

Understanding and Using your Apollo H.V.L.P. Spray Gun

Congratulations! You have just purchased the finest H.V.L.P. Super-spray Gun available. Our design is the result of many years experience in manufacturing HVLP systems and spray guns. We have painstakingly worked and consulted with professional spray finishers to bring you this high quality spray gun. If given a little care your Apollo spray gun will last for many years.

Apollo HVLP turbine spray guns are *bleeder* type spray guns. When the turbine is turned on, air will constantly flow through the air cap. This ensures the longevity of your equipment. Air also flows through the air feed tube (#25 on Apollo Diagram) to pressurize the cup to deliver fluid to the tip/nozzle (#6). When the paint flow screw (#18) is opened and the trigger (#24) pulled back, fluid flows through the tip/nozzle mixing with the airflow delivered from the air cap (#2) and projects a fine atomized mist to your work piece. All passages and airports are much larger than a conventional spray gun. If one of these air passages becomes blocked, or build up of material starts to occur, your spray pattern will become distorted. Always keep your spray gun clean.

Your Apollo spray gun comes fitted with a 1mm tip/nozzle and needle (inscribed with a #2). This will cover about 85% of all the materials/coatings that you will spray. Using this size tip/nozzle and needle you can achieve a ¼" line up to a 12" fan pattern simply by rotating the air cap (#2) to the desired fan type, opening the material flow screw (#18) counter clockwise and moving the spray gun closer or further away from your work piece. A little practice will enable you to master this technique.

Your spray gun offers you many options. Familiarize yourself with the controls on your new spray gun. The rotating air cap (#2), the material flow screw (#18) and the air cap locking ring (#1). You can adjust (click) the air cap (#2) to three positions. Fig. 1, below, shows the vertical pattern, which can be used spraying from side to side. Fig. 2 shows the horizontal pattern, which can be used for spraying up and down. Fig. 3 shows the round pattern, which can be used for touch-up jobs or narrow pieces. (Paint flow will increase when using the diagonal position and it is usually necessary to reduce the material flow by adjusting the flow screw (#18)).

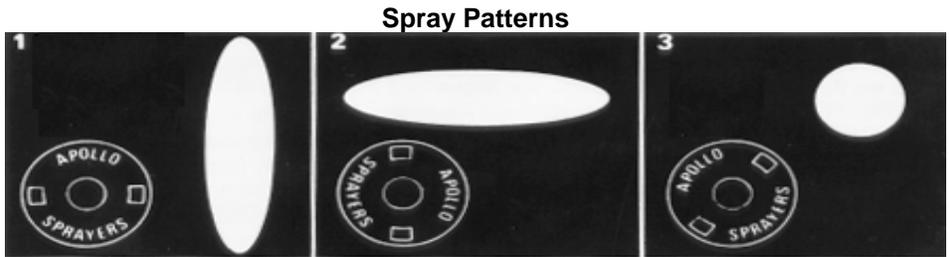


Fig. 1 Use this position when spraying across from side to side.

Fig. 2 Use this position when spraying from top to bottom.

Fig. 3 Use this position for spotting small objects, corners and sharp angles.

The flow adjustment screw (#18) allows more material to flow if you turn the knob counter-clockwise and less material if you turn the knob clockwise. Lastly, you can feather the ends of the spray pattern and slightly reduce the fan size by adjusting the air cap ring (#1). By loosening the air cap ring one or two turns the edges of the fan will blend in with the rest of the fan pattern and thus reduce the overall size. This should be a secondary control, the primary fan pattern size being adjusted between fluid flow and distance of the spray from the work piece.

Your A.5010 quick release cup gun can easily convert to a production gun; simply unscrew the entire cap assembly held by #26 cup top bolt. Disconnect the air feed tube at the gun by unscrewing #8. Replace this part with a 10/32" blanking screw, Apollo part # A5246. The material connector #35 is 3/8" NPS thread, therefore if you are using ¼" fluid hose you will need an adapter, part number A5247 (not illustrated). With a 3/8" fluid hose you connect your hose directly to the material connector. Your A.5010 cup gun is supplied with foam cup gasket, part #A.5280. This is the only material available for this cup assembly.

Your A.5000 screw cup gun cannot easily be converted to a production gun. If you would like to do this please call the Apollo technical support line at 888-900-4857 before doing so. An Ethafoam cup gasket, part #A.5238 is supplied with the spray gun; three alternative materials are also available.



Understanding Your Viscosity Meter

Using the APOLLO-SPRAY™ viscosity meter is an accurate way of measuring the thickness/viscosity of a coating in order to ensure a fine finish. The viscosity meter will accurately measure many different varieties of materials including, but not limited to: Lacquers, Sealers, Enamels, Stains, Oils and Waterbornes.

TO USE:

Take a stopwatch, the APOLLO-SPRAY viscosity meter and the coating/material/paint to be measured.

- A. Dip the Viscosity meter into the coating.
- B. Start the stopwatch as soon as you pull the cup out of the material.
- C. The coating will run out of the hole in the bottom of the cup in a steady stream.
- D. As soon as you see the FIRST break in the stream, stop the watch.
- E. The time shown is equivalent to #2 Zahn seconds.
- F. Clean the cup and store.

If the time you get is more than the recommend or desired time then you need to thin your material. Use the appropriate thinner to the correct proportion for you mixture. Retest, following steps A-E. Continue to thin until the desired viscosity is reached or until you reach the maximum thinning recommended by the manufacturer of the coating you are trying to spray. For further assistance please call the Apollo technical support line at 800-578-7606.

VISCOSITY CUP COMPARISON CHART	
ZAHN #2	FORD # 4
16	5
17	8
18	10
19	12
20	15
22	17
24	19
27	21
30	23
34	26
37	29
41	31
49	36
58	41
66	45
74	51
82	56

VISCOSITY CHART		
Coating	Thin/Reduce	Viscosity in Seconds
Lacquers	25% - 50%	15-22 seconds
Sanding Sealer	20% - 30%	15-22 seconds
Enamels	20% - 40%	16-22 seconds
Stains	use from can	15 seconds
Acrylic Enamel	50% - 60%	15-17 seconds
Catalyzed		
Polyurethane	10% - 30%	15-18 seconds
Polyurethane's		
Varnishes	20% - 30%	16-22 seconds
Waterborne		
Coatings	00% - 10%	24-34 seconds
<p>Viscosity chart should be used as a guide to thinning various coatings. Actual reduction will depend upon model turbine used, flow out properties of the coating and the final visual results of the sprayed work piece. Seconds quoted are measured in a Zahn #2 Viscosity Cup. Always adjust viscosity for best results.</p>		

KNOW YOUR COATINGS

Coating Properties

Coatings are a blend of resins and additives to create a product that will provide a protective and beautifying surface to your work piece. Different resins have different properties. It is important to use the correct coating to achieve a desired result. Manufacturers of coatings can control the resin solids content, production viscosity, sheen, color, flow-out enhancement and other properties as well. Some products offer ways to adjust the coating properties such as speeding up or slowing down the drying time, adding catalysts to strengthen the molecular bond or adding flattening agents to lower the sheen. Manufacturers will often give some guidelines on how to thin their product for spray application. There are many different types of spray equipment in use. Coatings manufacturers cannot address all of them. It is important for the finisher to understand the spray equipment and to use common sense to arrive at the correct fluid viscosity to produce the best possible results with the selected coating and the equipment being used.

Your Choice of Coatings and Viscosity

Extremely thin, watery or light bodied fluids such as inks, aniline dyes and oil stains can generally be used straight from the can. Most water based finishing products are also formulated to be used straight from the can without thinning with a **3 stage or larger turbine**. Most other coating products will need to be thinned anywhere from 10% to 50% depending on the available air pressure of the turbine model and the properties of the coating selected. (See Chart A)

Apollo HVLP Turbine Properties

Each Apollo Turbine Unit offers the finisher a maximum operating pressure. This pressure is determined by the size and output of the unit you have selected. The maximum available pressure will have a direct bearing upon the viscosity of the fluid that you choose to spray. Atomizing pressure and fluid viscosity directly relate to the efficiency of the equipment operation and the quality of the results that you will achieve.

MODEL	TURBINE SIZE	UNRESTRICTED PRESSURE
700	2 STAGE	4.5PSI
800	3 STAGE	5.5PSI
900	3 STAGE	6.0PSI
1000	4 STAGE	8.0PSI
1100	2 & 3 STAGE	3.5PSI—10PSI
1200	2 & STAGE	3.5PSI—10PSI

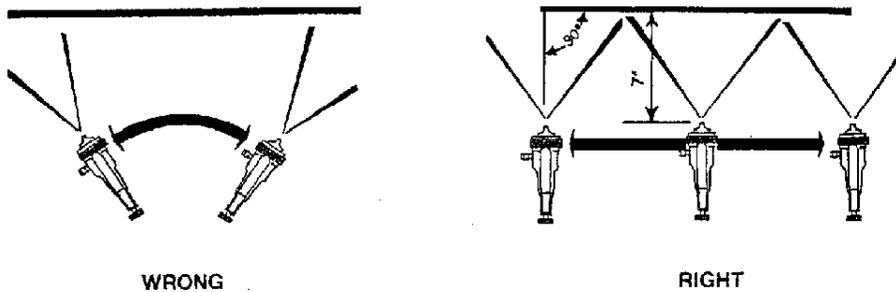
Tips, Needles, Air Caps & Viscosity

TIP/NEEDLE SIZE	APPLICATION	VISCOSITY ZAHN #2	AIR CAP
.75MM (.0295)(#1)	Inks, Dyes, Stains, extremely thin viscosity fluids, Water based finishes	16 seconds	(A) A.5201
1.0MM (.039) (#2)	All purpose, thin lacquers, thin enamels, Water based finishes, Automotive, Marine, Airplane finish	16—18 seconds	(A) A.5201
1.5MM (.059) (#3)	Catalyzed lacquers, Conversion Varnish, Primers, Automotive, Marine, Airplane finishes, Varnish, High Viscosity Industrial Coatings, Urethanes, Enamels.	18—24 seconds	(A) or (B) A.5201 A.5297
2.0MM (.079) (#4)	Thinned latex paint, Multi-spec, Heavy Primers, Butyrate, nitrate dope, High Viscosity Industrial Coatings	24—35 seconds	(B) A.5297
2.5MM (.098) (#5)	Thinned latex paint, Multi-spec, Solvent adhesives, Wax based strippers	35+ seconds	(B) A.5297

Spray Gun Technique

Like any skill, practice makes perfect. Never try to rush the spray finishing process. Learn the characteristics of the coating you will be spraying. Build up layers of material (3—4 applications or more if necessary). Sand between coats and allow proper drying time between applications.

It is important to remember to always keep the distance of the spray gun the same when moving across your work (or up and down). (Called a “pass”). Do not rotate or turn your wrist from side to side. Move the spray gun across your work from end to end. Be sure to maintain the same speed of movement. This will ensure an even application of coating. Always release



the trigger at the end of a “pass”. Continue spraying in the opposite direction overlapping your previous coat by 1/3rd to 1/2. When finished you should have an even wet coat on your work. If you have dry spots you have overlapped too wide. If you have heavy or wet spots, you have overlapped too much. When spraying a large or pre-assembled piece, start at the top and work down. Try to spray the hard to reach and underneath surfaces first. Common sense and some forethought will prevent errors. Remember, that a light wet film will generally produce better results than a heavy wet coat. When spraying a vertical surface it is advisable to apply a thin/light “tack” coat first, followed by a normal light wet coat. This technique will help prevent “runs” and “sags”.

When using your APOLLO Spray Gun you control five variables.

1. Fluid flow (#18).
2. Distance of the spray gun from your work. (4” - 8” is average. Closer if necessary).
3. Pattern Direction (Vertical fan, horizontal fan and round)
4. Speed of application
5. Fan Pattern Control (adjust air cap ring #1)

*Items 1,2, and 4 directly relate to each other.

If you have any further questions regarding the use of your Apollo Spray gun please call one of our experts at 888-900-4857.

Troubleshooting

1. Your paint cup is full of material, the HVLP air is supplied to the spray gun, trigger is pulled and no paint comes out—Reason: Cup not pressurizing.

Check:

- A. Air feed tube and one-way valve (#25) may have a blockage. Check and clean as necessary.
- B. Air feed connector (#8) has a blockage. Check and clean as necessary.
- C. Check to make sure the cup is clamped (A5010) or screwed (A5000) on tight.
- D. Check the cup top gasket (#32 or #28 on A.5020) to make sure that the gasket is not damaged or worn and that the cup is sealing correctly on it.
- E. On model A.5010, look under the cup top lid (#29) to locate the “C” shaped tube. Check this for blockage and clean as necessary.

2. When spray gun is connected to a turbine and the turbine is on, air continually flows through the air cap even if the trigger is not pulled. Response: This is correct. All APOLLO turbine spray guns are “bleeder” type guns. This is necessary and desirable to ensure longevity of the turbine motor.

3. If you think that you are getting too much “over spray”

Try:

- A) Moving the spray gun closer to the work
- B) Closing down the fluid flow
- C) Reducing the air power (use optional air control/texturing device A.5257).
- C) Considering using a smaller tip/needle assembly

4. If the sprayed surface is not flat and level after drying (orange peel effect)

Try:

- A) Increasing air power (Model 1100/1200)
- B) Thinning the coating more.

5. If the finish looks like “dry mist” or if you think the speed of the application is too slow

Try:

- A) Increasing the fluid flow
- B) Moving the spray gun slower
- C) Moving the spray gun closer to the work piece
- C) Thinning the coating more.

If you have any additional questions please refer to our website located at www.hvlp.com or call our technical service line at 888-900-4857.