

MBC - ZINC SPRAY GUN

IMPORTANT: Before using this equipment, read all safety precautions and instructions. Keep for future reference.

DESCRIPTION

The MBC-ZINC spray gun is intended for use with the new waterborne, zinc rich protective coatings. Solvent borne zinc coatings can also be applied with this gun.

The MBC-ZINC has all the features of the standard MBC-510 and consists of spray gun body and removable sprayhead. MBC-ZINC differs in the following components.

- Leather packings
- Heavy duty needle spring
- Delrin construction air cap
- Delrin construction retaining ring
- Fluid tip with composition insert

These components have proven very effective in handling the unique characteristics of waterborne zinc rich coatings. By using these components, the user will insure the longest and most reliable operation before major repair is required.

HANDLING OF ZINC COATING

Some zinc rich formulations can require up to 20 lbs. of dry zinc per gallon of liquid. Care must be taken when adding the zinc to insure complete suspension into the liquid. Mechanical agitation must be used when mixing, and during application, to prevent agglomeration and settling of the zinc particles. These larger clumps will interfere with needle seating and cause premature wear and leakage to the tip or needle.

Zinc rich formulations have limited pot life. Once the zinc is added, the liquid slurry begins to increase in viscosity. Material should be used within 3-4 hours after mixing. If material is applied out-of-doors, viscosity will increase faster as a result of heat buildup caused by environmental conditions.

Zinc solution – Follow manufacturers directions for mixing zinc powder into solution. Make sure adequate mechanical mixing is observed during and after zinc is mixed into liquid.

These instructions are found on both container label and Technical Data Sheets. In addition to specific recommendations on handling the zinc, suppliers also have recommendations concerning operating pressures, air and fluid hose length and size.

GUN OPERATION

The MBC-ZINC is supplied with a D (.086") size fluid tip. Extensive field testing of the various zinc formulations conclude that the use of smaller tip sizes require elevated fluid pressures, which in turn, increase the tendency of needle seat interference. These higher fluid pressures also cause the liquid material to pack out when the gun is triggered off. Lower fluid pressures help minimize both conditions.

After first mixing, a fluid pressure of approximately 15 psi should provide satisfactory flow rates for normal production speeds. A reduction in flow output will be experienced as the viscosity increases and fluid pressures will have to be increased. Under most application conditions, atomizing air in the range of 50 psi will be satisfactory.

Packing operation – The packing set consists of 3, pre-lubricated leather packings. Packing tension on needle is factory set. Lubricate packings twice daily by adding a few drops of •SSL-10 gun lube to the needle shaft. Retain proper packing tension to allow smooth needle travel. This will insure minimal needle shaft and packing wear.

CLEANING

The fluid hose interior and gun fluid passages should be cleaned immediately after each zinc batch is used. Exterior metal surfaces of the gun body and head should be wiped clean before any accumulation is allowed to dry. Waterborne zinc in its dried state will be extremely difficult to remove from any metal surface.

The DeVilbiss air cap GTI-1-100L, is constructed of Delrin . The zinc will not adhere to its surface. If zinc is allowed to dry, the film can be simply removed with a fiber brush or by soaking the cap in water. When the cap is removed, always wipe off the fluid tip exterior surfaces to prevent any zinc build up from drying.

PREVENTIVE MAINTENANCE

The MBC-ZINC spray gun is designed to provide the user trouble free service applying this unique protective coating, with only minimal care and maintenance. There are certain steps the user can take to insure trouble-free service.

1. Never immerse or soak the entire spray gun in any liquid. These liquids are generally contaminated and can foul interior components and passages. Immersion over long periods can also dilute and remove lubricants necessary for smooth operation. Lubricate gun components daily as indicated.
2. Mix dry zinc into solution using a mechanical agitator. Maintain agitation during application.
3. Mix only the amount to be used in 4 hours or less.
4. Refrain from using excessive fluid pressures. A range of 15-30 psi should be satisfactory during the 4 hour period of application.
5. Avoid longer than 25 ft. lengths of fluid and air supply hoses to the gun. Air hoses should be 5/16" I.D. minimum.
6. Do not allow zinc to dry on any interior, metal fluid passage in the gun or hose fittings. An appropriate cleaning agent should be used to purge the system as soon as a batch is used up.
7. Use a cleaning brush (see **Accessories**) to clean the air cap. Do not use a wire brush. Also avoid using metal objects such as drill bits to clean air hole jets. This air cap, unlike other DeVilbiss metal air caps, can be damaged if abused. Avoid using it as a chipping hammer, etc.

SAFETY PRECAUTIONS

This manual contains information that is important for you to know and understand. This information relates to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS. To help you recognize this information, we use the following symbols. Please pay particular attention to these sections.

WARNING

Important safety information - A hazard that may cause serious injury or loss of life.





Important information that tells how to prevent damage to equipment, or how to avoid a situation that may cause minor injury.

Note

Information that you should pay special attention to.

WARNING

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

HAZARD	CAUSE	SAFEGUARDS
 <p>Fire</p>	Solvent and coatings can be highly flammable or combustible especially when sprayed.	<p>Adequate exhaust must be provided to keep air free of accumulations of flammable vapors.</p> <p>Smoking must never be allowed in the spray area.</p> <p>Fire extinguishing equipment must be present in the spray area.</p>
 <p>Solvent Spray</p>	During use and while cleaning and flushing, solvents can be forcefully expelled from fluid and air passages. Some solvents can cause eye injury.	Wear eye protection.
 <p>Inhaling Toxic Substances</p>	Certain materials may be harmful if inhaled, or if there is contact with the skin.	<p>Follow the requirements of the Material Safety Data Sheet supplied by your coating material manufacturer.</p> <p>Adequate exhaust must be provided to keep the air free of accumulations of toxic materials.</p> <p>Use a mask or respirator whenever there is a chance of inhaling sprayed materials. The mask must be compatible with the material being sprayed and its concentration. Equipment must be as prescribed by an industrial hygienist or safety expert, and be NIOSH approved.</p>
 <p>Explosion Hazard - Materials</p>	Halogenated hydrocarbon solvents - for example; methylene chloride and 1, 1, 1 - Trichloroethylene are not chemically compatible with the aluminum that might be used in many system components. The chemical reaction caused by these solvents reacting with aluminum can become violent and lead to an equipment explosion.	The MBC-510 can be used with these solvents. However, aluminum is widely used in other spray application equipment - such as material pumps, regulators, valves and cups. Check all equipment items before use and make sure they can also be used safely with these solvents. Read the label or data sheet for the material you intend to spray. If in doubt as to whether or not a coating or cleaning material is compatible, contact your material supplier.
<p>General Safety</p>	Improper operation or maintenance of equipment.	Operators should be given adequate training in the safe use & maintenance of the equipment (in accordance with the requirements of NFPA-33, Chapter 15). Users must comply with all local & national codes of practice & insurance company requirements governing ventilation, fire precautions, operation, maintenance and housekeeping. These are OSHA Sections 1910.94 and 1910.107 and NFPA-33.
<p>Cumulative Trauma Disorders ("CTD's") musculo-skeletal disorders, involve damage to the hands, wrist, elbows, shoulders, neck and back. Carpal tunnel syndrome and tendinitis (such as tennis elbow or rotator cuff syndrome) are examples of CTD's.</p>	<p>Use of hand tools may cause cumulative trauma disorders ("CTD's").</p> <p>CTD's when using hand tools, tend to affect the upper extremities. Factors which may increase the risk of developing a CTD include:</p> <ol style="list-style-type: none"> 1. High frequency of the activity. 2. Excessive force, such as gripping, pinching, or pressing with the hands and fingers. 3. Extreme or awkward finger, wrist, or arm positions. 4. Excessive duration of the activity. 5. Tool vibration. 6. Repeated pressure on a body part. 7. Working in cold temperatures. <p>CTD's can also be caused by such activities as sewing, golf, tennis bowling, to name a few.</p>	<p>Pain, tingling, or numbness in the shoulder, forearm, wrist, hands or fingers, especially during the night, may be early symptoms of a CTD's, or CTD. Do not ignore them. Should you experience any such symptoms, see a physician immediately. Other early symptoms may include vague discomfort in the hand, loss of manual dexterity, and nonspecific pain in the arm. Ignoring early symptoms and continued repetitive use of the arm, wrist & hand can lead to serious disability. Risk is reduced by avoiding or lessening factors 1-7.</p>

Note

When replacing the fluid tip or fluid needle, replace both at the same time. Using worn parts can cause fluid leakage. Also, replace the needle packings at this time. Lightly lubricate the threads of the fluid tip before reassembling. Torque to 20 - 25 ft. lbs.

CAUTION

To prevent damage to the fluid tip (3) or fluid needle (3B), be sure to either 1) pull the trigger and hold while tightening or loosening the fluid tip or 2) remove fluid needle adjusting screw (27) to relieve spring pressure against needle collar.

TROUBLESHOOTING

Leakage from the tip can be caused by sluggish needle travel, improperly mixed zinc solution, or worn tip and/or needle.

If leakage occurs during application, clean the gun and hoses out and remove fluid tip. Inspect the interior seating surfaces. If large particles appear to be imbedded into the tip seat, scrape the surfaces with a blunt object. Then, attempt to remove agglomerates from the balance of solution by straining.

Fluid Tip – If large imbedded clumps cannot be removed, or if the tip seating surface is worn, it will be necessary to replace the tip and needle. Satisfactory operation depends on the unique DeVilbiss tip design, smooth needle shaft, and lubricated and properly adjusted packings.

In order to insure proper operation, replace these parts when tip leakage occurs due to wear:

**MBC-4397-D
Fluid Tip, Needle & Gasket Kit**
(Zinc waterborne gun)

**AV-650-D Fluid Tip
MBC-496-DEX Needle and
AV-1 Gasket**
(Zinc solvent-based gun)

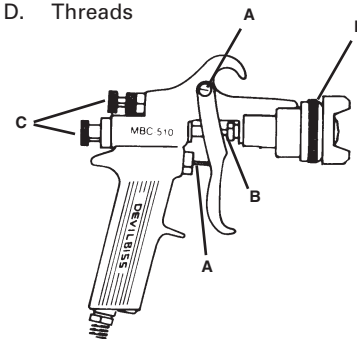
**MB-135
pre-lubricated leather packings (3)**
(both guns)

SPRAY GUN LUBRICATION

Daily, apply two drops of •SSL-10 spray gun lube (see Accessories) at trigger bearing stud (29) and the stem of the air valve (19) where it enters the air valve assembly. The shank of the fluid needle (3B) where it enters the packing nut (7) should also be oiled. The fluid needle packing (3A) should be kept soft and pliable by periodic lubrication. Make sure the sprayhead (6) and retaining ring (1) threads are clean and free of foreign material. Before assembling retaining ring to sprayhead, clean the threads thoroughly, then add two drops of SSL-10 spray gun lube to threads. The fluid needle spring (26) and air valve spring (20) should be coated with a very light grease, making sure that any excess grease will not clog the air passages. For best results, lubricate the points indicated, daily.

•Material Safety Data Sheet available from DeVilbiss upon request.

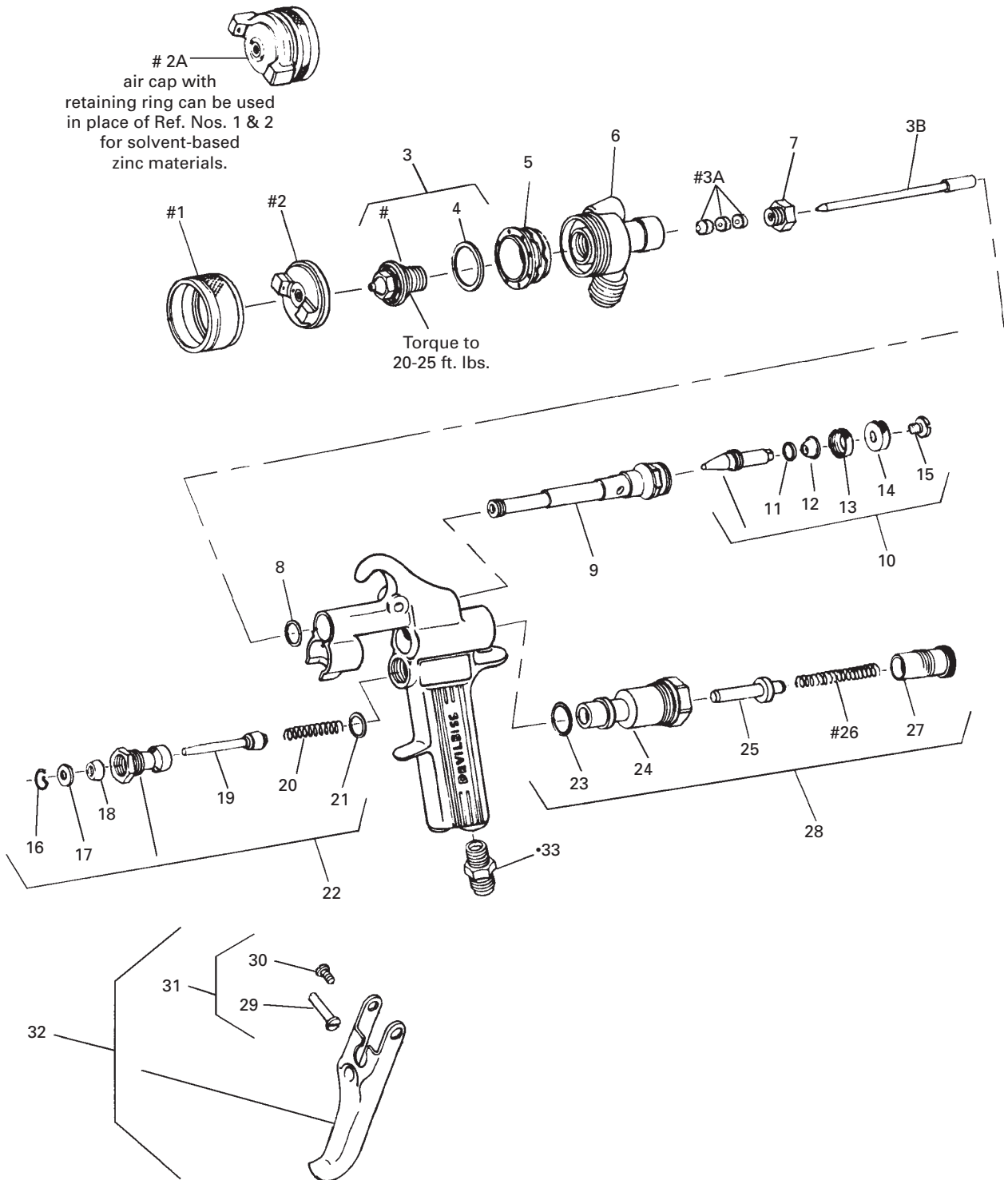
- A. Trigger Points
- B. Packing
- C. Adjusting Valves
- D. Threads



PARTS LIST

Ref. No.	Replacement Part No.	Description	Individual Parts Req
1	MSA-1	Retaining Ring, Delrin (waterborne)	1
2	GTI-1-100L	Air Cap, Delrin (waterborne)	1
2A	MB-4039-64HD	Air Cap, (solvent-based)	1
3	MBC-4397-D	Fluid Tip, Needle, Gasket Kit (waterborne)	1
		(Includes 3, 3B & 4) OR	
	AV-650-D	Fluid Tip (solvent-based)	1
* 3A	MB-135-K9	Leather Packings (Kit of 9)	3
3B	---	Needle (waterborne) OR	1
	MBC-496-DEX	Needle (solvent-based)	
* 4	AV-1-K5	Gasket Kit (Kit of 5)	1
5	MBC-1225	Baffle	1
6	P-MBC-402	Sprayhead Body	1
7	MB-19-K5	Packing Nut (Kit of 5)	1
* 8	MBC-1226-K10	Gasket Kit (Kit of 10)	1
9	MBC-67	Locking Bolt	1
10	MBC-498-1	Fan Adjustment Valve	1
* 11	---	Washer	1
* 12	---	Packing	1
13	---	Packing Nut	1
14	---	Knob	1
* 15	---	Screw	1
* 16	JGA-14-K25	Snap Ring Kit (Kit of 25)	1
* 17	JGA-15-K25	Washer Kit (Kit of 25)	1
* 18	JGS-26-K25	U-cup Kit (Kit of 25)	1
* 19	JGS-431-K25	Air Valve Kit (Kit of 25)	1
* 20	MBD-12-K25	Spring Kit (Kit of 25)	1
* 21	JGS-72-K10	Gasket Kit (Kit of 10)	1
22	JGS-449-1	Valve Assembly	1
* 23	CV-5-K5	Gasket Kit (Kit of 5)	1
24	---	Cylinder	1
25	MBC-33	Plunger	
26	MBC-70-K2	Spring (Kit of 2)	1
27	MBC-39	Screw	1
28	MBC-415-ZN	Cylinder Assy.	1
29	---	Trigger Bearing Stud	1
* 30	---	Screw	1
31	JGS-478	Stud & Screw Kit (3 studs, 5 screws in kit)	1
32	JGS-477-1	Trigger, Stud & Screw Kit (kit includes 1 each)	1
33	P-MB-51	Air Inlet Adapter 1/4" NPS	1






*A quantity of necessary parts is included in **Repair Kit KK-4058-1** for complete gun repair and should be kept on hand for service convenience



• Use medium strength thread sealant (i.e. Loctite 242 value, or equal) on threads.

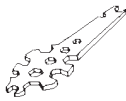
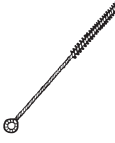
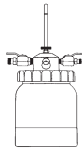
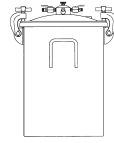
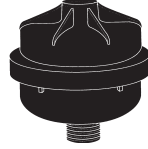


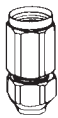
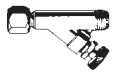
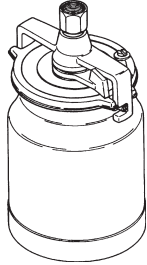

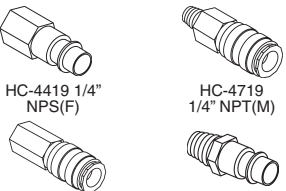
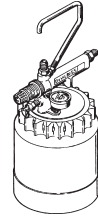
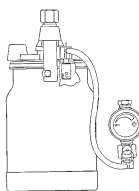

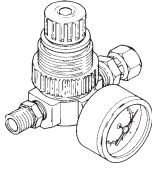

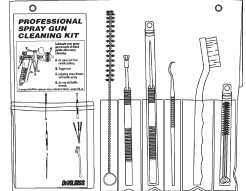
These components have proven very effective in handling characteristics of zinc rich coatings.

TROUBLESHOOTING

CONDITION	CAUSE	CORRECTION
Heavy top or bottom pattern 	Horn holes plugged. Obstruction on top or bottom of fluid tip. Cap and/or tip seat dirty.	Clean. Ream with non-metallic point. Clean. Clean.
Heavy right or left side pattern 	Left or right side horn holes plugged. Dirt on left or right side of fluid tip. Remedies for the top-heavy, bottom-heavy, right-heavy and left-heavy patterns: 1) Determine if the obstruction is on the air cap or the fluid tip. Do this by making a test spray pattern. Then, rotate the cap one-half turn and spray another pattern. If the defect is inverted, obstruction is on the air cap. Clean the air cap as previously instructed. 2) If the defect is not inverted, it is on the fluid tip. Check for a fine burr on the edge of the fluid tip. Remove with #600 wet or dry sand paper. 3) Check for dried paint just inside the opening. Remove paint by washing with solvent.	Clean. Ream with non-metallic point. Clean.
Heavy center pattern 	Too much material. Material too thick.	Reduce fluid flow on suction guns. Reduce fluid pressure on pressure feed guns . Thin to proper consistency.
Split spray pattern 	Not enough material.	Reduce air pressure or increase fluid flow by turning fluid needle adjusting screw counter clockwise on suction feed, increase fluid pressure on pressure feed guns.
Jerky or fluttering spray 	*Loose or damaged fluid tip/seat. Insufficient fluid in cup or pressure tank. Gun (with cup) tipped at excessive angle. Obstructed fluid passage or hose. Loose or cracked fluid tube in cup or tank. Too heavy fluid for suction feed. Dry or worn packing (14) or loose packing nut (15).	Tighten or replace. Fill cup or tank. Do not tip excessively or rotate fluid tube. Clean. Tighten or replace. Change to pressure feed. Lubricate or replace. Tighten.
Unable to get round spray	Fan adjustment screw not seating properly. Air cap retaining ring loose.	Clean or replace. Tighten.
Will not spray	No air pressure at gun. Internal mix or pressure feed air cap and tip used with suction feed. Fluid pressure too low with internal mix cap and pressure tank. Fluid needle adjusting screw not open enough. Fluid too heavy for suction feed.	Check air supply and air lines. Change to proper suction feed air cap and tip. Increase fluid pressure at tank. Open fluid needle adjusting screw. Thin material or change to pressure feed.
Fluid leaking from packing nut	Packing nut loose. Packing worn or dry	Tighten, do not bind needle. Replace or lubricate.
Dripping from fluid tip	Dry packing. Sluggish needle. Tight packing nut. Sprayhead misaligned, causing needle to bind.	Lubricate. See "Preventive Maintenance". Lubricate. See "Preventive Maintenance". Adjust. See "Preventive Maintenance". Tap all around sprayhead with wooden mallet and retighten locking bolt.

*Most common problem.

ACCESSORIES

<p>WR-103 Wrench</p>  <p>Contains all necessary tip, hose and nut sizes used on or with gun.</p>	<p>42884-214-K5 3/8" 42884-215-K10 5/8" Cleaning Brushes</p>  <p>These brushes are helpful in cleaning threads and recesses of gun body.</p>	<p>HD-503 Solvent-Saver™ Hose/Gun Cleaner</p>  <p>2 Qt. & 2-1/2 Gal hose/gun cleaner used to clean the inside of hose, fluid passageways of gun & other paint equipment.</p>	<p>183GZ-5200 Hose/Gun Cleaner SolventSaver™</p>  <p>2 gallon galvanized tank used to clean the inside of hose and material passages of the gun.</p>	<p>HAF-507 Whirlwind™ In-Line Air Filter</p>  <p>Removes water, oil, and debris from the air line.</p>	<p>Spray Gun Lube SSL-10 (2 oz. bottle)</p>  <p>Compatible with all paint materials: contains no silicone or petroleum distillates to contaminate paint. MSDA sheet available upon request.</p>
<p>HAV-500 OR HAV-501 Adjusting Valve (HAV-501 SHOWN)</p>  <p>HAV-500 does not have pressure gage. Use to control air usage at gun.</p>	<p>VS-531 Low Pressure Strainers</p>  <p>The VS-531 Low Pressure Fluid Strainer provides a final filter for trapping foreign particles in the paint supply.</p>	<p>P-H-5516 Air Adjusting Valve</p>  <p>Removes water, oil, and debris from the air line.</p>	<p>TGC-545 (Aluminum) TLC-555 (Non-stick Lined) TSC-595 (S.S.) 2 Qt. Drip-Free Suction Cup</p>  <p>Cup has a unique, two position valve which permits selection of either a drip-free or conventional open vent mode.</p>	<p>Millennium 3000 Twin Cartridge Paint Spray Respirator</p>  <p>NIOSH-Certified, for respiratory protection in atmospheres not immediately dangerous to life.</p>	
<p>Quick Disconnect Approved for HVLV Guns (Air) High Flow Ball and Ring Type</p>  <p>HC-4419 1/4" NPS(F) HC-4719 1/4" NPT(M) HC-4720 1/4" NPT(F) HC-1166 1/4" NPT(M)</p>	<p>KB-555 (Aluminum) & KB-545-SS (S/S) 2 qt. Pressure Feed Cup With Regulator</p>  <p>Provides greater degree of control over cup fluid pressure.</p>	<p>JGA-444 Fluid Tube This tube combines the fluid and air hoses at gun handle preventing dragging hoses over work, twisting line and improving overall gun handling.</p> <p>TLC-576 Aluminum Cup (Non-stick Lined) & TSC-591 Stainless Steel Cup</p>  <p>1 Qt. pressure feed cups. 3/8" NPS (F), cam lock lid. Requires KK-4980 air regulator kit.</p>	<p>29-3100 Scrubs® Hand Cleaner Towels</p>  <p>Scrubs® are a pre-moistened hand cleaner towel for painters. No water is needed.</p>		
<p>HARG-510 Air Regulator</p>  <p>Use to maintain nearly constant outlet pressure despite changes in inlet pressure and downstream flow.</p>	<p>KK-5060 Air Cap Cleaning Kit</p>  <p>Consists of: 2 brushes, 1 wire pick. Helps keep air cap clean and performing properly.</p>	<p>192212 Professional Spray Gun Cleaning Kit</p>  <p>Contains six precision tools designed to effectively clean all DeVilbiss, Binks, Finishline and other brand spray guns.</p>			

WARRANTY

This product is covered by DeVilbiss' 1 Year Limited Warranty.

DeVilbiss Sales and Service: www.devilbiss.com



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