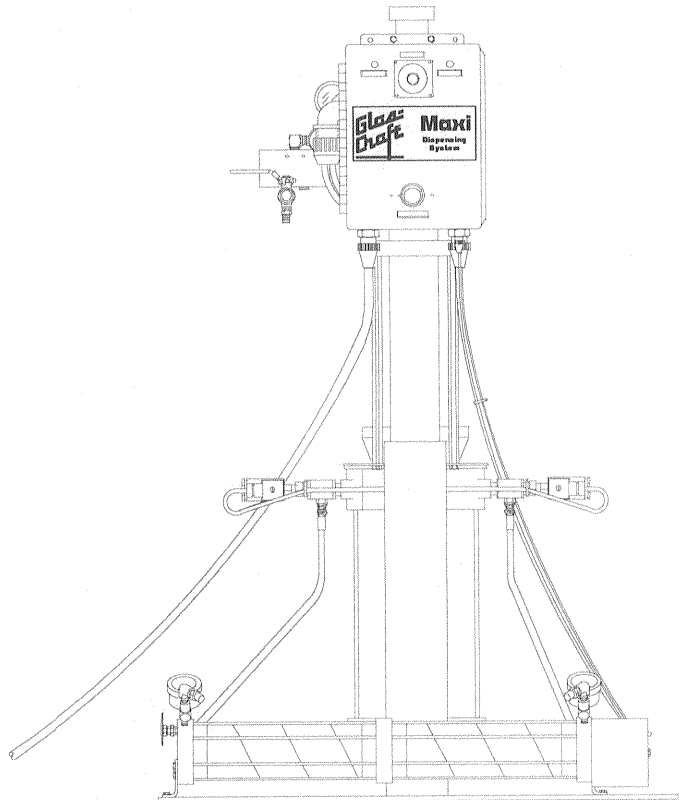




USER

MANUAL

# Maxi Dispensing System



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An ISO 9001  
Approved  
Company



Specialized Dispensing  
Equipment and Technology

CE CERTIFIED

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*Gla-Craft*<sup>®</sup>

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# INTRODUCTION

**Glas-Craft®**

## 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.



**NOTE**

**CAUTION** Is imperative information about equipment protection.



**CAUTION**

**WARNING** Is imperative information about personnel safety.



**WARNING**

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
17254	Probler Gun	GC-1023

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

# PARTS & ILLUSTRATIONS *Gla-Craft*

## MAXI Dispensing System

14 lbs.(6.4 kg.)/min., Spray or Pour Dispensing System  
Floor Mount with Base Plate

### INCLUDES

20020-00	MAXI FOAM SYSTEM
	* 5" AIR MOTOR, 1 PHASE, 220 VAC, 50/60 HZ.
18374-02	PROBLER GUN ASSEMBLY
	* W/ FLAT SPRAY MIXING CHAMBER
LPA2-147-4340	SPRAY NOZZLE, TUNGSTEN CARBIDE
20005-48	HEATED HOSE ASSEMBLY, 48 FT., *W/ PROTECTIVE SLEEVING
20010-00	ELECTRICAL CONTROL ASSEMBLY
19852-511	PROPORTIONING UNIT ASSEMBLY
20015-00	HEAT EXCHANGER ASSEMBLY
15845-00	BALL DRIVER
59934-04	DIOCTYL PHTHALATE, 1 QT.
19526-00	HOSE THERMOMETER
19851-00	GRAVITY FEED KIT
	SERVICE MANUALS

### OPTIONS

21404-35	HIGH HEAT HOSE ASSY., 35 FT. >replaces Standard 48 FT. Hose Assembly >must one P/N 21415-00 Hose Extension, no charge when ordered with system.
21403-35	HIGH HEAT EXTENSION HOSE ASSY., 35 FT.

### REPAIR PARTS KITS

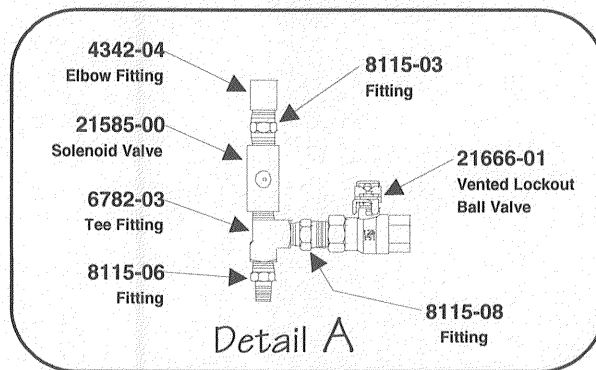
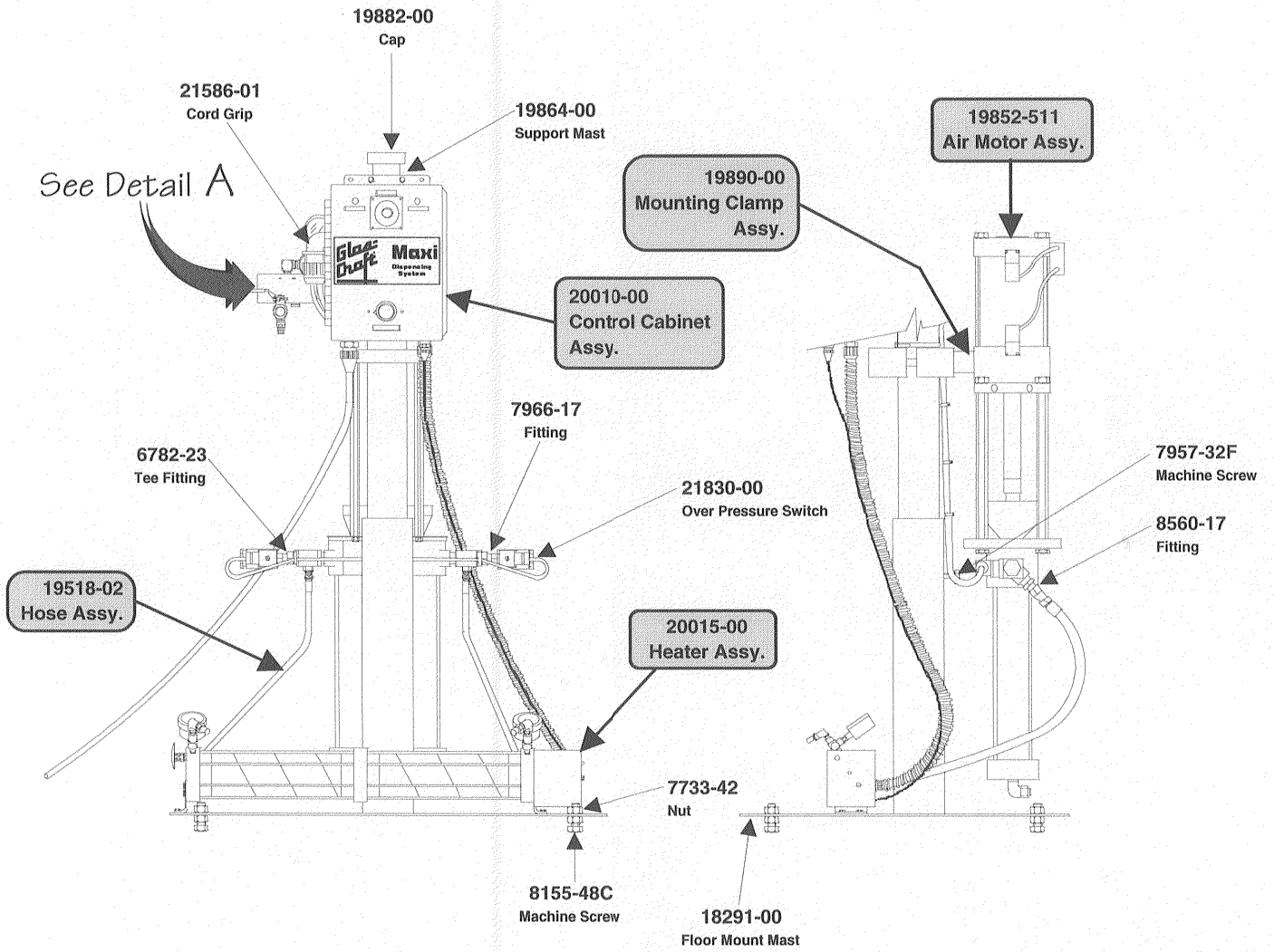
17661-03	GUN SERVICE KIT
18409-00	HEAT EXCHANGER O-RING KIT
21845-00	PUMP FLUID SECTION REPAIR KIT

### SYSTEM SPECIFICATIONS

MATERIAL RATIO:	1:1 (FIXED)
MATERIAL VISCOSITY:	200 TO 1000 CENTIPOISE (CPS) AT OPERATING TEMPERATURES
OUTPUT:	12-14 POUNDS (5.4 - 6.3 KILOGRAMS) PER MINUTE
OPERATING TEMPERATURES:	GREATER THAN 65° F
PURGING:	AUTOMATIC PNEUMATIC, SOLVENT-FREE, CONSTANT
ELECTRICAL REQUIREMENTS:	25 A @ 208/240 VAC, 50/60 HZ, SINGLE PHASE
AIR REQUIREMENTS:	25 CFM @ 100 PSI (708 LITERS/MIN @ 7 BAR)
OVERALL DIMENSIONS:	24 IN/61 CM WIDE 24 IN/61 CM DEEP 39 IN/99 CM HIGH
SHIPPING WEIGHT:	166 LBS/75 KG



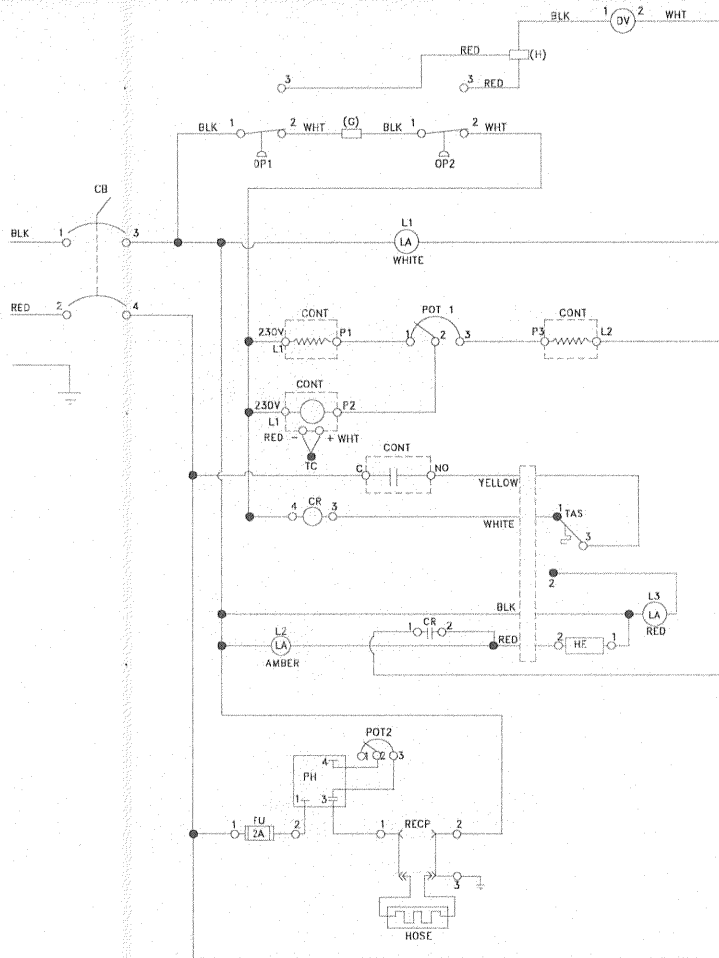
# 20020-00 Maxi SYSTEM CONSOLE



REVISED 10/99

# 20020-00 SYSTEM ELECTRICAL SCHEMATIC

208/240 VAC  
25 AMP  
50/60 HZ  
1 Ø

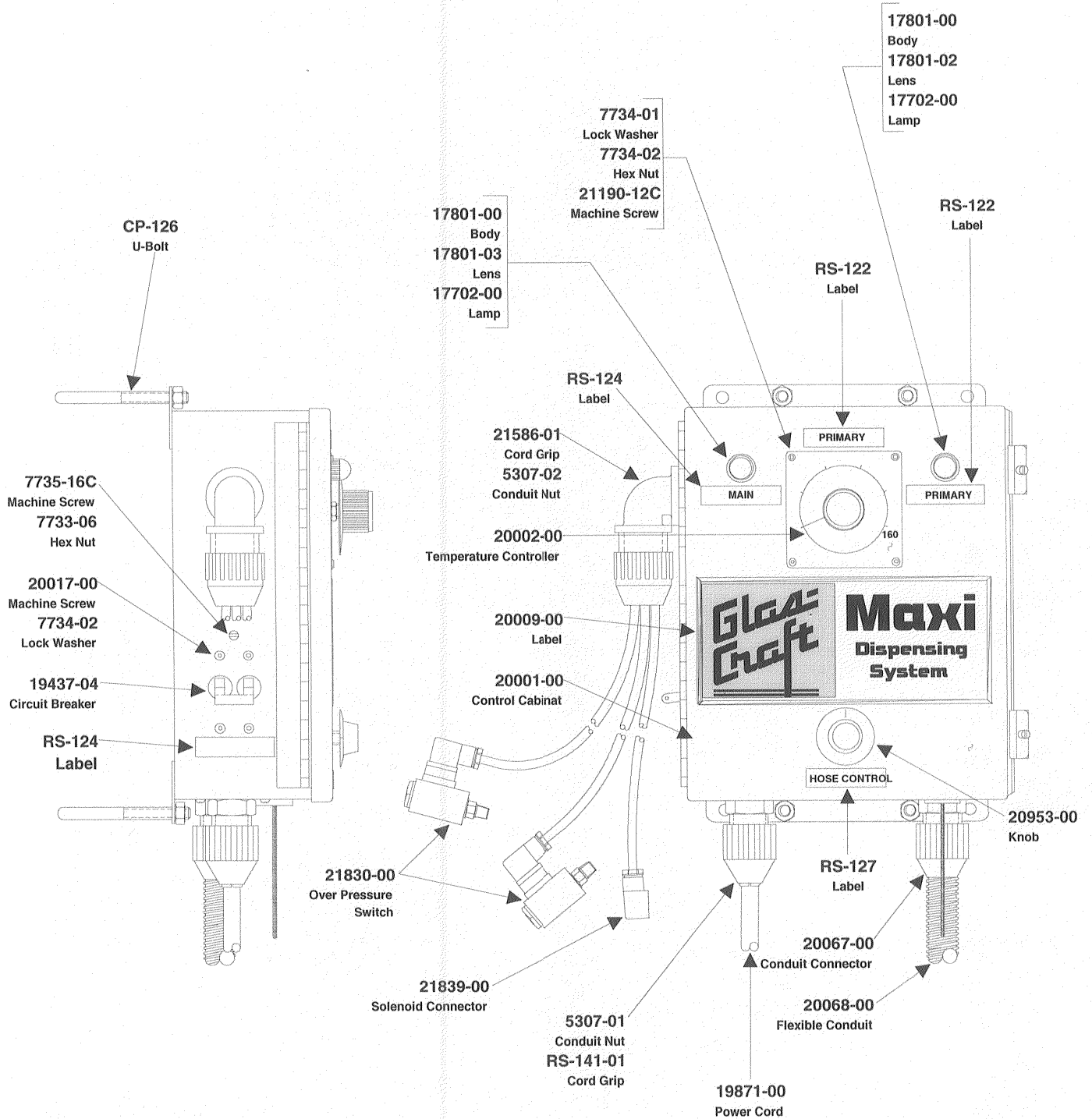


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## REFERENCE PARTS LIST

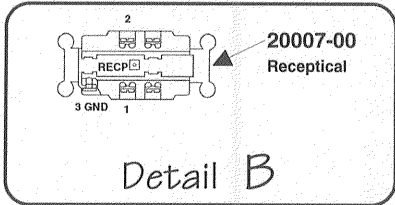
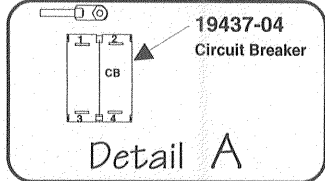
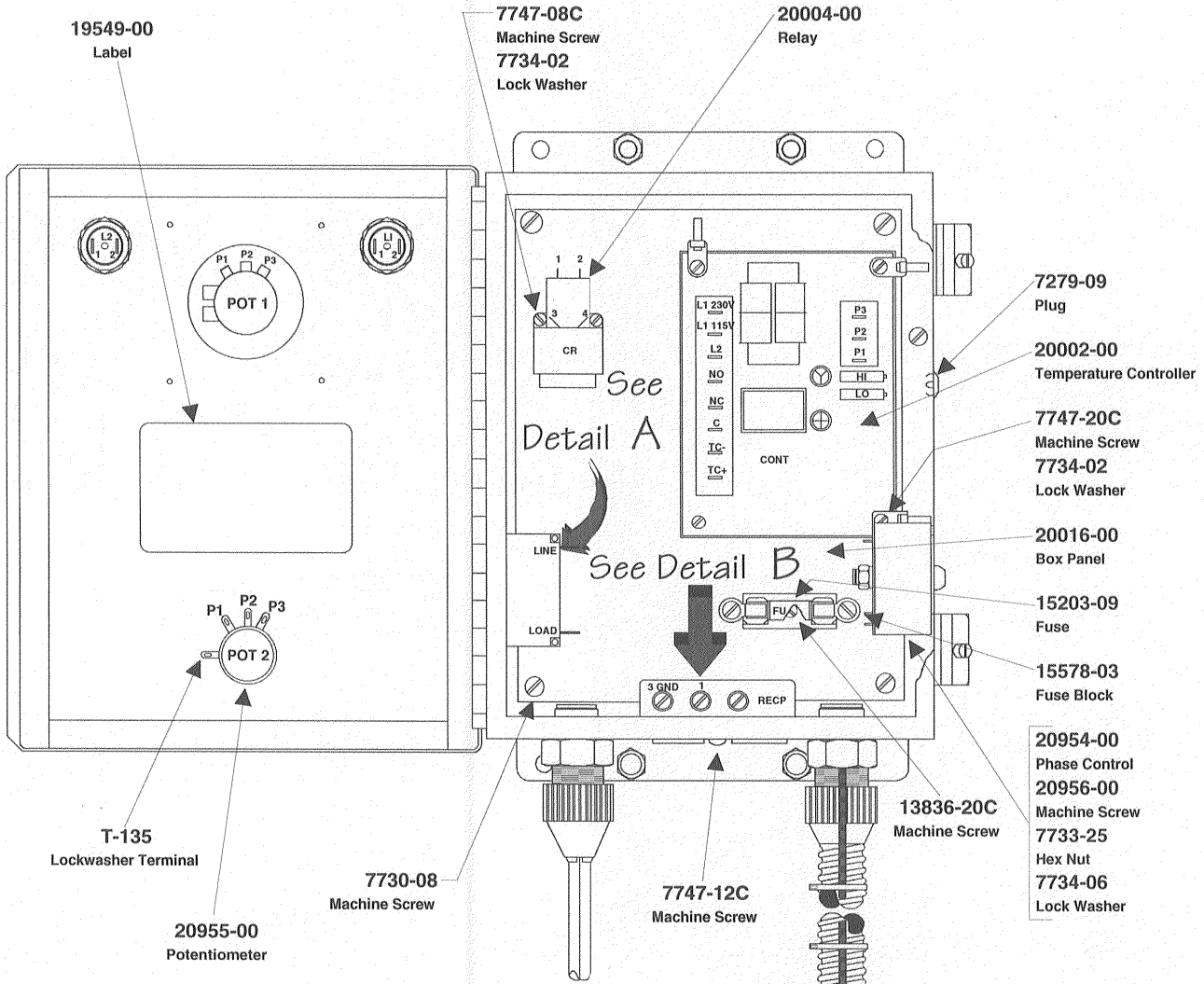
SYMBOL	PART NO.	SPECIFICATIONS	DESCRIPTION
CB	19437-04	2 Pole, 25 amp	Series Trip Circuit Breaker
CONT	20002-00	5 amp, 230 VAC	Time Proportioning Temperature Controller
CR	20004-00	SPST, 240 VAC, 20 amp	Mercury Displacement Relay
FU	15203-09	2 amp, 250V type	BAF Fuse
HE	20013-00	3500 watt, 240 VAC	Fire Rod
HOSE	20005-00	7 watts/ft., 220 VAC	48 ft. Hose Assembly
L1	17801-00	210/250V, White	Pilot Light Body (White Lens, P/N 17801-03)
L2	17801-00	210/250V, Amber	Pilot Light Body (Amber Lens, P/N 17801-02)
L3	17801-00	210/250V, Red	Pilot Light Body (Red Lens, P/N 17801-01)
LA	17702-00	Type B2A	Pilot Lamp, (not included with Pilot Light Body)
RECP	20007-00	15 amp, 250 VAC	Duplex Receptacle, 3-wire grounding
PH	20954-00	208/240VAC, 6 amp	AC Phase Control
TAS	20008-00	135° F	Overtemp Switch
TC	T3-136	1/8" X 8", Type J	Thermocouple (iron/constan)
POT 1	--	0-250° F	Remote Potentiometer (part of P/N 20002-00)
POT 2	20955-00	20 meg Ohm	Remote Potentiometer
DV	21585-00	220/240VAC	Solenoid Valve
OP1	21830-00	5 amp	Over Pressure Switch
OP2	21830-00	5 amp	Over Pressure Switch

# 20010-00 CONTROL CABINET ASSEMBLY



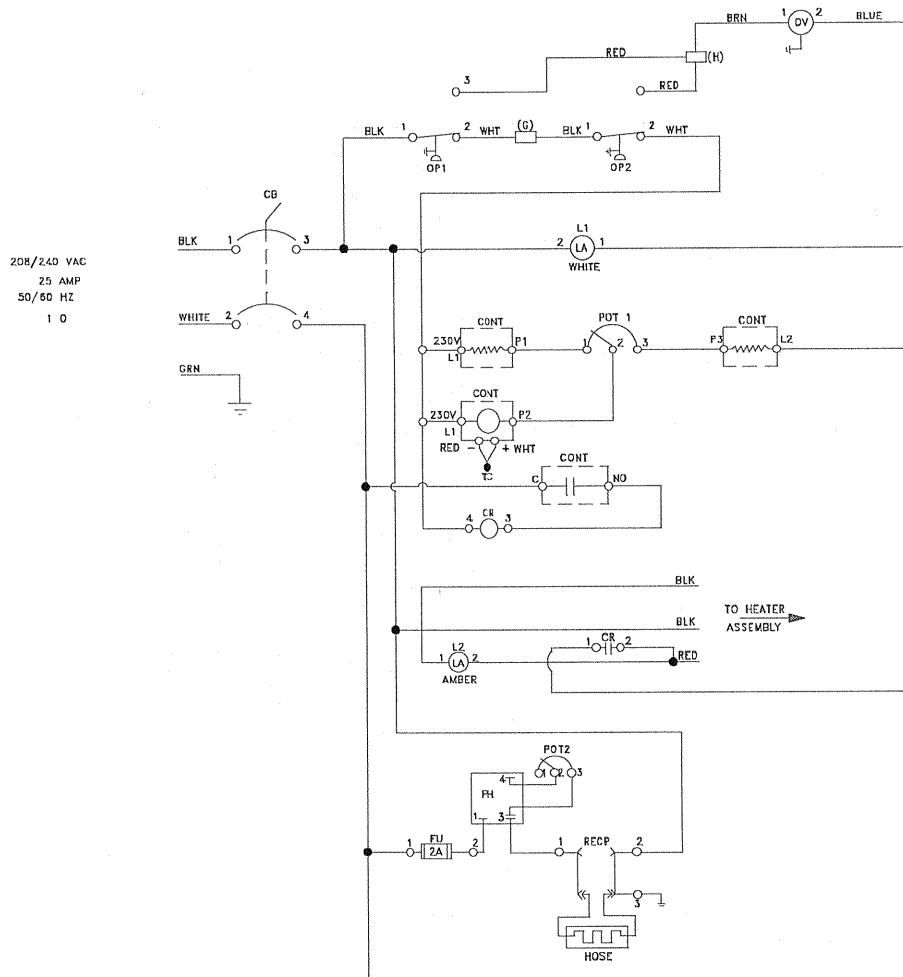
REVISED 10/99

# 20010-00 CONTROL CABINET ASSEMBLY



REVISED 10/99

# 20010-00 CONTROL CABINET ELECTRICAL SCHEMATIC

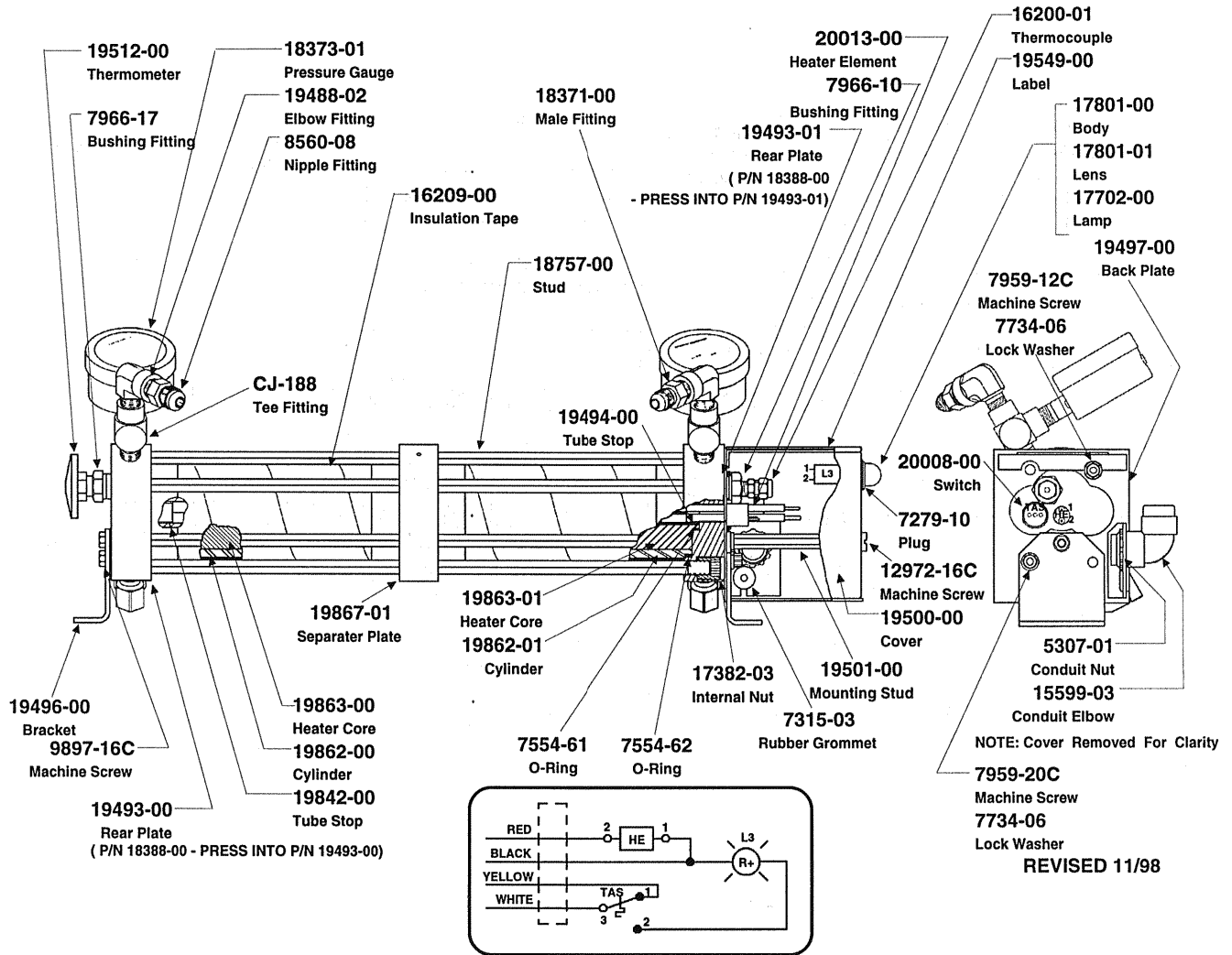


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## REFERENCE PARTS LIST

SYMBOL	PART NO.	DESCRIPTION	DESCRIPTION
CB	19437-04	2 Pole, 25 amp	Series Trip Circuit Breaker
CONT	20002-00	5 amp, 230 VAC	Time Proportioning Temperature Controller
CR	20004-00	Spst, 240 VAC, 20 amp	Mercury Displacement Relay
FU	15203-09	2 amp, 250V Type	BAF Fuse
L1	17801-00, -03	210/250V, White	Pilot Light Socket
L2	17801-00, -02	210/250V, Amber	Pilot Light Socket
LA	17702-00	Type B2A	Pilot Lamp, (not included with light socket)
POT 1	--	0-250 F	Remote Set Pot (part of P/N 20002-00)
RECP	20007-00	15 amp, 250 VAC	Duplex Receptacle, 3-wire grounding,
PH	20954-00	208/240 VAC, 6 amp	AC Phase Control
TC	T3-136	1/8" X 8", Type J	Thermocouple (iron/constan)
POT 2	20955-00	20 meg Ohm	Remote Potentiometer
DV	21585-00	220/240VAC	Solenoid Valve
OP1	21830-00	5 amp	Over Pressure Switch
OP2	21830-00	5 amp	Over Pressure Switch

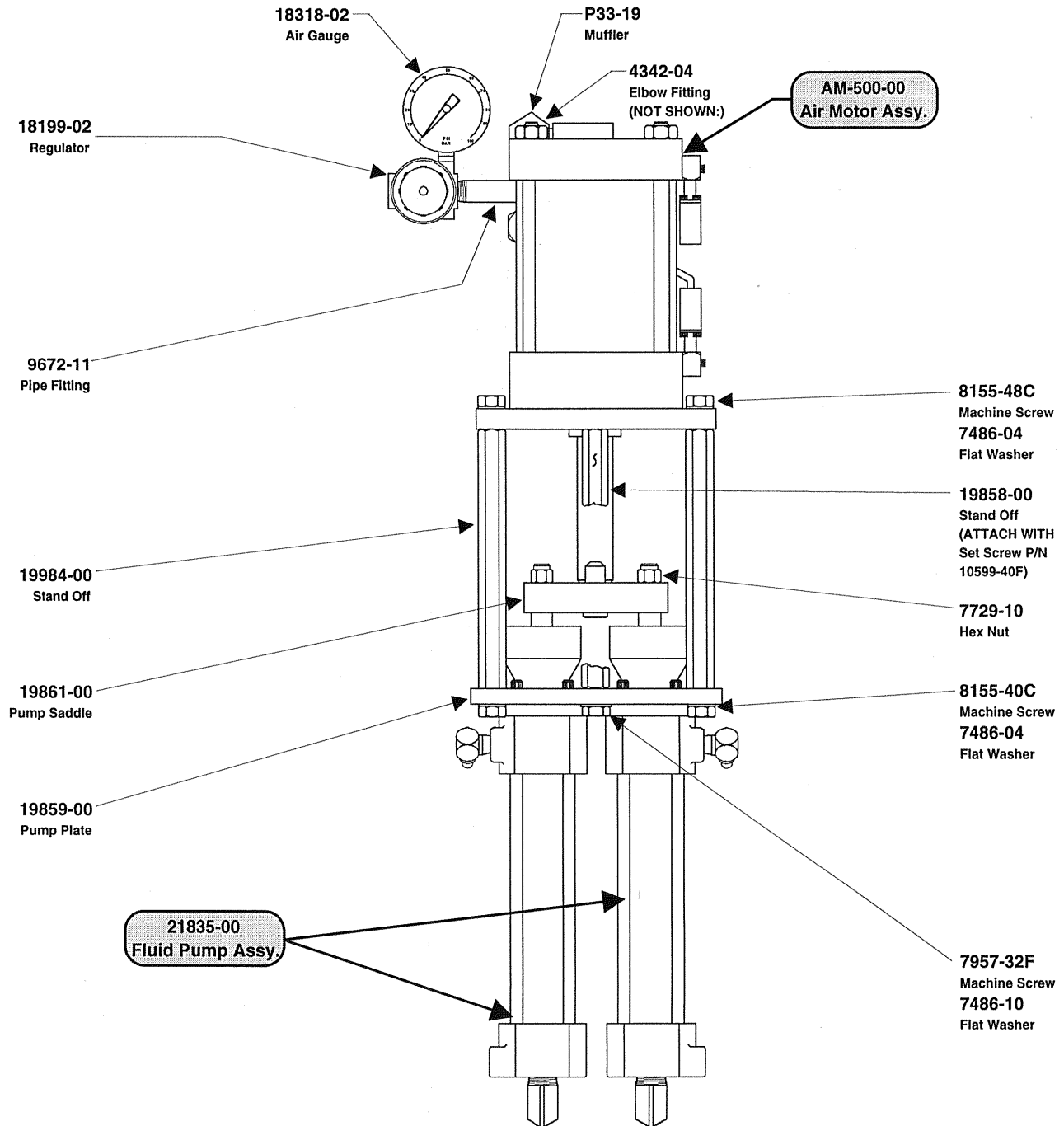
# 20015-00 HEAT EXCHANGER ASSEMBLY



CONNECTION	WIRE	CONNECTION
YEL	SUPPLIED	TAS-1 (YEL) (B)
WHT	SUPPLIED	TAS-3 (WHT) (B)
BLK	SUPPLIED	HE-1 (C)*
RED	SUPPLIED	HE-2 (C)*
TAS-2 (BRN)	SUPPLIED	L3-1 (A)
HE-1 *	6655-10	L3-2 (A)
THE LETTERS (A-C) INDICATE SOLDERLESS TERMINALS LISTED BELOW.		
	(A) 19818-01	2 REQ'D.
	(B) 7208-04	2 REQ'D.
	(C) 7208-01	2 REQ'D.
USE P/N 13424-01 CABLE TIES AS REQUIRED.		
* INDICATES 2 OR MORE WIRES CRIMPED IN ONE TERMINAL.		

**REPAIR KIT: 18409-00**

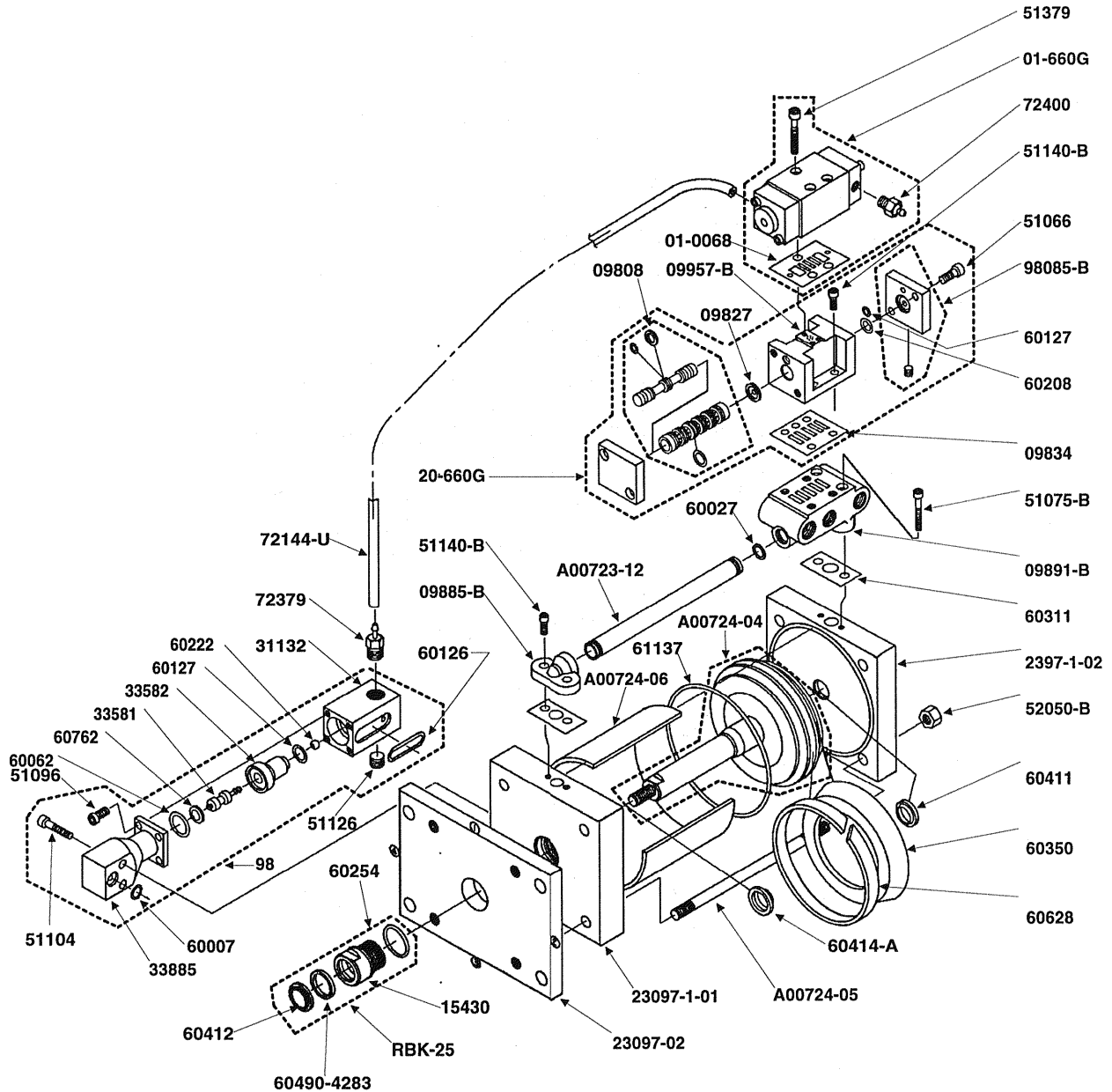
# 19852-511 PROPORTIONING UNIT ASSEMBLY



REVISED 2/98



# AM-500-00 AIR MOTOR



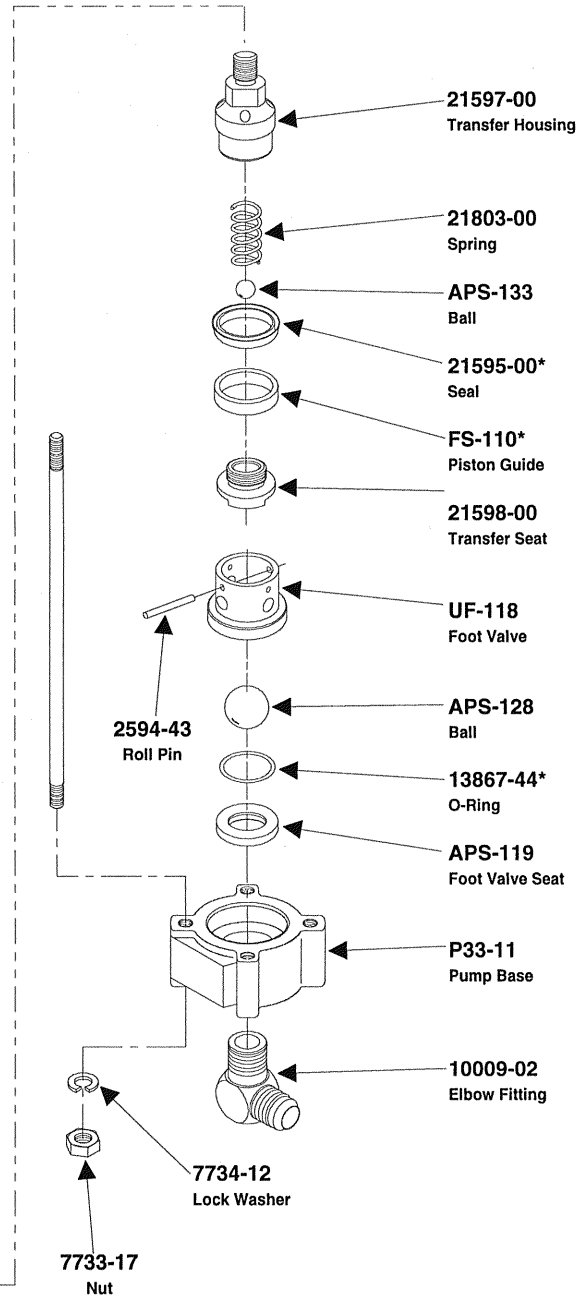
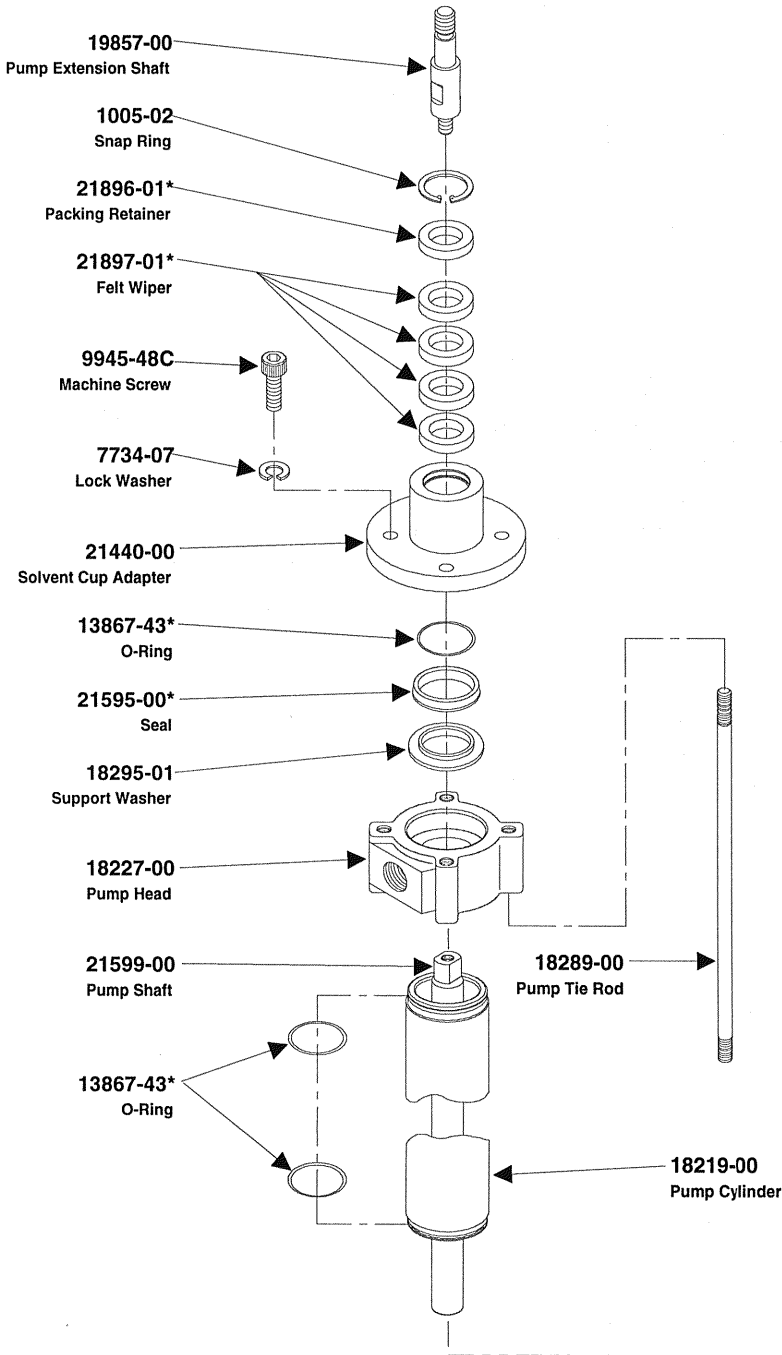
## REPAIR KITS

20101-00 OVERHAUL KIT	20102-00 PISTON SEAL KIT	20103-00 ROD SEAL KIT	20104-00 SIGNAL VALVE KIT	20105-00 GASKET KIT	20106-00 MAIN VALVE KIT	20107-00 PILOT VALVE KIT
20102-00	60325	60254	33581	01-0068	09808	01-0020
20103-00	60327-80	60412	60007	09834	09827	01-0028
20104-00	50-TSH	60490-4283	60062	60027	60127	01-0069
20105-00	60628		60126	60311	60208	60747
20106-00			60127			
20107-00			60905			
20189-00			60222			
			60762			
			A-00723-13			

# 19875-00 FLUID SECTION

**RATIO: 1:1**

**VOLUME: .021 gals. Displacement per cycle**

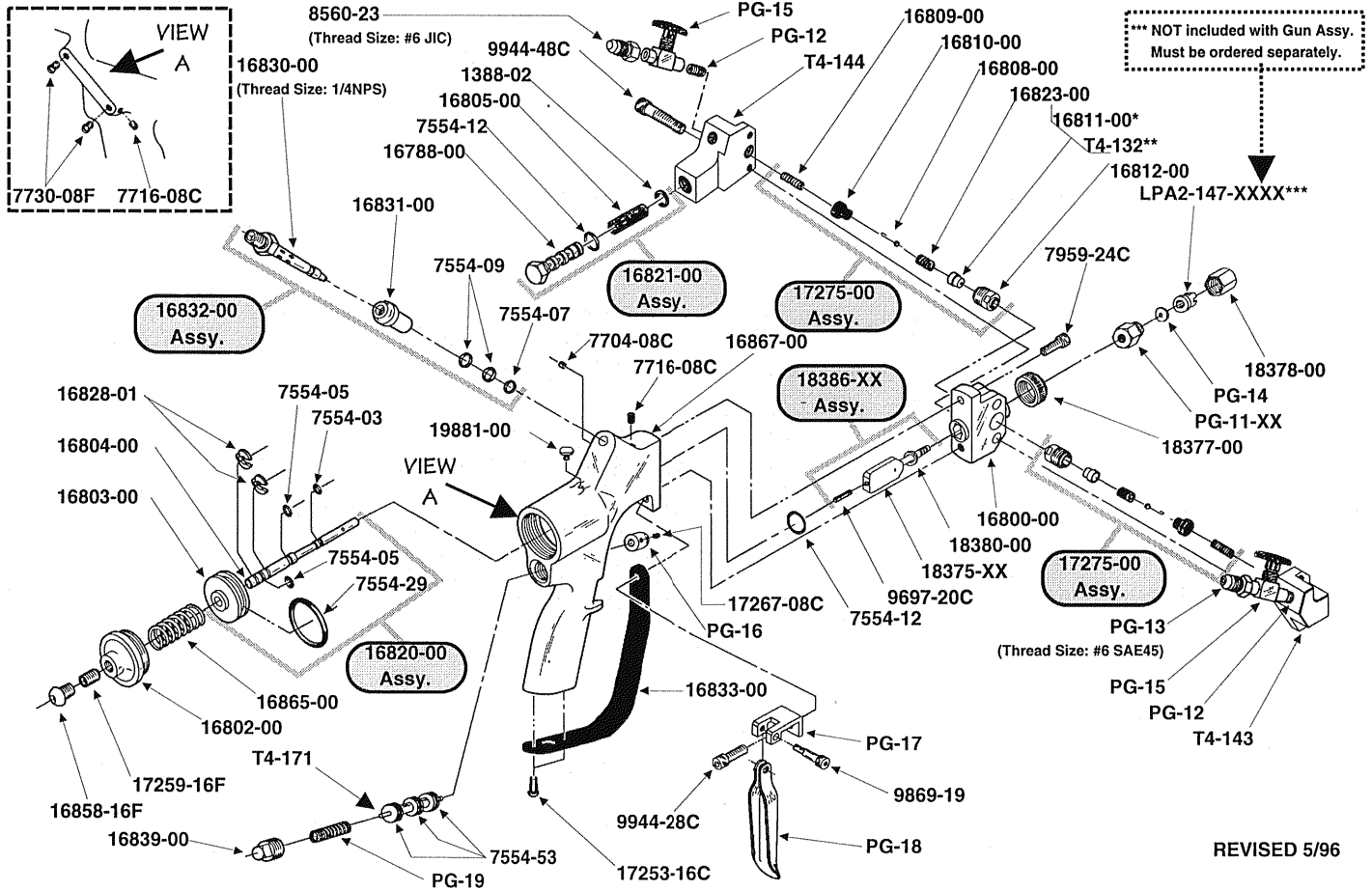


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## REPAIR KIT: 21845-00

(\* Indicates parts included in Repair Kit.)

# 18374 DISPENSE GUN



\* USED WITH P/N 18374-00, 01, -02, -03 GUN ASSEMBLY      \*\* USED WITH 18374-04, -05 GUN ASSEMBLY

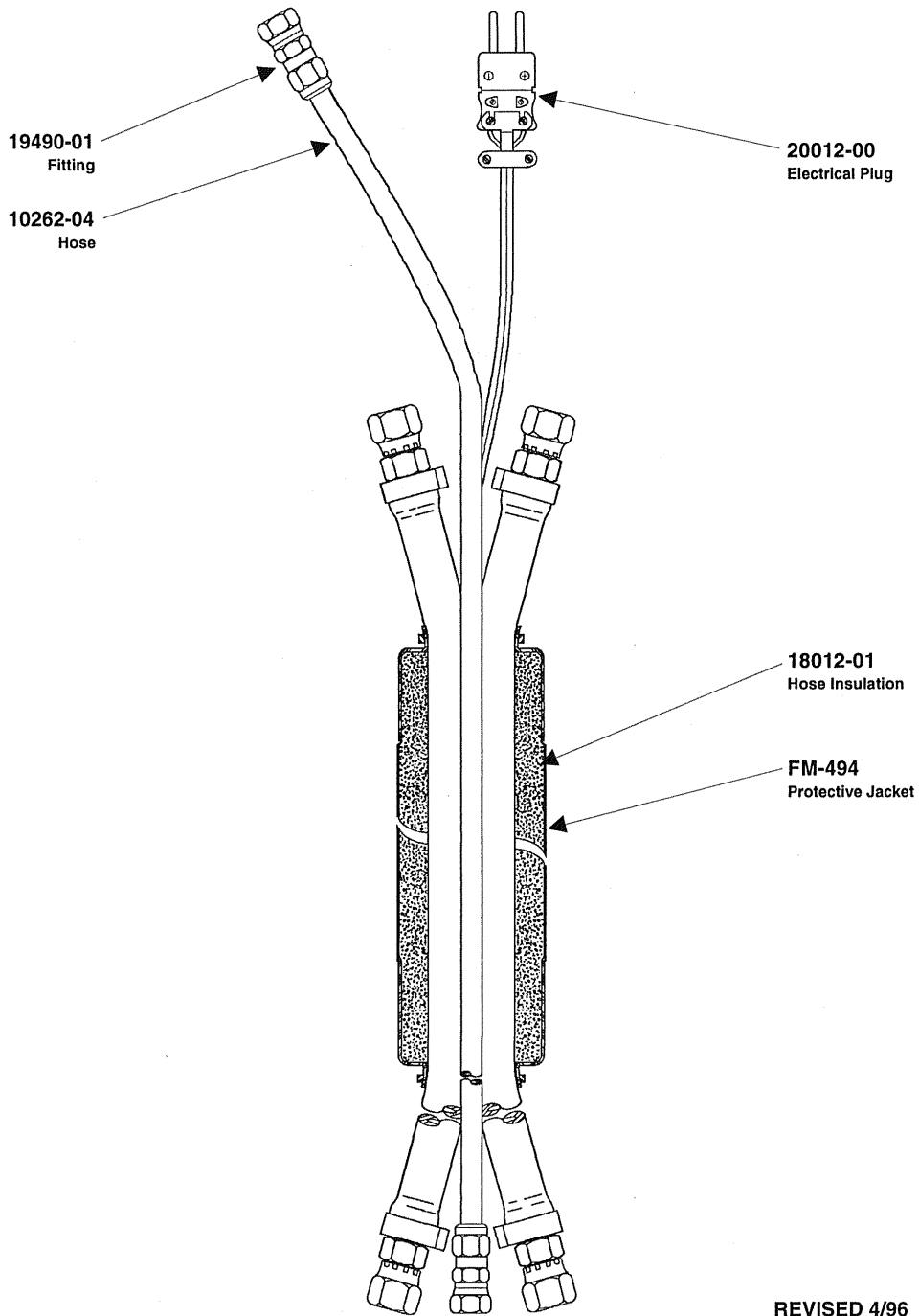
1388-02	SNAP RING
16788-00	FILTER SUPPORT
16800-00	MIXING CHAMBER HSG.
16802-00	REAR CAP
16803-00	PISTON
16804-00	PISTON SHAFT
16805-00	FILTER SCREEN
16808-00	BALL
16809-00	SPRING
16810-00	BODY
16811-00	SEAL
16812-00	CHECK VALVE
16820-00	PISTON ASSY.
16821-00	FILTER ASSY.
16823-00	SPRING
16828-01	RETAINER RING
16831-00	AIR SWITCH SPOOL
16832-00	AIR SWITCH ASSY.
16833-00	TRIGGER GUARD
16839-00	TRIGGER PLUG
16839-00	AIR SWITCH TUBE
16858-16F	MACHINE SCREW

16865-00	SPRING
16867-00	HANDLE
17253-16C	MACHINE SCREW
17259-16F	MACHINE SCREW
17267-08C	MACHINE SCREW
17275-00	CHECK VALVE ASSY.
18375-XX	MIXING CHAMBER
18377-00	CAP
18378-00	NUT
18380-00	AIR CAP SEAL
18386-XX	MIXING CHAMBER ASSY.
19881-00	PLUG FITTING
7554-03	O-RING
7554-05	O-RING
7554-07	O-RING
7554-09	O-RING
7554-12	O-RING
7554-12	O-RING
7554-29	O-RING
7554-53	O-RING
7704-08C	MACHINE SCREW
7716-08C	MACHINE SCREW

7716-08C	MACHINE SCREW
7730-08F	MACHINE SCREW
7959-24C	MACHINE SCREW
8560-23	FITTING
9697-20C	MACHINE SCREW
9869-19	MACHINE SCREW
9944-28C	MACHINE SCREW
9944-48C	MACHINE SCREW
LPA2-147-	SPRAY TIP
PG-11-XX	CONNECTOR
PG-12	NIPPLE FITTING
PG-13	FITTING
PG-14	SEAL
PG-15	BALL VALVE
PG-16	TRIGGER BUTTON
PG-17	TRIGGER BRACKET
PG-18	TRIGGER
PG-19	SPRING
T4-132	SEAL
T4-143	SIDE BLOCK
T4-144	SIDE BLOCK

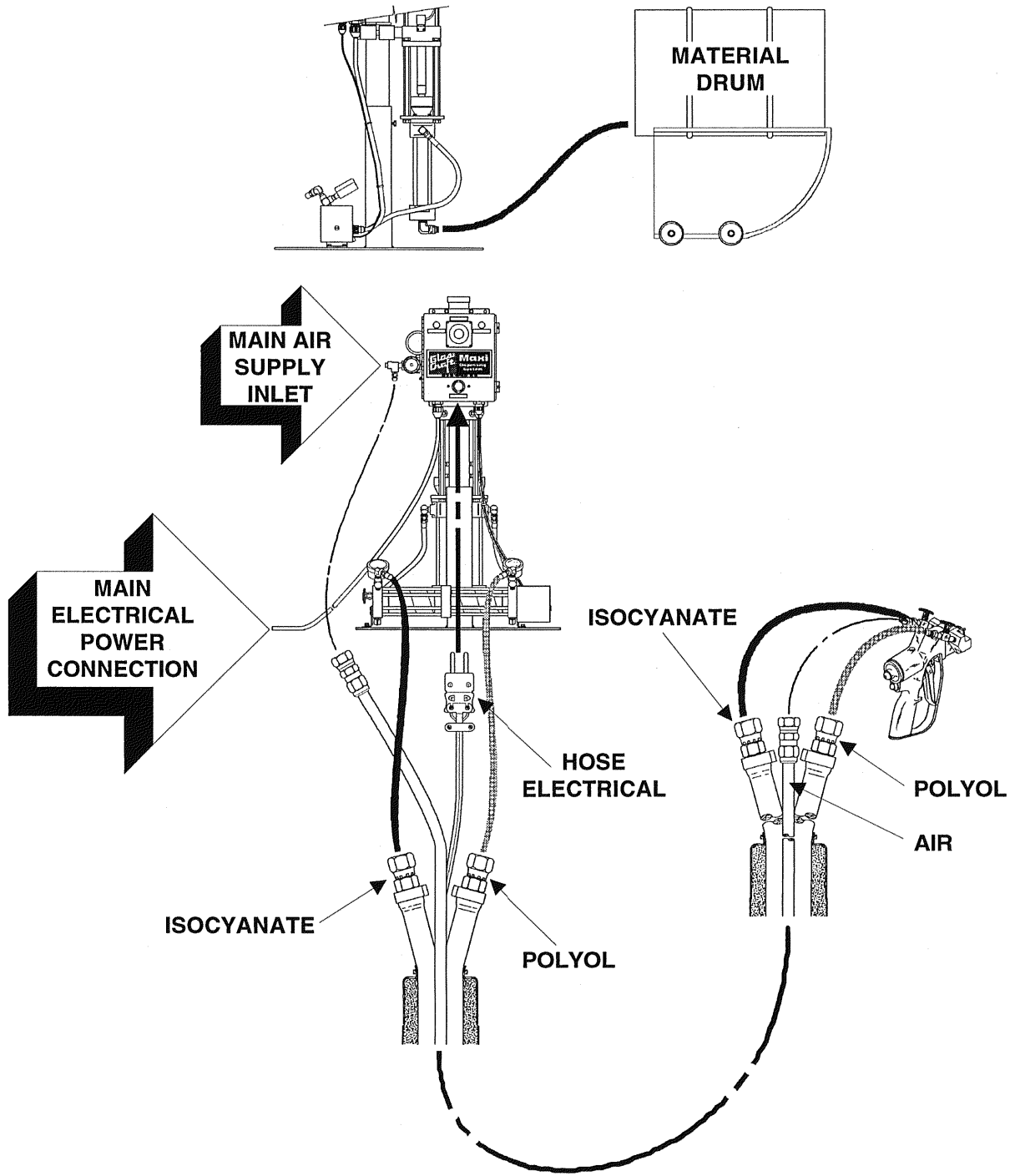
**REPAIR KIT: 19134-00**

# 20005-48 HOSE ASSEMBLY



REVISED 4/96

# TYPICAL SYSTEM CONNECTION DIAGRAM



## 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 Urethane 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 ammonium 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 work 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.

In 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 in 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.

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APRIL 1996

# INSTALLATION

**Gla-Craft**

## ASSEMBLY INSTRUCTIONS



### NOTE

Refer to "Typical System Connection Diagram" illustration during assembly steps.

#### A. FLUID LINE CONNECTION

The fluid lines that bring Isocyanate and Polyol from the drums to the pump inlets, and the hoses that take the chemicals and air from the system to the gun should be connected as follows:

### WARNING

Main power from power source should be disconnected or turned off to console before making hose connections.

1. Connect Hose assembly, P/N 20005-48 to Material Heater on base at front of unit. The swivel fittings on the Hose assembly are sized differently and

will attach only one way. (Match like sized fittings.) Also connect the Air Hose assembly at this time. It should be attached to the fitting located on the Main Air Supply Inlet.

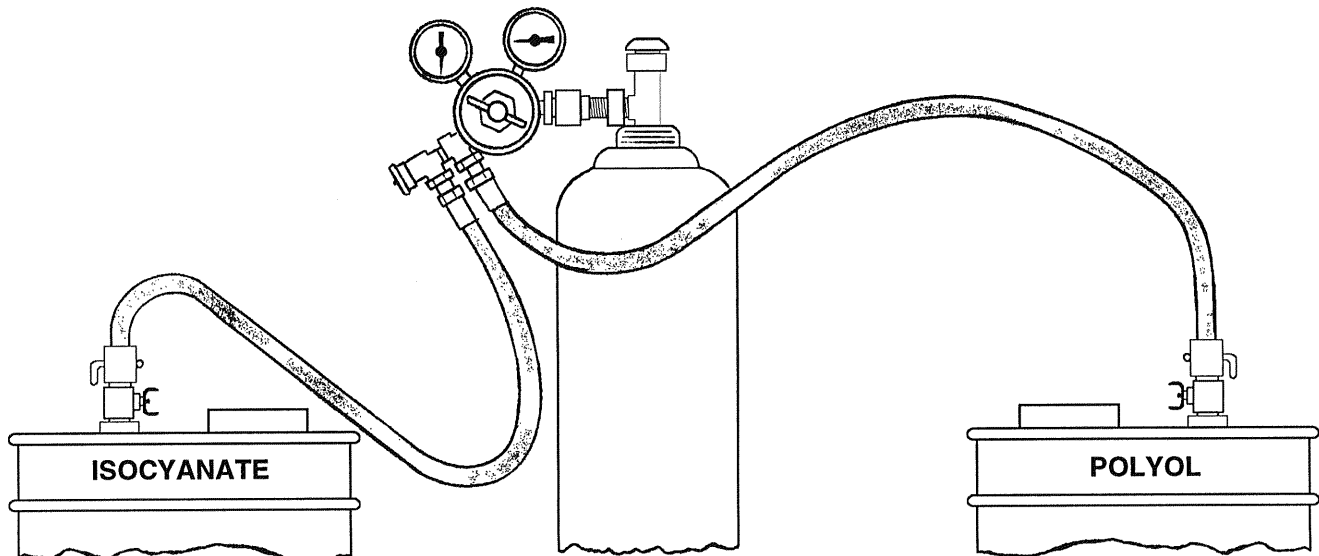
2. Fluid and Air Hose connections between Heater and Gun should now be complete.

### WARNING

If temperature is over 75 degrees F, Polyol with R-11 Blowing Agent may expand vigorously when material drum is opened. This could result in material spewing from the drum. It is recommended that a cover (ie: cloth, rag, etc.) be placed over the bung as it is slowly opened to help prevent injury.



3. With all fluid lines connected, an *optional* Nitrogen Kit, P/N 17667-00 or an *optional* Air Dryer Kit, P/N AD-100 can be installed on the material drums. (see Fig. 1)



17667-00 NITROGEN KIT

Fig. 1



## NOTE

Glas-Craft strongly recommends the use of nitrogen or dry air as an atmosphere in the material drums. Either Kit provides a moisture-free atmosphere in the drums, thus reducing the chance of producing crystals in the isocyanate (A side) drum which can clog filters and hoses in the system.

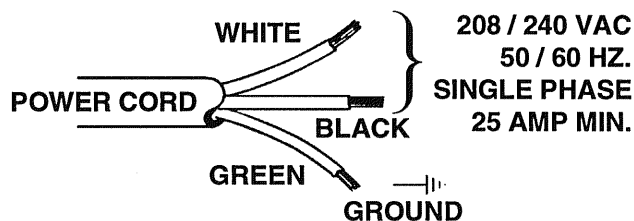


Fig. 2

### B. AIR SUPPLY CONNECTION

An air source which delivers a constant 25 CFM @ 90-110 PSI (708 liters @ 6.3-7.7 BAR) and does not exceed 200 PSI (14 BAR) should be connected directly to the Fitting, P/N 6782-03, mounted on the Proportioning Unit Air Motor Regulator, P/N 18199-02. (see "Typical System Connection Diagram" illustration)

The air line to the Console should be a minimum 1/2 inch inside diameter (I.D.) if it is 25 feet or less in length. Should it be over 25 feet in length, the air line should be a minimum 3/4 inch I.D.

### C. ELECTRICAL CONNECTION

1. Prior to connecting Main Power, insert Hose Electrical Plug, P/N 20012-00 into the Receptacle, P/N 20007-00 located on the front bottom of the Console Control Box.
2. Connect the *white* and *black* wires of the Power Cord to a single phase of 208/240 VAC, 50/60 HZ. The *green* wire should be connected to GROUND. (see Fig. 2)



## WARNING

When Main Power to Maxi console is on, the white and black wires in the console are always live! Disconnect or turn off Main Power source before opening console to make any repairs or before making any electrical repair of any type to the Maxi system.



## CAUTION

If you do not understand the electrical hook-up described above, consult your local Glas-Craft distributor OR a qualified electrician.

## PRE-OPERATION CHECK LIST

- A. Fill the Pump Lubrication Cups, P/N P33-14 approximately 2/3 full with a suitable pump lubricant.
- B. Check that **all** fittings are securely tight.
- C. Check electrical hook-up (*qualified* electrician recommended).
- D. Circuit Breaker on Control Box should be switched to **OFF** position.
- E. Air Regulator turned (counter clock-wise) to **OFF** position.
- F. Hose Rheostat and Primary Heater dials in **OFF** position (ZERO).
- G. Hose Thermometer should be inserted into Heated Hose assembly approximately 3 - 4 feet before gun.

## 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.

## A. INITIAL START-UP PROCEDURE

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

## FILLING THE SYSTEM

1. Adjust air regulator to 20 PSI to fill system. Air Motor will cycle slowly to fill Pumps, Heaters and Hoses, and stop.
2. Remove the Side Blocks, P/Ns T4-143 and T4-144, on the front housing of the Gun, by removing Screws, P/N 9944-48C.
3. Place separate clean containers under each individual Side Block. Open manual Material Valves (black arrow forward, see Fig. 4 & 5) on each Side Block simultaneously to allow trapped air to escape the Hose and material to flow into the containers until all air is purged from the material system. (see Fig. 3)

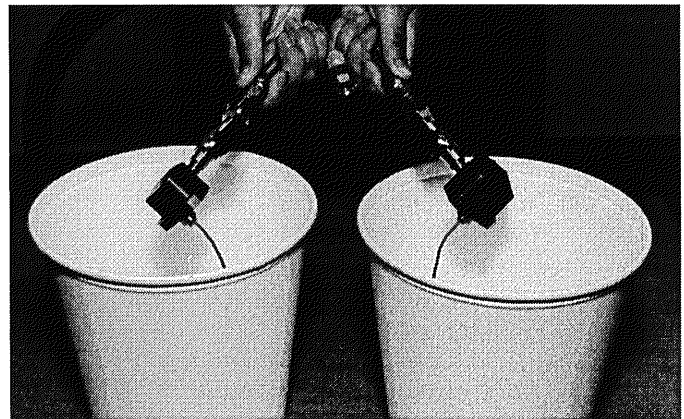


Fig. 3

4. Close manual Material Valves simultaneously. Material pressures gauges on each Heater should now register approximately equal pressure. If one side registers considerably more pressure than the other side, go to the high pressure side and bleed off some pressure by slightly opening the manual Material Valve on the Side Block over the container. Bleed pressure until both sides are approximately the same pressure.
5. Dispose of waste material properly and in accordance with chemical suppliers instructions and local, state and federal regulations.



## NOTE

Before re-assembling Side Blocks, lubrication can be applied by dabbing a white lithium grease into holes inside of Gun Front Housing and wiping grease over Side Block Seals. Grease will purge itself when air valve is turned on at Gun and Gun is triggered.

6. Clean and lubricate Side Blocks and Seals thoroughly and re-assemble on Gun. Make certain that Side Block Screws are tighten securely.
7. Maintain Main Air Regulator at 20 PSI to heat up the Material Heaters.
8. Switch MAIN Breaker to ON position. Both lights on Control Box Front Panel will come on. The Main Indicator Light will stay on and the Primary Heater Light will go off after a few seconds.
9. Straighten Hose out flat to avoid uneven heating and avoid damage to internal wiring. Turn Hose Control clockwise to 10 to warm-up Hose to 100° - 130° F.
10. When desired temperature is achieved, Hose Control should be turned down to approximately 6 or 7 in order to maintain required heat.
11. Hose temperature will be indicated on Hose Thermometer placed in Hose. Operator should periodically check hose temperature and adjust HOSE CONTROL up or down to maintain desired primary heater temperature in hose while unit is spraying.



## NOTE

Remember, the heated hose is not a material heater. The heated hose's function is to maintain the heat put into the material by the primary heaters. The hose will normally be set to maintain a temperature that is very close to the primary heater temperature settings.

12. Adjust the Primary Heater Control to 100° - 130° F. The Primary Light will cycle on the and the Heater will quickly come up on or above set temperature. The Primary Light will go on and off until this set temperature is reached.



## CAUTION

Due to the expansion of urethanes when heated, it is imperative that on cold start-up of the Maxi that the heaters be turned on and allowed to reach operating temperatures before the Main Pump Air Regulator is adjusted to the desired spray pressure. If you do not allow the heaters to reach operating temperature before adjusting air pressure, the material pressure will exceed the range of both gauges, permanently damaging them, and may also burst components.

13. Adjust Main Air Regulator to 60-100 PSI for spraying. Pouring operations will require less Main Air pressure.
14. Turn Purge Air and Material Valves ON at Gun. (see Fig. 4 & 5)

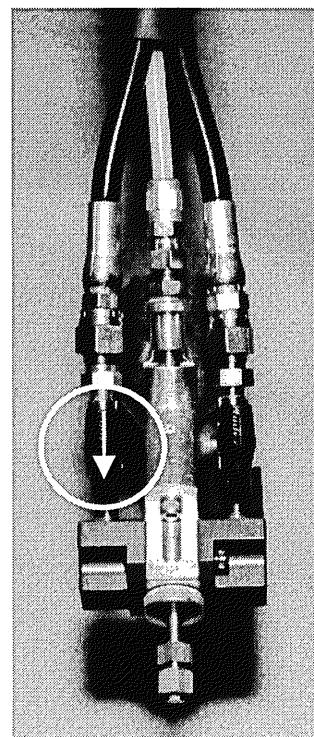


Fig. 4

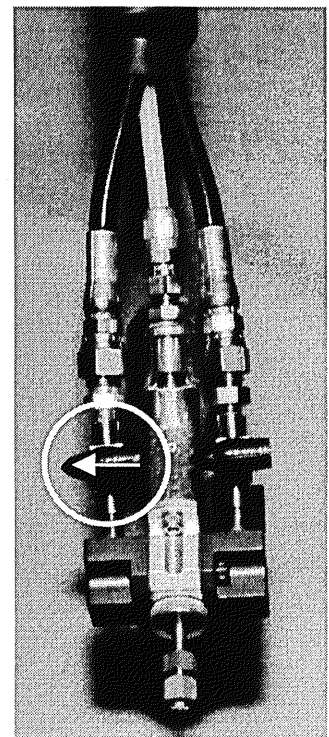


Fig. 5

13. 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.

14. The Maxi will dispense liquid at high pressure when Gun Trigger is activated. Read and note WARNINGS contained in this User Manual and the Probler Gun User Manual, GC-1023.



## CAUTION

The Polyol will expand in the Hose if any normal operating pressures are bled off whenever the material is above approximately 75 degrees F. Hot Polyol hoses should never be bled, by any method, to zero pressure for two reasons.

1. The seals in the Gun rely on high pressure to make their seal. The high pressure cannot be maintained if the pumps are attempting to apply this pressure through a hose full of expanded froth; therefore, the Gun seal may leak.

2. Re-starting immediately after hot Polyol has expanded in the system may result in spraying substantial amounts of "bad" foam. This will continue until the expanded Polyol in the primary Heater and the Hose has been completely purged.

## B. OVER-TEMPERATURE CIRCUIT AND LIGHT

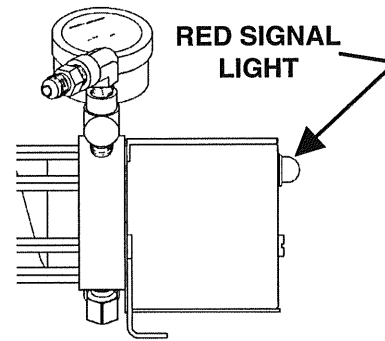


Fig. 6

1. The red signal light for the over temperature circuit protection is located down on the cover on the polyol (B) side of the heater. Under normal operation conditions and temperature for urethanes, (100-130°F) this light will not come on. However, should the controller malfunction and stick in the heating (primary light on) condition, or should the primary heater control be turned up too high or run at too high a temperature for an extended period of time, the red-light may come on and signal an overheating condition. This light signals that the circuit has sensed a hot or potentially hot condition in the heater. When this light is on or cycling off and on with the controller, the power has been interrupted to the heater and it will not continue to heat material in this condition. The orange primary light will go out when the red light is on or cycling on and off. To start the unit heating again, turn down the primary heat temperature and let the unit cool down by itself or run some material thru the gun by pulling the trigger. This will draw cool material into the heater and help cool the heater down faster. When the heater cools to normal operating range again, the red light will go out and the orange light will come back on indicating the heater is heating again.

## C OVER PRESSURE SYSTEM PROTECTION

The Maxi system incorporates monitors for high pressure monitoring. These monitoring devices will present the Maxi system from continued operation if high pressure situations develop.

There are pressure sensors located on each proportioning pump. The high pressure sensor is located at the outbound of the fluid section.

The high pressure monitoring sensor will engage if fluid pressure increases above 2000 psi.

If a high pressure situation develops, the sensor will detect this and immediately engage the hold-in circuit.

This will disengage power to the air motor and it will stop cycling. It will also turn the heater off.

In the over pressure situation, the system will remain shutdown until it is manually reset.

At this point, it is necessary to determine if the problem is an over pressure situation.

When the sensor engages, the system will be frozen, giving you the pressure readings at the time the problem was detected.

Inspect the fluid pressure gauges, in an over pressure situation, one of the fluid pressure gauges will be significantly higher than the other gauge.

## **!!! WARNING**

When main power to unit is on, the console will have wires that are live. Disconnect or turn off main power source before opening console to make any repairs.

## **!!! WARNING**

Before performing any repairs on the system, ALL AIR and FLUID PRESSURES SHOULD BE RELIEVED TO ZERO (BLEED-OFF)!

### **D. OVER PRESSURE PROBLEM CORRECTION**

1. Determine if the problem is high pressure related.
2. Relieve system hydraulic pressure.
3. Turn off main power
4. Fix the problem area:
  - a. Potential high pressure causes:
    - Restriction
    - Overheating material in static position
    - ISO filter at gun

5. Re-start system for operation

### **E. DAILY SHUT-DOWN PROCEDURE**

1. Turn Hose Control knob to *ZERO*. Turn Main Circuit Breaker to *OFF* position.
2. Perform Gun maintenance as follows:
  - a. Check for leaking Seals, P/N 16811-00:
    - Turn OFF Gun incoming air by closing Gun Air Switch.
    - Wait approximately 10-20 seconds, then turn ON incoming air by opening Gun Air Switch.
    - Repeat two or three times.
    - If any material has been purged from the Gun, the Seals, P/N 16811-00 are leaking.
    - Correct leaks by replacing seals and re-checking.
  - b. Check for leaking Material Valve, P/N PG-15:
    - Turn OFF both Material Valves.
    - Trigger Gun several times.
    - Turn OFF Gun incoming air by closing Gun Air Switch.
    - Trigger Gun several times.
    - If additional material is purged, the Material Valves are leaking.
    - Correct leaks by taking off Black Knobs and turning packing 1/8 to 1/4 turns at a time until leak has stopped. Re-check.
  - c. Check Side Blocks:
    - Turn OFF the Air Switch on Gun.

## **!!! WARNING**

Before removing Side Blocks make certain that both Gun Material Valves are in the fully OFF positions!

Refer to Figures 4 and 5.

If Material Valves are on when Side Blocks are removed, the Gun will quickly become encased in urethane!



## **WARNING**

Point Gun Side Blocks down, away from all personnel. Existing fluid pressures could cause material to exit the Side Blocks with considerable force.

- Take off Side Blocks by removing Screws, P/N 9944-48C.
  - Examine the sides of the Mixing Chamber, P/N 17637-XX for scratches and/or material build-up. Carefully, without scratching the seal surfaces (sides), remove any accumulated material. Solvent can be used to wash accumulated material off of Chamber, Side Blocks, etc. Keep Gun Chamber tilted toward the ground so that solvent does not run back into Gun. Certain solvents will attack O-Rings on Chamber Shaft causing swelling and deterioration of O-Rings.
  - Place generous amounts of high quality, white lithium grease in each side of the Gun Front Housing and on the Side Block Seals.
  - Use a No. 50 Drill Bit to clean out the Mixing Chamber exit passage. Use a No. 55 Drill Bit to clean the inlet side holes of the Mixing Chamber taking care not to scratch the Mixing Chamber's polished surfaces.
  - Re-assemble the Side Blocks and tighten Screws securely. Grease should appear at the tip of the Mixing Chamber. **DO NOT** open Air Switch on Gun because this will purge grease from the Gun. The grease should be allowed to remain in the Gun overnight.
3. Reduce Main Air Regulator setting to ZERO.
  4. Visually inspect entire system for leaks.
  5. Turn OFF Main Air Supply and Main Power to unit.
  6. Close the nitrogen or dry air valves in the small drum bung holes of the material drums.
  7. Coil heated Hoses with a minimum two foot bend-radius to avoid kinking and subsequent damage to the internal electrical wiring.
  8. Refill the Pump Lubrication Cups, P/N 21440-00 approximately 2/3 full with Dibutyl Phthalate Plasticizer, P/N 59934-04 supplied with system.



## **CAUTION**

Do not bleed fluid pressure from the system.

### **F. EXTENDED SHUT-DOWN PROCEDURE**

There are many different procedures that are being followed for extended machine shut down. Because the system is designed to be compatible with most urethane formulations, we at Glas-Craft recommend the system to be stored with urethanes instead of solvents, plasticizers, etc. Certain considerations have to be adhered to when an extended shut-down is being performed.

The following procedure is not only for long extended shut-down periods, but should also be used on a daily shut-down procedure.

A Nitrogen Harness Assembly and an adequate supply of nitrogen is required for especially extended periods of shut-down.



## **NOTE**

*Nitrogen is suggested to be used on the last set of material drums being used before the shut down procedure.*

A nitrogen blanket of 1½ - 2 psi on the material assures that the material in the drums and system is relatively moisture free. It is also a good practice to have the quantity in the material drums no lower than one-third (1/3) from being empty.

### *Shut Down Procedure*

1. Spray material onto a suitable substrate as to direct the fluid section shafts in the full retractable (down) position.
2. Place all circuit breakers on the machine in the **OFF** position.
3. Disconnect the electrical cable from the main power source.
4. Stopcock valves on nitrogen supply lines are in the closed position.

5. Close valve on top of nitrogen cylinder. Maximum nitrogen pressure on the drums should not exceed 1½ - 2 psi.
6. If transfer pumps are being used, close off air valves and back off (counter clockwise) the air regulators.
7. Reduce main air motor regulator to 20 psi.



## NOTE

*Do not bleed nitrogen pressure from the drums.  
Do not bleed fluid pressure from the system.*

8. Turn off main air source and remove air supply line from system inlet air fitting.
9. Wipe and clean all exposed pump shafts.
10. Remove old pump lube from both the proportioners and transfer pumps and replace with clean pump lube.
11. Generously coat the exposed pump shafts on the transfer pumps, main air motor shaft and proportioning pumps with lithium grease.
12. Coil heated hoses with a minimum two foot bend radius to avoid kinking and subsequent damage to the internal electrical wiring.
13. For gun shut down, follow the procedure from the GC-1023 Probler Gun User Manual.

The length of time the system is in the shut down mode and the climate condition that it is stored in will determine how often the system should be purged and refilled. Usually every 2 - 4 weeks the succeeding procedure should be followed.

### Purge and Refill Procedure

1. Turn valve on top of nitrogen bottle to **ON**. Maximum pressure feeding the material drums should not exceed 1½ - 2 PSI.
2. Turn stopcock valves on Nitrogen supply lines to the **ON** position.
3. Supply main air to the system and both transfer pumps. Main air motor regulator should be set at 20 PSI. Transfer pump regulators should be approximately 40 psi.

4. Remove the side blocks from the gun.
5. Open both side blocks simultaneously into separate containers and dispense approximately 1½ - 2 gallons of material from each side. Stop the fluid pumps in the down position.
6. Turn off both side blocks simultaneously and wipe off material residue from the side block seals. Regrease and attach both blocks to the gun.
7. Shut off main air line from system and remove.
8. Turn off stopcocks valves on the nitrogen supply lines.
9. Turn valve on top of nitrogen bottle to fully "OFF" position.
10. Mix and properly dispose of purge material.

## WARNING

*Before performing any repairs on the system,  
ALL AIR and FLUID PRESSURES SHOULD BE  
RELIEVED TO ZERO (BLEED-OFF)!*

### To Relieve Air and Fluid Pressures:

- A. System Console
  1. Turn OFF any and all valves that supply material from the material containers to the proportioning pumps.
  2. Turn off main air regulator to system air motor.
  3. Turn off transfer pump regulators.
- B. Material Containers
  1. Close valve on top of nitrogen cylinder.
  2. Bleed off nitrogen blanket from containers by opening petcock bleed valves.
- C. Gun
  1. Open both side block valves.
  2. Turn on air slide valve at gun.
  3. Point gun at suitable substrate and trigger gun until flow stops.
  4. Fluid pressure gauges must read zero (0), if not, trigger gun until fluid pressure gauges do read zero (0) pressure.
  5. Turn off both side block material valves.
  6. Trigger gun several more times to purge any material remaining in gun.
  7. Turn "OFF" air slide valve at gun.

8. Disconnect main air supply feeding the system and transfer pumps.

## **WARNING**

Before performing any repairs on any part of the system,

**PLACE ALL CIRCUIT BREAKERS ON THE MACHINE AND THE MAIN POWER SOURCE IN THE OFF POSITION AND DISCONNECT THE ELECTRICAL POWER CABLE FROM THE MAIN POWER SOURCE!**

### **G. ROUTINE MAINTENANCE**

#### **DAILY**

Check amount and color of plasticizer in Pump Lubrication Cups. Change badly discolored material to prevent damage to Pump Packings. Use a plastic siphon bottle to remove the discolored plasticizer from the Cups. Refill the Pump Lubrication Cups approximately 2/3 full with with a suitable pump lubricant.



## **CAUTION**

If plasticizer discolors rapidly, replace the Pump Packings.

#### **WEEKLY**

Place a small amount of grease on Air Motor Shaft and rub over Shaft.

## **WARNING**

Before performing any repairs on the system, ALL AIR and FLUID PRESSURES SHOULD BE RELIEVED TO ZERO (BLEED-OFF)!

To relieve Air and Fluid pressures:

#### **ON SYSTEM CONSOLE:**

- > Turn OFF valves that supply material to the Pumps.
- > Turn OFF Main Air Regulator on Air Motor.

#### **ON GUN:**

- > Open both Side Block Material Valves.
- > Turn ON Air Switch.
- > Point Gun into a clean, suitable container and trigger Gun until material flow stops.
- > Fluid pressure gauges must read zero (0), if not, trigger Gun until the fluid pressure gauges do read zero (0) pressure.
- > Turn OFF Side Block Material Valves.
- > Trigger Gun several more times to purge any material remaining in Gun. Turn OFF air Switch.
- > Unless system is to be returned to service at once, follow *DAILY SHUT-DOWN PROCEDURE*, steps E-1 to E-8.

## MATERIAL OR MECHANICAL PROBLEM

### Troubleshooting Procedure

By following this procedure, you should be able to locate and cure problems easily. Remember, however, that a successful operator must know:

- > *WHAT GOOD MATERIAL LOOKS LIKE.*
- > *HOW THE EQUIPMENT NORMALLY OPERATES.*
- > *WHAT PATH THE MATERIALS FOLLOW THROUGH THE EQUIPMENT.*
- > *KNOWLEDGE OF THESE TROUBLESHOOTING PROCEDURES.*



## NOTE

Always start with step one, never skip any portion of these procedures. The hydraulic pressure gauges are to be used for troubleshooting purposes only. The pressures registered on one gauge will not necessarily match the other. This difference can be caused by variance in materials, temperatures, viscosities, etc.

1. Identify the *missing* material.
2. Check the hydraulic pressure gauge on the *missing* material side.
  - a. If the *missing* material gauge reads HIGHER than normal, there is a RESTRICTION problem between the gauge and the Mixing Chamber tip in the Gun.
  - b. If the *missing* material gauge reads LOWER than normal, there is a STARVATION problem between the gauge and the material supply system.



## NOTE

Problems may be cyclic in that they will appear first on only one stroke of the Proportioning Pump. Check the hydraulic pressure gauges during one of these bursts of missing materials and always stop spraying while you are getting a burst of good material.

3. Concern yourself only with the hydraulic pressure on the *missing* material side. In troubleshooting a STARVATION problem where the hydraulic pressure gauge on the *missing* material side is LOWER than normal, start at the point farthest from the unit and work forward. Check the obvious and easy things first.

### A. NITROGEN SYSTEM

1. Bottle turned on?
2. Bottle has nitrogen in it?
3. Pressure dialed in for drums?
4. Air Valves on drums open?

### B. MATERIAL DRUMS

1. Material in drums?
2. Material temperature?
  - a. No nitrogen and too much heat will cause the fluorocarbon R-11 to pre-expand on the resin side.
  - b. Too cold a material, especially at the bottom of the drum, will raise viscosity of the material and stall Transfer Pumps.

### C. OPTIONAL TRANSFER PUMP(S)

1. Is it operating?
2. Is air turned on to Transfer Pump?
3. Regulated pressure where it should be?
4. Severe contamination of pump shaft on isocyanate side. This indicates that the pump shaft is not being lubricated.
5. Check Filter of Transfer Pump.
6. Before diagnosing a faulty Transfer Pump, be sure and check all items just listed under Transfer Pump including step 3.B.b.

### D. FILTER ASSEMBLY

1. Check fluid filter at inlet to Proportioning Pumps if applicable.

### E. PROPORTIONING PUMPS

1. Determine whether the burst appears on the Pump's up or down stroke.
  - a. If burst appears on UP stroke, check UPPER Ball Seat and Cups.
  - b. If burst appears on DOWN stroke, check LOWER Ball Seat

- B. MATERIAL TEMPERATURE
  1. Too high a temperature on resin side can cause the fluorocarbon R-11 to pre-expand in either the Hose or the Primary Heater.
- C. HOSES
  1. Make sure that the Hoses are not plugged.
5. Troubleshooting a poor spray pattern.

## NOTE

Follow the procedures in the order given. Remember that repairs should be made as soon as possible. Don't leave the unit open to air any longer than necessary, as this will lead to further problems, such as moisture entering the system and causing the isocyanate to crystallize.

After the unit has been exposed to the atmosphere, it should be run long enough to displace the material that was in the unit when it was opened up.

**NEVER inspect filter assemblies at time of shut-down!**

## NOTE

To troubleshoot a poor spray pattern, you must understand the four factors that affect the spray pattern.

4. In troubleshooting, a restriction problem where the hydraulic pressure gauge on the *missing* material side is higher than normal, start at the point farthest from the unit and work backward. Check obvious and easy things first.

- A. TEMPERATURE
  1. Too warm a material temperature will cause a separation (fingering) in the pattern.
  2. Too cold a material temperature will cause a stream effect.
- B. PRESSURE
  1. Too high a pressure will cause excessive overspray and/or separation (fingering).
  2. Too low a pressure will cause a stream effect.
- C. CONTAMINATION IN THE MIXING CHAMBER
  1. A foreign object in the Mixing Chamber will cause a poor pattern.

## WARNING

Before performing any repairs on the Gun, ALL AIR and FLUID PRESSURES SHOULD BE RELIEVED TO ZERO (BLEED-OFF)!

## NOTE

Correct problem(s) immediately!

- A. GUN
  1. Side Block Material Valve turned on?
  2. Bore hole of Mixing Chamber clean?
  3. Filter Strainer Screen clean?
  4. Side hole in Mixing Chamber clean?

# OVERHAUL PROCEDURE

**Gla-Craft®**

19875-00 (-01) Pumps

21835-00 Pumps

1. Dump pressure off system

## WARNING

*Be sure air and power are off to system.*

This is achieved by splitting side blocks off of gun, opening ball valves and purging materials into clean containers.

2. Flush system side to be rebuilt with suitable solvent.



## NOTE

*This is optional, it makes the process easier.*

3. Disconnect inlet fitting from the bottom of the pump.
4. Disconnect outlet fitting from the top of the pump.
  - a. Systems with Over Pressure Valve: remove DIN connector from switch, Phillips screw.
  - b. Remove Over Pressure Switch from fitting.



## CAUTION

*Do not immerse Over Pressure Valve in solvents externally. (Flushing will not affect).*

5. Remove pump from base.

1. Loosen and remove P/N 7729-10 Nylon Lock Nut from yoke.

(Older MX Systems), loosen allen screw screw in yoke, remove Hitch Pin, pull out Clevis Pin.

- b. Loosen and remove four bolts, P/N 9945-48C.

## BREAKING DOWN PUMP

1. Loosen four nuts, P/N 7733-17 at the base of pump and remove, break loose, in a criss-cross pattern.
2. Remove Base, P/N P33-11 from Tie Rods, P/N 18289-00.



## NOTE

*On P/N 21835-00 pumps, watch out for APS-119, APS-128, & 19633-00. The 19633-00 will push these parts out. Observe which side of the APS-119 comes out, Keep right side up for diagnostics.*

3. Remove Valve Housing from the cylinder.  
P/N UF-118 on 19875-00 pump.  
P/N, 19634-00 on 21835-00 pump.
4. Using a rubber mallet, tap shaft out through the bottom of the cylinder, P/N 18219-00.
5. Remove cylinder, P/N 18219-00 from Pump Head, P/N 18227-00.
6. Remove Cup Adapter, P/N 21440-00 from Pump Head, P/N 18227-00.

## DISASSEMBLE SUB-ASSEMBLIES

1. Cup Adapter, P/N 21440-00.
  - a. Remove Support Washer, P/N 18295-01.
  - b. Remove Seal, P/N 21595-00.
  - c. Remove Snap Ring, P/N 1005-02, Nylon Washer, P/N 21896-01, & Felt Wipers, P/N 21897-01.
2. Shaft Assembly:
  - a) Remove P/N 21598-00, Transfer Seat from P/N 21597-00, Transfer Housing. Watch for P/N APS-133, Ball and P/N 21803-00, Spring. The Ball is loaded with spring tension.
  - b. Remove FS-110, Piston Guide and P/N 21595-00 Pump Seal.

## CLEANING

1. Thoroughly wash all parts in suitable solvent.
2. If parts have any build-up of hardened material, it is acceptable to polish parts with fine sand paper,(1200 grit) or steel wool(000).
3. It is recommended that the cylinder be honed with a fine grit bead honer,(P/N RK5-2).

## INSPECTION

1. The Pump Cylinder, P/N 18219-00 inner wall should be smooth. No pitting or scarring should be seen. If slight scars show in the wall, they must not be able to be felt with a finger nail.
2. The Pump Shaft, P/N 21599-00 must not have any scoring, pitting, or build up of any debris on the shaft.
3. Set the Ball, P/N APS-133 in the Seat, P/N 21598-00 and hold up to a light. Observe for light between seat surface and the ball.



## NOTE

If a large sliver of light shows, check for debris or scarring on Seat or Ball.

4. P/N APS-128 & P/N APS-119 repeat the above step.



## NOTE

The APS-119 is reversible, you can use either side.

## RE-ASSEMBLE



## NOTE

All parts underlined are contained in repair kit.

2. Soak P/N 21897-01 in a light weight, non detergent oil, then install in P/N 21440-00.
3. Install P/N 21896-01, push down and install Snap Ring P/N 1005-02 in groove.
4. On bottom side of P/N 21440-00 install P/N 21595-00 in housings so that the lip faces out.
5. Lubricate and install O-Ring, P/N 13867-43 on bottom groove.
6. Install P/N 18295-01 with lip facing toward P/N 21595-00 seal.
7. Place P/N 21595-00 Seal and P/N FS-110 guide on P/N 21597-00. The lips of the Seal will face away from P/N FS-110.
8. Set P/N 21803-00 Spring in P/N 21597-00 Housing and set APS-133 Ball on Spring.
9. Apply blue lock-tite to the threads of P/N 21598-00 and install on P/N 21597-00. Tighten these two parts!
10. Lubricate and install two P/N 13867-49 O- Rings on P/N 18219-00 cylinder.
11. Using a light weight non-detergent oil, coat the seal on the shaft assembly and the walls of the cylinder, then install the shaft assembly into the cylinder, leave approximately 4" of the shaft exposed on the top side.
12. Install cylinder/shaft assembly into P/N 18227-00 Pump Head, careful not to cut O-Ring for Pump P/N 21835-00.
13. With the Pump Assembly upside down, (easy if clamped in a vise) install Foot Valve Housing P/N 19634-00.
14. Set P/N 19633-00 Spring in place and set P/N APS-128 Ball on Spring.
15. Lubricate and install P/N 13867-44 O-Ring in groove of P/N 19634-00.
16. Lubricate the outer edge of P/N APS-119 and set top of ball, square and center flats of P/N APS-119 and P/N 19634-00.
17. Gently set P/N P33-11 through P/N 18289-00 Tie Rods and push down square and firm until it sets down over cylinder O-Ring.
18. Continue holding P33-11 down, install (4) P/N 7734-12 Lock Washers and hand thread (4) P/N 7733-17 Nuts.



19. Tighten P/N 7733-17 in a criss- cross pattern until tight.

**FOR 19875-00 PUMPS:**

1. Set UF-118 in cylinder.
2. Set P/N APS-128 in body.
3. Lubricate P/N 13867-44 and install in groove of UF-118.
4. Install P/N APS-119.
5. Gently set P/N P33-11 through P/N 18289-00 Tie Rods and push down square and firm until it sets down over cylinder O-Ring.

6. Continue holding P33-11 down, install 4 P/N 7734-12 Lock Washers and hand thread 4 P/N 7733-17 Nuts.
7. Tighten P/N 7733-17 in a criss- cross pattern until tight.
8. Lubricate P/N 21595-00 Seal (inside of P/N 21440-00 housing).
9. Gently push down over Pump Shaft P/N 21599-00 and set flush to P/N 18227-00 Pump Head.
10. Re-install pump in reverse order of removal.

# LIMITED WARRANTY POLICY

*GLAS-CRAFT*<sup>®</sup>

GLAS-CRAFT, INC. WARRANTS THE ORIGINAL PURCHASER OF GLAS-CRAFT MANUFACTURED EQUIPMENT AND PARTS, THAT IT WILL REPAIR OR REPLACE (AT ITS SOLE OPTION) ANY DEFECTS IN WORKMANSHIP OR MATERIAL FOR A PERIOD OF ONE YEAR FROM THE DATE OF INSTALLATION.

A WARRANTY CLAIM WILL BE HONORED WHEN;

1. GLAS-CRAFT HAS BEEN INFORMED, IN WRITING, OF ANY SUCH DEFECT IN WORKMANSHIP OR MATERIAL.
2. AN OFFICIAL OF GLAS-CRAFT HAS ISSUED A RETURN AUTHORIZATION NUMBER.
3. SAID EQUIPMENT OR PART HAS BEEN RETURNED TO GLAS-CRAFT BY THE ORIGINAL PURCHASER, FREIGHT PREPAID (WITH PROPER RETURN AUTHORIZATION NUMBER(S) ATTACHED) TO THE INDIANAPOLIS ADDRESS.

IF THE PART IS FOUND TO BE DEFECTIVE IN WORKMANSHIP OR MATERIAL, AS DETERMINED SOLELY BY GLAS-CRAFT, FULL CREDIT OR REPLACEMENT WILL BE MADE BY GLAS-CRAFT INCLUDING FREIGHT CHARGES BOTH WAYS.

THE WARRANTY SHALL NOT APPLY TO ANY EQUIPMENT OR PARTS THAT HAVE BEEN ALTERED OR REPAIRED BY ANYONE OTHER THAN GLAS-CRAFT AND/OR ITS AUTHORIZED DISTRIBUTOR, NOR DEFECTS RESULTING FROM INSTALLATION, MISUSE, NEGLIGENCE, ACCIDENT, OR USE NOT SPECIFIED BY GLAS-CRAFT. THE DECISION BY GLAS-CRAFT SHALL BE CONCLUSIVE AND BINDING ON PURCHASER.

GLAS-CRAFT DOES NOT WARRANT THAT THE EQUIPMENT OR PARTS MEET OR COMPLY WITH ANY REGULATIONS OR CODES BE THEY LOCAL, STATE, FEDERAL OR ANY OTHER JURISDICTION. GLAS-CRAFT DOES NOT WARRANT ANY BUYER THAT THE EQUIPMENT OR PARTS DO NOT INFRINGE ON PATENTS ISSUED TO OTHERS BUT NO KNOWLEDGE OF SUCH INFRINGEMENT DOES EXIST.

ALL WARRANTIES FOR PARTS NOT MANUFACTURED BY GLAS-CRAFT WILL BE SOLELY IN ACCORDANCE WITH ANY WARRANTIES PROVIDED BY THE ORIGINAL MANUFACTURER. THIS WARRANTY IS LIMITED TO THE PURCHASER ONLY.

CREDIT GIVEN OR REPLACEMENT OF DEFECTIVE PARTS IN MATERIAL OR WORKMANSHIP SHALL CONSTITUTE COMPLETE AND FULL OBLIGATION TO THE ORIGINAL PURCHASER. NO OTHER WARRANTIES, EXPRESS OR IMPLIED ON ANY PRODUCT MANUFACTURED OR SOLD BY GLAS-CRAFT WILL BE RECOGNIZED. GLAS-CRAFT SHALL NOT BE HELD 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, INCLUDING SUBSEQUENTIAL AND CONSEQUENTIAL LOSSES.

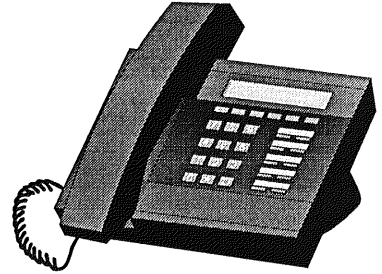


# IF YOU HAVE AN EQUIPMENT PROBLEM...

**Glas-Craft®**

SPRAY GUN MODEL NO. \_\_\_\_\_  
 MATERIAL PUMP MODEL NO. \_\_\_\_\_  
 CATALYST SYSTEM TYPE \_\_\_\_\_  
 CHOPPER MODEL NO. \_\_\_\_\_  
 TYPE of MATERIAL BEING SPRAYED \_\_\_\_\_  
 TYPE of CATALYST BEING SPRAYED \_\_\_\_\_  
 SYSTEM GAUGE PRESSURES  
 ISO \_\_\_\_\_ PSI  
 POLY HEATER AIR \_\_\_\_\_ PSI  
 RESIN \_\_\_\_\_ PSI  
 AIR LINE PRESSURE in SYSTEM \_\_\_\_\_ PSI  
 VOLUME \_\_\_\_\_ CFM  
 COMPRESSOR SIZE \_\_\_\_\_ HP  
 COMPRESSOR to SYSTEM SUPPLY LINE SIZE \_\_\_\_\_ INCHES

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.
<b>SPRAY GUN SYSTEM</b>		
<b>TYPE of MATERIAL BEING SPRAYED</b>		
<b>SYSTEM GAUGE PRESSURES</b>		
<b>ISO HEATER GAUGE</b>		<b>PSI</b>
<b>POLY HEATER GAUGE</b>		<b>PSI</b>
<b>MATERIAL PUMP AIR MOTOR</b>		<b>PSI</b>
<b>MAIN AIR LINE PRESSURE at SYSTEM</b>		<b>PSI</b>
<b>MAIN AIR LINE VOLUME</b>		<b>CFM</b>
<b>COMPRESSOR SIZE</b>		<b>HP</b>
<b>COMPRESSOR to SYSTEM SUPPLY LINE SIZE</b>		<b>INCHES</b>

***Have a general equipment or operation question? You can contact Glas-Craft Service Department via E-Mail at [gciservice@glascraft.com](mailto:gciservice@glascraft.com)***

**FOR YOUR REFERENCE**

***Glas-Craft***

**DATE PURCHASED** \_\_\_\_\_

**DISTRIBUTOR** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CONTACT** \_\_\_\_\_

**PHONE** \_\_\_\_\_

***Manufacturers of ...***

*Fixed and Variable Ratio Systems and Equipment for  
Polyurethane and Hybrid Materials Spray, Pour and Injection*

**Micro, Maxi, Super Maxi, Mini II,  
Mini III, MX, MX II, MH & MH II**

**SYSTEMS and EQUIPMENT for...**

- *SPRAY, POUR & INJECT*
- *FIXED & VARIABLE RATIO SYSTEMS*
- *EQUIPMENT FOR POLYURETHANE FOAMS, COATINGS  
and POLYUREAS*

*...featuring the patented **Probler** Spray/Pour Gun*

**LPA Series**

*"Low Pressure, AIR ASSIST CONTAINMENT, Airless External-Mix"  
Gel-Coat, Wet-Out, & Chopper  
Systems and Equipment*

**INDy Series**

*"Internal-Mix Non-Atomized Dispense Systems"  
...featuring **INDy Nozzle**  
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, Inc.***

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FAX (317) 875-5456  
Web Site [www.glascraft.com](http://www.glascraft.com)

# INSPECTION REPORT

**GLAS-CRAFT**

## FOAM EQUIPMENT

- Micro**       **Maxi**       **Mini II**  
 **Mini III**       **MX**       **MX II**  
 **MH**       **MH II**       **Mongoose**

Part No. \_\_\_\_\_ Inspected By \_\_\_\_\_

Serial No. \_\_\_\_\_ Inspection Date \_\_\_/\_\_\_/\_\_\_

- NEW**       **REPAIR**       **RETURN**

### VISUAL INSPECTION

	N/A	Accept	Reject		N/A	Accept	Reject
Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fluid Filters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visual Leakage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Power Cord	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### FUNCTIONAL TESTS

	N/A	Accept	Reject
Smoothness of Pump Operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pump Output Pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pump Dead-Head Pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electrical Wiring & Connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electrical Control Functions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heater Operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Over Pressure Sensors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Service Manual**       **Literature**

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