DeVilbiss

SERVICE BULLETIN
SB-2-173-G
Replaces SB-2-173-F

Repair Kit KK-5025

Model GFHV-501 High Volume Low Pressure Gravity Feed Spray Gun

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

DESCRIPTION

GFHV-501 spray gun is a gravity feed HVLP spray gun designed to apply a wide variety of finishing materials. This gun is manufactured to comply **with SCAQMD and other air quality authorities** by limiting the air spray pressure to 10 psi. This spray gun is intended for use with gravity feed paint supply only.

Note

The KGP gravity feed cups are only included with the gun as part of the refinishers kit and must be ordered separately. See Accessories on Page 8 for more information.

CHART 1 AIR CAPS - PATTERNS - APPLICATIONS

Typical Applications	Air Cap	Fluid Tip	Pattern Size	Fluid Flow
Primer	57	DE	11	11.0
Thin Materials, Low viscosity materials	57	DFX	9	5.5
Basecoat	57 57	DFF DFW	10 10-1/2	7.5 9.5
Clear Coat	57	DFW	10-1/2	9.5
Single Stage	57	DFW	10-1/2	9.5

INSTALLATION

Connect the gun to a clean, moisture and oil free air supply using a hose size of at least 5/16" I.D. Depending on hose length, larger I.D. may be required. Install an air adjusting valve/air gauge, HAV-501, at the gun handle. Pull trigger on spray gun and adjust inlet air pressure at gun handle to approximately 80 psi. **For maximum gun performance and to assure code compliance, install air cap test kit over tip and set the air cap pressure at 10 psig or less.**

Remove the air cap test kit and install the air cap. Attach the gravity feed cup to the material inlet.

OPERATION

Mix, prepare and strain the material to be sprayed according to the paint manufacturer's instructions. Strain material through a 60 or 90 mesh screen.

1. Fill the gravity feed cup with the material. Do not overfill. Make sure that the cup lid vent hole is clear.
2. Turn on the air at the source of supply. Adjust the atomization air pressure to 50 psi.
3. Open the spreader adjustment valve (24) (Fan) by turning the valve stem counter-clockwise.
4. Open the fluid needle adjusting screw (28) by turning counterclockwise.
5. Spray a test area.

If the finish sags, there is too much material flowing for the atomization air pressure being used. Restrict flow by closing the needle adjusting screw (28), or increase atomization pressure.

If the finish is too sandy and dry, the material flow may be too low for the atomization air pressure being used. Lower the air pressure.

Excessive flow rates will result in heavy center spray patterns. Indequate 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.

Best atomization will occur with 10 psig air cap pressure (around 80 psi gun inlet pressure). However, most materials can be sprayed at lower pressures. To improve transfer efficiency, always decrease the inlet pressure to the lowest setting that still provides acceptable atomization quality. To further increase transfer efficiency and reduce overspray, spray with the lowest fluid pressure possible and the smallest pattern that gives acceptable results.

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 serious injury or loss of life.

CAUTION

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

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 Hazard 	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.
Eye Injury 	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 the 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 hygienst or safety expert, and be NIOSH approved.
Explosion Hazard - 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.	This gun can be used with these solvents. However, aluminum is widely used in other spray application equipment - such as, material pumps, cups, regulators, valves, etc. Check all other equipment items before use and make sure they can also be used safely with these solvents. Read the label or material 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.

SAFETY PRECAUTIONS (Continued)

Hazard	Cause	Safeguard
General Safety	Improper operation or maintenance of equipment.	1. Operators must be given training in accordance with the requirements of NFPA-33, Chapter 15. 2. Read all instructions and safety precautions prior to operating. 3. Comply with appropriate local, state, and national codes governing ventilation, fire prevention, operation, maintenance, and housekeeping. OSHA references are Sections 1910.94 and 1910.107. Also refer to NFPA-33 and your insurance company requirements.
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 the activity. 5. Tool vibration. 6. Repeated pressure on a body part. 7. Working in cold temperatures. "CTD's" can also be caused by such activities as sewing, golf, tennis and bowling, to name a few.	Risk is reduced by avoiding or lessening factors 1-7. 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.

PREVENTIVE MAINTENANCE

CAUTION

Do not completely immerse gun in solvents. Lubricants and packings will be damaged or destroyed and performance or life expectancy will be reduced.

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.** Wipe gun exterior with a solvent dampened cloth.

CAUTION

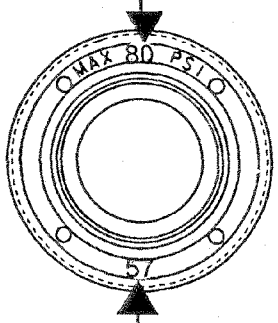
To avoid damage to the fluid needle (25) or fluid tip (3), be sure to either 1) pull the trigger and hold while tightening or loosening the fluid tip or 2) remove fluid needle adjusting screw (28) to relieve spring pressure.

Note

When baffle (6) and fluid tip (3) are removed, seal (4) and O-ring (5) should be replaced. For your convenience, an extra seal and O-ring is included with this gun. Be careful when reassembling baffle not to damage the O-ring. Apply SSL-10 gun lube to the O-ring to help in reassembling.

Figure 1 Baffle

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.



Air cap number located on face of cap - cap number must correspond with baffle number to assure 10 PSI cap pressure.

Chart 2

Air Caps & Baffle Combinations				
No. stamped on parts				
Air Cap Size	Ref. No. 2 Baffle	Ref. No. 6 Air Cap	Baffle	CFM 10 psi @Cap
57	57-80-G	JGHV-101-57	GFHV-402-57-80	21.0

Chart 3

Fluid Tips and Needles for use with JGHV-101-57 Caps

If this No. On Tip, Order →	Tip Size		Matched Tip & Needles Ref. Nos. 3 & 25
	In.	mm	
DFX	.042	1.1	JGA-4046-11
DFF	.055	1.4	JGA-4046-14
DFW	.063	1.6	JGA-4046-16
DE	.070	1.8	JGA-4046-18

PARTS REPLACEMENT

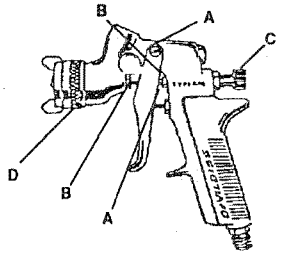
Spreader Adjustment O-ring (23) Replacement Instructions

1. Remove retaining ring (22) on spreader adjustment.
2. Remove valve stem & Teflon® O-ring (23) from valve body.
3. Insert new Teflon® O-ring (23) in valve body. Make sure it is pushed past the threads.
4. Insert valve stem
5. Reinstall retaining ring (22).

SPRAY GUN LUBRICATION

For best results, lubricate the points indicated, daily. Use SSL-10 Spray Gun Lube to lubricate.

A. Trigger Points
B. Packing
C. Adjusting Valve
D. Baffle Threads



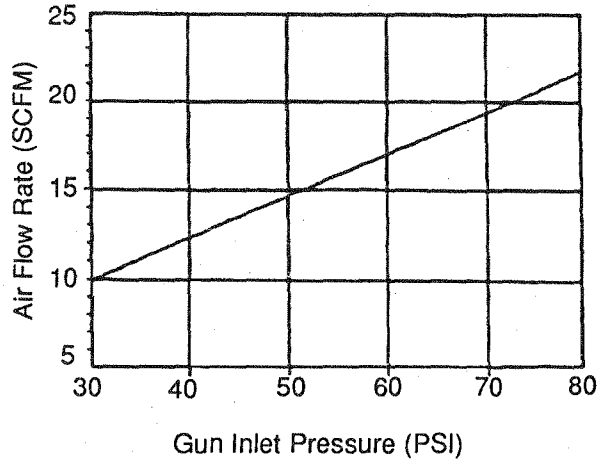
The fluid needle spring (26) and air valve spring (13) should be coated with a light grease. Be careful that any excess grease does not clog the air passages.

PARTS LIST

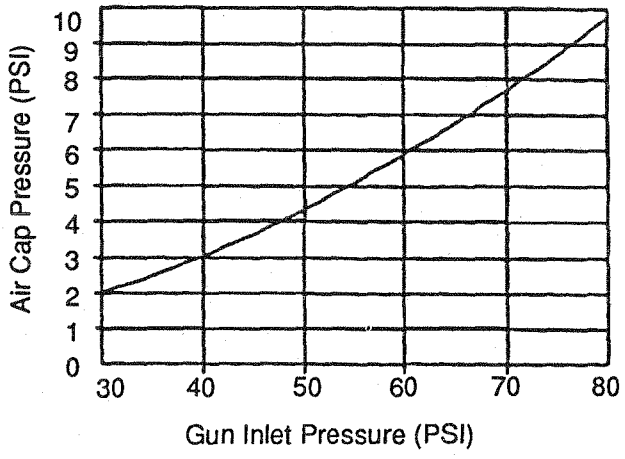
Ref. No.	Part No.	Description	Ind. Parts Req.
1	MBC-368	Retaining Ring	1
2	JGHV-101-57	Air Cap	1
3	See Chart 3	Fluid Tip	1
•4	JGD-14-K10	Seal (Kit of 10) (Polyethylene)	1
•5	SSG-8182-K5	O-ring (Kit of 5)	1
6	GFHV-402-57-80	Baffle	1
•7	JGA-4035-K10	Fluid Needle Packing (Kit of 10)	1
8	34411-122-K10	Packing Nut (Kit of 10)	1
•9	—	Snap Ring	1
•10	—	Washer	1
•11	—	U Cup	1
•12	—	Air Valve	1
•13	—	Spring	1
•14	JGS-72-K10	Gasket (Kit of 10) (Teflon)	2
15	JGS-449-1	Air Valve Assembly	1
•16	—	Screw	1
17	—	Trigger Bearing Stud	1
18	JGS-478	Stud & Screw Kit (Kit includes 3 studs & 5 screws)	1
19	JGS-477	Trigger, Stud & Screw Kit (Kit includes 1 ea.)	1
20	P-MB-51	Air Inlet Connector 1/4" NPS (M)	1
21	—	Plug	1
•22	—	Retaining Ring	1
•23	—	O-ring (Teflon®)	1
24	GFG-413-2	Air Valve Assy - Horn	1
25	See Chart 3	Fluid Needle	1
•26	MBD-19-K10	Fluid Needle Spring (Kit of 10)	1
27	—	Gun Body Bushing	1
28	JGS-16	Fluid Needle Adjusting Screw	
29	JGA-4041	Bushing, Spring & Knob Kit	1

• KK-5025 Gun Repair Kit includes a quantity of necessary parts and should be kept on hand for service convenience. Suffixes - K5, K-10 designated kits of multiple parts. (Example) JGD-14-K10 is a kit of 10 seals.

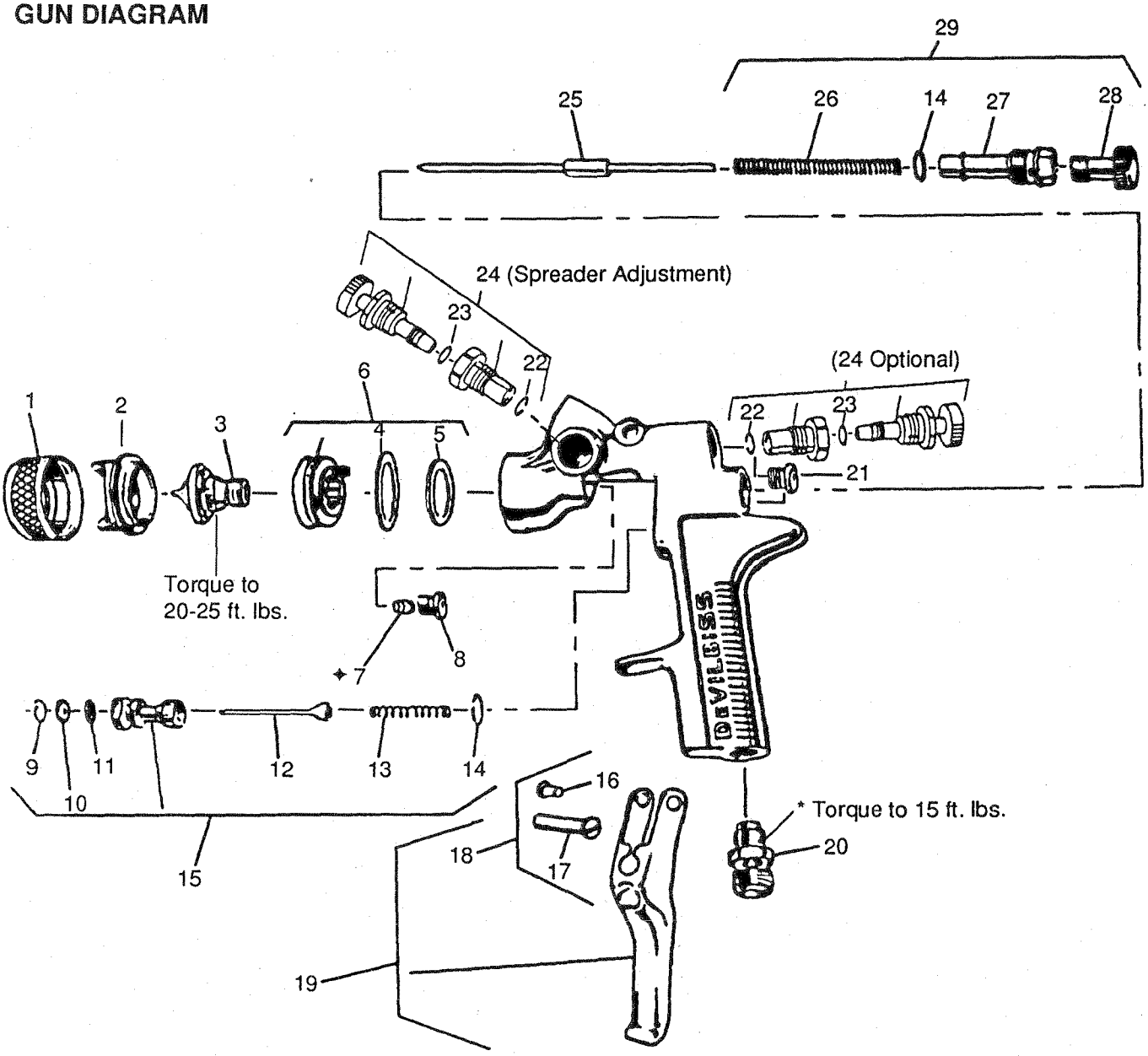
Graph 1 Air Flow Rates Versus Inlet Pressure (for #57 air cap)



Graph 2 Cap Pressure Versus Inlet Pressure (for #57 air cap)



GUN DIAGRAM



*Use QH-130 (Loctite #242 med. strength blue) sealing compound on threads.

✦ (Ref. No. 7) Needle Packing Assembly Detail (3 piece packing)

TROUBLESHOOTING

Condition	Cause	Correction
Heavy top or bottom pattern 	Horn holes plugged.	Clean. Ream with non-metallic point.
	Obstruction on top or bottom of fluid tip.	Clean.
	Cap and/or tip seat dirty.	Clean.
Heavy right or left side pattern 	Left or right side horn holes plugged.	Clean. Ream with non-metallic point.
	Dirt on left or right side of fluid tip.	Clean.
	Remedies for top-heavy, bottom-heavy, right-heavy and left-heavy patterns: 1) Determine if obstruction is on cap or fluid tip. Do this by making a test pattern. Then, rotate cap one-half turn and spray another pattern. If defect is inverted, obstruction is on air cap. Clean air cap as previously instructed. 2) If defect is not inverted, it is on fluid tip. Check for a fine burr on edge of fluid tip. Remove with #600 wet or dry sand paper. 3) Check for dried material just inside opening. Remove by cleaning.	
Heavy center pattern 	Material flow exceeds air cap's capacity.	Thin or lower fluid flow.
	Atomizing pressure too low.	Increase pressure.
	Material too thick.	Thin to proper consistency.
Split spray pattern 	Fluid adjusting knob turned in too far.	Back out counterclockwise to achieve proper flow.
	Atomization air pressure too high.	Reduce air pressure.
Jerky or fluttering spray 	*Loose or damaged fluid tip /seat.	Tighten or replace.
	Material level too low.	Refill.
	Container tipped too far.	Hold more upright.
	Obstruction in fluid passage.	Clean according to material supplier's recommendations.
	Loose or broken fluid tube or fluid inlet nipple.	Tighten or replace.
	Dry or loose fluid needle packing nut.	Lubricate or tighten.
Will not spray	No air pressure at gun.	Check air supply and air lines.
	Fluid needle adjusting screw not open enough.	Open fluid needle adjusting screw.
Excessive overspray	Too much atomization air pressure.	Reduce pressure.
	Gun too far from work surface.	Adjust to proper distance.
	Improper stroking (arching, gun motion to fast).	Move at moderate pace, parallel to work surface.

Condition	Cause	Correction
Dry Spray	Air pressure too high.	Decrease air pressure.
	Gun tip too far from work surface.	Adjust to proper distance.
	Gun motion too fast.	Slow down.
	Gun out of adjustment.	Adjust.
Fluid leaking from packing nut	Packing nut loose.	Tighten, do not bind needle.
	Packing worn or dry.	Replace or lubricate.
Fluid leaking or dripping from front of gun	*Foreign matter in tip.	Clean.
	Packing nut too tight.	Adjust.
	Dry packing.	Lubricate.
	Fluid tip or needle worn or damaged.	Replace tip & needle with lapped sets.
	Fluid needle spring deformed or broken.	Replace.
Runs and sags	Too much material flow.	Adjust gun or reduce fluid pressure.
	Material to thin.	Mix properly or apply light coats.
	Gun tilted on an angle.	Hold gun at right angle to work and adapt to proper gun technique.
Thin, sandy coarse finish. Drying before it flows out	Gun too far from surface.	Check distance. Normally 6-8"
	Too much air presure.	Reduce air pressure and check spray pattern.
	Improper thinner being used.	Follow paint manufactuer's mixing instructions.
Thick, dimpled finish "orange peel". Too much material coarsely atomized.	Gun too close to surface.	Check distance. Normally 6-8".
	Air pressure too low.	Increase air pressure or reduce fluid pressure.
	Improper thinner being used.	Follow paint manufacturer's mixing instructions.
	Material not properly mixed.	Follow paint manufacturer's mixing instructions.
	Surface rough, oily, dirty.	Properly clean and prepare.
Excessive fog	Too much, or too fast-trying thinner.	Remix properly.
	Too much atomization air pressure.	Reduce pressure.
Unable to get round spray	Fan adjustment screw not seating properly.	Clean or replace.
	Air cap retaining ring loose.	Tighten.

* Most common problem.

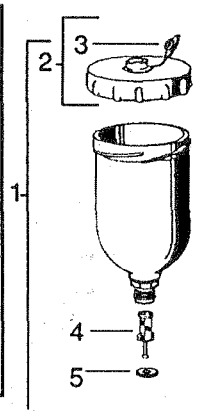
ACCESSORIES

Gravity Feed Cups

1/2 Pint Cup, 8 ounces	20 Ounce Cup
KGP-509-1 (Nylon)	KGP-510-1 (Nylon)

These gravity feed cups fit into the material inlet on the gun. Make sure that the washer (5) is placed between the gun body and the cup. This washer is placed in the material inlet of the gun before the cup is assembled.

Ref. No.	Part No.	Description
1	KGP-509-1	Cup Assembly 1/2 pint, 8 oz. nylon
	KGP-510-1	Cup Assembly 20 oz., nylon
2	KGP-401	Cup Lid for KGP-509-1
	KGP-402	Cup Lid for KGP-510-1
3	KGP-2-K5	Drip Check Lid (Kit of 5)
4	KGP-5-K5	Filter (Kit of 5)
5	KGP-12-K5	Washer (Kit of 5)

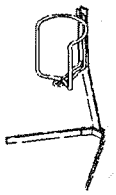


Other Accessories

42884-214-K5	Cleaning Brush 3/8"
42884-215-K10	Cleaning Brush 5/8"
WR-103	Wrench
SSL-10	Spray Gun Lube (2oz. bottle)
MSP-521	Paint Spray Respirator
HAV-501	Air Adjusting Valve
HARG-510	Air Regulator
GFG-6	Gun Hook

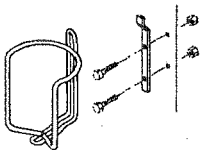
GH-505 Gun Holder

Gun holders are made to hold standard paint cups, gravity feed guns and cups and paint filters.



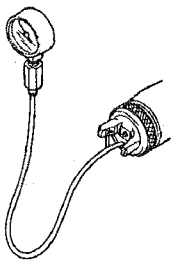
GH-407 Gun Holder

(1) Wall mount bracket included with GH-407.



KK-5033-57, Air Cap Test Kit for JGHV-101-57

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



SERVICE BULLETIN REVISIONS

Part No. Old Part No.	New Part No	Interchangeability	Literature Changes
			1. Added Figure 1, Pg. 3 info. for checking maximum air pressure at air cap. 2. Added Safety Precautions and Troubleshooting into manual.

WARRANTY

This product is covered by DeVilbiss' 1 Year Limited Warranty. See SB-1-000 which is availabie upon request.

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