DEVILBISS

SERVICE BULLETIN
SB-2-611

FUN-600G COMPLIANT HIGH VOLUME LOW PRESSURE GRAVITY FEED SPRAY GUN AND CUP

IMPORTANT: Before using this equipment, read all safety precautions on page 2 and instructions. Keep for future use.

GUN DESCRIPTION – 110268 (*FUN-600G*)

The FUN-600G is a light weight, general purpose compliant high volume low pressure gravity feed spray gun. It is designed to apply a wide variety of common coating materials.

IMPORTANT: This gun may be used with most common coating and finishing materials. It is designed for use with mildly corrosive and non-abrasive materials. If used with other high corrosive or abrasive materials, it must be expected that frequent and thorough cleaning will be required and the necessity for replacement of parts will be increased.

Note

This gun includes 303 series stainless steel fluid tip and needle. Guns may be used with chlorinated solvent materials only if the attached gravity cup is Delrin or Nylon. **Do not use aluminum cups with chlorinated solvent materials.**

This gun was manufactured to provide maximum transfer efficiency by limiting air cap pressure to 10 psi (complies with rules issued by SCAQMD and other air quality authorities).

This gun will produce approximately 10 psi cap pressure at 18 psi gun inlet pressure, as measured at the gun inlet. An air cap test kit (see Accessories) should be used to insure 10 psi cap pressure is not exceeded.

The No. V (HVLP) air cap requires an air supply of 8 SCFM and an air pressure of 18 psi when measured at the gun inlet and with the trigger pulled.

CUP DESCRIPTION – 192298 (*KGP-4*)

This gun is supplied with a 400 ml cup. The cup is constructed from durable Acetal to provide trouble-free operation. The cup insert is nickel plated brass. The cup has a stand built into the bottom to prop up the gun.

INSTALLATION

For maximum transfer efficiency, **do not use more pressure than is necessary to atomize the material being applied.**

Attach the gravity feed cup to the material inlet by hand-tightening the wing nut.

Note

Protective coating and rust inhibitors have been used to keep the gun in good condition prior to shipment. Before using the gun, flush it with solvents so that these materials will be removed from fluid passages.

Connect the gun to a clean, moisture and oil free air supply using a hose size of at least **5/16" I.D.** hose. Do not use 1/4" I.D. 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 psi.)

Note

Depending on hose length, larger I.D. hose 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.** Excess pressure will create additional overspray and reduce transfer efficiency.

Note

If quick connects are required, use only high flow quick connects approved for HVLP use, such as DeVilbiss HC-4419 and HC-4719. Other types will not flow enough air for proper gun operation.

Note

If an air adjusting valve is used at the gun inlet, use DeVilbiss Model HAV-500 or HAV-501. Some competitive adjusting valves have significant pressure drop that can adversely affect spray performance. Models HAV-500 and HAV-501 have minimal pressure drop, which is important for HVLP spraying.

OPERATION

Mix, prepare and strain the material to be sprayed according to the paint maufacturer's instructions.

Strain material through a 60 or 90 mesh screen.

Fill the cup with paint to the full mark (400 ml). **Do not overfill.**

Screw the plastic lid on the top of the cup. Make sure that the cup lid vent hole is clear.

Open the spreader adjustment valve (8) (Fan) by turning the valve stem counterclockwise.

Close the fluid needle adjusting knob (15) by turning clockwise.

Turn on air supply and set gun inlet pressure to lowest recommended pressure for material being sprayed. Best atomization will occur with 10 psig air cap pressure. However, some materials can be sprayed at lower pressures, improving transfer efficiency.

Spray a test area. Turn the fluid needle adjusting knob (15) counterclockwise until a full coat is obtained.

If the finish is too sandy and dry, the material flow may be too low for the atomization air pressure being used. Turn the fluid needle adjusting knob (15) counterclockwise to increase fluid flow.

If the finish sags, there is too much material flowing for the atomization air pressure being used. Turn the fluid needle adjusting knob (15) clockwise to decrease fluid flow.

Pattern width can be altered by turning spreader adjustment valve (8), either clockwise to decrease the width or counterclockwise to increase the width.

Adjust inlet air pressure to provide a uniform dispersion of atomized paint throughout the pattern. Keep air pressure as low as possible to minimize bounce-back and overspray. Excessive pressure will result in split spray patterns. Inadequate pressures will cause heavy centered patterns and poor atomization.

(continued on page 3)

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.

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	SAFEGUARDS
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 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.
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 hygienist or safety expert, and be NIOSH approved.
Explosion Hazard - Incompatible Materials 	Halogenated hydrocarbon solvents - for example; methylene chloride and 1,1,1, - Trichloroethane 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.	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 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.
General Safety	Improper operation or maintenance of equipment.	Operators should be given adequate training in the safe use and maintenance of the equipment (in accordance with the requirements of NFPA-33, Chapter 15). Users must comply with all local and 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 tendonitis (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.	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.

CLEANING

Note

For routine cleaning, it is not necessary to remove cup from gun.

CAUTION

Do not soak the lid in solvent for extended periods of time. Doing so could cause cup/lid sealing problems and leakage. If lid becomes tight, or does not fit, it is due to extended soaking in solvent. Let lid air dry overnight and the lid should return to its original size and fit.

Remove lid and properly dispose of any excess paint. Pour in a small amount of clean solvent. The amount will vary with different coatings and solvents. Reinstall lid. Shake cup to wash down the inside surfaces. Pull trigger to allow some solvent to be flushed through gun. Remove lid and pour out dirty solvent. Add a small amount of clean solvent and repeat procedure. Wipe exterior of lid with a clean cloth and clean solvent.

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 if possible. If a wire or hard instrument is used, extreme care must be used to prevent scratching or burring of the holes which will cause a distorted spray pattern.

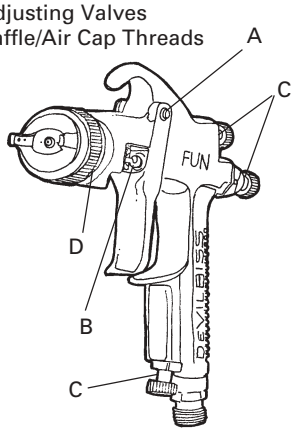
To clean fluid passages, remove excess material at source, then flush with a suitable solvent. Wipe gun exterior with a solvent dampened cloth. Never completely immerse in solvent as this is detrimental to the lubricants and packings.

PREVENTIVE MAINTENANCE

Spray Gun Lubrication

Daily, apply a drop of SSL-10 spray gun lube at trigger bearing stud (19) and the stem of the air valve (10). The shank of the fluid needle (13) where it enters the packing nut (17) should also be oiled. The fluid needle packing (16) should be kept soft and pliable by periodic lubrication. Make sure the baffle (5) and retaining ring (1) 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. The fluid needle spring (14) and air valve spring (11) 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.

A. Trigger Points
B. Packing
C. Adjusting Valves
D. Baffle/Air Cap Threads



Note

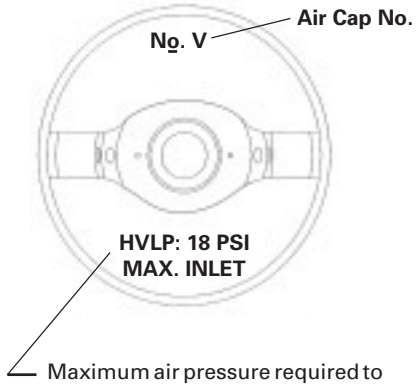
When replacing the fluid tip or fluid needle, replace both at the same time. Using worn parts can cause fluid leakage. Also, replace the needle packing at this time. Lightly lubricate the threads of the fluid tip before reassembling. Torque to 15 ft-lbs. Do not overtighten the fluid tip.

CAUTION

To prevent damage to the fluid tip (4) or fluid needle (13), be sure to either 1) pull the trigger and hold while tightening or loosening the fluid tip or 2) remove fluid needle adjusting screw (15) to relieve spring pressure against needle collar.

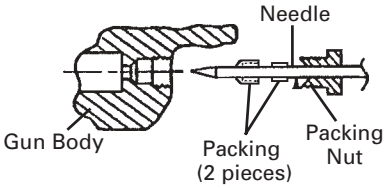
PARTS REPLACEMENT

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.

FUN-463 Packing Replacement Instructions

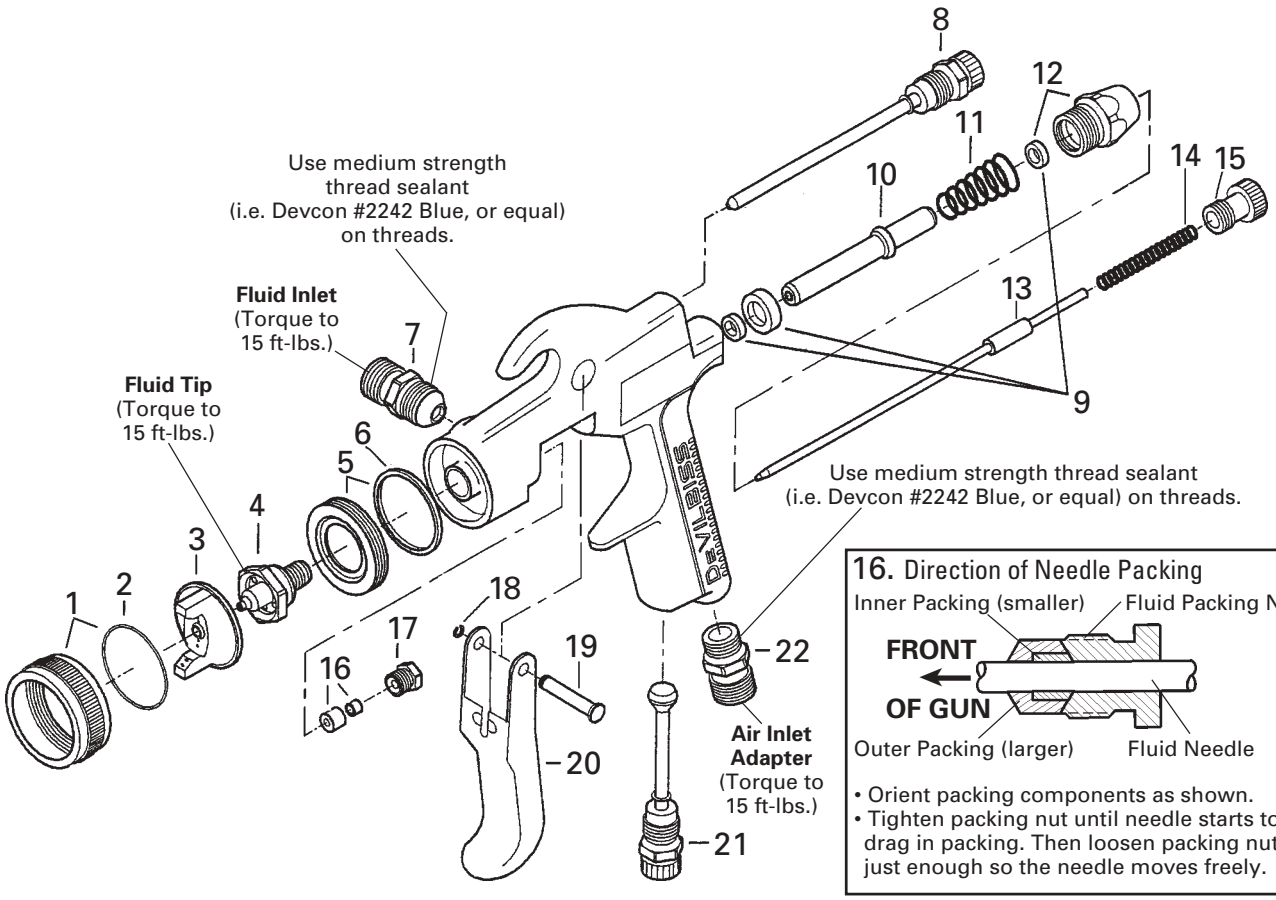


1. Remove adjusting knob and needle spring from gun.
2. Partially withdraw needle from gun body.
3. Loosen packing nut and remove.
4. Remove old packing.
5. Assemble packing nut to needle
6. Assemble packing in order shown to needle.
7. Insert needle all the way into gun body seating in tip.
8. Install needle spring and adjusting knob.
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.

Chart 1

No. on Fluid Tip or Needle Order →	Fluid Tip (Ref. No. 4)	Fluid Tip Computer No.	Fluid Tip Size (mm)	Fluid Needle (Ref No. 13)	Fluid Needle Computer No.	Applications
1.1	FUN-4-1.1	192300	1.1	FUN-41-1.1	192303	Stains, lacquers and other thin materials.
1.4	FUN-4-1.4	192301	1.4	FUN-41-1.4	192304	General purpose, light to medium viscosity materials.
1.8	FUN-4-1.8	192302	1.8	FUN-41-1.8	192305	Primers and medium viscosity materials.

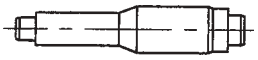
Gun Drawing



16. Direction of Needle Packing

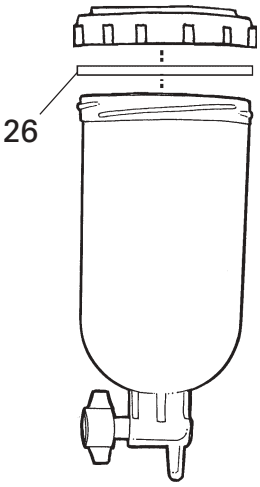
- Orient packing components as shown.
- Tighten packing nut until needle starts to drag in packing. Then loosen packing nut just enough so the needle moves freely.

23. Valve Seal Inserting Tool



24. Gun Wrench

25. KGP-4 Cup



PARTS LIST

Ref. No.	Computer Part No.	Replacement Part No.	Description	Ind. Parts Required
1	192276	FUN-6	Retaining Ring	1
2	192277	FUN-50-K5	Air Cap Seal (Kit of 5)	1
3	192278	FUN-3-V	Air Cap (Violet) – For HVLP	1
4	See Chart 1		Fluid Tip	1
5	192279	FUN-7	Baffle with Gasket	1
6	192280	FUN-8-K5	Baffle Gasket (Kit of 5)	1
7	192281	FUN-35	Fluid Inlet	1
8	192282	FUN-44	Spreader Adjustment Valve	1
*9	192283	FUN-443	Air Valve Seal Kit	1
10	192284	FUN-43	Air Valve	1
11	192285	FUN-25-K5	Air Valve Spring (Kit of 5)	1
12	192286	FUN-12	Air Valve Bushing	1
13	See Chart 1		Fluid Needle	1
14	192287	FUN-14-K5	Needle Spring (Kit of 5)	1
15	192288	FUN-13	Needle Adjusting Knob	1
16	192289	FUN-463	Needle Packing	1
17	192290	FUN-11-K3	Packing Nut (Kit of 3)	1
18	192291	FUN-46-K10	E-Ring (Kit of 10)	1
19	192292	FUN-45-K5	Trigger Stud (Kit of 5)	1
20	192293	FUN-108	Trigger (Fun Gun)	1
21	192294	FUN-42	Air Control Valve	1
22	192295	FUN-30	Air Inlet Adapter	1
*23	192296	FUN-34	Tool for Replacing Valve Seal	1
24	192297	FUN-103	Gun Wrench (Fun Gun)	1
25	192298	KGP-4	Acetal Gravity Feed Cup – 400 ml	1
26	192307	KGP-4-FP-K5	Cup Lid Gasket (Kit of 5)	1

* Ref. No. 23 (FUN-34) is needed for the installation of Ref. No. 9 (FUN-443). When replacing it, be careful not to damage the seating surface. A damaged seat can cause air leakage.

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.	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. Fluid needle adjusting screw not open enough. Fluid too heavy for gravity feed.	Check air supply and air lines, blow out gun air passages. Open fluid needle adjusting screw. Thin material and/or change to larger tip size.
Paint bubbles in cup	Fluid tip not tight.	Tighten tip.
Fluid leaking or dripping from cup lid	Cup lid loose. Dirty threads on cup or lid. Cracked cup or lid.	Tighten lid. Clean. Replace cup and lid.
Starved spray pattern	Inadequate material flow. Low atomization air pressure.	Back fluid adjusting screw out to first thread, or change to larger tip size. Increase air pressure and rebalance gun.
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.
Fluid dripping or leaking from bottom of cup	Cup loose on gun. Cup threads dirty.	Tighten. Clean.

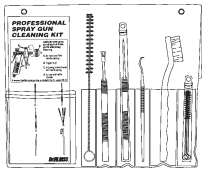
*Most common problem.

TROUBLESHOOTING (Continued)

CONDITION	CAUSE	CORRECTION
Runs and sags	Too much material flow. Material too thin. Gun tilted on an angle, or gun motion too slow.	Adjust gun or reduce fluid flow. Mix properly or apply light coats. 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. Too much air pressure. Improper thinner being used.	Check distance. Normally approximately 8". Reduce air pressure and check spray pattern. Follow paint manufacturer's mixing instructions.
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 approximately 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.

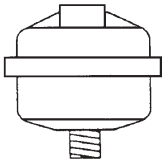
ACCESSORIES

192212 Professional Spray Gun Cleaning Kit



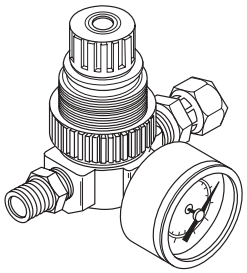
Contains six precision tools designed to effectively clean all DeVilbiss, Binks, Finishline and other brand spray guns.

HAF-507 Whirlwind™ In-Line Air Filter



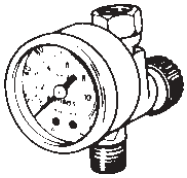
Removes water, oil, and debris from the air line.

HARG-510 Air Regulator



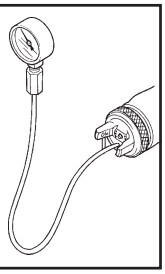
Use to maintain nearly constant outlet pressure despite changes in inlet pressure and downstream flow.

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



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

FUN-5033-V Air Cap Test Kit



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.

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

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

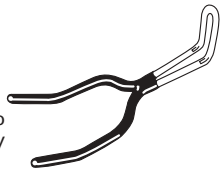
MSP-524 Twin Cartridge, Paint Spray Respirator

NIOSH-Certified (TC84A-1623) for respiratory protection in atmospheres not immediately dangerous to life.

192218 Scrubs® Hand Cleaner Towels

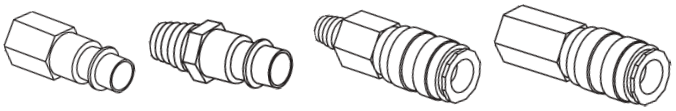
Scrubs® are a premoistened hand cleaner towel for painters, body men and mechanics that go where you go and no water is needed.

192219 Gun Holder



Gun holder made to hold guns with gravity feed cups.

Automotive Quick Connects For HVLP Guns (Air)
High Flow Type.



HC-4419 Stem 1/4" NPT(F) | HC-1166 Stem 1/4" NPT(M) | HC-4719 Coupler 1/4" NPT(M) /NPS(M) | HC-4720 Coupler 1/4" NPT(F)

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

DeVILBISS WORLDWIDE SALES AND SERVICE LISTING - www.devilbiss.com

AUTOMOTIVE REFINISHING

DeVilbiss has authorized distributors throughout the world. For equipment, parts and service, check the Yellow Pages under "Automobile Body Shop Equipment and Supplies". **FOR TECHNICAL ASSISTANCE, CALL TOLL FREE 1-800-445-3988 (U.S.A. ONLY). FOR LOCAL CALLS, SEE LISTING BELOW.**

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MAUMEE, OH 43537	1724 Indian Wood Circle	(419) 891-8100
		Toll Free Fax No. 1-800-445-6643

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