DEVILBISS

SERVICE BULLETIN

SB-2-282-H

Replaces SB-2-282-G

Repair Kit KK-5085

VTX HIGH VOLUME LOW PRESSURE SPRAY GUN
MODELS: VTX-18 AND VTX-30

IMPORTANT: Before using this equipment, read all Safety Precautions and instructions. Retain for future use.

DESCRIPTION

The VTX spray gun uses the patented internal jet impingement technology to pre-atomize wood stains. This unique feature reduces the incidence of mottling typically seen on other types of HVLP spray guns. Model VTX-18 includes .018" orifices in the fluid nozzle for flow rates of 15 oz/min or less. Model VTX-30 includes .030" orifices in the fluid nozzle for flow rates of 15 to 25 oz/min. The VTX is designed to provide maximum transfer efficiency by **limiting air cap pressure to 10 psi (complies with rules issued by SCAQMD and other air quality authorities)**. The gun is intended for use with a pressure feed paint supply only.

Note

The VTX spray gun is not suitable for highly abrasive materials (i.e. porcelain enamel, certain mica paints, etc.). Premature fluid tip and needle wear will occur.

NGR, Dye, and Toner stains can be atomized with the 2000 air cap. The 2000-air cap and baffle has shown in tests to provide the most consistent patterns using air pressures of 30 psi or less. The MP air caps are not recommended with the VTX spray gun, as they will not provide the same pattern consistency with the internal impingement technology.

Operating Conditions:

Air: 30 PSI Maximum

Fluid: 60 PSI Maximum

Air Consumption: 16 cfm at 10psi air cap pressure.

• Models include 400 grade stainless fluid tip with Delrin needle seat and 400 stainless needle.

Approximate pressure required to achieve 10 PSI air cap pressure is 30 PSI.

These gun models will produce approximately 10 psi-cap pressure at the corresponding gun inlet pressure, as measured at the gun inlet. Air cap test kit (see Accessories) should be used to insure 10 psi air cap pressure is not exceeded.

Note

This gun may be used with chlorinated solvents; but see additional warnings on page 2.

INSTALLATION

Do not use more pressure than is necessary to atomize the material being applied. To provide optimum performance and assure compliance with all air quality regulations, an air cap test gauge kit is available to determine actual air cap pressures being used. See Accessories. Connect the gun to a clean, moisture and oil free air supply using a hose size of at least **5/16" I.D. hose. Avoid use of quick detachable connectors.** Do not use 1/4" ID hose (25' x 1/4" hose at 18 CFM has a pressure loss of 25 psi. 25' x 5/16" hose at 18 CFM has a pressure loss of 8.1 psi).

Note

Depending on hose length, larger hose I.D. may be required. Install an HAV-501 air gauge at the gun handle and air cap test kit over tip. When gun is triggered on, adjust regulated pressure to desired setting to provide a maximum of 10 psi at the air cap. **Do not use more pressure than is necessary to atomize the material being applied.**

OPERATION

Adjust fluid pressure to deliver the desired material volume. Adjust air pressure and flow to provide a uniform dispersion of atomized material throughout the pattern. A fluid pressure of 15 psi will deliver a flow rate of approximately 6 oz/min. with a .018" orifice. A fluid pressure of 15 PSI will deliver a flow rate of approximately 22 oz/min. with a .030" orifice.

Excessive flow rates will result in heavy center spray patterns. Inadequate flows may cause the pattern to split. See Spray Gun Guide, SB-2-001 latest revision, for details concerning set up of spray guns.

HVLP requires gun distances of 6"-8" be used. Excess distance will produce inferior results. Strain material through 60 or 90 mesh screen.

CA PROP 65

PROP 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

PREVENTIVE MAINTENANCE

Note

To clean air cap and fluid tip, brush exterior with a stiff bristle brush. If necessary to clean cap holes, use a broom straw or toothpick. **Never use a wire or hard instrument.** This may scratch or burr holes causing a distorted spray pattern. To clean fluid passages, remove excess material at source, then flush with a suitable solvent using a device such as the SolventSaver™ (see Acessories). Wipe gun exterior with a solvent dampened cloth.

Note

The technology used in this gun is the internal jet impingement orifices contained within the fluid tip. The components of the fluid tip assembly are not sold separately. The fluid nozzle must be purchased as an assembly.

Note

If the orifice components do become plugged and it is necessary to remove them for cleaning, this may be done by unscrewing the spacer retainer in the fluid tip assembly. There are two Delrin material components: the first is the seat and the forward part is the impingement orifice. The holes in these parts are either .018" or .030" in diameter. They may be cleaned out in an acetone solvent or the obstruction can be poked out with the appropriate wire or drill rod, depending on orifice size. Replace the components in the identical order in which they were removed. The retainer spacer should be hand tightened to 64 inch-ounces of torque.

Note

It will be necessary to periodically clean the fluid inlet 100-mesh strainer element. Disconnect the fluid inlet hose and remove the in-line strainer. Element can be cleaned in any appropriate solvent.

SAFETY PRECAUTIONS

This manual contains information that is improtant 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 an injury or loss of life.

CAUTION

Important information that tells how to prevent damage to equipment.

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.

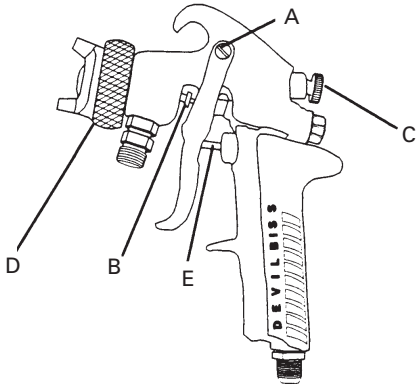
HAZARD	CAUSE	SAFEGUARD
Fire 	Solvent and coatings can be highly flammable or combustible, especially when sprayed.	Adequate exhaust must be provided to keep air free of accumulations of flammable vapors. Smoking must never be allowed in the spray area. Fire extinguishing equipment must be present in the spray area.
Solvent Spray 	During cleaning and flushing, solvents can be forcefully expelled from fluid and air passages. Some solvents can cause eye injury.	Wear eye protection.
Inhaling Toxic Substances 	Certain materials may be harmful if inhaled, or if there is contact with skin.	Follow the requirements of the Material Safety Data Sheet supplied by your coating material manufacturer. Adequate exhaust must be provided to keep the air free of accumulations of toxic materials. 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.
Explosion Hazard - Incompatible Materials 	Halogenated hydrocarbon solvents - for example; methylene chloride and 1, 1, 1 - Trichloroethane can chemically react with aluminum. The chemical reaction caused by these solvents reacting with aluminum can become violent and lead to an equipment explosion.	Guns with stainless steel internal passageways may be used with these solvents. However, aluminum is widely used in other spray application equipment - such as material pumps, regulators, valves & 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.
General Safety	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 and insurance company requirements governing ventilation, fire precautions, operation, maintenance and housekeeping. These are OSHA Sections 1910.94 and 1910.107 and NFPA-33.
Cumulative Trauma Disorders "CTD's" **CTD's, or musculoskeletal disorders, involve damage to the hands, wrists, elbows, shoulders, neck and back. Carpal tunnel syndrome and tendinitis (such as tennis elbow or rotator cuff syndrome) are examples of CTD's**	Use of hand tools may cause cumulative trauma disorders "CTD's". CTD's, when using hand tools, tend to affect the upper extremities. Factors which may increase the risk of developing a CTD include: 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 activity. 5. Tool vibration. 6. Repeated pressure on a body part. 7. Working in cold temperatures.	Pain, tingling, or numbness in the shoulder, forearm, wrist, hands or fingers, especially during the night, may be early symptoms of a 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 and hand can lead to serious disability. Risk is reduced by avoiding or lessening factors 1-7.

SPRAY GUN LUBRICATION

Daily, apply a drop of SSL-10* spray gun lube at trigger bearing stud (29) and the stem of air valve (19) where it enters air valve assembly. The shank of fluid needle (11) where it enters packing nut (9) should also be oiled. Fluid needle packing (8) should be lubricated periodically. Make sure baffle (6) and retaining ring (3) threads are clean and free of foreign matter. Before assembling retaining ring to baffle, clean the threads thoroughly, then add two drops of SSL-10 spray gun lube to threads. Fluid needle spring (16) and air valve spring (18) 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.

* Not for air tools or high RPM equipment.

A. Trigger Points
B. Packing
C. Adjusting Knob
D. Baffle Threads
E. Air Valve Cartridge



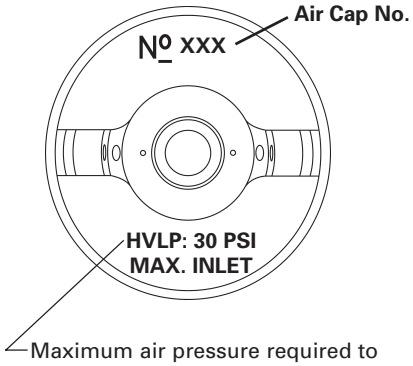
PARTS REPLACEMENT

FLUID INLET GASKET (33) REPLACEMENT INSTUCTIONS

1. Remove fluid inlet adapter (35) with appropriate wrench.
2. Clean Loctite from gun body inlet threads and seal area.
3. Place gasket (33) squarely onto the fluid inlet adapter and push it down until it is flat against the shoulder.
4. Use medium strength thread sealant (i.e. Devcon 2242 blue, or equal) on threads before installing fluid inlet adapter.
5. Torque fluid inlet adapter to 20-25 ft. lbs. and tighten locknut.

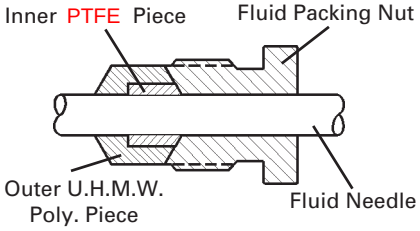
PARTS REPLACEMENT

Figure 1 Air Cap



Maximum air pressure required to assure compliance of 10 PSI Max. Cap Pressure - this reading must be taken at the spray gun handle inlet fitting.

JGV-463 Packing Replacement Instructions



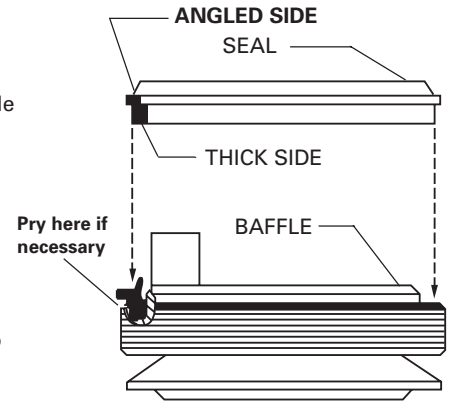
1. Remove gun body bushing and needle spring from gun.
2. Partially withdraw needle from gun body.
3. Loosen packing nut and remove.
4. Remove old packing.
5. Assemble packing nut to needle.
6. Assemble packing in order shown to needle.
7. Insert needle all the way into gun body seating in tip.
8. Install needle spring and gun body bushing.
9. Thread packing nut into gun body.
10. Tighten packing nut in equal increments – no more than 1/6 turn at a time.
11. After each adjustment, pull needle open and observe needle closure.
12. If needle snaps shut, continue adjusting nut until there is evidence of needle bind or slow closing.
13. Back off packing nut 1/12 turn to the point where needle snaps shut. Packing nut must remain tight enough to prevent loosening by hand.
14. Pull needle several times to verify needle snaps shut and check packing nut for looseness.

GTI-33 Baffle Seal Replacement

1. Remove Fluid Tip (5).
2. Remove Baffle (6).
3. Remove Seal (7) from baffle.

NOTE

The seal is designed to be a tight fit on the baffle. The seal should be able to be removed using your fingers. If you are unable to remove the seal using your fingers, insert a small screwdriver between the outer lip and the back of the baffle and pry the seal off.



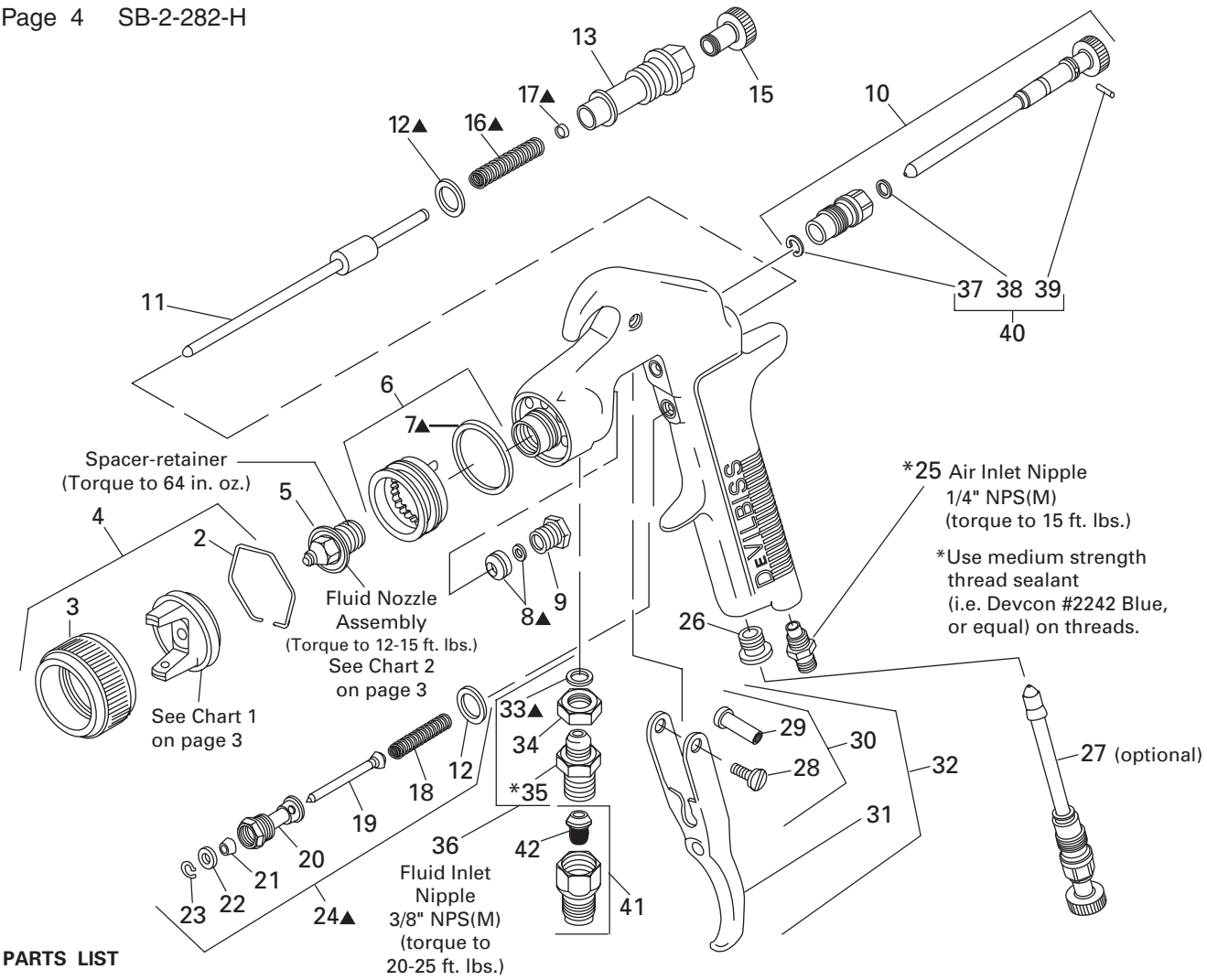
4. Assemble seal to baffle with **angled side up** as shown above. **NOTE:** The seal should be a tight fit on the baffle. If it is a loose fit on the baffle, assure that it is assembled with the angled side up.
5. Install baffle on gun.
6. Install fluid tip (5) and tighten to 15-20 ft-lbs.

Chart 1 — Air Cap & Baffle Combinations

No. Stamped on Parts		Set		CFM @ Cap Pressure				
Air Cap Part No.	Baffle	Ref. No. 4 Air Cap	Ref. No. 6 Baffle Assy.	2 psi	4 psi	6 psi	8 psi	10 psi
2000	(Not Stamped)	GTI-407-2000	GTI-425	7.3	10.4	12.8	14.7	16

Chart 2 — Fluid Nozzles

Fluid Nozzle Assembly	Orifice Size	Recommended Flows
VTX-2	.018	15 oz/min or Less
VTX-13	.030	From 15-25 oz/min



PARTS LIST

Ref. No.	Replacement Part No.	Description	Ind. Parts Req.
2	JGA-156-K10	Spring Clip (Kit of 10)	1
3	GTI-3	Air Cap Retaining Ring	1
4	See Chart 1	Air Cap & Retaining Ring	1
+5	See Chart 2	Fluid Nozzle Assembly	1
6	GTI-425	Baffle Assembly	1
▲7	GTI-33-K5	Baffle Seal (Kit of 5)	1
▲8	JGV-463-K3	Needle Packing Assembly (Kit of 3)	1
9	34411-122-K10	Fluid Needle Packing Nut (Kit of 10)	1
10	GTI-405	Spreader Valve	1
11	VTX-9	Fluid Needle	1
▲12	JGS-72-K10	Gasket Kit (PTFE) (Kit of 10)	2
13	JGA-17	Gun Body Bushing	1
15	GTI-4	Adjusting Screw	1
▲16	MBD-19-K10	Fluid Needle Spring (Kit of 10) (Standard 6#)	1
	MSA-4-K10	Fluid Needle Spring (Kit of 10) (Optional 4#)	1
▲17	JGA-193	Spring Pad	1
18	---	Air Valve Spring	1
19	---	Air Valve	1
20	---	Air Valve Body	1
21	---	U-Cup Seal	1

Ref. No.	Replacement Part No.	Description	Ind. Parts Req.
22	---	Washer	1
23	---	Snap Ring	1
▲24	JGS-449-1	Air Valve Assembly	1
25	MSA-3	Air Inlet Nipple 1/4" NPS(M)	1
26	JGA-132	Plug	1
27	GTI-415	Air Adjusting Valve (optional)	1
28	---	Trigger Stud Screw	1
29	---	Trigger Stud	1
30	JGS-478	Stud and Screw Kit (Includes 3 studs & 5 screws)	1
31	---	Trigger	1
32	JGS-477-1	Trigger, Stud, Screw Kit (1 ea.)	1
▲33	---	Fluid Inlet Gasket (PTFE)	1
34	---	Locknut	1
35	---	Fluid Inlet Adapter	1
36	JGA-4044	Fluid Inlet, Gasket, Nut Kit	1
37	---	Retaining Clip	1
38	---	Seal	1
39	---	Pin	1
40	GTI-428-K5	Clip, Seal & Pin Kit (5 each)	1
41	PLH-MF-6-100	Mini Strainer Assy. (100 mesh)	1
42	PLH-MFC-100	Element, 100 mesh	1

+ Also available in Seat and Nozzle Repair Kits, (Qty. 2) VTX-18-K2 and VTX-30-K2.

▲ KK-5085 Gun Repair Kit includes a quantity of necessary parts.

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. Fluid nozzle plugging.	Clean. Ream with non-metallic point. Clean. Clean. Clean orifices.
Heavy right or left side pattern 	Left or right side horn holes plugged. Dirt on left or right side of fluid tip.	Clean. Ream with non-metallic point. Clean.
	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 by washing with solvent.	
Heavy center pattern 	Fluid flow too high for atomization air. Material flow exceeds air cap's capacity. Spreader adjustment valve set too low. Atomizing pressure too low. Material too thick.	Balance air pressure and fluid flow. Increase spray pattern width with spreader adjustment valve. Thin or lower fluid flow. Adjust. Increase pressure. Thin to proper consistency.
Split spray pattern 	Atomization air pressure too high. Fluid flow too low. Spreader adjusting valve set too high.	Reduce at transformer or gun. Increase fluid flow (increases gun handling speed). Adjust.
Jerky or fluttering spray 	*Loose or damaged fluid tip/seat. Material level too low. Container tipped too far. Obstruction in fluid passage. Dry or loose fluid needle packing nut.	Tighten or replace. Refill. Hold more upright. Backflush with solvent. Lubricate or tighten.
Unable to get round spray	Spreader adjustment screw not seating properly. Air cap retaining ring loose.	Clean or replace. Tighten.
Will not spray	No air pressure at gun.	Check air supply and air lines, blow out gun air passages.
Starved spray pattern	Inadequate material flow. Low atomization air pressure.	Increase fluid pressure. Back fluid adjusting screw out to first thread, or change to larger tip size. Increase air pressure and rebalance gun. Clean orifices.
Excessive overspray	Too much atomization air pressure. Gun too far from work surface. Improper stroking (arcing, gun motion too fast).	Reduce pressure. Adjust to proper distance. Move at moderate pace, parallel to work surface.
Excessive fog	Too much or too fast-drying thinner. Too much atomization air pressure.	Remix properly. Reduce pressure.
Dry spray	Air pressure too high. Gun tip too far from work surface. Gun motion too fast. Gun out of adjustment.	Reduce air pressure. Adjust to proper distance. Slow down. Adjust.
Fluid leaking from packing nut	Packing nut loose. Packing worn or dry.	Tighten, do not bind needle. Replace or lubricate.
Fluid leaking or dripping from front of gun	Packing nut too tight. Dry packing. Fluid tip or needle worn or damaged. Foreign matter in tip. Fluid needle spring broken. Wrong size needle or tip.	Adjust. Lubricate. Replace tip and needle. Clean. Replace. Replace.
Runs and sags	Too much material flow. Material too thin.	Adjust gun or reduce fluid flow. Mix properly or apply light coats.

*Most common problem.

TROUBLESHOOTING (continued)

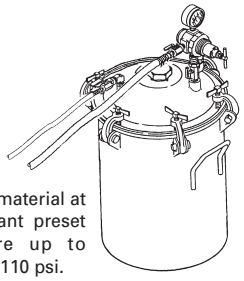
CONDITION	CAUSE	CORRECTION
Thin, sandy coarse finish drying before it flows out	Gun too far from surface. Too much air pressure. Improper thinner being used.	Check distance. Normally approx. 6-8". Reduce air pressure and check spray pattern. Follow paint manufacturer's mixing instrs.
Thick, dimpled finish "orange peel"	Gun too close to surface. Air pressure too low. Improper thinner being used. Material not properly mixed. Surface rough, oily, dirty.	Check distance. Normally approx. 6-8". Too much material coarsely atomized. Increase air pressure or reduce fluid flow. Follow paint manufacturer's mixing instructions. Follow paint manufacturer's mixing instructions. Properly clean and prepare.

NOTES

NOTES

ACCESSORIES

QMGT Galvanized
QMST Stainless Steel
2, 5, 10, 15 Gal. Pressure Tanks

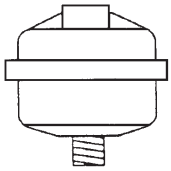


Supply material at a constant preset pressure up to max. of 110 psi.

Spray Gun Lube
SSL-10 (2 oz. bottle)

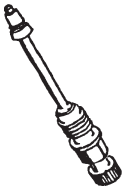
Compatible with all paint materials; contains no silicone or petroleum distillates to contaminate paint. MSDS Sheet available upon request.

HAF-507
Whirlwind™
In-Line Air Filter



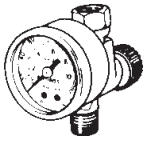
Removes water, oil, and debris from the air line.

GTI-415
Air Adjusting Valve



Allows air adjustment at the gun. Replaces JGA-132 plug.

HAV-500 OR
HAV-501
Adjusting Valve
(HAV-501 SHOWN)



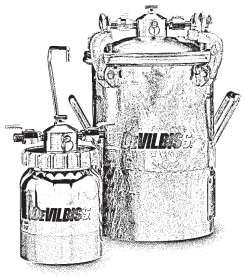
HAV-500 does not have pressure gage. Use to control air usage at gun.

KK-5060 Air Cap Cleaning Kit

Consists of: 2 brushes, 1 wire pick. Helps keep air cap clean and performing properly.

HD-503 or QMGZ-5200
Solvent Savers™ Hose/Gun Cleaners

Simple, easy-to-use cleaners operate with compressed air, providing a finely atomized blast of solvent that travels through fluid passages of spray guns, hoses, etc. **NOTE: Not for use with chlorinated solvents.**



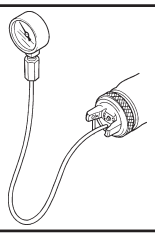
Binks Millennium Series Respirators

Millennium 3000
Premium
Paint Spray
Respirator

Protection against organic vapors, fumes, dusts, and mists.

GTI-5033-2000
Air Cap Test Kits

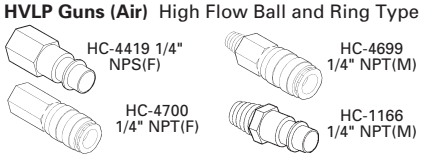
The purpose of this test kit is to measure air cap atomizing air pressure at the center air port of the air cap. Used to confirm code compliance and as a daily quality control measure.



JGA-156-K10 Spring Clips

Joins any single piece DeVilbiss air cap with latest version MBC-368, MSA-1 or GTI-3 retaining rings. Helps prevent parts loss and provides easier assembly.

Industrial Quick Disconnect Approved for HVLP Guns (Air) High Flow Ball and Ring Type



29-3100 Binks Scrubs® Hand Cleaner Towels

Scrubs® are a premoistened hand cleaner towel for painters, that go where you go and no water is needed.

WR-103 Wrench

Contains all necessary tip, hose and nut sizes used on or with gun.

WARRANTY

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

DeVilbiss Sales and Service: www.devilbiss.com

DEVILBISS

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