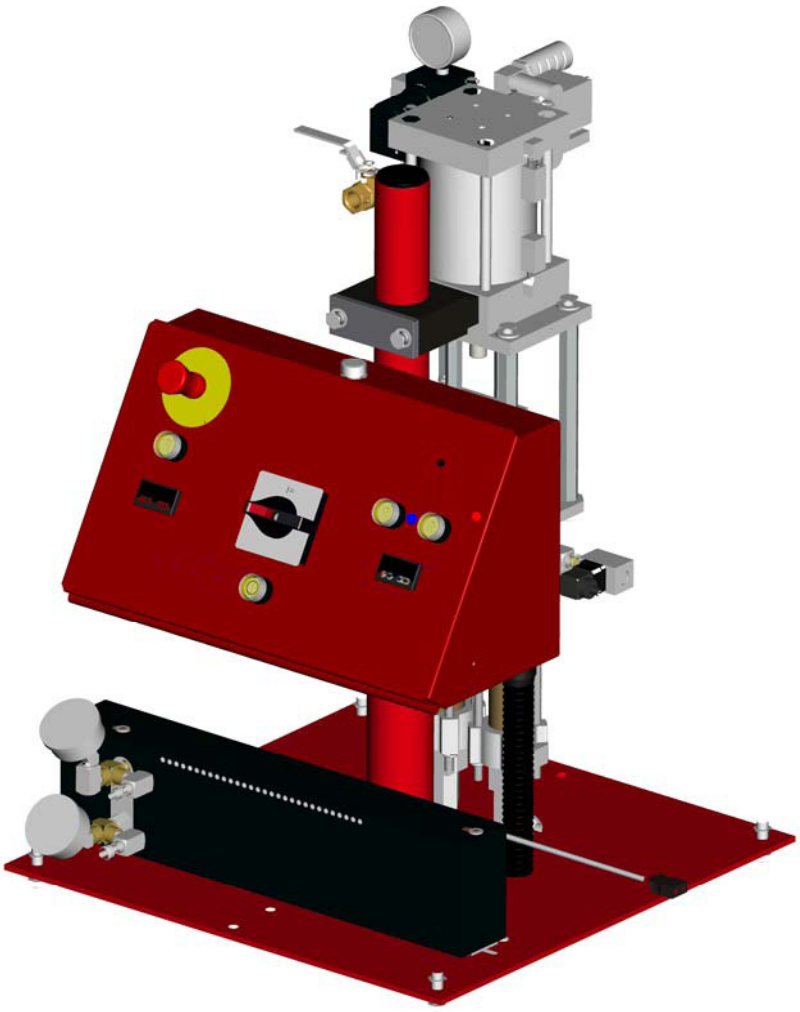
USER MANUAL

GlasCraft
DISPENSING EXCELLENCE

MICRO II/MAXI II

Dispensing System



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CE CERTIFIED

GlasCraft
An ISO 9001 Approved Company

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Introduction

About This Manual

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

In this **GlasCraft** 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 personal 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 **GlasCraft** distributor or made from the **GlasCraft** assembly instructions provided.

This manual provides information for the assembly, operation, maintenance and service of this **GlasCraft** 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 **GlasCraft** distributor to resolve the difference. **GlasCraft,** 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 troubleshooting.

Parts & Illustrations

MICRO II Dispensing System

8lbs.(3.6kg.)/min. Spray or Pour Dispensing System
Floor Mount with Base Plate

Includes

20020-01	Micro II Dispense System • 5" AIR MOTOR, 1 PHASE,220 VAC, 50/60 HZ.
18374-01	Probler Gun Assembly • W/ FLAT SPRAY MIXING CHAMBER
LPA2-147-3640	Spray Nozzle, Tungsten Carbide
20005-22	Heated Hose Assembly, 22 Ft., *w/ Protective Sleeving
15845-00	3/16" Ball Driver
59934-04	Dioctyl Phthalate, 1 Qt.
19851-00	Gravity Feed Kit
21063-01	Heat Exchanger O-ring Kit
1324	User Manual

Options

23950-XX	Probler P2 Gun
23976-00	Probler P2 Flat Spray Kit > You MUST purchase the round spray gun with the flat spray kit.
22515-35	Heated Hose Assy., 35 Ft. > Replaces standard 22 Ft. hose assembly
21403-35	Heated Extension Hose Assy., 35 Ft.

Repair Parts Kits

17661-03	GUN SERVICE KIT
21845-00	PUMP FLUID SECTION REPAIR KIT

MAXI II Dispensing System

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

Includes

20020-01	Maxi II Dispense 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
15845-00	3/16" Ball Driver
59934-04	Dioctyl Phthalate, 1 Qt.
19851-00	Gravity Feed Kit
21063-01	Heat Exchanger O-ring Kit
1324	User Manual

Options

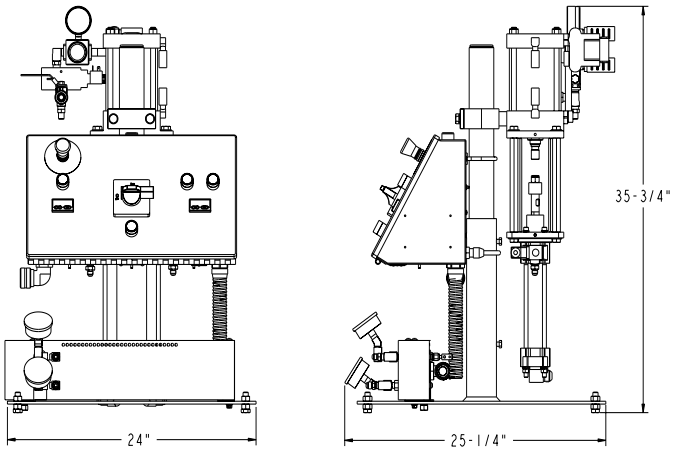
23950-XX	Probler P2 Gun
23976-00	Probler P2 Flat Spray Kit > You MUST purchase the round spray gun with the flat spray kit.
21403-50	Heated Extension Hose Assy., 50 Ft.
21998-00	Thermocouple Extension Kit (Required to complete the hose circuit for each additional 50 Ft hose)

Repair Parts Kits

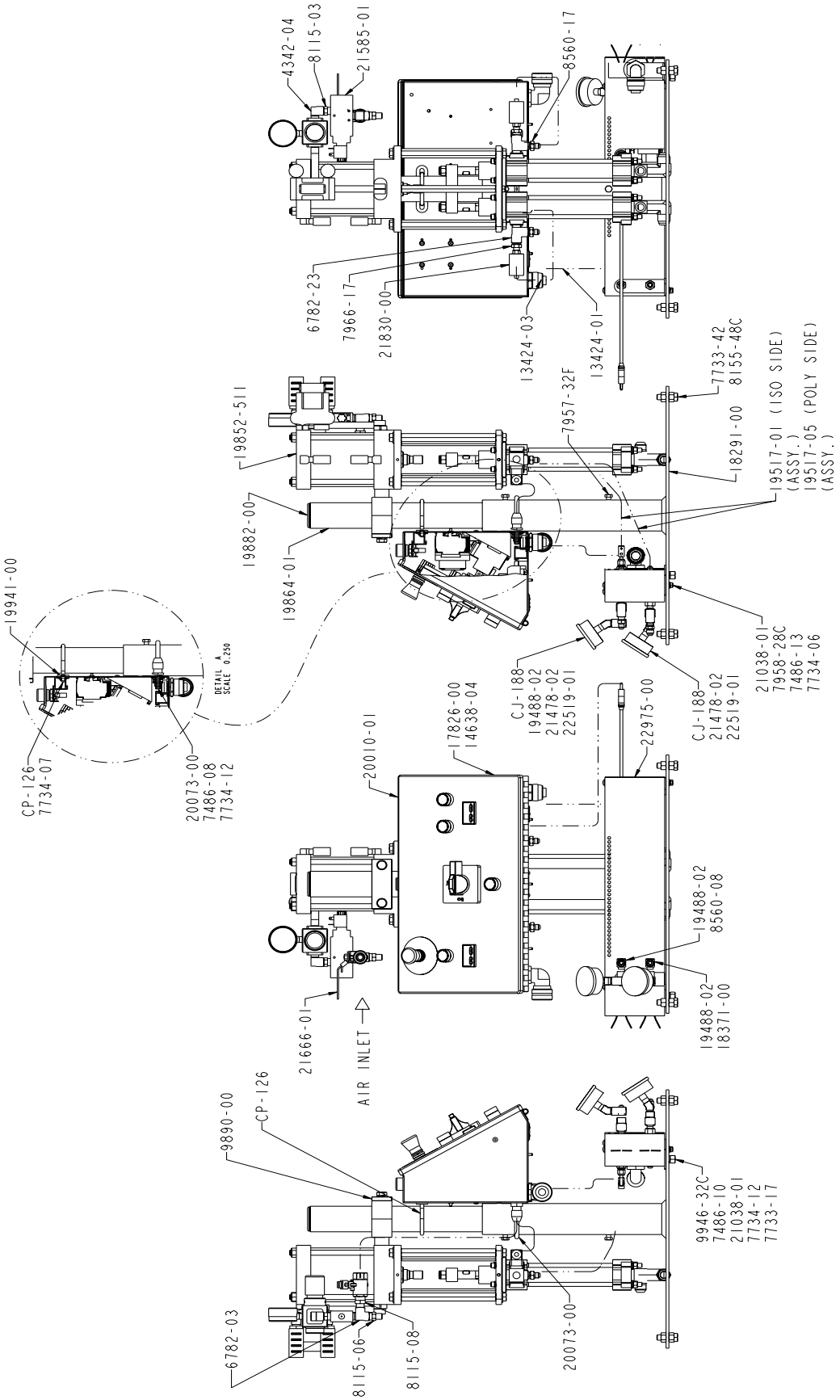
17661-03	GUN SERVICE KIT
21845-00	PUMP FLUID SECTION REPAIR KIT

System Specifications

Material Ratio:	1:1 (Fixed)
Material Viscosity:	200- 2000 Centipoise (Cps) @ AMBIENT (*system set-up for transfer feed) (if viscosity exceeds 1000 cps @ AMBIENT, it is recommended to pressure assist Feed Pumps and spring load lower balls.
Output:	Pumps Rated: .021 GPS @ 60 Cycles = 2.52 GPM .042 GPC
Operating Temperatures:	32º F (0º C) - 190º (88 º C)
Operating Psi:	16:1 RATIO 1600 PSI @ 100 PSI Air Max Working PSI 1760 PSI **Note: Overpressure switches are factory set at 2200 PSI.**
Purging: Constant	Automatic Pneumatic, Solvent-free, Constant
Electrical Requirements:	25 A @ 208/240 VAC,50/60 hz, Single Phase
Compressed Air Requirements:	Base Unit: 1.0 GAL PER MINUTE – 17 CFM @ 100 PSI. 1.5 GAL PER MINUTE – 24 CFM @ 100 PSI. 2.0 GAL PER MINUTE – 33 CFM @ 100 PSI. **NOTE:** As output is increased, (achieved w/ chamber size on gun or spray tip), pressure drop will be greater. Heateing capability will also drop.
Heaters:	3000 WATT HEATER
Maximum Hose Length:	100' (Each Section 50' x ¼")
Shipping Weight:	240 Lbs.
Overall Dimensions:	



20020-01 Maxi II Micro II System Assembly



REVISION E

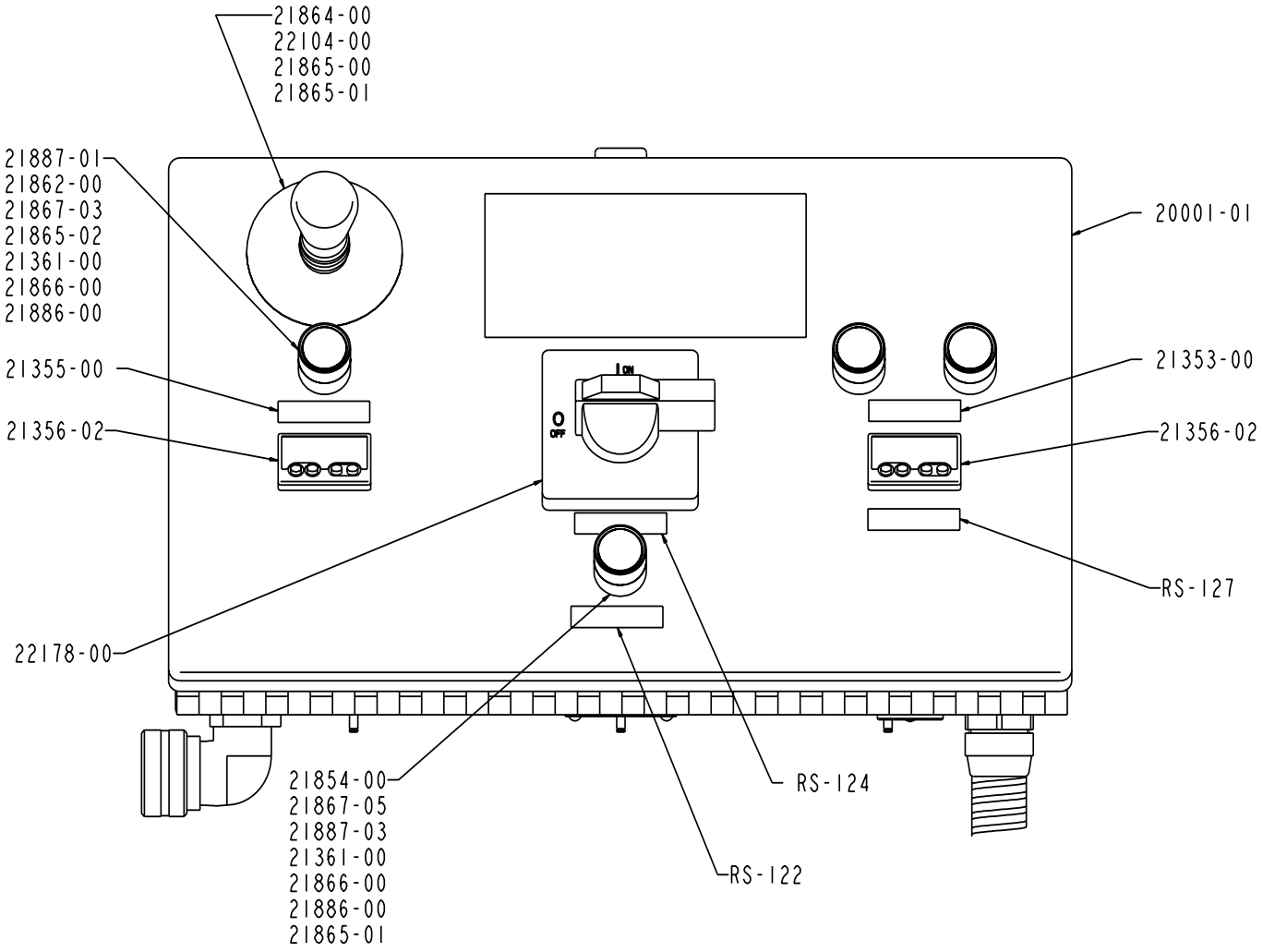
20020-01 Maxi II Micro II System Assembly Parts List

PART NUMBER	DESCRIPTION
13424-01	CABLE TIE
13424-03	CABLE TIE
14638-04	BLIND RIVET
17826-00	(CAUTION) NAME PLATE
18291-00	FLOOR MOUNT MAST BASE
18371-00	CONNECTOR FITTING
19488-02	ELBOW FITTING
19517-01	(ISO) SIDE ASSY.
19517-05	(POLY) SIDE ASSY.
19852-511	5” PROPORTIONING UNIT ASSY.
19864-01	SUPPORT MAST
19882-00	CAP
19890-00	MOUNTING CLAMP ASSY.
19941-00	STRAP WASHER
20010-01	CONTROL BOX ASSY.
20073-00	U-BOLT
21038-01	FIBER WASHER
21478-02	ELBOW FITTING
21585-01	4-WAY VALVE
21666-01	LOCK-OUT BALL VALVE
21830-00	HIGH PRESSURE SWITCH
22519-01	3000 PSI PRESSURE GAUGE
22975-00	HEAT EXCHANGER ASSY.

PART NUMBER	DESCRIPTION
4342-04	ELBOW FITTING
6782-03	TEE FITTING
6782-23	TEE FITTING
7486-08	FLAT WASHER
7486-10	FLAT WASHER
7486-13	FLAT WASHER
7733-17	NUT
7733-42	NUT
7734-06	LOCK WASHER
7734-07	LOCK WASHER
7734-12	LOCK WASHER
7957-32F	SCREW
7958-28C	SCREW
7966-17	PIPE FITTING
8115-03	FITTING
8115-06	PIPE FITTING
8115-08	PIPE FITTING
8155-48C	SCREW
8560-08	CONNECTOR FITTING
8560-17	CONNECTOR FITTING
9946-32C	SCREW
CJ-188	TEE PIPE FITTING
CP-126	U-BOLT

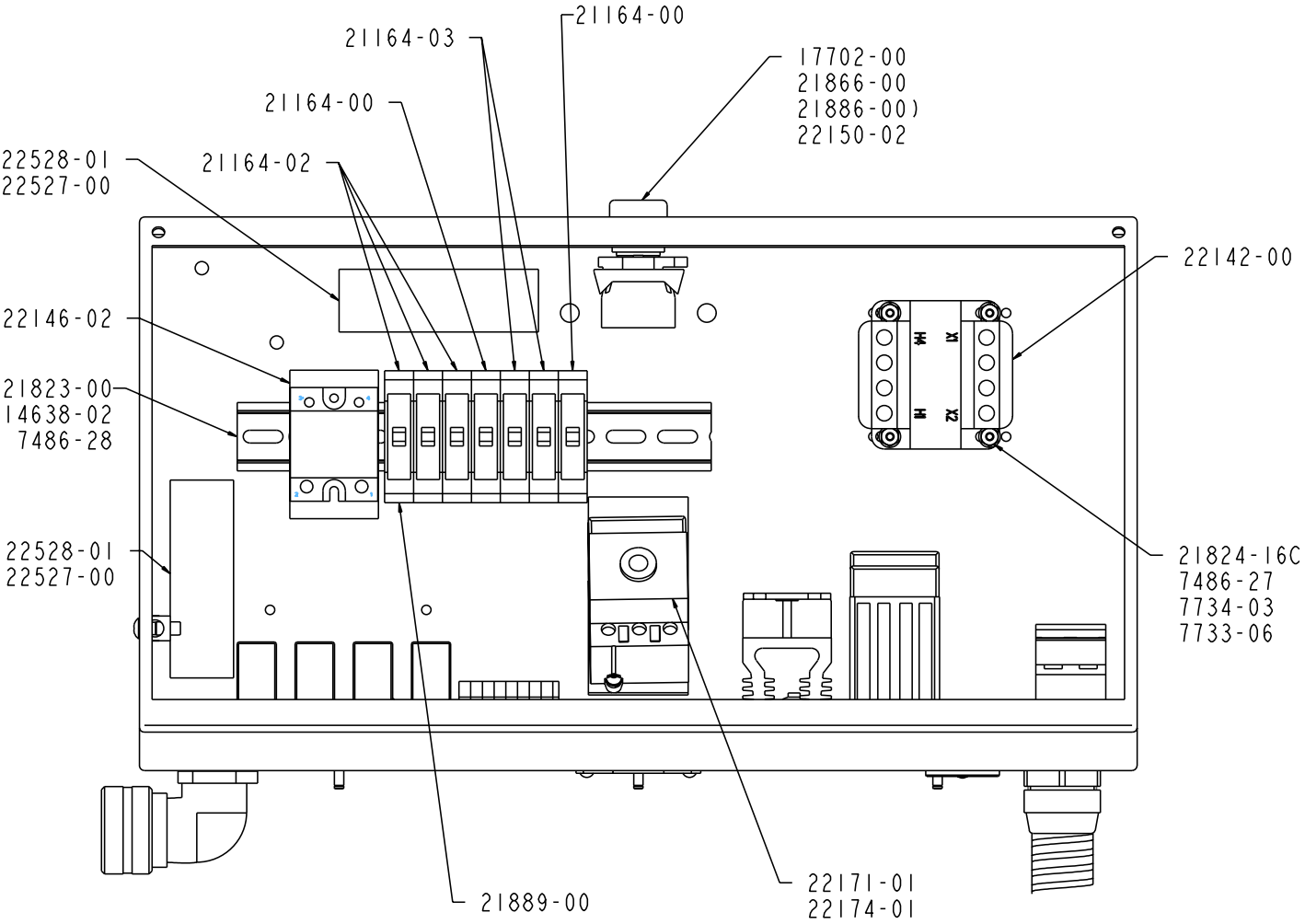
REVISON E

20010-01 Control Box Assembly



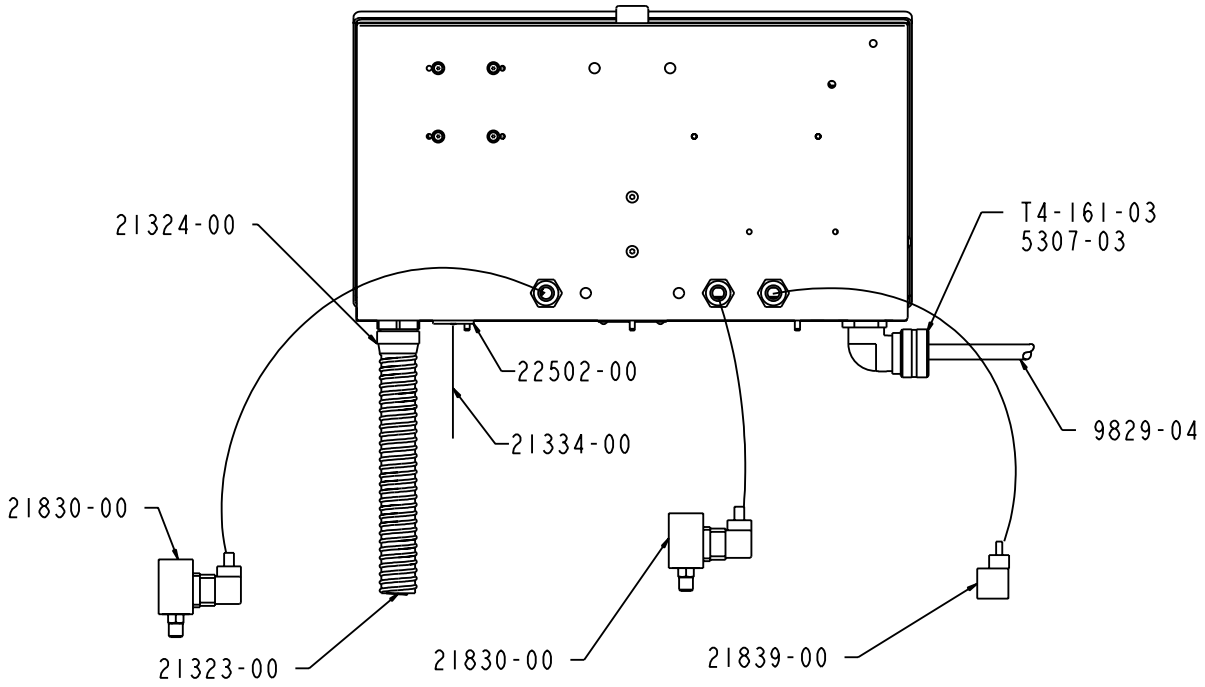
REVISION L

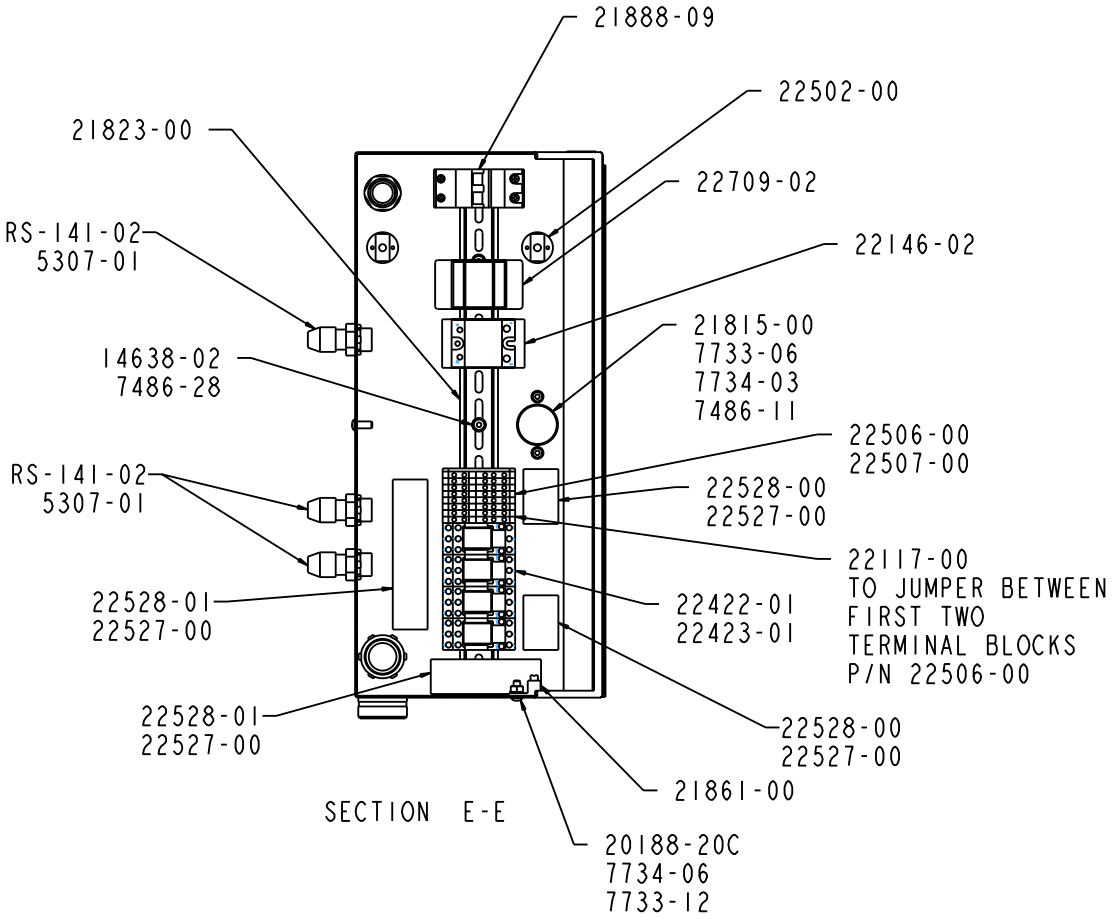
20010-01 Control Box Assembly



REVISION L

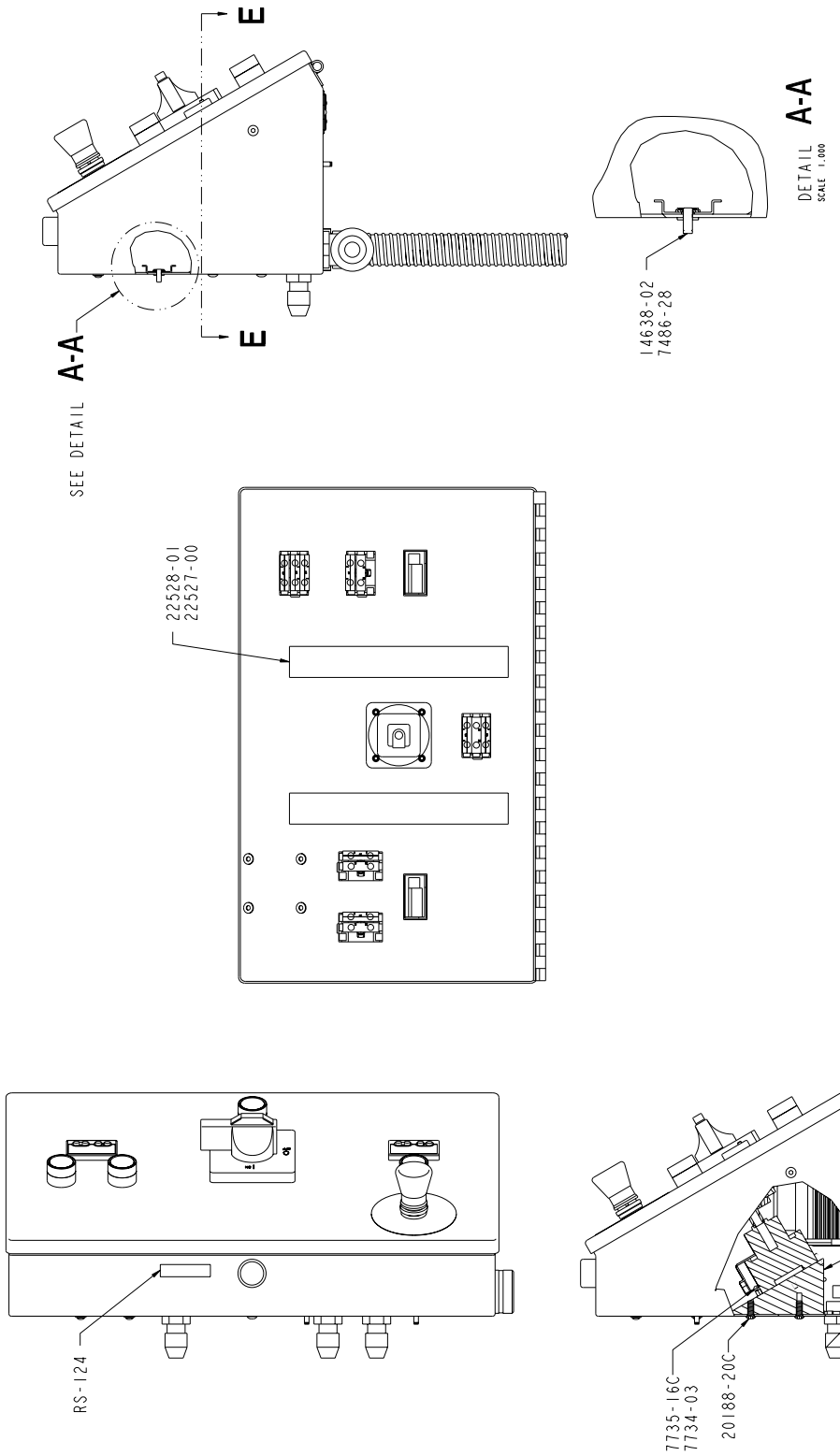
20010-01 Control Box Assembly





REVISION L

20010-01 Control Box Assembly



REVISION L

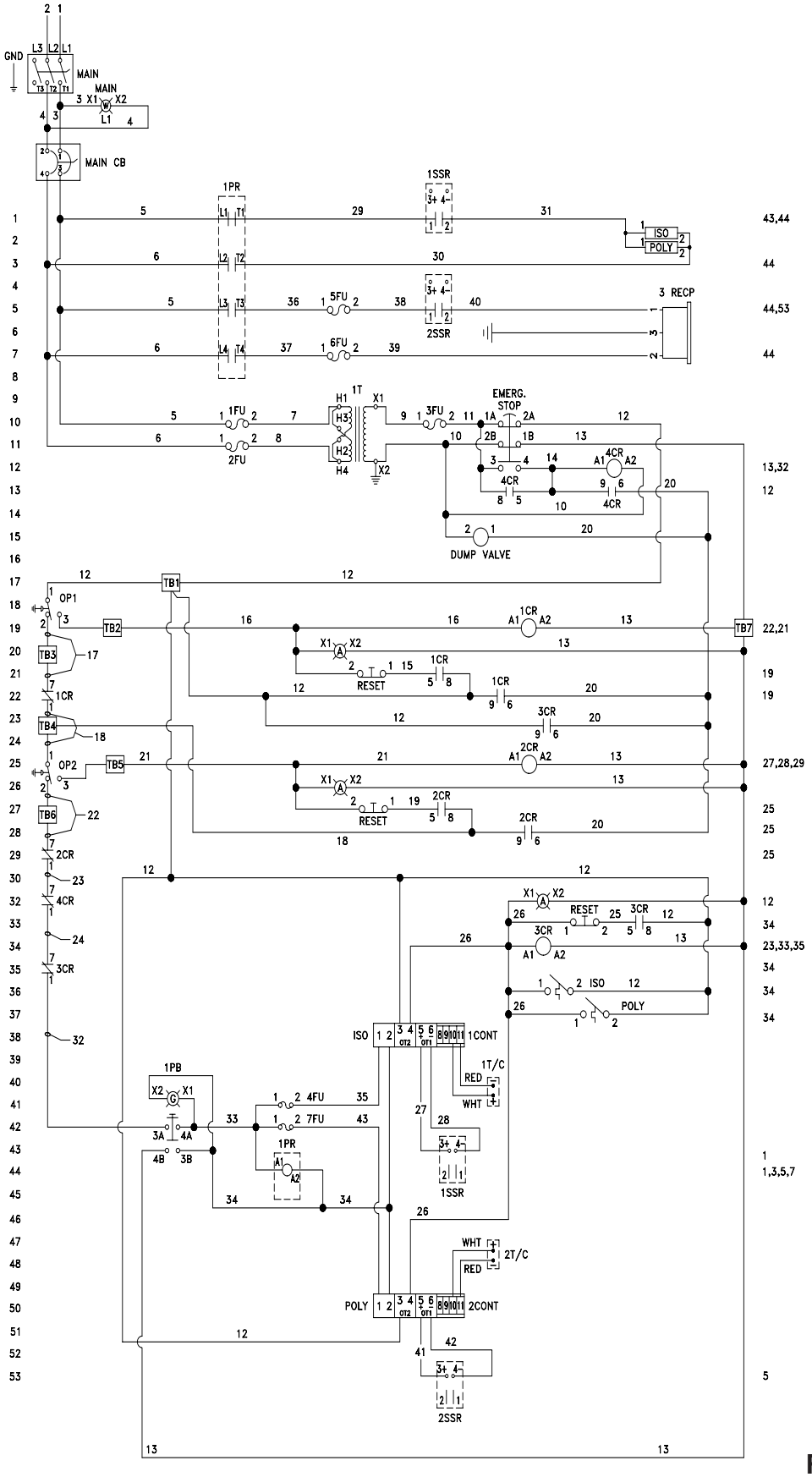
20010-01 Control Box Assembly Parts List

PART NUMBER	DESCRIPTION
14638-02	BLIND RIVET
17702-00	PILOT LAMP
20001-01	CONTROL BOX
20188-20C	SCREW
21164-00	1/2 AMP FUSE
21164-02	2 AMP FUSE
21164-03	3 AMP FUSE
21323-00	3/4” FLEXIBLE CONDUIT
21324-00	CONDUIT CONNECTOR
21334-00	THERMOCOUPLE
21353-00	OVER PRESSURE DECAL
21355-00	OVER TEMPERATURE DECAL
21356-02	2 AMP MICROPROCESSOR CONTROL
21361-00	MINIATURE LAMP
21722-00	MOUNTING BLOCK BRACKET
21815-00	FLANGED ELECTRIC RECEPTACLE
21823-00	DIN RAIL
21824-16C	SCREW
21830-00	HIGH PRESSURE SWITCH
21839-00	3-WIRE DIN CONNECTOR
21854-00	LATCHED PUSH BUTTON
21861-00	CONDUCTOR CONNECTOR
21862-00	MOMENTARY PUSH BUTTON
21864-00	EMERGENCY STOP PUSH BUTTON
21865-01	N.O. CONTACT BLOCK
21865-02	N.C. CONTACT BLOCK
21866-00	COUPLING PLATE
21867-03	WHITE INSCRIPTION CAP
21867-05	WHITE INSCRIPTION CAP
21886-00	FRONT MOUNTING LAMP BLOCK
21887-01	YELLOW COLOR CAP
21887-03	GREEN COLOR CAP
21888-09	CIRCUIT BREAKER
21889-00	DIN RAIL FUSE HOLDER
22104-00	EMERGENCY STOP DECAL
22117-00	TERMINAL BLOCK JUMPER
22142-00	CONTROL BOX TRANSFORMER

PART NUMBER	DESCRIPTION
22146-02	50 AMP SOLID STATE RELAY
22150-02	OPAQUE PILOT LIGHT
22171-01	ON/OFF SWITCH BLOCK
22174-01	ON/OFF SWITCH BLOCK COVER
22178-00	ON/OFF POWER SWITCH
22422-01	10 AMP 3 POLE RELAY
22423-01	10 AMP 3 POLE RELAY SOCKET
22502-00	CIRCULAR PANEL JACK
22506-00	2 IN/OUT TERMINAL
22507-00	TERMINAL END COVER
22527-00	WIRING DUCT COVER
22528-00	WIRING DUCT
22528-01	WIRING DUCT
22709-02	4-POLE MECHANICAL CONTACTOR
22801-00	DOUBLE SIDED TAPE
5307-01	CONDUIT NUT
5307-03	CONDUIT NUT
6663-00	TERMINAL LUG
7208-02	WIRE NUT
7208-04	WIRE NUT
7361-00	TERMINAL RING LUG
7486-11	FLAT WASHER
7486-27	FLAT WASHER
7486-28	FLAT WASHER
7733-06	NUT
7733-12	NUT
7734-03	LOCK WASHER
7734-06	LOCK WASHER
7735-16C	SCREW
7750-02	COPPER WIRE
8846-08	COPPER WIRE
8847-08	COPPER WIRE
9829-04	CABLE
RS-122	PRIMARY DECAL
RS-124	MAIN DECAL
RS-127	HOSE CONTROL DECAL
RS-141-02	CORD GRIP
T4-161-03	CABLE CONNECTOR

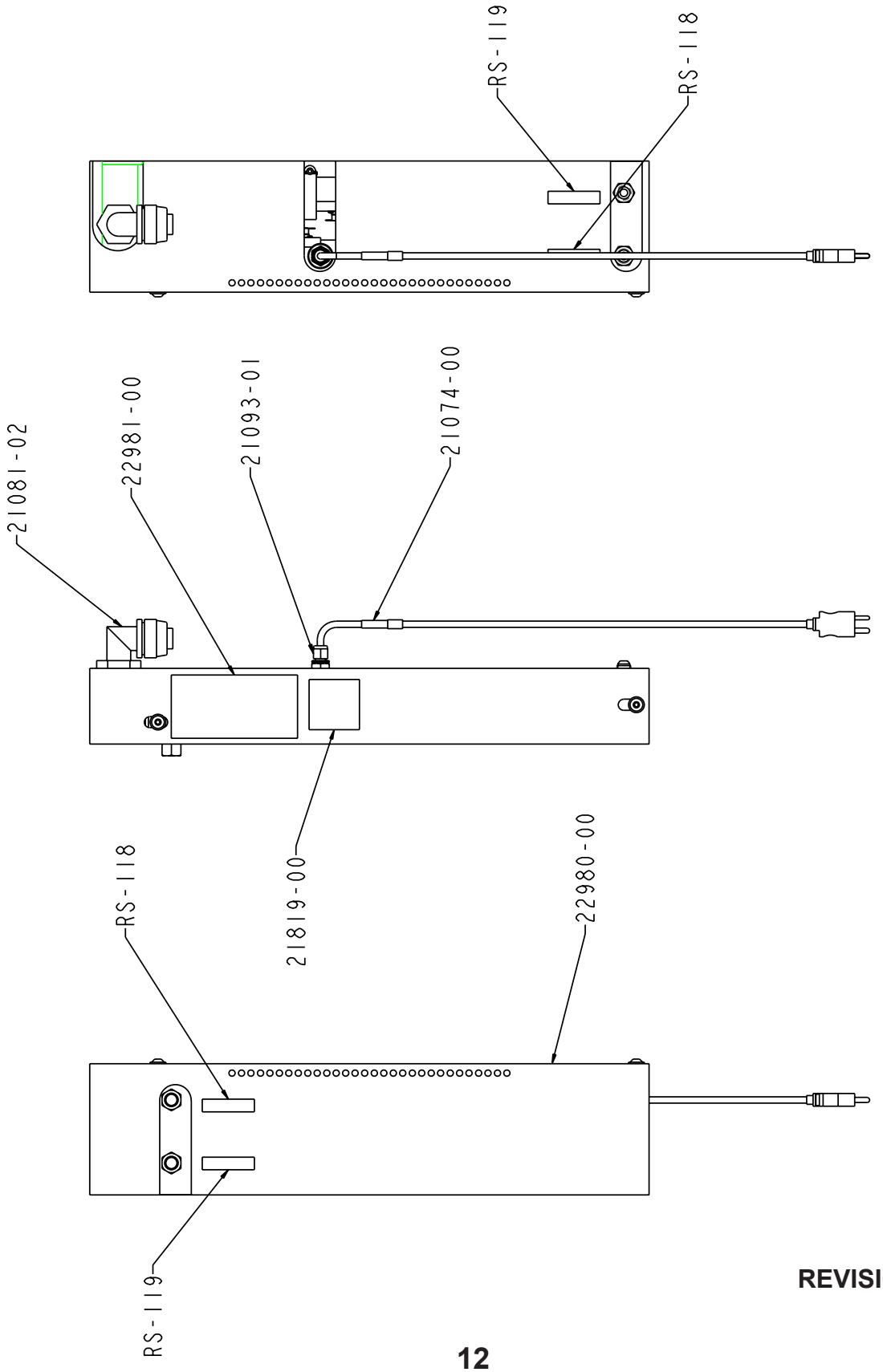
REVISON L

20010-01 System Schematic



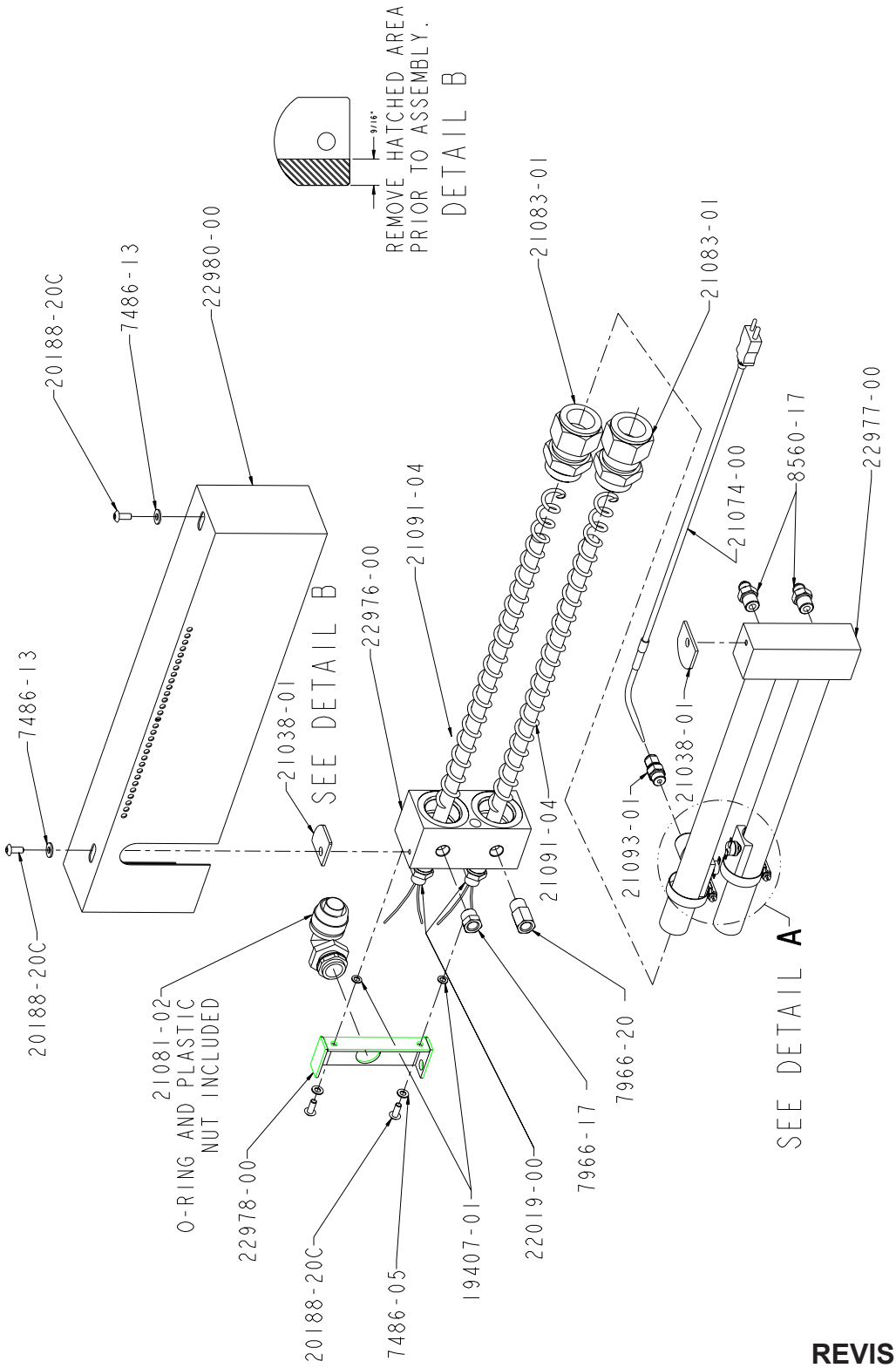
REVISON L

22975-00 Heat Exchanger Assembly



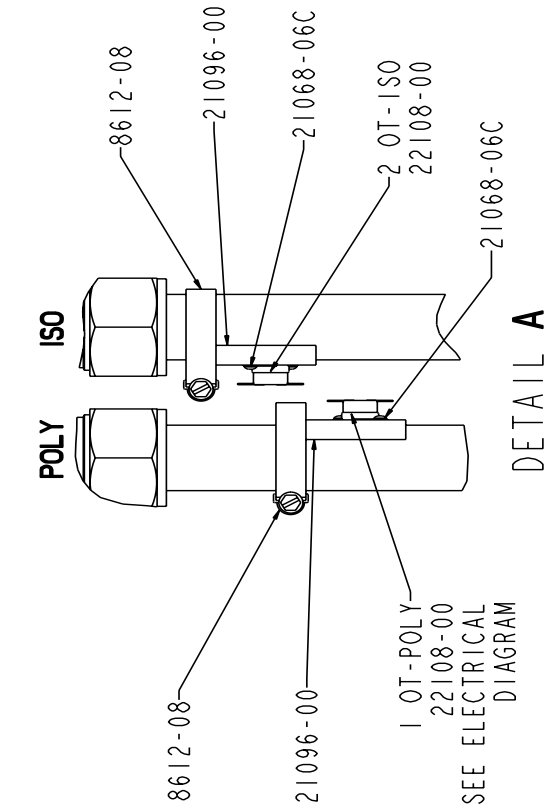
REVISION H

22975-00 Heat Exchanger Assembly

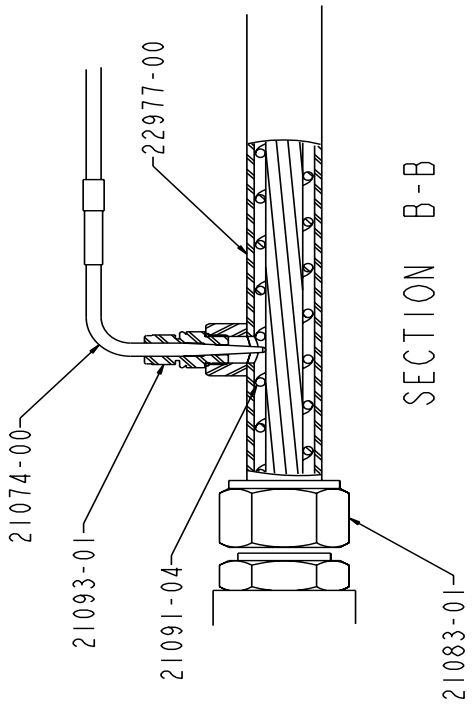


REVISION H

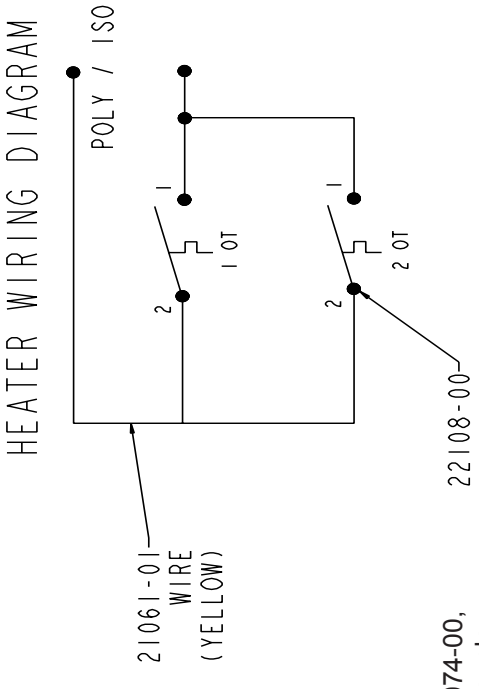
22975-00 Heat Exchanger Assembly



DETAIL **A**



SECTION B-B



HEATER WIRING DIAGRAM

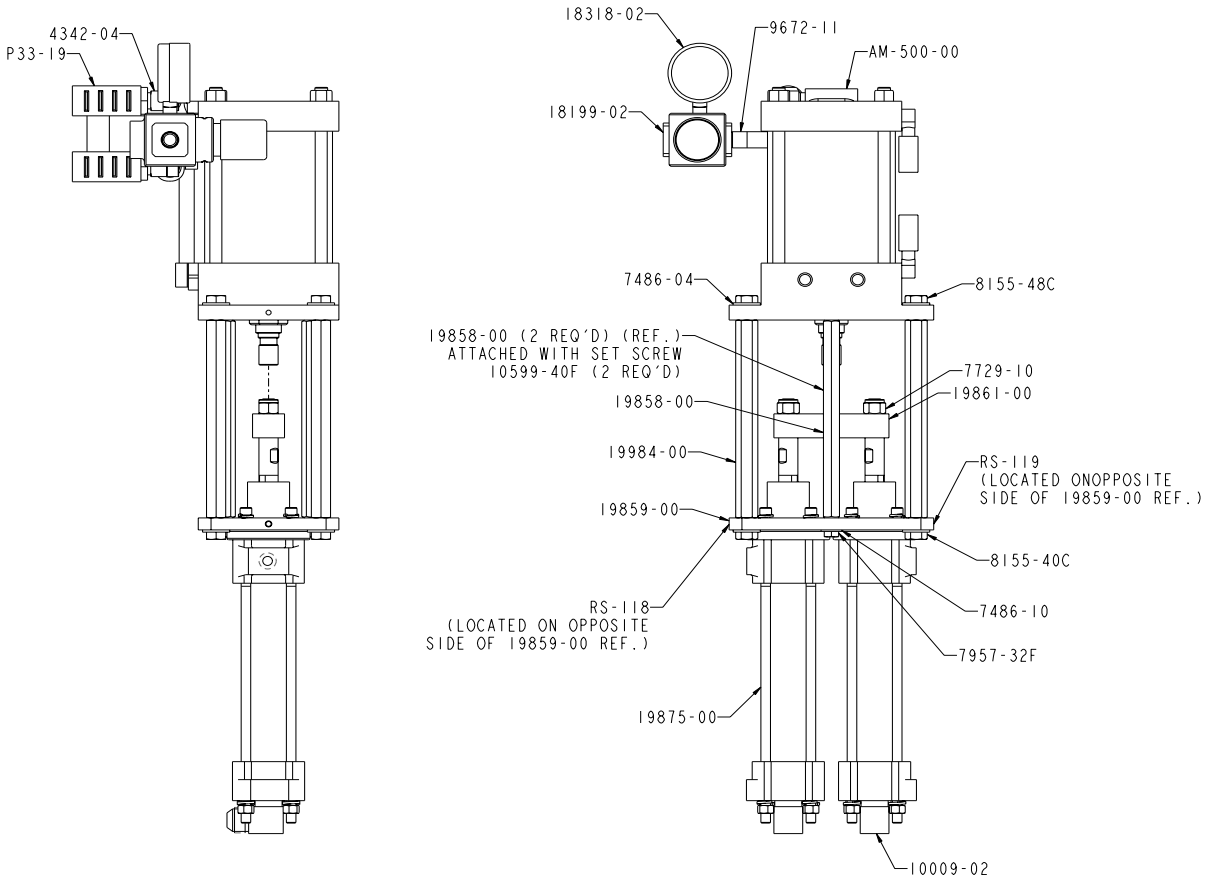
Note
When replacing thermocouple p/n: 21074-00, use kit p/n: 21214-01. Besure thermocouple is touching heater element before tightening.

22975-00 Heat Exchanger Parts List

PART NUMBER	DESCRIPTION	QTY.
19407-01	NYLON WASHER	2
20188-20C	SCREW	4
21038-01	HARD FIBER WASHER	2
21061-01	COPPER WIRE	
21068-06C	SCREW	4
21074-00	THERMOCOUPLE	1
21081-02	SWIVELLOK CONNECTOR	1
21083-01	FITTING	2
21091-04	TURBULATOR SPRING	2
21093-01	FITTING	1
21096-00	THERMOSTAT MOUNTING PAD	2
21819-00	LIVE WIRE DECAL	1
22019-00	HEATER ELEMENT	2
22108-00	OVERTEMP SWITCH	2
22976-00	HEAT EXCHANGER CAP BLOCK	1
22977-00	SENSOR TUBE ASSEMBLY	1
22978-00	MOUNTING BRACKET	1
22980-00	HEAT EXCHANGER COVER	1
22981-00	HEAT EXCHANGER WARNING DECAL	1
7486-05	FLAT FENDER WASHER	2
7486-13	FLAT WASHER	2
7966-17	FITTING	1
7966-20	FITTING	1
8560-17	CONNECTOR FITTING	2
8612-08	HOSE CLAMP	2
RS-118	ISO DECAL	2
RS-119	POLY DECAL	2

REVISION H

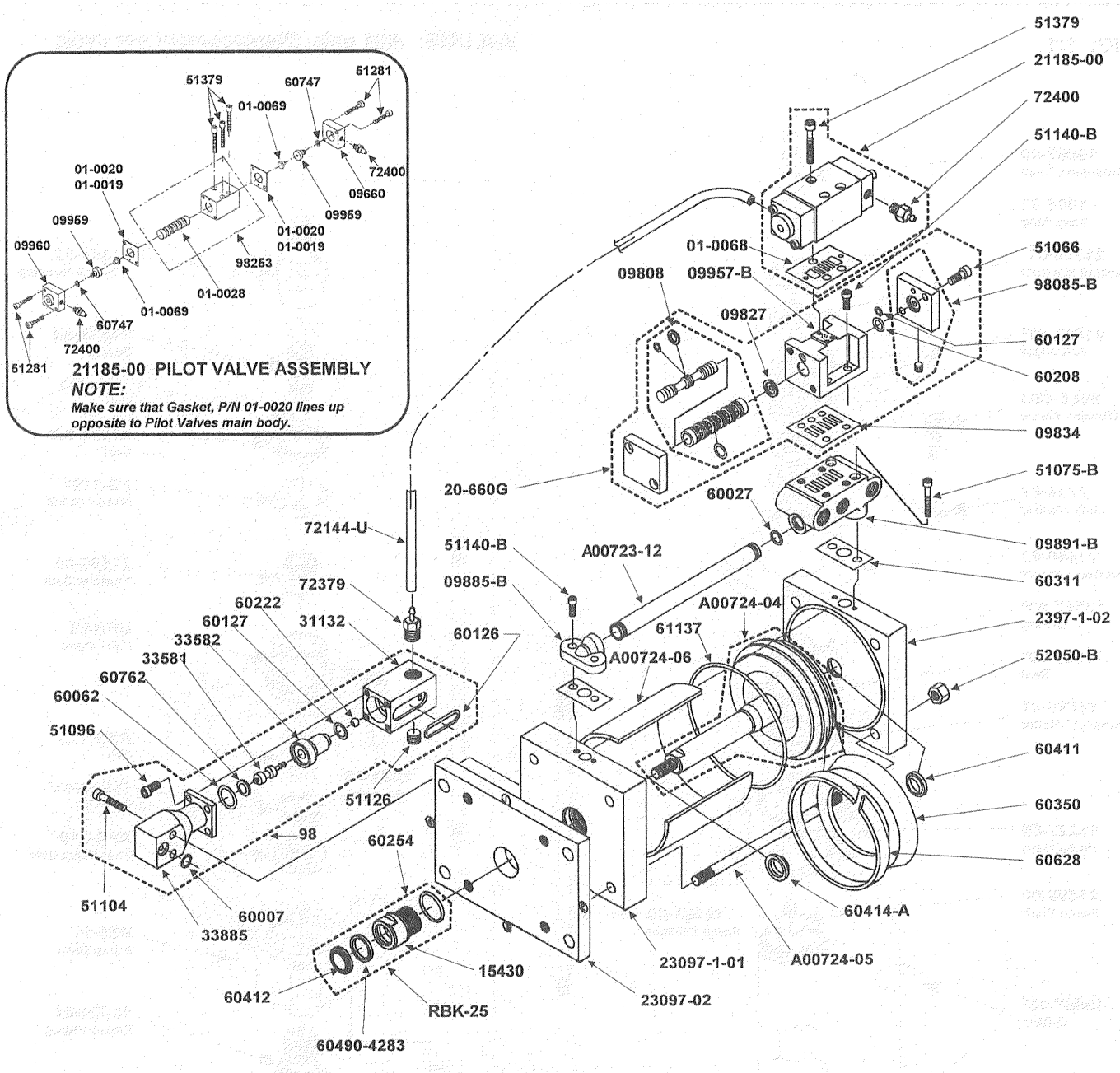
19852-511 Proportioning Unit Assembly



PART NUMBER	DESCRIPTION	QTY.
10599-40F	SCREW	2
18199-02	AIR REGULATOR	1
18318-02	0-100 PSI. AIR GAUGE	1
19858-00	STAND-OFF	2
19859-00	PUMP MOUNTING PLATE	1
19861-00	PUMP SADDLE	1
19984-00	STAND-OFF	4
4342-04	ELBOW FITTING	2
7486-04	FLAT WASHER	8
7486-10	FLAT WASHER	2
7729-10	NUT	2
7957-32F	SCREW	2
8155-40C	SCREW	4
8155-48C	SCREW	4
9672-11	FITTING	1
AM-500-00	5" AIR MOTOR	1
P33-19	EXHAUST SILENCER	2
RS-118	ISO DECAL	1
RS-119	POLY DECAL	1

REVISION H

AM-500-00 Air Motor



REPAIR KITS

20101-00 OVERHAUL KIT
20102-00
20103-00
20104-00
20105-00
20106-00
20107-00
20189-00

20102-00 PISTON SEAL KIT
60325
60327-80
50-TSH
60628

20103-00 ROD SEAL KIT
60254
60412
60490-4283

20104-00 SIGNAL VALVE KIT
33581
60007
60062
60126
60127
60905
60222
60762
A-00723-13

20105-00 GASKET KIT
01-0068
09834
60027
60311

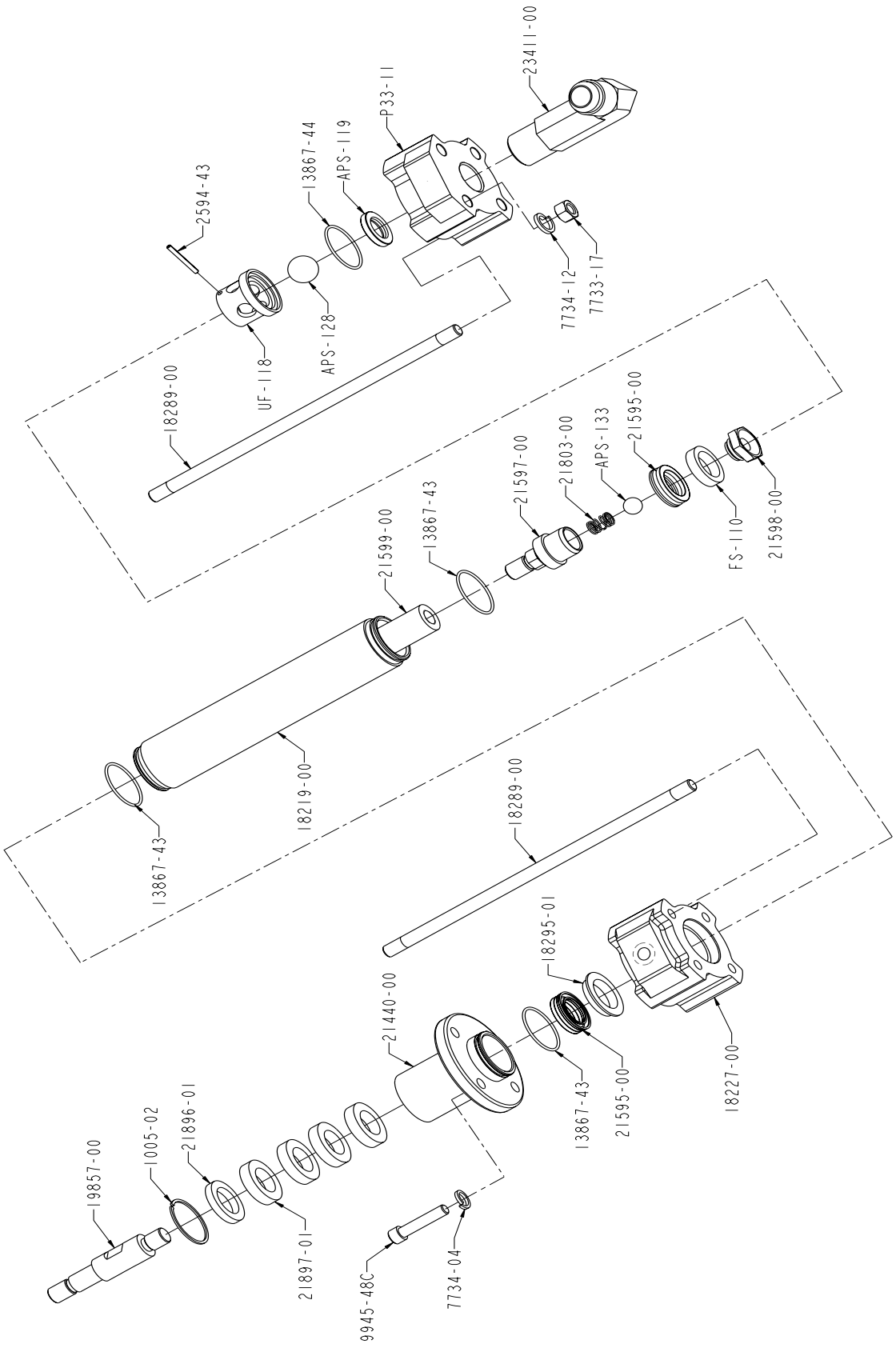
20106-00 MAIN VALVE KIT
09808
09827
60127
60208

20107-00 PILOT VALVE KIT
01-0020
01-0028
01-0069
60747

19875-00 Fluid Section

RATIO: 1:1

VOLUME: .021 gals. Displacement per cycle



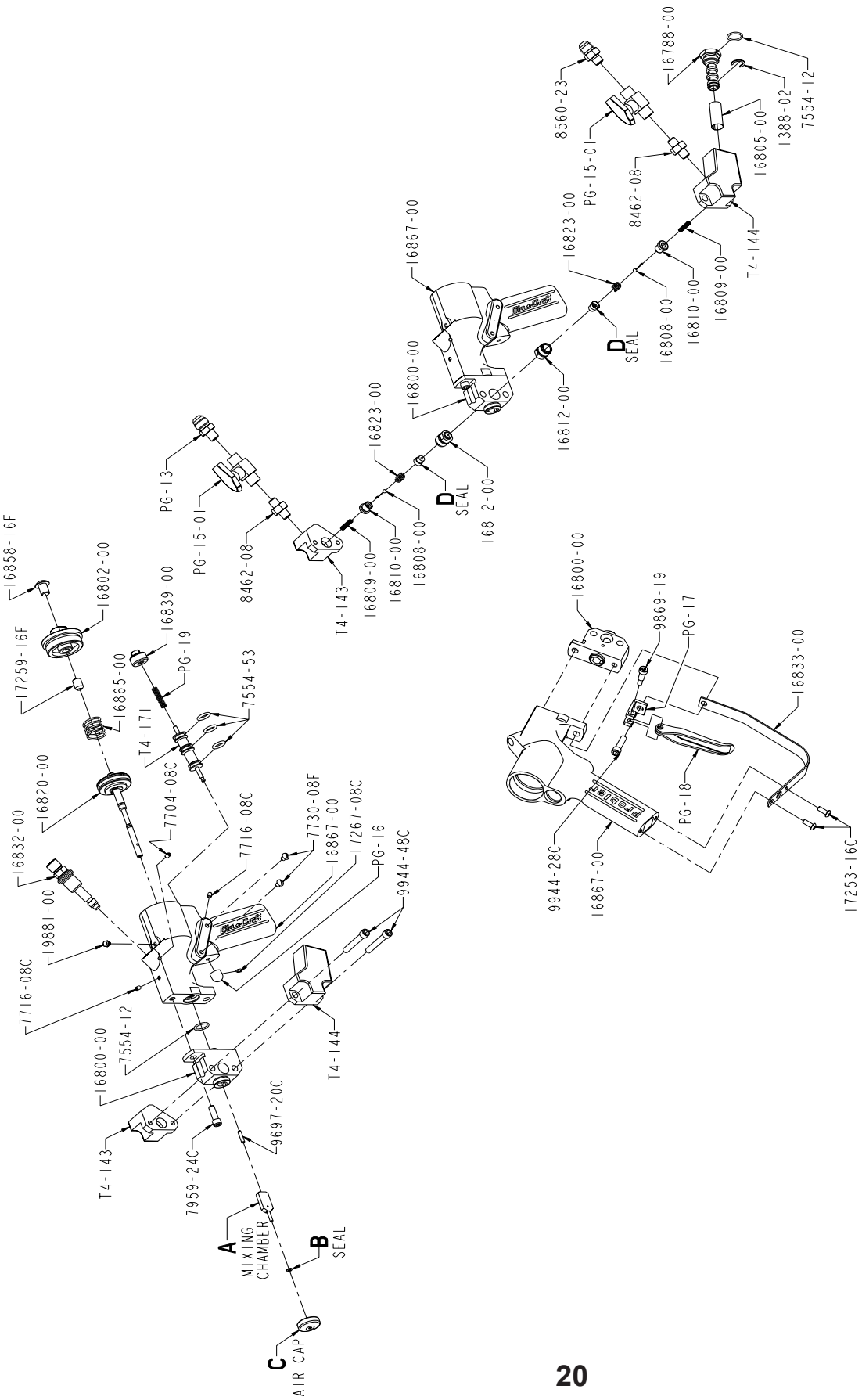
19875-00 Fluid Section Parts List

PART NUMBER	DESCRIPTION	QTY.
13867-43	O-RING	3
13867-44	O-RING	1
18219-00	PUMP CYLINDER	1
18227-00	PUMP HEAD	1
18289-00	TIE ROD	4
18295-01	UPPER CUP SUPPORT WASHER	1
19857-00	PUMP SHAFT EXTENSION	1
21440-00	SOLVENT CUP ADAPTER	1
21595-00	PUMP SEAL	2
21597-00	TRANSFER HOUSING	1
21598-00	TRANSFER HOUSING SEAT	1
21599-00	1:1 PUMP SHAFT	1
21803-00	SPRING COMPRESSION	1
21896-01	PACKING RETAINER	1
21897-01	FELT WIPER	4
23411-00	ELBOW FITTING	1
2594-43	ROLL PIN	1
7733-17	NUT	4
7734-07	SPRING LOCK WASHER	4
7734-12	SPRING LOCK WASHER	4
9945-48C	SCREW	4
APS-119	FOOT VALVE SEAT	1
APS-128	BALL	1
APS-133	BALL	1
FS-110	PISTON GUIDE	1
P33-11	PUMP BASE	1
UF-118	FOOT VALVE HOUSING	1

21845-00 REPAIR KIT		
PART NUMBER	**DESCRIPTION**	**QTY.**
13867-43	O-RING	3
13867-44	O-RING	1
21595-00	PUMP SEAL	2
21896-01	PACKING RETAINER	1
21897-01	FELT WIPER	4
FS-110	PISTON GUIDE	1

REVISION H

18374-XX Probler Dispense Gun



GLAS-CRAFT P/N	A	B	C
18374-00	18375-00	PG-11-01	16811-01
18374-01	18375-01	PG-11-01	16811-01
18374-02	18375-02	PG-11-01	16811-01
18374-03	18375-03	PG-11-01	16811-01
18374-04	18375-04	PG-11-02	T4-132
18374-05	18375-05	PG-11-02	T4-132

18374-XX probler Dispense Gun Parts List

PART NUMBER	DESCRIPTION	QTY.
1388-02	SNAP RING	1
16788-00	STRAINER SUPPORT	1
16800-00	MIXING CHAMBER HOUSING	1
16802-00	REAR CAP	1
16805-00	STRAINER	1
16808-00	CHECK VALVE BALL ASSEMBLY	2
16809-00	COMPRESSION SPRING	2
16810-00	CHECK VALVE BODY	2
16811-01	MIXING VALVE SEAL	2
16812-00	CHECK VALVE SEAL	2
16820-00	**PISTON ASSEMBLY**	**1**
16823-00	SPRING	2
16832-00	**AIR SWITCH ASSEMBLY**	**1**
16833-00	TRIGGER GUARD	1
16839-00	TRIGGER VALVE PLUG	1
16858-16F	SCREW	1
16865-00	SPRING	1
16867-00	HANDLE	1
17253-16C	SCREW	2
17259-16F	SET SCREW	1
17267-08C	SET SCREW	1
18375-00	MIXING CHAMBER ASSEMBLY	1
18377-00	FLAT SPRAY AIR CAP	1
18378-00	NUT	1

PART NUMBER	DESCRIPTION	QTY.
18380-00	AIR CAP SEAL	1
19881-00	PLUG FITTING	1
7554-12	O-RING	2
7554-53	O-RING	3
7704-08C	SET SCREW	1
7716-08C	SET SCREW	2
7730-08F	SCREW	2
7959-24C	SCREW	1
8462-08	FITTING	2
8560-23	CONNECTOR FITTING	1
9697-20C	SET SCREW	1
9869-19	SCREW	1
9944-28C	SCREW	1
9944-48C	SCREW	2
PG-11-01	FLAT SPRAY NOZZLE CONNECTOR	1
PG-13	CONNECTOR FITTING	1
PG-14	FLUID NOZZLE SEAL	1
PG-15-01	2-WAY BALL VALVE	2
PG-16	PROBLER TRIGGER BUTTON	1
PG-17	TRIGGER SUPPORT BRACKET	1
PG-18	PROBLER TRIGGER	1
PG-19	COMPRESSION SPRING	1
T4-143	POLYOL SIDE BLOCK	1
T4-171	ISO SIDE BLOCK	1

16820-00	PISTON ASSY.	QTY.
7554-03	O-RING	1
7554-05	O-RING	2
7554-29	O-RING	1
16803-00	PISTON	1
16804-00	PISTON SHAFT	1
16828-01	RETAINING RING	2

16821-00	FILTER ASSY.	QTY.
16788-00	STRAINER SUPPORT	1
7554-12	0-RING	1
1388-02	SNAP RING	1
16805-00	STRAINER	1

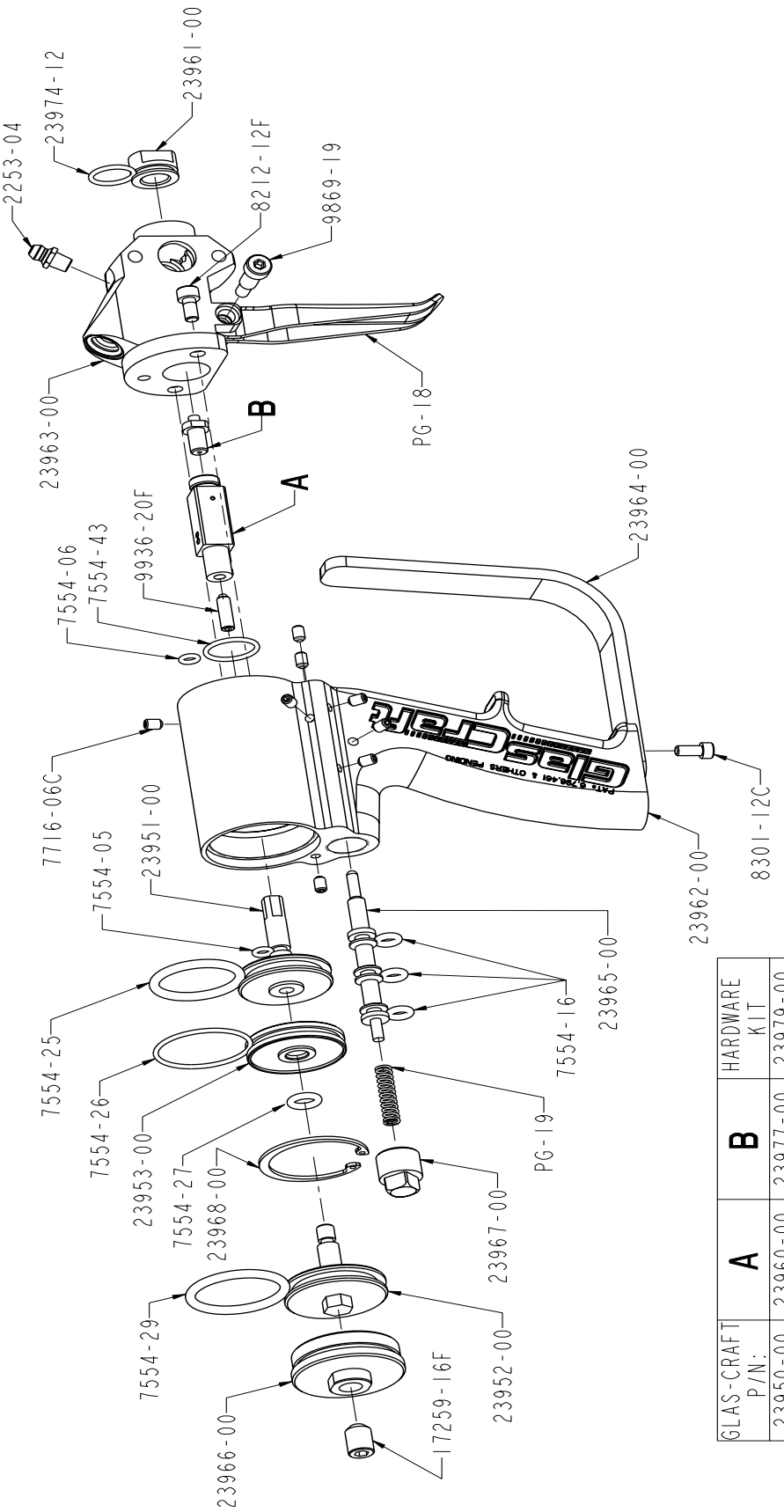
16832-00	AIR SWITCH ASSY.	QTY.
7554-07	O-RING	1
7554-09	O-RING	2
16830-00	AIR SWITCH TUBE	1
16831-00	AIR SWITCH SPOOL	1

17275-00	CHECK VALVE SEAL ASSY.	QTY.
16808-00	CHECK VALVE BALL ASSY.	1
16809-00	SPRING	1
16810-00	CHECK VALVE BODY	1
16811-01	SEAL	1
16812-00	CHECK VALVE SEAL	1
16823-00	SPRING	1

NOTE: Refer to gun manual or trouble shooting guids.

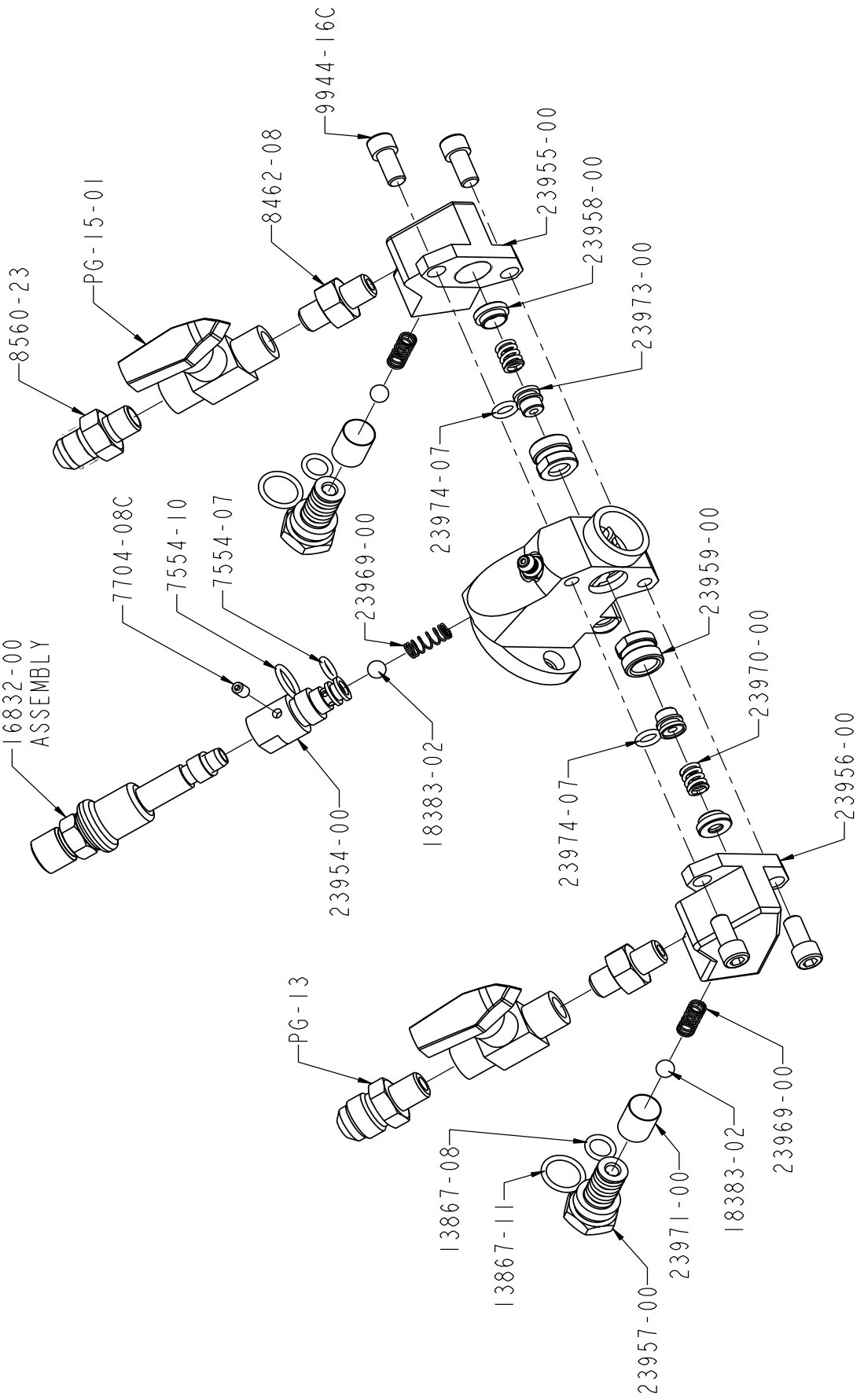
REPAIR KIT: 19134-00

23950-XX Probler P2 Dispense Gun



GLAS-CRAFT P/N:	A	B	HARDWARE KIT
23950-00	23960-00	23977-00	23979-00
23950-01	23960-01	23977-01	23979-00
23950-02	23960-02	23977-02	23979-00
23950-03	23960-03	23977-03	23979-00
23950-04	23960-04	23977-04	23980-00
23950-05	23960-05	23977-05	23980-00

23950-XX Probler P2 Dispense Gun



23950-XX Probler P2 Dispense Gun Parts List

PART NUMBER	DESCRIPTION	QTY.
PG-13	FITTING	1
PG-15-01	2-WAY BALL VALVE	2
PG-18	PROBLER TRIGGER	1
PG-19	COMPRESSION SPRING	1
13867-08	O-RING	2
13867-11	O-RING	2
16832-00	**AIR SWITCH ASSEMBLY**	**1**
17259-16F	MACHINE SCREW	1
18383-02	1/4 DIA BALL	3
2253-04	LUBE FITTING	1
23951-00	1-3/8" AIR PISTON	1
23952-00	1-1/2" AIR PISTON	1
23953-00	CYLINDER SPACER	1
23954-00	VALVE INSERT	1
23955-00	ISO SIDE BLOCK	1
23956-00	POLY SIDE BLOCK	1
23957-00	CHECK VALVE FILTER	2
23958-00	SEAL	2
23959-00	SEAL HOUSING	2
23961-00	FRONT TIP	1
23962-00	HANDLE	1
23963-00	PROBLER HEAD	1
23964-00	GUARD	1
23965-00	TRIGGER PISTON	1
23966-00	REAR CAP	1
23967-00	TRIGGER PLUG	1
23968-00	RETAINING RING	1
23969-00	SPRING	3
23970-00	SPRING	2
23971-00	FILTER SCREEN	2
23973-00	SEAL	2
23974-07	O-RING	2
23974-12	O-RING	1
7554-05	O-RING	1
7554-06	O-RING	1
7554-07	O-RING	1
7554-10	O-RING	1

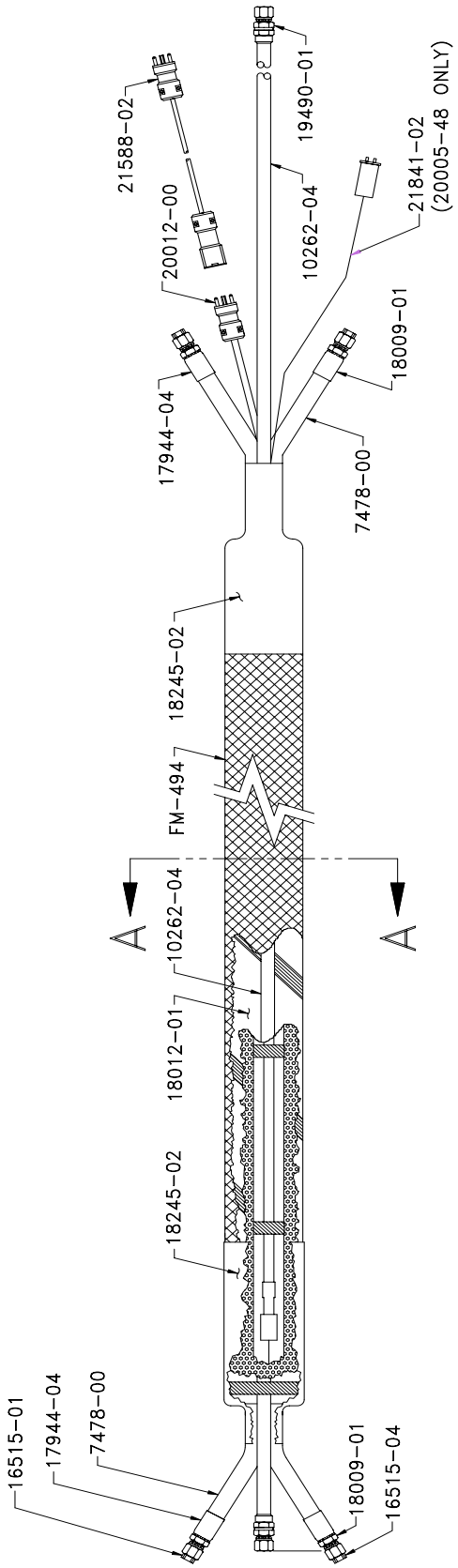
NOTE: Refer to gun manual or trouble shooting guids.

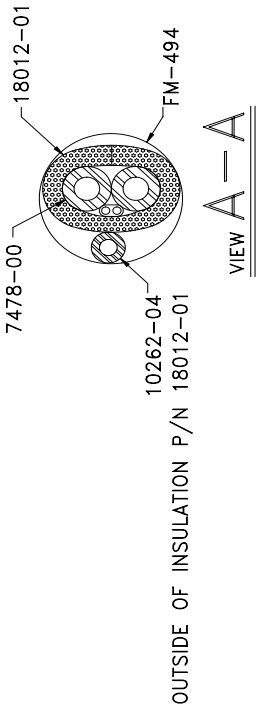
PART NUMBER	DESCRIPTION	QTY.
7554-16	O-RING	3
7554-25	O-RING	1
7554-26	O-RING	1
7554-27	O-RING	1
7554-29	O-RING	1
7554-43	O-RING	1
7704-08C	SET SCREW	1
7716-06C	SET SCREW	11
8212-12F	MACHINE SCREW	2
8301-12C	MACHINE SCREW	1
8462-08	FITTING	2
8560-23	FITTING	1
9869-19	SHOULDER SCREW	1
9936-20F	SET SCREW	1
9944-16C	MACHINE SCREW	4

16832-00	AIR SWITCH ASSY.	QTY.
7554-07	O-RING	1
7554-09	O-RING	2
16830-00	AIR SWITCH TUBE	1
16831-00	AIR SWITCH SPOOL	1

23975-00 STANDARD REPAIR KIT		
7554-05	O-Ring	1
7554-06	O-Ring	1
7554-07	O-Ring	2
7554-09	O-Ring	2
7554-10	O-Ring	1
7554-16	O-Ring	3
7554-25	O-Ring	1
7554-26	O-Ring	1
7554-27	O-Ring	1
7554-29	O-Ring	1
7554-43	O-Ring	1
13867-08	O-Ring	2
13867-11	O-Ring	2
23974-07	O-Ring	2
23974-12	O-Ring	1

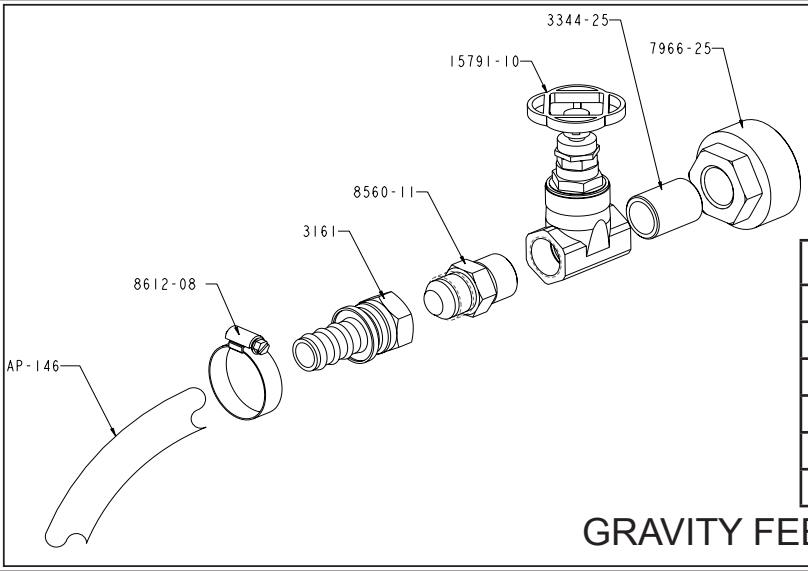
20005-22 Micro II Hose Assembly (22 Ft. / 7m)
20005-48 Maxi II Hose Assembly (48 Ft. / 14.5m)





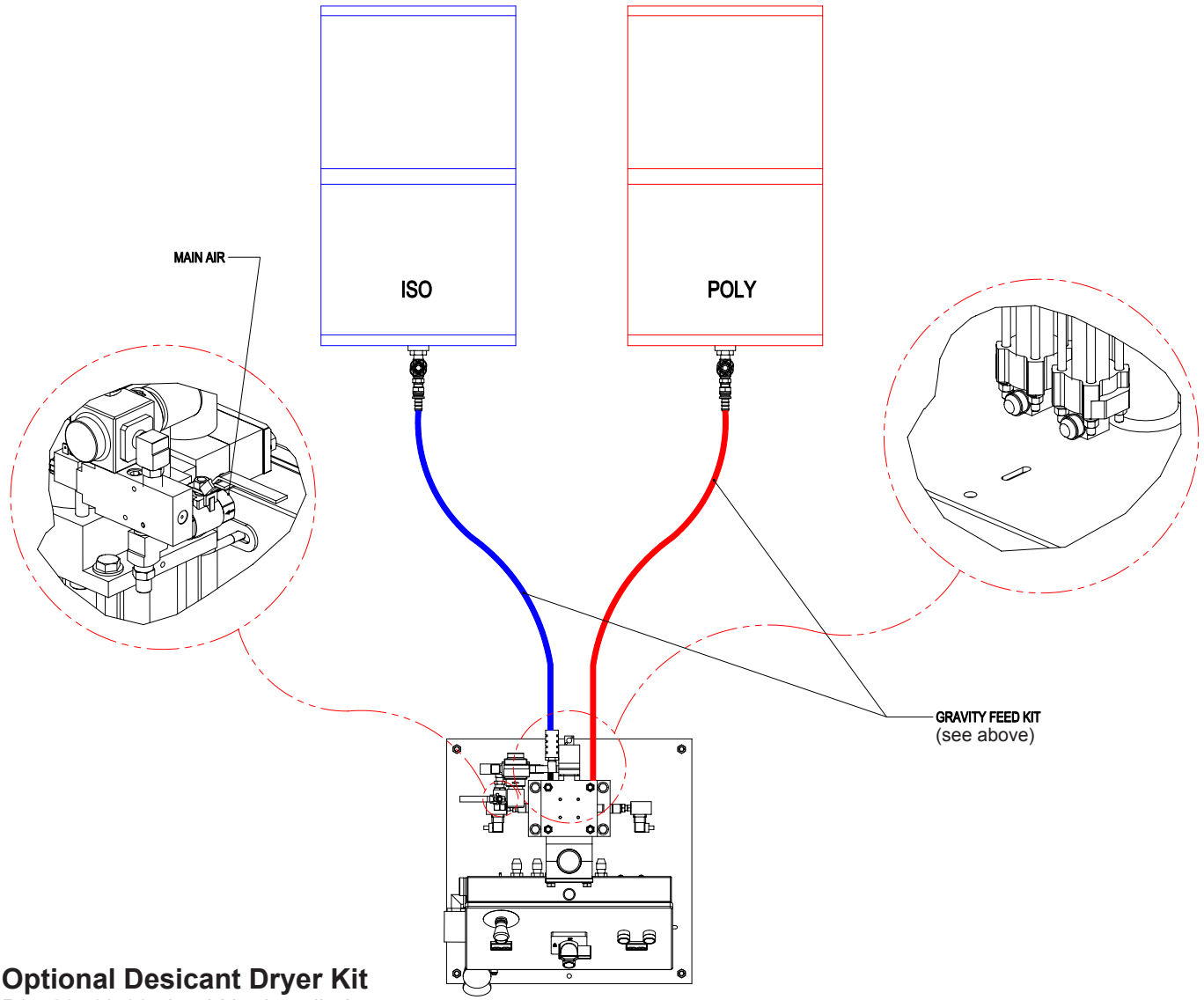
REVISION R

Typical System Connection Diagram



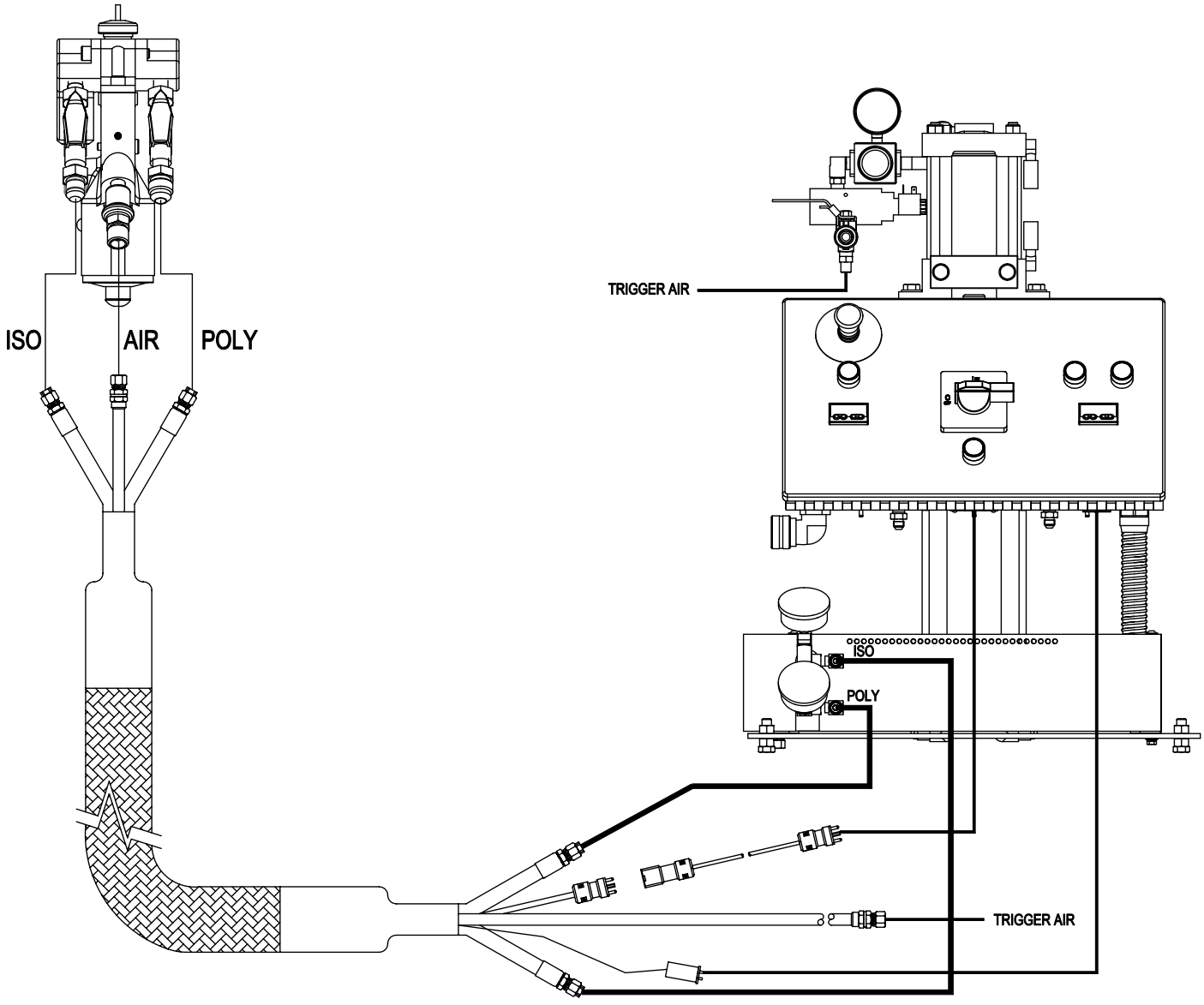
P/N	19851-00	QTY.
3161	HOSE FITTING	4
3344-25	PIPE NIPPLE	2
7966-25	BUNG ADAPTER	2
8560-11	JIC FITTING	2
8612-08	CLAMP	4
AP-146	HOSE	12 FT.

GRAVITY FEED KIT



Optional Desicant Dryer Kit
P/n: 23410-00 should be installed on the ISO material drum. Replacement cartridge pn: 23409-00.

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. GlasCraft 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, GlasCraft 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

GlasCraft recommends the following Personal Safety Equipment for conducting safe operations of the Polyester Systems:

GlasCraft 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 sawdust 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 GlasCraft spray equipment includes aluminum or galvanized components and will be affected by Halogenated Hydrocarbon Solvents.

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

1. **The presence of HHC solvents.** 1,1,1-Trichloro ethane 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.

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.

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.

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.

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

GlasCraft 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.

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

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

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

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

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

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

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.

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

Toxicity of Chemicals

GlasCraft recommends that you consult OSHA Sections 1910.94, 1910.106, 1910.107 and NFPA No. 33, Chapter 14, and NFPA No. 91.

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

First Aid

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

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 isocyanate.

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.

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.

If a person accidentally swallows isocyanate, 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 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 GLASCRAFT DISTRIBUTOR OR GLASCRAFT, 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.

GlasCraft
DISPENSING EXCELLENCE

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INDIANAPOLIS, INDIANA 46278 U.S.A.

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

Assembly Instructions

NOTE
The GlasCraft Maxi II Micro II System is factory assembled. If any questions arise concerning air or electrical connections, please refer to illustrations located in the forward portion of this User Manual or contact your GlasCraft distributor.

Fluid Line Connection

The material hoses that bring Isocyanate and Poly-ol chemicals and the air from the machine to the gun should be connected as follows.

Required Tools:

Opened - end wrenches - 5/8", 3/4" , 13/16"

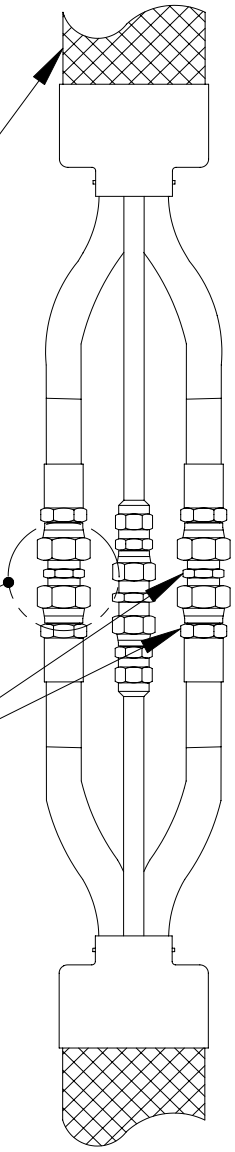
1. Lay hoses out straight.

2. Couple hoses together with supplied union fittings and tighten finger-tight.

3. a. Hold crimp fitting hex (3/4"), and union fitting together, allowing the hose to hold it's natural line.

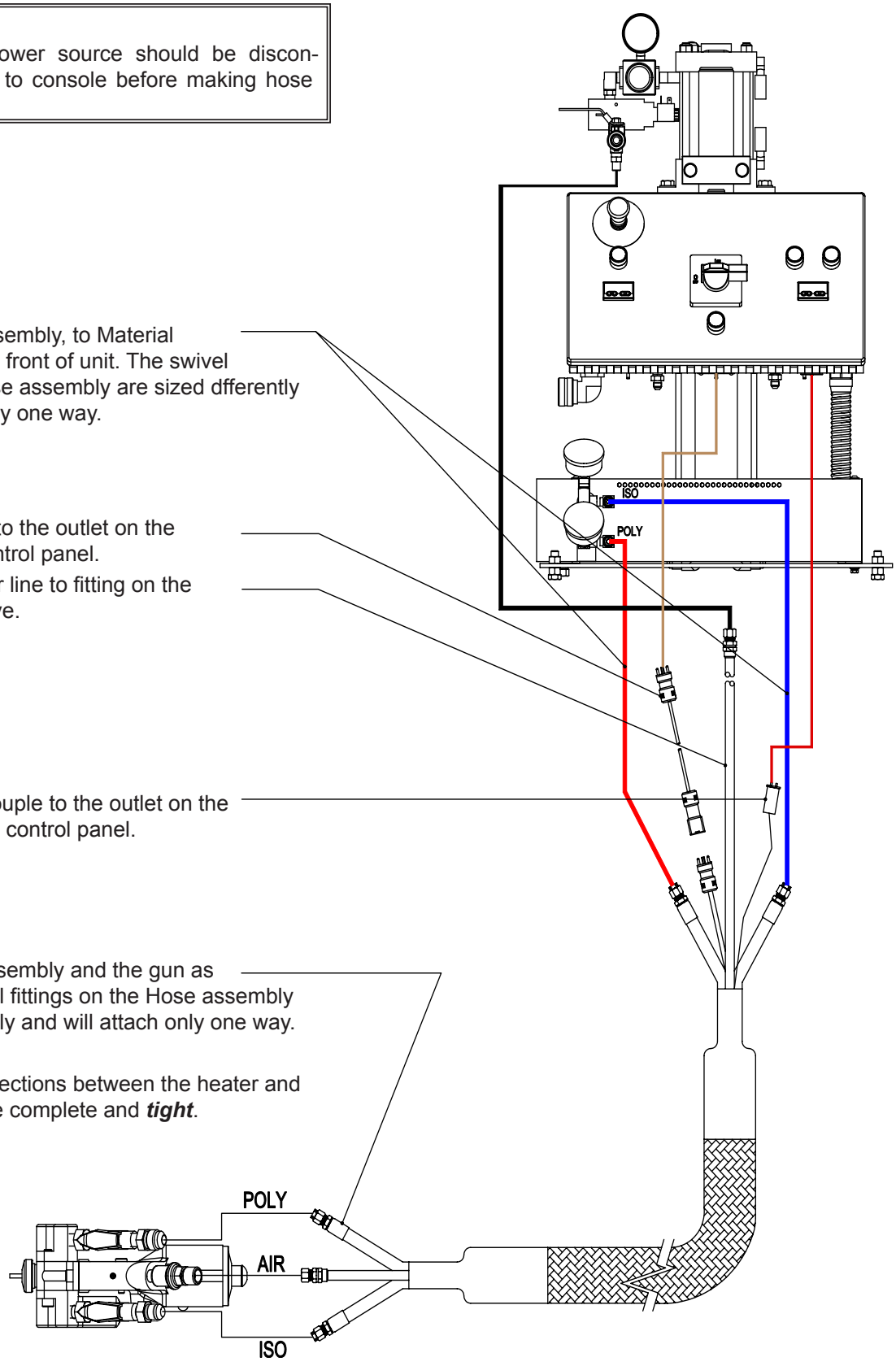
b. Using the appropriate wrench (A-side 3/4" / B-side 13/16") tighten swivel fitting to union, not allowing crimp fitting or union to turn. Repeat on opposite side of union.

This practice is required on all connection points.
1) Hose @ machine
2) Hose @ gun
3) Adding additional hose sections



Installation

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



1. Connect Hose Assembly, to Material Heater on base at front of unit. The swivel fittings on the Hose assembly are sized dfferently and will attach only one way.

2. Connect the plug to the outlet on the bottom side of control panel.

3. Connect trigger air line to fitting on the bottom side of valve.

4. Connect thermocouple to the outlet on the bottom side of the control panel.

5. Connect Hose Assembly and the gun as shown. The swivel fittings on the Hose assembly are sized differently and will attach only one way.

6. Fluid and air connections between the heater and gun should now be complete and ***tight***.

NOTE
GlasCraft 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.

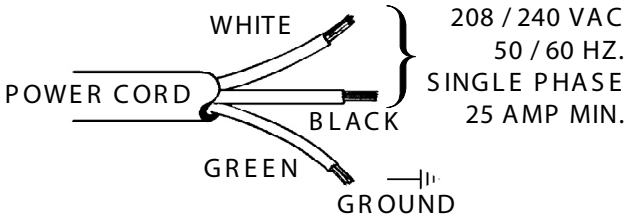
Air Supply Connection

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 connected directly to the Ball Valve, P/N 21666-01, mounted on the Proportioning Unit Air Motor. (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.

Electrical Connection

NOTE
Electrical Connections must be checked on a periodic basis.

1. 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.



WARNING
*When Main Power to system 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 II system.*

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

WARNING
Never leave machine unattended while system power is on or system is running.
System running is defined as: preheat cycle of the hose heat, primary heaters, or any pump operation.
Machine operators must be familiar with the component functions and operation of the machine.

Pre-Operation Check List

A. Check that all fittings are securely tight.

B. Check electrical hook-up (qualified electrician recommended).

C. Main power switch on Control Box should be switched to ***OFF*** position.

D. Air Regulator turned (counter clock-wise) to ***OFF*** position.

E. Hose Control and Primary Heater Control to ***OFF*** position.

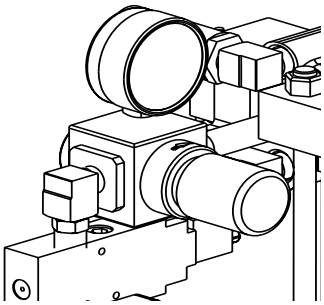
WARNING
Do not place any part of the body in the path of the material spray.
Do not point the gun at or near other personnel.
Do not look into the Mixing Chamber orifice at any time.
Because of the hazardous materials used in this equipment, it is recommended that the operator use an air mask, goggles, 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.

Initial Start-Up Procedure

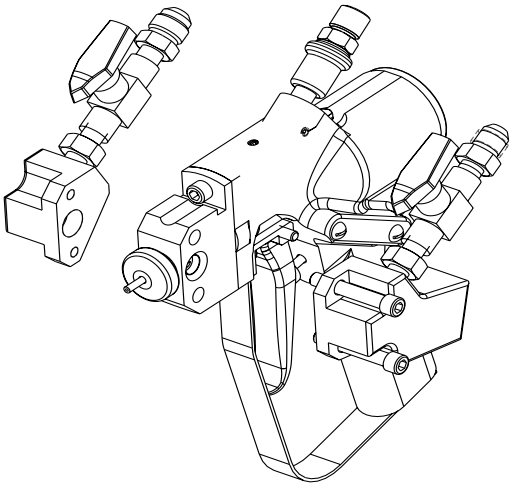
With all material and air lines connected and power cable attached, the system is now ready for start-up.

Filling The System

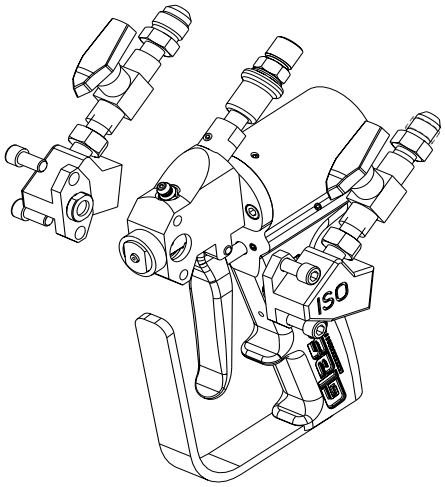
1. Adjust Air Regulator to 20 PSI to fill system. Air Motor will cycle slowly to fill Pumps, Heaters and Hoses and stop.



2. Remove ISO & POLY side blocks from gun.

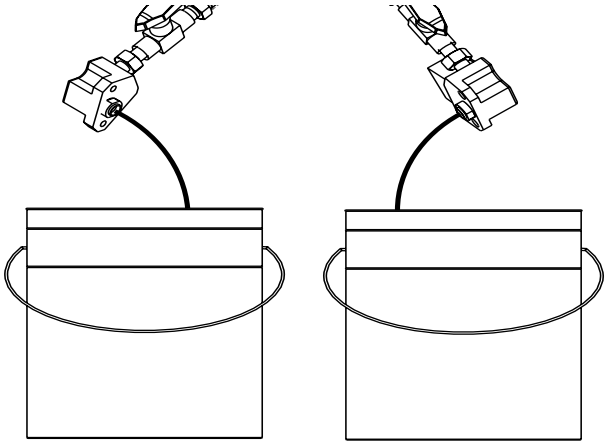


PROBLER



PROBLER P2

3. Place separate clean containers under each indi vidual side block. **Slowly** open material valves (black arrow forward) on each side block to allow trapped air to escape the hose and material to flow into the containers until all air is purged from the material system.



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

4. Close manual material valves. Material pressure gauges should now register approximately equal pressure. If one side registers considerably more pressure than the other side, go to the high pres sure 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.

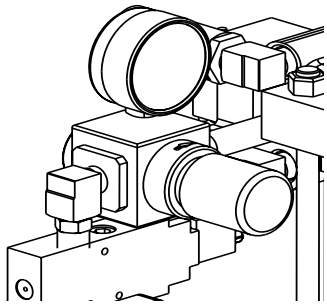
5. Dispose of waste material properly and in accor dance with chemical suppliers instructions and local, state and federal regulations.

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 SideBlock Seals. Grease will purge itself when air valve is turned on at Gun and Gun is triggered.

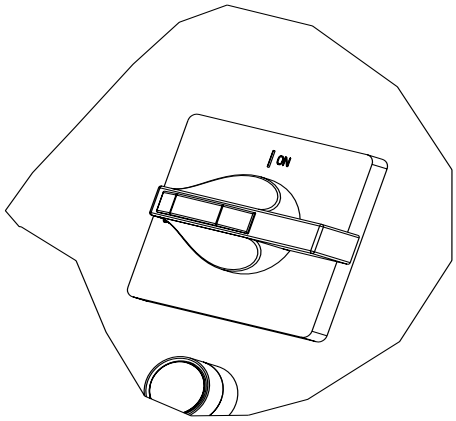
6. Clean and lubricate Side Blocks and Seals thor- oughly and re-assemble on Gun. Make certain that Side Block Screws are tighten securely.

7. Refer to material manufacturers operating instruc- tions for proper preparation of material, i.e, mixers, etc.

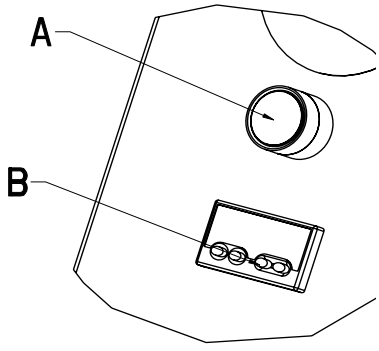
8. Leave Air Regulator at 20 PSI



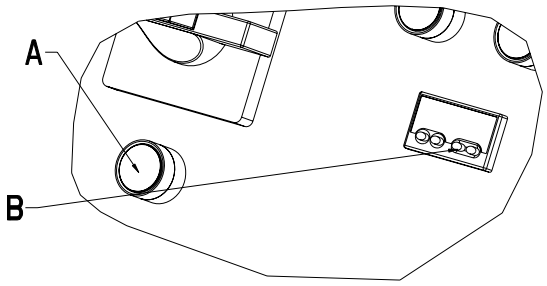
9. Turn main power Switch to ***ON*** position.



10. Turn on Hose Control:
a. Push in the green power button.
b. Press up or down arrow buttons on the controller until desired temperature setting is achieved.



11. Turn on the ISO & POLY Heater control:
- **a.** Push in green power button.
- **b.** Press up or down arrow buttons on the controller until desired temperature setting is achieved.

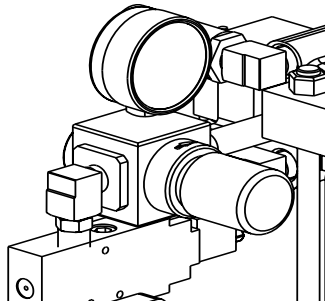


WARNING
Straighten hose out flat, to avoid uneven heating and damage to internal wiring of the Hose Assembly.

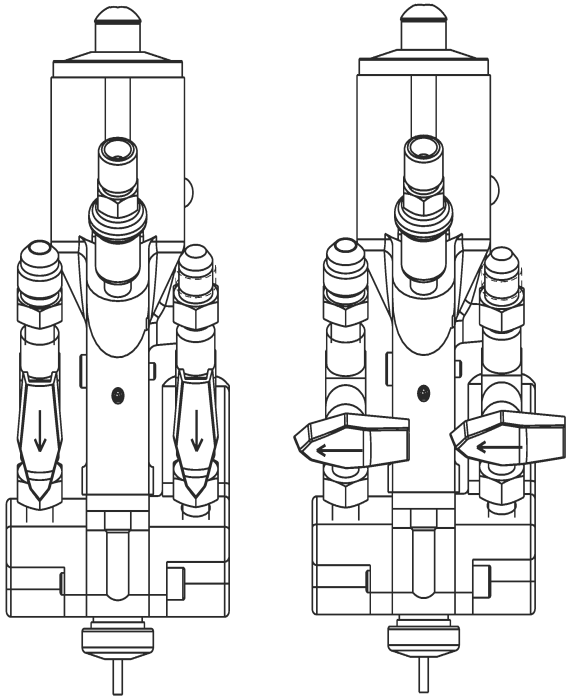
NOTE
Allow enough time for hose to warm up (approximately 15- 20 minutes). Remember that the heated hose does not have a delta rating. The heated hose's function is to maintain the heat generated by the primary heaters during system operation, and preheat material during initial start-up. The hose should be set to maintain a temperature close to the set point of the heaters.

CAUTION
Due to the expansion of urethanes when heated, it is imperative that on cold start-up of the system 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 set point of the over pressure switches causing the system to shut down.

12. Adjust Main Air Regulator to material suppliers specifications.



13. Turn Purge Air and Material Valves ON at Gun.



14. Relieve any excess pressure by triggering the gun.

NOTE
The Emergency Stop Switch is located on the top left side of the Box Panel, when depressed, it will shut down the power and activate the Air Dump Valve. To reset, turn handle on push button.

15. The system is now ready for operation.

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 sup pliers, and the laws in the area where the equip ment is being used.

16. The system 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.

Over Pressure System Protection

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

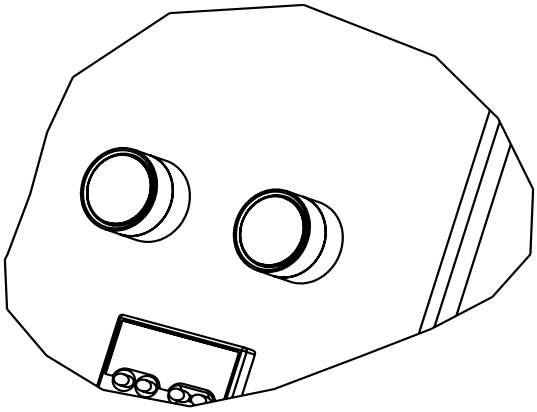
There are pressure sensors located on each propor tioning pump. The high pressure sensor is located at the outbound of the fluid section.

The high pressure monitoring sensor will engage if fluid pressure increases above 2200 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.

On the control box panel, there are two yellow lighted push buttons marked over pressure. One of these push buttons will be illuminated after the monitoring sensor engages, indicating where the problem is located (ISO or Poly).



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)!

Over Pressure Problem Correction

1. Determine if the problem is high pressure related.

2. Relieve system material 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

NOTE
Once the power has been turned off and problem solved, and the main power is turned on again, the over pressure lighted buttons will automatically be reset.

CAUTION
If you do not understand the electrical hook-up de scribed above, consult your local GlasCraft distributor OR a qualified electrician.

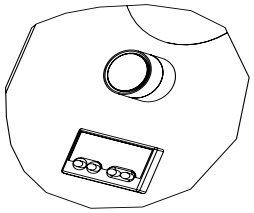
It is recommended that a qualified, licensed electrician should install power to the supply disconnect.

You should always follow all local or national electrical codes.

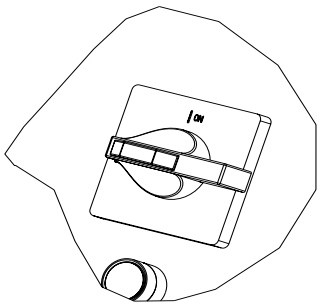
CAUTION
Disconnect power source BEFORE attempting any repairs or opening the Control Boxes. Access to internal parts is limited to qualified personnel ONLY!
Place Main Power Switch in OFF position BEFORE disconnecting power cables. This equipment is not approved for use in hazardous locations as set forth in the National Electrical Code Article 500 and Sub-Part "S" of the OSHA Standards.

Daily Shut-Down Procedure

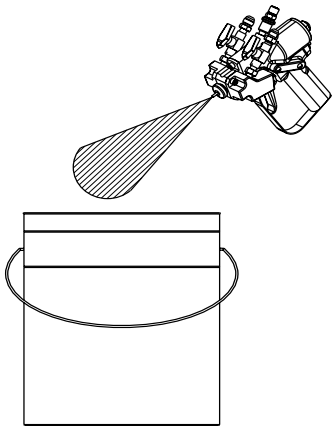
1. Turn off hose and heater controllers.



2. Turn off main power switch.

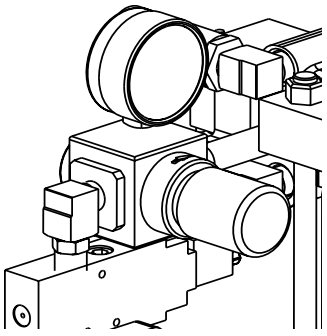


3. Spray material onto a suitable container to retract the fluid section shafts to the full down stroke position.



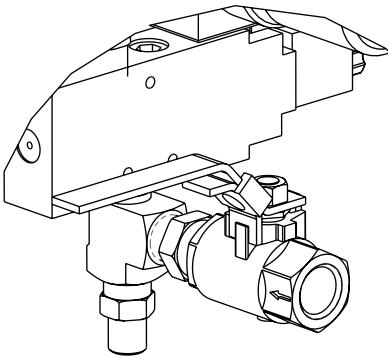
4. Perform gun maintenance. (See gun manual)

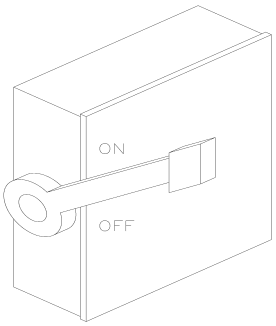
5. Reduce main air regulator pressure to zero.



6. Visually inspect the entire system for leaks.

7. Turn off main air supply and main power.

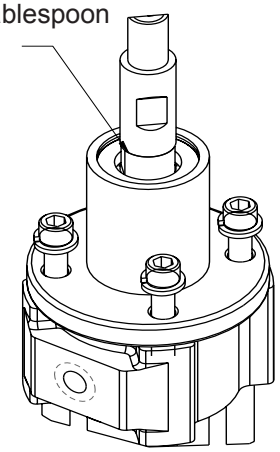




8. Coil heated hoses with a minimum two foot bend-radius to avoid kinking and subsequent damage to the internal electrical wiring.

9. Check and lube top of the fluid section.

Wipe off residual material and add a tablespoon of DOP,DBP



CAUTION
Do not bleed bleed fluid pressure from the system.

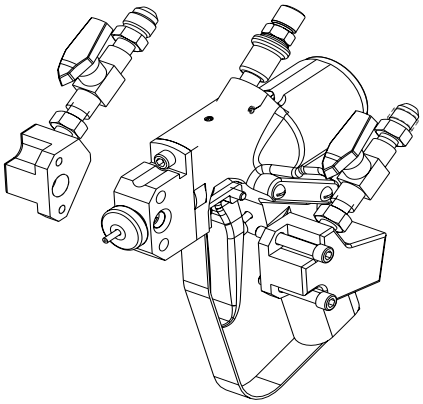
Extended Shut-Down Procedure

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, GlasCraft recommends that the system should be stored with urethanes instead of solvents, plasticizers, etc. Certain considerations have to be adhered to when an extended shut-down is being performed.

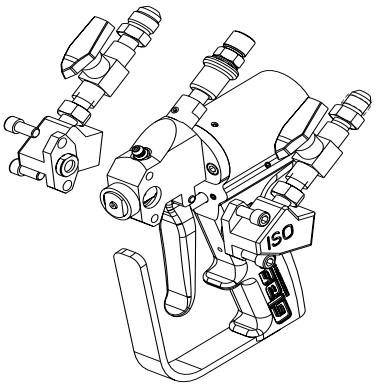
The following procedure is for long extended shut-down periods.

NOTE
Power should be disconnected and all air regulators turned down to zero.

1. Remove side blocks from the gun and releive pressure from the system.



PROBLER



PROBLER P2

2. Use a suitable solvent to flush the fluid circuits. To determine the compatibility of solvents with material being used. Always check with material supplier.

3. a. If transfer pumps are being used on the system, Increase transfer pump pressure until fluid movement occurs.

b. If transfer pumps are *NOT* used on the system or fluid movement does *NOT* occur @ 100 psi of air on transfer pumps, increase main pump pressure until the main proportioner *SLOWLY* starts cycling.

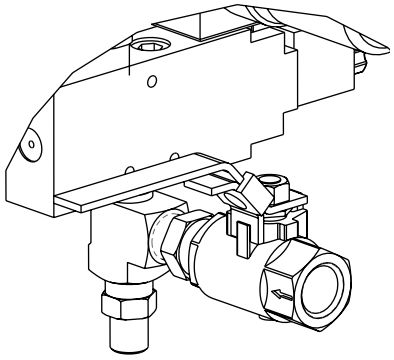
4. Once primary material is flushed from the system, reduce the main air pressure to zero or flip the retract switch to the "***retract position***".

5. If the solvent used to flush the system also contains placticizer, ensure that all primary material is flushed from the system and close the ball valves @ the gun.

6. Leave the pumps in the full down stroke position with appromatly 200-500 psi. on the fluid gauges.

7. If plasticizer is required to chase out solvent, cycle main pumps until the system is full of plasticizer, then close valves and leave the pumps in the full down stroke position with 200-500 psi.

8. Turn off main air supply and disconnect air line from the system.



9. If transfer pumps are being used, generously coat the exposed pump shafts with lithium grease.

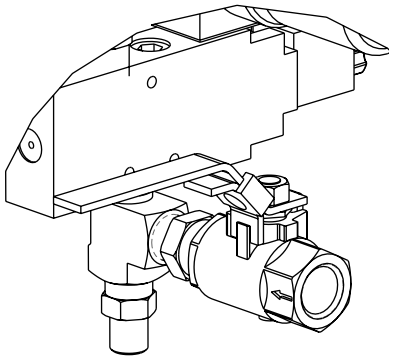
10. Coil the heated hoses with a minimum two foot bend radius to avoid kinking and subsequent damage to the internal electrical wiring.

11. For gun shut down, follow the procedure from the gun manual.

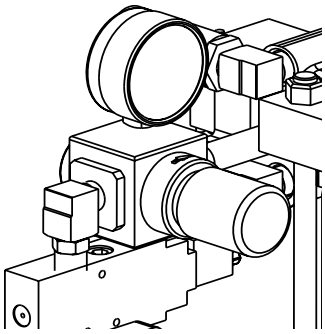
12. The length of time a system is shut down, and the climate conditions it's stored in will determine how often the system should be purged and refilled. Usually every 2 - 4 weeks the following procedure should be followed.

Purge and Refill Procedure

1. Connect the main air line to the system.

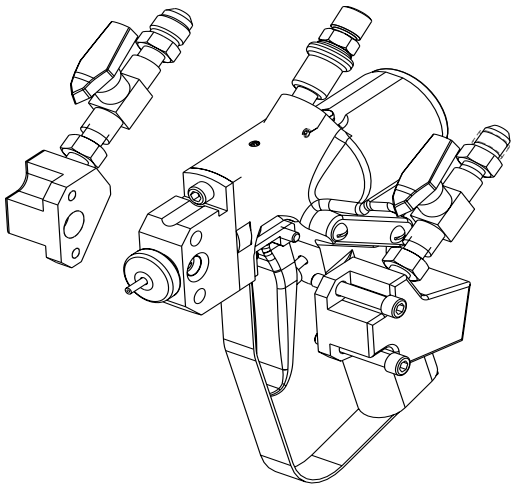


2. Adjust main air regulator to 20 psi.

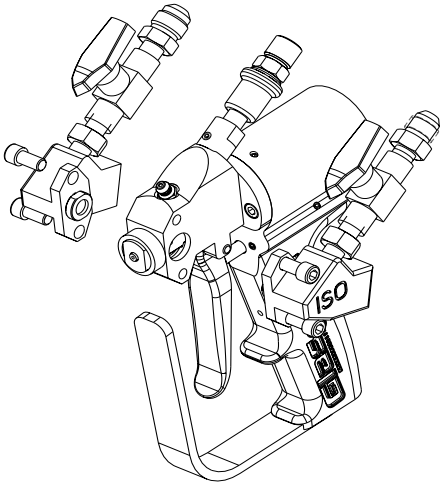


3. Adjust transfer pump regulators to approximately 40 psi. where used.

4. Remove the side blocks from the gun.

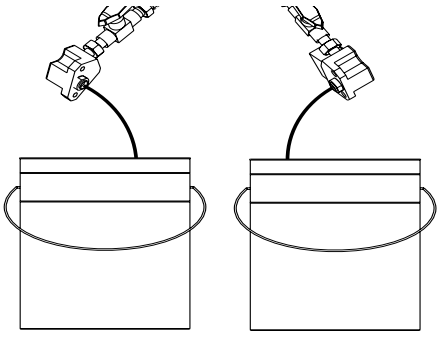


PROBLER



PROBLER P2

5. Open both side blocks simultaneously into seperate containers and dispense approximately 1-1/2 - 2 gallons of material from each side or until all plasticizer is purged from the system. Stop the pumps in the down position.



6. Close both side blocks simultaneously and wipe off residue from the side block seals. Regrease and attach both blocks to the gun.

7. 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:

System Console:
1. Turn OFF valves that supply material to the Pumps.
2. Turn OFF Main Air Regulator on Air Motor.

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

WARNING
Before performing any repairs on any part of the system,
PLACE ALL CONTROLS ON THE MACHINE AND THE MAIN POWER SOURCE IN THE OFF POSITION AND DISCONNECT THE ELECTRICAL POWER CABLE FROM THE MAIN POWER SOURCE!

Daily Routine Maintenance

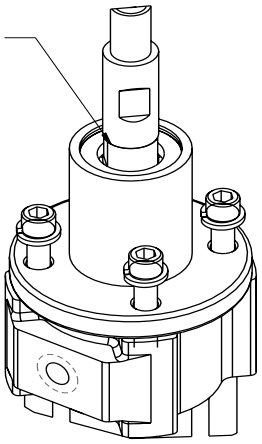
1. Visually inspect the system for leaks.

2. Check desiccant dryer beads to insure they are still purple and have not changed to pink.

3. Check desiccant dryer beads to insure they are still purple and have not changed to pink.

4. Check and lube top of the fluid section.

Wipe off residual material and add a tablespoon of DOP,DBP



Weekly Maintenance

1. Place a small amount of grease on the air motor shaft.

2. See related manuals.

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 material 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 material 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 material 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. MATERIAL DRUMS
1. Material in drums?
2. Material temperature?
   a. If the material is to cold, especially at the bottom of the drum, it will raise the viscosity of the material and stall Transfer Pumps.

B. 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 isocya nate 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.

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

D. 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

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!

4. In troubleshooting, a restriction problem where the material 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.

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

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?

B. MATERIAL TEMPERATURE
1. Too high a temperature on resin side can cause a blowing ajent to pre-expand in either the Hose or the Primary Heater.

C. HOSES
1. Make sure that the Hoses are not plugged.

TROUBLESHOOTING A POOR SPRAY PATTERN

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

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.

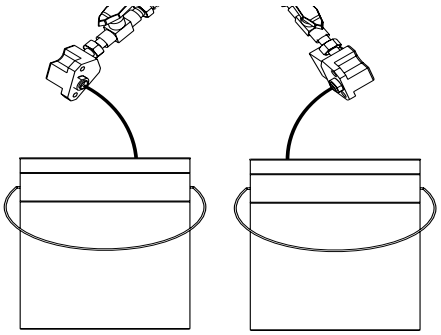
NOTE
Correct problem(s) immediately!

19875-00 (-01) Pumps
21835-00 Pumps

1. Dump pressure off system

WARNING
Be sure air and power are off to system.

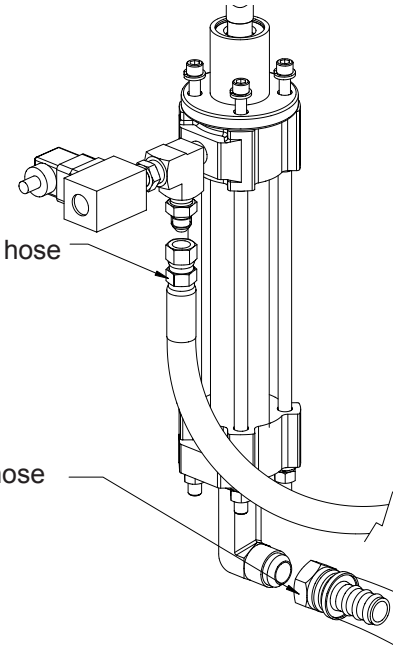
This is achieved by removing side blocks from the gun, opening ball valves and purging materials into clean containers.



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

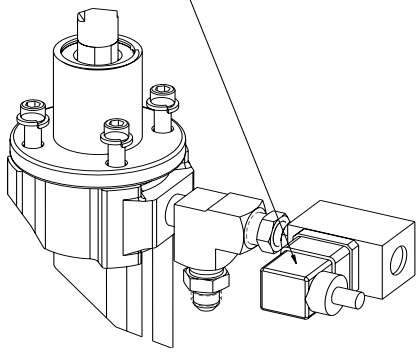
NOTE
Step three is optional, but it makes the process easier.

3. Disconnect inlet and outlet fittings from the pump.

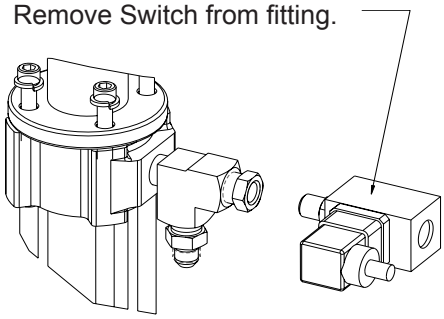


4. Disconnect the din connector from over pressure switch.

a. remove plug

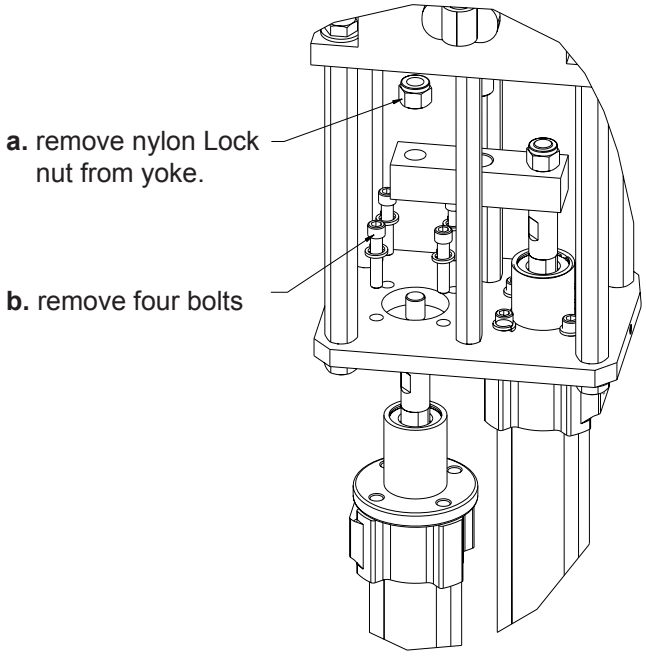


b. Remove Switch from fitting.



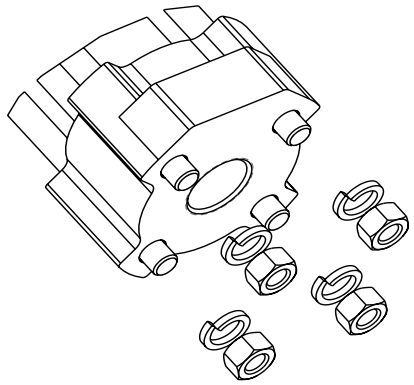
CAUTION
Do not immerse Over Pressure Valve in solvents externally. (Flushing will not affect).

5. Remove pump from base.

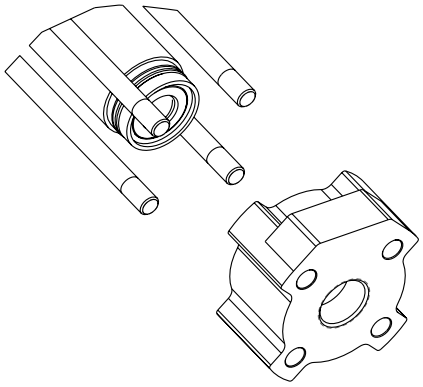


Breaking Down Pump

1. Remove four nuts at the base of pump break loose, in a criss-cross pattern.



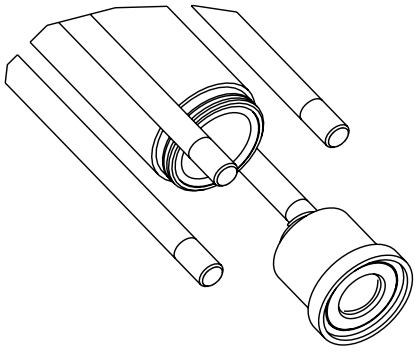
2. Remove Base from Tie Rods.



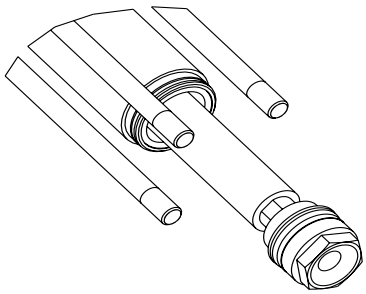
NOTE

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

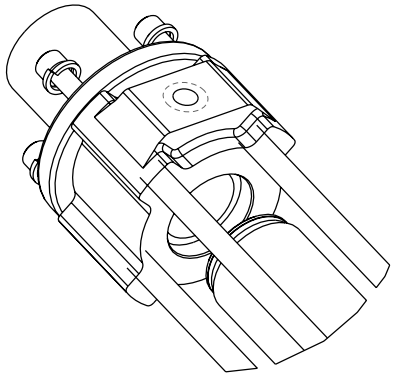
3. Remove Valve Housing from the cylinder.
P/N UF-118 on 19875-00 pump.
P/N, 19634-00 on 21835-00 pump.



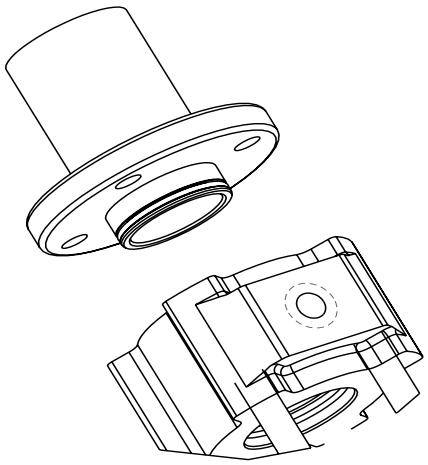
4. Using a rubber mallet, tap shaft out through the bottom of the cylinder, P/N 18219-00.



5. Remove cylinder, P/N 18219-00 from Pump Head, P/N 18227-00.



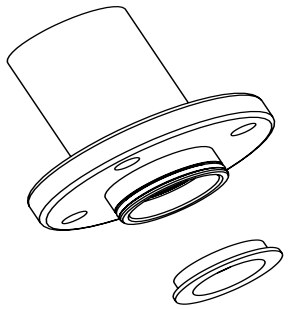
6. Remove Cup Adapter, P/N 21440-00 from Pump Head, P/N 18227-00.



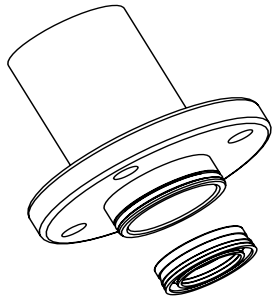
Disassemble Sub-Assemblies

1. Cup Adapter, P/N 21440-00.

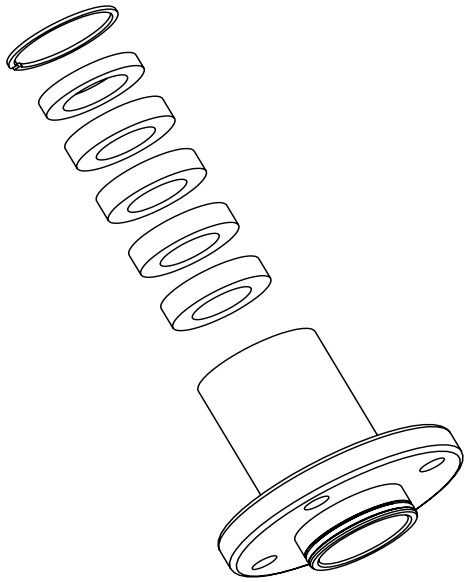
a. Remove Support Washer, P/N 18295-01.



b. Remove Seal, P/N 21595-00.

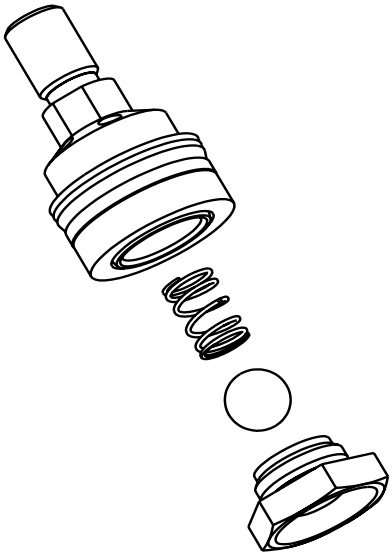


c. Remove Snap Ring, P/N 1005-02, Nylon Washer, P/N 21896-01, & Felt Wipers, P/N 21897-01.

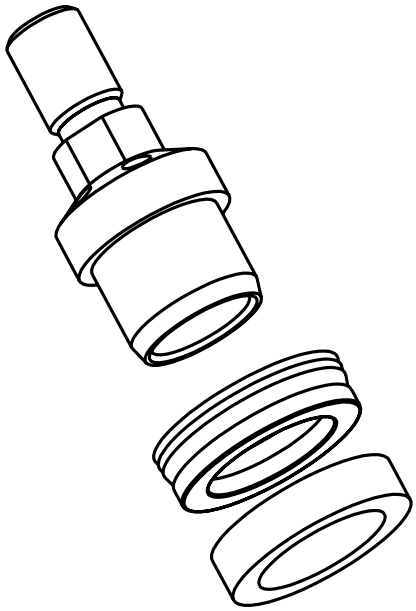


2. Shaft Assembly:

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.



Overhaul Procedure

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 scarrin on Seat or Ball.

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

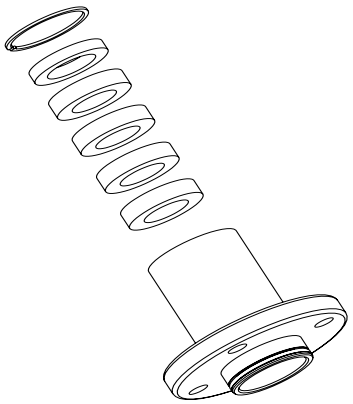
NOTE
The APS-119 is reversible, you can use either side.

Re-Assemble

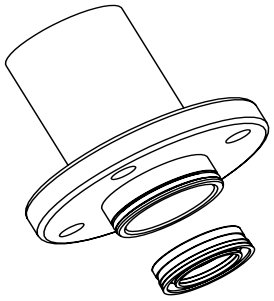
NOTE
All parts underlined are contained in Repair Kit.

1. Soak P/N 21897-01 in a light weight, non detergent oil, then install in P/N 21440-00.

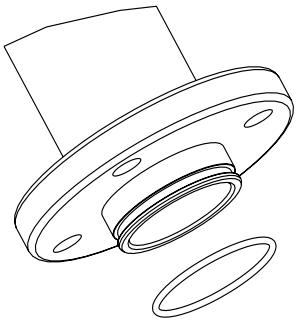
2. Install P/N 21896-01, push down and install Snap Ring P/N 1005-02 in groove.



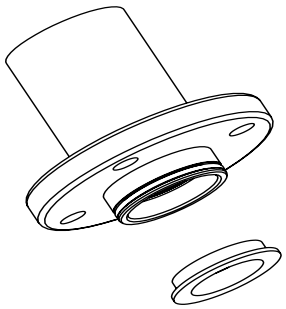
3. On bottom side of P/N 21440-00 install P/N 21595-00 so that the lip faces out



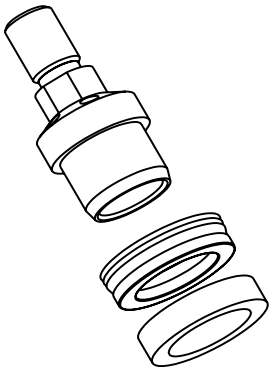
4. Lubricate and install O-Ring, P/N 13867-43 on bottom groove.



5. Install P/N 18295-01 with lip facing toward P/N 21595-00 seal.

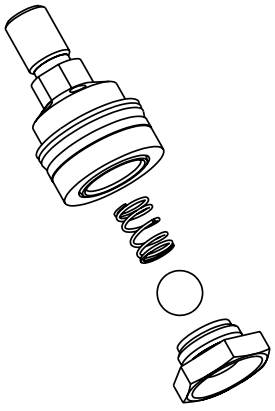


6. Place P/N 21595-00 Seal and P/N FS-110 guide on P/N 21597-00. The lips of the Seal will face away from P/N FS-110.

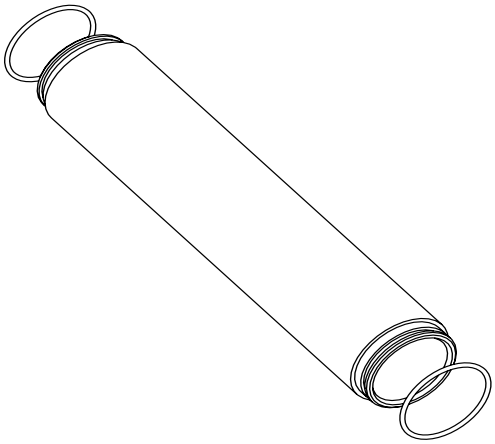


7. Set P/N 21803-00 spring in P/N 21597-00 housing and set APS-133 ball on Spring.

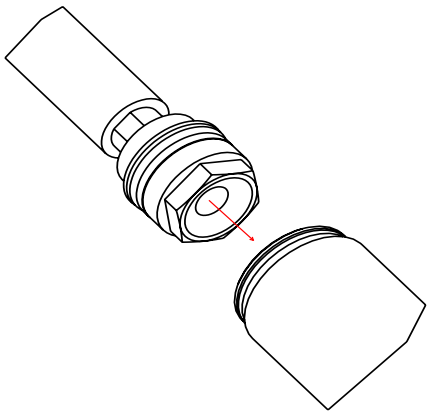
8. Apply blue lock-tite to the threads of P/N 21598-00 and install on P/N 21597-00. Tighten these two parts!



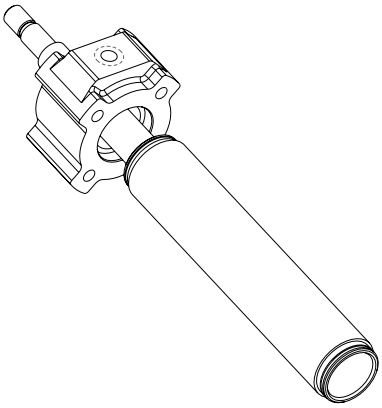
9. Lubricate and install two P/N 13867-49 O- Rings on P/N 18219-00 cylinder.



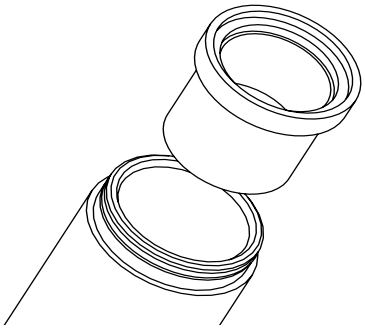
10. Using a light weight non-detergent oil, coat the seal on the shaft assembly and the walls of the cylinder, then install the shaft assembly into the cylinder, leave approximately 4” of the shaft exposed on the top side.



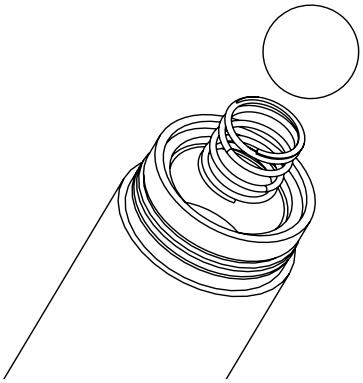
11. Install cylinder/shaft assembly into P/N 18227-00 pump Head, careful not to cut O-Ring for pump P/N 21835-00.



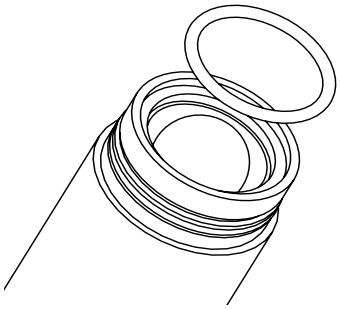
12. With the Pump Assembly upside down, (easy if clamped in a vise) install Foot Valve Housing P/N 19634-00.



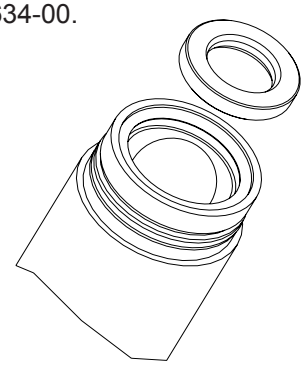
13. Set P/N 19633-00 Spring in place and set P/N APS-128 Ball on Spring.



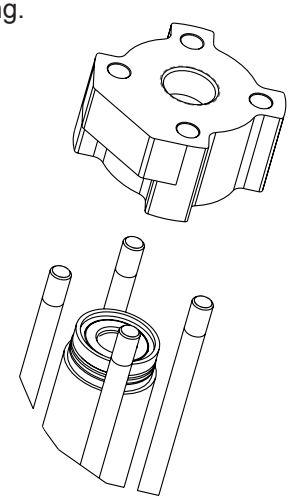
14. Lubricate and install P/N 13867-44 O-Ring in groove of P/N 19634-00.



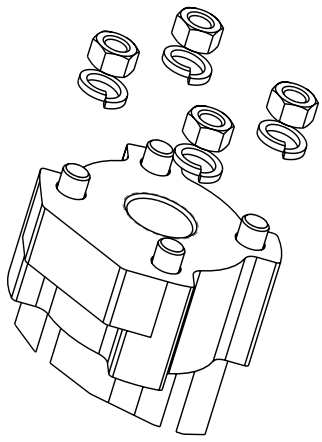
15. Lubricate the outer edge of P/N APS-119 and set top of ball, square and center flats of P/N APS-119 and P/N 19634-00.



16. 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.



17. Continue holding P33-11 down, install (4) P/N 7734-12 Lock Washers and hand thread (4) P/N 7733-17 Nuts. Tighten P/N 7733-17 in a criss-cross pattern until tight.



Overhaul Procedure

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.

Notes

Notes

Limited Warranty Policy

GLASCRAFT, INC. ("GlasCraft") warrants to the original Purchaser of GlasCraft manufactured equipment and parts, that all GlasCraft 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. GlasCraft makes no warranty to anyone other than the original Purchaser.

If any GlasCraft 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 GlasCraft, GlasCraft, in its sole discretion, will either repair or replace the defective part or equipment at GlasCraft'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. GlasCraft 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 GlasCraft has issued a return authorization number; and

3. The claimed defective equipment or part has been returned to GlasCraft by the original Purchaser, freight prepaid (with proper return authorization number(s) attached), to: GlasCraft, 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 GlasCraft or to defects or damage resulting from improper installation, misuse, negligence, accident, or use not specified by GlasCraft. 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 GlasCraft. The decision by GlasCraft shall be conclusive and binding on Purchaser.

GlasCraft 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. GlasCraft 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. GlasCraft only warrants that it has no specific knowledge of any such infringement.

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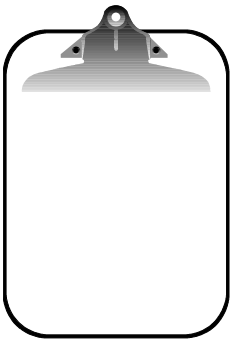
UNDER NO CIRCUMSTANCES SHALL GLASCRAFT'S LIABILITY EXCEED THE AMOUNT PURCHASER PAID FOR THE CLAIMED DEFECTIVE EQUIPMENT OR PART. UNDER NO CIRCUMSTANCES SHALL GLASCRAFT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR LOST PROFITS.

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

If You Have An Equipment Problem.....



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

	Model No.	Serial No.
SPRAY GUN		
MATERIAL PUMP		
CATALYST DELIVERY SYSTEM		
CHOPPER		
TYPE OF MATERIAL BEING SPRAYED		
TYPE OF CATALYST BEING SPRAYED		
CATALYST PERCENTAGE		%
SYSTEM GAUGE PRESSURES		
AAC		PSI
ATOMIZING AIR		PSI
MATERIAL PUMP		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 the GlasCraft Service Department via E-Mail at service@glascraft.com

For Your Reference

DATE PURCHASED _____
DISTRIBUTOR _____
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