Operation

GLASCRAFT
COMPOSITES EQUIPMENT BY GRACO

Indy-X Chop

GC-1388G
ENG

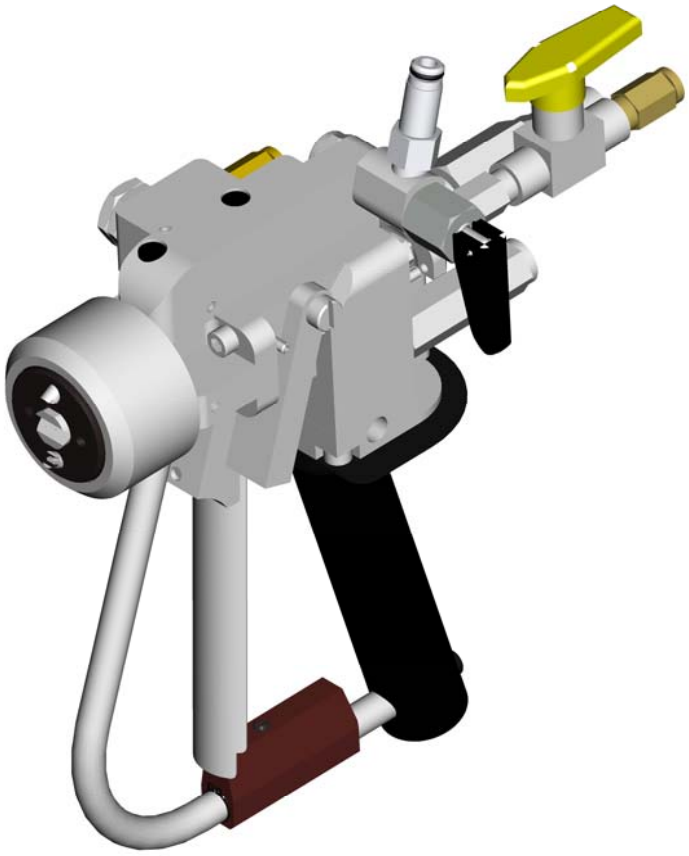
Low emission external-mix dispense gun for use with polyester resin and gel coat.

For professional use only.

Maximum fluid working pressure:
2000 psi (14 MPa, 138 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.



CE Ex II 2 G

Contents

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

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:

- 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.

PERSONAL PROTECTIVE EQUIPMENT

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:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- 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

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.**

- 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.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- 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.

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 quipment rupture, and result in death, serious injury, and property damage.

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 contaminates 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 Decompisition 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.

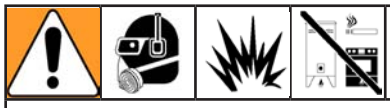
Store MEKP in a cool, dry and well-ventilated area in the original containers away from direct sunlight and away from other chemicals. It is strongly recommended that the storage temperature remain below 86° F (30° C). Heat will increase the potential for explosive decomposition. Refer to NFPA 432.
Keep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

Grounding

This equipment needs to be grounded.

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

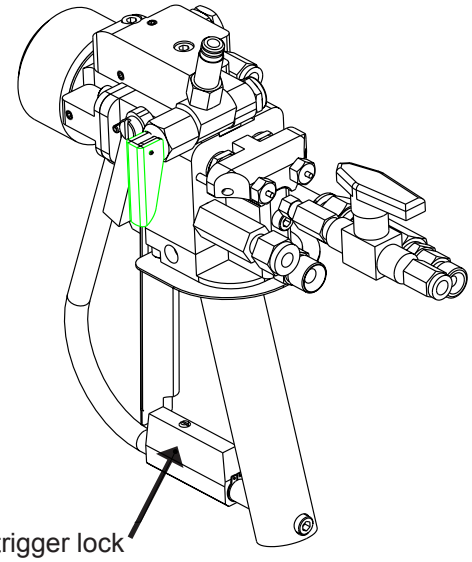
Check your local electrical code and related manuals for detailed grounding instructions of all equipment in the work area.

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

Set-Up

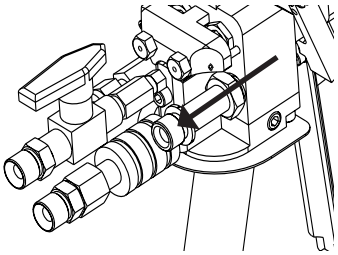
Hose Attachment

1. Engage the trigger lock.

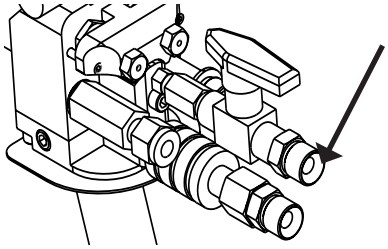


Rotate trigger lock to stop the trigger from being activated.

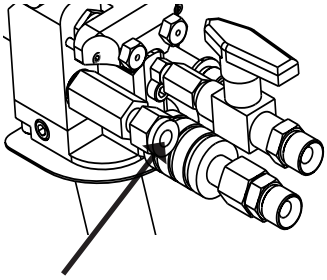
2. Attach the (black p/n 21694-25) material hose to the material inlet fitting on the back of the gun.



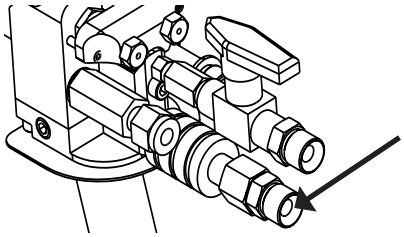
3. Attach the (yellow p/n 236) solvent line to the solvent inlet fitting on the back of the gun.



4. Attach the (stainless steel p/n 20190-00) catalyst hose to the catalyst inlet fitting on the back of the gun.



5. If the optional fiberglass roving chopper is being used, attach the “red” chopper air line to the chopper air inlet fitting on the back of the gun.



Parts

Indy-X Chop Dispense Gun 23575-00

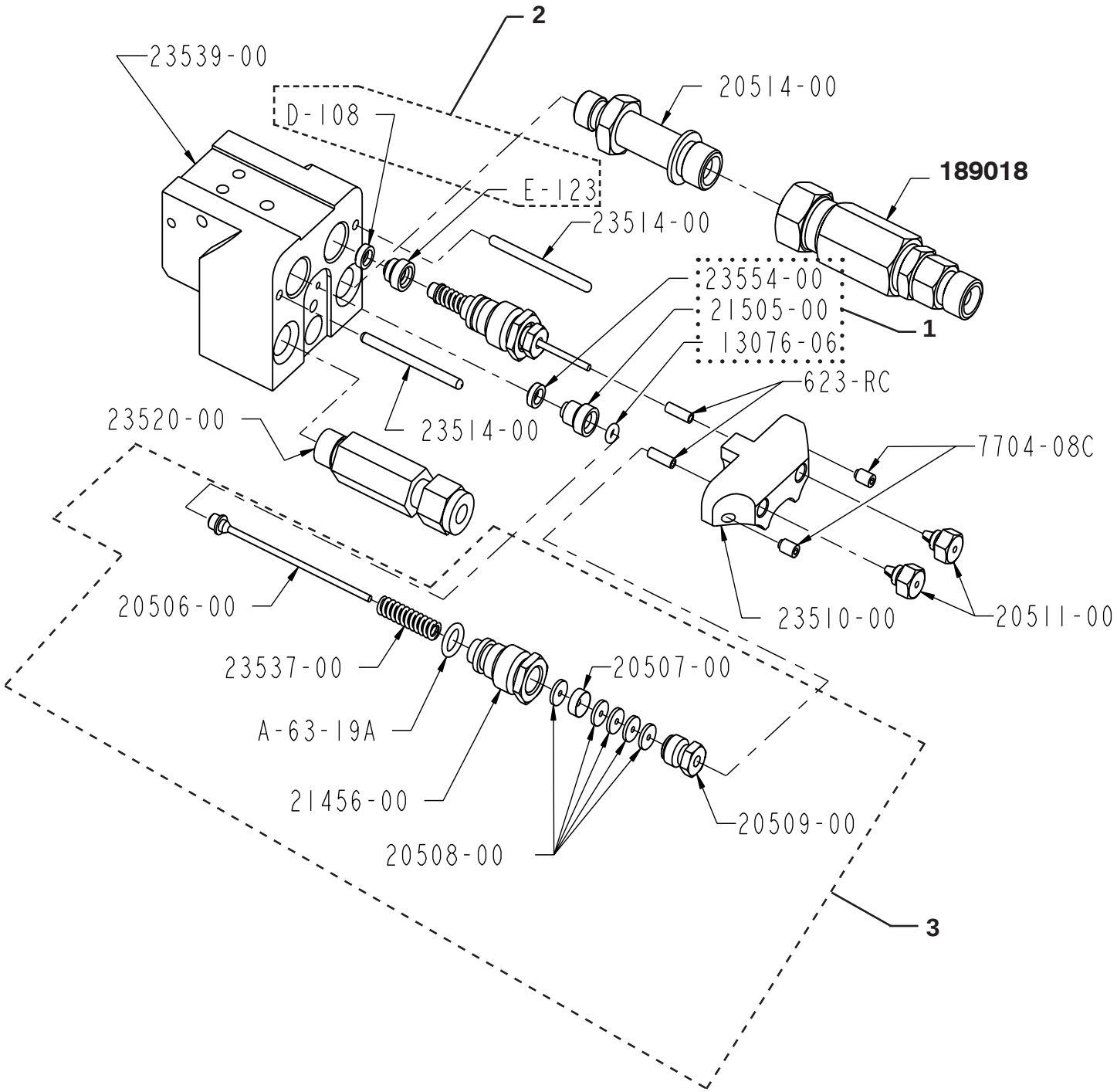
Standard Equipment	
Part Number	**Description**
23575-00	Indy X Chop Dispense Gun
GC-1388	User Manual

Repair Parts Kits:

Part Number	Description
23557-00	O-RING KIT
23558-00	MAINTENANCE KIT

Assembly Drawings

23575-00 Indy X Chop Dispense Gun



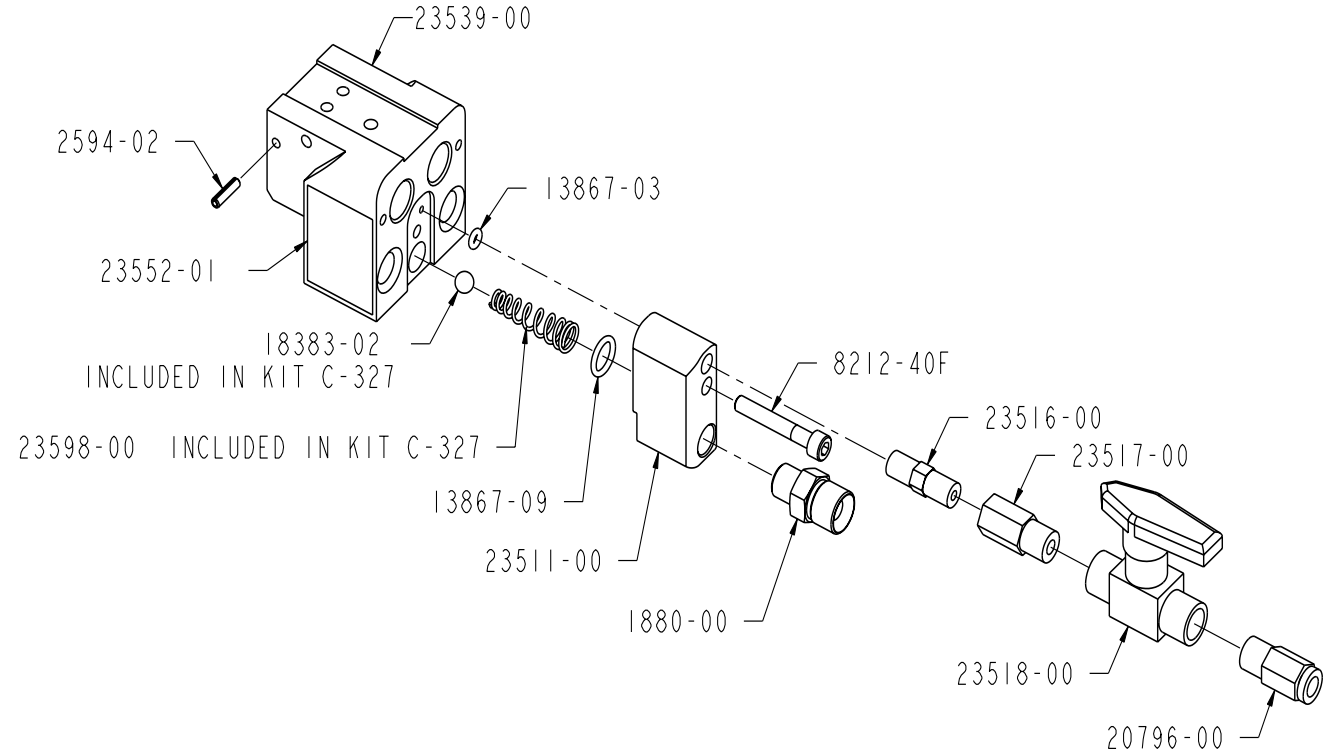
1) Catalyst seat assembly p/n: 23544-00

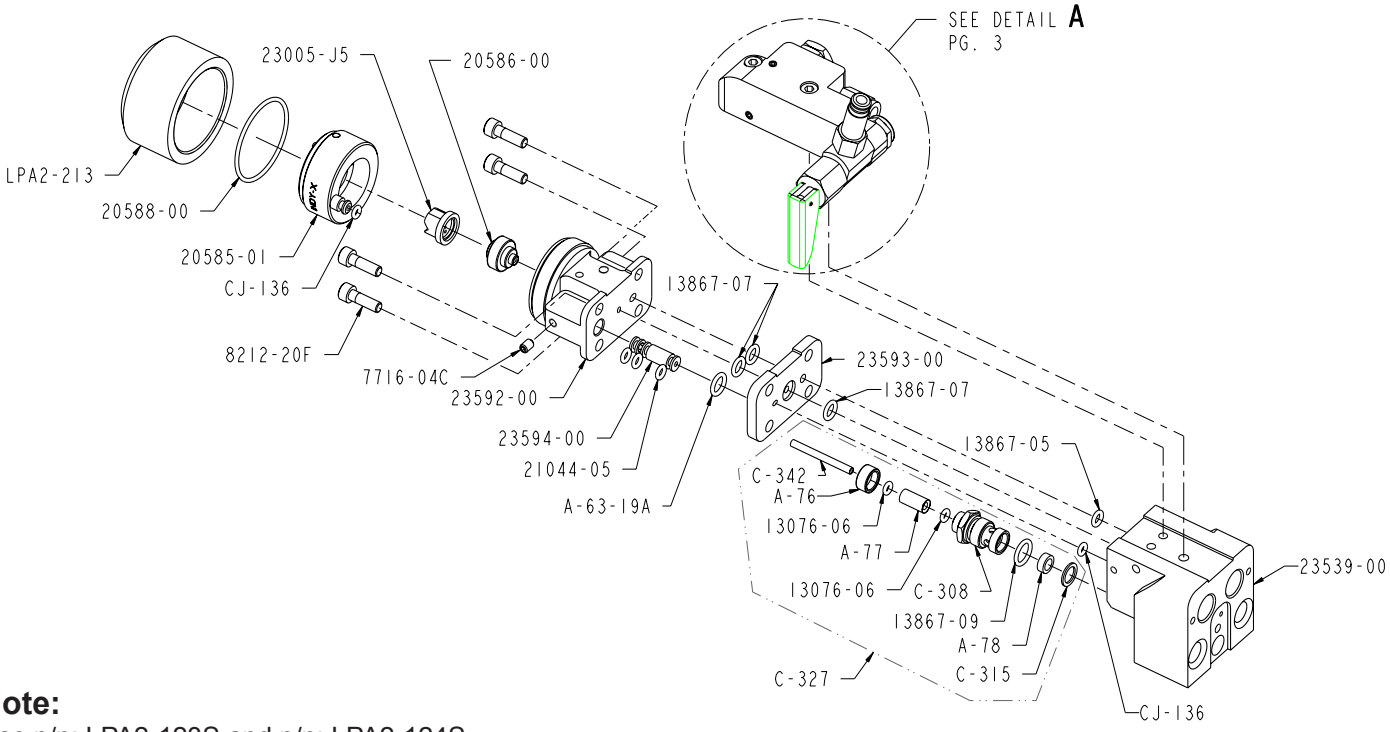
2) Material seat assembly p/n: E-135

3) Material needle valve assembly p/n: 23545-00

Assembly Drawings

23575-00 Indy X Chop Dispense Gun

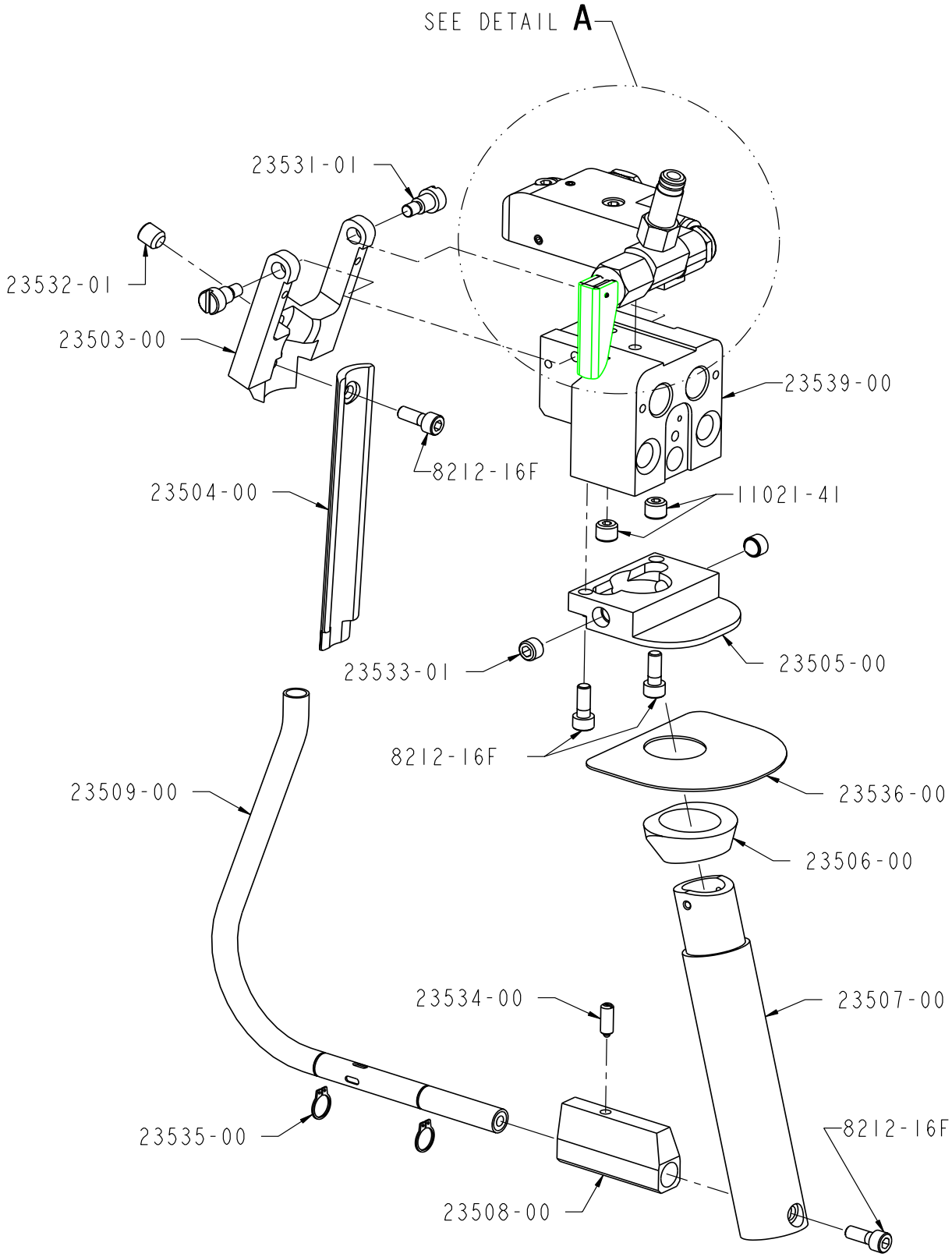




Note:
Use p/n: LPA2-123S and p/n: LPA2-124S when using LPA2-147-XXXX and 23047-XX series spray tips.

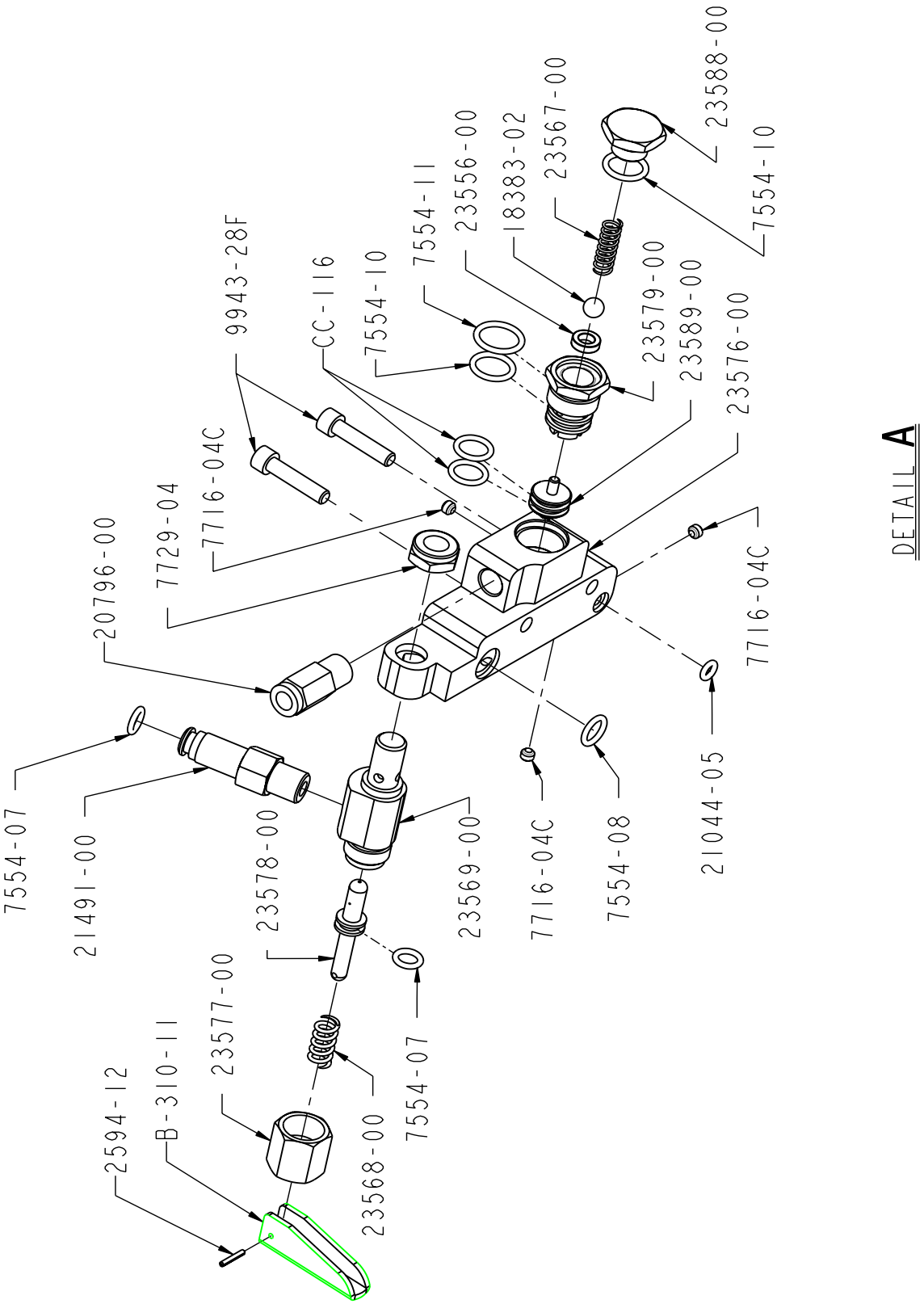
Assembly Drawings

23575-00 Indy X Chop Dispense Gun



Assembly Drawings

23575-00 Indy X Chop Dispense Gun



Assembly Drawings

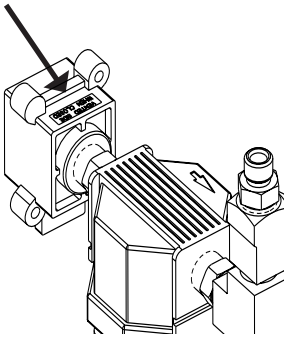
23575-00 Indy X Chop Parts List

Part number	Description	Qty.
11021-41	PIPE PLUG	2
13076-06	O-RING	1
13867-03	O-RING	1
13867-05	O-RING	1
13867-07	O-RING	3
13867-09	O-RING	1
15845-01	BALL DRIVER	1
18383-02	1/4 IN. SST BALL	1
1880-00	FITTING	1
20506-00	NEEDLE	2
20507-00	PACKING RETAINER	2
20508-00	MATERIAL DISK	10
20509-00	PACKING NUT	2
20511-00	NEEDLE COLLET	2
20514-00	FITTING	1
20585-01	CATALYST RING	1
20586-00	NOZZLE SEAL	1
20588-00	RETAINING SEAL	1
20796-00	CONNECTOR FITTNG	2
21044-05	O-RING	4
21456-00	PACKING HOUSING	2
21491-00	CUTTER PIVOT TUBE	1
21505-00	VALVE SEAT RETAINER	1
23503-00	TRIGGER	1
23504-00	PULL HANDLE	1
23505-00	GUN HANDLE	1
23506-00	HANDLE ADAPTER	1
23507-00	INDY 2 GUN HANDLE	1
23508-00	TRIGGER LOCK	1
23509-00	TRIGGER GUARD	1
23510-00	NEEDLE GUARD	1
23511-00	SOLVENT ADAPTER	1
23514-00	GUN PIN	2
23516-00	FITTING	1
23517-00	REDUCER FITTING	1
23518-00	BALL VALVE	1
23520-00	CATALYST FITTING	1
23531-01	SHOULDER SCREW	2
23532-01	SET SCREW	1
23533-01	SET SCREW	2
23534-00	DETENT PIN	1
23535-00	SNAP RING	2
23536-00	HANDLE REST	1
23537-00	NEEDLE VALVE	2
23539-00	MAIN BLOCK	1
23552-01	INDY X DECAL	2
23554-00	SEAT WASHER	1
23556-00	TEFLON WASHER	1
23567-00	COMPRESSION SPRING	1
23568-00	COMPRESSION SPRING	1
23569-00	CHOPPER VALVE	1
23576-00	CHOPPER MOUNT	1
23577-00	VALVE CAP	1
23578-00	CHOPPER PISTON MOUNT	1
23579-00	AIR SHIFTER	1
23588-00	AIR SHIFTER INSERT	1
23589-00	AIR SHIFTER PISTON	1
23592-00	FRONT HEAD	1
23593-00	HEAD ADAPTER	1
23594-00	AIR ASSIST INSERT	1
189018	FITTING	1
2594-02	ROLL PIN	1
2594-12	ROLL PIN	1
623-RC	TUBING	0.063
7554-07	O-RING	2
7554-08	O-RING	1
7554-10	O-RING	2
7554-11	O-RING	1
7704-08C	SET SCREW	2
7716-04C	SET SCREW	4
7729-04	HEX NUT	1
8212-16F	SCREW	4
8212-20F	SCREW	4
8212-40F	SCREW	1
9943-28F	SCREW	2
A-63-19A	O-RING	3
B-310-11	CUTTER VALVE LEVER	1
C-327	AIR VALVE	1
CC-116	O-RING	3
CJ-136	O-RING	2
D-108	SEAT WASHER	1
E-123	VALVE SEAT RETAINER	1
GC-1379	FRP SPRAY SET-UP MANUAL	1
GC-1388	USER MANUAL	1
LPA2-213	END CAP	1

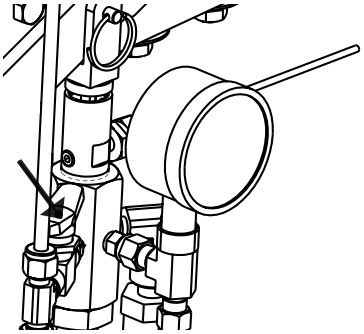
Pressure Relief Procedure

To relieve fluid and air pressures:

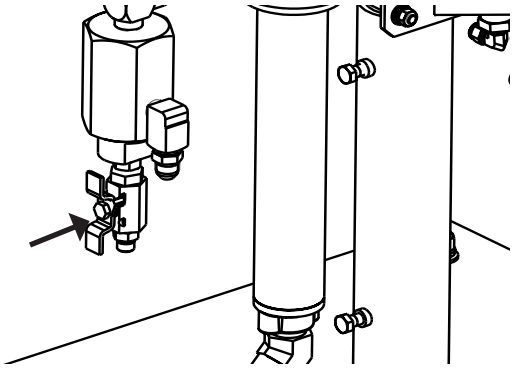
1. Push down Yellow slide valve, P/N 21402-00 to bleed off air to system.



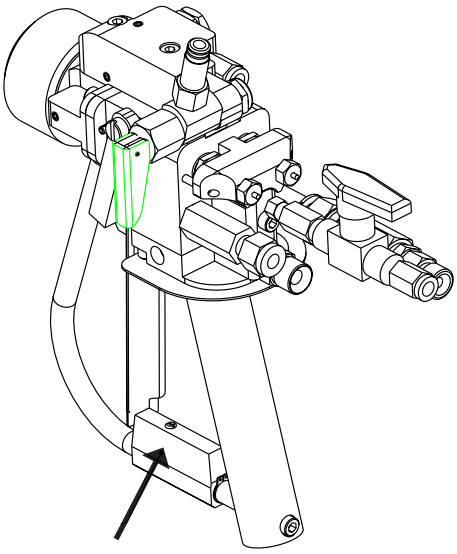
2. Open P/N 21228-00 on catalyst pump to recirculation position.



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



4. Verify the Trigger Lock is in the Locked position.



Daily Maintenance

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

1. The Gun is built at the factory with, P/N 21222-00 Lubricate. This is a water soluble lubricate, not affected by most solvents. When maintaining the Gun, it is recommended that this is used as outlined on “Lubricate Page”. Clean the Gun using a brush and a appropriate clean solvent.

2. Inspect Gun Valve Needle shafts, making certain they are clean and free of over-spray or foreign-material. Clean and lubricate as required.

3. Inspect the Gun Packings, Needles and Seats for catalyst or material leakage. If leakage does occur, correct at once! If material leaks (or drips) out of the nose of the gun, this indicates that there is a bad needle /seat condition. If material leaks out of the back of the needle stem, this indicates loose or worn packings and may be repacked by tightening the packing nuts, P/N 20509-00 1/8 turn each until leak stops. Test trigger to verify spring can return needle to seat.

4. Maintain a reasonable stock level of “wear” items such as Packings, Seals and O-Rings

5. If dispense gun is leak tested, be sure to dry gun thoroughly.

6. **Never** leave dispense gun immersed in any liquid.

Maintenance

Parts Replacement Procedure

Before performing maintenance on the dispense gun, follow Pressure Relief Procedure.

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.

1. Read each procedure entirely before beginning and refer to the illustration views as needed.
2. Flush and clean all passages as they become accessible.
3. Clean all parts before assembly.
4. Replace all O-Rings, Valves and Seals with new parts from the appropriate kit.
5. Inspect all parts for wear or damage and replace as required with new GENUINE GlasCraft REPLACEMENT PARTS from your authorized GlasCraft Distributor.
6. Inspect all threads for wear or damage and replace as required.
7. Tighten all threaded parts securely, but not excessively, upon assembly.
8. O-rings can fail if subjected to any of the following conditions.
    a. Swelling - coming in contact with solvent or oil from compressor.
    b. Cut - sharp, unlubricated edge in gun head or handle.
    c. Sticky - contaminated with oil, water, solvent, catalyst, resin or gel-coat.
    d. Chaffing - dry sliding surfaces (needs lubrication).
9. Lightly lubricate all O-Rings with petroleum jelly.
10. Check all springs for resilience. They should return quickly to their original (new) length.
11. Clean the exterior of the Gun and Hoses with an appropriate, clean solvent and cloth or brush.

Hose Removal

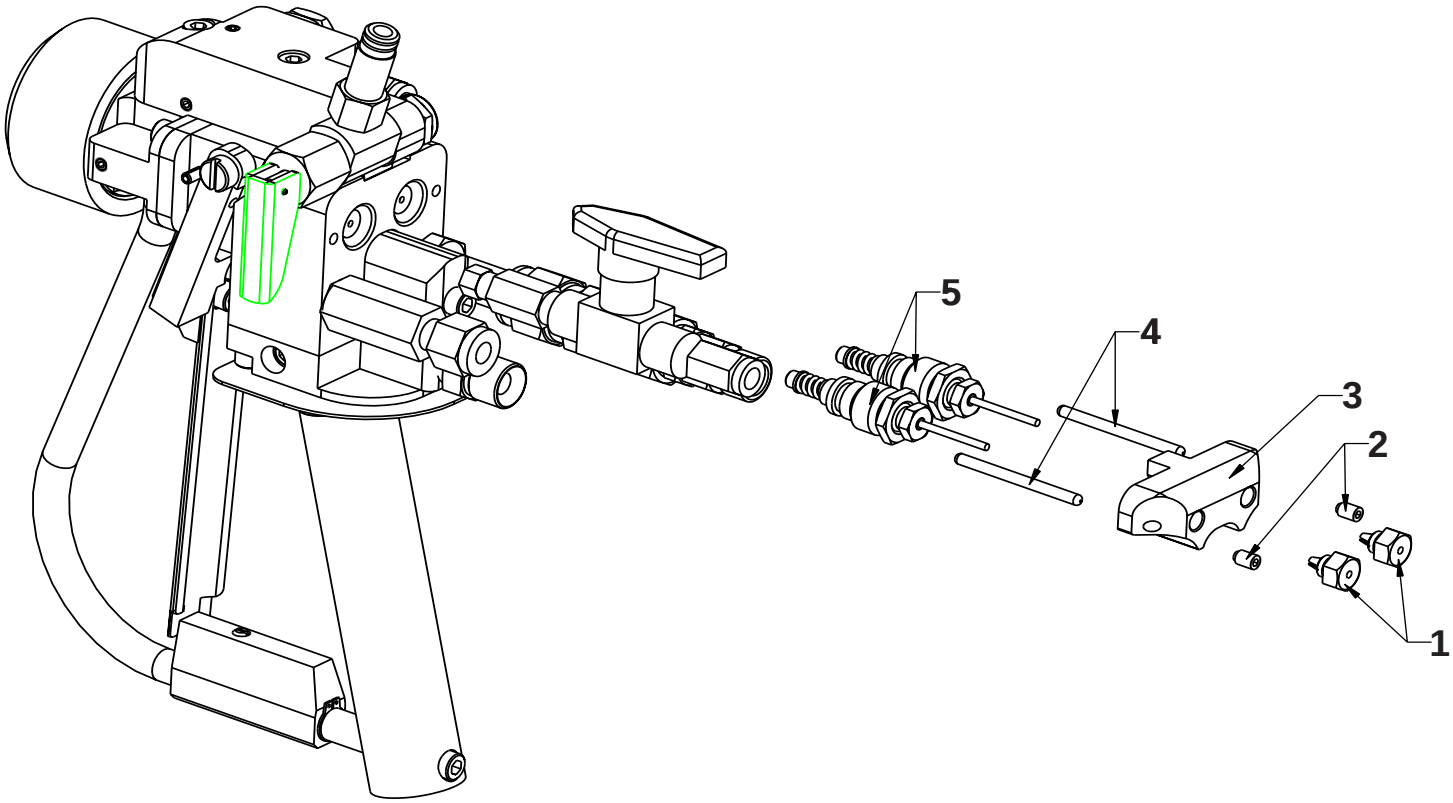
1. Relieve pressure (See page 19).
2. Remove Resin Hose with an 11/16” wrench. (Hold delivery tube with an 11/16 wrench.)
3. Remove Catalyst Hose with a 9/16” wrench. (Hold delivery tube with a 9/16 wrench.)
4. Remove Air / Flush Block with an 5/32” Allen wrench. Remove block, watch for spring and ball from Air Valve

Tape a clean polyethylene bag over the end of each Hose to prevent spillage and to keep clean.

Maintenance

Needle & Pin Removal Procedures

1. Remove needle collets. (3/8in. Wrench)
2. Remove set screws. (5/64in. Hex Key)
3. Remove needle guard.
4. Remove pins.
5. Remove needle assemblies. (9/16in. Wrench)



Maintenance

If Packing, P/N 20507-00 and Packing Disks, P/N 20508-00 are removed from Needle and Packing Housing, GlasCraft recommends that these parts always be replaced with NEW packings and packing disks.

1. Ensure spring is seated on needle shoulder.

2. Insert needle into the packing housing .

3. Lubricate a teflon packing disk with red lube and slide into housing.

4. Lubricate the retainer with red lube and slide it into the housing with the flat side entering the housing first. (Concave side entering the housing last).

5. Lubricate the remaining (4) teflon disc and slide them into the housing.

6. a. Lubricate the tip of the packing nut, screw it into the housing and hand tighten until it stops.

b. use a 3/8in. wrench on packing nut and a 9/16in. wrench on the packing housing and tighten 1/16 to 1/4 turn.

c. back off then tighten a little more.

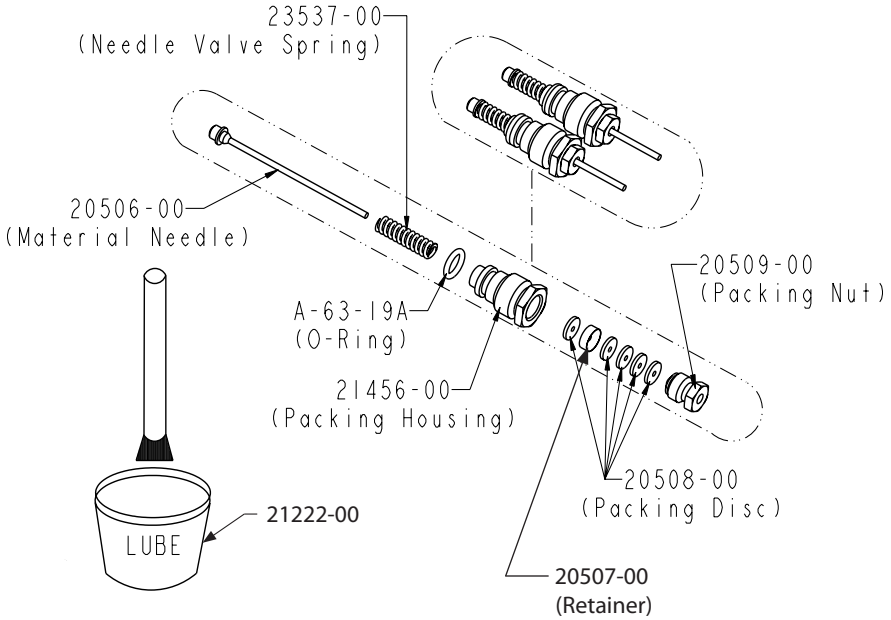
d. back off then tighten a little more.

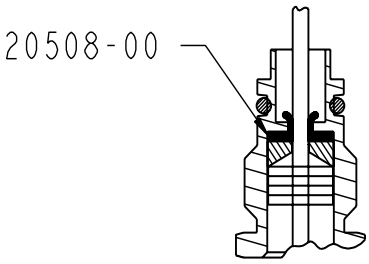
e. back off then snug tight until you hear a “POP”.

Needle Test

1. Put the tip of the needle on a hard surface and press down on the assembly to compress the spring. Release the assembly and the needle should return to it’s original position.

2. Turn the assembly over and place the *back* end of the needle on a hard surface and press down until it stops. Lift up on the spring and lock inside the housing to ensure that the seal has extruded through the hole and surrounds the needle as shown.





Maintenance

Needle & Pin Reassemble Procedure

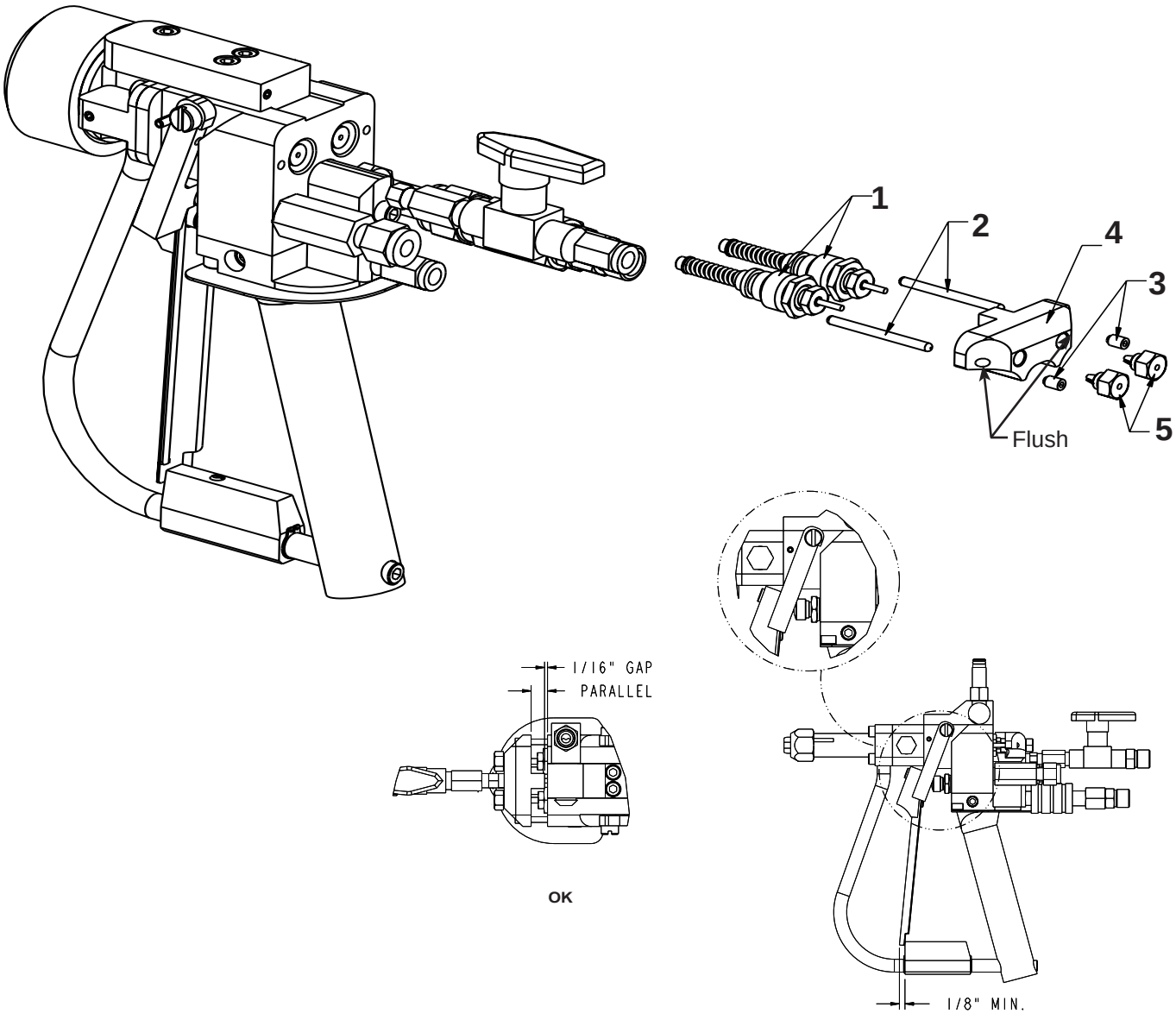
1. Reassemble the needle assemblies to the gun body. Lubricate the o-rings & use teflon tape on the threads.

2. Make sure the gun pins are lubricated and slide them into the gun block and can be seen between the gun block and the back side of the trigger and they both are exposed at the back of the gun block near the catalyst and resin needles.

3. Lock-tite both of the set screws, then assemble them to the needle guard using a 5/64in. hex key and make sure they are flush. Fine adjustment will be done after reassembly.

4. Slide the needle guard over the catalyst and resin needles.

5. Attach the collet nuts to exposed needles and hand tighten. *Before tightening with a wrench place the needle guard 1/16in. (1.66mm) gap between the gun block and needle guard and tighten using a 3/8in. wrench while holding in place with your hand. Be sure to tighten*

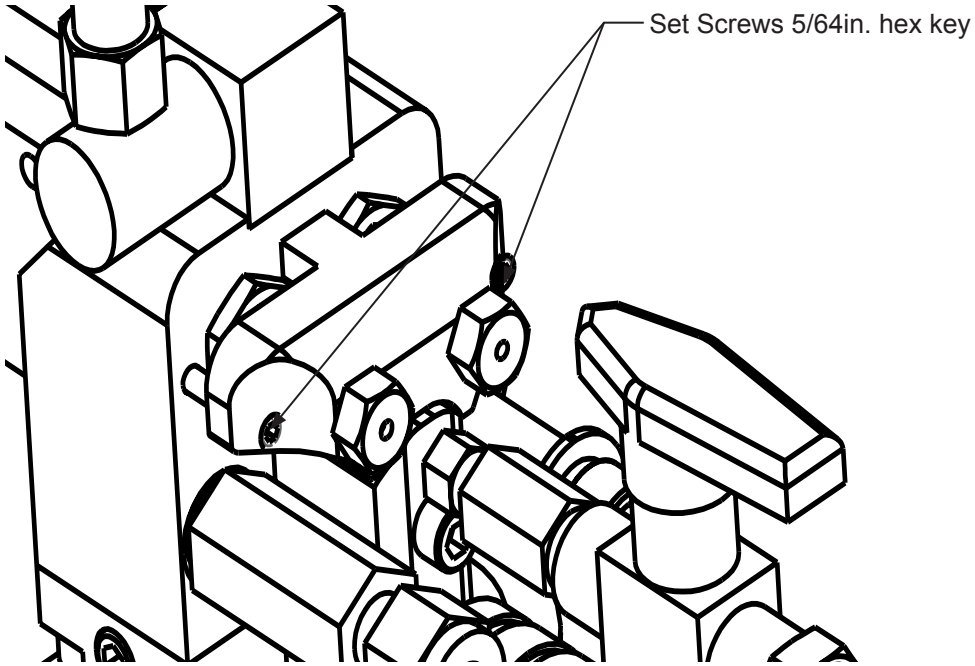


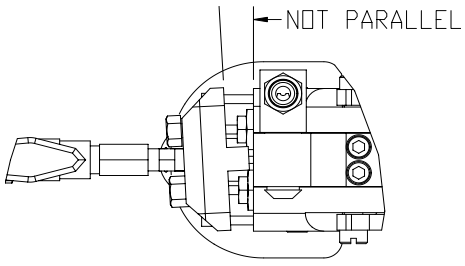
Maintenance

Trigger & Needle Guard Readjustment Procedure

If you trigger the gun and notice that one needle is activating before the other and not parallel, fine adjustment is needed.

1. Using a 5/64in. hex key adjust the Set Screw which is NOT making gun pin contact when the gun is triggered. Turn the set screw until both needles activate at the same time. ***Making the needle guard parallel is very important, to prevent LAG-LEAD in the catalyst & resin mix.***

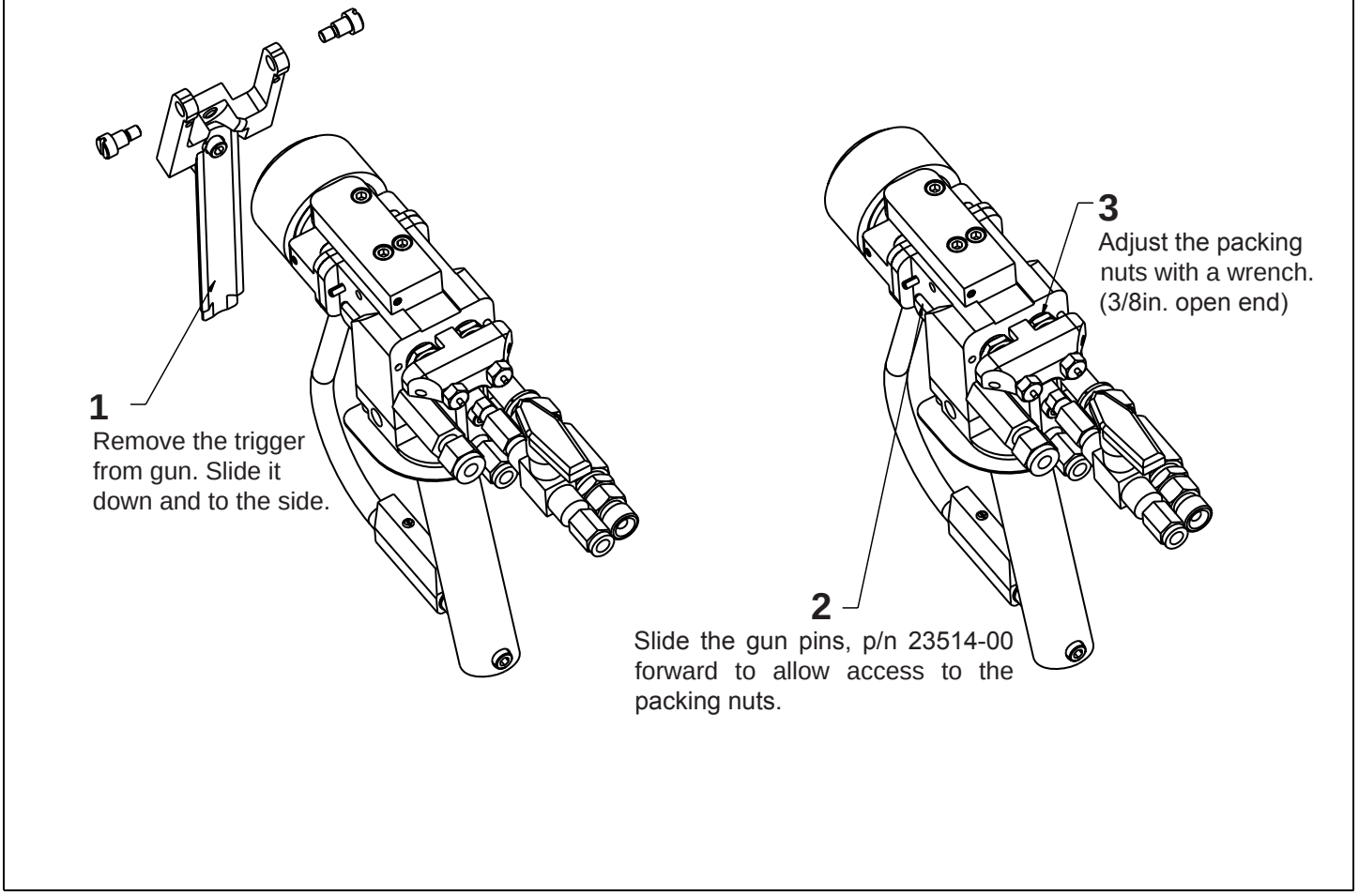




NOT OK

Maintenance

Packing Nut Adjustment Procedure



Options

Impingement Dispense Tips

Part Number	Orifice	Min. Width (in.)	Max. Width (in.)	Min. Output (lbs.)	Max Output (lbs.)
23005- C4	0.040	7	16.5	5.4	10.02
C5	0.050	8.5	15.5	6.36	12.23
C6	0.060	7	17	7.31	11.01
C7	0.070	7	13	8.53	10.58
C8	0.080	10	12.5	10.28	13.03
C9	0.090	7.5	10	11.49	12.36
E4	0.040	6	21	4.01	9.16
E5	0.050	11	21	5.71	10.23
E6	0.060	6.5	18.5	5.48	11.48
E7	0.070	7.5	15	7.96	10.58
E8	0.080	6	15.5	8.61	12.03
E9	0.090	7.5	15	9.61	12.36
G4	0.040	6	24	4.01	9.16
G5	0.050	10.5	32	4.31	10.23
G6	0.060	8.5	24	5.48	11.48
G7	0.070	6.5	25.5	6.43	10.58
G8	0.080	10	22	8.61	12.03
G9	0.090	7	16	8.53	12.36
J4	0.040	7	36.5	4.01	9.16
J5	0.050	7	30.5	4.31	10.23
J6	0.060	10	28	5.48	11.48
J7	0.070	7.5	26	6.43	10.58
J8	0.080	10	24	8.61	12.03
J9	0.090	11	20	8.53	10.58
K4	0.040	9.5	38	4.01	9.16
K5	0.050	12	34	4.31	10.23
K6	0.060	16	34	5.48	11.48
K7	0.070	13	30	6.43	10.58
K8	0.080	8	28	6.21	12.03
K9	0.090	11	25	7.88	12.36
M4	0.040	11	61	4.01	9.16
M5	0.050	13	38	4.31	10.23
M6	0.060	9	38	4.33	11.48
P4	0.040				

Options

Impingement Dispense Tip Reference Chart

Part Number	Orifice
23047-J1	.012
J2	.014
J3	.022
M1	.012
M2	.014
M3	.022
P1	.012
P2	.014
P3	.022

Note:
Use p/n: LPA2-123S and p/n: LPA2-124S when using LPA2-147-XXXX and 23047-XX series spray tips.

Airless Dispense Tip Reference Chart

Part Number	Orifice
LPA2-147-1525	0.015
1540	0.015
1550	0.015
1565	0.015
1825	0.018
1840	0.018
1850	0.018
1865	0.018
2125	0.021
2140	0.021
2150	0.021
2165	0.021
2325	0.023
2340	0.023
2350	0.023
2365	0.023
2625	0.026
2640	0.026
2650	0.026
2665	0.026
3125	0.031
3140	0.031
3150	0.031
3165	0.031
3625	0.036
3640	0.036
3650	0.036
3840	0.038
3850	0.038
4325	0.043
4340	0.043
4350	0.043
4365	0.043
5225	0.052
5240	0.052
5250	0.052
5265	0.052
LPA2-147-6225	0.062
6240	0.062
6250	0.062
6265	0.062
7240	0.072
7250	0.072
7840	0.078

Technical Data

Category	Data
Maximum Fluid Working Pressure	2000 psi (13.8 MPa, 138 bar)
Maximum Air Inlet Pressure	100 psi (.69 MPa, 6.9 bar)
Typical Flow Rate of Pattern Guns	Dependent of spray tip
Maximum Fluid temperature	120° F (49° C)
Air Inlet Size (Chopper)	1/4-18 NPS Male
A Component (Catalyst) Inlet Size	1/4 in. Tube
B Component (Resin) Inlet Size	1/4-18 NPS Male
Solvent Flush	1/4-18 NPS Male
Sound Pressure	40.39 dB(A)
Sound Power, measured per ISO 94 16-2	56.2 dB(A)
Dimensions	10.5 L X 2.75 W X 8.0 H (266.7 X 69.8 X 203.2 mm)
Weight	2.70 Lbs.
Wetted Parts	Aluminum, stainless steel, 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.

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Toll Free: 1-800-746-1334 **Fax:** 330-966-3006

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Original instructions. This manual contains English. MM GC-1388

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