

CENTRAL PNEUMATIC®
21 PC PAINT SPRAY GUN KIT
Model 90985
ASSEMBLY and OPERATING
INSTRUCTIONS



3491 Mission Oaks Blvd., Camarillo, CA 93011
Visit our Web site at <http://www.harborfreight.com>

Copyright © 2003 by Harbor Freight Tools® . All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.

For technical questions and replacement parts, please call 1-800-444-3353

Specifications

Operating PSI (Both Guns)	50 PSI
Air Consumption (Gravity Feed Gun)	10.2 CFM @ 50 PSI
Air Consumption (Touch-Up Gun)	5.3 CFM @ 50 PSI
Capacity (Gravity Feed Gun)	20.2 oz.
Capacity (Touch-Up Gun)	8.4 oz.
Air Inlet (Both Guns)	1/4" NPS

Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

Safety Warnings and Precautions

WARNING: When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

Read all instructions before using this tool!

1. **Keep work area clean.** Cluttered areas invite injuries.
2. **Observe work area conditions.** Do not use machines or power tools in damp or wet locations. Don't expose to rain. Keep work area well lit. Do not use air tools in the presence of flammable gases or liquids.
3. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, extension cords, or air hoses.
4. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
5. **Use the right tool for the job.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. There are certain applications for which this tool was designed. It will do the job better and more safely at the rate for which it was intended. Do not modify this tool and do not use this tool for a purpose for which it was not intended.
6. **Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
7. **Use eye and ear protection.** Always wear ANSI approved impact safety goggles. Wear an ANSI approved dust mask or respirator when working around chemical dusts, paints and mists. Wear appropriate ear protection.

8. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across running machines or air hoses.
9. **Maintain tools with care.** Keep tools clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords and air hoses periodically and, if damaged, have them repaired by an authorized technician. The handles must be kept clean, dry, and free from oil and grease at all times.
10. **Disconnect air supply.** Disconnect air hose when not in use, when changing accessories, and during maintenance.
11. **Remove adjusting wrenches.** Check that adjusting wrenches are removed from the tool before attaching to the air source.
12. **Avoid unintentional starting.** Be sure the trigger is in the Off position when not in use and before attaching to the air source. Do not carry any tool with your finger on the trigger, whether it is attached to the air compressor or not.
13. **Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.
14. **Check for damaged parts.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any trigger does not operate properly.
15. **Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.
16. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
17. **Do not operate tool if under the influence of alcohol or drugs.** Read warning labels if taking prescription medicine to determine if your judgement or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
18. **Use proper size and type extension cord.** If an extension cord is required, it must be of the proper size and type to supply the correct current to the compressor without heating up. Otherwise, the extension cord could melt and catch fire, or cause electrical damage to the compressor. Check your compressor's manual for the appropriate size cord.
19. **Maintenance.** For your safety, maintenance should be performed regularly by a qualified technician.
20. **Compressed air only.** Never use combustible gas as a power source.
21. **Do not spray near open flames, pilot lights, stoves, heaters, or any other heat source.** Most solvents and coatings are highly flammable, particularly when sprayed.

22. **Clean Sprayer with care. Use non-flammable solvents.**
23. **Do not smoke while spraying.** Most solvents and coatings are highly flammable, particularly when sprayed.
24. **Read all of the information concerning coating products and cleaning solvents.** Chlorinated solvents (e.g. 1-1-1 Trichlorethylene and Methylene Chloride, also known as methyl chloride) can chemically react with aluminum and may explode. Many paint sprayers contain aluminum. If you have any doubt about potential chemical reactions, contact the solvent or coating manufacturer.
25. **Materials used when painting or cleaning may be harmful or fatal if inhaled or swallowed.** Only use in an area with adequate ventilation. Use a respirator or mask when painting or using cleaning solvents.
26. **Never release the sprayer lid while the cup is pressurized.**
27. **Never point a spray gun at a person or animal.** Always properly mask all objects that are not to be painted.

NOTE: Performance of the compressor (if powered by line voltage) may vary depending on variations in local line voltage. Extension cord usage may also affect tool performance.

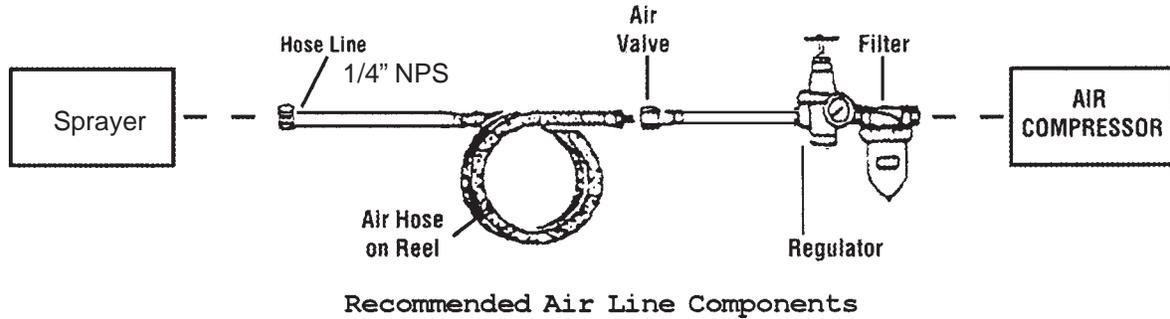
WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

WARNING: The brass components of this product contain lead, a chemical known to the State of California to cause birth defects (or other reproductive harm). (California Health & Safety code 25249.5, et seq.)

Unpacking

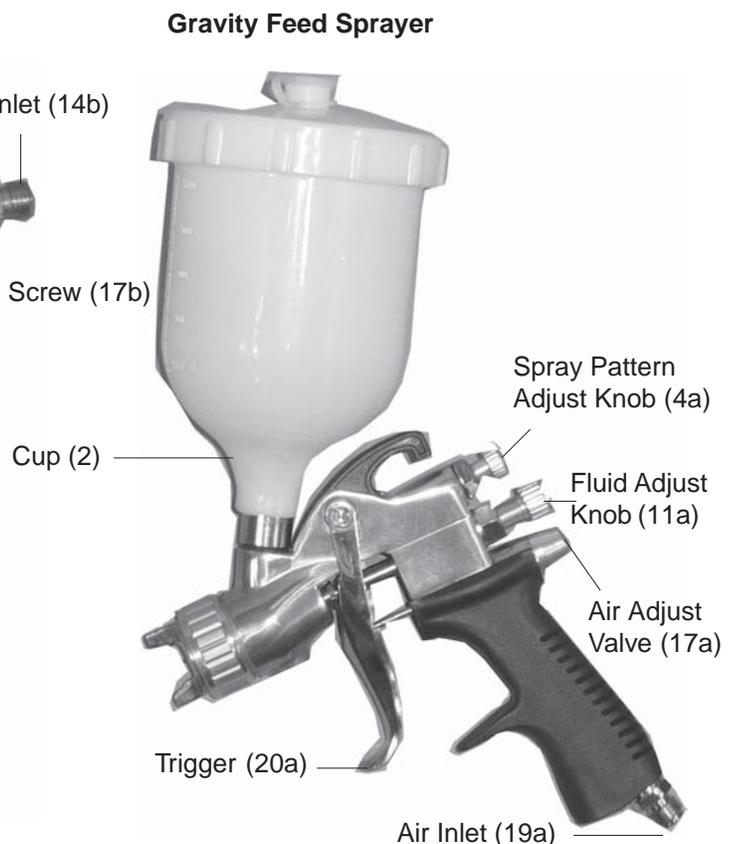
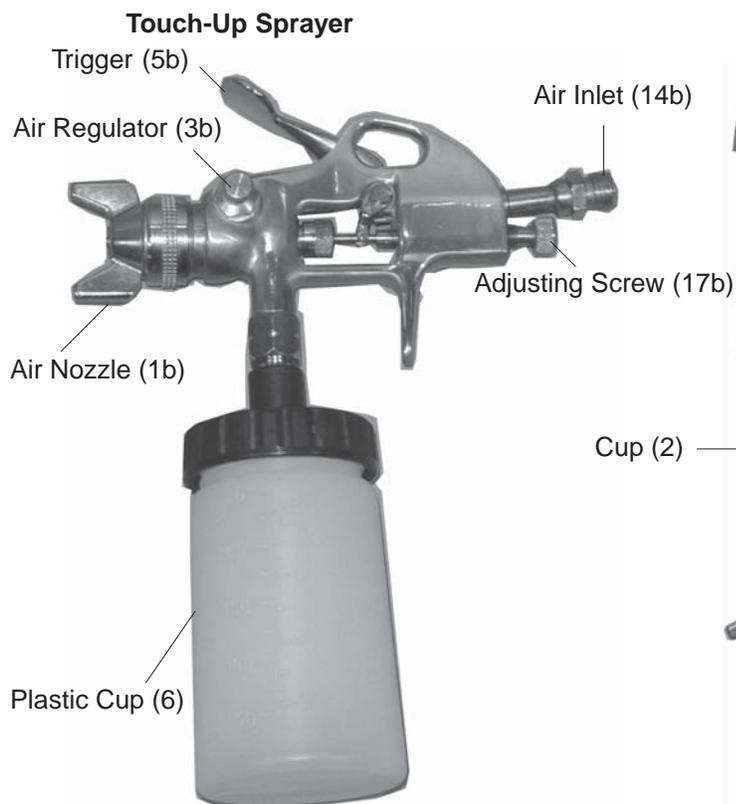
When unpacking, check to make sure the parts listed on pages 10, 11, and 12 are included. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual as soon as possible.

Operation



For best service you should incorporate an oiler, regulator, and inline filter, as shown in the diagram above. Hoses, couplers, oilers, regulators, and filters are all available at Harbor Freight Tools.

1. You will need to prepare a 1/4" air connector (sold separately) to connect to the air inlet on either the Gravity Feed or Touch-up Sprayer. First, wrap the 1/4" air connector (not included) with pipe thread seal tape before threading it into the Air Inlet (see below). Connect the 3/8" ID Air Source Hose to the Spray Gun.
2. Set the air pressure on your compressor to 50 PSI. Do not exceed the maximum air pressure of 50 PSI.
3. Check the air connection for leaks and then disconnect the tool from the air source.



Operation (continued)

Paint and Materials Preparation

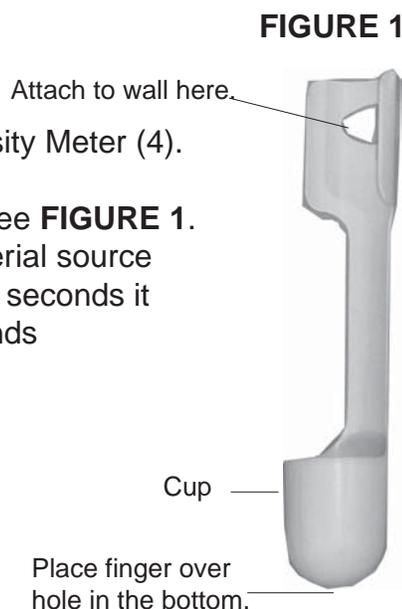
Verify with the paint or materials supplier the percentage of thinning required for use with these Sprayers. Try thinning a small amount and testing the spray action. Thoroughly mix material before testing.

Viscosity

Viscosity is the technical term used to indicate the liquidity (thickness or thinness) of the material being sprayed. Viscosity is measured in the number of seconds required for the material to pass through the Viscosity Tester (see **FIGURE 1**). This sprayer can spray materials with a viscosity range of 10 to a maximum of 60 (DINS). Material with a higher viscosity can be used only with water soluble products (outdoor and indoor wall applications). Use high quality products.

To test the viscosity of a material:

1. Place your finger over the output hole of the Viscosity Meter (4). See **FIGURE 1**.
2. Fill the Cup on the Viscosity Meter (4) to the top. See **FIGURE 1**.
3. While holding the Viscosity Meter (4) over the material source can, let go of the output hole and count the number of seconds it takes for it to empty completely. The number of seconds is the viscosity rating.



Guidelines for Thinning

PAINT OR MATERIAL	VISCOSITY
Filler	10 to 20
Wood Stain	15 to 25
2- Pack Paint	20-35
Oil Based Paint	35-40
Water Soluble or Finish Products	40 or higher

Note: These are general guidelines only. Refer to the material manufacturer's recommendations for thinning instructions.

Operation (continued)

FIGURE 2

Note: When not in use, hang the Gravity Feed Spray Gun as shown in **FIGURE 2**.

Preparing the area

1. Mask all objects you do not want sprayed.
2. Lay the appropriate size Tack Cloth (16) on the floor, and attach Tack Cloths (16) to the surrounding walls.



Preparing and Operating the HVLV Gravity Spray Gun

Refer to page 5 and the Assembly Drawing on pages 10 and 11.

Note: We recommend you practice on scrap material to adjust and become familiar with the Gun.

1. Detach the Plastic Cup (2). Insert a Filter (14) into the bottom of the Plastic Cup (2) with the stem end pointing into the cup. This will prevent dirt and debris from entering the HVLV Gravity Feed Gun (1).
2. Mount the Plastic Cup (2) to the HVLV Gravity Feed Gun (1). Make sure that the Plastic Cup (2) is securely attached. Fill the cup with material that has already been checked for viscosity (see page 6). Close to Cup (2) tightly to avoid leakage.
3. Connect the air source hose to the Air Inlet (19a). Turn on your air compressor. Do not exceed the 50 PSI maximum.
4. Pull the Trigger (20a) slowly and move the Spray Gun in parallel strokes to the object being painted. Keep the distance from the object being painted at 4" to 12". This may slightly differ depending on the flow adjustment and the material being sprayed.
5. Release the Trigger (20a) after each forward movement; pull the Trigger (20a) again on the return movement.
6. When using a vertical pattern, move the Spray Gun in a horizontal motion; with a horizontal pattern move the Spray Gun in a vertical motion. A round pattern requires a greater distance from the object being painted.
7. When finished, release the Trigger (20a) and disconnect from the air source. The Plastic Cup (2) and Spray Gun may still hold air pressure, fire the Spray Gun toward scrap material until all of the pressure is expended. Open the Cap on the Plastic Cup (2) before removing the Lid.

Note: Gun adjustments on page 8.

Operation (continued)

HVLP Gravity Gun Adjustments

Refer to page 5 and the Assembly Drawing on page 11.

Note: We recommend you practice on scrap material to learn the fine tune adjustments.

1. To change the spray pattern, turn the Spray Pattern Adjust Knob (4a).
2. To regulate the amount of material entering the Spray Gun, adjust the Fluid Adjust Knob (11a).
3. To fine tune the air flow, adjust the Air Adjust Knob (17a).

Preparing and Operating Touch-up Gun

Refer to page 5 and the Assembly Drawing on pages 10 and 12.

Note: We recommend you practice on scrap material to adjust and become familiar with the Gun.

1. Detach the Plastic Cup (6). Fill the cup with material that has already been checked for viscosity (see page 6). Close the Plastic Cup (6) tightly to avoid leakage.
2. Mount the Plastic Cup (6) to the Touch-up Gun (5). Make sure that the Plastic Cup (6) is securely attached.
3. Connect the air source hose to the Air Inlet (14b). Turn on your air compressor. Do not exceed the 50 PSI maximum.
4. Press the Trigger (5b) slowly and move the Spray Gun in parallel strokes to the object being painted. Keep the distance from the object being painted at 4" to 12". This may slightly differ depending on the flow adjustment and the material being sprayed.
5. Release the Trigger (5b) after each forward movement; press the Trigger (5b) again on the return movement.
6. When using a vertical pattern, move the Spray Gun in a horizontal motion; with a horizontal pattern move the Spray Gun in a vertical motion. A round pattern requires a greater distance from the object being painted.
7. When finished, release the Trigger (5b) and disconnect from the air source. As the Plastic Cup (6) and Spray Gun may still hold air pressure, fire the Spray Gun toward scrap material until all of the pressure is expended.

Touch-up Sprayer Adjustments

Refer to page 5 and the Assembly Drawing on page 12.

Note: We recommend you practice on scrap material to learn the fine tune adjustments.

1. To change the spray pattern, turn the Air Nozzle (1b).
2. To regulate the amount of material entering the Spray Gun, adjust the Adjusting Screw (17b).
3. To fine tune the air flow, adjust the Air Regulator (3b).

Troubleshooting

PROBLEM	CAUSE	REMEDY
Paint drips on the object being painted	<ol style="list-style-type: none"> 1. Paint too diluted 2. Improper spray adjustment 3. Too much air flow 4. Holding Trigger too long 5. Spraying too close 	<ol style="list-style-type: none"> 1. Add undiluted product (check viscosity) 2. Reduce paint flow by tightening Paint Adjustment Screw 3. Reduce air flow by turning Air Adjustment Screw down 4. Release Trigger on back stroke 5. Increase distance between nozzle and object
Paint Application uneven or irregular	<ol style="list-style-type: none"> 1. Paint too diluted 2. Improper spray adjustment 3. Air flow too weak 4. Spray movement too fast 5. Gun clogged 6. Spray distance too far 7. Nozzle set too fine 	<ol style="list-style-type: none"> 1. Add undiluted product (check viscosity) 2. Increase paint flow by loosening Paint Adjustment Screw 3. Increase air flow by loosening Air Adjustment Screw 4. Move Spray Gun more slowly 5. Clean components 6. Spray closer to object 7. Adjust Nozzle
Spray Gun not operating	<ol style="list-style-type: none"> 1. Paint not thinned enough 2. Spray Gun clogged 3. Air Hose is broken 4. Air Filter clogged 5. Paint Cup not fully closed 	<ol style="list-style-type: none"> 1. Add thinner (check viscosity) 2. Clean components 3. Replace Air Hose 4. Clean or replace Air Filter 5. Close paint cup

Maintenance

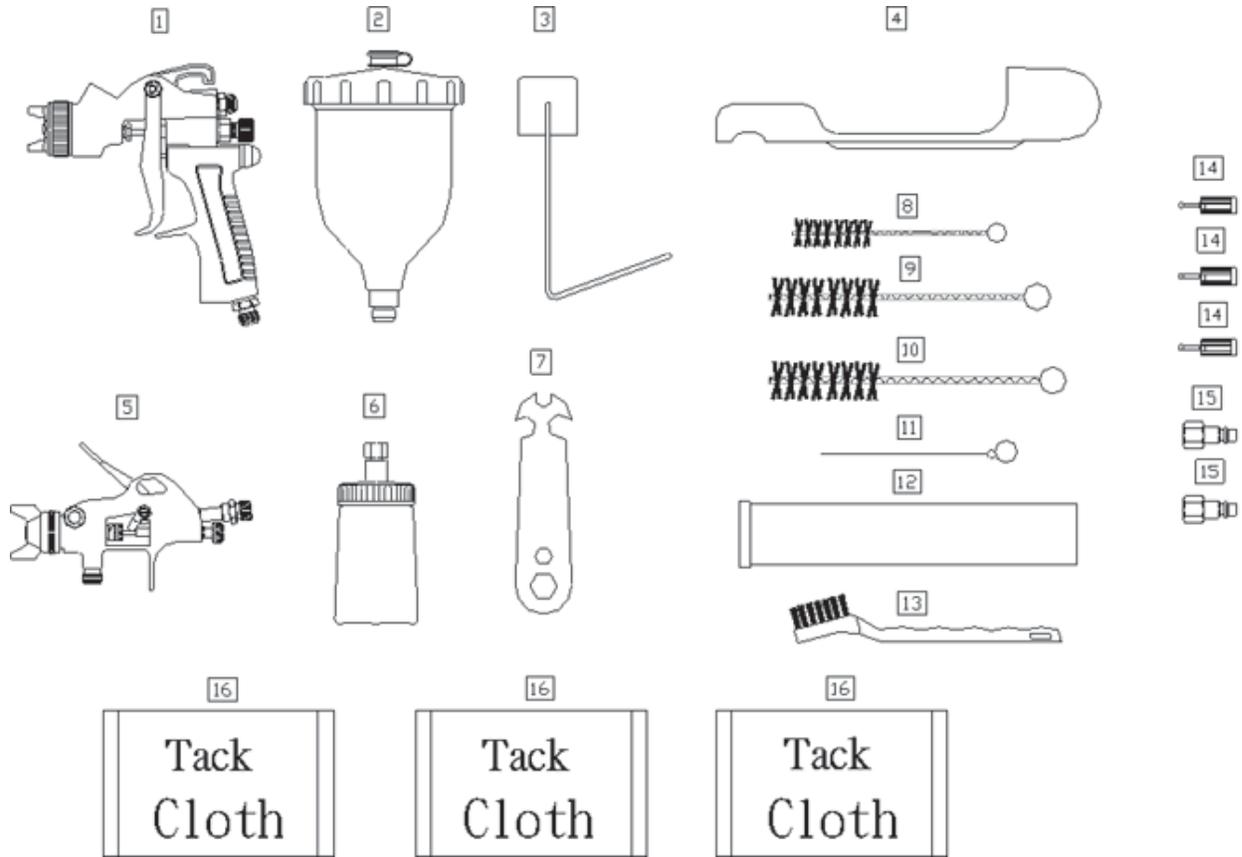
Disconnect the tool from the air source.

1. Remove the Spray Gun Plastic Cup (2 or 6).
2. Pour residual paint into the paint container and seal it.
3. Pour non-flammable paint thinner into the Plastic Cup (2 or 6). If water based paint was used, you can use water.
4. Secure the Plastic Cup (2 or 6) to the appropriate Gun and shake the liquid in the cup.
5. Connect to the air source and turn on the air compressor.
6. Spray the liquid onto a piece of scrap material until the spray material is free of paint.
7. Repeat if necessary.
8. After following the above procedure, use the brush and wire set to further clean the Spray Gun.



Brush & Wire Set

Main Parts List and Assembly Drawing



Part No.	Description	Qty.	Part No.	Description	Qty.
1	HVLP Gravity Spray Gun	1	9	Brush	1
2	20.2 oz. Plastic Cup	1	10	Brush	1
3	Gun Holder	1	11	Needle	1
4	Viscosity Measure	1	12	Plastic Tube	1
5	Touch-up Gun	1	13	Plastic Grip Brush	1
6	8.4 oz. Plastic Cup	1	14	Filter	3
7	Wrench	1	15	Brass Nipple	2
8	Brush	1	16	Tack Cloth	3

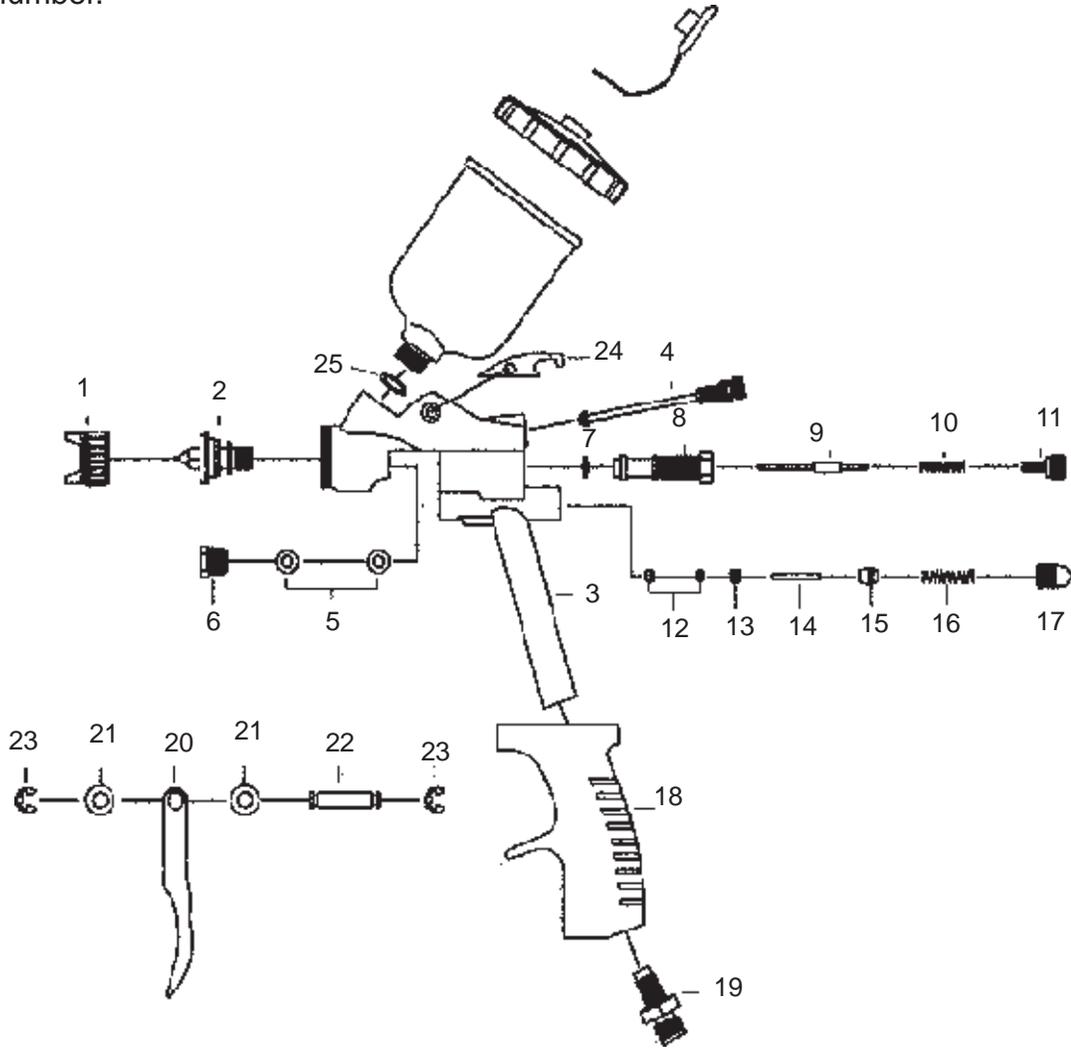
PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

NOTE: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

Gravity Feed Sprayer Assembly Drawing and Parts List

Note: When ordering parts off of the parts list below, make sure to include the letter “a” after the part number.

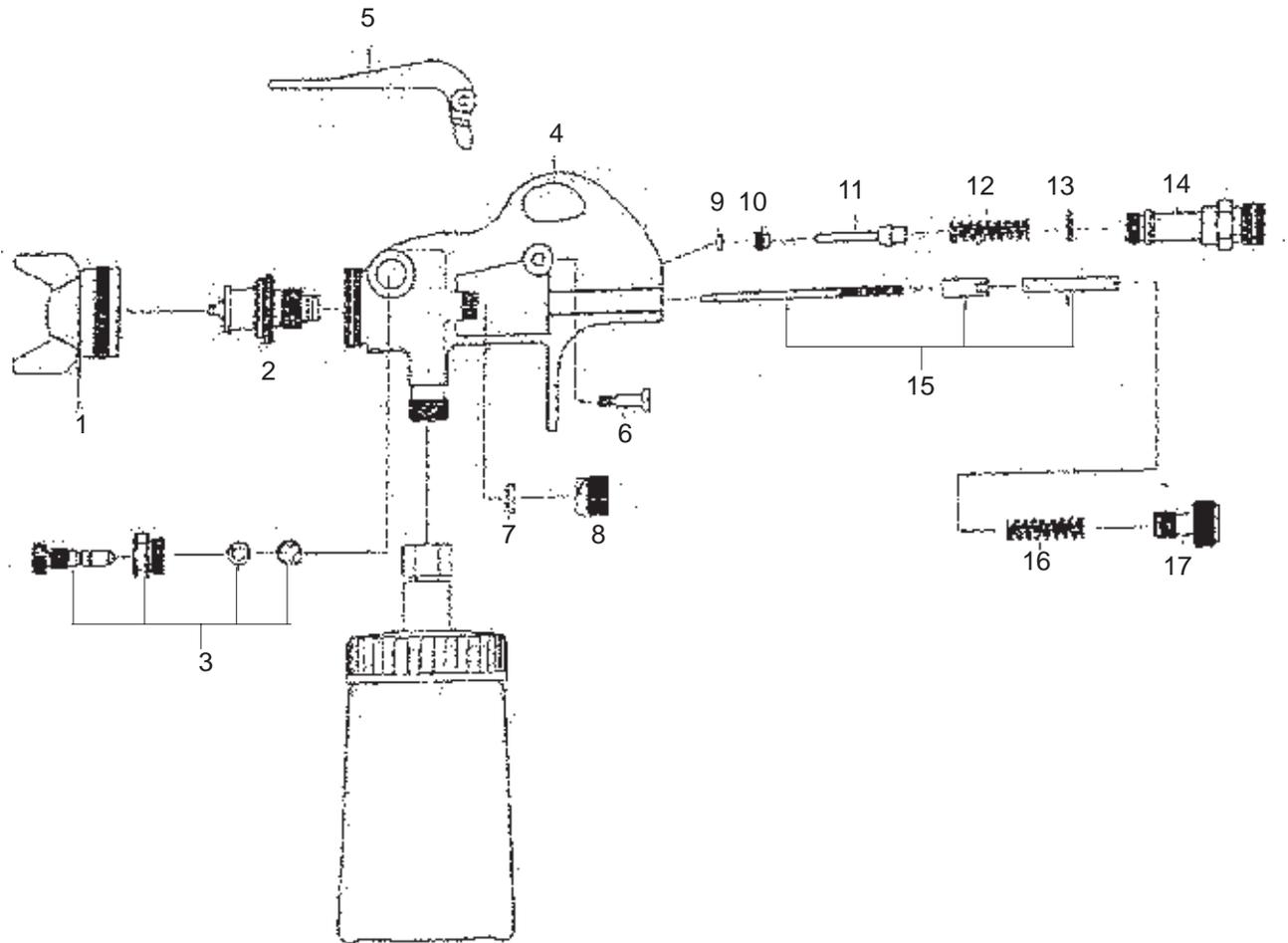


Part No.	Description	Part No.	Description
1a	Air Nozzle W/Brass Cap	17a	Air Adjustment Knob
2a	Fluid Nozzle	18a	Handle
3a	Gun Body	19a	Air Inlet
4a	Spray Pattern Adjust Knob	20a	Trigger
5a	Washer	21a	Gasket
6a	Packing Nut	22a	Trigger Stud
7a	Gasket	23a	E-clip
8a	Housing	24a	Hook
9a	Paint Needle	25a	Gasket
10a	Spring		
11a	Fluid Adjust Knob		
12a	Washer		
13a	Valve Nut		
14a	Stem		
15a	Nylon Piston		
16a	Spring		

NOTE: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

Touch-up Sprayer Assembly Drawing and Parts List

Note: When ordering parts off of the parts list below, make sure to include the letter “b” after the part number.



Part No.	Description	Part No.	Description
1b	Air Nozzle W/Brass Cap	10b	Valve Nut
2b	Fluid Nozzle	11b	Stem
3b	Air Regulator Set	12b	Spring
4b	Gun Body	13b	O-ring
5b	Trigger	14b	Air Inlet
6b	Trigger Screw	15b	Paint Needle Set
7b	Gasket	16b	Spring
8b	Nut	17b	Adjusting Screw
9b	Gasket		

NOTE: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.