

DAGR[®] by DEVILBISS[®]

Service Bulletin
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AIRBRUSH INSTRUCTIONS AND MAINTENANCE

Thank you for purchasing your DeVilbiss DAGR[®] airbrush! You will find that this high quality, versatile airbrush gives the demanding professional artist the full range of performance—from spraying fine lines to wide backgrounds—with a wide range of materials—from solvent-based automotive paints to waterbase inks.

DAGR airbrushes are precision made with micro machining and high quality materials. Each airbrush is spray tested before being packaged in its collector's tin, assuring that it meets the tough quality standards you have come to expect from DeVilbiss. With proper care, your DAGR airbrush will provide you with excellent performance to express your creativity.

SPECIFICATIONS

Operating Pressures:

20 to 50 psi

Maximum Inlet Pressure:

175 psi

Airbrush Plating:

Nickel, copper, chrome

Needle Packing:

PTFE (solvent-proof)
Waterborne compatible

GET READY TO SPRAY

SAFETY FIRST

Please read all safety information on pages 8 and 9.

Connect to Compressed Air

Connect your DAGR airbrush to a regulated air line or select an appropriate compressor. The DeVilbiss Airblade[®] single piston compressor is a compact, economical choice for the beginner and will provide approximately 25-30 psi of air pressure to the DAGR airbrush. At 35-40 psi, the DAGR will produce a high paint flow for shadow, fade, and background spray, as well as for detail work and fine lines.

Assemble Airbrush to Compressor

Connect the air hose to the compressor and airbrush, then turn on the compressor. If using an Airblade[®] compressor, adjust the pressure to between 20 and 30 psi. Listen for any air leaks in the compressor or air hose fittings.

Point the airbrush away from you and press down on the trigger (#13) to start the flow of air through the airbrush. Place a small amount of solvent or cleaner into the bottle or cup and pull back on the trigger. This will clean out any residual factory testing material that may still be in the airbrush.

Mix Paint and Fill the Removable Bottle

Follow the paint manufacturer's instructions and thin the paint with its proper solvent. Filter it through a nylon mesh strainer. It is best to "over-reduce" or prepare the paint relatively thin and make continuous passes across your work to achieve the desired shade. This will also decrease paint buildup on the needle and cleaning time. The DAGR features a removable bottle. Depending on the amount of paint you wish to spray, use the standard 1oz. (29 cc) bottle or select an optional 1/4 oz. (7 cc) cup or 3 oz. (89 cc) bottle. For small amounts of material, use the 1/4 oz cup, which will give you best visibility for close-up work.

GENERAL OPERATION

The DAGR is a double action airbrush for fine control. Push the trigger down for air flow and pull the trigger back for paint flow. For best results during spraying, keep air flow even when you have stopped paint flow.

Air Pressure Range

Working pressures vary between 20 and 50 psi, depending on what type of work is being done, what spray characteristics are desired, and paint viscosity. Generally, thicker paints or higher paint flow will require higher pressures.

Spraying Fine Lines and Detail

To spray a fine line or detail, press the trigger down for air flow and pull it back slightly for paint flow while moving the airbrush very close to the surface. Control the thickness of the line by adjusting the distance between the airbrush and the surface and by adjusting the amount of paint flow with the trigger. An even finer line can be achieved by carefully removing the crown cap (#1) and moving the airbrush closer to the surface.

NOTE: The needle and nozzle are very finely machined. A slight bend on the tip of the needle can result in an uneven pattern. The crown cap protects the needle yet still allows fine lines to be sprayed.

Wide Lines, Fades, and Background Spraying

For wider lines, fades, and background spraying, pull the trigger further back for more paint flow. Increase the distance between the airbrush and artwork up to six inches to control the line width. Increasing the air pressure will also affect the spray width. The DAGR will spray a background width of approximately two inches. Speed of movement controls the density of the color and fading effects.

Spraying Lines Without Heavy Ends

To spray a fine or wide line without heavy ends, start moving the airbrush with the trigger pushed down for air. Then pull the trigger back for paint flow at the beginning of the line and stop paint flow at the end, but continue the motion of the airbrush.

Stippling (Dots)

Stippling (coarse or fine dots) can add special textured effects to artwork. Simply adjust the air pressure down to the point the paint no longer fully atomizes. Lower air pressure will produce coarse dots; higher pressure will produce fine dots. Paint viscosity affects stippling, as well.

Removing Clogs

The cutaway handle (#20) allows the artist to remove paint buildup from the tip of the airbrush without removing the handle and needle. Just grip the exposed needle locknut (#18) and pull back while pushing down on the trigger (#13). More paint will flow past the needle and tip, clearing the clog.

Another method is to keep a second airbrush nearby that has solvent in the cup and use it to spray the nozzle/needle tip.

A third method is to increase the air pressure and spray solvent through the airbrush for a short period.

Lastly, backflow the airbrush by holding finger over the crown cap and triggering the airbrush. This will force air back through the fluid passage. Do not use this method with the open 1/4 oz cup.

Crown Cap

The crown cap (#1) is used to protect the needle when spraying a fine line and to prevent paint build-up and spitting when spraying large backgrounds.

CLEANING AND LUBRICATION

Before Each Spray Session

Spray the appropriate solvent or cleaner through the airbrush to make sure it is working properly.

To Clean Between Color Changes

Empty the excess paint left in the cup or bottle. Rinse with solvent and use a paper towel to wipe out any left over paint. Fill the bottom of the cup with solvent and spray it through until the spray is clear. Fill with the next color. To speed up cleaning, get one bottle for each color and one for solvent.

After Each Spray Session

Increase the air pressure and spray cleaning solution through the airbrush. This will help thoroughly clean the paint passages, nozzle, and needle. Remove the needle and wipe it clean (see below).

Wipe down the outside of the airbrush with a solvent-dampened cloth, and soak the crown cap, if needed.

Do not soak the airbrush body in solvent unless the air valve has been disassembled and removed. The air valve o-ring could swell and cause air flow problems.

To Clean the Needle

Remove the back handle, loosen the needle locknut (#18), and remove the needle (#19). Using a soft cloth folded over the needle, wipe the residue off the needle by rotating it. Inspect the needle. If it is bent or mis-shapen, replace it.

Holding the trigger down, carefully re-insert the needle into the airbrush near the back and push gently until it seats against the nozzle and is visible through the tip. You should feel a slight resistance as the needle passes through the packing (#6). If the needle stops suddenly, pull it out and check the trigger for proper positioning, then re-insert the needle. Release the trigger and tighten the needle locknut.

Lubrication

To insure smooth trigger action, periodically remove the needle and coat it with a high-quality lubricant (like DeVilbiss SSL-10 Spray Lube). Wipe the needle with a soft cloth, leaving it lightly coated. Re-insert the needle and re-tighten the needle locknut. Place a few drops of lube in the trigger slot in the airbrush body.

NOTE: Do not use WD-40® or light machine oil for lubrication, which will cause the needle to bind as it moves through the PTFE packing. Do not over-lubricate the needle or the trigger. The excess lube could be pushed into the nozzle, causing paint flow problems.

REPLACEMENT PARTS AND ACCESSORIES

NOTE: If you must disassemble the airbrush, please do not use pliers. Tools are rarely needed. If needed, however, use a small wrench to unscrew and lightly re-tighten the head cap (#3), which seats the nozzle on to the airbrush body. Do not overtighten!

Nozzle (#4)

If the nozzle becomes worn or damaged, it must be replaced. Before replacing the nozzle, protect the needle by pulling it back slightly. To do this, remove the handle (#20), loosen the needle locknut (#18), and carefully pull the needle back through the nozzle. Remove the head cap (#3) and pull out the nozzle. If it is stuck, loosen it by gently pushing the side of it with your thumb. Pull the nozzle off and replace it with the new one. Re-assemble the head cap and tighten it by hand or lightly with a wrench. Do not over tighten. Re-seat the needle into the nozzle by gently pushing it forward until it seats with the fluid nozzle. Tighten the needle locknut and continue reassembly.

NOTE: To insure even wear, change the needle at the same time as the nozzle.

Needle (#19)

DeVilbiss needles are made of precision machined stainless steel and are designed for long-term use. However, because of their long tapers and very fine tips they can be easily damaged. If the needle point becomes bent or hooked, it should be straightened before being pulled back through the nozzle

or the nozzle could become damaged. If the needle is not bent too badly, roll it between your finger and a smooth flat surface to straighten the point.

Quick Disconnect (Optional Accessory)

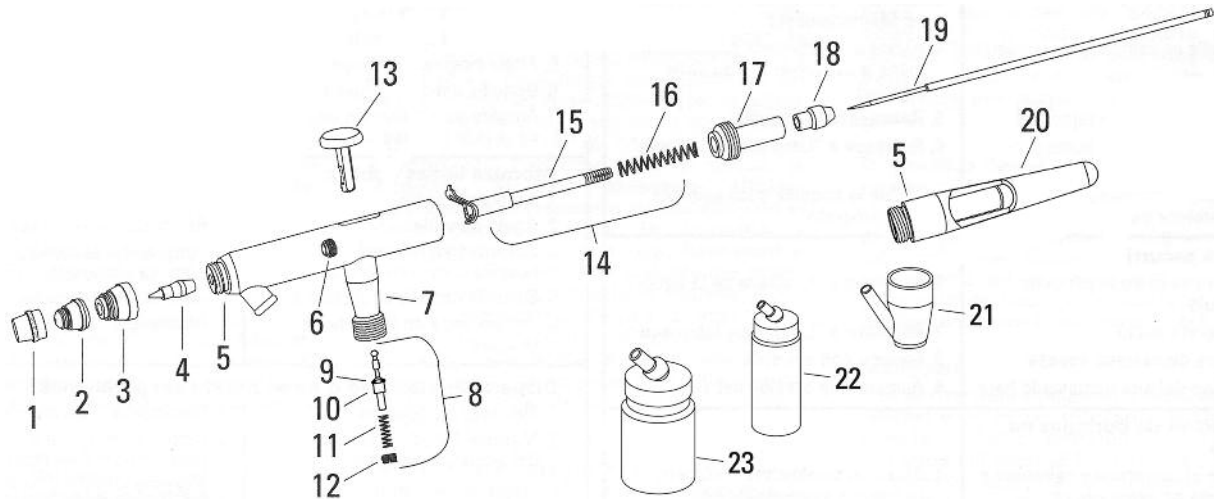
A quick disconnect stem is screwed on to each airbrush and a quick disconnect adapter is screwed on to the air hose. This allows for quick changes between airbrushes using one hose.

Hose

Use high quality, flexible DeVilbiss braided nylon air hose. Order DGR-123 (802769) 10' air hose assembly or DGR-124 (802770) 10' air hose assembly with quick disconnect.

TROUBLESHOOTING

CAUSE	CORRECTION	CAUSE	CORRECTION
<p>Skipping:</p> <ol style="list-style-type: none"> 1. Air pressure too high 2. Paint too thick 3. Airbrush is dirty 4. Nozzle not seated on body 5. Nozzle damaged or cracked 6. Dried paint on tip of needle 7. Nozzle not centered in air cap 	<ol style="list-style-type: none"> 1. Reduce pressure 2. Reduce with solvent 3. Refer to Cleaning and Lubrication Section 4. Tighten head cap (by hand or lightly with wrench) 5. Replace nozzle 6. Refer to "To Clean the Needle" 7. Clean nozzle & airbrush seats 	<p>Will Not Spray:</p> <ol style="list-style-type: none"> 1. Clogged nozzle 2. Loose head cap 3. Loose needle locknut 4. Improper air pressure 5. Paint too thick 6. Nozzle damaged or cracked 7. Vent hole in cup lid is plugged 	<ol style="list-style-type: none"> 1. Refer to "Cleaning and Lubrication" 2. Tighten (by hand or lightly with wrench) 3. Tighten 4. Adjust 5. Reduce with solvent 6. Replace nozzle 7. Unplug with toothpick or brush
<p>Spitting:</p> <ol style="list-style-type: none"> 1. Dried paint on tip of needle 2. Airbrush is dirty 3. Paint too thick 4. Air pressure too low 	<ol style="list-style-type: none"> 1. Refer to "To Clean the Needle" 2. Refer to "Cleaning and Lubrication" 3. Reduce with solvent 4. Increase air pressure 	<p>Sprays Double Line:</p> <ol style="list-style-type: none"> 1. Airbrush is dirty 2. Bent needle 3. Dirt on tip of nozzle or in air cap 4. Nozzle damaged or cracked 5. Dried paint on tip of needle 	<ol style="list-style-type: none"> 1. Refer to "Cleaning and Lubrication" 2. Replace or straighten needle 3. Flush with solvent or remove and soak parts 4. Replace nozzle 5. Refer to "To Clean the Needle"
<p>Bubbling in cup:</p> <ol style="list-style-type: none"> 1. Loose head cap or nozzle not lightly seated on body 2. Nozzle damaged or cracked 	<ol style="list-style-type: none"> 1. Tighten head cap (by hand or with wrench) 2. Replace nozzle 	<p>Trigger sticks or does not move smoothly:</p> <ol style="list-style-type: none"> 1. Needs lubrication 2. Material leaks past packing 	<ol style="list-style-type: none"> 1. Refer to "Lubrication" 2. Thoroughly clean airbrush (including trigger) and tighten packing (#6) by inserting small slotted screwdriver into airbrush body until it contacts packing nut. Turn slightly clockwise.



Ref. No.	Order No.	Model No.	Description
1	803648	DGR-101S	Crown Cap
2	803649	DGR-103-50	Aircap (.50mm Nozzle)
3	802616	DGR-104	Head cap
◇4	803650	DGR-105-50	Nozzle (.50mm)
• 5	–	–	O-ring (head cap & handle)
6	802619	DGR-106K	Packing Nut & Assembly (PTFE)
7	802620	DGR-107	Air Valve Casing
8	803644	DGR-308K	Air Valve Kit For Siphon
• 9	–	–	O-ring For Air Valve
10	–	–	Air Valve Plunger
11	–	–	Air Valve Spring
12	–	–	Air Valve Nut
13	803645	DGR-323	Trigger
14	803651	DGR-310K	Needle Guide, Rocker & Spring
15	–	–	Needle Guide & Rocker
•16	–	–	Needle Spring
17	–	–	Spring Guide
18	–	–	Needle Locknut
◇19	803652	DGR-113-50	Needle (For .50mm Nozzle)
20	–	–	Cutaway Handle w/out Preset
21	803636	DGR-317	1/4oz. Metal Siphon Cup
◇22	803637	DGR-318	1oz Plastic Bottle & Lid
23	803638	DGR-319	3oz Plastic Bottle & Lid
◇N/A	803646	DGR-321K	DAGR Siphon Repair Kit
N/A	803653	DGR-402	DAGR Siphon Parts Pak

Ref. No.	Order No.	Model No.	Description
◇N/A	802769	DGR-123	10' Braided Nylon Air Hose
N/A	802770	DGR-124	10' Braided Nylon Air Hose w/ QD
N/A	802771	DGR-125	20' Braided Nylon Air Hose
N/A	802772	DGR-126	20' Braided Nylon Air Hose w/ QD
◇N/A	802845	DGR-127	Quick Disconnect Set
N/A	802846	DGR-128-K2	Quick Disconnect Adapters (Male) (Kit of 2)
N/A	802940	DGR-132	Airbrush Holder
N/A	803287	DGR-140	Regulator, Gage, Moisture Trap & Hanger

• DAGR Siphon Repair Kit 803646 (DGR-321K) includes:

- DGR-17 (Needle Spring) - Qty. 1
- DGR-18 (O-Ring- Head Cap & Handle) - Qty 3
- DGR-25 (O-Ring- Air Valve) - Qty. 2

◇ DAGR Siphon Parts Pak 803653 (DGR-402) Includes:

- DGR-105-50 (Nozzle, .50mm) - Qty. 1
- DGR-113-50 (Needle For .50mm Nozzle) - Qty. 1
- DGR-318 (1oz Plastic Cup & Lid) - Qty. 1
- DGR-321K (DAGR Siphon Repair Kit) - Qty. 1
- DGR-123 (10' Braided Nylon Hose) - Qty. 1
- DGR-127 (Quick Disconnect Set) - Qty. 1


WARNING

The following hazards may occur during the normal use of this equipment. Please read the following warnings before using this equipment.

**HAZARD: FIRE**

CAUSE: Solvent and coatings can be highly flammable or combustible especially when sprayed.

SAFEGUARDS: Adequate exhaust must be provided to keep air free of accumulations of flammable vapors.

Smoking must never be allowed in the spray area.

Fire extinguishing equipment must be present in the spray area.

**HAZARD: SOLVENT SPRAY**

CAUSE: During use and while cleaning and flushing, solvents can be forcefully expelled from fluid and air passages. Some solvents can cause eye injury.

SAFEGUARDS: Wear eye protection.

**HAZARD: INHALING TOXIC SUBSTANCES**

CAUSE: Certain materials may be harmful if inhaled, or if there is contact with the skin.

SAFEGUARDS: Follow the requirements of the Material Safety Data Sheet supplied by your coating material manufacturer.

Adequate exhaust must be provided to keep the air free of accumulations of toxic materials.

Use a mask or respirator whenever there is a chance of inhaling sprayed materials. The mask must be compatible with the material being sprayed and its concentration. Equipment must be as prescribed by an industrial hygienist or safety expert, and be NIOSH approved.

**HAZARD: EXPLOSION HAZARD – INCOMPATIBLE MATERIALS**

CAUSE: Halogenated hydrocarbon solvents – for example; methylene chloride and 1,1,1, – Trichloroethane are not chemically compatible with the aluminum that might be used in many system components. The chemical reaction caused by these solvents reacting with aluminum can become violent and lead to an equipment explosion.

SAFEGUARDS: Guns with stainless steel internal passageways may be used with