



HVLP
HIGH VOLUME LOW PRESSURE

FINE FINISH PAINT SPRAYER
OPERATORS MANUAL

DO NOT USE EQUIPMENT BEFORE READING THIS MANUAL



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

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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

FIRE OR EXPLOSION HAZARD

FLUID SECTION - SOLVENTS

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 Halogenated 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

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

1. The presence of HHC solvents
2. Aluminum or galvanized parts
3. 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

Ethylene Dichloride

BROMINATED SOLVENTS:

Ethylene Dibromide

Methylene chlorobromide

Methyl bromine

TRICHLOROETHANE:

Trichloroethylene

Monochlorotoluene

Chlorine (CL) “-chloro-”

Iodine (I) “-iodo-”

METHYLENE CHLORIDE OR

DICHLOROMOETHANE

Monochlorobenzene

Orthodichlorobenzene

Parchloroethylene

IODINATED SOLVENTS:

N-butyl iodide

Methyl iodide

Ethyl iodide

Propyl iodide

FINISH MAX SPRAY FINISHING SYSTEMS

CONGRATULATIONS!! You have just purchased the finest HVLP air turbine system available. You are about to enjoy the great benefits of the **FINISH MAX** system. 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 **FINISH MAX** spray system.

INSTRUCTIONS

Check the contents of your box. The following are included:

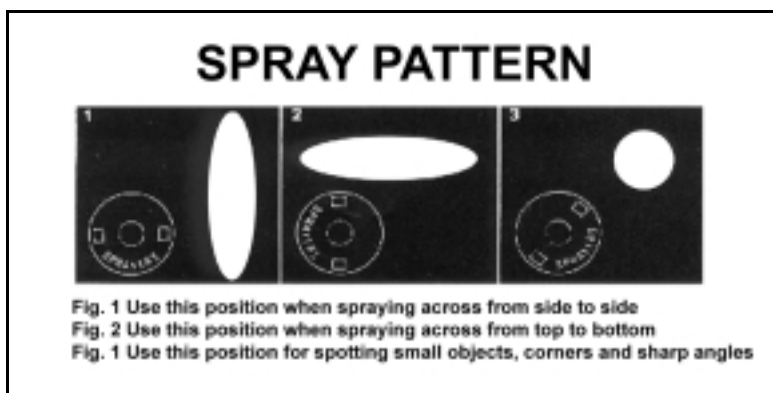
- Turbine unit
- Spray Gun
- Air hose
- instruction Manual

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 **FINISH MAX** 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 (over spray) 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 # MX-4227). When using only one spray gun, always be sure that one outlet is capped.

HOW YOUR SPRAY GUN WORKS

Finish Max 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.



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.

**MAX-5005
PRESSURE FEED GUN**



**MAX-5010
SIPHON GUN WITH 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. 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 North America 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 FINISH MAX SPRAY GUN

Cup Guns: On **FINISH MAX** guns with 1 quart cups, 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 screw (#18) anti- or counter-clockwise to open or release more fluid, clockwise to reduce or close 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 **FINISH MAX** 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 **FINISH MAX** spray equipment.

USING YOUR FINISH MAX SPRAY GUN

Your **FINISH MAX** 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 **FINISH MAX** 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.

PRACTICE:

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 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 below).

CHART A TURBINE PERFORMANCE

<u>TURBINE SIZE</u>	<u>UNRESTRICTED PRESSURE</u>	<u>COATING TYPES</u>
3 STAGE	5.5PSI	Light-Medium Viscosity Materials
4 STAGE	8.0PSI	Light-Heavy Viscosity Materials

HVLP Turbine Properties

Each **FINISH MAX** 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.

CHART B NOZZLE, NEEDLE AND AIR CAPS

TIP/NEEDLE SIZE	APPLICATION	AIR CAP
.75MM (.0295)(#1)	Inks, Dyes, Stains, extremely thin viscosity fluids, Water based finishes	(A) MX-5201
1.0MM (.039) (#2)	All purpose, thin lacquers, thin enamels, Water based finishes, Automotive, Marine, Airplane finish	(A) MX-5201
1.5MM (.059) (#3)	Catalyzed lacquers, Conversion Varnish, Primers, Automotive, Marine, Airplane, finish Varnish, High Viscosity Industrial Coatings, Urethanes, Enamel	(A) or (B) MX -5201 5297
2.0MM (.079) (#4)	Thinned latex paint, Multi-spec, Heavy Primers, Butyrate, nitrate dope, High Viscosity Industrial Coatings	(B) MX-5202 MX-5297
2.5MM (.098) (#5)	Thinned latex paint, Multi-spec, Solvent adhesives, Wax based strippers	(B) MX-5297

Chart C 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.

<u>CHART C—VISCOSITY</u>	
<u>Coating</u>	<u>Thin/Reduce</u>
Lacquers	25%-50%
Sanding Sealer	20%-30%
Enamels	20%-40%
Stains	use from can
Acrylic Enamel	50%-60%
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 FINISH MAX 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 water based 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).
 - 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 MX-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.
 - F) 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 FINISH MAX TURBINE SPRAY GUNS

Option One: In diagram (1,2, or 3), locate part #13. Most **FINISH MAX** turbine spray guns are fitted with this blanking cap (MX-5202). You can remove the cap and install part #'s MX-5216 and MX-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.

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 5 lbs 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.

MX-4600—2 qt cup (Stainless steel fluid parts/Teflon® lined cup)

MX-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 **FINISH MAX** 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.



MX-4169

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 # MX-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



**MX-4200
2 QT PRESSURE POT**



**MX-4113
2.5 GALLON PRESSURE POT**



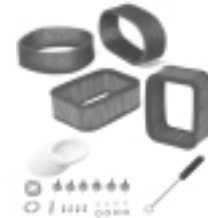
**MX-5309-3
NOZZLE / NEEDLE / AIR CAP SET**



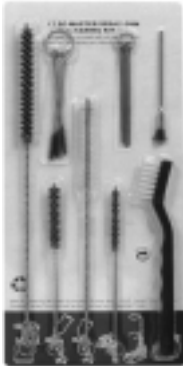
**MX-4227
Y-CONNECTOR
4-STAGE UNIT**



**MX-5257
AIR CONTROL / TEXTURING DEVICE**



**MX-9013
MAINTENANCE KIT**



**MX-5318
17 PIECE
CLEANING
KIT**



**MX-5269
8 OUNCE
MINI CUP
ASSEMBLY**



**MX-4169
FILTER 2 PACK**



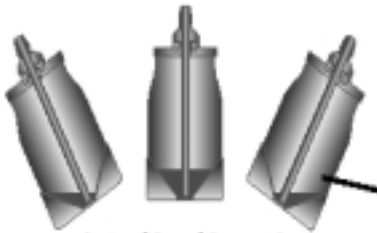
**MX-4500
2 QT FLUID FEED SYSTEM**



**MX-5319
ACCESSORY KIT COMES WITH
FULL SET OF MAINTENANCE
PARTS AND FULL SET OF TIPS
AND NEEDLES**



**MX-4550
2 1/2 GALLON
CART AND FLUID
FEED SYSTEM**



**MX-4950
OPTIONAL ROUND BOTTOM CUP**



**MX-1068
24 FEET TURBINE
HOSE OTHER
LENTGHS AVAILABLE**

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) MX-5232
 - B) Air Feed Connector (#8) MX-5211
 - C) Cup is screwed or clamped on tight
 - D) Cup top gasket is not damaged.
 - E) On Model MX-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.
 3. If you think that you are getting too much “over spray”
Try: Moving the spray gun closer to the work
Closing down the fluid flow
Reducing the air power (use optional air control/texturing device MX-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.
 5. 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

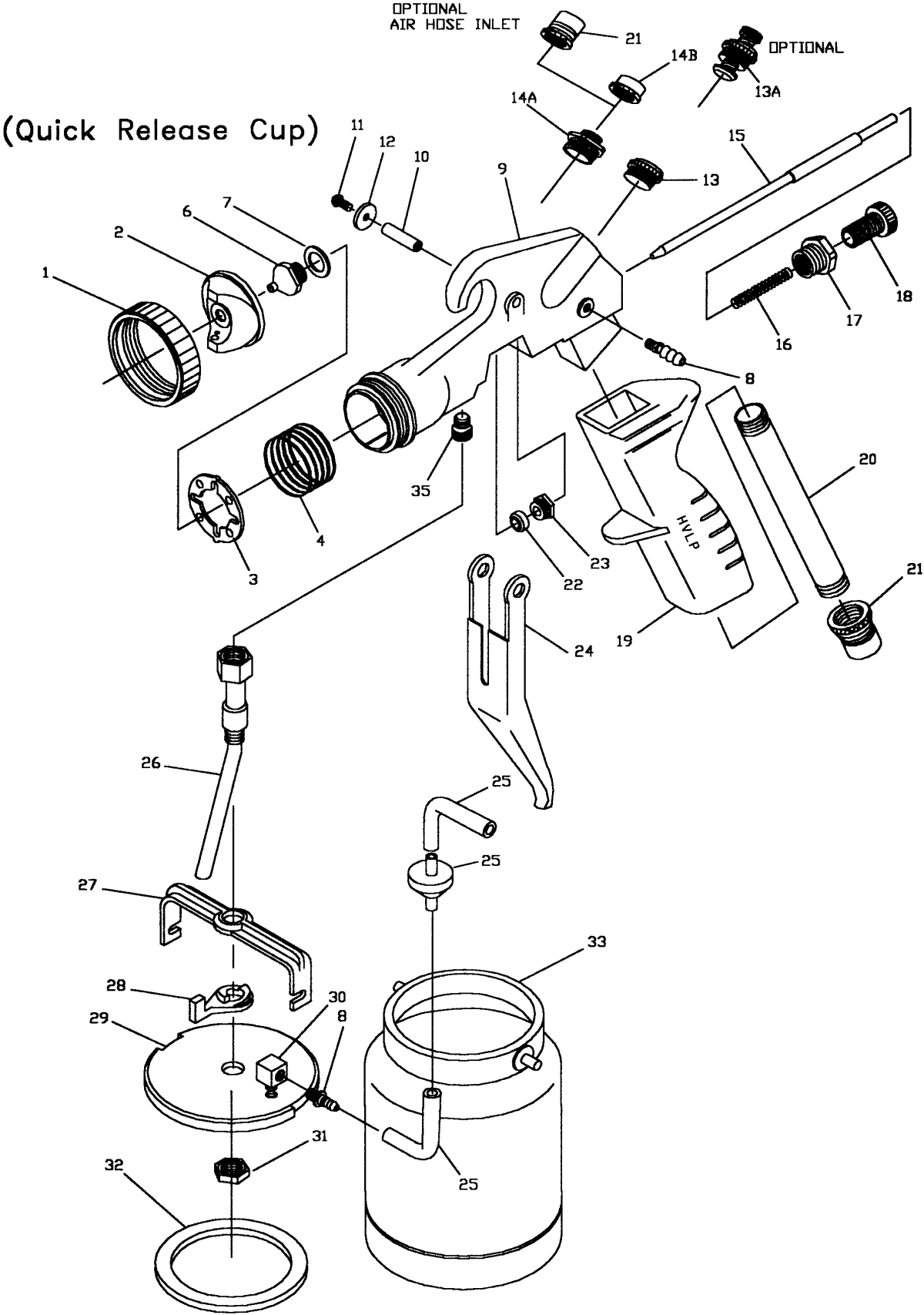
Turbine Recommended Maintenance: Clean and/or change pre-filters and/or cartridge filters every 50 hours or when necessary. See Pg 9 for appropriate filter replacement for your model.

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 # MX-5256.

RECORD OF TURBINE AND SPRAY GUN MAINTENANCE

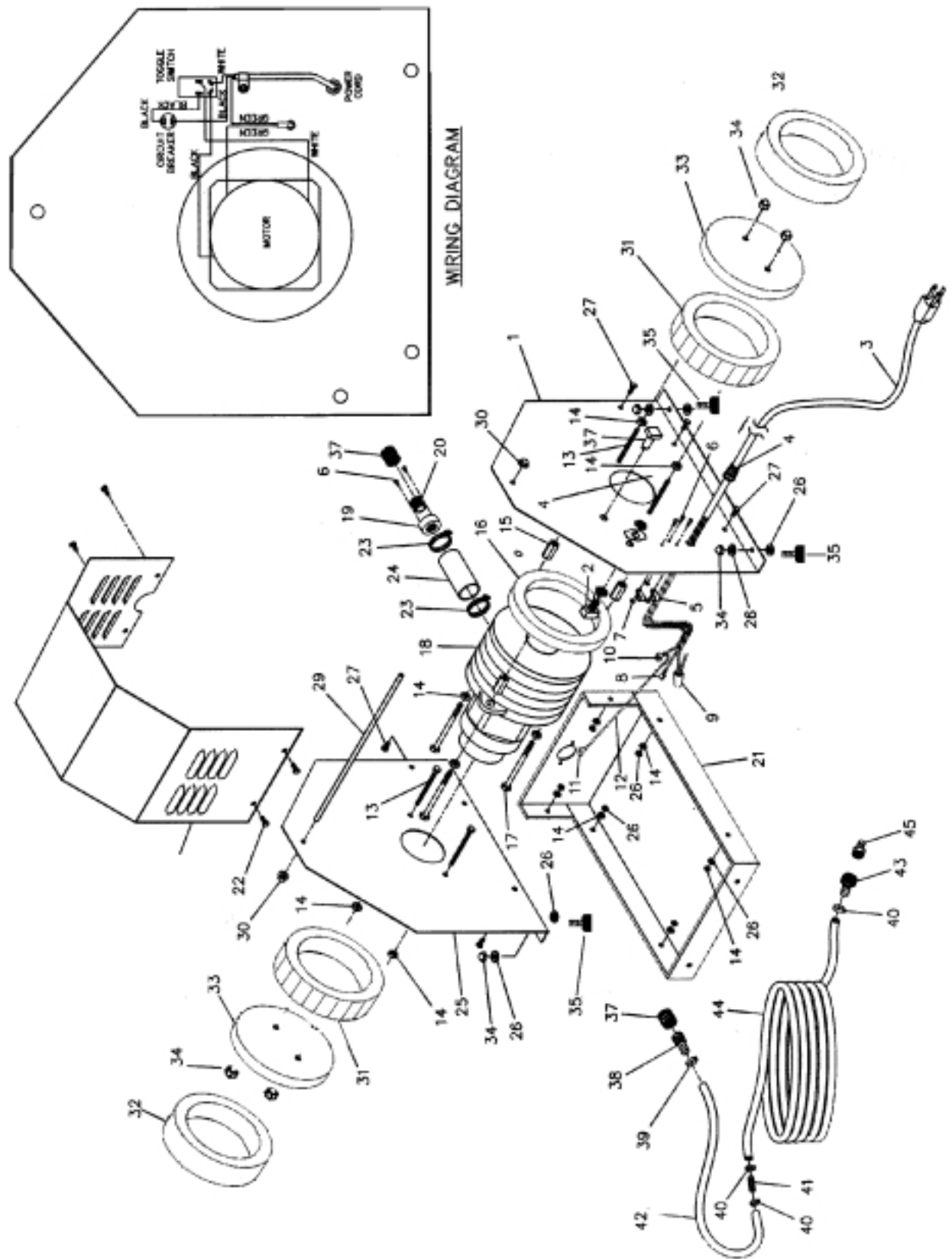
DATE	MAINTENANCE PERFORMED

FINISH MAX 5010 GUN WITH QUICK RELEASE CUP



REF #	DESCRIPTION	PART #
1	AIR CAP RING	MX-5200
2	AIR CAP #1	MX-5201
3	AIR DISTRIBUTOR PLATE (STAINLESS)	MX-5203
4	AIR DISTRIBUTOR SPRING (STAINLESS)	MX-5204
6	FLUID NOZZLE / JET (STAINLESS) .75 MM	MX-5206
6	FLUID NOZZLE / JET (STAINLESS) 1.0 MM	MX-5207
6	FLUID NOZZLE / JET (STAINLESS) 1.5 MM	MX-5208
6	FLUID NOZZLE / JET (STAINLESS) 2.0 MM	MX-5208-2
6	FLUID NOZZLE / JET (STAINLESS) 2.5 MM	MX-5209
7	FLUID NOZZLE GASKET	MX-5210
8	AIR FEED CONNECTOR	MX-5211
9	GUN BODY	MX-5212
10	TRIGGER BUSHING	MX-5213
11	TRIGGER PIVOT SCREW (STAINLESS)	MX-5214
12	TRIGGER SCREW WASHER	MX-5215
13	AIR BLANKING PLUG	MX-5202
13a	AIR CONTROL TEXTURING VALVE	MX-5257
14a	UPPER PORT INSERT	MX-5216
14b	AIR BLANKING PLUG	MX-5217
15	NEEDLE (STAINLESS) .75 MM	MX-5218
15	NEEDLE (STAINLESS) 1.0 MM	MX-5219
15	NEEDLE (STAINLESS) 1.5 MM	MX-5220
15	NEEDLE (STAINLESS) 2.0 MM	MX-5220-2
15	NEEDLE (STAINLESS) 2.5 MM	MX-5221
16	NEEDLE SPRING (STAINLESS)	MX-5222
17	FLOW SCREW INSERT	MX-5223
18	MATERIAL FLOW ADJUSTING SCREW	MX-5224
19	GUN HANDLE	MX-5225
20	HANDLE TUBE	MX-5226L
21	AIR HOSE QUICK RELEASE COUPLER	MX-5227
22	GLAND SEAL	MX-5228
23	GLAND NUT (STAINLESS)	MX-5229
24	TRIGGER (STAINLESS)	MX-5230
25	AIR FEED TUBE AND CHECK VALVE	MX-5232
26	CENTER BOLT / PICK UP TUBE	MX-5274
27	YOKE	MX5271
28	LEVER	MX-5278
29	CUP TOP CASTING	MX-5270
30	90 DEGREE BRASS BLOCK	MX-5266
31	CUP TOP LOCK NUT	MX-5272
32	CUP TOP GASKET (WHITE POLY)	MX-5280
33	QUICK RELEASE CUP	MX-5275
33	QUICK RELEASE CUP (TEFLON COATED)	MX-5277
35	FLUID CONNECTOR 3/8" (STAINLESS)	MX-5254

TURBINE UNIT DIAGRAM



HERO MAX-300 Turbine Parts List

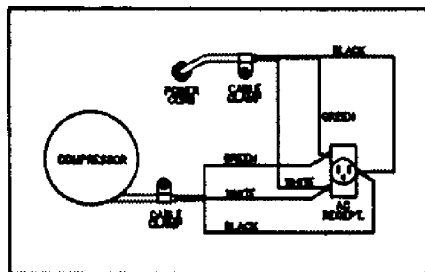
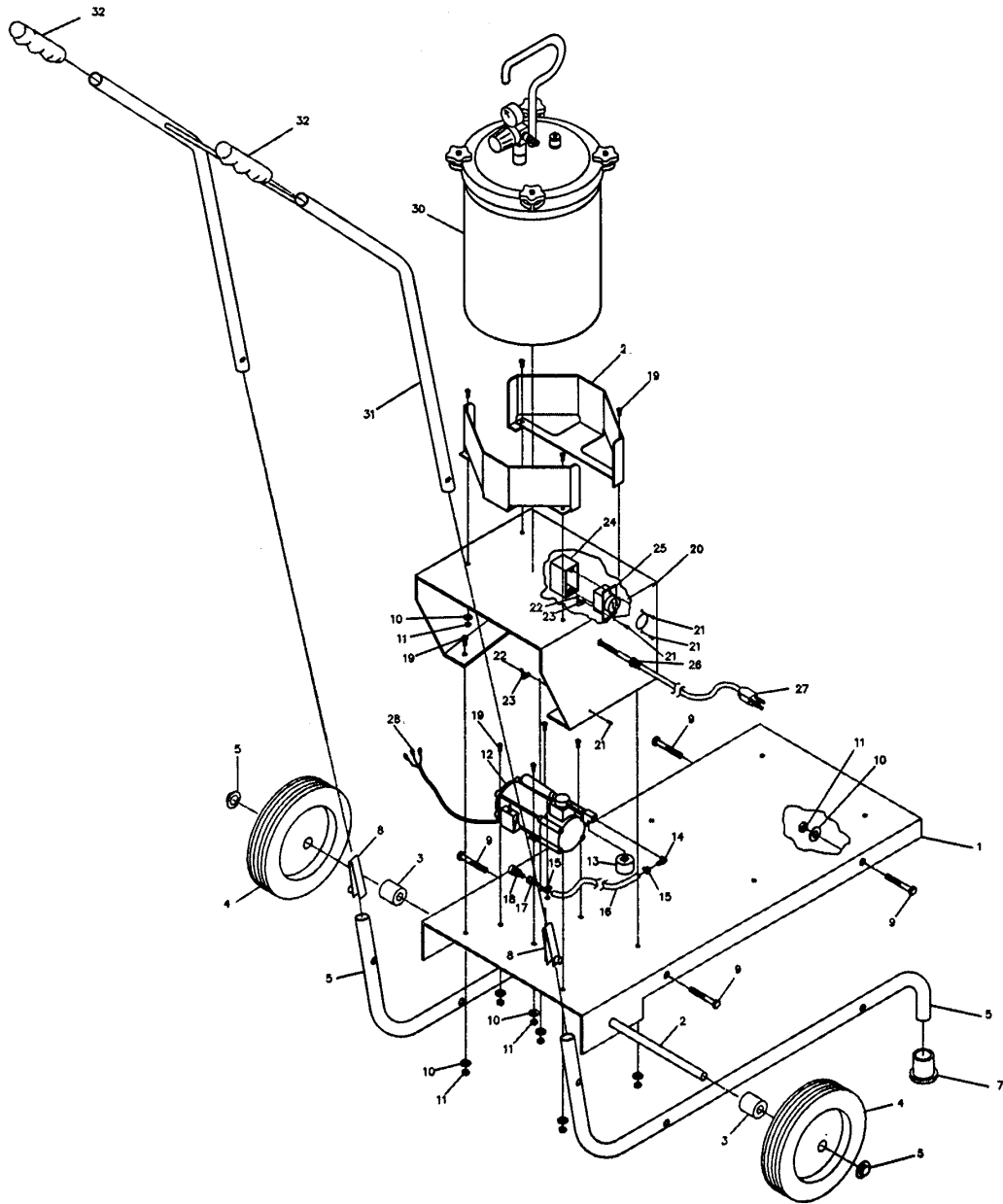
Turbine

Diagram #	Part #	Description	Quantity
1	MX-9008SS	Left End Plate	1
2	MX-4029	Switch & Plate	1
3	MX-4028	Power cord 8'	1
4	MX-4053	Cable grommet	1
5	MX-4051	Cable clamp	2
6	MX-4318	6-32 x 1/2" phillips pan m/s plated.	5
7	MX-4307	6-32 Hex M/S Nuts Plated.	3
8	MX-4179	Insulated Wire terminal	4
9	MX-4192	Crimp-on wire connector	1
10	MX-4178	Large Ring Terminal	1
11	MX-4180	Small Ring Terminal	1
12	MX-4999	6" piece of Green wire 14 AWG	1
13	MX-4350	1/4" x 20 x 2 3/4" full thread hex	4
14	MX-4308	1/4" x 20 Hex Nuts	13
15	MX-4349	1/4" X 20 length 7/8 Hex	3
16	MX-4176	Spliced rubber gasket	1
17	MX-4359	Bolt 1/4 x 20 x 3 1/2" half thread hex.	3
18	MX-4163	3 stage, 5.7" tangential motor	1
19	MX-4755	Female Turbine Adapter	1
20	MX-4756	Male Turbine Adapter.	1
21	MX-9006BLK	Base	1
22	MX-4315	#8 x 3/8" HWH sheet metal screw.	4
23	MX-4177	Hose clamp size 28-1/2"	2
24	MX-4222	Rubber hose, turbine exhaust	1
25	MX-9009SS	Right End Plate	1
26	MX-4300	1/4" SAE Flat Washer, Plated	10
27	MX-4320	1/4" X 20 X 1/2" Hex Bolt Plated	10
28	MX-9007SS	Cover/Top in Stainless Steel	1
29	MX-9010	Carrying Handle	1
30	MX-4345	5/16" handle cap	2
31	MX-4169	6" X 2 1/4" round filter cartridge	2
32	MX-4190	Pre-filter	2
33	MX-4181	6" X 2 1/4" round filter plate	2
34	MX-4310	1/4" X 20 cap nut plated.	8
35	MX-9016	Rubber foot	4
36	MX-9020	1/4" X 20 X 9" Threaded Rod	2
37	MX-4997	12 Amp Reset Button	1
38	MX-4991	6" piece of black wire 14 AWG	1
Air Hose			
38	MX-2110	5/8" brass swivel air hose adapter (male)	1
39	MX-2069	S.S. hose clip 7/8" O.D.	2
40	MX-2168	S.S. Hose clip 15/16" O.D.	2
41	MX-2155	5/8" brass air hose joiner	1
42	MX-2157	4 feet of flex hose, per foot	4
43	MX-2161	5/8" brass hose adapter (female)	1
44	MX-9011	30 feet of air hose, per foot.	30
45	MX-2111	Brass quick connect (male)	1
47	MX-2070	Female Quick Connector	1

HERO MAX-400 Turbine Parts List

Turbine			
Diagram #	Part #	Description	QTY
1	MX-9008SS	Left End Plate	1
2	MX-4029	Switch & Plate	1
3	MX-4028	Power cord 8'	1
4	MX-4053	Cable grommet	1
5	MX-4051	Cable clamp	2
6	MX-4318	6-32 x 1/2" phillip pan m/s plated.	5
7	MX-4307	6-32 Hex M/S Nuts Plated.	3
8	MX-4179	Insulated Wire terminal	4
9	MX-4192	Crimp-on wire connector	1
10	MX-4178	Large Ring Terminal	1
11	MX-4180	Small Ring Terminal	1
12	MX-4999	6" piece of Green wire 14 AWG	1
13	MX-4350	1/4" x 20 x 2 3/4" full thread hex	4
14	MX-4308	1/4" x 20 Hex Nuts	13
15	MX-4349	1/4" X 20 length 7/8 Hex	3
16	MX-4176	Spliced rubber gasket	1
17	MX-4359	Bolt 1/4 x 20 x 3 1/2" half thread hex.	3
18	MX-4174	4-stage, 5.7" tangential motor	1
19	MX-4755	Female Turbine Adapter	1
20	MX-4756	Male Turbine Adapter.	1
21	MX-9006BLK	Base	1
22	MX-4315	#8 x 3/8" HWH sheet metal screw.	4
23	MX-4177	Hose clamp size 28-1/2"	2
24	MX-4222	Rubber hose, turbine exhaust	1
25	MX-9009SS	Right End Plate	1
26	MX-4300	1/4" SAE Flat Washer, Plated	10
27	MX-4320	1/4" X 20 X 1/2" Hex Bolt Plated	10
28	MX-9007SS	Cover/Top in Stainless Steel	1
29	MX-9010	Carrying Handle	1
30	MX-4345	5/16" handle cap	2
31	MX-4169	6" X 2 1/4" round filter cartridge	2
32	MX-4190	Pre-filter	2
33	MX-4181	6" X 2 1/4" round filter plate	2
34	MX-4310	1/4" X 20 cap nut plated.	8
35	MX-9016	Rubber Foot	4
36	MX-9020	1/4" X 20 X 9" Threaded Rod	2
37	MX-4997	12 Amp Reset Button	1
Air Hose			
38	MX-2110	5/8" brass swivel air hose adapter (male)	1
39	MX-2069	S.S. hose clip 7/8" O.D.	2
40	MX-2168	S.S. Hose clip 15/16" O.D.	2
41	MX-2155	5/8" brass air hose joiner	1
42	MX-2157	4 feet of flex hose, per foot	4
43	MX-2161	5/8" brass hose adapter (female)	1
44	MX-9011	30 feet of air hose, per foot.	30
45	MX-2111	Brass quick connect (male)	1
47	MX-2070	Female Quick Connector	1

Porta MAX Cart Diagram



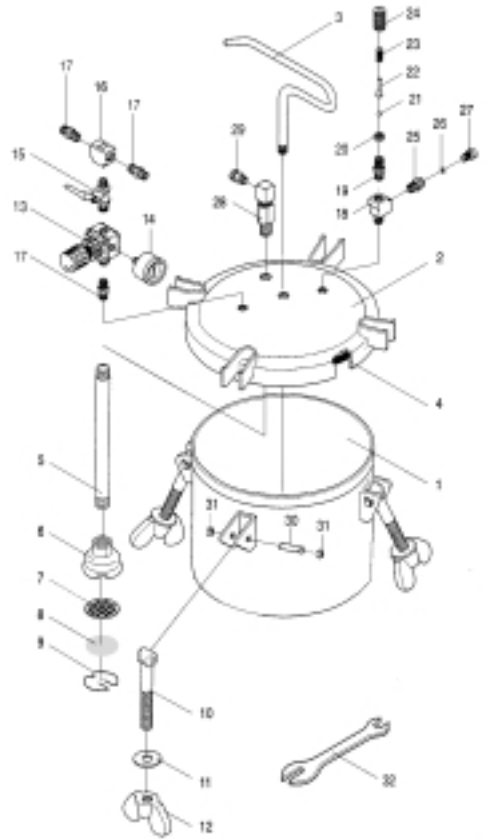
WIRING DIAGRAM

Porta MAX Parts Reference

Diagram #	Part #	Description	Quantity
1	MX-4554	Cart Base Plate Paint blue	1
2	MX-4555	Cart Axle (Zinc Plated)	1
3	MX-4556	Wheel Spacer (6061 alu.)	2
4	MX-4558	10" x 1 3/4" wheel	2
5	MX-4374	1/2" Axle cap	2
6	MX-4551	Frame Tube (Chrome)	2
7	MX-4559	Rubber tip for Frame tube	2
8	MX-4560	Handle button	2
9	MX-4364	1/4" x 20 x 1 1/4" hex bolt plated .5.	4
10	MX-4300	1/4" SAE F/W plated washer	20
11	MX-4308	1/4" X 20 hex nuts plated	20
12	MX-4198	110V mini compressor unit	1
13	MX-4998	Pressure regulator	1
14	MX-4503	1/8" male NPT X 1/4" male hose barb 90°	1
15	MX-4033	Air hose clip S.S.	2
16	MX-2116	1/4" air hose, per foot	3
17	MX-2119	1/4" X 1/4" female swivel barb	1
18	MX-4026	Quick connect female with 1/4" male thread	1
19	MX-4320	1/4" x 20 x 1/2" hex bolt plated .5.	16
20	MX-4553	Pressure pot deck	1
21	MX-4318	6-32 X 1/2" phillips pan m/s plated	4
22	MX-4307	6-32 Hex M/S nuts plated	2
23	MX-4051	Cable clamps, black	2
24	MX-4557	Outlet box (plastic)	1
25	MX-4197	Outlet 15 Amp-125 Volt	1
26	MX-4053	Flexible Cord Protector	1
27	MX-4028	8 foot Power Cord	1
28	MX-4178	Large Ring Terminal	3
29	MX-4552	Support ring for pressure pot.	2
30	MX-4113	2.5 gallon pressure pot	1
31	MX-4006	Handle (Chrome)	1
32	MX-4042	Handle Grip	2

2.5 GALLON PRESSURE POT DIAGRAM

Diagram #	Part #	Description	Qty.
1	MX-4901	Fluid Tank 2.5 Gallon	1
2	MX-4902	Lid Assembly	1
3	MX-4903	Handle	1
4	MX-4904	Gasket	1
5	MX-4905	Material Pick Up Tube	1
6	MX-4906	Material Filter Housing	1
7	MX-4907	Filter Base	1
8	MX-4908	Filter Element	1
9	MX-4909	Snap Ring	1
10	MX-4910	T-Bolt	4
11	MX-4911	Washer	4
12	MX-4912	Wing Nut	4
13	MX-4913	Pressure Regulator	1
14	MX-4914	Pressure Gauge	1
15	MX-4915	On/Off Valve	1
16	MX-4916	3 Way Block	1
17	MX-4917	1/4" X 1/4" Adapter	3
18	MX-4918	3 WAY Block	1
19	MX-4919	Adapter	1
20	MX-4920	Nut	1
21	MX-4921	Steel Ball	1
22	MX-4922	Needle Rod	1
23	MX-4923	Spring	1
24	MX-4924	Safety Valve Housing	1
25	MX-4925	Adapter	1
26	MX-4926	O-Ring	1
27	MX-4927	Release Valve	1
28	MX-4928	Material Outlet Adapter	1
29	MX-4929	Adapter	1
30	MX-4930	Cotter Pin	4
31	MX-4931	C - Snap Ring	8
32	MX-4932	Wrench	1



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.

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