

Spartan 3

GC-1368M
ENG

RTM Injection System
For use with Polyester Resin and Gel-Coat

Parts 23280-00 and 23280-02

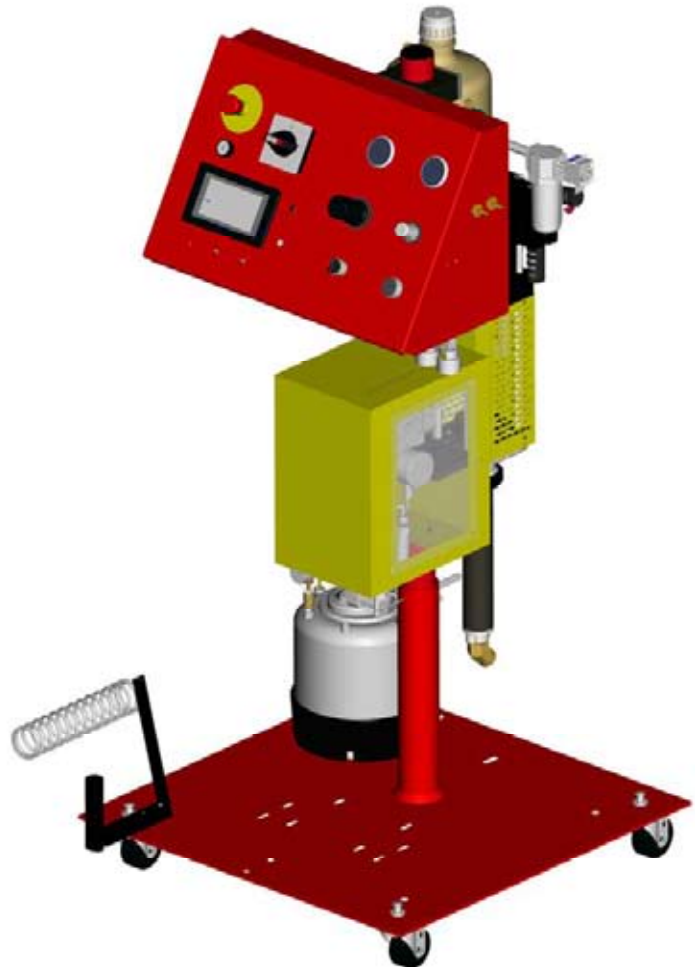
Maximum fluid working pressure:
1300 psi. (9 MPa, 90 bar)

Maximum air pressure:
100 psi. (0.7 MPa, 7 bar)



Important Safety Instructions

Read all warnings and instructions in this manual. Save these instructions.



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N/A = Non Applicable






Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

- See Important Safety Information - MEKP, Polyester Resins and Gel-Coats and Spraying and Lamination Operations section of this manual.

 WARNING	
	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc). • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Ground all equipment in the work area. See Grounding instructions. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. • If there is static sparking or you feel a shock, stop operation immediately. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eyewear • Clothing and respirator as recommended by the fluid and solvent manufacturer • Gloves • Hearing protection
	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • Read MSDS's to know the specific hazards of the fluids you are using. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines. • Always wear impervious gloves when spraying or cleaning equipment.

Warnings

 WARNING	
	<p>SKIN INJECTION HAZARD High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not point gun at anyone or at any part of the body. • Do not put your hand over the dispense outlet. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Engage trigger lock when not spraying. • Follow Pressure Relief Procedure in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.
	<p>MOVING PARTS HAZARD Moving parts can pinch or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure in this manual. Disconnect power or air supply.
	<p>EQUIPMENT MISUSE HAZARD Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer. • Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only. • Do not alter or modify equipment. • Use equipment only for its intended purpose. Call your distributor for information. • Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces. • Do not kink or over bend hoses or use hoses to pull equipment. • Keep children and animals away from work area. • Comply with all applicable safety regulations.
	<p>PRESSURIZED ALUMINUM PARTS HAZARD Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.</p>

Important Safety Information

Methyl Ethyl Ketone Peroxide (MEKP)

MEKP is among the more hazardous materials found in commercial channels. Proper handling of the “unstable (reactive)” chemicals presents a definite challenge to the plastics industry. The highly reactive property which makes MEKP valuable to the plastics industry in producing the curing reaction of polyester resins and gel-coats also produces the hazards which require great care and caution in its storage, transportation, handling, processing and disposal.

Workers must be thoroughly informed of the hazards that may result from improper handling of MEKP, especially in regards to contamination and heat. They must be thoroughly instructed regarding the proper action to be taken in the storage, use and disposal of MEKP and other hazardous materials used in the laminating operation.



MEKP is flammable and potentially explosive, as well as potentially damaging to the eyes and skin.

Read material manufacturer’s warnings and material MSDS to know specific hazards and precautions related to MEKP.

Contaminated MEKP can become explosive. Prevent contamination of MEKP with other materials, which includes, but is not limited to polyester overspray, polymerization accelerators and promoters, and non-stainless metals. Even small amounts of contaminants can make MEKP explosive. This reaction may start slowly, and gradually build-up heat, which can accelerate until fire or an explosion result. This process can take from seconds to days.

Heat applied to MEKP, or heat build-up from contamination reactions can cause it to reach what is called its Self-Accelerating Decomposition Temperature (SADT), which can cause fire or explosion.

Spills should be promptly removed, so no residues remain. Spillage can heat up to the point of self-ignition. Dispose in accordance with manufacture’s recommendation.

Store MEKP in a cool, dry and well-ventilated area in the original containers away from direct sunlight and away from other chemicals. It is strongly recommended that the storage temperature remain below 86° F (30° C). Heat will increase the potential for explosive decomposition. Refer to NFPA 432. Keep MEKP away from heat, sparks and open flames.

Current catalysts are premixed and do not require any diluents. GlasCraft strongly recommends that diluents not be used. Diluents add to the possibility of contaminants entering the catalyst system. Never dilute MEKP with acetone or any solvent since this can produce an extremely shock-sensitive compound which can explode.

Use only original equipment or equivalent parts from GlasCraft in the catalyst system (i.e.: hoses, fittings, etc.) because a hazardous chemical reaction may result between substituted parts and MEKP.

To prevent contact with MEKP, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons and goggles are required for everyone in the work area.

Polyester Resins and Gel-Coats



Spraying materials containing polyester resin and gel-coats creates potentially harmful mist, vapors and atomized particulates. Prevent inhalation by providing sufficient ventilation and the use of respirators in the work area.

Read the material manufacturer’s warnings and material MSDS to know specific hazards and precautions related to polyester resins and gel-coats.

To prevent contact with polyester resins and gel-coats, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons and goggles are required for everyone in the work area.

Spraying and Lamination Operations



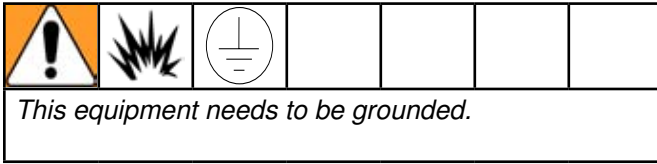
Remove all accumulations of overspray, FRP sandings, etc. from the building as they occur. If this waste is allowed to build up, spillage of catalyst is more likely to start a fire.

If cleaning solvents are required, read material manufacturer’s warnings and material MSDS to know specific hazards and precautions. (GlasCraft recommends that clean-up solvents be nonflammable.)



GlasCraft recommends that you consult OSHA Sections 1910.94, 1910.106, 1910.107 and NFPA No. 33, Chapter 16,17, and NFPA No. 91 for further guidance.

Grounding



Ground the dispense gun through connection to an GlasCraft approved grounded fluid supply hose.


Check your local electrical code and related manuals for detailed grounding instructions of all equipment in the work area.




A grounding wire and clamp are provided, assembly p/n 17440-00 with all FRP equipment.

Set-Up

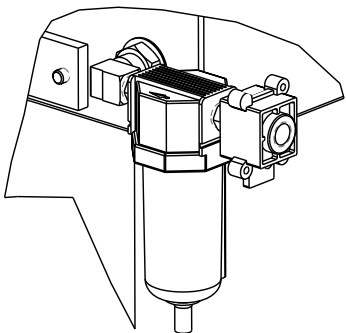
The Spartan 3 comes complete and fitted with all resin hoses, catalyst bottle and filters. The injection head is fully connected to the machine circuit and tested and secured against leaks prior to dispatch.




 The following instructions are to be used as a guide for consistent and continual operation. Any deviation from the "standard operation", usually requires more maintenance to the equipment and material formulation to assure consistent results. For example: the use of fillers in resins.

 Refer to specific user manuals (if available) for detailed component start-up and shut-down instructions.

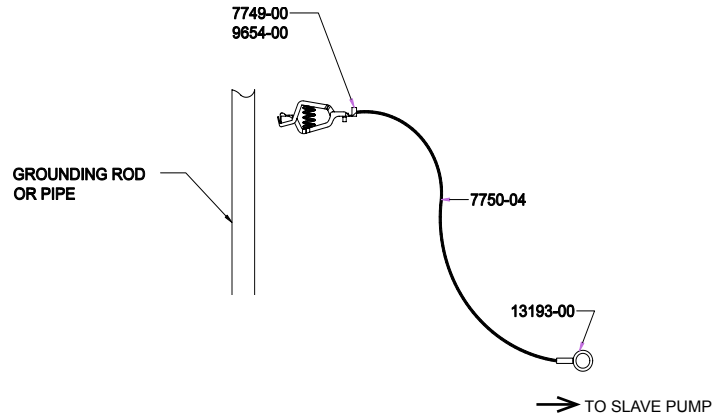
1. Select a clean, dry air supply.
It is very important to have a clean air supply.



2. Attach a 3/8" or larger air hose to the Air Inlet on the yellow air lock-out valve. Quick disconnect fittings should not be used because they can severely limit air flow.



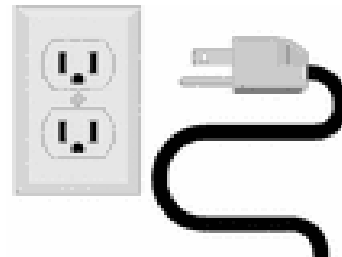
						
<p>Before turning on main air:</p> <ol style="list-style-type: none"> a. Check all fittings, making certain they are securely tightened. b. Make sure all regulators are set to zero (turn all the way to the left). <p>This should be done before air or material of any kind is introduced into the system.</p>						

3. Attach Grounding Clamp Assembly, P/N 17440-00, to System. Use a convenient Nut and Bolt to secure Lug, P/N 13193-00, to slave pump.
4. Securely attach Clamp, P/N 7749-00 to permanently grounded rod or pipe.

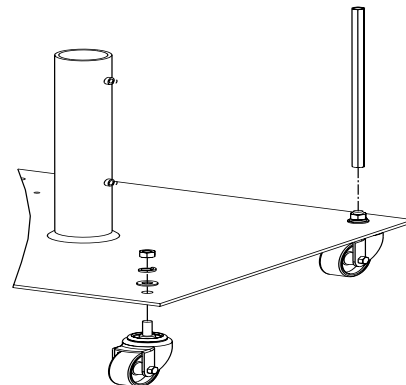


						
<p>Whenever flammable or combustible liquids are transferred from one container to another, both containers shall be effectively bonded and grounded to dissipate static electricity. For further information see..... NFPA 77, Recommended Practice on Static Electricity.</p>						

5. Plug the electrical cord into a 110 outlet.

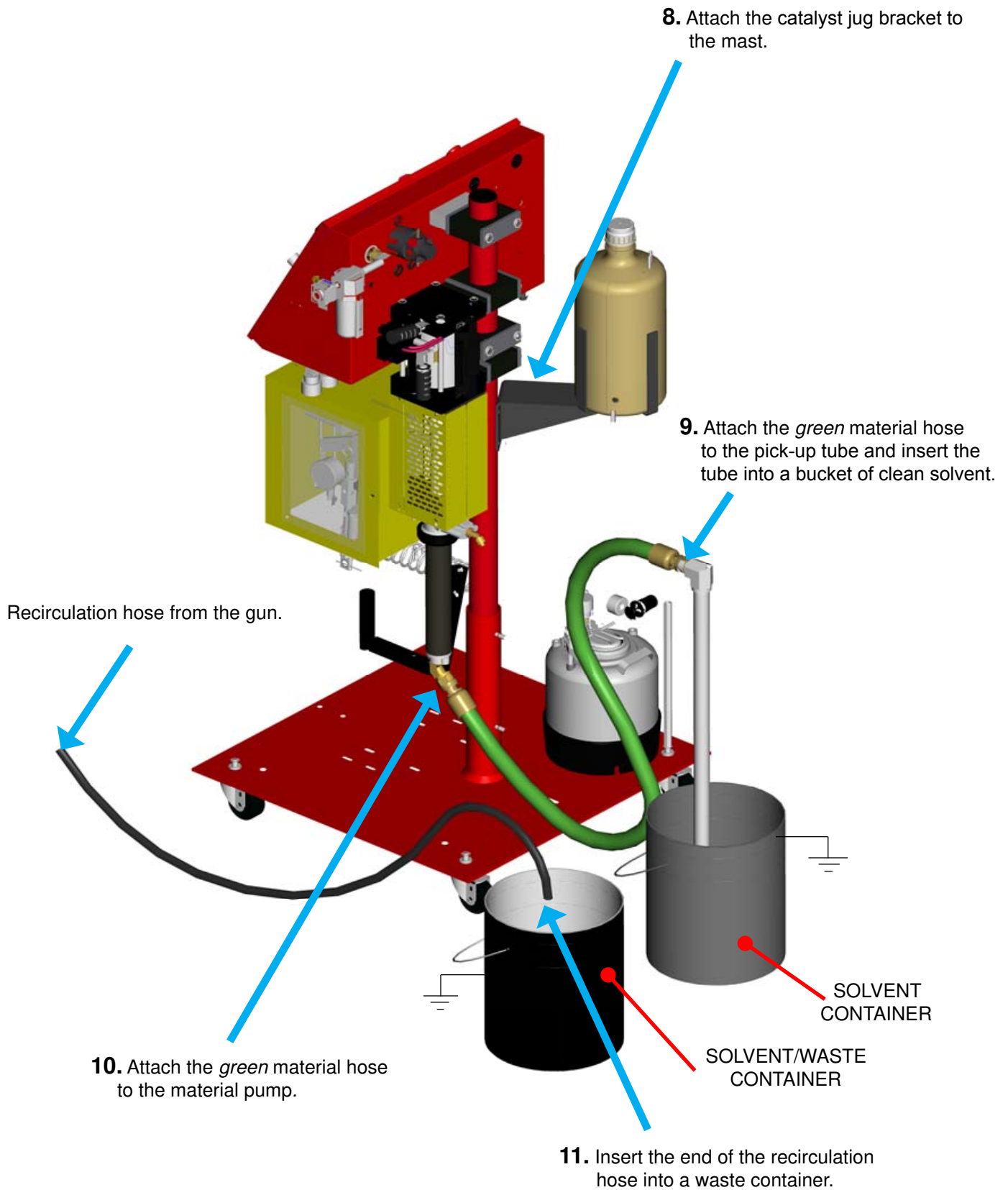


6. Attach 4 casters with provided lock washer, washer and nut. Attach solvent tank support rod on back left caster.



7. Attach solvent tank to solvent tank support rod with provided rubber strap.

Set-Up

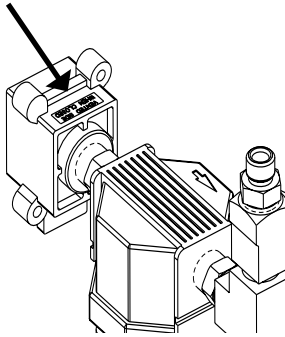


Pressure Relief Procedure

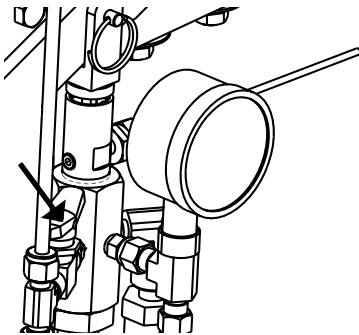


To relieve fluid and air pressures:

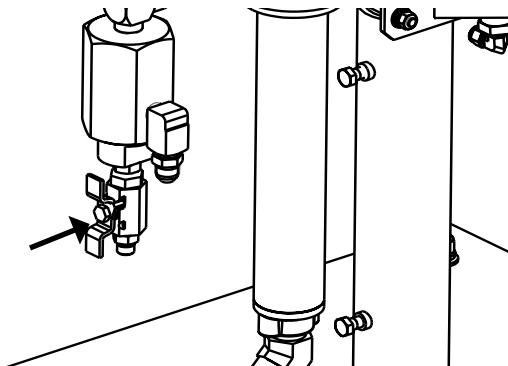
1. Push down Yellow slide valve, P/N 21402-00 to bleed off air to system.



2. Open P/N 21228-00 on catalyst pump to recirculation position.



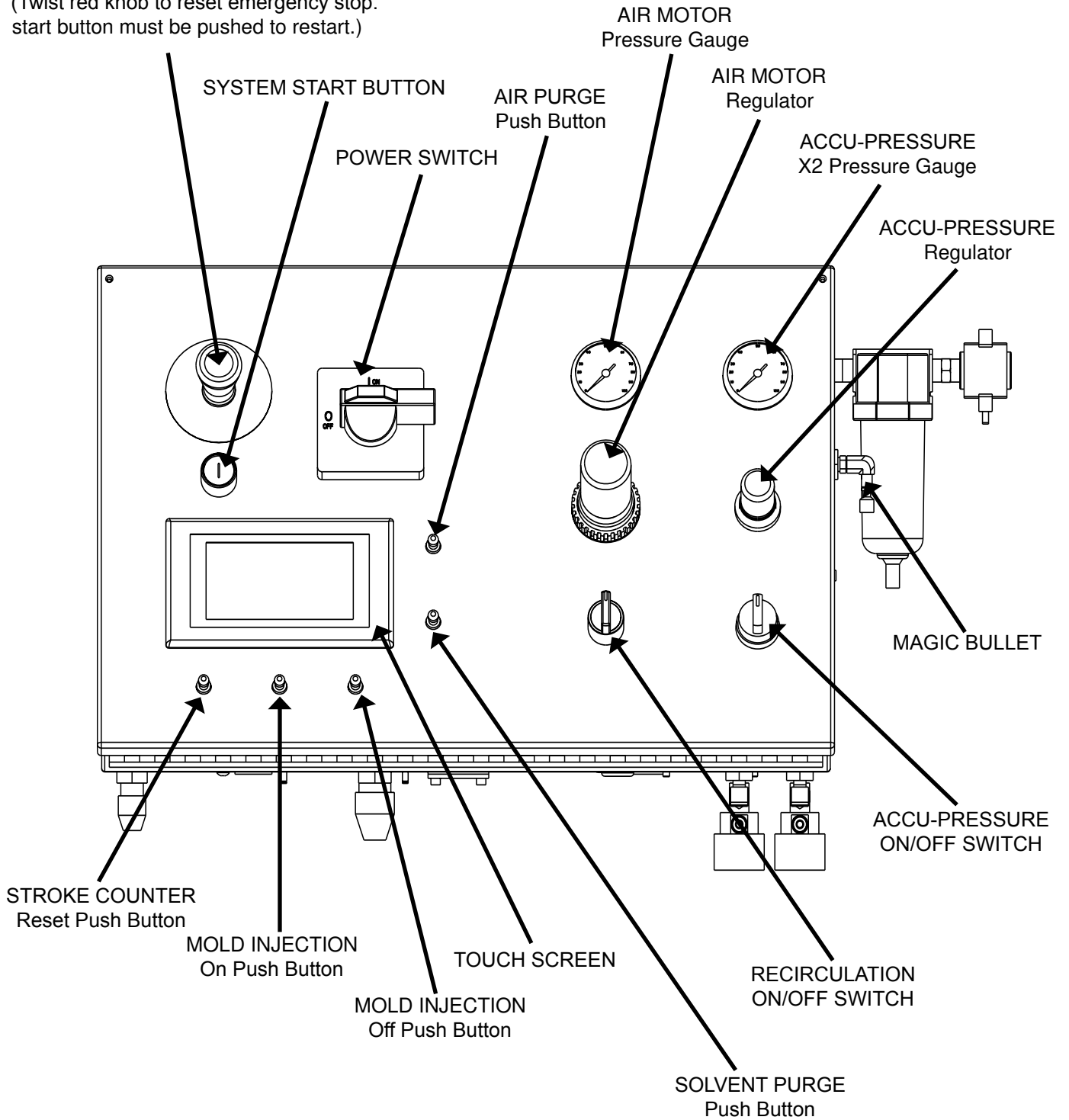
3. Open P/N 21192-00 on bottom of material pump.



Start-Up

Console Functions

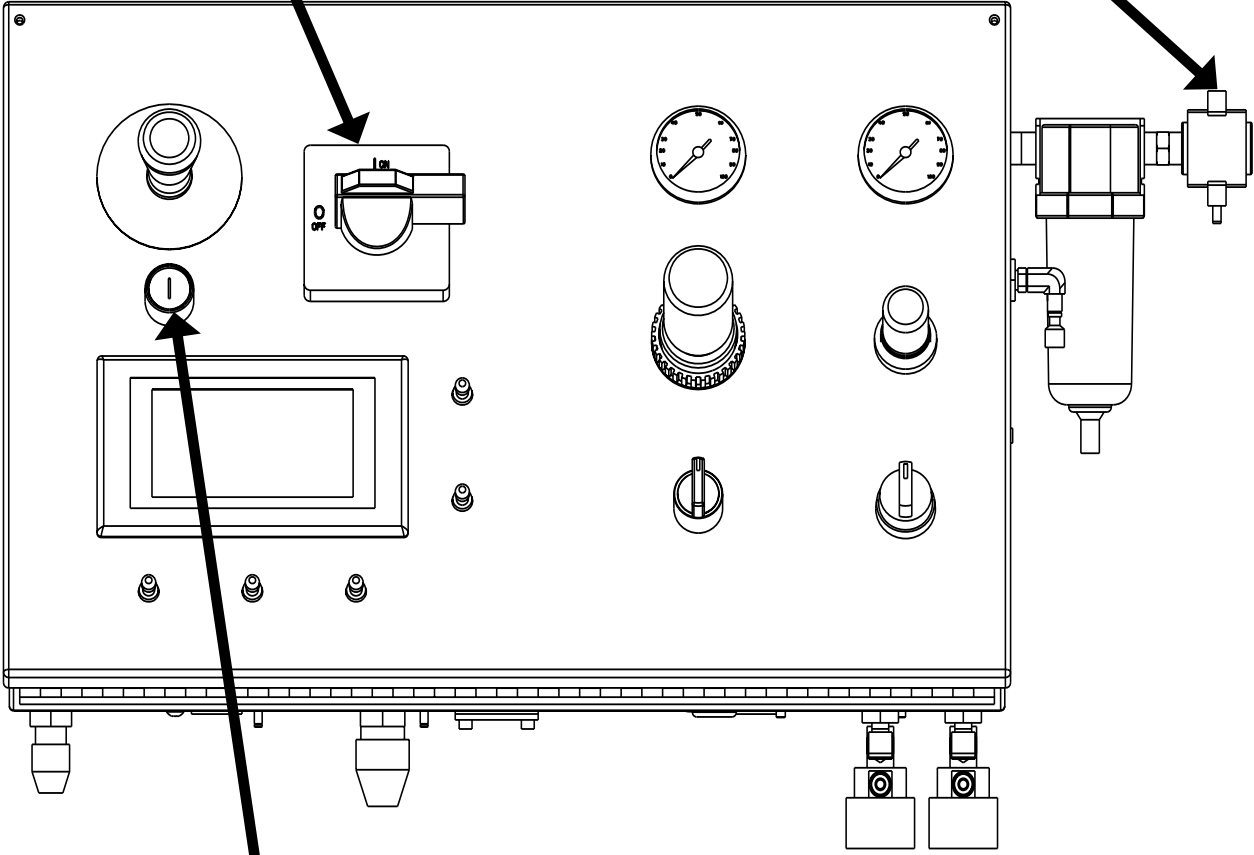
EMERGENCY STOP - Shuts off operation.
(Twist red knob to reset emergency stop.
start button must be pushed to restart.)



Start-Up

1. Open the air valve by pushing the yellow slide on the valve.

2. Turn on the main power.



3. Press the start button.

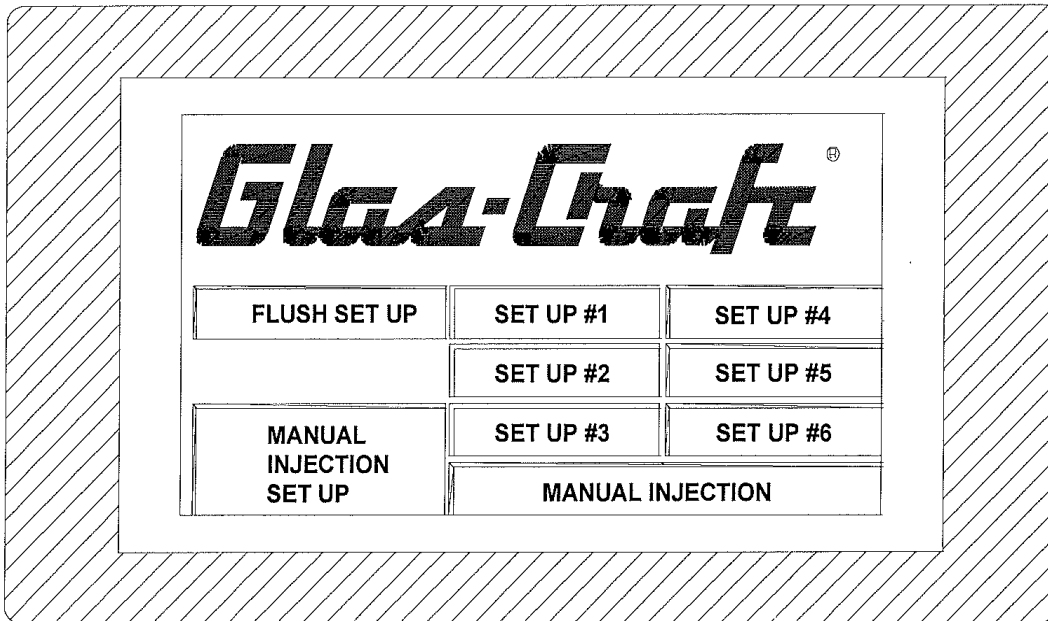
Start-Up

START-UP SCREEN WHEN POWER IS TURNED ON



4. Push for set-up screen.

SYSTEM SET UP SCREEN



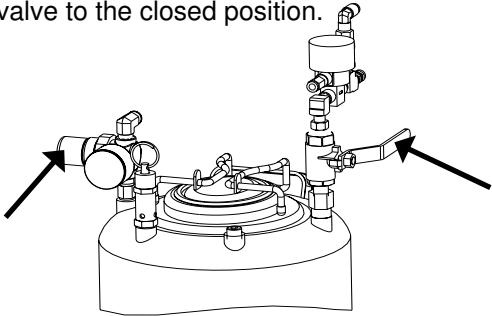
Start-Up

Solvent Flush Programing

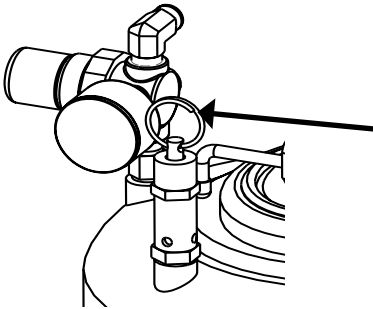
Before initial operation of any internal mix system, make certain the solvent flush set-up is fully operational.

Since the system is an internal mix system, the mixer requires flushing with air-solvent-air after each dispense Or before the mixed material starts to gel.

5. Make sure solvent regulator is dialed to zero (Turn knob fully counter-clockwise) and turn the ball valve to the closed position.

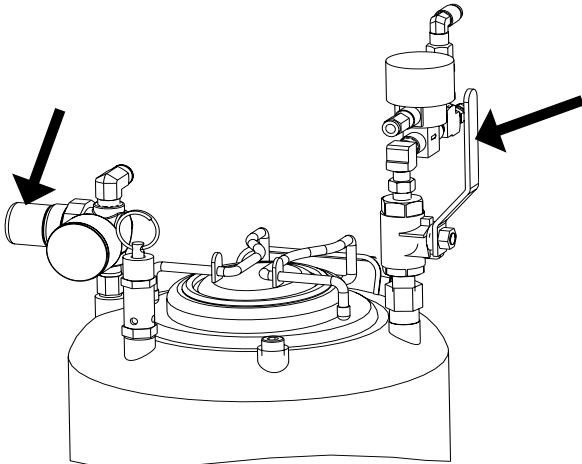


6. Carefully relieve any pressure in the solvent tank by slowly pulling the relief valve.



7. After all the pressure is released from the tank, open the lid and fill the tank with a suitable, clean flushing solvent and close the lid securely.

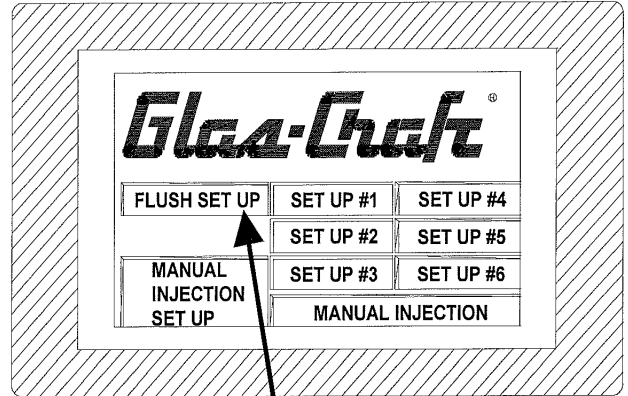
8. Turn solvent regulator clockwise to approximately 80 psi. and turn the ball valve to the open position.



9. Follow the instructions below for touch screen operations.

SCREEN #2

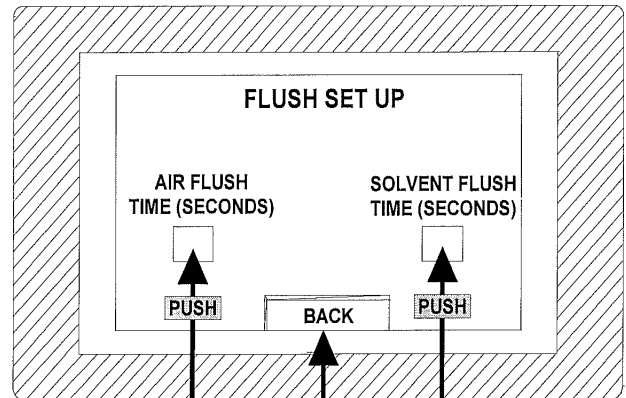
SYSTEM SET UP SCREEN



PUSH FOR FLUSH SET UP SCREEN

SCREEN #3

SCREEN WHEN FLUSH SET UP IS SELECTED



POP UP KEY PADS
AIR FLUSH
SECONDS

RETURNS TO
SET UP
SCREEN #2

POP UP KEY PADS
SOLVENT
FLUSH
SECONDS

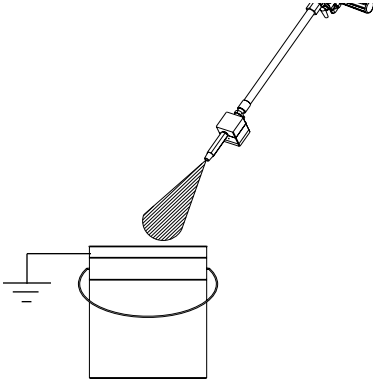
* THE TIME SETTINGS THAT ARE ON THIS SCREEN WILL NOT CHANGE, EVEN WHEN POWER IS TURNED OFF. SETTINGS CAN ONLY CHANGE, BY OPERATOR IN FLUSH SET UP SREEN, USING KEY PADS.

10-15 seconds is recommended for air flush initial set-up.

3-5 seconds is recommended for solvent flush initial set-up.

Start-Up

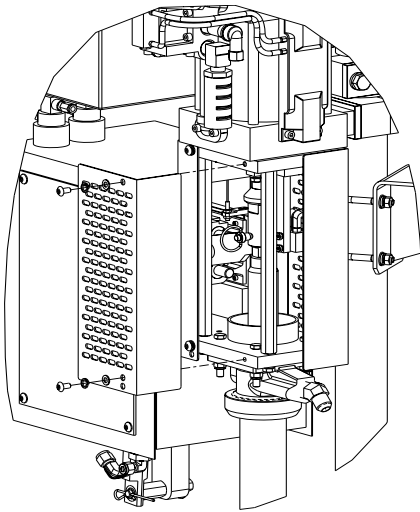
10. Place injection nozzle over a proper waste container. Press the solvent button (located on the front of the control panel) to assure proper flush. Press the air flush button (located on the front of the control panel) to purge any remaining solvent from the gun head.



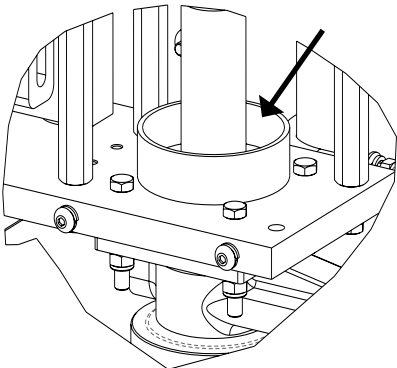
11. Exhaust air through the gun head until traces of solvent have been dissipated.

Resin Start-Up

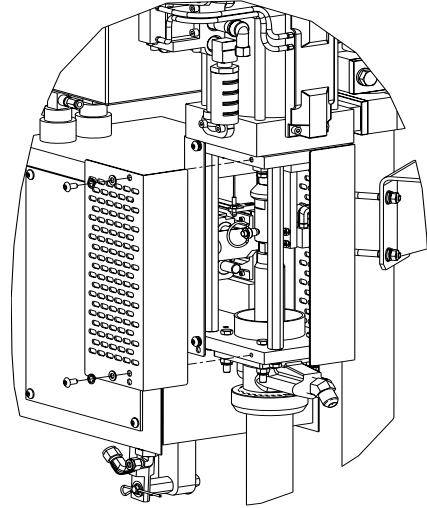
1. Remove yellow guard using a 5/32" hex balldriver.




2. Fill material pump lube cup with proper pump lube.




3. Replace yellow guard using a 5/32" hex balldriver.

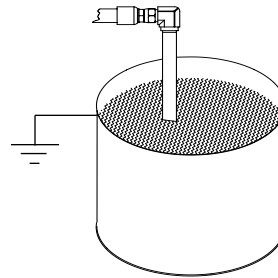


4. Before operating the material pump, flush thoroughly with a clean, suitable solvent to remove test fluid.

 *GlasCraft uses test fluid that may not be compatible with some resins. Then, it is recommended that the test fluid be flushed from the material pump fluid section.*

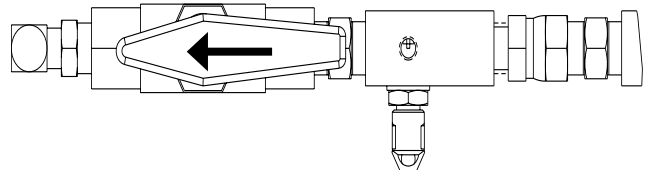
 *Make sure hose fittings on the pick-up hoses are tight.*

5. Place the material pick-up tube into a container of clean, suitable solvent.



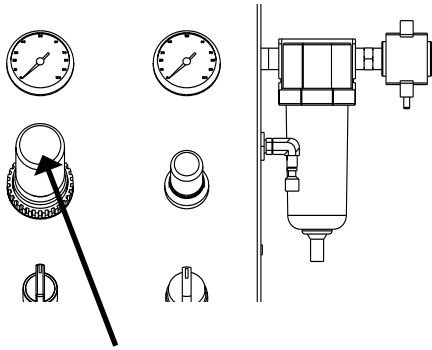
6. Place the recirculation hose into a suitable solvent/waste container.

7. Turn main valve on the gun head to the recirculation position (Towards the hoses).

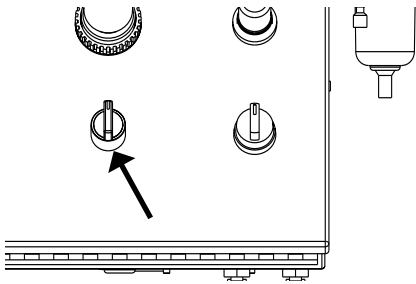


Start-Up

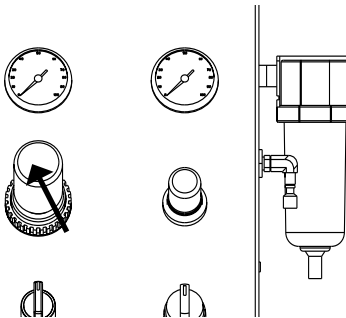
8. Turn the material air regulator "OFF" (counter-clock wise).



9. Switch machine recirculation to "ON".

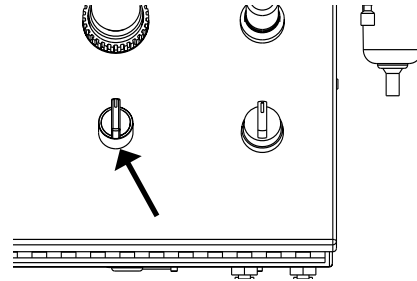


10. Turn the material injection regulator slowly clockwise until gauge indicates 10 PSI or until pump cycles slowly.



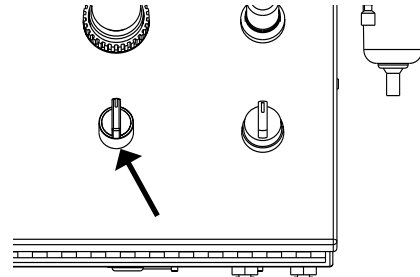
11. The pump should cycle clean solvent through the system and out the recirculation hose.

12. End recirculation when solvent appears reasonably clean. "OFF"

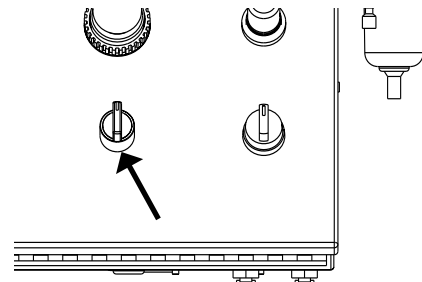


13. Remove material pump pick-up tube from solvent container and dry thoroughly.

14. Switch machine recirculation to "ON".



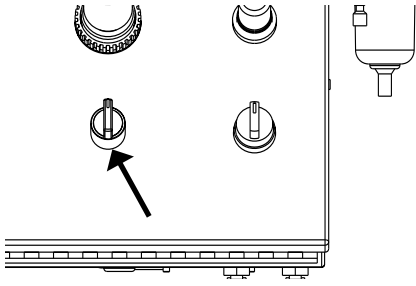
15. When solvent has stopped exiting the recirculation hose, end recirculation. (OFF)



16. Place material pick-up tube in desired container of material while keeping recirculation return hose in a waste container.

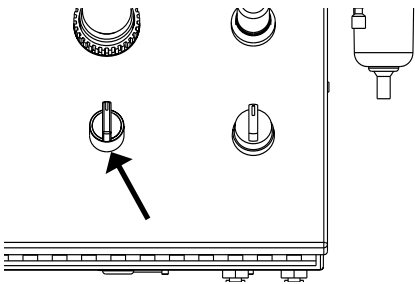
Start-Up

17. Turn machine to recirculation. (ON)




18. Let material pump cycle slowly until a steady stream of clean material is seen exiting the recirculation hose.

19. Switch machine recirculation to "OFF".






20. Secure recirculation hose in the material supply container.

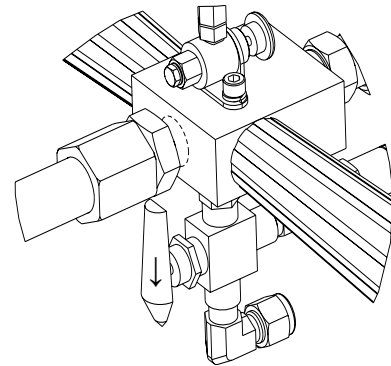
 *Dispose of resin in the waste container in a proper manner.*


Catalyst Start-Up

1. Safely fill the catalyst supply bottle, P/N LPA-165, (maximum two gallons) with preferred MEKP catalyst, to a minimum level of at least two inches above the catalyst bottle outlet fitting.

						
<p>Remove the catalyst bottle, P/N 20941-00 from catalyst bottle bracket, P/N LPA-169 for filling. The bottle should be placed at or below lowest level for safe filling. Never fill the catalyst bottle while mounted in bracket as personal injury from catalyst spillage could result.</p>						

2. Turn the catalyst valve on the dispense gun to recirculation position (arrow on valve should point away from gun block).



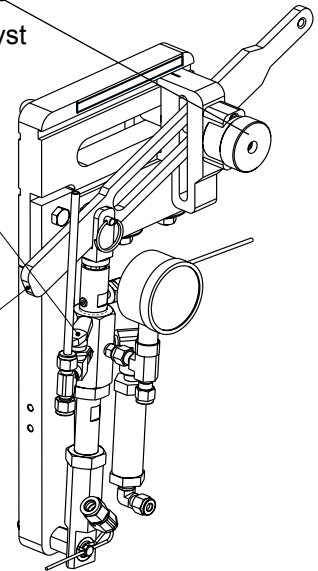
 *Make sure all the air is purged out of the catalyst pump on new start up.*

- 3a. Pull and rotate pivot knob to disengage the catalyst drive arm.


- b. Turn the catalyst slave pump yellow ball valve to the open position.


- c. Hand prime the pump until a steady stream of catalyst flows back to the bottle.

- d. Close the ball valve.



4. Set the catalyst slave pump to 3.0 percent.

 *It is usually a general practice when starting up the system to let the system recirculate with the catalyst slave pump set at 3.0%. This ensures good catalyst volume movement through the system to remove air in the catalyst system.*

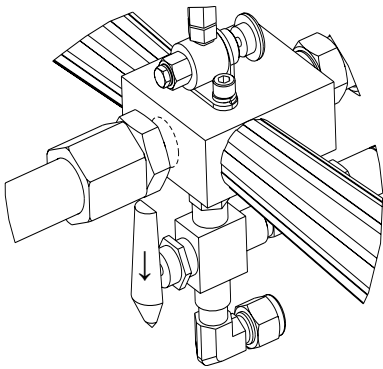
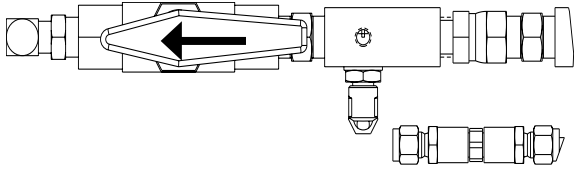
 *For systems that have PAC (Progressive Automatic Catalyst), see manual injection procedures on the next page for instructions on how to set the catalyst pump to 3% using the touch screen.*

5. Re-engage the catalyst pivot knob. (This step is not necessary if the system is equipped with the PAC option.)

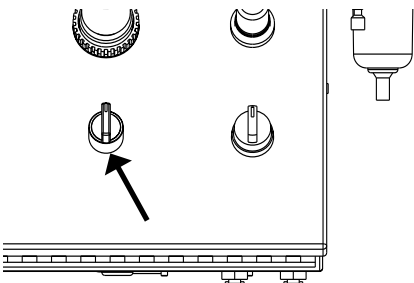
Start-Up

Recirculation Mode Start-Up

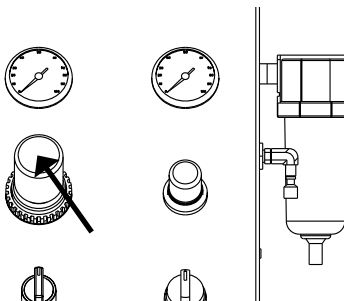
- Both the catalyst valve and the material valve on the dispense gun should be in the recirculation position. (Towards the hoses)



- Turn machine to recirculation. (ON)



- Turn the air motor regulator slowly clockwise until the pump cycles slowly.

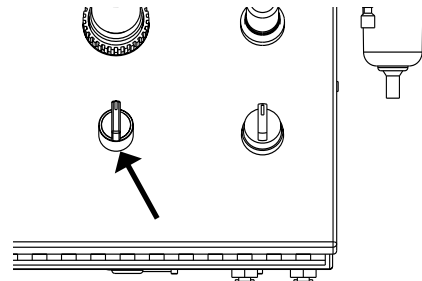


- Continue to cycle the machine until a steady stream of catalyst appears out of the return tube and is free of any air bubbles.

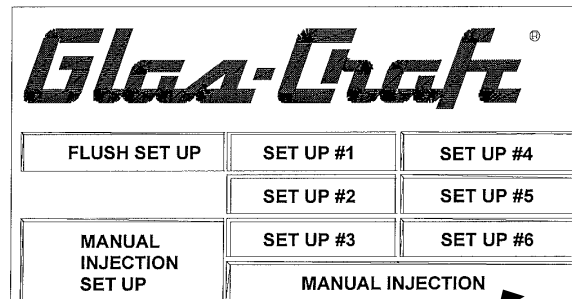
The recirculation mode should be used in initial start-up or when air bubbles are observed coming through the ends of the recirculation hoses.

Initial Injection Instructions

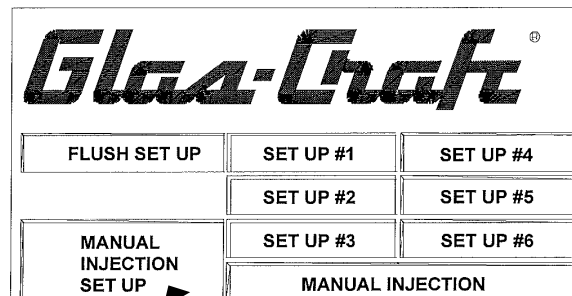
- Turn Recirculation Switch to the OFF position.



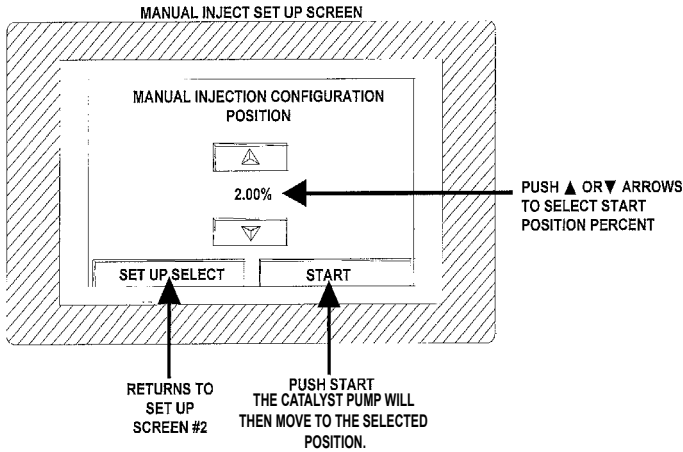
- Press manual injection (Located on Touch Screen).



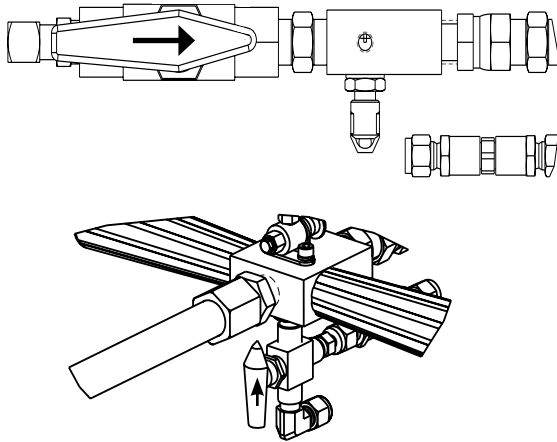
- (If Required), Select desired percentage of catalyst by pushing the manual injection set-up.



Start-Up

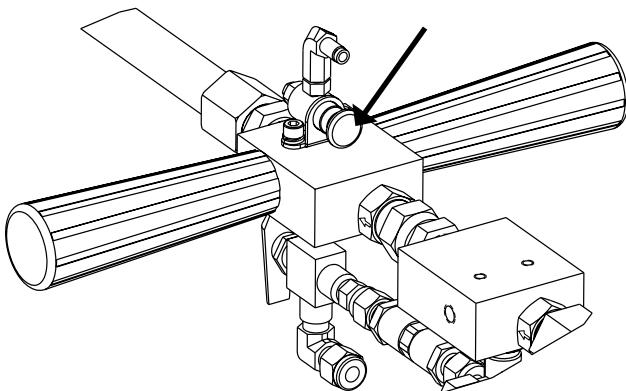


4. Turn the material and catalyst valves to the Injection position.



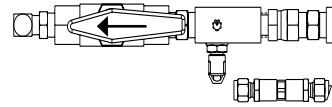
5. Depress the air switch button on the gun head to dispense mixed material. *It's strongly recommended at this time to do a couple of test shots in a suitable cup to confirm proper gel time.*

.025 gallons per stroke
95cc per stroke

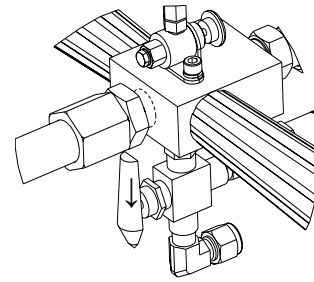


When starting a new machine, it is recommended to dispense a couple of strokes of resin into a suitable container to ensure a proper flow of materials. This is not required once the machine has been properly wet-out.

6. When finished, turn catalyst & resin valves on the gun head to recirculation position. **BEFORE FLUSHING!**



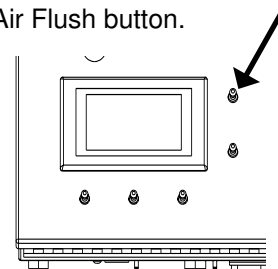
RESIN



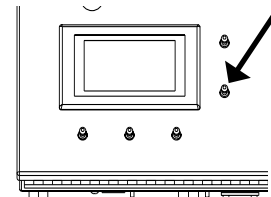
CATALYST

7. Flush the system.

a. Press the Air Flush button.



b. Press the Solvent Flush button.



c. Press the Air Flush button again.

8. Assure that proper catalyzation was achieved.

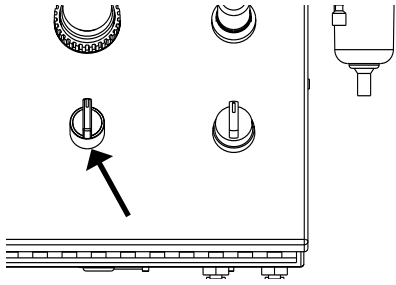


When making test material dispenses or during flushing operation, make certain that dispensed material and/or solvent is contained in a suitable container and that this material and/or solvent is disposed of properly.

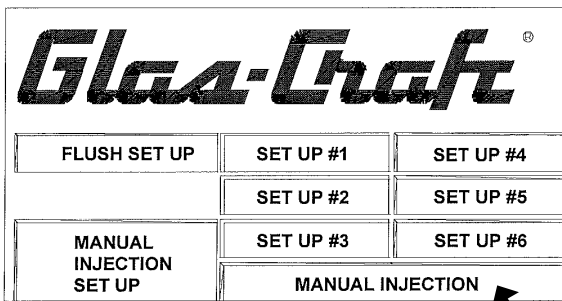
Start-Up

Manual Injection Instructions

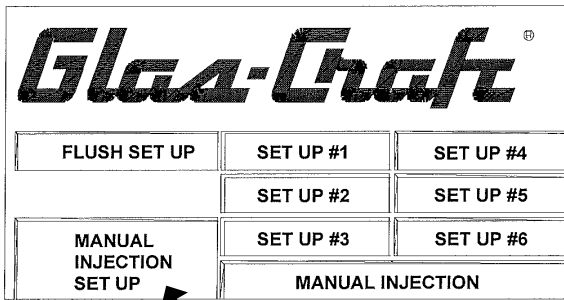
1. Turn recirculation switch to the OFF position.



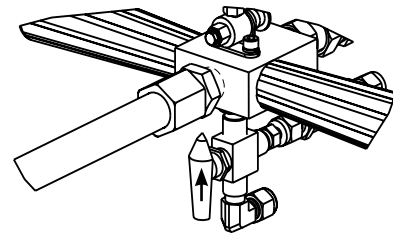
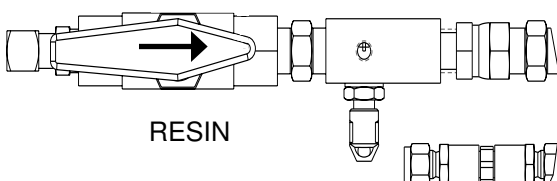
2. Press manual injection (Located on Touch Screen).



3. Select desired percentage of catalyst by pushing the manual Injection Set-Up. Once desired catalyst percent is selected press start to move the pump to the selected position.




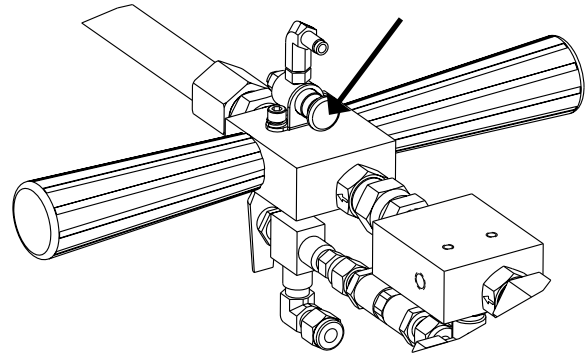
4. Turn valves on gun head to injection.



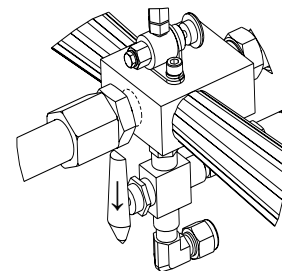
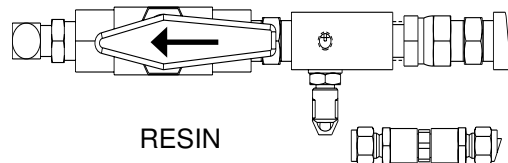
CATALYST

5. Insert port injector into mold opening.
6. Depress the air switch button trigger on gun head to dispense mixed material.

 .025 gallons per stroke
95cc per stroke



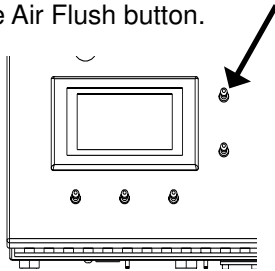
7. After the injection process turn both, catalyst valve and material valve on the dispense gun to the recirculation position.



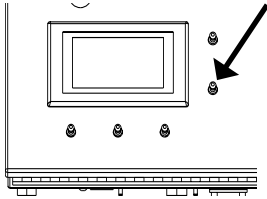
CATALYST

Start-Up

- 8. Flush the system.
 - a. Press the Air Flush button.



- b. Press the Solvent Flush button.



- c. Press the Air Flush button again.

If Adjustments need to be made on the timing of the Air/ Solvent, See Flush set-up page 13.

Automatic Injection Instructions

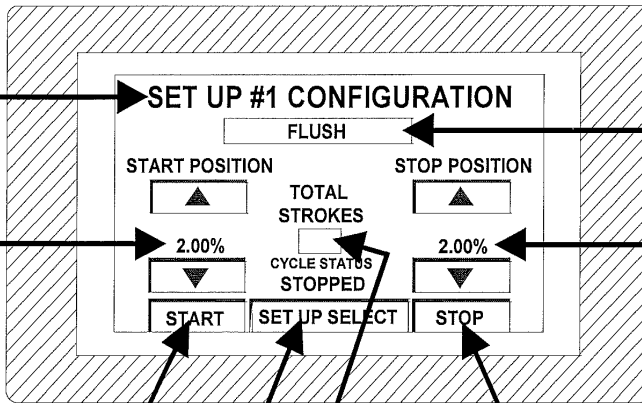
1. Make sure Manual Injection is NOT on.
Manual Injection Box- Blue =ON
Manual Injection Box- Gray= OFF
2. Press set-up. 1 through 6.
There are up to 30 set-up options depending on the system.

Glass-Craft ®		
FLUSH SET UP	SET UP #1	SET UP #4
	SET UP #2	SET UP #5
MANUAL INJECTION SET UP	SET UP #3	SET UP #6
	MANUAL INJECTION	

SCREEN WHEN SET UP #1 THRU #6 IS SELECTED

REPEAT SET UP STEPS FOR SET UP #2 THRU #6

PUSH ▲ OR ▼ ARROWS TO SELECT THE STARTING CATALYST PERCENT.

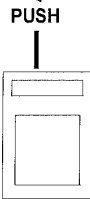


FLUSH FLASHES WHEN TOTAL STROKES HAVE BEEN REACHED. IT WILL ALSO FLASH IF STOP IS PUSHED.

PUSH ▲ OR ▼ ARROWS TO SELECT THE ENDING CATALYST PERCENT.

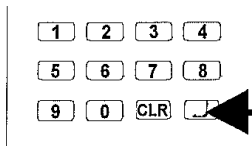
AFTER THE REQUIRED PERCENT AND STROKES ARE ENTERED, PRESS START TO START THE CATALYST PUMP POSITIONING.

RETURNS TO SET-UP SCREEN AND INJECTION PROGRAMMING



PUSHING STOP WILL STOP THE PROGRAM. THE START BUTTON MUST BE PUSHED AGAIN AND THE PROGRAM WILL START OVER. TO AVOID RESETTING THE PROGRAM USE THE START AND STOP BUTTONS ON THE CONSOLE AND/OR GUN DURING THE INJECTION PROCESS.

POP UP KEY PADS FOR TOTAL STROKES SELECTED



PRESS

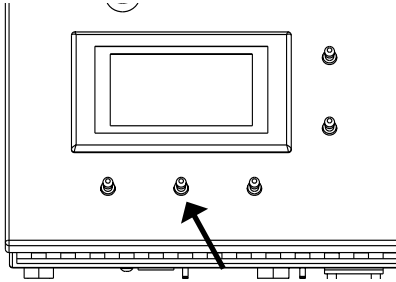
*.025 gallons per stroke
95cc per stroke*

Start-Up

3. Secure port Injector into mold opening or use the remote injection port.

4. Press Start on the set-up screen.

5. Press Injection ON button.



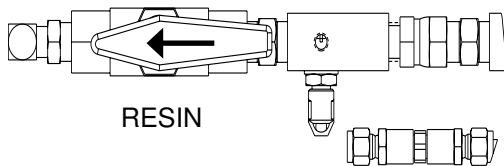
Injection ON will NOT function until the catalyst pump has found the correct percentage.

After the injection sequence has been completed, the pump will stop and the flush Indicator will flash.

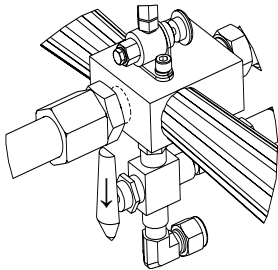
If additional material is required, Follow the manual injection instructions to finish injection.

The start and stop buttons on the gun and control panel can be pressed without changing the program. If the stop button is pressed, the program will be aborted and the start button must be pressed to reset the program.

6. Turn the catalyst and resin valves on the gun to the recirculation position before flushing.



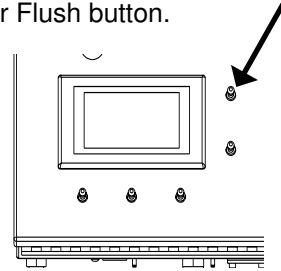
RESIN



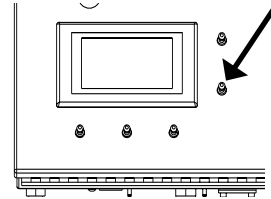
CATALYST

7. Flush the system.

a. Press the Air Flush button.



b. Press the Solvent Flush button.



c. Press the Air Flush button again.

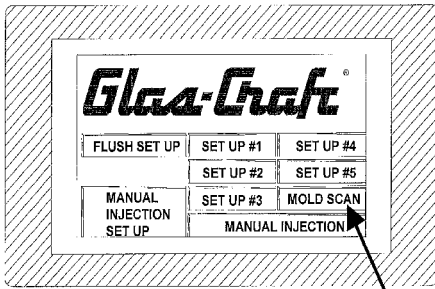
If an adjustment needs to be made on the timing of the air or solvent, refer to the flush set-up page 13.

RFID Option (WRITING TAGS)

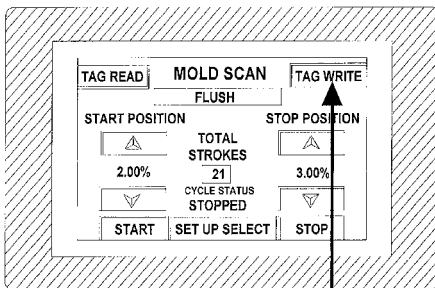
1. Select Mold scan.
2. Select Tag Write.
3. Enter password (1234) + enter / ← button
4. Select Start position % Stop position % and Total Strokes.
.025 gallons per stroke
95cc per stroke
5. With scanner wand, scan mold chip. (Yellow light on scanner will verify scanning).
6. Repeat steps #1, #3, and #4 for all mold chips.
7. Select Return (Tag Read)
8. Scan each chip to verify settings.

Start-Up

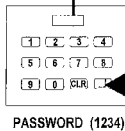
OPTIONAL MOLD SCAN



PUSH FOR MOLD SCAN SET UP

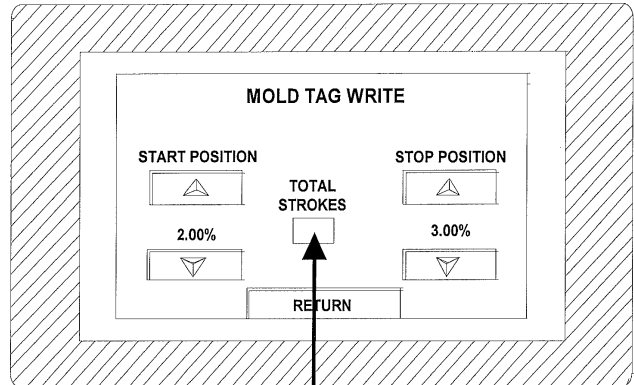
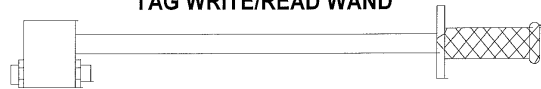


POP UP KEYPAD
ENTER PASSWORD

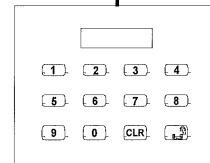


PUSH AFTER PASSWORD IS ENTERED.
SCREEN TAG WRITE WILL BE DISPLAYED.

TAG WRITE/READ WAND



POP UP KEYPAD,
ENTER STROKES



1. ENTER START PERCENTAGE, STOP POSITION PERCENTAGE AND TOTAL STROKES.
2. AFTER PARAMETERS ARE ENTERED, TAKE READ/WRITE WAND, AND SCAN MOLD CHIP. ORANGE LIGHT WILL APPEAR.
3. REPEAT STEPS 1, & 2 FOR EACH ADDITIONAL MOLD CHIP. MAKE SURE TO CHANGE DATA EACH TIME BEFORE WRITING MOLD CHIPS.
4. WHEN ALL MOLD CHIPS HAVE BEEN WRITTEN, AND SCANNED TO MOLD CHIPS PRESS RETURN. THE MOLD SCAN SCREEN WILL APPEAR AND THE TAG READ BUTTON WILL BE ACTIVATED.



RFID tag p/n: 23290-00

RFID tag carrier p/n: 23291-00

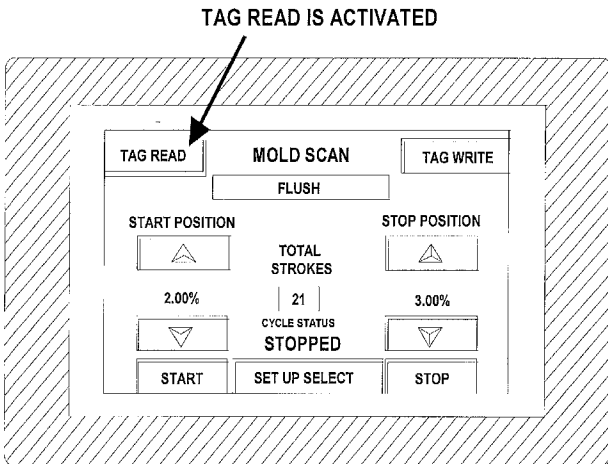
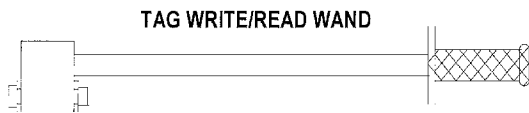
Start-Up

RFID Option (READ TAGS)

1. Select mold scan.
2. With scanner wand, scan mold chip.
3. Press Start (Located on Touch Screen).
4. Press Injection ON (Located on front control panel or on gun).

Injection ON will not function until the catalyst pump has found the correct percentage.

Injection OFF, (Located on front control panel or gun.) will NOT reset Injection Sequencer. The injection ON will restart sequencer.

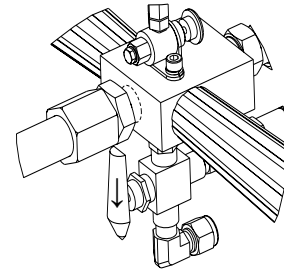
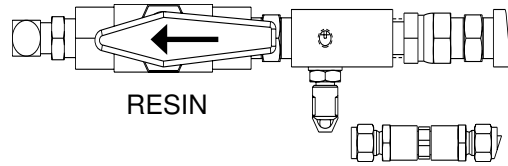


1. USING THE TAG READ/WRITE WAND, SCAN THE MOLD CHIP THAT IS TO BE INJECTED. THE WRITTEN CHIP DATA WILL BE ON THE SCREEN. PRESS START TO POSITION SERVO MOTOR. WHEN READY TO INJECT, PRESS INJECT ON BUTTON AT THE GUN, OR CONTROL BOX.



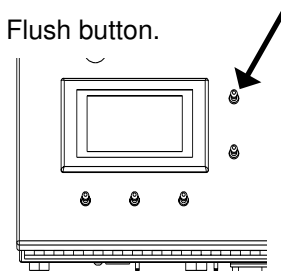
After Injection Sequencer has been completed, the pump will stop and Flush indicator will flash.

5. Turn the catalyst and resin valves on the gun to the recirculation position. **BEFORE FLUSHING!**

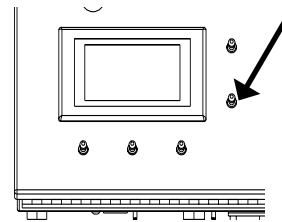


6. FLUSH SYSTEM:

- a. Press Air Flush button.



- b. Press Solvent Flush button.



- c. Press Air Flush button again.



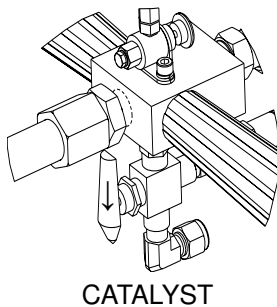
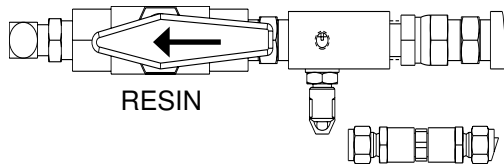
If Adjustment needs to be made on the timing of the Air or Solvent, See Flush Set-Up page 13.

Shut-Down

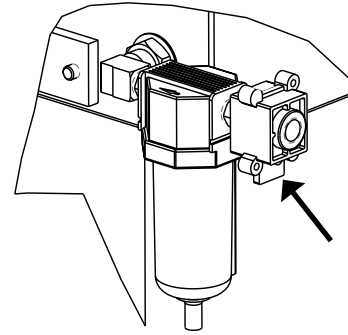
Shut Down Procedure

The purpose of the shut down procedure is to verify that all critical parts of the system, i.e., the mixing area, have been checked and cleaned to assure trouble-free start-up the next time the system is to be operated.

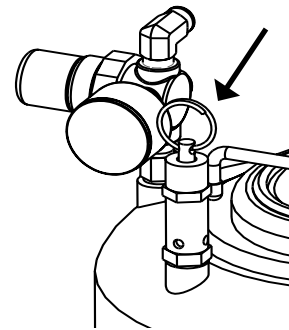
1. Confirm that both ball valves are in the recirculation position.




6. If you are using fillers mixed into the resin, remember on periods of shut-down, the fillers can settle to the bottom of the pump and pipe-works.
7. Shut down main air supply by closing yellow lock out valve.



8. Slowly bleed the air pressure from the tank by lifting the ring on the relief valve.



 *If using a filled resin it is suggested that the material pump and hoses be flushed with a “neat” resin and that the neat resin is flowing through the system and exiting the material recirculation hose thoroughly before shut down procedures are completed.*

2. Flush gun head with solvent and air purge thoroughly.
3. Material pump should be stopped with pump shaft in up position and shaft should be cleaned of any contaminants.
4. Material pump lube cup should be cleaned of old lube and refilled with new pump lube.
5. Material pump should now be cycled so that shaft is left in down position during shut-down period.

Notice

Failure to cycle Pump Shaft to DOWN position may result in contaminants to dry or harden on shaft. When the pump is next operated, severe damage may be done to upper pump seals.

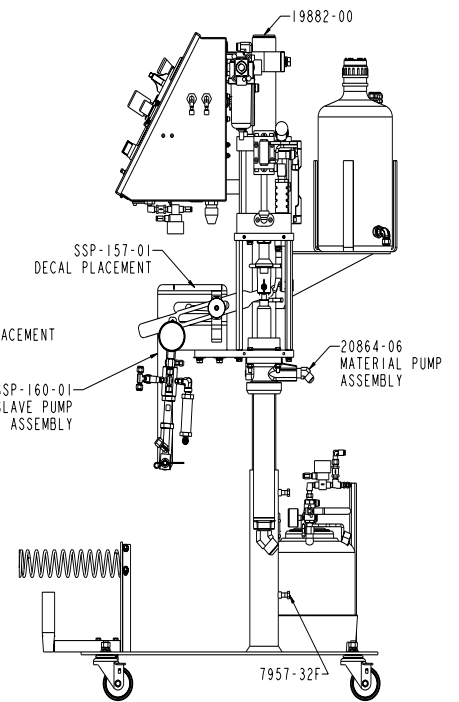
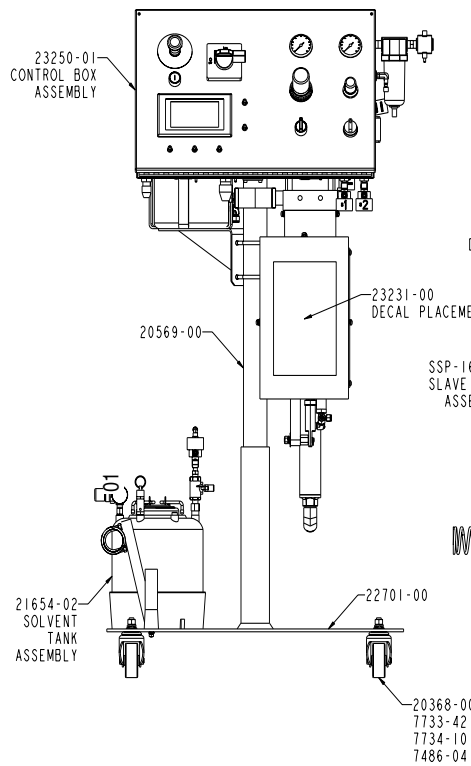
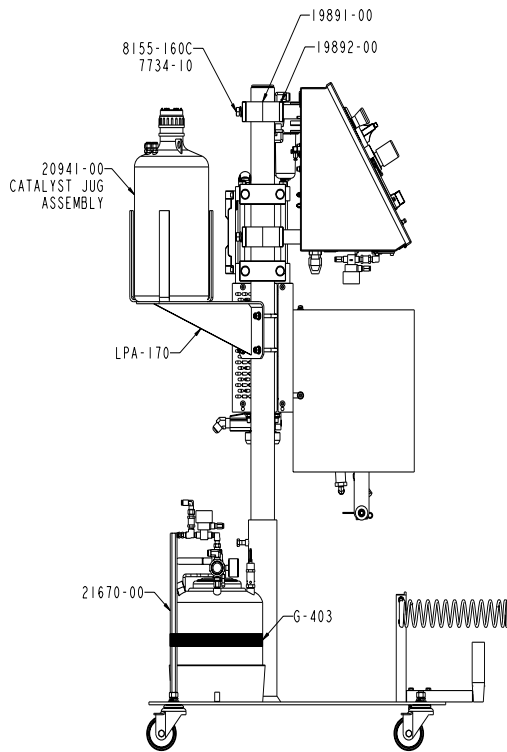
Parts

Spartan 3 System

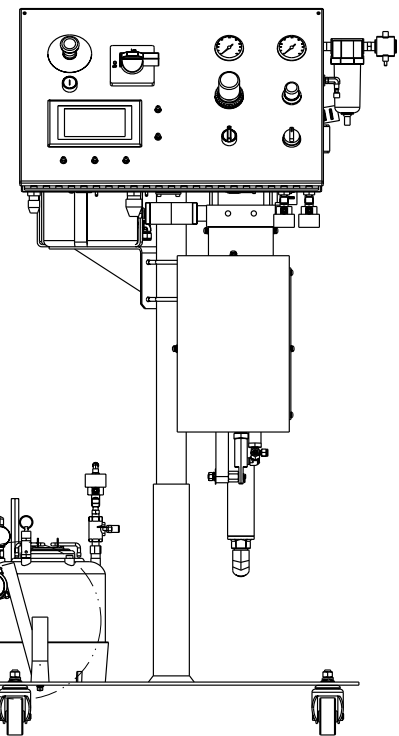
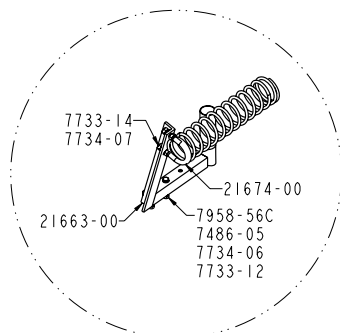
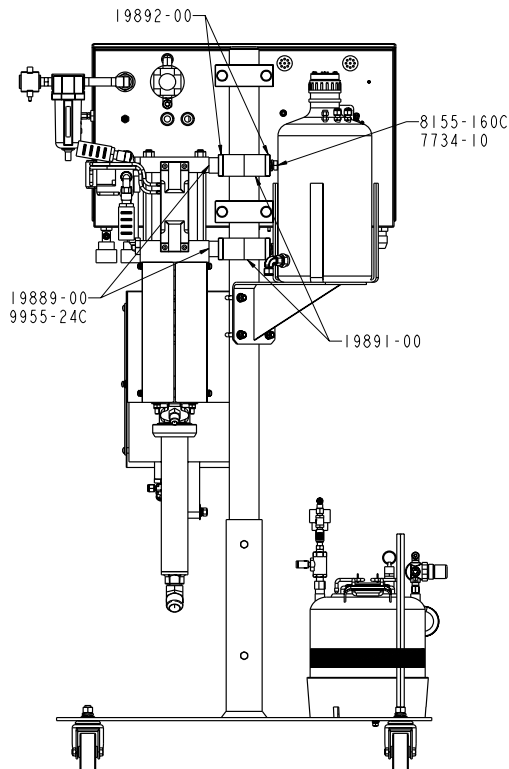
Standard Equipment	
Part Number	Description
20864-06	MATERIAL PUMP ASSEMBLY
17440-00	GROUNDING CLAMP ASSEMBLY
SSP-190-01	SLAVE PUMP ASSEMBLY
20190-30	CATALYST HOSE 30 FT.
20195-30	MATERIAL RECIRCULATION HOSE
20569-00/22701-00	MAST/BASE
20941-00	CATALYST BOTTLE ASSEMBLY
20945-00	CATALYST RECIRCULATION HOSE
21054-01	SOLVENT HOSE 48 FT.
21654-02	SOLVENT TANK ASSEMBLY
21694-25	MATERIAL HOSE ASSEMBLY, 25 FT.
23250-00	CONTROL BOX ASSEMBLY
GAM-268-01	MATERIAL PUMP PICK-UP KIT
LPA-170	CATALYST BOTTLE BRACKET ASSEMBLY
GC-1368	MANUAL

Assembly Drawings

23280-02 SPARTAN 3 ASSEMBLY



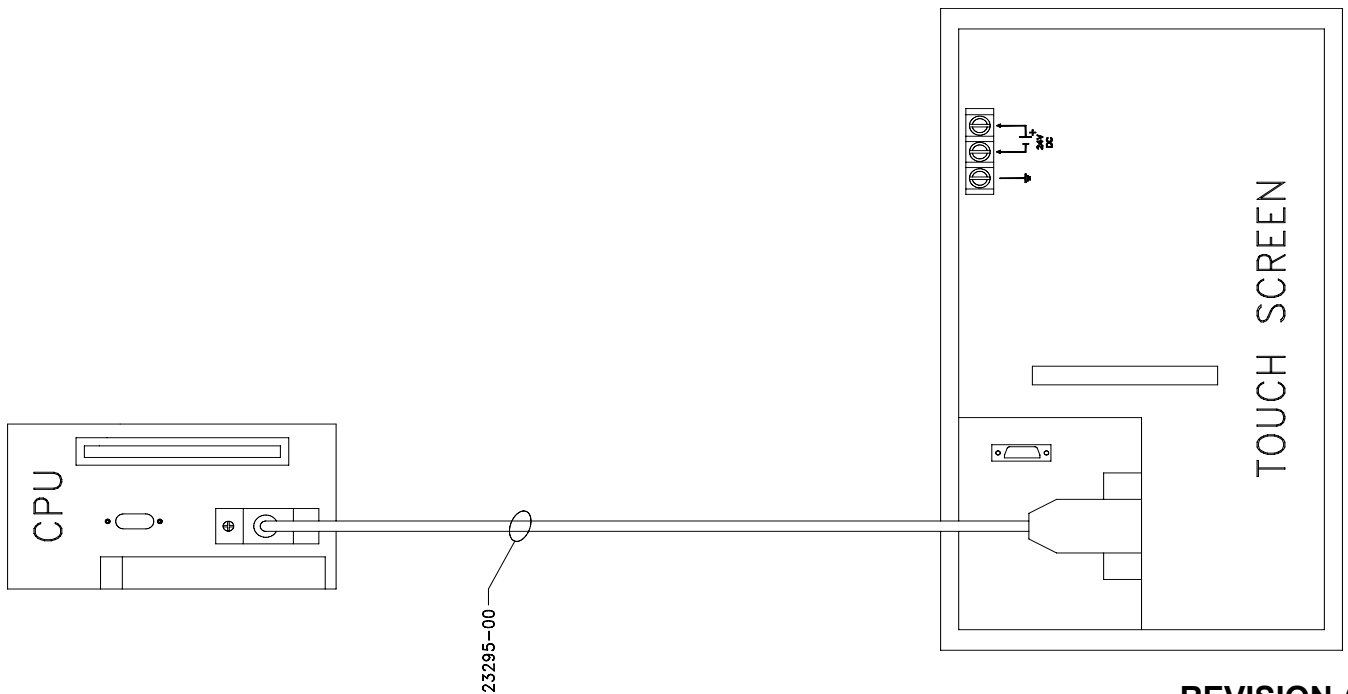
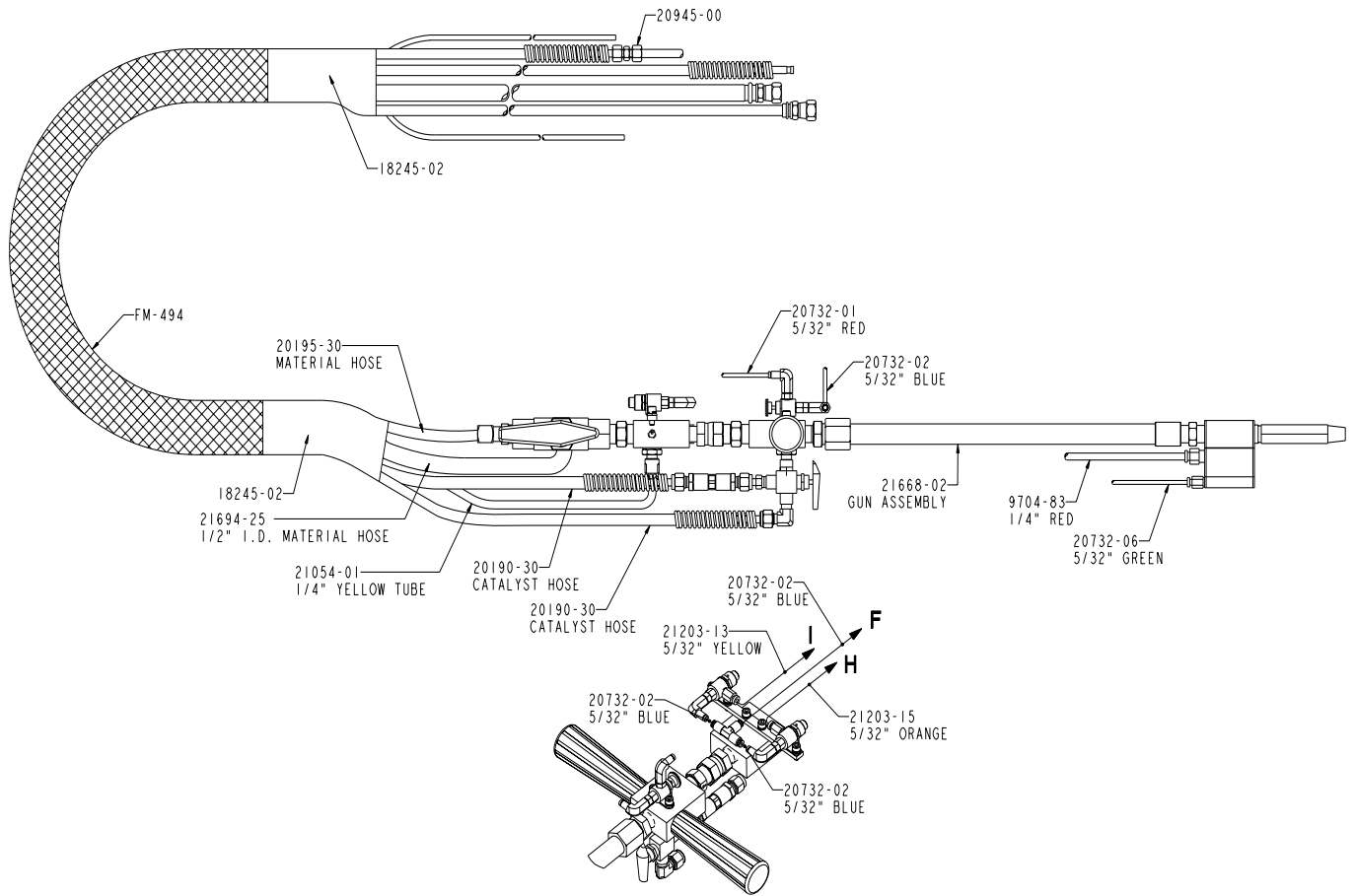
VIEW SHOWN WITH SSP GUARDS REMOVED



REVISION A

Assembly Drawings

23280-02 SPARTAN 3 ASSEMBLY



Assembly Drawings

23280-02 SPARTAN 3 ASSEMBLY

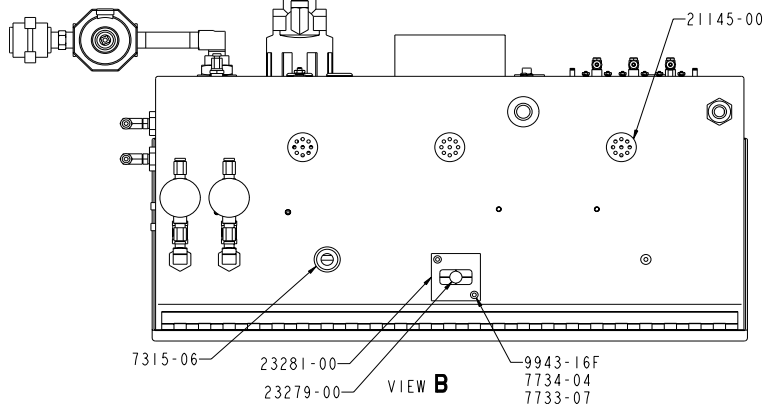
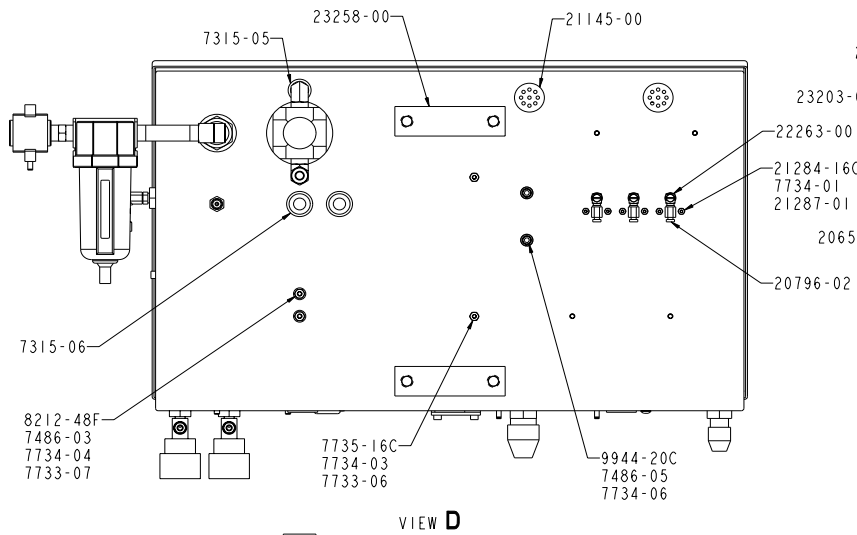
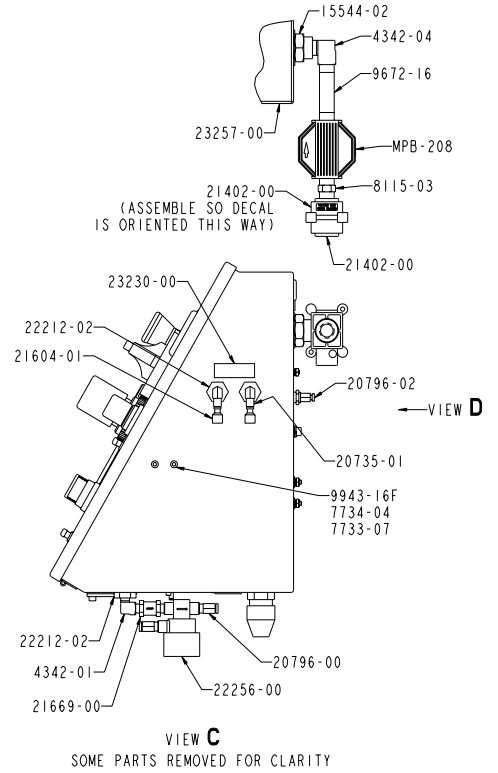
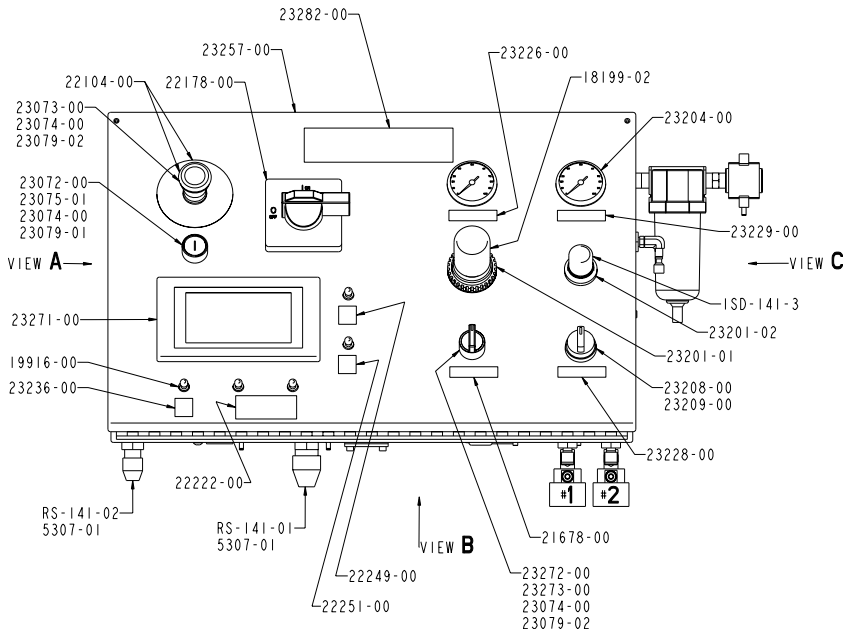
Part Number	Description	Qty.
13424-01	CABLE TIE	3
17440-00	GROUNDING CLAMP ASSEMBLY	1
18245-02	HEAT SHRINK TUBING	1.616
19845-00	FRP LITERATURE	1
19882-00	MAST CAP	1
19889-00	MOUNTING ADAPTER	2
19891-00	PIPE CLAMP	4
19892-00	COVER PLATE	8
20188-16C	SCREW	17
20190-30	CATALYST HOSE 30FT	2
20195-30	MATERIAL HOSE 3/8 ID	1
20368-00	3" SWIVAL CASTER	4
20569-00	SUPPORT MAST	1
20732-01	RED TUBING 5/32"	32
20732-02	BLUE TUBING 5/32"	64
20732-06	GREEN TUBING 5/32"	33
20864-06	MATERIAL PUMP ASSEMBLY	1
20941-00	CATALYST JUG ASSEMBLY	1
20945-00	RECIRC. CATALYST ASSEMBLY	1
21044-06	O-RING	1
21054-01	NYLON TUBING	48
21203-02	YELLOW TUBING 1/4"	14
21203-03	RED TUBING 1/4"	14
21203-05	GREEN TUBING 1/4"	14
21203-12	BLUE TUBING 5/32"	6
21203-13	YELLOW TUBING 5/32"	32
21203-15	ORANGE TUBING 5/32"	32
21654-02	SOLVENT TANK ASSEMBLY	1
21663-00	MOUNTING BLOCK	1
21668-02	SPARTAN 3 GUN	1
21670-00	TANK SUPPORT	1
21674-00	GUIDE HOSE ASSEMBLY	1
21694-25	MATERIAL HOSE 1/2" ID	1
22701-00	BASE	1
23231-01	SPARTAN 3 DECAL	1
23250-01	CONTROL BOX ASSEMBLY	1

Part Number	Description	Qty.
23295-00	TOUCH SCREEN CABLE	1
3923-02	SPIRAL WRAP	3
7486-04	WASHER	4
7486-05	WASHER	16
7486-13	WASHER	3
7733-12	NUT	2
7733-14	NUT	2
7733-42	NUT	4
7734-06	LOCK WASHER	15
7734-07	LOCK WASHER	2
7734-10	LOCK WASHER	12
7957-32F	SCREW	2
7958-56C	SCREW	2
8155-160C	SCREW	8
9704-11	NATURAL TUBING 3/8" OD	3
9704-83	RED TUBING 1/4" OD	33
9955-24C	SCREW	4
FM-494	EXPANDABLE SLEEVING	23
G-403	RUBBER TARP STRAP	1
GAM-268-01	PICK-UP TUBE ASSEMBLY	1
GC-1368	USER MANUAL	1
LPA-170	BOTTLE SUPPORT ASSEMBLY	1
SSP-157-01	CALIBRATION DECAL	1
SSP-160-01	SLAVE PUMP ASSEMBLY	1
SSP-172	SURROUND GUARD	1
SSP-173	LEFT PUMP GUARD	1
SSP-174	GUARD ANGLE BRACKET	1
SSP-176	GUARD WINDOW	1
SSP-177	RIGHT REAR PUMP GUARD	1
SSP-178	RIGHT FRONT PUMP GUARD	1

REVISION A

Sub-Assembly Drawings

23250-00 SPARTAN 3 CONTROL BOX ASSEMBLY

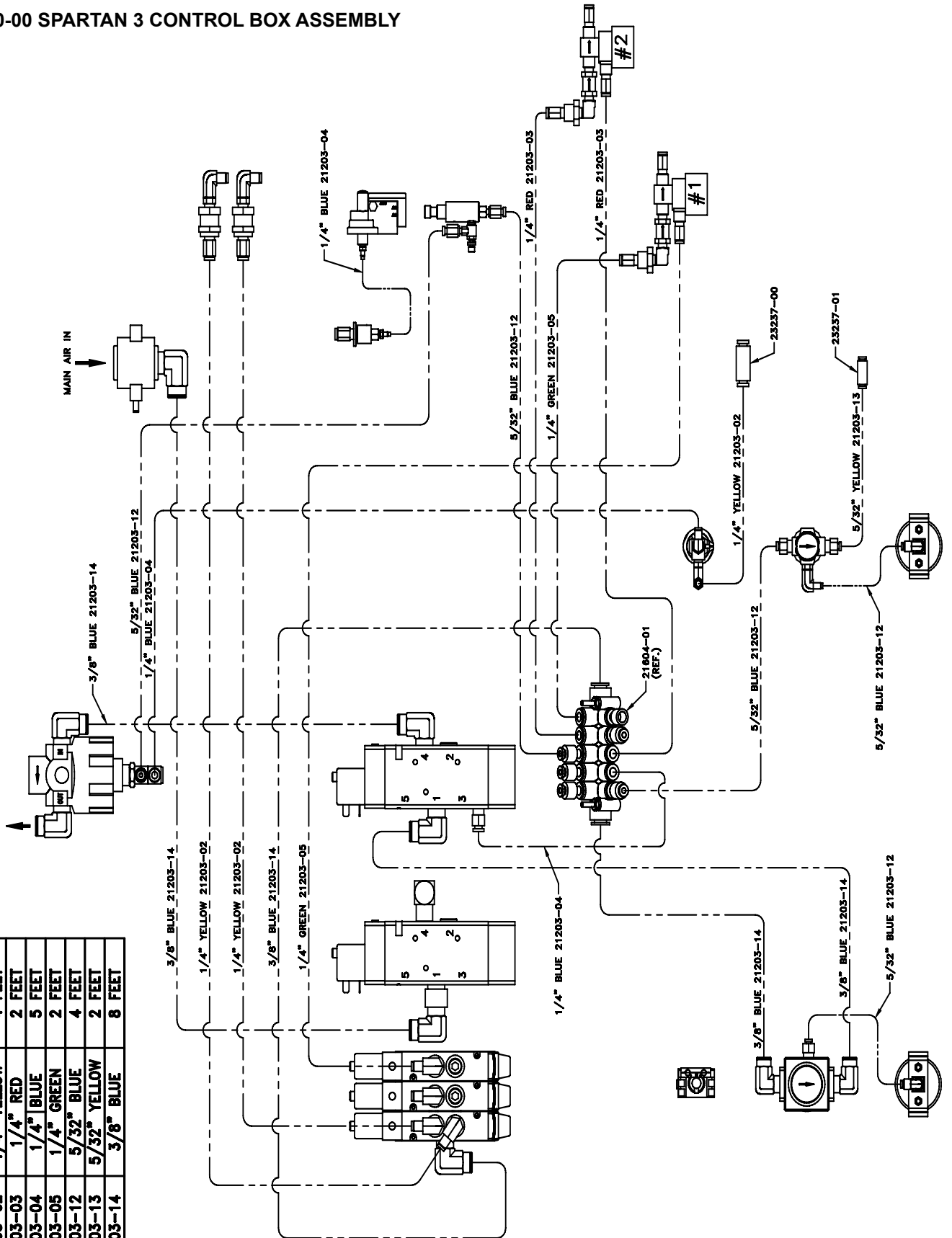


REVISION E

Sub-Assembly Drawings

23250-00 SPARTAN 3 CONTROL BOX ASSEMBLY

GLASCRAFT P/N	SIZE AND COLOR	LENGTH
21203-02	1/4" YELLOW	4 FEET
21203-03	1/4" RED	2 FEET
21203-04	1/4" BLUE	5 FEET
21203-05	1/4" GREEN	2 FEET
21203-12	5/32" BLUE	4 FEET
21203-13	5/32" YELLOW	2 FEET
21203-14	3/8" BLUE	8 FEET



REVISION E

Sub-Assembly Drawings

23250-00 SPARTAN 3 CONTROL BOX ASSEMBLY

Part Number	Description	Qty.
11021-23	PIPE PLUG	2
11021-24	PIPE PLUG	2
14638-02	RIVET	6
15229-01	BREATHER VENT	1
15544-02	BULKHEAD FITTING	1
18199-02	AIR REGULATOR	1
19892-00	COVER PLATE	2
19916-00	PUSH SWITCH	5
20655-04	ELBOW FITTING	9
20735-01	ELBOW FITTING	4
20735-02	ELBOW FITTING	4
20735-03	ELBOW FITTING	1
20754-00	ELBOW FITTING	2
20796-00	FITTING	9
20796-02	FITTING	6
20796-03	FITTING	2
20796-04	FITTING	3
21145-00	VENT PLUG	5
21164-02	2AMP FUSE	4
21203-02	YELLOW TUBING 1/4 IN.	4
21203-03	RED TUBING 1/4 IN.	2
21203-04	BLUE TUBING 1/4 IN.	5
21203-05	GREEN TUBING 1/4 IN.	2
21203-12	BLUE TUBING 5/32 IN.	4
21203-13	YELLOW TUBING 5/32 IN.	2
21203-14	BLUE TUBING 3/8 IN.	8
21284-16C	SCREW	6
21287-01	HEX NUT	6
21308-20C	SCREW	1
21402-00	3-WAY VALVE	1
21454-00	MOUNTING BRACKET	1
21489-48C	SCREW	2
21604-01	PLASTIC TUB PLUG	3
21669-00	CHECK VALVE	2
21678-00	RECIRCULATION DECAL	1
21722-00	MOUNTING BRACKET	1
21823-00	DIN RAIL	2.208
21861-00	CONDUCTOR CONNECTOR	1
21889-00	FUSEHOLDER	4
22104-00	EMERGENCY STOP DECAL	1
22117-00	TERMINAL BLOCK JUMPER	1
22171-01	SWITCH BLOCK	1
22174-01	SWITCH BLOCK COVER	1
22178-00	ON/OFF SWITCH	1
22212-01	BULKHEAD FITTING	1
22212-02	BULKHEAD FITTING	4
22218-00	PUSH-ON HOSE FITTING	2
22222-00	INJ EMERGENCY,ACCU-SHOT DECAL	1

Part Number	Description	Qty.
22238-01	POPPET VALVE	1
22249-00	AIR PURGE,ACCU-FLUSH DECAL	1
22251-00	SOLVENT FLUSH,ACCU-FLUSH DECAL	1
22256-00	ACTUATED TOGGLE VALVE	2
22263-00	"L" ADJUSTABLE FITTING	3
22506-00	TERMINAL	15
22507-00	TERMINAL END COVER	1
23072-00	MOMENTARY,ILLUMINATED PUSH BUTTON	1
23073-00	EMERGENCY STOP PUSH BUTTON	1
23074-00	PUSH BUTTON COUPLING PLATE	3
23075-01	"I" INSCRIPTION CAP	1
23079-01	NORMALLY OPEN CONTACT BLOCK	1
23079-02	NORMALLY CLOSE CONTACT BLOCK	2
23174-00	POWER CORD	1
23201-01	PANEL NUT	1
23201-02	PANEL NUT	2
23203-00	PILOT OPERATED REGULATOR	1
23204-00	PANEL MOUNT GAUGE	2
23205-00	SELF RELIEVING PRESSURE REGULATOR	1
23208-00	SELECTOR SWITCH	1
23209-00	ADAPTER VALVE	1
23210-02	TUBE REDUCER	6
23214-00	FITTING	1
23215-00	MANIFOLD	1
23226-00	PRESSURE,MOTOR,AIR DECAL	1
23228-00	ON-OFF,ACCU-PRESSURE DECAL	1
23229-00	ACCU-PRESSURE,X-2 DECAL	1
23230-00	REMOTE INJECTION PORT DECAL	1
23232-00	PRESSURE SWITCH	4
23233-00	NEEDLE VALVE	2
23236-00	STROKE COUNTER RESET DECAL	1
23237-00	FITTING	1
23237-01	FITTING	1
23257-00	CONTROL BOX	1
23258-00	PLATE EXTENSION	2
23263-00	SMARTSTEP DRIVE	1
23264-00	TERMINAL BLOCK	1
23265-00	POWER SUPPLY	1
23266-00	CPU	1
23267-00	PLC	1
23268-00	OUTPUT RELAY	1
23270-00	POWERSUPPLY	1
23271-00	TOUCHSCREEN	1
23272-00	SELECTOR SWITCH	1
23273-00	SELECTOR KNOB	1
23274-00	STATION MANIFOLD	1
23275-00	SOLENOID VALVE	1
23276-00	SOLENOID VALVE	3

REVISION E

Sub-Assembly Drawings

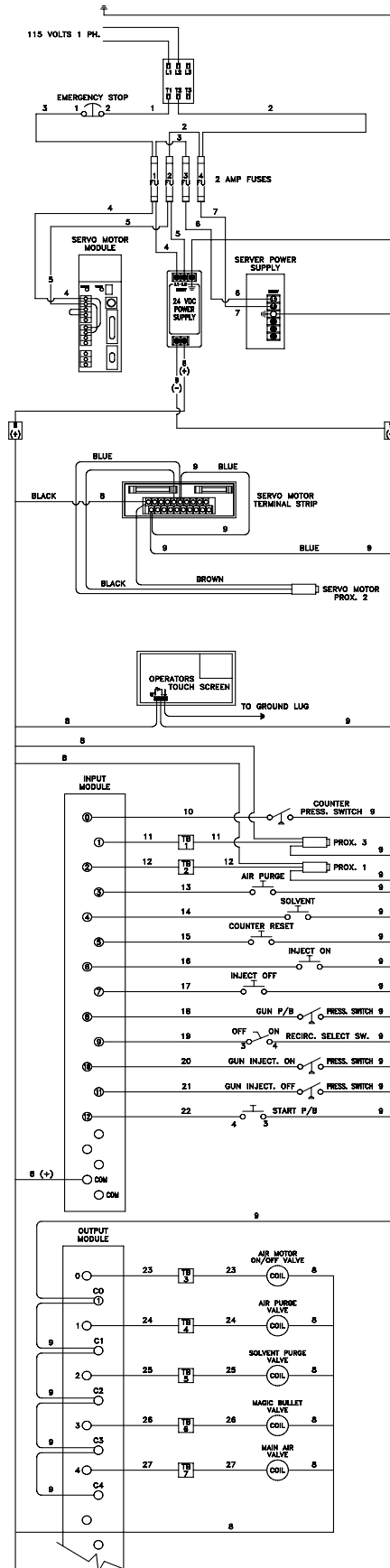
23250-00 SPARTAN 3 CONTROL BOX ASSEMBLY

Part Number	Description	Qty.
23277-00	SOLENOID VALVE	1
23279-00	RUBBER SEAL	1
23281-00	NYLON BRACKET	1
23282-00	SPARTAN II PAC DECAL	1
23287-00	AIR FILTER	1
23287-01	AIR FILTER	1
3800-08	COPPER WIRE #18 BLACK	
4342-01	ELBOW FITTING	3
4342-04	ELBOW FITTING	1
5307-01	CONDUIT NUT	2
5754-01	SPADE SOCKET TERMINAL LUG	2
5754-05	SPADE SOCKET TERMINAL LUG	6
6782-03	FITTING	1
7315-05	RUBBER GROMMET	1
7315-06	RUBBER GROMMET	3
7486-03	WASHER	2
7486-05	FENDER WASHER	2
7486-28	WASHER	6
7597-06	SWIVEL FITTING	1
7733-04	HEX NUT	2
7733-06	HEX NUT	5
7733-07	HEX NUT	6
7733-12	HEX NUT	1
7734-01	LOCK WASHER	6
7734-02	LOCK WASHER	2
7734-03	LOCK WASHER	7
7734-04	LOCK WASHER	6
7734-06	LOCK WASHER	3
7734-10	LOCK WASHER	4
7735-16C	SCREW	4
7750-02	COPPER WIRE #14 BLACK	
7966-03	FITTING	1
8115-02	FITTING	1
8115-03	FITTING	1
8115-04	FITTING	1
8155-40C	SCREW	4
8212-48F	SCREW	2
8301-96C	SCREW	3
9672-16	NIPPLE FITTING	1
9943-16F	SCREW	4
9944-20C	SCREW	2
ISD-141-3	MINI REGULATOR	1
MPB-208	AIR FILTER	1
RM-856-05	ELBOW FITTING	1
RS-141-01	CORD GRIP	1
RS-141-02	CORD GRIP	1

REVISION E

Sub-Assembly Drawings

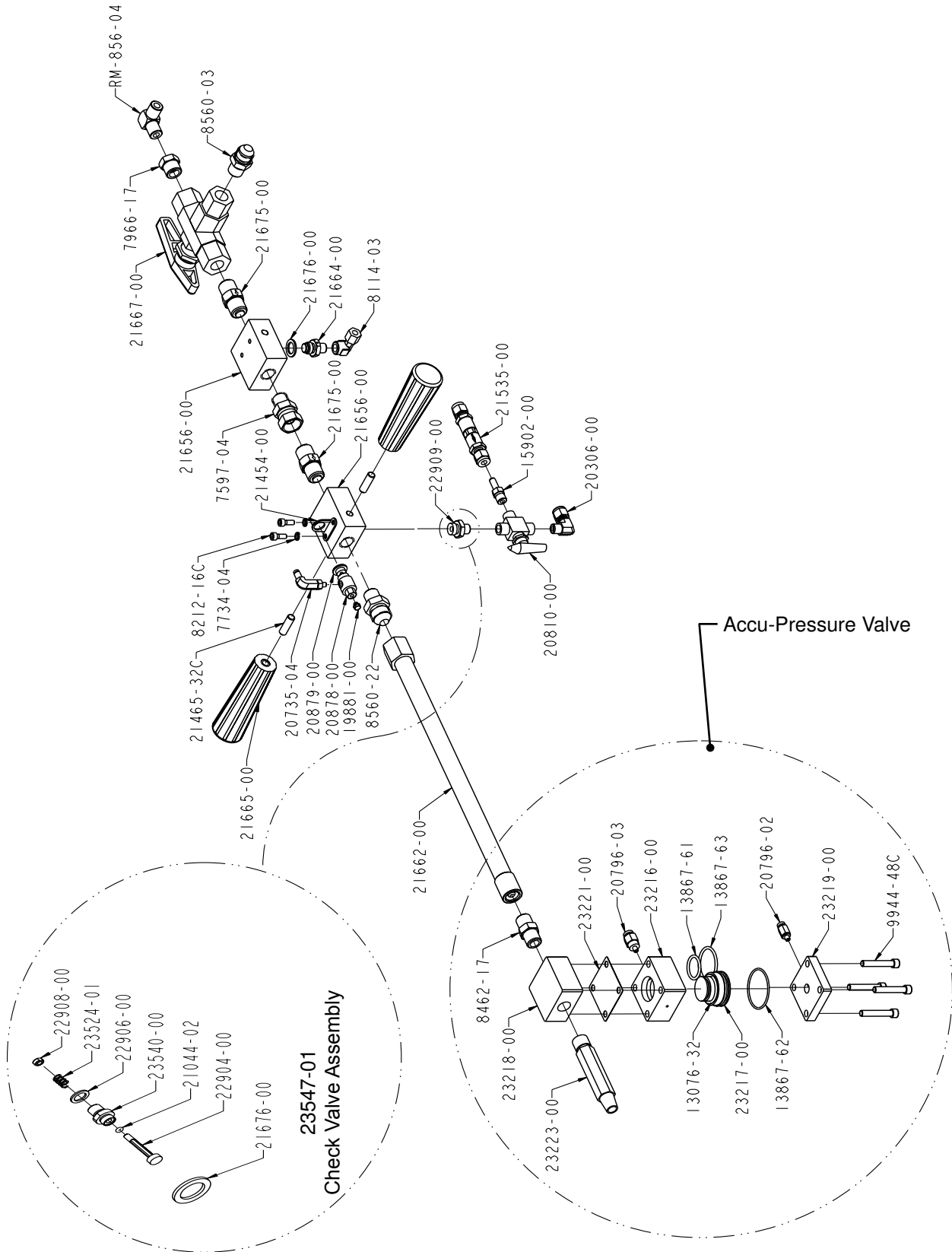
23250-00 SPARTAN CONTROL BOX SCHEMATIC



REVISION E

Sub-Assembly Drawings

21668-01 Spartan II Gun Assembly



REVISION E

Sub-Assembly Drawings

21668-01 Spartan II Gun Assembly

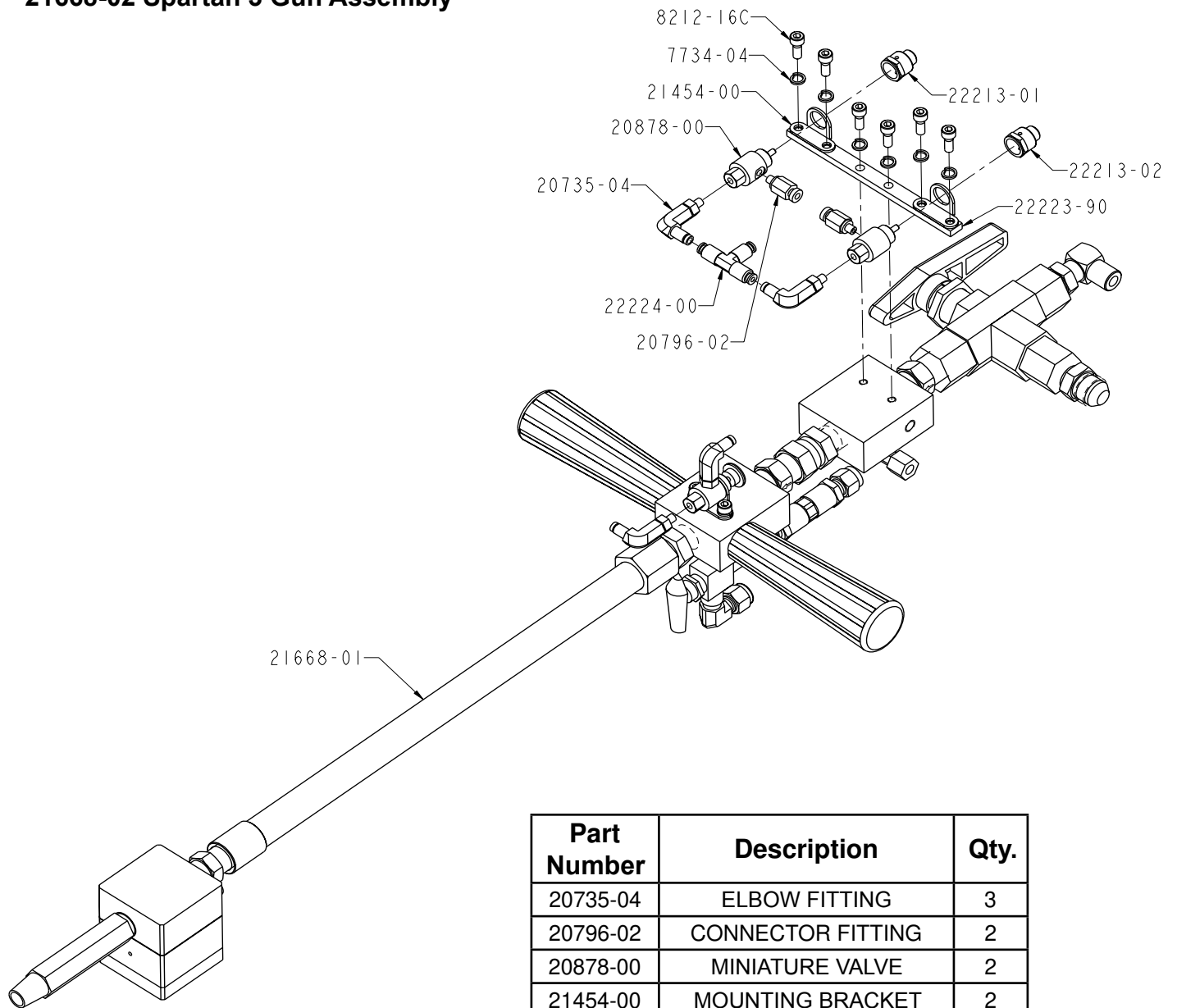
Part Number	Description	Qty.
RM-856-04	ELBOW FITTING	1
13076-32	O-RING	1
13867-61	O-RING	1
13867-62	O-RING	1
13867-63	O-RING	1
15902-00	FITTING	1
19881-00	FITTING	1
20306-00	ELBOW FITTING	1
20735-04	ELBOW FITTING	1
20796-02	FITTING	1
20796-03	FITTING	1
20810-00	BALL VALVE	1
20878-00	VALVE	1
20879-00	PUSH BUTTON	1
21044-02	O-RING	1
21454-00	MOUNTING BRACKET	1
21465-32C	STUD	2
21535-00	CHECK VALVE	1
21656-00	GUN BLOCK	2
21662-00	INJECTION WAND	1
21664-00	CHECK VALVE	1
21665-00	GUN HANDLE	2

Part Number	Description	Qty.
21667-00	BALL VALVE	1
21675-00	CHECK VALVE	2
21676-00	CRUSH WASHER	2
22904-00	CHECK VALVE STEM	1
22906-00	CRUSH WASHER	1
22908-00	NUT	1
22909-00	CHECK VALVE BODY	1
23216-00	MPS BLOCK	1
23217-00	PRESSURE SENSOR PISTON	1
23218-00	BOTTOM PLATE	1
23219-00	TOP PLATE	1
23221-00	GASKET	1
23223-00	INJECTION PORT	1
23524-01	SPRING	1
23540-00	CHECK VALVE BODY	1
7597-04	SWIVEL FITTING	1
7734-04	LOCK WASHER	2
7966-17	FITTING	1
8114-03	ELBOW FITTING	1
8212-16C	SCREW	2
8462-17	FITTING	1
8560-03	FITTING	1
8560-22	FITTING	1
9944-48C	SCREW	4

REVISION E

Sub-Assembly Drawings

21668-02 Spartan 3 Gun Assembly

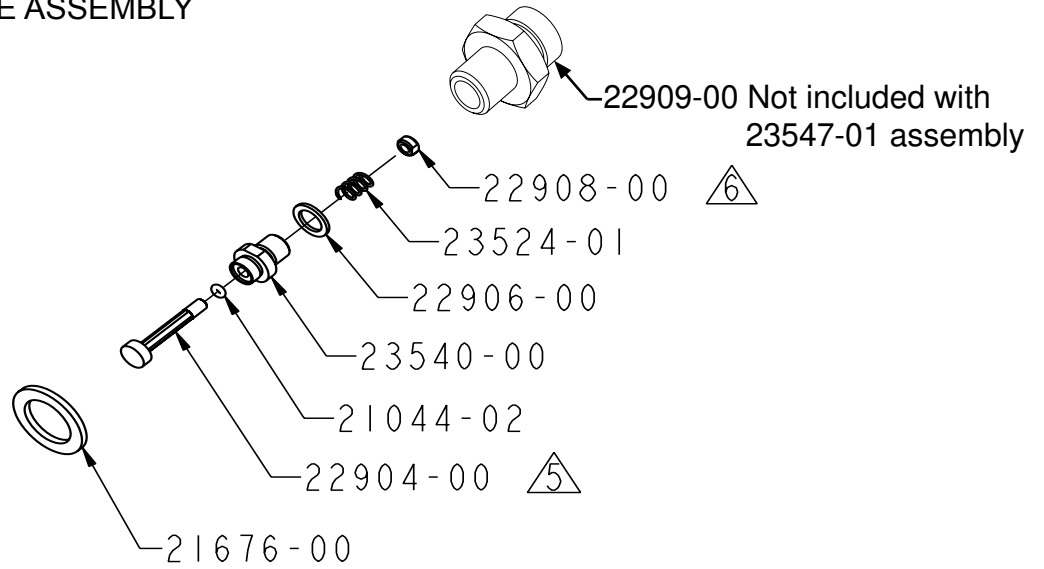


Part Number	Description	Qty.
20735-04	ELBOW FITTING	3
20796-02	CONNECTOR FITTING	2
20878-00	MINIATURE VALVE	2
21454-00	MOUNTING BRACKET	2
21668-01	SPARTAN II GUN	1
22213-01	RED PUSH BUTTON	1
22213-02	BLACK PUSH BUTTON	1
22223-90	PUSH BUTTON BRACKET	1
22224-00	TEE FITTING	1
7734-04	LOCK WASHER	6
8212-16C	SCREW	6

REVISION A

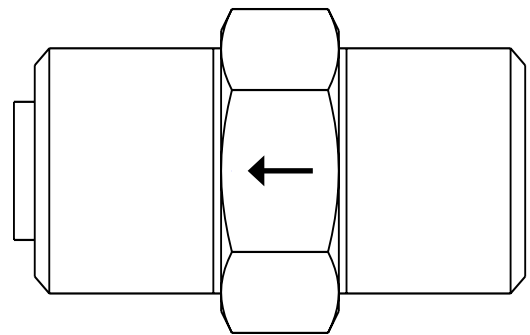
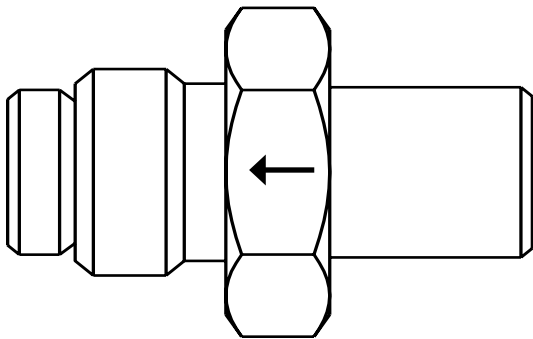
Sub-Assembly Drawings

23547-01 CHECK VALVE ASSEMBLY



$\triangle 6$ TIGHTEN NUT TO SHOW 1/2 TO 1 THREAD.
 $\triangle 5$ USE PURPLE LOCTITE 222 ON THREADS.

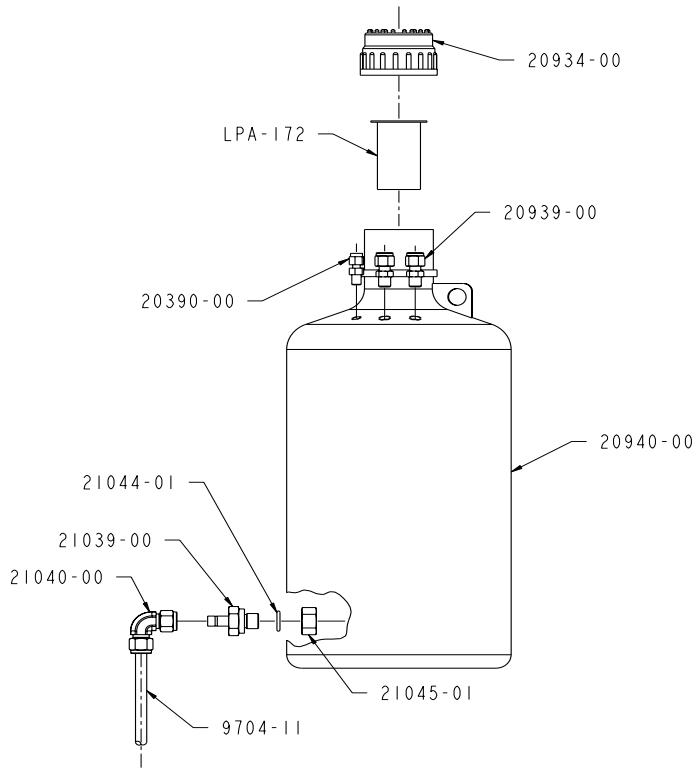
21664-00 Solvent/Air Purge Check Valve Assembly	21675-00 Resin Check Valve Assembly
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REVISION E

Sub-Assembly Drawings

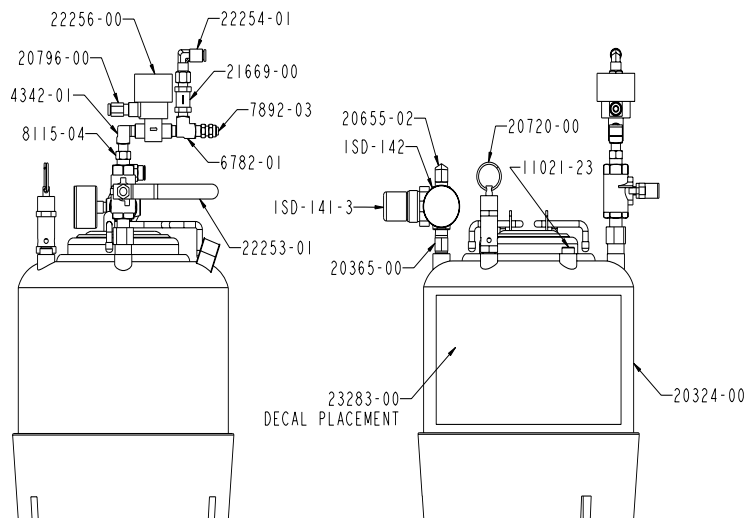
20941-00 CATALYST BOTTLE ASSEMBLY



Part Number	Description	Qty.
LPA-172	BOTTLE SUPPLY FILTER	1
20390-00	FITTING	1
20934-00	JUG CAP	1
20939-00	MALE CONNECTOR	2
20940-00	SUPPLY BOTTLE	1
21039-00	FITTING	1
21040-00	ELBOW FITTING	1
21045-01	HEX NUT	1
9704-11	TUBING	5

REVISION G

21645-01 SOLVENT POT ASSEMBLY

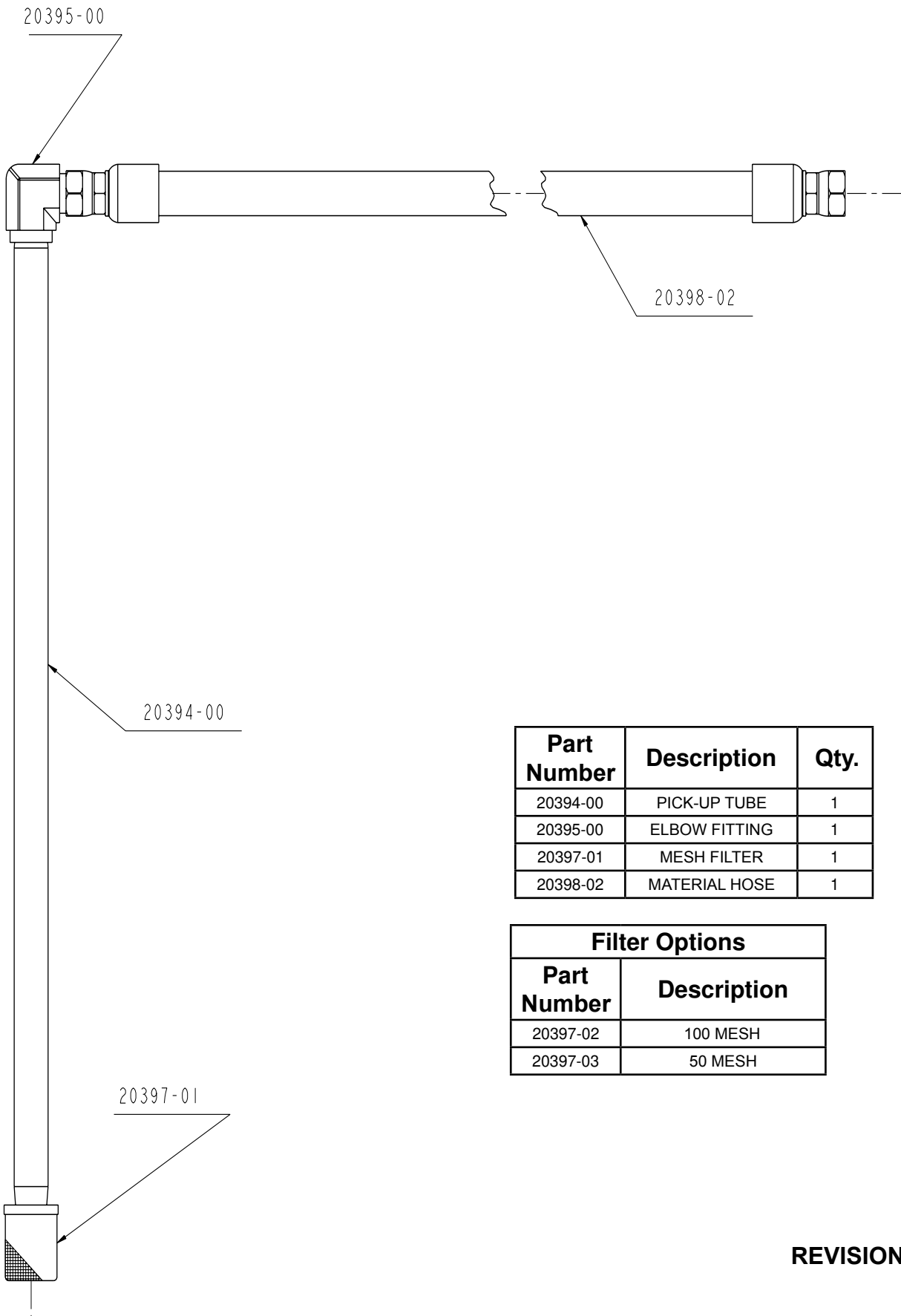


Optional		
Part Number	Description	Qty.
13867-68	EPR O-RING	1

Part Number	Description	Qty.
11021-23	PIPE PLUG	1
20324-00	SOLVENT TANK	1
20365-00	RELIEF VALVE	1
20655-02	ELBOW FITTING	1
20720-00	PRESSURE RELIEF VALVE	1
20796-00	FITTING	1
21669-00	CHECK VALVE	1
22253-01	BALL VALVE	1
22254-01	ELBOW FITTING	1
22256-00	TOGGLE VALVE	1
23283-00	TANK WARNING DECAL	1
4342-01	ELBOW FITTING	1
6782-01	TEE FITTING	1
7892-03	FITTING	1
8115-04	NIPPLE FITTING	1
ISD-141-3	MINI REGULATOR	1
ISD-142	GAUGE	1
21044-06	SILICONE O-RING	1

Sub-Assembly Drawings

GAM-268-01 MATERIAL PICK-UP KIT



Part Number	Description	Qty.
20394-00	PICK-UP TUBE	1
20395-00	ELBOW FITTING	1
20397-01	MESH FILTER	1
20398-02	MATERIAL HOSE	1

Filter Options	
Part Number	Description
20397-02	100 MESH
20397-03	50 MESH

REVISION D

Maintenance

						
<p>Before performing any maintenance on this system - Follow pressure relief procedures on page 8.</p>						

Notice

Due to the different O-Ring materials and lubricants used in the Dispense Guns never submerge or soak any dispense gun in any type of solvent!

Submerging or soaking any Dispense Gun will immediately void the Gun warranty.

Maintenance

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

1. Inspect and lubricate Catalyst Slave Pump Linkage. (See Catalyst Slave Pump User Manual.)
2. Inspect Pump Shafts on Material and Catalyst Pumps, making certain they are clean and free of foreign material. Clean and lubricate as required.

For long term storage of your injection system, it is recommended that the following procedures be followed:

1. Place dry nitrogen in the material drums and secure drum.
2. Make certain all air and material valves are in their "OFF" position.



GlasCraft recommends that you contact your gel-coat and/or resin supplier concerning material pot-life during extended periods of shut-down. The decision as to whether or not to leave material in your system should be based on information from your material suppliers as well as GlasCraft.

Consult your local authorized GlasCraft distributor for more information concerning system storage.

Troubleshooting



Before altering catalyst percentage by moving the catalyst pump to a new desired location on the ratio arm ALWAYS ensure that the catalyst recirculation valve is turned to the recirculation position, and the air pressure is removed from the system.

It is absolutely essential that both streams of material are pumped to the head without air or gas entrapped. For example, if air is drawn into the resin stream through the resin pump inlet system, i.e., via bad connection or filter end coming out of resin surface, then this air if not purged out of the machine by recirculating on by-pass will naturally go to the head through the mixer and into the RTM mold. This fault condition will manifest itself in the molded part having very small bubbles; almost in a froth like state, on the upper side of the

molded part once the mold is opened. The reason for these bubbles being so small is due to the fact that air coming through the mixer with the resin is mixed and frothed before finally entering the mold.

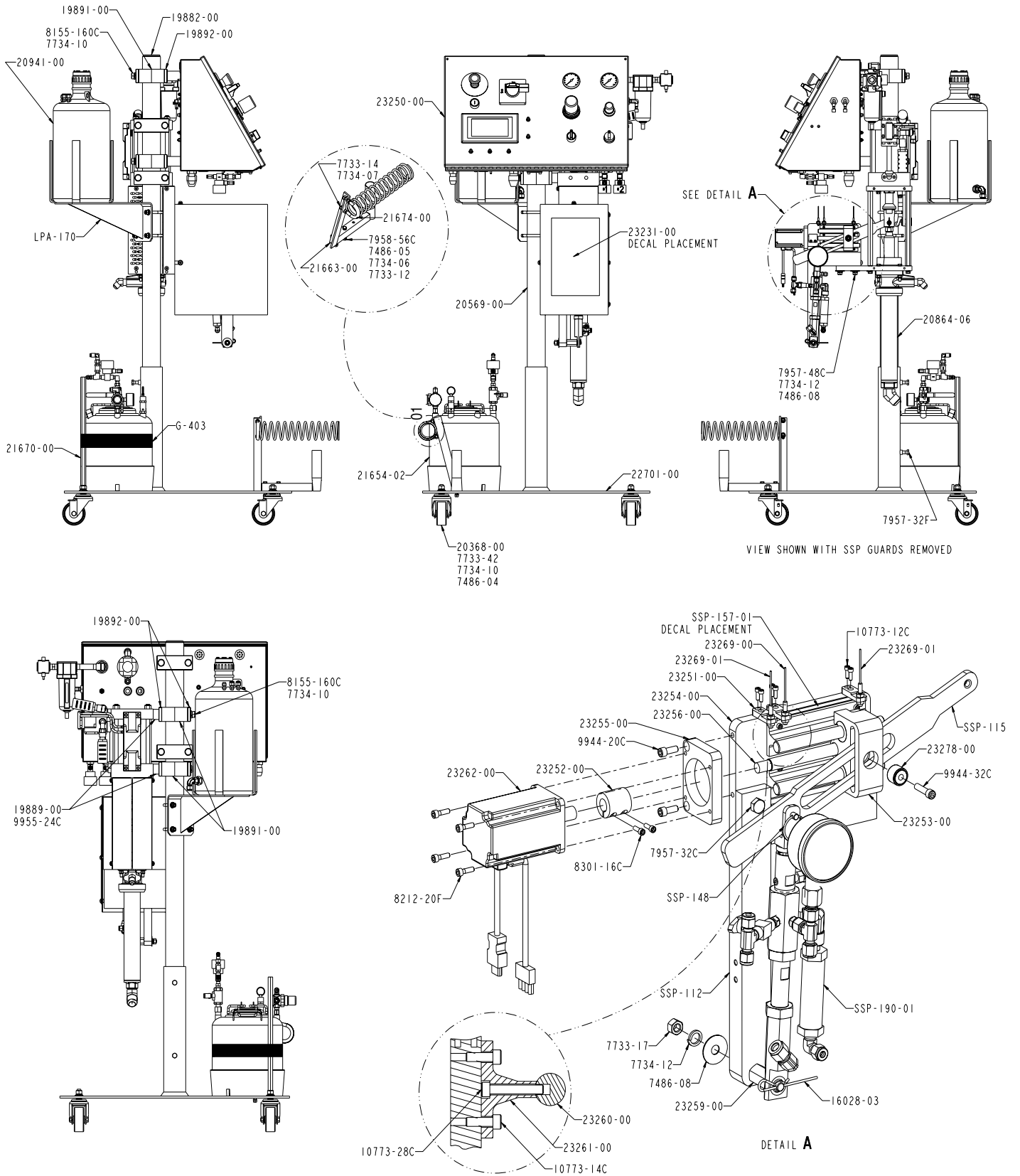
Air or gas in the catalyst stream, leads to a different type of fault in the molded part. This condition will be manifest by observing when opening the mold after injection and supposed cure, that there are wet patches of uncured or semi-gelled resin in the molded part. The causes attributed to this are:

1. Air is drawn in by the catalyst pump through a bad connection on the inlet stream from the catalyst container or pump inlet connection.
2. Catalyst contamination in the pump system causing oxidation resulting in peroxide gas bubbles being generated within the supposedly hydraulic sealed system of the catalyst.
3. The catalyst pump has faulty seals or is contaminated with particles.

To ensure that the catalyst system is totally hydraulically tight, it is expedient after a period of shut-down that the procedures in the instructions for commissioning the catalyst stream should be repeated.

Accessories

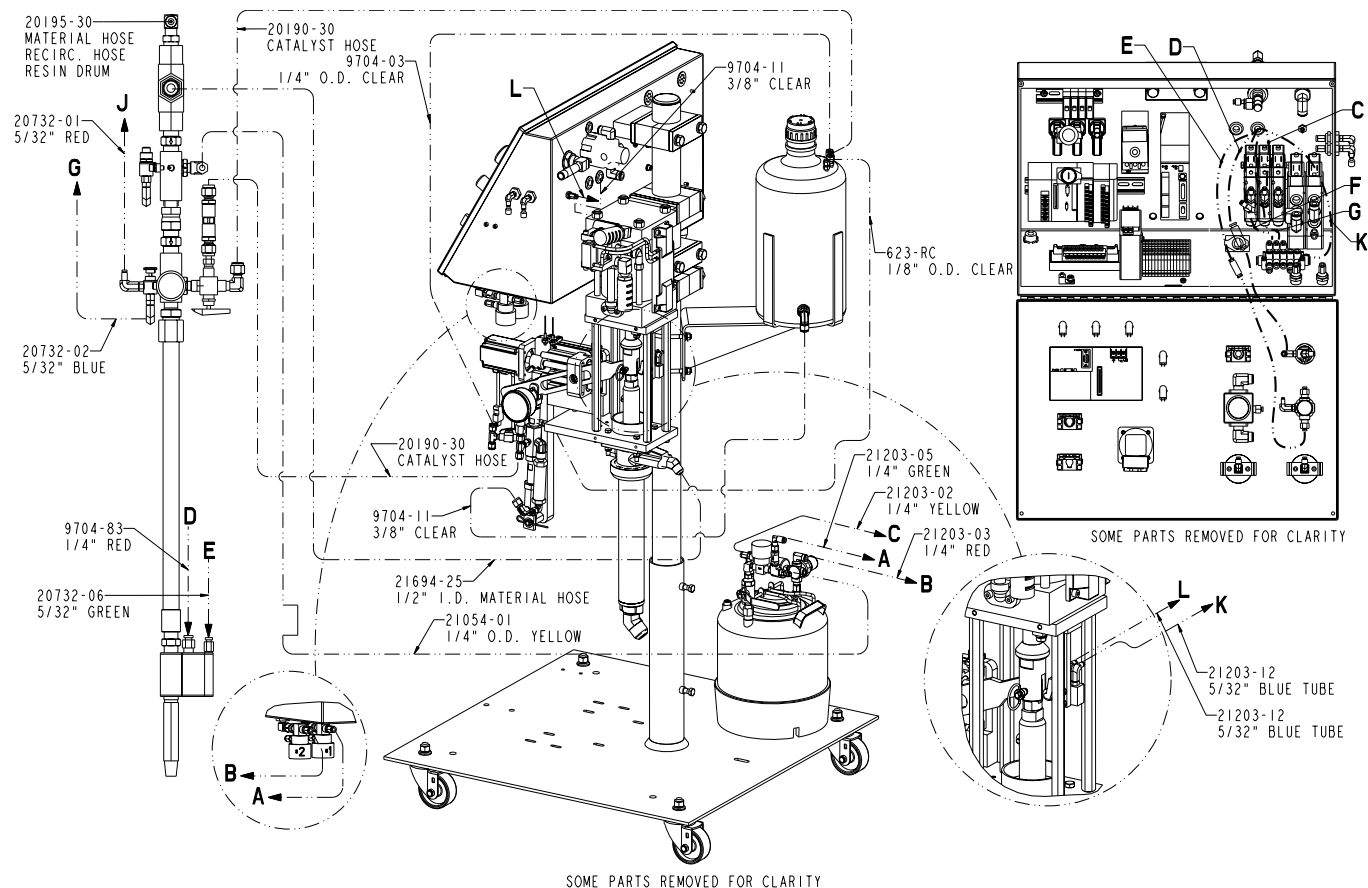
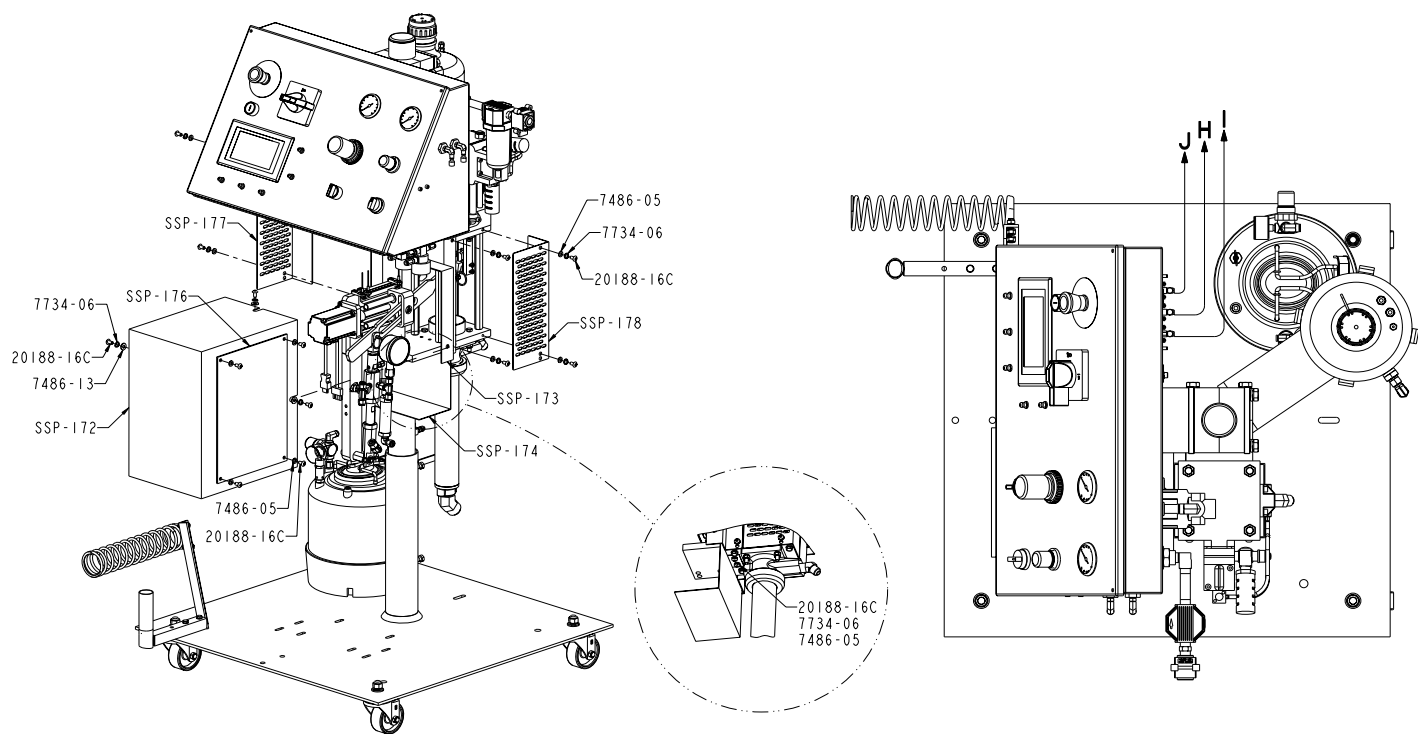
23280-00 SPARTAN 3 W/PAC ASSEMBLY



REVISION G

Accessories

23280-00 SPARTAN 3 W/PAC ASSEMBLY

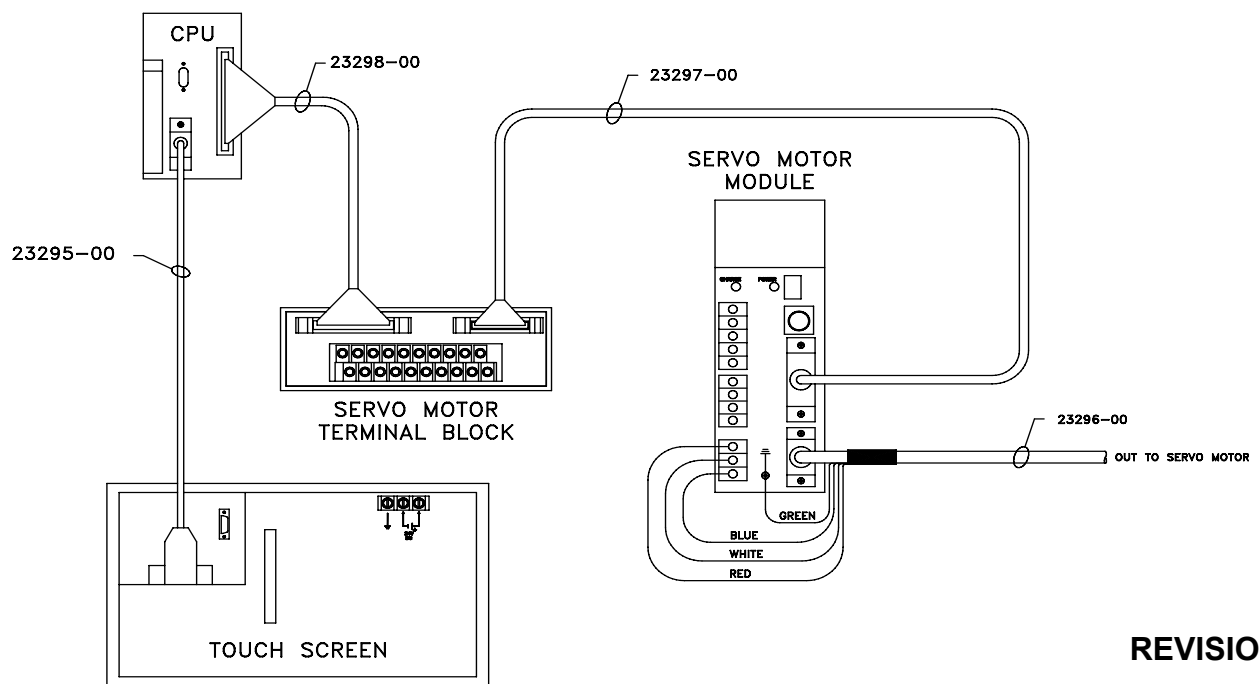
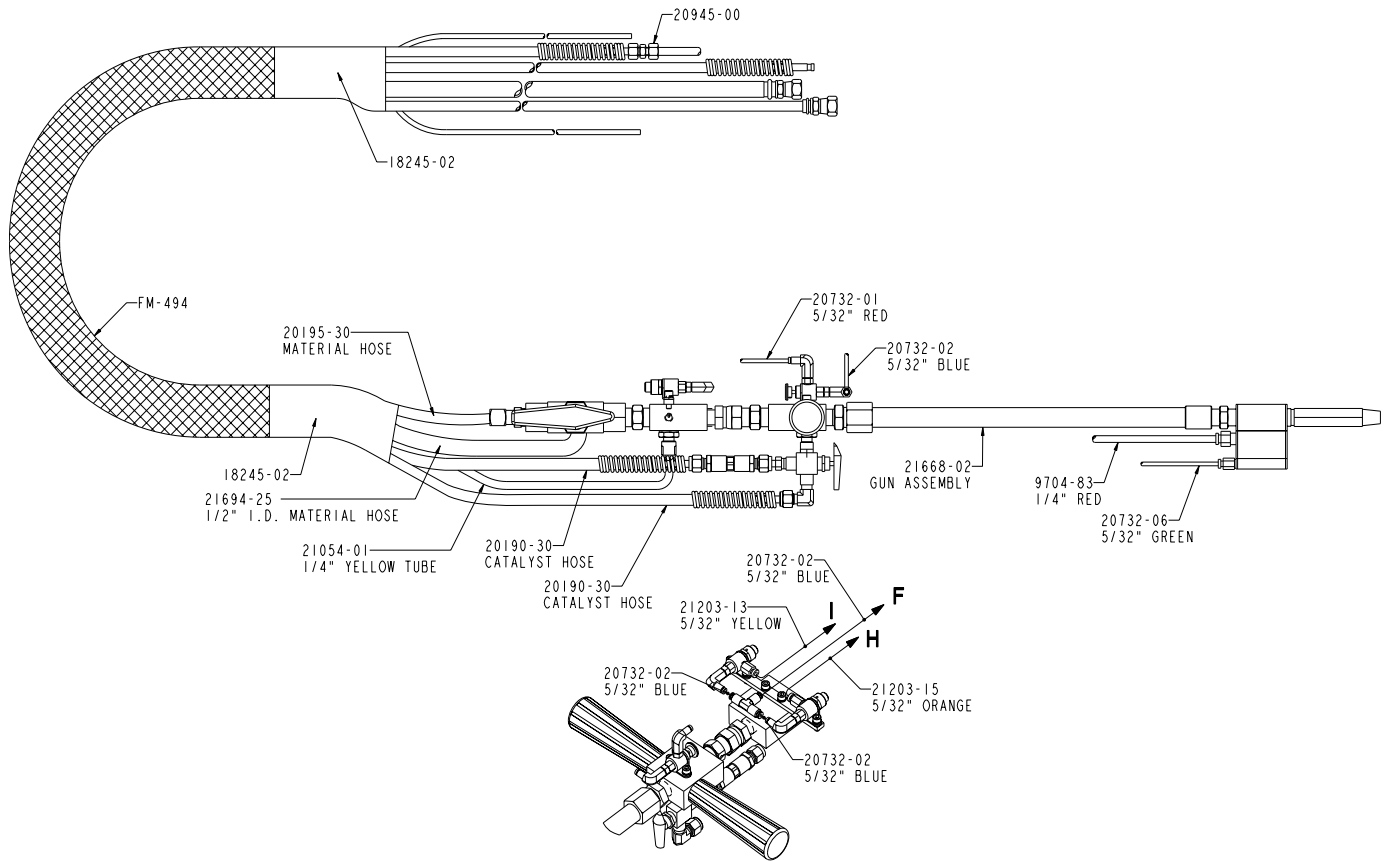


SOME PARTS REMOVED FOR CLARITY

REVISION G

Accessories

23280-00 SPARTAN 3 W/PAC ASSEMBLY



REVISION G

Accessories

23280-00 SPARTAN 3 W/PAC ASSEMBLY

Part Number	Description	Qty.
10773-12C	SCREW	6
10773-14C	SCREW	8
10773-28C	SCREW	4
13424-01	CABLE TIE	3
16028-03	HITCH PIN	1
17440-00	GROUNDING CLAMP	1
18245-02	HEAT SHRINK TUBING	1.616
19845-00	FRP LITERATURE	1
19882-00	MAST CAP	1
19889-00	MOUNTING ADAPTER	2
19891-00	PIPE CLAMP	4
19892-00	COVER PLATE	8
20188-16C	SCREW	17
20190-30	CATALYST HOSE 30FT	2
20195-30	MATERIAL HOSE 3/8 ID	1
20368-00	SWIVEL CASTER 3 IN.	4
20569-00	G2 SUPPORT MAST	1
20732-01	RED TUBING 5/32 IN.	32
20732-02	BLUE TUBING 5/32 IN.	64
20732-06	GREEN TUBING 5/32 IN.	33
20864-06	MATERIAL PUMP ASSEMBLY	1
20941-00	CATALYST JUG	1
20945-00	RECIRC. CATALYST ASSEMBLY	1
21044-06	O-RING	1
21054-01	NYLON TUBING	48
21203-02	YELLOW TUBING 1/4 IN.	14
21203-03	RED TUBING 1/4 IN.	14
21203-05	GREEN TUBING 1/4 IN.	14
21203-12	BLUE TUBING 5/32 IN.	6
21203-13	YELLOW TUBING 5/32 IN.	32
21203-15	ORANGE TUBING 5/32 IN.	32
21654-02	SOLVENT TANK	1
21663-00	MOUNTING BLOCK	1
21668-02	SPARTAN 3 GUN	1
21670-00	TANK SUPPORT	1
21674-00	GUIDE HOSE	1
21694-25	MATERIAL HOSE	1
22701-00	BASE	1
23231-01	SPARTAN 3 DECAL	1
23250-00	CONTROL BOX ASSEMBLY	1
23251-00	MOUNTING BRACKET	3
23252-00	SERVO COUPLER	1
23253-00	SLAVE SLIDER	1
23254-00	SSP MOUNT	1
23255-00	SERVO ADAPTER PLATE	1
23256-00	ADJUSTMENT ROD	1
23259-00	HEX ADAPTER	1
23260-00	RECISION ROD	2
23261-00	SUPPORT RAIL	2
23262-00	SERVO MOTOR	2

Part Number	Description	Qty.
23269-00	NORMALLY OPEN SENSOR	1
23269-01	NORMALLY CLOSED SENSOR	2
23278-00	ROLLER BEARING	1
23295-00	TOUCH SCREEN CABLE	1
23296-00	SERVO MOTOR CABLE	1
23297-00	TERMINAL/SERVO CABLE	1
23298-00	CPU/SERVO BLOCK CABLE	1
3923-02	SPIRAL WRAP	3
7486-04	WASHER	4
7486-05	WASHER	16
7486-08	WASHER	3
7486-13	WASHER	3
7733-12	HEX NUT	2
7733-14	HEX NUT	2
7733-17	HEX NUT	1
7733-42	HEX NUT	4
7734-06	LOCK WASHER	15
7734-07	LOCK WASHER	2
7734-10	LOCK WASHER	12
7734-12	LOCK WASHER	3
7957-32C	SCREW	2
7957-32F	SCREW	2
7957-48C	SCREW	2
7958-56C	SCREW	2
8155-160C	SCREW	8
8212-20F	SCREW	4
8301-16C	SCREW	2
9704-11	P.E. TUBING	3
9704-83	RED P.E. TUBING	33
9944-20C	SCREW	2
9944-32C	SCREW	1
9955-24C	SCREW	4
FM-494	EXPANDABLE SLEEVING	23
G-403	RUBBER TARP STRAP	1
GAM-268-01	PICK-UP TUBE	1
GC-1368	USER MANUAL	1
LPA-170	BOTTLE SUPPORT	1
SSP-112	SLAVE PLATE EXTENSION	1
SSP-115	DRIVE ARM	1
SSP-148	RELEASE PIN	1
SSP-157-01	CALIBRATION DECAL	1
SSP-172	SURROUND GUARD	1
SSP-173	LEFT PUMP GUARD	1
SSP-174	GUARD ANGLE BRACKET	1
SSP-176	GUARD WINDOW	1
SSP-177	REAR RIGHT PUMP GUARD	1
SSP-178	FRONT RIGHT PUMP GUARD	1
SSP-190-01	SLAVE PUMP	1

REVISION G

Technical Data

Category	Data
Maximum Fluid Working Pressure	1300 psi (9 MPa, 90 bar)
Maximum Air Inlet Pressure	100 psi (0.7 MPa, 7 bar)
Typical Flow Rate of Pattern Guns	Refer to gun manual
Maximum Fluid Temperature	100° F (38° C)
B Component (Resin) Inlet Size	1 5/16-12 UN-2A Male
Sound Pressure	84.83 dB(A)
Sound Power, measured per ISO 94 16-2	87.04 dB(A)
Dimensions	35 L X 35 W X 70 H (889 X 889 X 1778 mm)
Weight	305 lb (139 kg)
Wetted Parts	Catalyst- Chemically coated aluminum, stainless steel, chemically resistant o-rings Resin- Carbon steel, carbide, chemically resistant o-rings.

Graco Ohio Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

GRACO OHIO INC. 8400 PORT JACKSON AVE NW, NORTH CANTON, OH 44720

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Revised 11/2010