

Gel Coat Troubleshooting Guide, continued

6. Discoloration On Finished Parts: This problem is caused from porosity related to air entrapment while spraying. This can be overcome by spraying the mold surface with several light passes. It is also important to bleed any moisture from the air lines and to be sure that the mold surface is dry.

7. Craters And Pock Marks: These surface blemishes can be caused by improper resin to catalyst ratios and improper air pressure both high and low. Another cause for craters would be oil or moisture on the surface of the mold.

8. Fisheyes: Fisheyes are usually caused by contaminants on the mold like dirt, moisture or oils. Bleeding the air lines and using air filters will lower any air related contaminants. Try to isolate the spray area from any oils, especially silicones.

9. Blisters When Immersed In Water: Blisters can be caused for the following reasons:

1. Incomplete cure
2. Improper wetting of the back up fibers
3. Bad bond between the gel coat and the back up laminate. This is often caused by contamination.
4. Thin gel coat

10. Lifting Of Gel Coat Before Laminating: This condition is usually related to shrinkage of the gel coat. Shrinkage can be caused by:

1. Too fast of a curing time normally caused by over-catalyzation.
2. Delays between the gel coat and laminating can cause shrinking
3. Variations in gel coat thickness can vary the gel time which can cause shrinkage.
4. The mold surface is too hot.

11. Back Up Pattern Showing Through Gel Coat: This visual pattern is caused by too low a gel coat thickness or the gel coat was not properly cured.

12. Gel Coat Sticking To The Part: This condition is caused by improper releasing of the mold surface. It is important to use release agents formulated for the reinforced plastics industry.

Proper training and common sense will eliminate most of the problems associated with gel coats. Proper handling of gel coats will result in a part with a blemish free surface.

Gel Coat Cup Gun 120-A

Usage Instructions & Parts List



Operating Instructions & Suggestions

Your model 120-A spray gun is quick and easy to use, and equally important, quick and easy to clean.

It will spray a wide variety of materials including gel coats, resin, parting films, and it will sand blast with the proper spray tip.

Your gun comes with one heavy duty plastic cup which will withstand acetone and ketone, and a selection of paper cups. When an inexpensive supply of paper cups is available, most fabricators prefer the time savings an expendable paper cup gives.

The model 120-A is supplied with a cast aluminum lid (1812-A) and a 3/16" (4.8MM) (1805-A) nozzle. This is a general purpose nozzle and other sizes may be purchased (see parts diagram) for better results with your particular applications.

Gel Coat Troubleshooting Guide

Proper gel coat application is difficult for professionals and is probably the most common problem area for those new to fiberglass work. Most common gel coat problems are related to temperature variation, catalyzation and a variety of handling techniques. The following list of gel coat problems and causes should help to resolve some of the difficulties associated with gel coat.

1. Wrinkles And Pinholes: A coating less than five mils thick may wrinkle, especially when brush marks are present. Check the thickness using a gel coat thickness gauge. The preferred thickness is .010" to .020".

A wrinkle can also occur if the gel coat is not cured enough prior to lay-up. Before lay-up check the surface for tack. The surface should be sticky but not transfer to your finger. Several things can affect a slow cure; solvent or water entrapment, under catalyzation, cold temperatures and other factors.

If the gel coat film contains pinholes, check the spray equipment for moisture in the air lines or dirt in the traps. It is also important to review your spray techniques.

2. Slow Gel Coat Cure: Any temperature below 70 degrees F will retard the gel time. An under-catalyzed gel coat will also result in a slow cure but this is not a recommended technique for deliberately lengthening gel time. High moisture and humidity will lengthen the gel time.

3. Sagging Of The Gel Coat: The most common reasons for gel coat sags would be when the gel coat is applied in an excessively heavy application in one or more passes.

To avoid sagging, spray in multiple light coats at a 15" distance from the mold. The maximum thickness to be sprayed at one application is .016".

4. Porosity: Gel coat porosity (air bubbles) is normally caused by trapped air or moisture. This can be prevented by limiting the spray thickness per pass to .005". It is also important to verify that the proper air pressure is being used because an over pressurized spray can cause fine porosity. Air pressure should be set at 40-80 PSI, depending on viscosity.

5. Separation Of Color: Most color separations are related to improper spray techniques. Reduce or lower thinning agents and lower the per pass thickness of the gel coat. It is also important to avoid any spray overlap areas.

Suggestions for Other Applications:

1. Many experienced sprayers purchase several different nozzle tips for changing materials and atmospheric conditions. By purchasing and experimenting with several nozzle tips, the quality of your parts will greatly improve.
2. By using 1809-A 9/32" (7.1MM) nozzle (and closing the catalyst flow control (1815-A) 836-A gun only), you can blast with a light dry sand.
3. With 1806-A 7/32" (5.5MM) or 1807-A 1/4" (6.2MM) nozzle, gel coats with metal flake additive can be sprayed to achieve a similar appearance to that used on bass boats.
4. 1800-A 1/32" (0.8MM) or 1801-A 1/16" (1.6MM) can be used to spray light viscosity materials such as parting film. By spraying a light coat of wax over your hand buffed mold, it will increase the number of parts between hand-waxing of your mold.
5. To remove lid, (1812-A) from empty plastic cup (121-A), insert compressed air into nozzle tip.

General nozzle suggestions:

Ask your material manufacturer for more detailed material information.

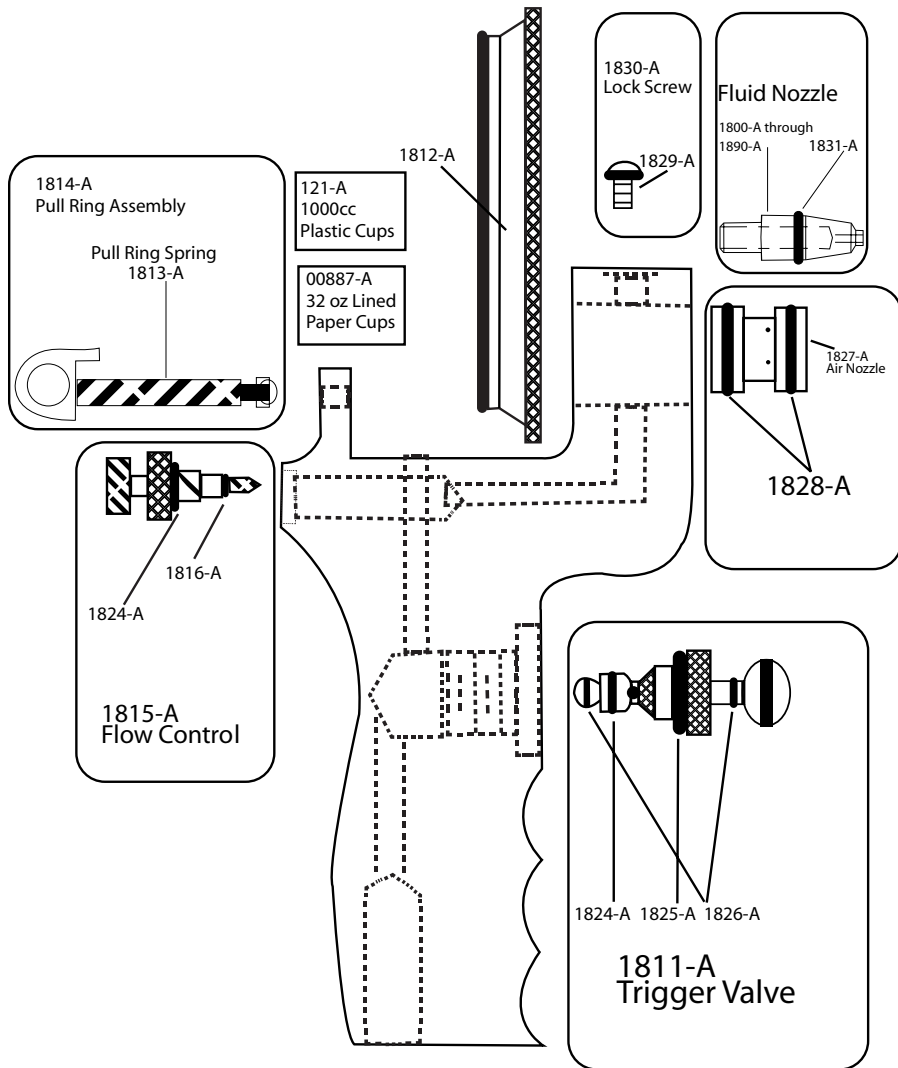
Fibre Glast Part Number

PARTING FILMS	1800-A (1/32"), 1801-A (1/16")
PAINTS	1802-A (3/32")
RESINS	1803-A (1/8")
GEL COATS	1804-A, 1805-A (5/32")
Gel coats with GLITTERFLAKE	1806-A (7/32"), 1807-A (1/4")
SAND-BLASTING	1809-A (9/32")

Instructions:

1. Never put oils or jellies on "o" ring seals. This will cause extreme swelling and damage to these specially formulated seals. Acetone will cause slight swelling, and will require some "o" rings to be replaced occasionally.
2. Fill paper (00887) or plastic cup (121-A) with the material to be sprayed. (The disposable 32 oz paper cup makes an ideal liner to the plastic cup, and reduces clean up time.
3. Catalyze material to supplier's specification. (A small MEKP Dispenser, 166-A is helpful in this step.)
4. Secure cup on the cast lid (1812-A) while cup is upright. Slide fluid nozzle (1800-A thru 1809-A) into air nozzle (1827-A) and attach pull ring (1814-A) to the lip in the cup.
5. When material is not being sprayed, point cup up or material will drip out of your fluid nozzle.
6. Depress trigger valve (1811-A) all the way until upper "o" ring (1826-A) seats, and open flow control (1815-A) to achieve desired spray volume. (About 2 turns is fully open)
7. When finished spraying, release trigger and raise gun to vertical position. To refill, follow instructions 2 through 5 again.

120-A Gun Air Requirements
60 to 100 psi (5.8cfm @ 80psi)



Replacement / Repair Parts

- 1811-A Trigger Valve Assembly
- 1824-A Trigger / Flow Control Body "O" Ring (2 Req.)
- 1825-A Upper Trigger Body "O" Ring (1 Req.)
- 1826-A Trigger Stem "O" Ring (2 Req.)
- 1827-A Air Nozzle Assembly (W/ "O" Rings)
- 1828-A Air Nozzle "O" Ring (2 Req.)
- 1829-A Lock Screw "O" Ring (Req.)
- 1830-A Lock Screw Assembly (W/ "O" Ring)
- 1831-A Fluid Nozzle "O" Ring (1 Req.)
- 1812-A Cast Aluminum Cup Lid
- 00887 Sweet heart P4325 32oz Paper Cup
- 121-A Graduated heavy Duty Plastic Cup
- 1813-A Pull Ring Spring
- 1814-A Pull Ring Assembly (Including Spring)
- 1815-A Flow Control (Needle Valve Assembly)
- 1816-A Flow Control stem "O" Ring (1 Req)
- 1152-A Nozzle cleaning brush

Fluid Nozzles

- 1800-A 1/32" Fluid Nozzle (0.8MM)
- 1801-A 1/16" Fluid Nozzle (1.6MM)
- 1802-A 3/32" Fluid Nozzle (2.4MM)
- 1803-A 1/8" Fluid Nozzle (3.1MM)
- 1804-A 5/32" Fluid Nozzle (3.9MM)
- 1805-A 3/16" Fluid Nozzle (4.7MM)
- 1806-A 7/32" Fluid Nozzle (5.5MM)
- 1807-A 1/4" Fluid Nozzle (6.2MM)
- 1809-A 9/32" Fluid Nozzle (7.1MM)