**INSTRUCTION MANUAL** 

(For Professional Use Only)

# HIGH VOLUME LOW PRESSURE SPRAY FINISHING SYSTEMS

DO NOT USE EQUIPMENT BEFORE READING THIS MANUAL



DeLuxe System



Standard System

This manual contains important warnings and instructions. Please read these instructions carefully and keep for your reference.

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# **Basic and Deluxe Spray Finishing Systems**



# **STANDARD SYSTEM**

[Turbine System] Model 200-S12 (120 V) Model 300-S12 (120 V) Model 400-S12 (120 V) Model 200-S24 (240 V) Model 300-S24 (240 V) Model 400-S24 (240 V)

# **DELUXE SYSTEM**

[Turbine System] Model 200-D12 (120 V) Model 300-D12 (120 V) Model 400-D12 (120 V) Model 200-D24 (240 V) Model 300-D24 (240 V) Model 400-D24 (240 V)

# WARNING DO NOT USE EQUIPMENT BEFORE READING THIS SECTION

#### A fire or explosion hazard is present when spraying flammable materials. In order to assure safe operation of your spray system, please read the following instructions carefully.

- Always follow coating or solvent manufacturers safety instructions and warnings.
- Always spray in a well ventilated area.
- Always keep the turbine system at the maximum length of hose. •
- Always wear eye protection and a respirator.
- Always store indoors, never allow unit to freeze.
- Always use original manufacturers replacement parts
- Never spray flammable materials near open flames, pilot lights or any other source of ignition.
- Never alter or modify any part of this equipment; doing so can cause equipment malfunction and/or bodily injury.
- Never attempt to clean any part of the turbine system while it is plugged in.
- CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE TO WATER.
- Never leave spray equipment unattended. Keep away from children or any person not familiar with spray equipment.

#### **GROUNDING INSTRUCTIONS**

This product should be grounded. In the event of an electrical short circuit, grounding reduces the risk of electrical shock by providing an escape wire for the electric current. This product is equipped with a cord that has a grounding wire and appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not operate unit with a damaged cord or plug. Do not pull or carry unit by the cord. Keep away from heated surfaces. Do not unplug by pulling on the cord.

#### DANGER

Improper installation of the grounding plug can result in the risk of electric shock. Check with a qualified electrician or serviceman if in doubt as to whether the product is properly grounded. Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician. This product is for use on a nominal 120 volt circuit and has a grounding plug similar to the one illustrated. Make sure that the turbine is connected to an outlet with the same configuration as the plug. DO NOT USE ANY ADAPTERS WITH THIS PRODUCT.

#### USING EXTENSION CORDS

Use only a three wire extension cord with a 3-slot receptacle similar to the plug on the turbine. Make sure your extension cord is in good condition. When using an extension cord, be sure to select one that will carry a heavy enough current for the turbine system used. An undersized cord will cause a drop in the line voltage resulting in loss of power and overheating. If in doubt use the next heavier gauge. The smaller the gauge number, the heavier the wire thickness. Please use the chart below as a guide to selecting the proper size extension cord.

For length less than:	Use extension gauge:
25ft	16AWG
50ft	14AWG
100ft	12AWG
150ft	10AWG

#### **FLUID SECTION - SOLVENTS**

#### FIRE OR EXPLOSION HAZARD

Halogenated Hydrocarbon solvents can cause an explosion when used with aluminum or galvanized components in a closed (pressurizable) fluid system (pumps, heater, filters, valves, spray guns, tanks, etc.). The explosion could cause serious injury, death and/or substantial property damage. Cleaning agents, coatings, paints, etc. may contain Hologenated hydrocarbon solvents. The manufacturer of this equipment uses aluminum components that will be affected by Halogenated Hydrocarbon solvents, DO NOT USE HALOGENATED HYDROCARBONS WITH THIS EQUIPMENT.

#### **EXPLANATION OF THE HAZARD**

3.

There are three key elements to the Halogenated Hydrocarbon (HHC) solvent hazard. These elements are:

- The presence of HHC 1. 2.
  - Aluminum or galvanized parts
  - Equipment capable of withstanding pressure

When all three elements are present, the result can be an extremely violent explosion. The reaction can be sustained with very little aluminum or galvanized metal; any amount of aluminum is too much. The reaction is unpredictable. Prior use of an HHC solvent without incident (corrosion or explosion) does NOT mean that such use is safe.

HALOGENATED SOLVENTS - definition: Any hydrocarbon solvent containing any of the elements as listed below: Consult your material supplier to determine whether your solvent or coating contains Halogenated Hydrocarbon Solvents.

Fluorine (F) "-fluor-"
Bromine (Br) "-bromo-"
Examples (not all-inclusive):
FLUOROCARBON
SOLVENTS:
Dichlorofluoromethane
Trichlorofluoromethane
CHLORINATED SOLVENTS:

Carbon tetrachloride Chloroform Ethvlene Dichloride BROMINATED SOLVENTS: Ethylene Dibromide Methylene chlorobromide Methyl bromine TRICHLOROETHANE:

Trichloroethylene Monochlorotoluene Chlorine (CL) "-chloro-" lodine (I) "-iodo-" METHYLENE CHLORIDE OR DICHLOROMOETHANE Monochlorobenzene Orthodichlorobenzene

Porchloroethylene IODINATED SOLVENTS: N-butyl iodide Methyl Iodide Ethyl lodide Propyl iodide

#### TrueHVLP<sup>™</sup> SPRAY FINISHING SYSTEMS

CONGRATULATIONS!! You have just purchased the finest HVLP air turbine system available. You are about to enjoy the great benefits of TrueHVLP<sup>TM</sup>. Our designs are the result of many years experience in manufacturing HVLP turbine systems, and HVLP spray guns. We have painstakingly worked and consulted with professional spray finishers to bring you this versatile, well engineered tool.

Whether you are new to spray finishing, you have spray finished before, or are just new to HVLP spraying, there are some basic spray finishing guide lines that will help you to achieve the best results and optimum success from your new equipment. Reading this information carefully and following these simple steps will ensure that you get the best performance and results from your new TrueHVLP™ spray system.

#### INSTRUCTIONS

Check the contents of your box. The following are included: Turbine unit Spray Gun Air hose Instruction Manual

#### HOW YOUR HVLP TURBINE SYSTEM WORKS

Your turbine system has three components: the turbine unit, an air hose and a spray gun. The turbine unit when connected to the correct electrical power supply and with the on/off switch in the "on" position, provides a continuous source of clean, warm, dry, High Volume Low Pressure air (cfm). The air hose connects the turbine unit to the spray gun. Air flows through the hose to the nozzle of the specially designed TrueHVLP<sup>™</sup> spray gun. Atomization of the coating is achieved when the air mixes with the stream of fluid passing through the tip/nozzle. This low pressure atomization principle achieves minimum misting (overspray) to the spray environment.

The turbine blower has one air hose outlet on the side of the unit and is designed to run one spray gun. The 4-stage model has the capability to run two spray guns at the same time with an optional "Y" connector (Part #A.4227). When using only one spray gun, always be sure that one outlet is capped.

#### HOW YOUR SPRAY GUN WORKS

TrueHVLP™ 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) in order to pressurize the cup, and 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 air flow delivered from the air cap (#2) and projects a fine atomized mist to your work piece.



Fig. 1 Use this position when spraving 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.

Your spray gun offers you many options. You can adjust (click) the air cap (#2) to three positions. One will produce a horizontal pattern for spraying across, another will produce a vertical pattern for spraying up and down, and the third will produce a round pattern to spray small or narrow pieces.





A.5005

A.5005L PRODUCTION GUN PRODUCTION GUN



A.5010 **BAYONET CUP** 



A.5010L BAYONET CUP



A.5020 8 OZ CUP



A 5020L **8 OZ CUP** 

## PREPARING TO USE YOUR HVLP TURBINE SYSTEM

Connect the air hose to the turbine. On the deluxe turbine units, pull back the spring loaded quick disconnect coupler and insert the male connector on the air hose into the turbine connector. Release the ring. (Economy models will have a screw-on connector). Your air hose will be locked into place. To disconnect, pull back on the connector to release the air hose. CAUTION: If you have just finished spraying, the metal coupler at the turbine end may be hot.

Plug the electric cord into a correctly grounded electrical outlet. Be sure the electric current is the correct voltage. If you need to use an extension cord, be sure it is at least 12 gauge wire and has a correctly grounded outlet. (240v units for use outside of the United States are often only supplied with an electric cord. A correct plug must be installed prior to use. Make sure the ground wire is properly connected).

Select a safe, well ventilated area where you will spray your work piece. Locate your turbine unit away from the area where you will be directly spraying. Do not cover or enclose the turbine. It is important to draw cool/ambient air through the unit for optimum performance. Avoid placing the turbine in a warm environment or in direct sunlight.

### FAMILIARIZING YOURSELF WITH YOUR TrueHVLP™ SPRAY GUN

Cup Guns: On the TrueHVLP<sup>™</sup> Deluxe & Slim-Lite<sup>™</sup> Deluxe Spray Guns (bayonet style cup) slide the lever to one side, releasing the cup from the holding pins on the cup. Reverse the procedure to install the cup onto the gun body. Make sure the cup is secure. Be sure the cup is centered on the gasket (#32) under the cup top. Familiarize yourself with the controls on the spray gun. There are three principal controls. The rotating air cap (#2), the material flow screw (#18) and the air cap locking ring (#1). Click the rotating air cap into each position. Horizontal, Vertical and 45°. When the air cap is in the 45° position the pattern is round. This is useful for spraying small, narrow pieces of work. (Paint flow will increase when using the diagonal position and it is usually necessary to reduce the paint flow by adjusting the flow screw (#18). (See Diagram Spray Patterns, Bottom, Pg. 4). Next, turn the material flow. Last, loosen the air cap locking ring (#1) one or two turns. This will feather the top and bottom of the fan pattern and slightly reduce the fan pattern size.

#### PREPARING TO SPRAY

You should now be ready to spray your coating of choice on your work piece. Good quality results with your TrueHVLP<sup>™</sup> spray finishing equipment are a combination of careful preparation of your project, a proper spraying environment, a basic knowledge of the coatings you will be using and how these coatings work with your TrueHVLP<sup>™</sup> spray equipment.

### USING YOUR TrueHVLP™ SPRAY GUN

Your TrueHVLP<sup>™</sup> Spray Gun is certified High Volume Low Pressure. This means your spray gun only uses from 3psi—10psi (depending on your turbine unit) of air pressure measured at the air cap (#2). All passages and air ports 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, therefore, always keep your spray gun clean. Your TrueHVLP<sup>™</sup> spray gun comes fitted with a 1mm tip/nozzle (#6) and needle (#15) (inscribed with a number 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 1/4" line up to a 10" fan pattern, simply by rotating the air cap (#2) to the desired fan type (See Spray Gun Diagram 1 & 2 on pages 13 & 14), 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. <u>PRACTICE</u>: Remove the cup from your spray gun. Fill it approximately half way with some water. Attach the cup to the body of the spray gun. Attach the spray gun to the air hose. Turn the turbine unit on. You will notice air is now flowing through the air cap, this is normal and correct. Position the air cap (#2) in the horizontal position, turn the material flow screw (#18) counter clockwise approximately 1 to 1 1/2 turns. Point the spray gun away from yourself (and anyone else) and pull the trigger all the way back. You should see a "V" shaped mist (or triangle) called a fan pattern. Now, with the trigger depressed, slowly begin to turn the material flow screw (#18) clockwise (closing). Notice that the fan pattern is beginning to get smaller. Now, reverse this and notice the pattern get larger. Take a large piece of cardboard and direct the pattern at the surface. Turn the material flow screw 2 full turns and hold the spray gun approximately 6" from the surface.

Pull the trigger. Observe the outline and size of the pattern. Now, turn the material flow screw clockwise (closing). Move the spray gun an inch or two closer to the surface. Pull the trigger. Notice the pattern has become smaller. You can continue reducing the material flow and move the spray gun even closer to the surface and the pattern will continue to get smaller and smaller. Next, rotate the air cap to a diagonal position (See Spray Patterns, Pg. 4). Vary the material flow and the distance of the spray gun from the work surface. Notice the change in pattern size.

Finally, there is one additional control to learn. If you loosen the air cap locking ring (#1), approximately 1—2 turns, you can also control the fan pattern size and trim/feather the edge of the fan pattern itself. This should be considered a secondary control, the primary fan pattern size being adjusted between fluid flow and distance of the spray gun from the work piece.

Caution: Even when the turbine unit is turned off, pressure will remain in the spray cup. If you pull the trigger back, a stream of fluid will flow. To prevent accidents, turn paint flow screw (#18) clockwise until it is completely closed. The trigger is now locked in the closed position.

Note: It is not necessary to empty and clean your spray gun when you pause between applications. Be sure, however, to clean your spray gun thoroughly at the end of your work session. It is a bad idea to leave paint in your spray gun overnight. Extra caution should be taken when spraying coatings that have a catalyst or hardener added since many of these coatings have short pot life. These coatings can harden in your spray gun quickly, making cleaning difficult or impossible. Read manufacturers coating instructions as to how much time you have before catalyst/hardener begins to set up.

#### **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. 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 flatting 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 waterbased 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 below).

#### CHART A TURBINE PERFORMANCE

TURBINE SIZE	UNRESTRICTED PRESSURE	COATING TYPES
2 STAGE	4.5PSI	Light Viscosity Materials Only
3 STAGE	5.5PSI	Light-Medium Viscosity Materials
4 STAGE	8.0PSI	Light-Heavy Viscosity Materials

#### HVLP Turbine Properties

Each TrueHVLP<sup>™</sup> 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.

The available air volume and pressure at the air cap of the spray gun will meet the delivery of fluid coming out of the nozzle to create a fine mist called atomization. This mist travels directly to your work piece where it blends together to form a connected wet film. Achieving a smooth, level surface will depend on the proper relationship between available atomizing pressure, the viscosity of the coating being applied and the properties of the coating. USING LATEX PAINT

Although your turbine spray system is best suited to spray Class A Finish coatings such as lacquers, enamels, urethanes, varnishes, waterbornes etc., you can spray latex house paint if you follow a few simple rules. First, it is absolutely necessary to thin latex paint. This will vary from as little as 10% to as much as 50%. This will depend on the model turbine you are using and the quality of the paint used. In addition, it is necessary to use a larger nozzle & needle set in the spray gun (2.0mm or 2.5mm) It is recommended that a latex conditioner, Floetrol, be added to aid flow-out. This product is sold at local paint stores.

TIP/NEEDLE SIZE	APPLICATION	AIR CAP
.75MM (.0295)(#1)	Inks, Dyes, Stains, extremely thin viscosity fluids, Water based finishes	(A) A.5201
1.0MM (.039) (#2)	All purpose, thin lacquers, thin enamels, Water based finishes, Automotive, Marine, Airplane finish	(A) A.5201
1.5MM (.059) (#3)	Catalyzed lacquers, Conversion Varnish, Primers, Automotive, Marine, Airplane, finish Varnish, High Viscosity Industrial Coatings, Urethanes, Enamel	(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	(B) A.5297
2.5MM (.098) (#5)	Thinned latex paint, Multi-spec, Solvent adhesives, Wax based strippers	(B) A.5297

## CHART B NOZZLE, NEEDLE AND AIR CAPS

CHART C-VI	SCOSITY	
Coating T Lacquers	<u>hin/Reduce</u> 25%-50%	
Sanding Sealer	20%-30%	
Enamels	20%-40%	Chart C should be used as a guide to thinning various coatings. Actual reduction will
Stains	use from can	depend upon model turbine used, flow out proportion of the coating and the final visual
Acrylic Enamel	50%-60%	results of the sprayed work piece.
Catalyzed Polyurethane	10%-30%	
Polyurethane's Varnishes	20%-30%	
Waterborne Coatings	00%-10%	
Latex Paint Emulsion Paint	10%- 40%	

#### **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 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)

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

#### CLEANING YOUR TrueHVLP™ SPRAY GUN

#### After Spraying

1) Empty any unused paint from the paint cup and wash out any residue with an appropriate cleaner compatible with the coating, or water if using a waterbased material. Partly fill the cup with cleaner and spray through the gun to flush out the material passages.

2) Remove the Air Cap (#2) and clean. Ensure that the air holes in the horns of the air cap are clean.

3) Using a brush and solvent, remove any paint deposits on the outer surface of the tip/nozzle (#6). If it is necessary to remove the tip/nozzle and needle (#6 & #15) for cleaning the following procedure should be used:

A) Unscrew the Paint Flow Adjusting Screw (#18). Remove the needle spring (#16), then withdraw the

needle (#15).

F)

- B) Remove the tip (#6).
- C) Clean both tip and needle using cleaner or water and a brush.

D) Reassemble, making sure that all washers and gaskets are replaced correctly. Oil the needle spring and put a spot of oil on the Gland Seal (#22) to prevent the needle from sticking. To adjust the Gland nut (#23), tighten until needle sticks, then slacken off by about 1/8 turn.

E) Check the Cup Top Gasket (#32 or #28 on A.5020)and replace if damaged. Always seat the cup top gasket flat in the cup groove. Failure to do this will allow the cup to drip and impair the spray pattern due to loss of pressure.

Lubricate all threads to ensure smooth operation.

Blockages and or leaks may occur if the gun is left on its side or turned upside down. Always hang the gun by the hook when not in use.

#### OPTIONAL ACCESSORIES FOR TrueHVLP™ TURBINE SPRAY GUNS

Option One: In diagram (1,2, or 3), locate part #13. Most TrueHVLP<sup>™</sup> turbine spray guns are fitted with this blanking cap (A.5202). You can remove the cap and install part #'s A.5216 and A.5217 (#14A, 14B). This gives you the option to attach your air hose onto this port instead of into the handle. To install, unscrew blanking cap (#13). Screw in part #(14A, 14B). To use this port, unscrew the male hose coupler (#21) and screw onto (#14A). Take the small blanking cap (#14B) and screw it onto the threads at the bottom of the handle. Reverse these two fittings to use the air hose coupled to the handle. Option Two: This will allow you to control the air flow and create textured or splatter paint effects. To install, remove blanking plug (#13) or parts (#14A and #14B). Screw part (#13A) into the spray gun. After installing the air control/texturing device, turn the adjusting screw as far as you can counter clockwise (open). Always use in the full open position unless it is necessary to reduce the flow of air, or to create a textured or splatter effect. This feature is not available for use with A.6000 spray gun. See instructions supplied with the air control device for proper use.

#### USING PRESSURE POTS WITH TURBINE SYSTEMS

When using a remote cup or pressure pot, it is necessary to introduce compressed air in order to pressurize the remote pot and move the fluid from the pot to the tip/nozzle of the spray gun. In general 5lbs of pressure is sufficient for most average viscosity fluids in order to deliver the proper flow of fluid to the tip (#6). Higher pressure would only be necessary for a heavier viscosity fluid. A good test to determine the correct fluid delivery would be to first, pressurize the pot. DO NOT turn on the turbine. Pull the trigger of the spray gun until a stream of fluid flows from the tip/nozzle. Adjust the pressure until the fluid drops off or bends at approximately 2 1/2 inches (6.35cm). Pot pressure should be correct at this point.

A.4600—2qt cup (Stainless steel fluid parts/Teflon® lined cup)

A.4900-2.5 gal deluxe pressure pot

SAFETY PRECAUTION: Always depressurize the remote pot using the safety valve when the equipment will be idle for a while. This will prevent excess fluid from remaining in the fluid hose, and prevent a possible accident should the trigger be pulled and paint streams from the spray gun.

Always ensure that the remote cup is tightly sealed, and all gaskets are in good shape, to prevent air and fluid leaks. Be sure to flush and clean fluid hose at the end of a work session.

For smaller jobs, insert a one gallon can inside the 2.5 gallon pressure pot. This will keep the inside of the pot clean.

#### **TURBINE MAINTENANCE**

The turbine unit needs virtually no maintenance. The motor has sealed bearings that are pre-lubricated. No service is necessary. Periodically, the turbine air filters and pre-filters should be examined. Clean filters are critical to good performance and equipment longevity. Your TrueHVLP<sup>™</sup> Turbine has 2 replaceable filters. Remove the two hex-head securing nuts in order to remove the filters for cleaning or replacement. Periodically wash and blow excess dust and dirt with water and an air compressor. Dirty filters will reduce the air being drawn through the motor, causing the unit to run abnormally hot, diminish spray performance and reduce the life of the motor. Clean and/or replace filters and pre-filters when you suspect they can no longer be cleaned. Use the maintenance record sheet on Pg.12 to keep track of your equipment use.



#### RUNNING MULTIPLE SPRAY GUNS WITH A TURBINE

It is possible to run the 4-stage turbine system with two spray guns at the same time by installing Part # A.4227, "Y" Connector to the turbine outlet port. It is important to note that if the "Y" connector is installed and only one spray gun operated, the 2nd outlet must be capped or closed so that performance to the single spray gun will not be affected.

#### **GENUINE ACCESSORIES**



A.4200 2QT PRESSURE POT



A.4227 Y CONNECTOR 4 STAGE UNIT ONLY



A.4113 2.5 GALLON PRESSURE POT



A.5257 AIR CONTROL/TEXTURING DEVICE





A.5319 ACCESSORY CASE WITH FULL SET OF MAINTENANCE PARTS AND FULL SET TIPS/NEEDLES



A.5309-3 NOZZLE/NEEDLE/AIR CAP SETS



A.9013 MAINTENANCE KIT



A.5269

MINI CUP

ASSEMBLY

A.5318 17 PIECE CLEANING KIT

A 1500

A.4500 2 QT (2 LTR) FLUID FEED SYSTEM



A.4550 2 1/2 GAL (10 LTR) CART AND FLUID FEED SYSTEM

## TROUBLESHOOTING

1. Paint cup full, turbine air is supplied to the spray gun. Trigger is pulled and no paint comes out—Reason: Cup not pressurizing.

## Check:

- A) Air Feed Tube/one way air valve (#25) A.5232
- B) Air Feed Connector (#8) (A.5211)
- C) Cup is screwed or clamped on tight
- D) Cup top gasket is not damaged.
- E) On Model A.5010, Look under Cup Top Lid (#29). Locate the "C" shaped tube. Check for blockage.
- 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, "bleeder" type guns are necessary and desirable to ensure longevity of the turbine motor.
- If you think that you are getting too much "overspray" Try: Moving the spray gun closer to the work Closing down the fluid flow Reducing the air power (use optional air control/texturing device A.5257). Considering a smaller tip/needle assembly
- 4. If the sprayed surface is not flat and level after drying (orange peel effect) Try: Thinning the coating more.
- If the finish looks like "dry mist" or if you think the speed of the application is too slow
  Try: Increasing the fluid flow
  Moving the spray gun slower
  - Moving the spray gun closer to the work piece Thinning the coating more.

RECORD OF TURBINE AND SPRAY GUN USE					
MODEL SERIAL # DATE PURCHASED					
DATE	HOURS OF USE	TOTAL HOURS			

Turbine Recommended Maintenance: Clean and/or change pre-filters and/or cartridge filters every 50 hours or when necessary. See Pg 9 for appropriate filter replacement for your model.

Spray Gun Recommended Maintenance: Check: Cup gasket, nozzle gasket, gland seal, air cap holes, nozzle/needle assembly every 50 hours or when necessary. Clean or replace parts as needed. Spray gun maintenance kit part #a.5256

RECORD OF TURBINE AND SPRAY GUN MAINTENANCE		
DATE MAINTENANCE PERFORMED		

## **DELUXE SPRAY GUN DIAGRAM 1**



#### A.5020 DIAGRAM 2





# 300D Turbine Parts List

Diagram #	Part #	Description	Quantity	
	Turbine			
1	A9008	Left End Plate	1	
2	A4029	Switch & Plate	1	
3	A4028	Power cord 8'	1	
4	A4053	Cable grommet	1	
5	A4051	Cable clamp	2	
6	A4318	6-32 x 1/2" phil. pan m/s plated.	5	
7	A4307	6-32 Hex M/S Nuts Plated.	3	
8	A4179	Insulated Wire terminal	2	
9	A4192	Crimp-on wire connector	1	
10	A4178	Ground Terminal - Large Eye	1	
11	A4180	Ground Terminal - Small Eye Connector	1	
12	A4500	6" piece of grounding wire 14 AWG	1	
13	A4350	1/4" x 20 x 2 3/4" full thread hex	4	
14	A4308	1/4" x 20 Hex Nuts	13	
15	A4349	1/4" X 20 length 7/8 Hex	3	
16	A4176	Spliced rubber gasket	1	
17	A4359	Bolt 1/4 x 20 x 3 1/2" half thread hex.	3	
18	A4164	3 stage, 5.7" tangential motor	1	
19	A4755	Female Adapter	1	
20	A4756	Male Turbine Adapter.	1	
21	A9006	Base	1	
22	A4315	#8 x 3/8" HWH sheet metal screw.	4	
23	A4177	Hose clamp size 28-1/2"	2	
24	A4176	Rubber hose, turbine exhaust	1	
25	A9009	Right End Plate	1	
26	A4300	1/4" SAE Flat Washer, Plated	14	
27	A4320	1/4" X 20 X 1/2" Hex Bolt Plated	6	
28	A9007SS	Cover/Top in Stainless Steel	1	
29	A9010	Carrying Handle	1	
30	A4345	5/16" handle cap	2	
31	A4098	6" X 4" 1 1/2" rectangle filter	2	
32	A4190	Pre-filter 3/8" X 2 1/4" X 19"	2	
33	A4094	6" X 4" rectangular top chrome	2	
34	A4310	1/4" X 20 cap nut plated.	8	
35	A9013	Front swivel wheel, no brake.	2	
36	A9014	Rear swivel wheel with brake.	2	

Diagram #	Part #	Description	Quantity
		Hose	
37	A2070	Female Quick Connector	2
38	A2161	5/8" brass hose adapter (male)	1
39	A2069	S.S. hose clip 7/8" O.D.	2
40	A2168	S.S. Hose clip 15/16" O.D.	2
41	A2155	5/8" brass air hose joiner	1
42	A2157	4 feet of flex hose, per foot	4
43	A2110	5/8" brass swivel air hose adapter (female)	1
44	A2167	20 feet of air hose, per foot.	20
45	A2111	Brass quick connect (male)	1



## A.4200 2-QUART POT DIAGRAM 4

Diagram #	Part #	Description	Quantity
1	A4601	Handle, 2 qt. p/pot	1
2	A4602	Handle lock nut	1
3	A4603	Fluid Outlet	1
4	A4604	2 Quart Cup top Casting	1
5	A4605	Check valve	1
6	A4606	Centerpost	1
7	A4607	Air regulator assembly	1
8	A4608	Relief valve stem	1
9	A4609	Cup top gasket	1
10	A4610	Material pickup tube, S.S.	1
11	A4611	2-quart cup with Teflon	1
12	A4612	Check valve spring	1
13	A4613	Check valve bracket	1
14	A4614	Check valve screw	1

## A.4113 2.5 GALLON POT DIAGRAM 5

Diagram #	Part #	Description	Quantity
1	A4901	Fluid Tank	1
2	A4902	Lid Assembly	1
3	A4903	Handle	1
4	A4904	Gasket	1
5	A4905	Material pickup tube	1
6	A4906	Material filter housing	1
7	A4907	Filter base	1
8	A4908	Material filter element	1
9	A4909	Snap ring	1
10	A4910	T-bolt	4
11	A4911	Washer	4
12	A4912	Wing nut	4
13	A4913	Pressure regulator	1
14	A4914	Pressure gauge	1
15	A4915	On/Off valve	1
16	A4916	3-way block	1
17	A4917	1/4" X 1/4" adapter	3
18	A4918	3-way block	1
19	A4919	Adapter	1
20	A4920	Nut	1
21	A4921	Steel ball	1
22	A4922	Needle Rod	1
23	A4923	Spring	1
24	A4924	Safety valve housing	1
25	A4925	Adapter	1
26	A4926	O-ring	1
27	A4927	Release Valve	1
28	A4928	Material outlet adapter	1
29	A4929	Adapter	1
30	A4930	Cotter pin	4
31	A4931	C-snap ring	8
32	A4932	Wrench	1



#### MODEL A.6000 SPRAY GUN

The economy models of USA-HVLP turbine spray systems are supplied with an excellent quality molded plastic spray gun with metal air cap, nozzle, needle, trigger and paint flow screw. The model A.6000 offers all of the performance features of the spray guns supplied with the standard and deluxe models.

We recommend that you read the main instruction booklet first, as the general rules for spraying as well as the basic operation of the spray guns are similar.

Here are the operating features for the A.6000 spray gun:

- 1. Locate the rubber cone. (1) Insert the small plastic tube through the large opening into the narrow end of the cone. Be sure to push the small plastic tube all the way to the end. Slip the adjustable clamp over the narrow end of the cone. Insert the cone into the large round opening on the back of the spray gun above the fluid adjusting screw (4). Push in firmly.
- 2. Take the quick disconnect coupler end of the air hose and insert it into the cone. Push it as far as it will go. (We have supplied a quick disconnect coupler onto the air hose should you choose to upgrade to the standard or deluxe spray gun in the future). Locate the adjustable clamp over the coupler. Tighten the adjusting screw until the clamp grips the coupler firmly. Your spray gun is now attached to the system.
- Loosen the lock ring (9). You will be able to rotate the air cap (8). There are three positions for the air cap. Horizontal, Vertical and 45°. Horizontal will produce a vertical fan pattern, Vertical will produce a horizontal fan pattern and 45° will produce a round pattern. There is a diagram located on the cup of your spray gun.
- 4. Unscrew the cup (clockwise) to remove from the body of the spray gun. Read and follow instructions on page (7) regarding selection of coating and how to properly thin the material.
- 5. Fill the paint cup with the desired amount of paint/coating. You do not have to fill it all the way. You may use any quantity of material.
- 6. Rotate the air cap to the desired pattern position. Hold the spray gun 4" to 6" from the surface you wish to spray. Turn the fluid adjusting screw (4) approximately 2 3 full turns.
- 7. Turn on the turbine unit. (Air will flow through the air cap). Pull the trigger all the way back and move the spray gun in an even steady motion from left to right. Adjust the distance of the spray gun from the work piece and the fluid adjusting screw to increase or decrease the amount of paint flowing from the spray gun.
- 8. It is important to remember to maintain an even distance from the work surface and a even speed as you "pass" across the work piece. (See diagram below).



9. Use the horizontal air cap position to spray across your work piece, use the vertical air cap position to spray up and down and use the round pattern for small narrow pieces such as the rungs on a chair, iron gates or fences, stair rails, etc. It is important to remember when switching to the round pattern to also reduce the amount of fluid feeding to the fluid tip.

10. There is no one position that is right or wrong for the spray gun. The same is true for how many turns on the fluid adjusting screw. You may move the spray gun as close as 1" from the surface if necessary and as far back as 10". The closer in you go, the smaller the pattern and the further back, the larger the pattern. The closer you go, the less fluid you need, the further back, the more fluid you need.

### SPRAY GUN MAINTENANCE AND CLEANING

- 1. You do not need to clean your spray gun every time you stop spraying. Either set the spray gun down carefully so as not to tip it over, or hang it by the hook provided on the spray gun. You should, however, clean your spray gun at the end of a work session or at the end of the day. It is not a good idea to leave material in the spray gun over night. Also, pay careful attention in keeping the cup threads clean, this includes the threads on the main gun body as well. Dried material on the threads can cause the cup to lock onto the surface making removal difficult.
- 2. When you have finished spraying, pour the remainder of your material out of the spray gun cup. Pour in a small amount of solvent or water. Use a cleaner that is compatible with the coating you just sprayed. Shake the spray gun gently. Wait about one minute and spray out the cleaner in the cup. To protect the environment, you can spray the cleaner into a container or into a large rag that you have wadded into a large ball.
- 3. If necessary, remove the Fluid tip (7) and nozzle washer (17). A standard wrench will fit the flanges on the fluid tip. Be careful not to loose or misplace the nozzle washer. Rinse with appropriate cleaner.
- 4. To remove the fluid needle assembly, turn the fluid adjusting screw (4) all the way counter (anti) clockwise until it comes out of the spray gun. Carefully remove the spring (3). Pull the needle assembly back towards you out of the spray gun. Wipe or rinse clean.
- 5. Wipe all exposed areas clean again giving special attention to the cup threads.
- 6. Although they might not need attention every time you spray, you should be aware of two additional important parts on your spray gun. One is the container gasket (11) and the fluid Needle Packing (13). The container gasket insures that the cup is properly sealed to the spray gun body, the cup is properly pressurized and no fluid leaks from the spray gun cup. Replace if necessary. The fluid needle packing (13) compresses around the fluid needle assembly to prevent fluid from leaking around the needle. This is adjusted by tightening ( or loosening) the needle packing screw (14). Be sure that this screw is not too tight as to not permit free movement of the needle assembly. Be sure that this screw is not too loose as to permit fluid to leak around the needle. Normally, this is preset at the factory and should need no adjustment. Replace fluid needle packing (13) when it becomes impossible to prevent leaking.
- 7. Store your spray gun for the next use.

You're A.6000 spray gun is supplied with a standard all purpose 1.8mm tip/needle assembly. This will cover most fluids that you will choose to spray with this spray gun. At this time, there are no additional tip/needle sizes available for the A.6000. If your needs become greater, you can upgrade to our standard or deluxe model spray guns from your distributor. These spray guns will offer additional variables that you may need as you become a more experienced sprayer.

## FOR PARTS, SERVICE OR TECHNICAL SUPPORT CONTACT





A.6000 SPRAY GUN