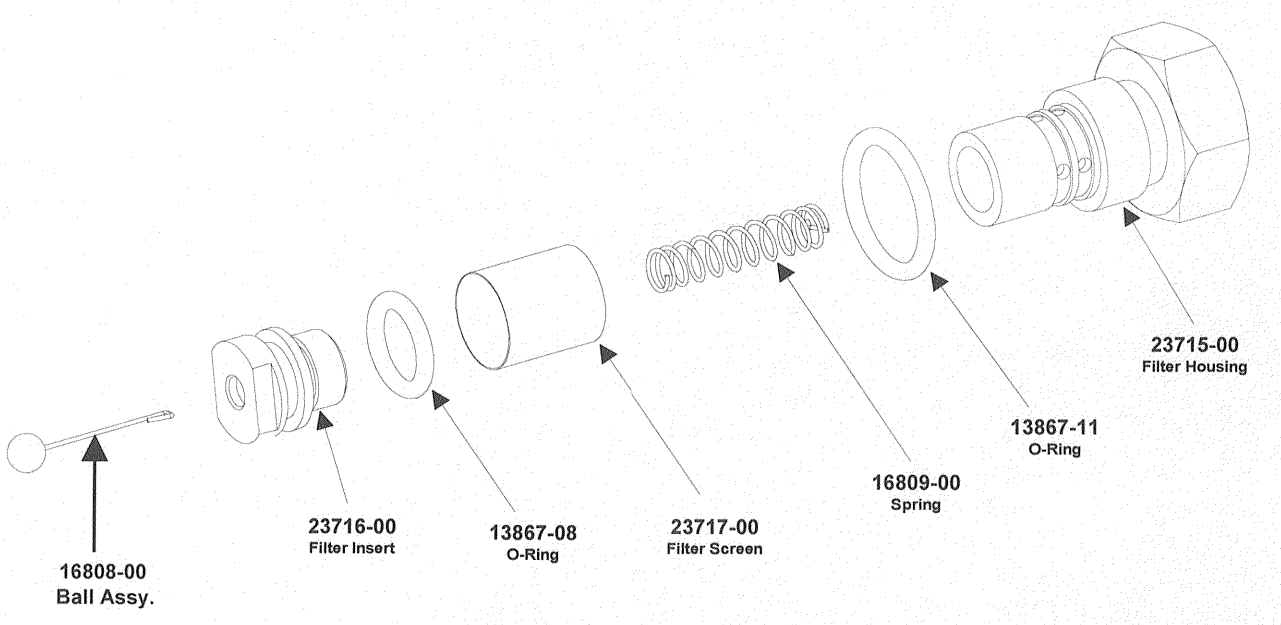


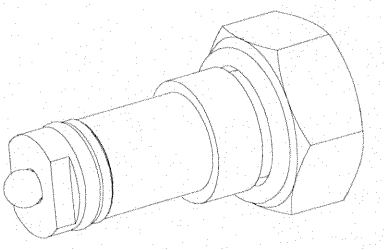
FIG.4

23735 CHECK VALVE ASSEMBLY
23735-00 POLY 23735-01 ISO



EXPLODED CHECK VALVE ASSEMBLY

FIG.5



ASSEMBLED CHECK VALVE ASSEMBLY

SAFETY

Safe Handling And Use Of Urethane Foam Equipment

Introduction

Any tool, if used improperly, can be dangerous. Safety is ultimately the responsibility of those using the tool. In like manner, safe operation of polyester processes is the responsibility of those who use such processes and those who operate the equipment. This manual outlines procedures to be followed in conducting polyester operations safely.

All personnel involved in dispensing operations should read and understand this manual. It is most important that equipment operators, maintenance and supervisory personnel understand the requirements for safe operation.

This manual cannot answer every circumstance; each user should examine his own operation, develop his own safety program and be assured that his equipment operators follow correct procedures. Glas-Craft hopes that this manual is helpful to the user and recommends that the precautions in this manual be included in any such program.

Urethane foam systems are comprised of several different chemical compounds, some of which may be hazardous if improperly used.

CAUTION

Particular caution must be taken with respect to the vapors released during the use of urethane foam systems.

Isocyanate compounds are used in urethane foaming operations. The medical history of persons who may be exposed to such isocyanates should be examined. It is recommended that individuals with a history of chronic respiratory ailments should avoid exposure to all isocyanates.

In addition to the manual, Glas-Craft recommends that the user consult the regulations established under the Occupational Safety & Health Act (OSHA), particularly the following sections:

1910.94 Pertaining to ventilation.
1910.106 Pertaining to flammable liquids.
1910.107 Pertaining to spray finishing operations, particularly Paragraph (m) Organic Peroxides and Dual Component Coatings.

Local codes and authorities also have standards to be followed in the operation of your spraying equipment. Chemical manufacturer's recommendations should be obtained and considered. Your insurance carrier will be helpful in answering questions that arise in your development of safe procedures.

Personnel Safety Equipment

Glas-Craft recommends the following Personal Safety Equipment for conducting safe operations of the Polyester Systems:

EYE PROTECTION | HEARING PROTECTION | BREATHING PROTECTION

Glas-Craft recommends that the user consult the state and local regulations established for all Safety equipment listed.

Operating Safely

In operating urethane foam equipment safely, user should make every effort to:

1. Handle chemicals safely.
2. Provide adequate ventilation.
3. Provide adequate safety equipment (gloves, respirators, safety glasses, protective clothing, etc.) for operators and all others working in areas where they may be exposed to the chemicals or their vapors.
4. Avoid operating equipment which has given any indication of malfunction.
5. Become fully acquainted with the equipment and chemicals used.

Handling Chemicals Safely

Storage of polyisocyanates, diamines, and organic solvents should be isolated and restricted to specially constructed storage rooms. Store chemicals in original containers and according to manufacturer's recommendations listed on the container. Maximum ambient temperatures to which such chemicals should be exposed are specified by the manufacturer and **MUST NOT** be exceeded either in the storage area or in the spraying or pouring area.

To avoid moisture contamination, do not open containers until ready for use. After use, the remaining material should be re-sealed in the original container and stored in areas away from moisture.

During clean-up of spilled isocyanate-component, respirators, gloves and eye protection must be worn. Isocyanates which have been spilled can be controlled by covering them with dry saw dust and/or other absorbent inert materials. Care should be taken to avoid skin contact. The absorbent material and the absorbed isocyanate should be collected promptly, placed in an open-top container, and treated with dilute solutions of ammoniom hydroxide and/or alcohol. While being treated in this manner, the material should be in an adequately ventilated area. Clothing on which any material has been spilled should be removed immediately, and cleaned before being worn again.

Clean-Up Solvents

WARNING

A hazardous situation may be present in your pressurized fluid system!

Halogenated Hydrocarbon Solvents can cause an explosion when used with aluminum or galvanized components in a closed (pressurized) fluid system (pumps, heaters, filters, valves, spray guns, tanks, etc.).

The explosion could cause serious injury, death and/or substantial property damage.

Cleaning agents, coatings, paints, etc. may contain Halogenated Hydrocarbon Solvents.

Some Glas-Craft spray equipment includes aluminum or galvanized components and will be affected by Halogenated Hydrocarbon Solvents.

A. There are three key elements to the Halogenated Hydrocarbon (HHC) solvent hazard.

1. **The presence of HHC solvents.** 1,1,1-Trichloroethane and Methylene Chloride are the most common of these solvents. However, other HHC solvents are suspect if used; either as part of paint or adhesives formulation, or for clean-up or flushing.
2. **Aluminum or Galvanized Parts.** Most handling equipment contains these elements. In contact with these metals, HHC solvents could generate a corrosive reaction of a catalytic nature.
3. **Equipment capable of withstanding pressure.** When HHC solvents contact aluminum or galvanized parts inside a closed container, such as a pump, spray gun, or fluid handling system, the chemical reaction can, over time, result in a build-up of heat and pressure, which can reach explosive proportions.

When all three elements are present, the result can be an extremely violent explosion. The reaction can be sustained with very little aluminum or galvanized metal: ***any amount of aluminum is too much.***

B. The reaction is unpredictable. Prior use of an HHC solvent without incident (corrosion or explosion) does ***NOT*** mean that such use is safe. These solvents can be dangerous alone (as a clean-up or flushing agent) or when used as a component of a coating material. There is no known inhibitor that is effective under all circumstances. Furthermore, the mixing of HHC solvents with other materials or solvents, such as MEK, alcohol, and toluene, may render the inhibitors ineffective.

C. The use of reclaimed solvents is particularly hazardous. Reclaimers may not add any inhibitors, or may add incorrect amounts of inhibitors, or may add improper types of inhibitors. Also, the possible presence of water in reclaimed solvents could feed the reaction.

D. Anodized or other oxide coatings cannot be relied upon to prevent the explosive reaction. Such coatings can be worn, cracked, scratched, or too thin to prevent contact. There is no known way to make oxide coatings or to employ aluminum alloys, which will safely prevent the chemical reaction under all circumstances.

E. Several solvent suppliers have recently begun promoting HHC solvents for use in coating systems. The increasing use of HHC solvents is increasing the risk. Because of their exemption from many State Implementation Plans as Volatile Organic Compounds (VOC's), their low flammability hazard, and their not being classified as toxic or carcinogenic substances, HHC solvents are very desirable in many respects.

WARNING

If you are now using Halogenated Hydrocarbon solvents in pressurized fluid systems having aluminum or galvanized wetted parts,
IMMEDIATELY TAKE THE FOLLOWING STEPS:

- ***> Empty system, shut-off, completely depressurize in accordance with equipment service instructions.***
- ***> Remove equipment from service, disassemble in accordance with equipment servicing instructions.***
- ***> Inspect all parts for corrosion and/or wear. Replace any damaged parts.***
- ***> Thoroughly clean all parts of the equipment with a non-halogenated solvent and reassemble in accordance with equipment servicing instructions.***
- ***> Flush equipment with non-halogenated solvent.***
- ***> Do NOT reuse equipment with HHC solvents or with materials containing such solvents.***
- ***> Material suppliers and/or container labels should be consulted to ensure that the solvents used are compatible with your equipment.***

NOTE

Glas-Craft is aware of NO stabilizers available to prevent Halogenated Hydrocarbon solvents from reaction under all conditions with aluminum components in a closed fluid system.

TAKE IMMEDIATE ACTION...
Halogenated Hydrocarbon solvents are dangerous when used with aluminum components in a closed fluid system.

F. Consult your material supplier to determine whether your solvent or coating contains Halogenated Hydrocarbon Solvents.

G. Glas-Craft recommends that you contact your solvent supplier regarding the best non-flammable clean-up solvent with the heat toxicity for your application.

H. If, however, you find it necessary to use flammable solvents, they must be kept in approved, electrically grounded containers.

I. Bulk solvent should be stored in a well-ventilated, separate building, 50 feet away from your main plant.

J. You should allow only enough solvent for one day's use in your laminating area.

K. "**NO SMOKING**" signs must be posted and observed in all areas of storage or where solvents and other flammable materials are used.

L. Adequate ventilation (as covered in OSHA Section 1910.94 and NFPA No. 91) is important wherever solvents are stored or used, to minimize, confine and exhaust the solvent vapors.

M. Solvents should be handled in accordance with OSHA Section 1910.106 and 1910.107.

Toxicity of Chemicals

A. Glas-Craft recommends that you consult OSHA Sections 1910.94, 1910.106, 1910.107 and NFPA No. 33, Chapter 14, and NFPA No. 91.

B. Contact your chemical supplier(s) and determine the toxicity of the various chemicals used, as well as the best methods to prevent injury, irritation and danger to personnel.

C. Also determine the best methods of first aid treatment for each chemical used in your plant.

First Aid

If chemicals containing isocyanates are splashed on the skin, they can produce ill effects. Steps to counteract such effects should be started immediately.

1. Apply Tincture of Green Soap, full strength, to the contaminated area. If Tincture of Green Soap is not immediately available, wash the exposed area repeatedly with soap and water. Soap and water is not as desirable as using Tincture of Green Soap because many isocyanate components are not easily dissolved in water. In addition, soap and water does not form a barrier to the isocyanates.
2. After approximately two to four minutes, wash off the Tincture of Green Soap with water. If there is still an indication of isocyanate present, repeat the application. If the isocyanate contamination is on the facial area, care must be taken to avoid getting the Tincture of Green Soap in the eyes.
3. If the person develops breathing difficulties, oxygen should be administered. Quite often the exposed person will experience residual effects such as coughing spells. **CONTACT PHYSICIAN IMMEDIATELY.**

WARNING

Contact a doctor immediately in the event of an injury and give him the information you have collected. If your information includes first aid instructions, administer first aid immediately while you are contacting the doctor.

4. If a person accidentally swallows isocyanates, large amounts of water should be swallowed immediately. Vomiting should then be induced by patient sticking his finger down his throat, or by swallowing large quantities of warm salt water or warm soapy water. After vomiting, more water should be taken to dilute isocyanate further. **CONTACT PHYSICIAN IMMEDIATELY.**

Ventilation

WARNING

Hazardous concentrations of some chemical vapors exist before they can be smelled. Chemical component suppliers should be contacted to determine at what concentrations the vapors of the chemicals they supply become dangerous, and the procedures and equipment needed to detect such dangerous concentrations. Such equipment should be obtained.

Adequate ventilation must be provided in any area where foam chemicals are sprayed or poured, and wherever the material containers are opened.

In industrial applications, foaming operations should be restricted to specific areas, and proper ventilation should be provided in these areas to prevent chemical vapors from spreading. Spray foaming operations MUST be restricted to a spray booth where a minimum exhaust of 100 feet per minute at the face of the booth is provided. Special care should be taken to prevent unsuspecting personnel both inside and outside of the plant from being exposed to chemical vapors. The chemical vapors should be exhausted to atmosphere in such a manner and at a sufficiently low concentration that personnel outside the plant are not exposed to dangerous concentrations of chemical vapors. Refer to OSHA Standards, sub-part G, 1910.107 and particularly sub-section (m) for Federal standards. State and local authorities may have applicable statutes or regulations concerning ventilation.

n contractor applications (for example, at a construction site, inside building or other enclosed space), the forced ventilation normally provided is likely to be inadequate. These applications, therefore, usually REQUIRE the use of forced, fresh air respirators for all persons in the areas where foaming operations are conducted or where the chemical vapors are likely to spread.

In industrial and contractor applications, it is advisable to run frequent tests to determine the exact concentration of isocyanate vapor in the air. Industrial equipment is available for making such determinations. Your chemical supplier can recommend such equipment and procedures.

Proper Safety Equipment

All persons spraying or working is areas where forced air ventilation is not adequate to remove isocyanate vapors from the air MUST use an approved (U.S. Bureau of Mines) fresh air supplied respirator.

Respirators should be regularly inspected, cleaned and disinfected according to good practices. Records must be kept of the inspections. The user MUST have a medical clearance indicating that he can safely use a respirator.

Respirators must fit securely; beards prevent a tight seal around the face. Eye glasses have to be given special attention and contact lenses are prohibited.

Safety goggles, gloves and other protective devices are suggested for operators of foaming equipment. Refer to OSHA Standards, sub-part 1, 1910.132, 1910.133 and 1910.134 for Federal standards.

IF YOU HAVE ANY QUESTIONS REGARDING THE ABOVE PRECAUTIONS OR ANY SERVICE OR OPERATION PROCEDURES, CALL YOUR **GLAS-CRAFT** DISTRIBUTOR OR **GLAS-CRAFT, INC.**

Notice

All statements, information and data given herein are believed to be accurate and reliable but are presented without guaranty, warranty or responsibility of any kind expressed or implied. The user should not assume that all safety measures are indicated or that other measures are not required.

Glas-Craft, Inc.

5845 WEST 82nd STREET, SUITE 102
INDIANAPOLIS, INDIANA 46278 U.S.A.

PHONE (317) 875-5592 **FAX (317) 875-5456**

APRIL 1996

INSTALLATION

NOTE
Refer to specific system user manual for complete system installation.

Refer to 23700 Gun illustration during instructions.

Assembly Instructions

1. Connect Whip Hose, P/N 18006-00 to Hose assembly, P/N 19524-00 using Hose Union assembly, P/N 19434-00 and Air Line Fitting, P/N 18101-01. (see Fig. 1)

WARNING
After connecting, wrap Hose Union assembly and Air Line fitting with electrical tape to prevent electrical arcing or short circuiting.

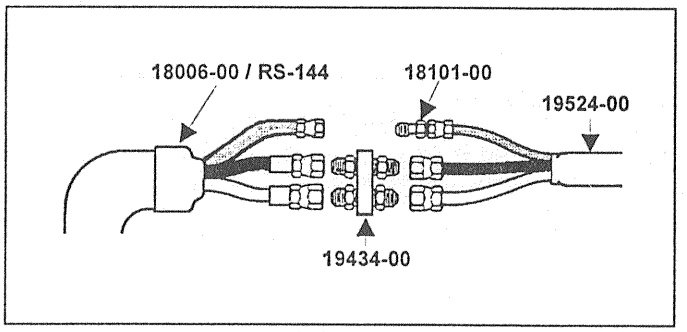


Fig. 1

2. The Whip Hose assembly should now be attached to the Gun. The swivel fittings on the Whip Hose assembly are sized differently and will attach only one way. (Match like sized fittings.) Also connect the Air Hose assembly to the Gun at this time. (see Fig. 2)

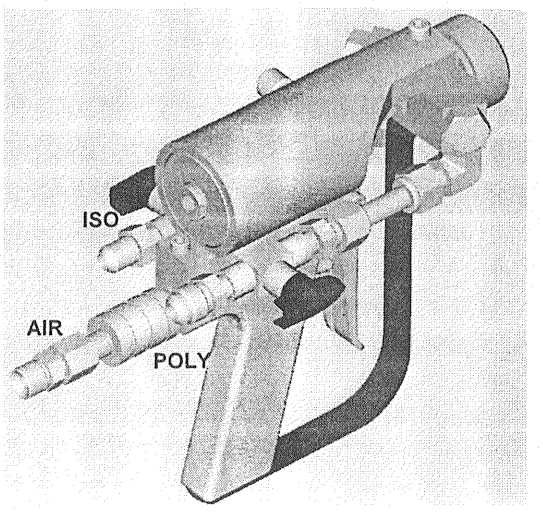


Fig. 2

3. Fluid Hose connections between Console and Gun should now be complete. The following checked before proceeding:

A. All fittings tight from Isolation Block to Gun.

B. All Union Fittings and Air Line Unions used between Hose sections wrapped individually with several layers of electrical tape to prevent short circuiting of Hose.

C. Air Line union Fitting and Hose Union assembly used between last Hose section and Whip Hose wrapped individually with several layers of electrical tape to prevent short circuiting of Hose.

4. The use of the (RS-144) whip hose will reduce the amount of unheated material and may be used instead of the standard (18006-00) whip hose.

5. If this gun is being installed on a Maxi 2, Micro2, MX, LX, or Super Maxi the use of a whip hose is not required.

OPERATION

NOTE

Refer to specific system user manual for complete system installation.

Preoperation Check List

A. Check that all fittings are securely tight

B. Air Regulator turned to OFF position.

WARNING

Do not place any part of the body in the path of the material spray.
Do not point the gun at or near other personnel.
Do not look into the Mixing Chamber orifice at any time.
Because of the hazardous materials used in this equipment, it is recommended that the operator use an air mask, goggles, protective clothing, and other safety equipment as prescribed by current regulations, recommendations of the chemical suppliers, and the laws in the area where the equipment is being used.

LS Gun

The LS gun is used to spray two component Polyurethane, Polyurea, or hybrid Polyurethane, Polyurea blends. The design of this gun allows very low material output and very low thickness of material being applied. Thickness of material being applied depends on the viscosity of the material, but typically can obtain .005 to .011 inches or .12 to .28 mm. The gun features an air-assisted full-finger trigger and a mechanical purge cleaning system that requires no solvent.

Operating Requirements

- ❑ **.5CFM at 90- 125 PSI**
- ❑ **MAXIMUM Static Fluid Pressure - 3000 PSI**

WARNING

The Glas-Craft LS gun is designed and manufactured to operate at a maximum static fluid pressure not to exceed 3000 psi. When attached to a Glas-Craft proportioning system, this pressure will not be exceeded. However, if the Glas-Craft Probler gun is installed on any other manufacturer's of self-designed piece of equipment, great care must be taken to ensure that the maximum static fluid pressure not be exceeded.

Gun Operation

The trigger actuates a small valve in the gun handle that controls the flow of air into the piston assembly. When the trigger is pulled, air flows thru the valve to the front of the piston. Air pressure forces the piston toward the rear of the gun, which moves the needle back, passed the two orifices located in the mixing module. This action allows the materials to flow thru the shut-off valves to the filter/check valve assemblies then into the mixing module and finally into the mixing chamber. If the round-spray mixing module is being used, the mixing material will enter the mixing area offset, but on the same plane and will generate a swirling motion, which will provide a conical (round) spray pattern. If the flat-spray mixing module is being used, the mixing material will enter the mixing area directly opposite from each other and will provide a flat spray pattern as long as the flat-spray tip is installed.

NOTE

The proper alignment of the orifices is determined by the setting of the Set Screw, P/N 17259-16F, located at the rear of the Piston assembly. This Set Screw determines the length of travel of the Air Piston and has been preset at the factory and should not require adjustment.

NOTE

The Material shut-off valves should be turned in the off position when not in use.

NOTE

Both Material Shut-Off Valves must be FULLY OPEN during dispensing and must be FULLY CLOSED during service or extended shut-down periods.

WARNING

BOTH MATERIAL SHUT-OFF VALVES, P/N PG-15, MUST BE TURNED TO THEIR "OFF" POSITION AND MATERIAL PRESSURE RELIEVED TO ZERO BEFORE DISASSEMBLY OF ANY COMPONENTS LOCATED IN THE FRONT HEAD. See Figure 3.

Initial Start-Up Procedure

With all material and air lines connected and power cable attached, the system is now ready for start-up.

1. Remove the Gun from the hoses by loosening and removing the nut and ferrule, P/N 17597-01 forward of the PG-15.

2. Place separate clean containers under each individual Ball Valve. With only the transfer pumps operational, open each ball valve simultaneously to allow trapped air to escape the hoses and material to flow into the containers until all air is purged from the material system. Close ball valves

Fig. 3

3. Dispose of waste material properly and in accordance with chemical suppliers instructions and local, state and federal regulations.

4. Clean nuts and ferrules before reassembly. Make sure both fittings are tight and secure.

5. Slide Air Valve forward and turn Ball Valves on. (See figure3.)

6. The system is now ready for operation.

NOTE

Remember to dispense one to two gallons of material to clear the system of grease and plasticizer that was used during factory testing.

WARNING

Do not place any part of the body in the path of the material spray.
Do not point the gun at or near other personnel.
Do not look into the Mixing Chamber orifice at any time.
Because of the hazardous materials used in this equipment, it is recommended that the operator use an air mask, goggles, protective clothing, and other safety equipment as prescribed by current regulations, recommendations of the chemical suppliers, and the laws in the area where the equipment is being used.

Spray Technique

1. Viscosity of the material being sprayed directly correlates with thickness of the end product. In other words the thinner the material the thinner the material thickness.

2. The thicker the viscosity of the material is, the more heat will be required to achieve a proper spray pattern and thickness of material.

3. We can also adjust individual material heat to adjust unbalanced pressures. For example if one material has a viscosity of 1200 and the other material has a viscosity of 200, the material pressures between the two will not be exact, but we can adjust the higher temperature to the more viscous material and less heat to the less viscous material to achieve a more balanced pressure between the two.

4. Pressure of the material being sprayed directly correlates with the shape of the spray pattern and can affect the thickness of the part being sprayed.

5. Typically the higher the material-pressure the wider the pattern. The wider the pattern the more atomized the material, resulting in less mil thickness.

6. Taking these two factors into consideration and consulting with the material manufacture we should be able start with a preset heat setting and material pressure setting. (Further adjustments to both pressure and heat may be required).

7. With the air containment needle valve completely closed, purge the cold material from the unheated section of hose.

8. Within a few seconds the spray-pattern will begin to open-up. Once the pattern opens to its optimal spray-pattern, open the air containment needle valve to achieve the proper atomization and pattern width.

9. The spraying of a waxed test panel is recommended not only for material thickness testing, but also for testing material quality.

Daily Shut-Down Procedure

WARNING

Before attempting to perform any maintenance on this Gun - ***Relieve All Fluid and Air Pressures!***
To relieve fluid and air pressures:
1. Turn OFF all air supplies at System except Gun Trigger Air.
2. Trigger Gun until all fluid pressures have been relieved.
3. Turn OFF Gun Trigger Air at System.

1. Remove air pressure from main proportional pumps and transfer pumps.

2. Pull trigger until all material pressure is removed.

3. Turn Ball valves into the OFF position.

4. Remove retaining cap (23730-00) and air cap (23729-00) remove any over spray with solvent.

5. Remove retaining nut (23728-00) and spray tip (23726-00 Round) (23727-00 Flat) clean with solvent.

6. Rotate air containment needle clockwise until it stops. (This action turns off the air containment).

7. Pull main trigger back and release. The mixing module will be pushed forward (23724-00 23722-00 Round) (23725-00 23723-00 Flat)

8. Remove mixing module from needle. Clean side ports with .011-inch drill. (see fig. 1)

9. Push down on seal housing (23722-00 Round) (23723-00 Flat) to expose holes. Clean side ports with .025-inch drill. (See fig 1)

10. Clean front face and needle with solvent. Remove any build-up on needle surface and check needle tip for any wear or burrs.

11. Push seal housing (23722-00 Round) (23723-00 Flat) back up on mixing seal (23724-00 Round 23723-00 Flat.

12. Place mixing module onto the end of the needle (23709-00) and pull main trigger back. Replace spray-tip (23726-00 Round 23727-00 Flat) and retaining nut (23728-00 and tighten to 100 in. lbs. Release main trigger. (see fig 2)

13. Replace air cap (23729-00) and retaining cap (23730-00).

Extended Shut-Down Procedure

This procedure should be performed when the system is to be stored for an extended period of time (i.e. winter shut-down, etc.).

1. Perform DAILY SHUT-DOWN PROCEDURE steps.

SERVICE

NOTE
Refer to specific system user manual for complete system installation.

Parts Replacement Procedure

WARNING
BOTH MATERIAL SHUT-OFF VALVES, P/N PG-15, MUST BE TURNED TO THEIR "OFF" POSITION AND MATERIAL PRESSURE RELIEVED TO ZERO BEFORE DISASSEMBLY OF ANY COMPONENTS LOCATED IN THE FRONT HEAD. See Figure 3.

1. Read each procedure entirely before beginning and refer to the illustration views as needed.

2. Flush and clean all chambers and passages as they become accessible.

3. Clean all parts before assembly.

4. Replace all O-Rings and Seals with new parts from the appropriate kit.

5. Inspect all parts for wear or damage and replace as required with new ***GENUINE Glas-Craft REPLACEMENT PARTS*** from your authorized Glas-Craft distributor.

6. Inspect all threads for wear or damage and replace as required.

7. Tighten all threaded parts securely, but not excessively, upon assembly.

8. Lightly lubricate all O-Rings and threads with lithium grease.

9. Check all springs for resilience. They should return quickly to their original (new) length.

Routine Care

WARNING
BOTH MATERIAL SHUT-OFF VALVES, P/N PG-15, MUST BE TURNED TO THEIR "OFF" POSITION AND MATERIAL PRESSURE RELIEVED TO ZERO BEFORE DISASSEMBLY OF ANY COMPONENTS LOCATED IN THE FRONT HEAD. See Figure 3.

It is recommended that the following service be performed on a daily basis.

1. Clean the Gun using a brush and an appropriate clean solvent.

2. Inspect Mixing Seals, (P/N 23724-00 Round), (23723-00 Flat), making certain they are clean and free of scratches, nicks or foreign material. Clean and replace as required.

3. Remove, clean or replace Filter Screen, P/N 23717-00. (See Fig 5.)

4. Maintain a reasonable stock level of "wear" items such as Seals and O-Rings. (see Service & Repair Parts Kits listed in Parts & Illustrations section)

LIMITED WARRANTY POLICY

GLAS-CRAFT, INC. ("Glas-Craft") warrants to the original Purchaser of Glas-Craft manufactured equipment and parts, that all Glas-Craft manufactured equipment and parts will conform to their published written specifications and be free of defects in workmanship and material for a period of one (1) year from the original date of installation. Glas-Craft makes no warranty to anyone other than the original Purchaser.

If any Glas-Craft manufactured part or equipment is found to be defective in workmanship or material within the one-year period from the date of installation, as determined solely by Glas-Craft, Glas-Craft, in its sole discretion, will either repair or replace the defective part or equipment at Glas-Craft's cost, including freight charges both ways, or credit or refund the purchase price for the defective equipment or part.

A warranty claim will be honored only when:

1. Glas-Craft has been informed, in writing, of any such defect in workmanship or material within ten (10) days after discovery by the original Purchaser;

2. An official of Glas-Craft has issued a return authorization number; and

3. The claimed defective equipment or part has been returned to Glas-Craft by the original Purchaser, freight prepaid (with proper return authorization number(s) attached), to: Glas-Craft, Inc., 5845 West 82nd Street, Suite 102, Indianapolis, IN 46278, U.S.A.

This warranty shall not apply to any equipment or parts that have been altered or repaired by anyone other than Glas-Craft or to defects or damage resulting from improper installation, misuse, negligence, accident, or use not specified by Glas-Craft. This warranty shall not apply to any equipment where any parts or components were replaced by any parts or components not manufactured or supplied by Glas-Craft. The decision by Glas-Craft shall be conclusive and binding on Purchaser.

Glas-Craft does not warrant that any equipment or parts sold to Purchaser meet or comply with any local, state, federal, or other jurisdiction's regulations or codes. Glas-Craft does not warrant that any equipment or part sold to Purchaser, when used individually or in concert with any other part, equipment, device, component or process, does not infringe on any patent rights of any third party. Glas-Craft only warrants that it has no specific knowledge of any such infringement.

Glas-Craft makes no warranty as to any parts or equipment manufactured by others. Purchaser shall look solely and only to the manufacturer of such parts or equipment with respect to any warranty claims. Glas-Craft hereby assigns to Purchaser the original manufacturer's warranties to all such equipment and parts, to the full extent permitted.

THE AFORESAID WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. SPECIFICALLY THERE ARE NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH WARRANTIES ARE SPECIFICALLY DISCLAIMED.

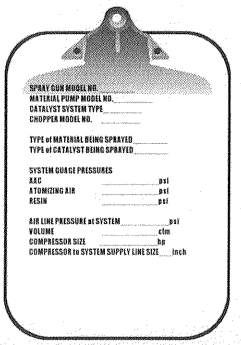
Glas-Craft shall not be liable for any loss or expense resulting from damage or accidents caused by improper use or application of materials manufactured or sold by Glas-Craft or its distributors or agents.

UNDER NO CIRCUMSTANCES SHALL GLAS-CRAFT'S LIABILITY EXCEED THE AMOUNT PURCHASER PAID FOR THE CLAIMED DEFECTIVE EQUIPMENT OR PART. UNDER NO CIRCUMSTANCES SHALL GLAS-CRAFT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR LOST PROFITS.

No action arising from or relating to any goods manufactured by or purchased from Glas-Craft may be brought more than one (1) year after the cause of action accrues.

NOTES

IF YOU HAVE AN EQUIPMENT PROBLEM...



If you have a problem that requires Distributor or Glas-Craft Service Department help, gather the following information *BEFORE* you pick-up the telephone.

	Model No.	Serial No.
SPRAY GUN		
SYSTEM		
TYPE of MATERIAL BEING SPRAYED		
SYSTEM GAUGE PRESSURES		
ISO HEATER GAUGE		PSI
POLY HEATER GAUGE		PSI
MATERIAL PUMP AIR MOTOR		PSI
MAIN AIR LINE PRESSURE at SYSTEM		PSI
MAIN AIR LINE VOLUME		CFM
COMPRESSOR SIZE		HP
COMPRESSOR to SYSTEM SUPPLY LINE SIZE		INCHES

Have a general equipment or operation question? You can contact Glas-Craft Service Department via E-Mail at gciservice@glascraft.com

FOR YOUR REFERENCE

DATE PURCHASED _____
DISTRIBUTOR _____

CONTACT _____
PHONE _____

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"Internal-Mix Non-Atomized Dispense Systems"
Gel-Coat, Wet-Out, Chopper & Pressure Fed Roller Systems and Equipment

For more information concerning any of these Glas-Craft products, contact your local authorized Glas-Craft distributor, or

Glas Craft
DISPENSING EXCELLENCE

5845 WEST 82nd STREET, SUITE 102 INDIANAPOLIS. INDIANA 46278 U.S.A.
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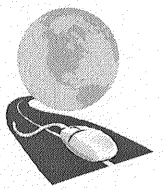

5845 WEST 82nd STREET
INDIANAPOLIS, INDIANA 46278 U.S.A.

Phone (317) 875-5592
Fax (317) 875-5456
E-Mail gcisales@glascraft.com

www.glascraft.com

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