H·E·R·O Industries

2719 Lake City Way, Burnaby, BC, V5A 2Z6 ? P.O. Box 75, Custer WA 98240-0052 ? Phone: (604) 420-6543 Fax: (604) 420-8725

OPERATOR'S MANUAL

Model 1240
Model 1260
Model 2260

PROFESSIONAL CONTRACTOR PRODUCTS

Thank you for choosing HERO HVLP (High-Volume Low-Pressure) sprayers for your spraying needs. At HERO Industries, we take pride in our precision-engineered products and want you to obtain all the benefits that your HERO sprayer has to offer.

To ensure the proper use and maintenance of your HERO sprayer, please carefully read the information contained in this manual before using your system. Should you require any further information, please contact your nearest HERO distributor, or HERO directly for assistance - we will be pleased to assist you.

IMPORTANT: READ BEFORE USING

SAFETY PRECAUTIONS

?? CAUTION: Arcing parts. Keep the turbine at least 20 feet away from explosive vapors to avoid risk of fire or explosion.

?? Never spray flammable materials near any source of open flame or spark.

?? Always spray in a properly ventilated area.

?? Never point the spray gun at anyone.

?? Always wear a spray mask and protective eyewear when spraying toxic substances.

IMPORTANT OPERATING TIPS

?? For simple Operating Instructions and Painting Tips, please refer to the laminated card supplied with your system, attached to the handle of the turbine.

?? Most sprayable coatings must be diluted to be sprayed. Always follow the paint or coating manufacturer's instructions regarding thinning solvents and dilution ratios when preparing the coating to be sprayed.

?? Select the appropriate Needle, Fluid Tip and Air Cap based on the coating being sprayed, the film thickness required, and the application speed and finish required.

?? For optimum results, always test spraying distance, pattern size, coating thickness, Needle/Fluid Tip/ Air Cap combination and finish, on a sample of the surface to be coated.

?? When using a Cup Gun, do not turn the gun upside-down. The Pressure Feed Tube that pressurizes the paint cup is internal and if blocked, will prevent the pressurization of the paint cup.

?? Make sure you clean your spray gun after each use as outlined in this manual. Proper cleaning is essential to ensure the smooth operation of your system.

WARRANTY

?? Where applicable, please complete the enclosed warranty information card and return it to HERO Industries

CONTENTS

THE HERO HVLP ADVANTAGE

HERO Turbine-Powered HVLP Sprayers are powered by an electric turbine which supplies a consistent flow of **high volume, low pressure air** (4-6 PSI @ 95-130 CFM) to the spray gun to atomize the paint or coating (dye, lacquer, adhesive, etc.) being applied.

By spraying at low pressure, the coating does not bounce back from the surface as with conventional high pressure spraying systems powered by a pump or a compressor. As a result, HERO systems reduce paint consumption, virtually eliminate overspray, and offer a transfer efficiency of up to 90%, as compared to 30-40% with conventional systems! The end results are substantial savings in paint and operating costs, a cleaner, safer working environment and a superior quality finish.

HERO ® HVLP Paint Spraying Systems: Features, Advantages, and Benefits

?? HERO HVLP systems virtually eliminate overspray offering up to 90% transfer efficiency. Increased transfer efficiency provides for a cleaner working environment and drastically reduces paint and spray booth costs while saving time and energy.

?? HERO all-inclusive portable systems operate from a standard power outlet of 110v or 220v for increased versatility. With no compressor or complicated hook-up required, the user is free to paint virtually anywhere.

?? Simple design makes HERO systems easy to learn, use, and particularly maintain.

?? Solid construction of HERO products prevent downtime and assure durability and long life.

?? HERO guns contain few parts, making them easy to clean and limiting the need for replacement parts.

?? The warm, dry air generated by the turbine not only reduces drying time for most coatings, but eliminates the possibility of airline moisture and oil contaminants as well. As a result, HERO turbine-powered systems eliminate the need for costly airline maintenance equipment such as those required for compressor-powered systems.

?? All HERO systems use tangential turbines to provide the highest CFM (**C**ubic **F**eet per **M**inute) rating in the industry, thus offering the highest-quality finish.

?? Built-in Variable Speed Controllers on models 1235 and 1537 allow operator to adjust the speed of the turbine to deliver the minimum amount of air required to properly atomize the coating being applied, while maintaining the desired coating thickness and finish. This limits the amount of overspray and increases transfer efficiency.

Turbine-powered HVLP sprayers have literally changed the way people do spray finishing. Whether you are a professional or novice painter/finisher, we are confident that once you are familiar with your new HERO sprayer, you will enjoy the benefits of this professional tool for many years, and appreciate the ease and simplicity of its use.

GETTING STARTED

2.1 UNPACKING YOUR HERO SYSTEM

Unpack your new HERO system from the box. Ensure that all items are included with your system:

Cup-Fed Systems include: turbine, air hose and spray gun

Volume-Fed Systems With Built-In Compressors include: turbine, Lower Deck Fluid Delivery System (including paint tank), air hose, fluid line, and spray gun

Volume-Fed Systems For Use With Shop Compressors include: turbine, air hose, fluid line, paint tank (with regulator and pressure gauge), and spray gun

All systems can also be ordered with a Gun Accessory Kit. The Gun Accessory Kit includes a practical selection of (4) Needles, (4) Fluid Tips, (2) Air Caps, (1) gun cleaning brush, and (8) siphon tube paint filters. The Kit ensures the ability to spray virtually any sprayable coating and can be purchased for a reduced price at time of purchase of a complete system.

2.2 TESTING THE TURBINE

With the power switch in the OFF position, place the turbine as far away from the spray area as comfortably possible and plug into a standard power outlet (110V or 220V, as applicable). Verify that the turbine foam air filters are properly covering the motor air vents on either side of the turbine cabinet. Turn the turbine ON and ensure that air is blowing out the air outlet.

All HERO systems are equipped with a re-settable circuit breaker. If the turbine is not functioning properly, check your power supply and/or re-set the breaker switch on the face of the unit by pressing it once.

NOTE: Due to the high speed of the turbine (18,000 to 24,000 RPM) and the frictional forces this causes, it is normal for the turbine, hose and gun to heat up slightly during operation. Generally, the system will heat up and then remain at a constant temperature during use.

2.3 TESTING THE VARIABLE SPEED CONTROLLER (VSC)

The purpose of the Variable Speed Controller (VSC) is to determine the minimum amount of air volume required to atomize the coating being applied, while maintaining the desired coating thickness and finish. By using the VSC properly you will reduce overspray and increase transfer efficiency.

All HERO systems equipped with a VSC have a three way power switch: On/Off/On. When the switch is in the "up" position, the turbine will operate at maximum air volume. When the switch is in the "middle" position, the turbine is off. When the switch is in the "down" position, the air volume output of the turbine can be adjusted based on the coating being sprayed and the finish required.

Most coatings do not require maximum air volume to be atomized. When spraying non-viscous coatings (i.e.: stains, dyes, etc.) the air output can be reduced to eliminate over-atomization and unnecessary overspray. When spraying viscous coatings (i.e.: latex paint, multi-color, adhesives, etc.) the air output can be increased to provide a fine finish, or decreased to provide a textured finish.

2.4 CONNECTING THE HOSE TO THE TURBINE

With the power switch in the OFF position, uncoil the air hose and screw it hand-tight to the turbine air outlet.

Although the hose is designed for industrial use, it is not crushproof. Do not stand on the hose for extended periods. For information on wire-bound crushproof hoses, please contact your local HERO distributor or HERO directly. Also, the hose should never be used to pull the turbine or form a sharp angle at the air outlet – this can cause premature wear of the hose, restriction of the airflow and/or overheating of the hose.

2.5 CONNECTING THE SPRAY GUN AND TEST SPRAY

Always ensure that the gun is clean prior to being used. Any paint residue and/or particles left in the paint cup and/or fluid tubes from previous use can spoil a finish and possibly affect the performance of your sprayer.

Using the information provided in the Gun Accessory Kit or in Section 3.3 of this manual, determine whether the Needle, Fluid Tip and Air Cap combination in the gun is suitable as a starting point for your application. If not, refer to Section 3.3 of this manual for Needle, Fluid Tip and Air Cap selection, and Section 4.4 for instructions on Changing The Needle, Fluid Tip and Air Cap.

To install the hose on the gun, pull back the ring on the Quick Disconnect Coupler to connect it to the male tail piece on the end of the gun handle. If your unit is not equipped with a Quick Disconnect Coupler, connect the air hose to the gun by screwing it hand-tight to the male threads at the base of the handle of the gun.

For proper Testing Prior To Spraying, refer to Section 3.8 of this manual.

GENERAL OPERATING INSTRUCTIONS

3.1 OPERATING INSTRUCTIONS AND PAINTING TIPS

For the specific Operating Instructions and Painting Tips of your HERO sprayer, please refer to the laminated card attached to the turbine handle of your system. If this card is missing or has been lost, please contact your local HERO distributor or HERO directly, we will be pleased to mail, fax, or e-mail you a new copy.

The following general instructions are meant to be a guideline for success with your HERO sprayer. Although practice makes perfect, there are a number of books, videos and courses available on the market to help you further refine your knowledge and skills of spraying in general, should you wish to do so.

3.2 PAINT PREPARATION AND VISCOSITY CHART

Most sprayable coatings must be diluted to be sprayed. If so, always follow the paint or coating manufacturers' instructions regarding thinning solvents and dilution ratios when preparing the coating to be sprayed. Always mix and store your thinned material in a separate container, and label your containers based on original coating, thinning solvent used and percent dilution.

The thickness of a coating is defined by its "viscosity in seconds": "viscous coatings" are thicker materials; "non-viscous coatings" are thinner materials. To properly measure the viscosity of a coating, use the Zahn B viscosity cup supplied with your HERO sprayer.

1. Completely submerge the viscosity cup in the coating to be measured.
2. Lift the viscosity cup out of the coating and begin timing.
3. Measure the time in seconds until the first break in the stream of coating.
4. The time lapsed will determine the viscosity of the coating, i.e.: 25 seconds in a Zahn B.

Once you have prepared the estimated quantity of coating required, refer to Section 3.3 of this manual for information about Needle, Fluid Tip and Air Cap Selection based on the coating being sprayed and its viscosity, once diluted. Refer to Section 4.4 for information about Changing The Needle, Fluid Tip and Air Cap.

Once you have chosen and installed the appropriate size Needle, Fluid Tip and Air Cap, detach the paint cup from the gun, pour the diluted material (paint, coating, etc.) into the cup, and re-attach it to the gun. All material should be strained with a cone filter when poured into the paint cup and/or a Siphon Tube Paint Filter (included in Gun Accessory Kit) should be installed on the siphon tube.

For optimum results, always test coating viscosity, spraying distance, pattern size, film thickness, Needle/Fluid Tip/ Air Cap combination and finish, on a sample of the surface to be coated.

Viscosity Chart

Properties and thickness of coatings vary from one manufacturer to another. The following chart is **a guideline only**. Use these times as a guideline in determining the appropriate viscosity based on your spraying technique and finish standards. Some high solids coatings may exceed a reasonable viscosity and still be sprayable.

Material To Be Sprayed	Time To First Break In Stream
Acrylic Finishes	10-15 seconds
Acrylic Metallic	10-15 seconds
Acrylic Primer	20-40 seconds
Adhesives	40-60 seconds
Automotive Lacquer	20-30 seconds
Chromates	20-25 seconds
Dyes	10-20 seconds
Enamel	25-50 seconds
Hammer Finishes	30-40 seconds
Hard Gloss Synthetics	30-40 seconds
Imron	30-45 seconds
Lacquer	10-30 seconds
Latex	30-45 seconds
Marine Paint	30-45 seconds
Masonry Paint	30-50 seconds
Oil-bound Heavy-bodied Primers	35-40 seconds
Polyurethane Paint	20-40 seconds
Stains	10-20 seconds
Synthetic & Lacquer Metallic	20-25 seconds
Water Sealer	10-20 seconds

3.3 NEEDLE, FLUID TIP AND AIR CAP SELECTION

The proper Needle, Fluid Tip and Air Cap combination is critical to the optimal performance of any spraying system. Needles and Fluid Tips are sized together – when changing the Needle, the Fluid Tip must be changed as well. Air Caps are sized separately and can be changed without necessarily changing the Needle and Fluid Tip. HERO manufacturers seven different sizes of Needles and Fluid Tips ranging from 0.50mm to 3.0mm, and three different sizes of Air Caps.

Identifying Needle, Fluid Tip and Air Cap sizes

The size of a Needle can be determined by the number of annular grooves in the brass sleeve on the Needle. Every wide groove represents one millimeter, every narrow groove represents one-half of a millimeter, i.e.: a Needle with one wide groove and one narrow groove is a 1.5mm Needle; a Needle with two wide grooves is a 2.0mm Needle. The only Needle that differs from this is the 0.75mm, which has no grooves at all.

The size of the Fluid Tip can be determined by placing it on the tip of the Needle. If the tip of the Needle protrudes from the Fluid Tip, they do not match. When the Needle and Fluid Tip match, the Needle will be flush with the end of the Fluid Tip.

The size of the Air Cap is determined by the size of the center hole. Every Air Cap is stamped with number 1, 2, or 3 to indicate the range in size. The larger the center hole (No. 3), the greater the amount of atomizing air around the Fluid Tip. To ensure proper performance, ensure that the Air Cap hole is large enough to allow atomizing air to flow freely around the Air Cap, but not so large that it will create a distorted pattern. Trial and error is often the best way to select the appropriate Air Cap.

IMPORTANT: Needles and Fluid Tips are sized together – when changing the Needle, the Fluid Tip must be changed as well. Air Caps are sized separately and can be changed without necessarily changing the Needle and Fluid Tip.

Selecting The Proper Needle, Fluid Tip, And Air Cap Combination

To select the proper Needle and Fluid Tip, start with the Needle And Fluid Tip Selection Chart later in this section. Needles and Fluid Tips range in size and should be selected based on the viscosity of the coating being applied and the finish and application speed required. For non-viscous materials (thin viscosity), select a smaller size Needle and Fluid Tip. For viscous materials (thick viscosity), select a larger size Needle and Fluid Tip. For best results, use the Needle and Fluid Tip that performs best with the trigger of the gun fully engaged.

To select the proper Air Cap, consider the size of the Needle and Fluid Tip, and finish required. The size of the Air Cap is determined by the size of its center hole. In order for the air to atomize the coating, the hole in the center of the Air Cap must be large enough to allow air to flow freely around the Fluid Tip. Depending on the size of the Fluid Tip, you may have a choice of Air Caps: using a larger size Air Cap may eliminate more overspray (mist), however using a smaller size Air Cap may produce a finer finish.

For information about testing your Needle/Fluid Tip/Air Cap combination, refer to Section 3.8 of this manual – Testing Prior To Spraying.

Needle And Fluid Tip Selection Chart

Material	Viscosity	Needle and Fluid Tip
Wood Stains, Lacquers, Automotive, Cellulose, Synthetics, Acrylic, Oil	0-20 sec	0.50 - 0.75mm
Polyurethane, Glitter Paints, Cellulose, Acrylics, Synthetics, Lacquers, Fluorescents, Wood Stains, Creosote, Wood Primer, Multi-Color, Latex	20-30 sec	1.00 – 1.50mm
Oil Base, Latex, Hammers, Oxides, Primers, Marine Paint, Varnish, Enamels, Multi-Color, Industrial Synthetics	30-35 sec	1.50 – 2.00mm
Emulsions, Oxides, Chlorinated Rubber, Zinc Rich Primers, Polyurethanes, Adhesives, Latex	35-40 sec	2.00 – 2.50mm
Hammers, Latex, Oil Base Primers, Enamels, Marine, Masonry Paints, Texture Coatings, Heavy Primers, Water and Solvent Based Adhesives	40+ sec	2.50 – 3.00mm

3.4 SURFACE PREPARATION

Ensure that the surface you are spraying is clean, dry, and free from dust, oil, grease or any other contaminant. A dirty or greasy surface will affect adhesion, can spoil a finish and is very difficult to correct once sprayed. If possible, always clean the surface with a tack rag to remove any dust or lint. Do not wipe the surface with your hand – body oil may stay on the part and ruin the surface preparation.

3.5 OPERATING THE TURBINE

All HERO turbines are very simple to operate.

Single Speed Turbines are equipped with a standard two-way power switch: On/Off.

Variable Speed Turbines are equipped with a three-way power switch: On/Off/On. When the switch is in the "up" position, the turbine will operate at maximum air volume. When the switch is in the "middle" position, the turbine is off. When the switch is in the "down" position, the air volume output of the turbine can be adjusted based on the coating being sprayed and the finish required. For further information on the Variable Speed Controller, please refer to Section 2.3 of this manual.

All HERO turbines are equipped with a re-settable circuit breaker. If the turbine is not functioning properly, check your power supply and/or re-set the breaker switch on the face of the unit by pressing it once.

NOTE: Due to the high speed of the turbine (18,000 to 24,000 RPM) and the frictional forces this causes, it is normal for the turbine, hose and gun to heat up slightly during operation. Generally, the system will heat up and then remain at a constant temperature during use.

3.6 SPRAY GUN TERMINOLOGY

3.7 OPERATING THE SPRAY GUN

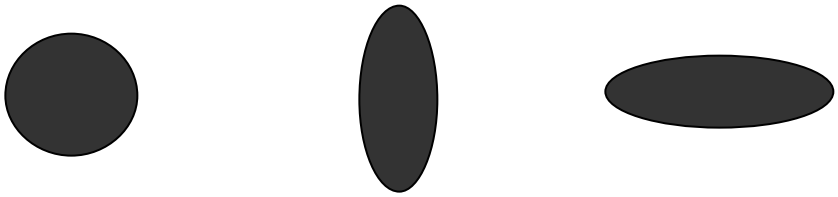
Fill the cup as necessary (up to the shoulder maximum) with the properly diluted paint or coating. Do not overfill the cup as this may cause leakage or may block the air pressure holes and prevent pressurization of the cup.

Spray Pattern Selection

To select the desired spray pattern, rotate the Air Cap at the front of the gun. When Air Cap is in the diagonal position, the spray pattern will be round; when in the horizontal position, the spray pattern will be vertical; and when in the vertical position, the spray pattern will be horizontal.

Air Cap Position

Spray Pattern



To adjust the size of the pattern when spraying with a "S" gun (11CS or 11PS: Spring Loaded Air Cap), turn the Sleeve Nut on the front of the gun, and lock it in place with the Locking Ring once the proper size has been determined. To adjust the size of the pattern when spraying with a Fixed Air Cap Gun (10C, 11C, or 11P), use the Material Flow Adjustment Screw as a means of adjusting the pattern size. If this is not adequate, upgrade to a "S" gun for finer control.

CAUTION: When adjusting the size of the spray pattern with a "S" gun, moving the Air Cap too close to the Fluid Tip may cause an undesirable figure-8 pattern; moving the Air Cap too far from the Fluid Tip will eventually prevent spraying altogether.

To Begin Spraying

Switch the turbine power switch to the ON position.

To control the thickness of the coat being applied, slowly turn the Material Flow Adjustment Screw (at rear of gun) counter-clockwise while squeezing the trigger of the gun. Continue turning the screw until the appropriate material flow has been achieved to provide the desired coating thickness and finish. For best results, select the Needle, Fluid Tip and Air Cap combination that allows you to have the trigger fully engaged.

Maintain a consistent distance of 6-8 inches from the surface and spray in a smooth continuous motion.

The direction of the spraying motion should be based on the spray pattern chosen: when spraying a horizontal pattern, the direction should be up and down; when spraying a vertical pattern, the direction should be left to right or right to left; when spraying a round pattern, the direction can be either.

CAUTION: Once you have filled the spray gun, it is important to keep the gun upright. You may tilt the gun as necessary to spray a ceiling or table top for example, but note that the Pressure Feed Tube that pressurizes the paint cup is internal. Do not turn the **gun on it side or upside down** when there is paint in the cup as the paint may block the air holes and prevent the pressurization of the paint cup.

3.8 TESTING PRIOR TO SPRAYING

?? For optimum results, always test coating viscosity, spraying distance, pattern size, film thickness, Needle/Fluid Tip/ Air Cap combination and finish, on a sample of the surface to be coated.

?? **To test the proper application speed** (speed of your hand), spray one pass on a sample of the surface to be coated at a consistent speed. Examine the sprayed coating: if there appears to be space between the droplets of paint, slow down your application speed; if individual droplets are not visible and the film seems even, note the application speed and maintain it throughout use.

?? **To test the Needle/Fluid Tip/Air Cap combination and to ensure even film thickness** (coat of material being applied), use the Horizontal Spray Pattern Test:

Horizontal Spay Pattern Test

1. Turn the Air Cap to the vertical position – this will spray a horizontal pattern.
2. Maintaining the distance of 6-8" from the surface, squeeze the trigger and spray a horizontal pattern on the same spot until the material has built up enough to sag.
3. Release the trigger and point the gun away from the surface.
4. Repeat steps 1-3 about three to five times in different areas of the test piece.

Watch the material sag and see if it runs (drips) evenly across the spray pattern. If so, your Needle, Fluid Tip and Air Cap combination are correct. If not, identify a common problem with all the test patterns sprayed and refer to the following troubleshooting chart:

Problem	**Solution**
?? Coating is running/dripping from the center of the pattern	?? Air Cap may be too large: try smaller size Air Cap
?? Coating is running/dripping from the extremities of the pattern	?? Air Cap may be too small: try larger size Air Cap
?? Pattern is in the form of a figure 8	?? Air Cap may be too small: try larger size Air Cap ?? Air Cap may be too close to the Fluid Tip: turn the Sleeve Nut slightly to move Air Cap further from Fluid Tip

Even Drip Figure 8

Running/Dripping From Extremities Running/Dripping From Center

3.9 BASIC SPRAYING TECHNIQUES

?? For applications where thicker coats are required and finish quality is critical, consider applying two thinner coats. The reduction in paint consumption and drying time when spraying with HERO systems often justifies the additional step.

?? Hold the gun perpendicular to the surface being sprayed, maintain a consistent distance from the surface (approx. 6-8"/15-20cm), and spray with a smooth continuous motion.

?? Overlap strokes up to 50% to ensure proper coverage and avoid streaks.

?? Select the Needle and Fluid Tip that performs best with the trigger of the gun fully engaged.

?? When spraying odd shaped objects, spray hard to reach areas, curved surfaces, and corners and edges first, spray flat surfaces second.

?? When spraying an edge or corner, split the center of the spray pattern on the corner or edge so that each side receives 50% of the spray pattern and equal amounts of paint.

Correct Application Technique

Incorrect Application Technique

Overlap strokes up to 50% to ensure proper coverage and avoid streaks:

When spraying an edge or corner, split the center of the spray pattern on the corner or edge so that each side receives 50% of the spray pattern and equal amounts of paint:

CLEANING AND MAINTENANCE

4.1 BASIC CLEAN UP

If you are taking a break or plan to spray the same material again within a reasonable time:

1. Turn off the turbine and disconnect the gun from the hose.
2. Turn the Material Flow Adjustment Screw at the back of the gun clockwise until it stops and clean any excess coating remaining on the Fluid Tip. This will ensure that the Needle closes the Fluid Tip air tight, allowing you, depending on the coating, to leave the material in the cup for extended periods.

When you are finished your spraying project:

1. Remove the paint cup from the gun. While removing the cup, squeeze the trigger on the gun to release all the paint from the siphon tube back into the cup.
2. Empty the excess material from the paint cup and clean the paint cup with an appropriate cleaning solvent.
3. Pour some cleaning solvent in the clean paint cup and spray it with the gun into a bucket until the spray is clear.
4. To clean the underside of the Paint Cup Top, either shake the gun while spraying the cleaning solvent, or use a paintbrush with cleaning solvent and brush it clean.
5. Clean the Air Cap and the outside of the gun as necessary with a rag and cleaning solvent.

After spraying an adhesive, a catalyzed coating, or any other material that is known to be difficult to clean, refer to Section 4.3 of this manual: Complete Disassembly And Cleaning Of Spray Gun.

Once cleaning is complete, dispose of used cleaning solvent and dirty rags in a safe and environmentally friendly way.

4.2 MAINTAINING THE TURBINE AIR FILTERS

The motor inside the turbine cabinet draws large amounts of air volume. It is therefore very important to check the turbine foam air filters after every use. Depending on the location of the turbine, these filters may require some form of cleaning after every use.

The turbine foam air filters can be easily removed from the back of the turbine and are washable. Once the pores are permanently blocked or begin to visibly deteriorate, the filters should be changed.

When re-installing filters, be sure they properly cover the motor air vents visible from either side of the turbine cabinet.

WARNING: Do not put wet filters in the turbine - this may cause electrical shock and/or premature wear of the turbine. Do not operate your turbine without the foam air filters.

4.3 COMPLETE DISASSEMBLY AND CLEANING OF SPRAY GUN

Periodically, especially after spraying an adhesive, a catalyzed coating, or any other material that is known to be difficult to clean, HERO recommends that you completely disassemble your gun and clean each part individually. If necessary, contact your local HERO distributor or HERO directly for a parts breakdown of your gun, or for any help when completely disassembling and re-assembling your gun.

Tools required: ratchet, 1/2" and 5/8" sockets, 5/8" and 7/16" combination wrenches, and a Gun Cleaning Brush

To Clean And Disassemble The Gun:

For Pressure-Fed Guns without a paint cup, flush the gun with cleaning solvent and go directly to Step 7:

1. Remove the paint cup from the gun. While removing the cup, squeeze the trigger on the gun to release all the paint from the siphon tube back into the cup.
2. Empty the excess material from the paint cup and clean the paint cup with an appropriate cleaning solvent.
3. Pour some cleaning solvent in the clean paint cup and spray it with the gun into a bucket until the spray is clear. Remove the paint cup from the gun.
4. Using the closed end of a 5/8" combination wrench, remove the Siphon Tube Locking Nut located under the Paint Cup Top.
5. Remove the Splash Guard (square piece of aluminum with two holes in it and a cut corner).
6. Using a 5/8" socket and a ratchet, remove the Siphon Tube Extension – this will allow you to completely remove the Paint Cup Top Assembly.
7. Completely unscrew the Material Flow Adjustment Screw at the back of the gun and remove the Spring and Needle – if necessary, squeeze the trigger to help remove the Needle.
8. Using the opened end of a 7/16" combination wrench, remove the Gland Nut located directly in front of the trigger, and remove the Gland Seal.
9. Completely unscrew the Sleeve Nut on the barrel of the gun and remove the Air Cap, Air Distributor, and Air Distributor Spring (Air Cap only on models without Floating Air Cap).
10. Using a 1/2" socket and a ratchet, remove the Fluid Tip.

To Clean Parts Individually And Replace Gaskets:

1. Soak all dirty parts in clean cleaning solvent (Fluid Tip, tip of Needle, Siphon Tube Extension, Splash Guard, etc.). If necessary, soak the entire Gun Body.
2. Using the Gun Cleaning Brush, clean the inside of the Siphon Tube, Siphon Tube Extension, and all Fluid Passages.
3. Remove the Cup Top Gasket. Using the Gun Cleaning Brush, a paintbrush (if necessary), and cleaning solvent, clean the underside of the Paint Cup Top, and install a new Cup Top Gasket.
4. When re-assembling the Paint Cup Top Assembly, be sure that the Air Pressure Feed Tube protruding from the Gun Body is not blocked, and install a new Cup Top Washer between the Cup Top and the Gun Body.
5. Before re-installing the Gland Nut, install a new Gland Seal to seal the fluid passage – ensure that the Gland Seal is seated properly before installing the Gland Nut. If not properly installed, this may cause leaking between the Gland Nut and the Needle directly in front of the gun trigger.

Do not use hardened needles or picks to clean the holes of the Fluid Tip or the Air Cap. This may

enlarge the holes of these critical parts and affect the performance of your system when used.

When re-assembling the gun, it is recommended to apply **a little** white grease or petroleum jelly on all threaded and tight tolerance parts: Material Flow Adjustment Screw and Spring; Air Distributor; Sleeve Nut; tip of Needle.

4.4 CHANGING THE NEEDLE, FLUID TIP AND AIR CAP

Select the Needle, Fluid Tip and Air Cap combination based on the coating being sprayed, the application speed and finish required. Select the combination that performs best with the trigger fully engaged.

Needles and Fluid Tips are sized together – when changing the Needle, the Fluid Tip must be changed as well. Air Caps are sized separately and can be changed without changing the Needle and Fluid Tip:

1. **To Change The Needle:** Completely unscrew the Material Flow Adjustment Screw at the back of the gun and remove the Spring and Needle – if necessary, squeeze the trigger to help remove the Needle.
2. **To Change The Fluid Tip:** Completely unscrew the Sleeve Nut on the barrel of the gun and remove the Air Cap, Air Distributor, and Air Distributor Spring (Air Cap only on models without Floating Air Cap). Using a 1/2" socket and a ratchet, remove the Fluid Tip.
3. **To Change The Air Cap:** Completely unscrew the Sleeve Nut on the barrel of the gun and remove the Air Cap, Air Distributor, and Air Distributor Spring (Air Cap only on models without Floating Air Cap).

To re-install the Air Distributor after changing the Fluid Tip and/or Air Cap:

1. Place the Air Distributor Spring in the barrel of the gun.
2. Place the Air Distributor on the Air Distributor Spring with the recessed side inward, and the ball guide lined up with the groove in the Distributor Housing.
3. Press the Air Distributor into the Distributor Housing, making sure that the ball guide is sliding into the groove in the Distributor Housing, and hold it in place.
4. Slide the Air Cap over the Air Distributor, and hold it in place.
5. Place the Sleeve Nut on your index finger. Use the tip of the same index finger to hold the Air Cap on the Air Distributor and screw the Sleeve Nut in place.

4.5 REPLACING THE CUP TOP GASKET

The Cup Top Gasket on the underside of the Cup Top should be replaced periodically as part of preventive maintenance. A worn Cup Top Gasket can be the cause of material leaking from the paint cup and/or bubbling under the paint cup top when the gun is in use.

To Replace The Cup Top Gasket:

1. Remove the Paint Cup from the gun.
2. Remove the Cup Top Gasket using a pointed object or screwdriver.
3. Replace with a new gasket, making sure it is placed flat and properly pressed in place.

4.6 REPLACING THE GLAND SEAL

The Gland Seal is located behind the Gland Nut directly in front of the gun trigger and should be replaced periodically as part of preventive maintenance. A worn Gland Seal can be the cause of leaking between the Gland Nut and the Needle directly in front of the trigger. If leaking occurs, try tightening the Gland Nut before changing the Gland Seal.

To Replace The Gland Seal:

1. Remove the Material Flow Adjustment Screw, Spring and Needle from the back of the gun.
2. Using the opened end of a 7/16" combination wrench, remove the Gland Nut.
3. Being careful not to damage the threads of the gland nut chamber, remove the Gland Seal using a hardened needle or pick.
4. Replace the Gland Seal and re-install the Gland Nut.
5. Re-install the Needle, Spring and Material Flow Adjustment Screw.

Tighten the Gland Nut as much as possible without restricting the free movement of the trigger. If the gun continues to spray after the trigger is released, the gland nut is too tight. If material leaks out between the Gland Nut and the Needle directly in front of the trigger, the gland nut is too loose. Adjust accordingly.

TROUBLE SHOOTING

5.1 BASIC TROUBLESHOOTING CHART

Problem	Probable Cause	Solution(s)
Turbine not working at all	A. No power to the turbine B. Re-settable breaker has been activated	A. Check power outlet/socket B. Re-set breaker on face of turbine by pressing it once
Low Air Flow	A. Filters are blocked B. Turbine air vents are obstructed C. Kink in hose D. Broken or damaged hose E. Motor mounts broken F. Motor outlet leaking air: gasket is worn	A. Clean or replace filters as necessary B. Allow air to flow freely around turbine C. Remove kink and straighten hose D. Inspect hose: repair or replace if necessary E. Open turbine cabinet and inspect: replace if possible or contact HERO F. Open turbine cabinet and inspect: replace if possible or contact HERO
Turbine/Hose/Gun Overheating	A. Ambient air is hot B. Turbine foam filters are blocked C. Turbine air vents are obstructed D. Due to speed of turbine motor, system normally gets warm	A. Use in cooler environment if possible B. Clean or replace filters as necessary C. Allow air to flow freely around turbine D. Additional lengths of hose will reduce heat build-up in gun ?? Wear gloves
Uneven Spray Pattern	A. Air Cap holes plugged B. Dry paint on Fluid Tip C. Incorrect Needle/Fluid Tip/ Air Cap combination D. "Figure 8": Air Cap too close to Fluid Tip	A. Clean or replace Air Cap as necessary B. Clean Fluid Tip and continue spraying C. See Sec. 3.3 for proper selection, and Sec. 3.8 for proper testing D. Turn Sleeve Nut counter-clockwise to move Air Cap away from Fluid Tip
Fluid Leaking From Paint Cup and/or Bubbling In Paint Cup	A. Cup Top Gasket not sealing properly	A. Tighten cup or see Sec. 4.5, Replacing Cup Top Gasket
Fluid Leaking Between Gland Nut And Needle Directly In Front Of Trigger	A. Gland Nut too loose B. Gland Seal worn out	A. Tighten Gland Nut B. See Sec. 4.6, Replacing Gland Seal

5.1 BASIC TROUBLESHOOTING CHART (Continued)

Problem	Probable Cause	Solution(s)
Not Spraying At All or Inconsistent Material Flow (spitting) With A Cup Gun	A. Air Cap too far from Fluid Tip	A. Turn Sleeve Nut clockwise to move Air Cap closer to Fluid Tip
	B. Dry paint on end of Fluid Tip	B. Clean Fluid Tip and continue spraying
	C. Coating is too thick: not enough pressure to pump from cup to Fluid Tip	C. Add more thinning solvent if possible
	D. Foreign/unwanted particles in the coating	D. Empty cup; clean gun (see Basic Clean Up, Sec. 4.1); properly filter material when pouring back into cup
	E. Air Pressure Feed Tube blocked: preventing pressurization of paint cup	E. See Sec. 4.3, Complete Disassembly and Cleaning Of Spray Gun
	F. Cup Top Gasket not sealing properly	F. Tighten cup or see Sec. 4.5, Replacing Cup Top Gasket
	G. Not enough paint in cup	G. Check level and add
Not Spraying At All or Inconsistent Material Flow (spitting) With A Pressure-Fed Gun	A. Air Cap too far from Fluid Tip	A. Turn Sleeve Nut clockwise to move Air Cap closer to Fluid Tip
	B. Dry paint on end of Fluid Tip	B. Clean Fluid Tip and continue spraying
	C. Insufficient pressure in paint tank	C. Increase pressure in paint tank
	D. Fluid Line blocked	D. Disconnect Fluid Line from gun and increase air pressure in tank to flush hose.
	E. Fluid Line kinked	E. Remove kink and straighten as necessary
	F. Paint Tank not properly sealed	F. Tighten Wing Nuts on paint tank or replace gasket if necessary
	G. Not enough paint in tank	G. Check level and add
Paint Leaking From Fluid Tip	A. Damaged Needle and/or Fluid Tip	A. Check and replace if necessary
	B. Gland Nut too tight	B. Loosen Gland Nut
Excessive Overspray	A. Too much air volume for the coating being sprayed	A. Use Variable Speed Controller to reduce air volume output of turbine
	B. Spraying too far from the surface	B. Spray 6-8” from the surface to be coated

5.2 TROUBLESHOOTING FINISH PROBLEMS

Problem	Probable Cause	Solution(s)
Runs or Sags	A. Coating has been over-diluted	A. Add undiluted material and mix thoroughly; flush gun with new mixture
	B. Application speed too slow	B. Increase application speed
	C. Improper overlapping	C. Overlap passes by up to 50%
	D. Needle and Fluid Tip too large	D. Check material viscosity; refer to Sec. 3.3 for proper selection
	E. Film thickness is too thick for one coat	E. Consider spraying too thinner coats
	F. Gun too close to surface	F. Spray 6-8" from the surface to be coated
	G. Insufficient atomizing air	G. Increase turbine air volume output using VSC; experiment with different Air Caps
"Orange Peel": Finish has the texture of an orange peel. A dimpled appearance, often very glossy.	A. Insufficient dilution	A. Check viscosity; add thinning solvent
	B. Incorrect thinning solvent: solvent is evaporating too fast	B. Use slower thinning solvent or retarder
	C. Gun too far from surface	C. Spray 6-8" from the surface
	D. Film thickness is too thin	D. Apply a "wetter" coat
	E. Incorrect amount of atomizing air	E. Adjust turbine air volume output using VSC; experiment with different Air Caps
	F. Ambient air temperature too high	F. Reduce air temperature in spray area and/or add retarder to coating being applied
"Fish Eyes": Small round depressions in the paint film. Normally form as soon as part is sprayed.	A. Contaminant on the surface (oil, moisture) preventing the coating from adhering to the surface in certain spots	A. Very difficult to correct once surface is sprayed. Ensure that surface is clean, dry and free from any contaminants prior to spraying
"Dry Spray": Surface is dull and rough. Dry paint particles protruding from, or sitting on surface. Unlike Orange Peel, Dry Spray is always low in gloss.	A. Gun too far from surface	A. Spray 6-8" from the surface
	B. Incorrect amount of atomizing air	B. Adjust turbine air volume output using VSC; experiment with different Air Caps
	C. Incorrect thinning solvent: solvent is evaporating too fast	C. Use slower thinning solvent or retarder
	D. Film thickness is too thin	D. Apply a "wetter" coat
	E. Application speed too fast	E. Slow down speed of motion
"Blushing": Large whitish areas in the finish	A. High humidity in the spray area: moisture has condensed in the coating as it was being sprayed.	A. Reduce humidity in spray area and/or add retarder to coating being sprayed
	B. Incorrect thinning solvent: solvent is evaporating too fast	B. Use slower thinning solvent or retarder
For all other problems, please contact your local HERO distributor or HERO directly		

OPTIONS AND ACCESSORIES

6.1 CUP-FED SYSTEMS

Cup-Fed Systems include a turbine, air hose and cup-fed spray gun. The guns with these systems are supplied with a 1 Qt/L paint cup and are ideal for spraying applications where versatility and portability are essential.

6.2 VOLUME-FED SYSTEMS WITH BUILT-IN COMPRESSORS

Volume-Fed Systems With Built-In Compressors include a turbine, Lower Deck Fluid Delivery System (including paint tank), air hose, fluid line, and pressure-fed spray gun. The pressure-fed guns supplied with these systems are designed for use with a paint tank supplying the material directly to the gun. The built-in compressor pressurizes the paint tank and pumps the material directly to the gun.

These systems are ideal for large volume spraying applications where a cup-fed gun is not practical, yet versatility and portability are essential. Note that these systems are modular and that the gun can be converted to a cup-fed gun and used with the turbine and air hose as a cup-fed system.

6.3 VOLUME-FED SYSTEMS FOR USE WITH SHOP COMPRESSORS

Volume-Fed Systems For Use With Shop Compressors include a turbine, air hose, fluid line, paint tank (with regulator and pressure gauge), and pressure-fed spray gun. The pressure-fed guns supplied with these systems are designed for use with a paint tank supplying the material directly to the gun. The regulator and pressure gauge on the paint tank supplied with these systems allows for pressurization of the tank with an existing shop compressor.

These systems are ideal for large volume spraying applications where a cup-fed gun is not practical, and compressed air is already available. Note that the gun can be converted to a cup-fed gun and used with the turbine and air hose as a cup-fed system.

6.4 NEEDLES, FLUID TIPS AND AIR CAPS

The proper Needle, Fluid Tip and Air Cap combination is critical to the optimal performance of any spraying system. Needles and Fluid Tips are sized together – when changing the Needle, the Fluid Tip must be changed as well. Air Caps are sized separately and can be changed without necessarily changing the Needle and Fluid Tip.

HERO manufacturers seven different sizes of Needles and Fluid Tips ranging from 0.50mm to 3.0mm, and three different sizes of Air Caps. For more information about Needles, Fluid Tips, and Air Caps, and how to select the proper combination for your application, refer to Section 3.3 of this Manual.

6.5 GUN EXTENSION WANDS, TOUCH-UP CUP KIT AND OTHER ACCESSORIES

Gun Extension Wands
For ease of use when spraying in hard to reach areas, ceilings, floors, decks, etc., Gun Extension Wands can be installed on any HERO gun with a spring loaded air cap. Wands are available in 12", 18", and 24" lengths. Specify the required Needle size when ordering – additional Needles can also be ordered as necessary.

Touch-Up Kit
When the 1 Qt/L cup on the cup-fed gun is too large, a Touch-Up Cup Kit can be installed on any HERO gun. The touch-up cup is the size of a spice jar and completely replaces the standard Cup Top Assembly and paint cup. The Touch-Up Kit allows the user to spray small quantities of material with the same gun as usual, without wasting material in a large cup.

2 Qt/L Paint Cup
When the 1Qt/L cup on the cup-fed gun is too small, a remote 2 Qt/L cup can be installed on any HERO gun. The 2 Qt/L cup can be pressurized by the turbine or by a compressor – the possibility of pressurizing with the turbine is dependent on the coating being sprayed. Remote 2 Qt/L cups are supplied with a Gun Conversion Kit (to convert from Cup-Fed Gun to Pressure-Fed Gun), 4' air hose (from 2 Qt/L cup to gun), 4 ½' fluid line (from 2 Qt/L cup to gun), and a shoulder strap.

Gun Accessory Kit
HERO Gun Accessory Kits are a practical selection (4 different sizes) of Needles, Fluid Tips, and Air Caps to ensure the ability to spray virtually any sprayable coating. Kits also include a Gun Cleaning Brush and (8) Siphon Tube Paint Filters.

Having a selection of accessories available has proven to be the difference between satisfaction and frustration when using any spraying system. Gun Accessory Kits can be purchased at a reduced price at time of purchase of a complete system, or as a separate item later on.

6.6 REPLACEMENT PARTS AND TECHNICAL SPECIFICATIONS

For up-to-date parts breakdowns of any HERO product and/or technical specifications other than those listed in HERO's literature, please contact your local HERO distributor or HERO directly – we will be pleased to assist you.

WARRANTY INFORMATION

LIMITED WARRANTY

HERO Industries warrants to the original purchaser that the HERO equipment described in this manual will be free of defects in materials and workmanship for a period of ONE (1) YEAR from the date of purchase. HERO Industries' only obligation shall be to repair or replace, at HERO's option, such product proved to be defective during the warranty period. This warranty is subject to the timely notification and substantiation that such products have been stored, maintained and used in accordance with the HERO Industries written instructions. A proof of purchase is required for all warranty claims.

Customers returning goods to HERO Industries or an authorized service center for warranty claims will be asked to prepay freight charges within reason. Goods returned to HERO Industries or an authorized service center for repair or maintenance must be clean and free from paint to allow for inspection. Should any equipment require cleaning, a charge will be made whether or not under warranty. Failure to change filters as needed and the use of parts other than genuine HERO replacement parts that cause damage to the unit will void the warranty.

All statements, technical information and recommendations enclosed are based upon tests that HERO considers reliable. However, neither the seller nor the manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising from the use of the product or the inability to use the product. Before use, users shall determine the suitability of the product for his/her intended use. The user assumes all risk and liability whatsoever in the use or failure to use the product, whether due to a product defect or not. HERO Industries' only obligation shall be to replace or repair, at its option, the quantity of product proved to be defective and any consequential damages shall be limited to the volume of the HERO equipment purchased.

Except where prohibited by law, this warranty is exclusive and is in lieu of all expressed or implied rights, warranties and conditions, statutory or otherwise.

For further information, please contact HERO directly at:

Canada (Head Office):
2719 Lake City Way
Burnaby, BC Canada
V5A 2Z6

Tel: (604) 420-6543
Fax: (604) 420-8725
E-mail: sales@hero.ca
Internet: http://www.hero.ca

United States (Mailing Only):
P.O. Box 75
Custer, Washington USA
98240-0075

Tel: 1-800-494-4376