



INSTRUCTIONS

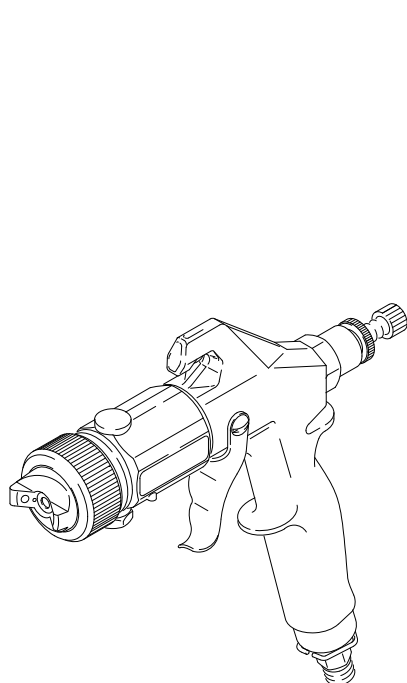
This manual contains important
warnings and information.
READ AND RETAIN FOR REFERENCE

Series 700

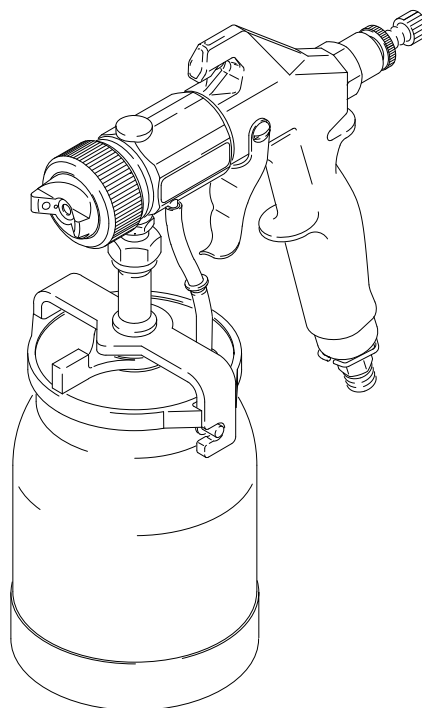
Venturi Spray Gun

90 psi (6.2 bar) Maximum Inlet Air Pressure

50 psi (3.5 bar) Maximum Inlet Fluid Pressure

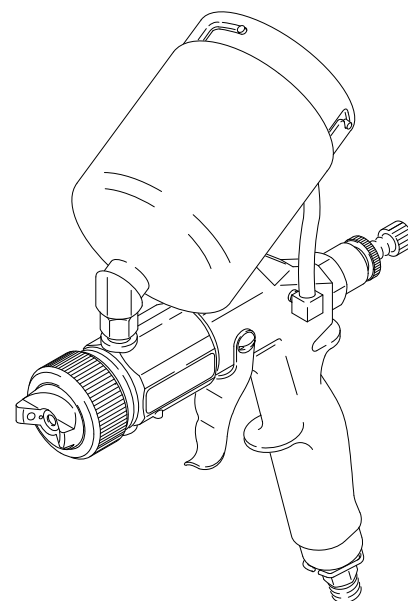


Model 713VP



Model 711V

Includes 1 quart (1 liter) cup



Model 714HSV

Includes 1/2 quart (1/2 liter) cup

Model 712HSV

Includes 3/4 quart (3/4 liter) cup

02968

WARNINGS

For Professional Use Only. Observe All Warnings.
Read and understand all instruction manuals before operating equipment.

EQUIPMENT MISUSE HAZARD

General Safety

Any misuse of the spray equipment or accessories, such as improper usage, over pressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, can cause them to rupture and result in serious injury, fire, explosion or property damage.

- Never point the spray gun at anyone or at any part of the body.
- Never put hand or fingers over the spray nozzle.
- Never try to stop or deflect leaks with your hand or body.
- Always turn off the air supply to the gun before removing the spray gun cup.
- Check all spray equipment regularly and repair or replace worn or damaged parts immediately.
- Only use genuine Graco replacement parts when servicing the gun.
- Never alter or modify any part of this equipment; doing so could cause it to malfunction.
- Read and follow the fluid and solvent manufacturer's literature regarding the use of protective eyewear, gloves, clothing, respirator and other equipment.

Fluid Compatibility

Be sure all fluids and solvents used are chemically compatible with the "Wetted Parts" shown in the **Technical Data** on the back cover. Always read the fluid and solvent manufacturer's literature before using the fluid or solvent in this gun.

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in the venturi spray system, which contains aluminum and/or galvanized-coated parts. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious injury, and/or substantial property damage.

System Pressure

This gun has a *Maximum Inlet Fluid Pressure* of 50 psi (3.5 bar) and a *Maximum Inlet Air Pressure* of 90 psi (6.2 bar). The accessory remote pressure pots have a *Maximum Inlet Air Pressure* of 50 psi (3.5 bar). Never exceed the maximum pressures of the gun, pressure pot, or any other component or accessory used in the system.

Pressure Relief

The spray gun cups and accessory remote pressure pots remain pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid or accidental spray from the gun, always relieve pressure in the cup or pressure pot before checking or servicing any part of the spray system; before installing, cleaning or changing fluid nozzles; before loosening or removing the accessory remote pressure pot cover; and whenever you stop spraying.

Spray Gun Cup

To relieve pressure:

1. Turn off the air supply to the gun.
2. Unlatch the cup cover and loosen or remove the cup from the cover.

Accessory Remote Pressure Pot

To relieve pressure:

1. Turn off the air supply to the pressure pot.
2. *2 1/2 Gallon Remote Pot:* Pull the pressure relief valve ring (205) until pressure is completely relieved.
2 Quart Remote Pot: Turn the air regulator (5) knob all the way out (*counterclockwise*) and unscrew the air control valve (20) thumbscrew. Wait until pressure is completely relieved before removing the cover. Close the air regulator knob and screw the air control valve in before using the system again.

See Fig. 3, on page 7.

HOSE SAFETY

Tighten all fluid connections securely before each use.

Never use a damaged hose. Before each use, check the entire hose for cuts, leaks, abrasion, bulging cover, or damage or movement of the hose couplings. If any of these conditions exist, replace the hose immediately.

Handle and route hoses carefully. Do not pull on hoses to move equipment. Do not use fluids or solvents which are not compatible with the inner tube and cover of the hose.

FIRE OR EXPLOSION HAZARD

Sparking and Flammable Vapors Hazard

Sparking can be expected in the normal operation of the turbine motor. Sparks could ignite fumes from flammable liquid, dust particles and other flammable substances in the spray area, and cause serious injury and property damage. Be sure to follow the precautions below:

- When flammable liquid is sprayed or used for flushing or cleaning equipment, the turbine must be placed at least 20 feet (6.1 m) away from areas where hazardous concentrations of flammable vapors are likely to occur.
- Use additional air hose if necessary to ensure that the turbine is operated in a clean, dry, well ventilated area.
- Never place the turbine inside a spray booth! Use this equipment outdoors or in extremely well ventilated areas.

Ignition Sources

Avoid all ignition sources such as static electricity from plastic drop cloths, open flames such as pilot lights, hot objects such as cigarettes, arcs from connecting or disconnecting power cords or turning light switches on and off. Extinguish or remove all sources of ignition.

Grounding

To reduce the risk of static sparking, ground the turbine and all other spray equipment used or located in the spray area. Check your local electrical code for detailed grounding instructions for your area and type of equipment.

To ground the turbine: Plug the power supply cord into a properly grounded outlet. Do not remove the grounding prong from the power cord. Do not use an adapter. Extension cords must have three wires and be rated for a minimum of 15 amps.

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards—particularly the General Standards, Part 1910 and the Construction Standards, Part 1926—should be consulted.

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Introduction

The Series 700 Venturi Spray Gun can spray most coatings or finishes currently being used for automotive refinish, industrial, aerospace, marine, wood, plastic and architectural applications.

Operating at standard air line pressures, the Venturi Spray Gun creates a high volume of low pressure air [less than 10 psi (0.7 bar)] at the gun. This air carries

and directs the paint from the gun to the surface, minimizing overspray and increasing transfer efficiency. This enables painters to comply with new clean air laws that are designed to reduce VOC (volatile organic compounds) emissions, eases paint application by requiring fewer paint passes to obtain coverage, and saves on both material and clean-up time.

Selection Charts

Contractor User Chart

Complete Fluid Set P/N	Fluid Needle/ Nozzle Set P/N	Fluid Needle P/N	Fluid Nozzle P/N	Air Cap P/N	Orifice Size	Type of Fluid**	Fluid Usage
M70562	M71328	M70456	M70448	M70439	1.0 mm	Light 14–18 sec.	Fine finish work with stains, lacquers
M70643	M71329	M70637	M70634	M70630	1.2 mm	Light–Medium 18–20 sec.	Medium speed application with lacquers, enamels
M70581*	M71330	M70458	M70449	M70442	1.4 mm	Medium 20–22 sec.	Normal output with lacquers, enamels, urethanes, varnish, waterborne lacquers
M70650	M71331	M70639	M70635	M70632	1.6 mm	Medium 20–26 sec.	Medium speed industrial finishes
M70651	M71332	M70641	M70636	M70633	1.8 mm	Medium 20–26 sec.	Higher speed industrial finishes
M70582	M71333	M70460	M70450	M70444	2.0 mm	Heavy 22–26 sec.	Heavy output with lacquer and enamels, latex and oil wall paints
M70583	M71334	M70462	M70451	M70445	2.8 mm	Heavy 26+ sec.	Wax base stripper, sound deadeners, latex paint

* Standard with Series 700 Guns

** Fluid measured with a #4 Ford viscosity cup (part no. M70702). See Accessories to order.

Selection Charts

Automotive User Chart

Complete Fluid Set P/N & Size	Fluid Needle/ Nozzle Set P/N & Size	Fluid Needle P/N & Size	Fluid Nozzle P/N & Size	Air Cap P/N & Size	Fluid Usage
M70497 0.5/0.5 mm	M71326 0.5 mm	M70452 0.5 mm	M70446 0.5 mm	M70434* 0.5 mm	Ultra fine finish with automotive touch-up, spot jobs
M70528 0.7/0.7 mm	M71327 0.7 mm	M70454 0.7 mm	M70447 0.7 mm	M70437* 0.7 mm	Fine finish work with all automotive finishes, color matching, automotive base coat
M70559 1.0/0.5 mm	M71328 1.0 mm	M70456 1.0 mm	M70448 1.0 mm	M70434* 0.5 mm	Fine finish work with acrylic enamels, automotive base coat
M70647 1.2/0.7 mm	M71329 1.2 mm	M70637 1.2 mm	M70634 1.2 mm	M70437* 0.7 mm	Medium speed application with automotive clear coat, urethanes
M70581 1.4/1.4 mm	M71330 1.4 mm	M70458 1.4 mm	M70449 1.4 mm	M70442 1.4 mm	Normal output with enamels, urethanes, zinc chromate, automotive primers

* Multi-hole air cap

Selecting the Proper Fluid Set

The venturi spray gun's fluid sets range in size to provide different fluid flow rates. The selection charts show the recommended combinations based on fluid viscosities, flow rates, and usage.

As a general guideline, use the fluid nozzle that will give the required flow with the needle fully triggered at the lowest fluid pressure.

For low flow rates or light viscosity fluid, select the smaller nozzle sizes.

For high flow rates or high viscosity fluid, select the larger nozzle sizes.

To eliminate mist, use an air cap one size larger than the fluid nozzle. The use of a smaller size air cap produces a finer finish, but it can increase mist.

For very fine finish work (automotive, furniture, etc.), order the air cap two sizes smaller than the needle and nozzle. A 0.5 mm or 0.7 mm air cap is recommended for automotive finishes. See the **Automotive User Chart**, above.

Setup

NOTES:

- The air compressor must be able to maintain a constant air flow of 8 cfm minimum, at a minimum of 60 psi (4.2 bar). The air must be dry and oil-free.
- A pressure regulator must be installed between the air compressor and the spray gun to control air flow to the gun.

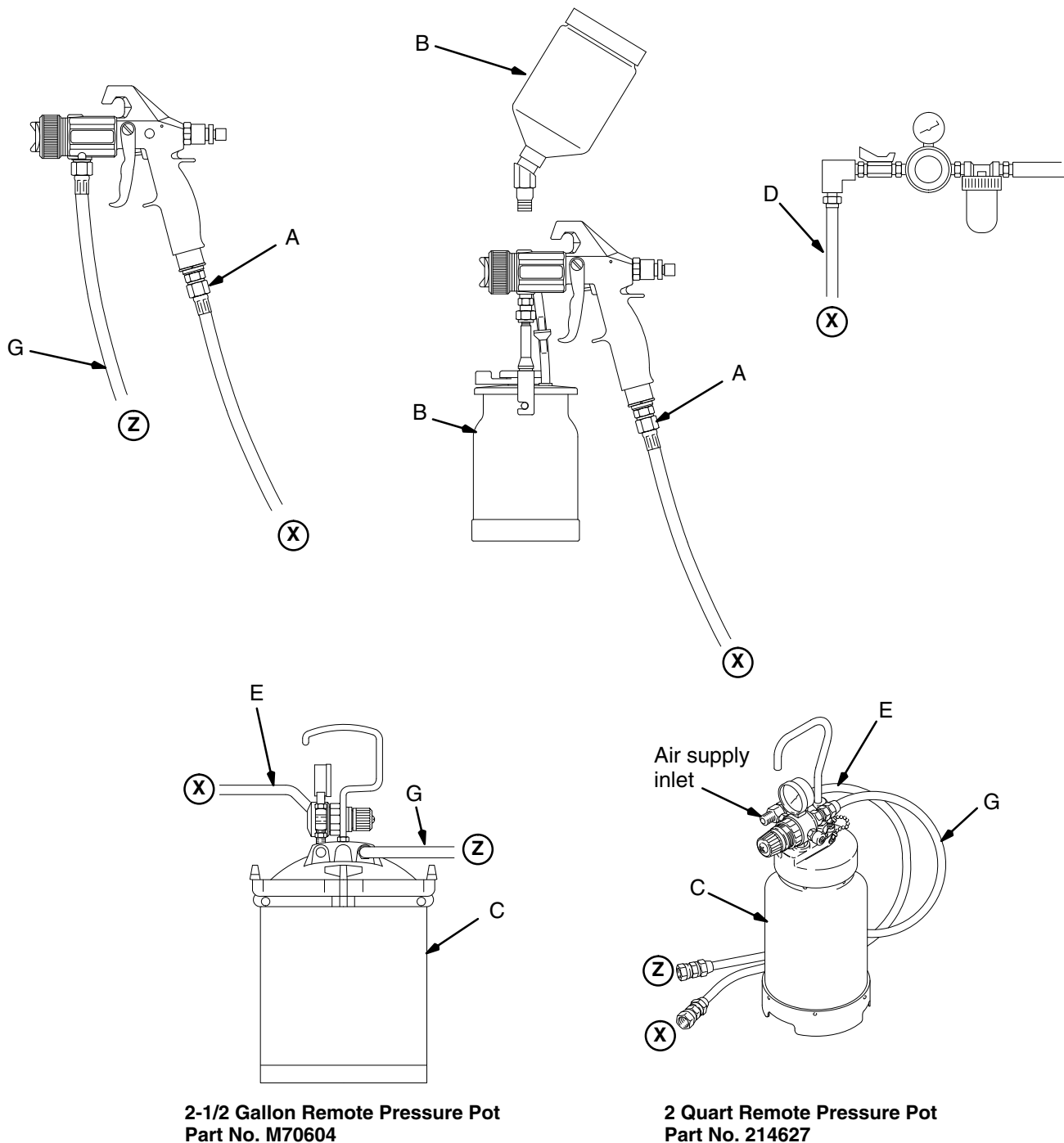
2. *If using a spray gun cup (B), connect the cup to the gun fluid inlet.*
3. *If using an accessory remote pressure pot (C), connect the fluid supply hose (G) between the gun fluid inlet and the remote pressure pot.*

Connect the air hose (E) between the pressure pot air inlet and the air supply.

Connect the Fluid and Air Supply

1. Connect the air supply hose (A) between the air supply (D) and the gun air inlet. See Fig. 1.

NOTE: The circled letters in Fig. 1 indicate hose line connections.



Setup

Prepare the Fluid

Always strain the fluid before spraying; this includes color, reducer and hardeners if used.

Paint Reduction

Reduce and catalyze all paint to manufacturer's specifications. If no reductions are given, first thoroughly mix the fluid to be sprayed. Then gradually mix in the proper reducer, testing the fluid until you have the correct spraying consistency.

To test the consistency: Remove the stir stick from the thinned paint. When the paint stream running off the stir stick breaks into droplets, the first few drops should be about one second apart.

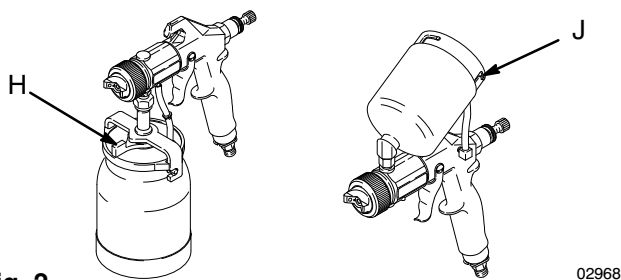
Fill the Cup or Remote Pressure Pot

Spray Gun Cup

WARNING

The spray gun cup is pressurized by the gun's air supply. To reduce the risk of serious injury from pressurized fluid or accidental spray from the gun, always turn off the air supply to the gun before removing the spray gun cup.

Only fill the cup 3/4 full to help keep the lower air pressure tube clean, then install the cover. The under-cup cover has a latch (H) to secure it to the cup. The over-cup has a ring with notches (J) that secures the cup hood into place when locked in place on the cup.



Accessory Remote Pressure Pot

WARNING

The accessory remote pressure pots remain pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid or accidental spray from the gun, always relieve pressure in the pressure pot before loosening or removing the cover.

1. Relieve the remote pressure pot pressure by following these steps:
 - a. Turn off the air supply to the pressure pot.
 - b. *2 1/2 Gallon Remote Pot:* Pull the pressure relief valve ring (205) until pressure is completely relieved.
2 Quart Remote Pot: Turn the air regulator (5) knob all the way out (*counterclockwise*) and unscrew the air control valve (20) thumbscrew. Wait until pressure is completely relieved before removing the cover. Close the air regulator knob and screw the air control valve in before using the system again.

See Fig. 3.

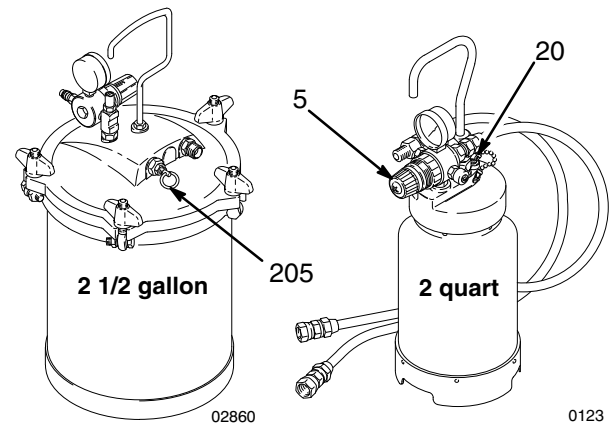


Fig. 3

2. Remove the pressure pot cover and fill the pressure pot. Secure the cover.

NOTE: *2 quart remote pressure pot only:* lightly coat the cover threads with petroleum jelly.

CAUTION

If the 2 quart remote pressure pot is accidentally tipped over or held at too great of an angle, fluid may leak into the air regulator. Take precautions to avoid this. If fluid does get into the regulator, clean it immediately.

CAUTION

Do not tighten the pressure pot cover more than hand-tight. Excessive tightening may damage the cover gasket.

Prepare the Workpiece

To achieve proper adhesion, make sure the surface to be sprayed is completely clean.

Setup

Adjust the Pattern Direction and Shape

The spray pattern direction and shape are determined by the 3 different positions of the air cap. See Fig. 4. Rotate the air cap as needed to achieve the desired pattern.

NOTE: You do not have to loosen the air cap retaining ring to change patterns unless the air cap is set to its widest pattern. Refer to Fig. 9, page 9.

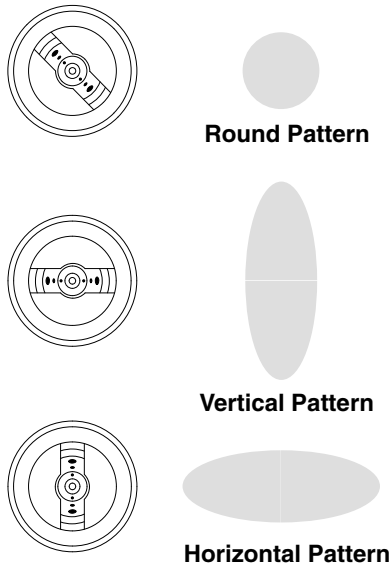


Fig. 4 02847

Adjust the Spray Pattern

WARNING

Do not exceed the gun's 50 psi (3.5 bar) *Maximum Fluid Inlet Pressure* and 90 psi (6.2 bar) *Maximum Air Inlet Pressure*. Higher pressures can cause parts to rupture and result in serious injury or property damage.

To establish the correct fluid flow:

1. Turn the fluid adjustment knob (20) counterclockwise until no restriction of the trigger movement is felt. See Fig. 5.

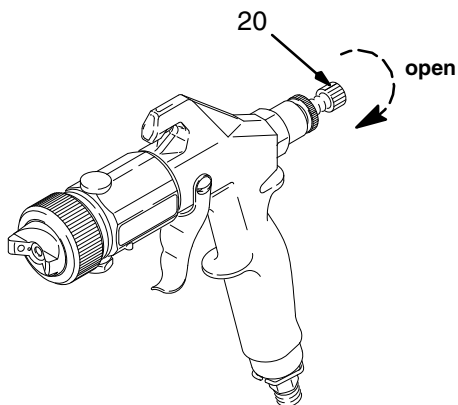


Fig. 5 02968
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2. If a remote pressure pot is used, hold the gun parallel to the floor and adjust the fluid pressure to yield a 12 to 18 inch (305 to 457 mm) fluid stream. See Fig. 6.

A 2 quart remote pressure pot typically should be set at 2 to 4 psi (0.14 to 0.28 bar).

A 2-1/2 gallon remote pressure pot typically should be set at 4 to 8 psi (0.28 to 0.56 bar).

Heavier fluid or a long fluid hose will require more pressure.

WARNING

To reduce the risk of over-pressurizing the accessory remote pressure pots, which could cause serious injury, never exceed 50 psi (3.5 bar) *Maximum Air Inlet Pressure*.

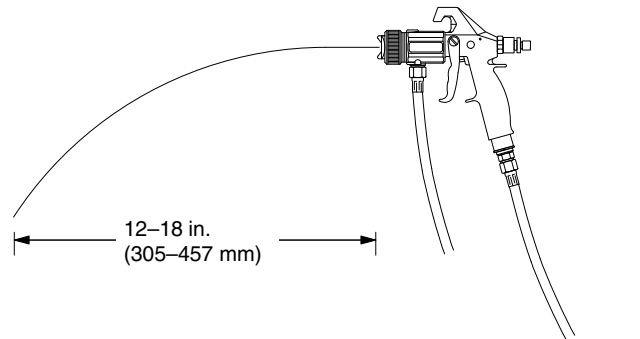


Fig. 6 02969

Fluid Velocity of Fluid Nozzles at the Same Flow Rate

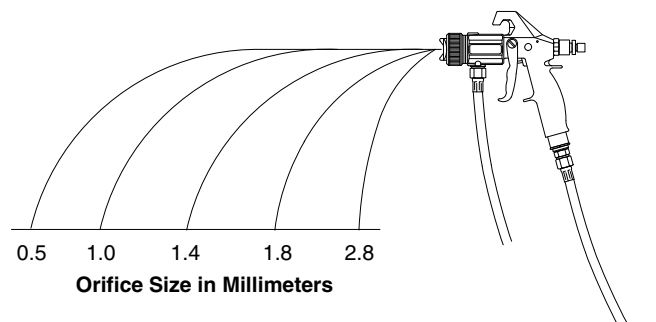


Fig. 7 02970

Adjust the Spray Pattern continued on next page

Setup

Adjust the Spray Pattern *(continued)*

3. If further fluid adjustment is needed at the gun, turn the fluid adjustment knob (20) clockwise to reduce the volume of fluid output and obtain the desired results. See Fig. 8.

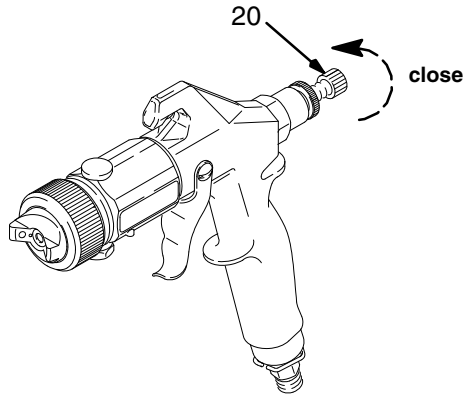


Fig. 8

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CAUTION

Restricting the trigger and fluid needle travel by continuously spraying with the fluid adjustment knob closed (*turned clockwise*), will cause accelerated abrasive wear on the fluid needle and wear on the trigger.

For the best results, adjust the fluid flow at the pressure source or use a different size needle/nozzle/air cap combination.

Follow these steps to establish the correct air flow:

NOTE: Before turning on the air supply, turn the air regulator adjusting knob until the air pressure is completely shut off.

4. Turn on the air supply and adjust the air regulator. Set the gun air supply pressure, using the fluid manufacturer's recommendations for the fluid you are spraying.

To control over-spray mist, use only as much air as is necessary for the fluid being sprayed. The lighter the fluid, the less air required.

If the flow rate is too slow when using heavy fluids, additional thinning or a larger fluid nozzle may be needed.

5. Test the spray pattern and atomization while holding the gun about 6 to 8 inches (150 to 200 mm) from the test piece.
6. Increase the gun air supply pressure in 5 psi (0.35 bar) increments until you obtain the desired atomization.

NOTES:

- To control over-spray mist, use only as much air as is necessary for the fluid being sprayed. The lighter the fluid, the less air required.
- If atomization is unacceptable after following the procedure above, the fluid may need to be thinned further or a different fluid set may be required. Refer to page 5 to select the proper fluid set or page 7 to prepare the fluid.

Adjust the Pattern Size

Change the pattern size by turning the air cap retaining ring in for a wide pattern or out for a narrow pattern. See Fig. 9. For a smoother finish, use a narrow pattern. For more fluid output, use a wide pattern.

NOTE: If the air cap retaining ring is turned too far out, the fluid flow will stop or flutter.

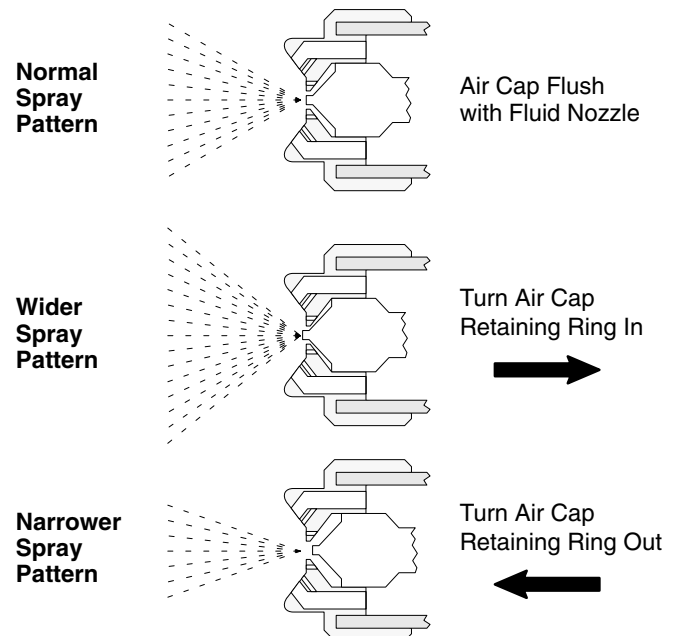


Fig. 9

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Shutdown

WARNING

The spray gun cups and accessory remote pressure pots remain pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid or accidental spray from the gun, always relieve pressure in the cup or pressure pot before checking or servicing any part of the spray system; before installing, cleaning or changing fluid nozzles; before loosening or removing the accessory remote pressure pot cover; and whenever you stop spraying.

1. When spraying is finished, turn off the air supply to the gun.
2. *If using a remote pressure pot, relieve its pressure by following these steps:*
 - a. Turn off the air supply to the pressure pot.
 - b. *2 1/2 Gallon Remote Pot:* Pull the pressure relief valve ring (205) until pressure is completely relieved.
2 Quart Remote Pot: Turn the air regulator (5) knob all the way out (*counterclockwise*) and unscrew the air control valve (20) thumbscrew. Wait until pressure is completely relieved before removing the cover. Close the air regulator knob and screw the air control valve in before using the system again.

See Fig.10.

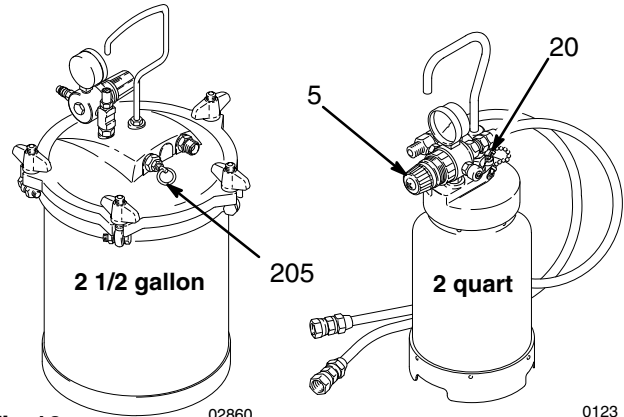


Fig.10

NOTE: Elevate the spray gun and pull the trigger. This will allow the fluid in the fluid hose to drain back into the remote pressure pot.

3. *If using a spray gun cup, unlatch the cup cover and loosen or remove the cup from the cover to relieve the cup pressure.*
4. Clean the spray gun and cup as instructed on pages 12 and 13.

Spraying Techniques

Prolonged Overhead or Downward Spraying with a Cup

For prolonged overhead spraying, loosen the fluid tube nut (N) and turn the entire cup assembly one-half turn. See Fig. 11. This will position the fluid tube (36) in the back side of the cup so the entire contents will be sprayed.

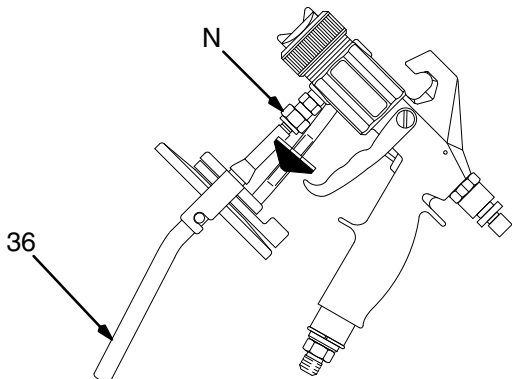


Fig. 11

For prolonged downward spraying, make sure the fluid tube (36) is positioned as shown in Fig. 12.

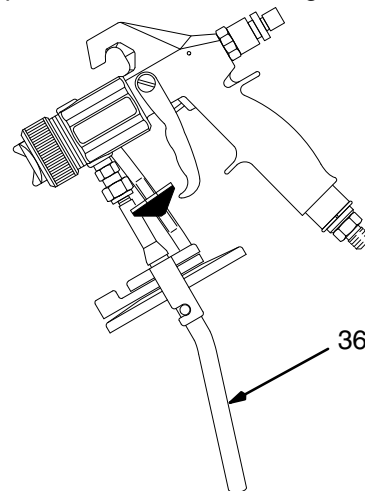


Fig. 12

continued on next page

Spraying Techniques

General Spraying Techniques

1. Select the proper fluid set for the fluid you are spraying. See pages 4 and 5.
2. When fluid is first being applied, start with the fluid nozzle and air cap adjusted to the “normal spray pattern” position. See Fig. 13. Then adjust as needed.
3. Keep the gun perpendicular to the surface and maintain a consistent distance of approximately 6 to 8 inches (150 to 200 mm) from the object being sprayed. See Fig. 14.
4. Always have the spray gun in motion before triggering it. Move the spray gun across the workpiece in a straight, smooth stroke, maintaining the same speed and distance. Release the trigger at the end of the stroke.
5. To obtain an even finish, overlap previous strokes by the same amount, generally 50% overlap.
6. Apply a full, wet coat whenever possible.

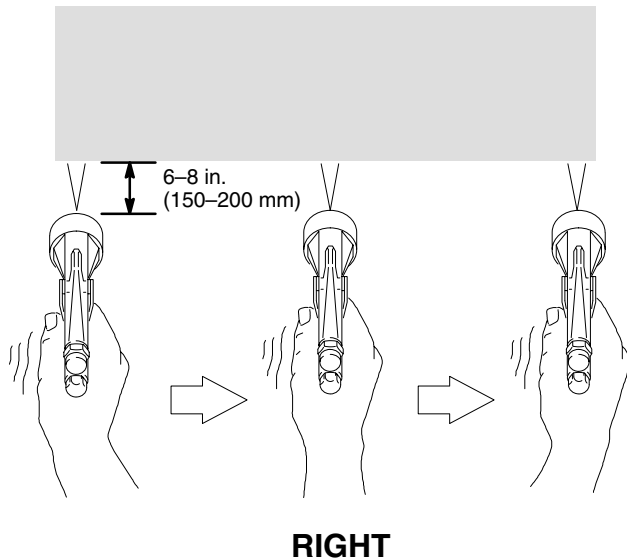


Fig. 14

NOTE: For automotive spraying, work from the outside in to blend spots.

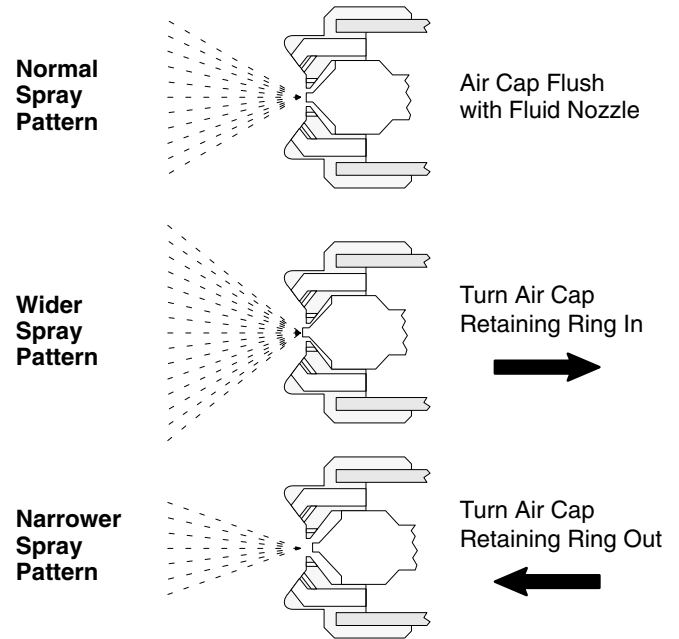
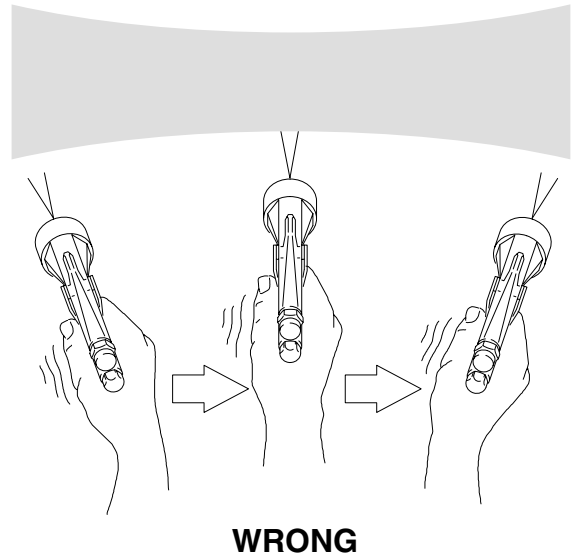


Fig. 13

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Maintenance

WARNING

The spray gun cups and accessory remote pressure pots remain pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid or accidental spray from the gun, always relieve pressure in the cup or pressure pot before checking or servicing any part of the spray system; before installing, cleaning or changing fluid nozzles; before loosening or removing the accessory remote pressure pot cover; and whenever you stop spraying.

NOTES:

- Check for any fluid leakage from the gun and fluid hoses. Tighten fittings or replace equipment as needed.
- Flush the gun before changing colors and whenever you are done spraying.

CAUTION

Clean all parts with a solvent compatible with the fluid being sprayed and compatible with the spray gun and cup or accessory remote pressure pot wetted parts. See the **Technical Data** on the back cover.

Flushing the Spray Gun Using a Remote Pressure Pot

1. Turn off the air supply to the gun.
2. Relieve the pressure pot pressure by following these steps:
 - a. Turn off the air supply to the pressure pot.
 - b. *2 1/2 Gallon Remote Pot:* Pull the pressure relief valve ring (205) until pressure is completely relieved.
2 Quart Remote Pot: Turn the air regulator (5) knob all the way out (*counterclockwise*) and unscrew the air control valve (20) thumbscrew. Wait until pressure is completely relieved before removing the cover. Close the air regulator knob and screw the air control valve in before using the system again.

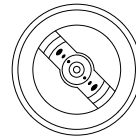
See Fig. 10, page 10.

3. Fill the pressure pot with compatible solvent.
4. Turn the air cap to the round pattern position and reduce pressure by adjusting the pressure regulator. This reduces the solvent mist. See Fig. 15.

5. Flush the spray gun, using compressor air only. Point the gun down into a container and flush until the solvent runs clean.
6. Relieve the pressure pot pressure, following step 2a and b, above.
7. Disconnect the air and fluid hoses from the gun.
8. Clean and lubricate the gun as instructed on pages 13 and 15.

Flushing the Spray Gun and Cup

1. Turn off the air supply to the gun.
2. Unlatch the cup cover and remove the cup from the cover.
3. Turn the air cap to the round pattern position and adjust the regulator to reduce pressure. See Fig. 15.



Air Cap Round Pattern Position

Fig. 15

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4. Fill the empty cup with about 1-1/2 inches (38.1 mm) of compatible solvent and reinstall the cup. Be sure the cover is secured.
5. Turn on the air to the gun.
6. Point the gun down into a container and flush until the solvent runs clean. See Fig. 16.

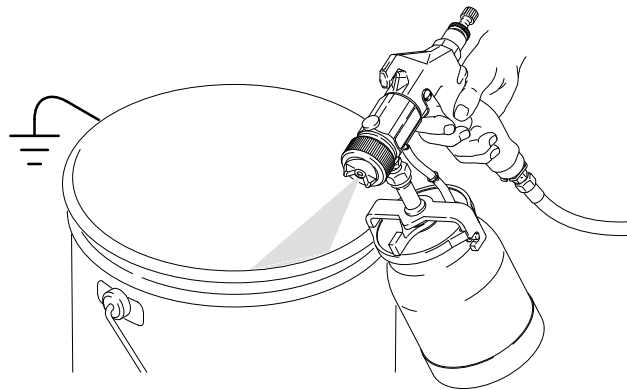


Fig. 16

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7. Turn off the air to the gun.
8. Disconnect the air supply and remove the cup from the gun. Clean and lubricate the gun as instructed on pages 13 and 15.

Maintenance

Clean the Spray Gun

1. Clean the gun and cup by hand with a compatible solvent or place them in a gun washer with the trigger held open; cycle the washer as necessary to clean the gun.

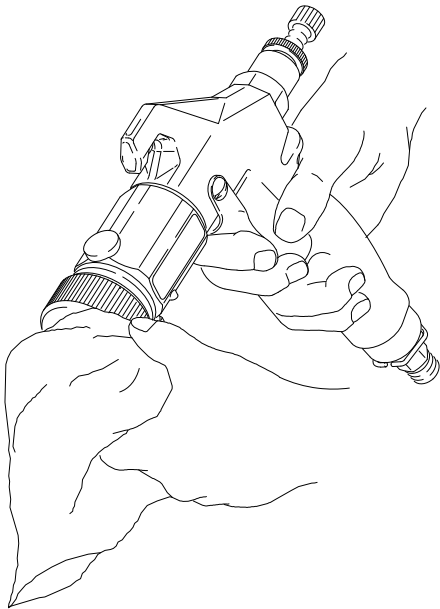


Fig. 17

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2. Remove the air cap retaining ring (29), air cap (27), spring (25), and detent plate (26). See Fig. 18.
3. Trigger the gun while you remove the fluid nozzle (19) with the nozzle wrench (P). See Fig. 18.

CAUTION

Trigger the gun whenever you tighten or remove the nozzle. This keeps the needle seat away from the nozzle seating surface and prevents the seat from being scratched.

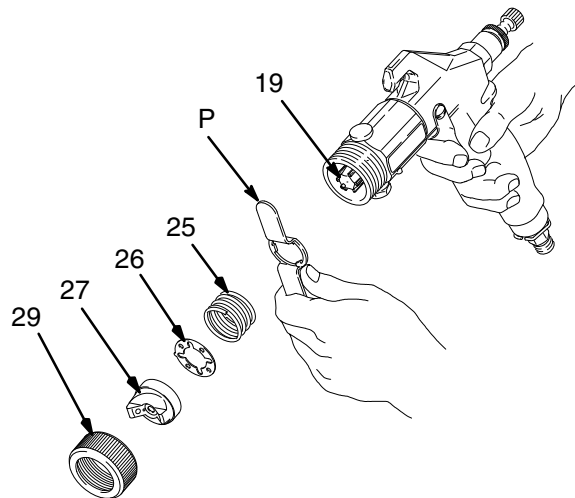


Fig. 18

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4. Soak the air cap, detent plate and fluid nozzle in solvent. Clean the air cap and fluid nozzle daily, minimum, with solvent and a brush (R). See Fig. 19. Some applications require more frequent cleaning. Keep all the air cap holes clean.

CAUTION

Clean air cap horn holes with a non-metallic item to avoid permanently damaging them.

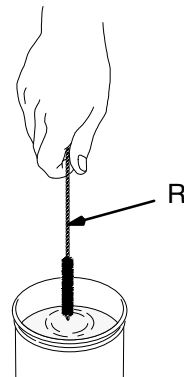


Fig. 19

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5. With the gun pointed down, clean the front of the gun, using the brush and solvent.
6. Trigger the gun while you install the fluid nozzle (19) with the nozzle wrench (P).
7. Install the spring (25), detent plate (26), air cap (27), and air cap retaining ring (29). Be sure to properly align air cap detents (S) with the slots (T) in the detent plate. See Fig. 20.

continued on next page

Maintenance

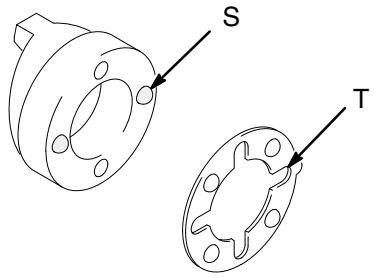


Fig. 20

02855

8. Lubricate the gun after cleaning it as instructed on page 15.

Clean the Venturi Filter/Silencer

The filter/silencer must be kept as clean as possible to allow full air flow through the spray gun.

1. Remove the filter/silencer (54f) from the gun handle. See Fig. 21.

2. Clean the filter/silencer with lacquer thinner and a small brush.

NOTE: The filter/silencer is resistant to solvent.

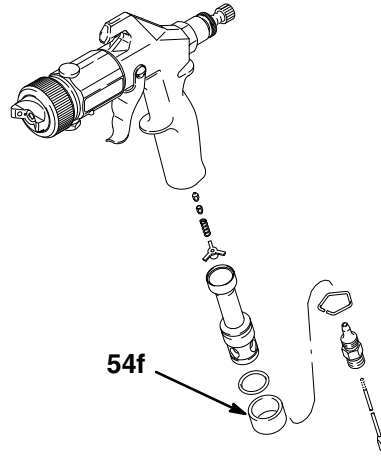


Fig. 21

04108

Service

Lubricating the Spray Gun

After cleaning or servicing the gun, lubricate the parts indicated in Fig. 22 and Fig. 23 with silicone-free spray gun lubricant or similar material. It is recommended that Lubricant 111–265 be used (see Accessories).

- All threaded areas (A)
- Trigger screws (B)
- Trigger axle (C)
- Fluid needle assembly (D) – where indicated
- O-ring on venturi (E) (see Fig. 23)

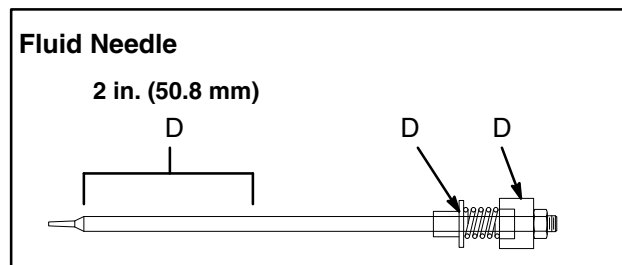
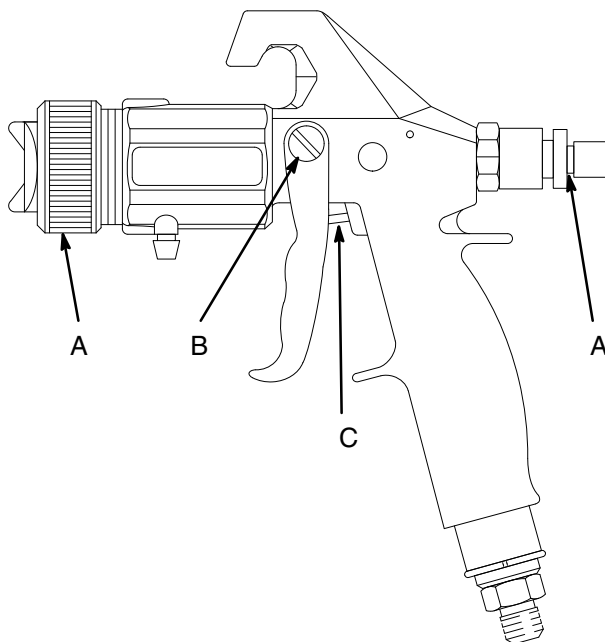


Fig. 22

02980, 02950

Adjusting the Air Flow

1. Be sure that the venturi parts are fully seated into the spray gun handle and that the locking screw on the spindle (54h) is tight. See Fig. 23.

2. Press the gun trigger, then release it. If air fails to shut off when the trigger is released, loosen the locking nut (54a-2) and turn the adjustment cap (54a-1) clockwise. This allows the venturi spindle to fully restore.
3. If the air flow fails to start before the fluid needle moves, loosen the locking nut (54a-2) and turn the adjustment cap (54a-1) counterclockwise.

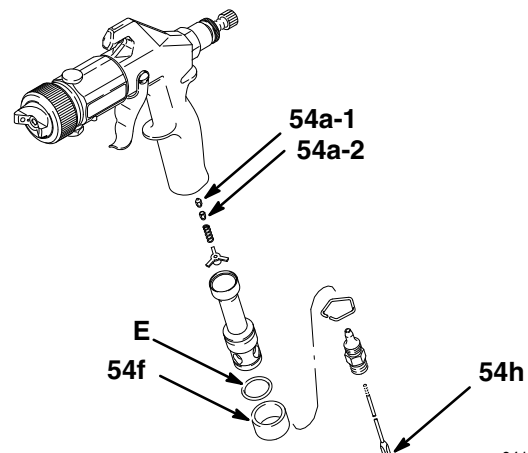


Fig. 23

04108

4. Verify that the filter/silencer (54f) is in place during spraying and that it is clean. See Maintenance.

Adjusting the Needle

The needle may need to be adjusted whenever you change nozzle/needle sizes or to compensate for wear.

To adjust the needle:

1. Remove the housing (22) from the back of the gun. The fluid adjustment knob (20), nut (21), and spring (23-not shown) will come out with it. See Fig. 24.
2. Loosen the locking nut (17) and turn the drum (13). See Fig. 25.
3. Turn the drum (13) until the trigger has about 1/16 in. (1.59 mm) free travel before the needle (14) is engaged and starts to move. See Fig. 25.
4. Lock the adjustment with the locking nut (17).
5. Make sure the spring (23) is in place in the housing (22), then install the housing with the other parts. Hand-tighten the housing.

continued on next page

Service

Adjusting the Needle Packings

The needle packings require adjustment once a month under normal use to ensure fluid does not leak back through the needle packings. The needle packings must also be adjusted whenever the needle is removed or adjusted.

To adjust the needle packings:

1. First flush the gun as instructed on page 12.
2. Remove the air cap retaining ring (29), air cap (27), spring (25), and detent plate (26). See Fig. 26.
3. Trigger the gun while you remove the fluid nozzle (19) with the nozzle wrench (P). See Fig. 26. Clean the gun as instructed on page 13.

CAUTION

Trigger the gun whenever you tighten or remove the nozzle. This keeps the needle seat away from the nozzle seating surface and prevents the seat from being scratched.

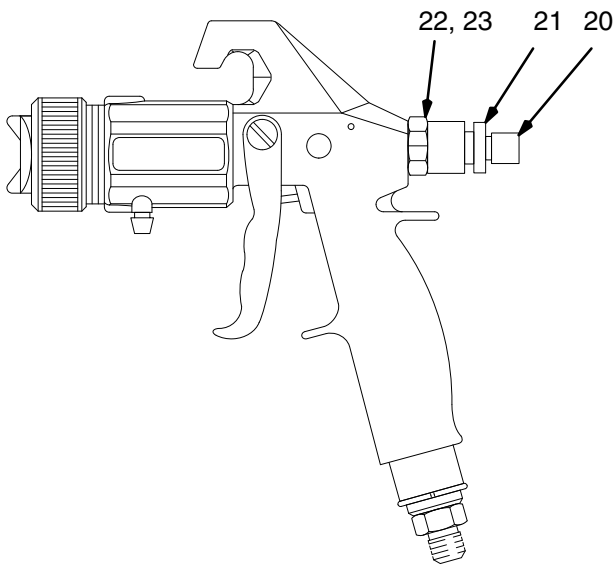


Fig. 24

02980

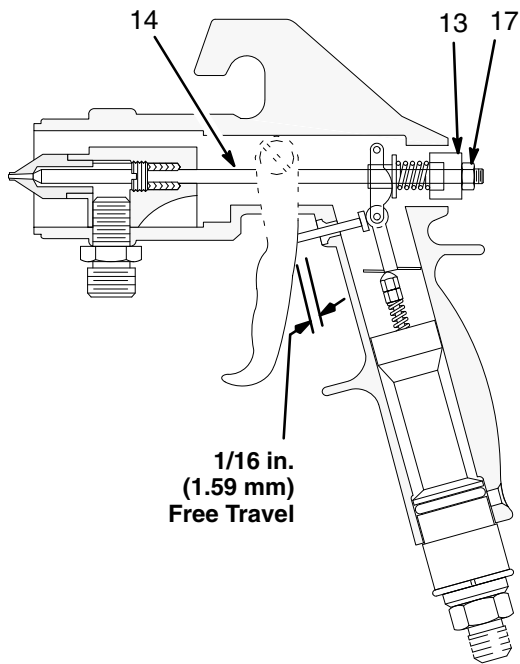


Fig. 25

02974

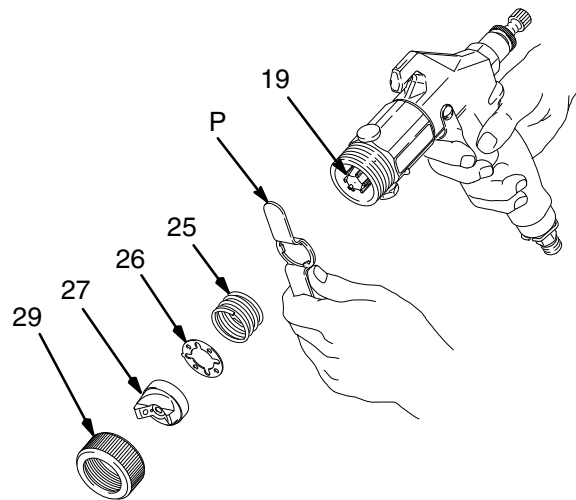


Fig. 26

0273

continued on next page

Service

4. Trigger the gun while you turn the packing nut (9) slightly clockwise with the packing wrench (K), provided. See Fig. 27. This will compress the packings.

The packings need very little pressure to seal well. If the needle binds, the packings are too tight; back the packing nut off 1/16 turn. The needle should then move freely. If the packings are over-tightened, they may be damaged and need to be removed and replaced.

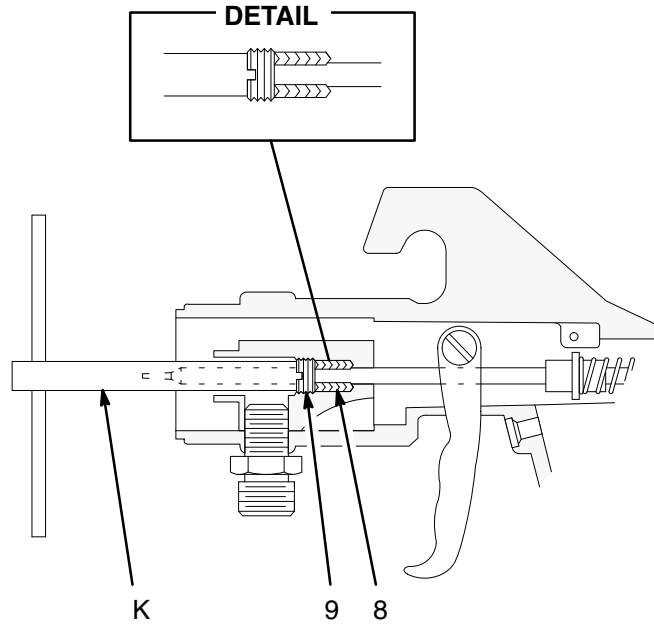


Fig. 27

02858

5. Trigger the gun while you install the fluid nozzle (19) with the nozzle wrench (P).
6. Install the spring (25), detent plate (26), air cap (27), and air cap retaining ring (29). Be sure to properly align air cap detents with the slots in the detent plate. See Fig. 28.

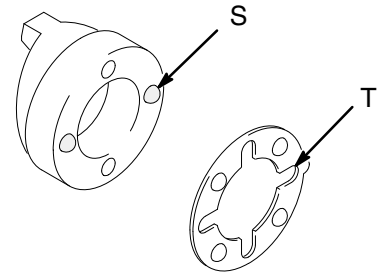


Fig. 28

02855

Troubleshooting

Spray Gun Problems

PROBLEM	CAUSE	SOLUTION
No or slow fluid flow, intermittent spray, or fluttering spray	Proper size fluid set is not being used.	Select the proper fluid set for the fluid being sprayed. See pages 4 and 5.
	Air cap is adjusted too far forward.	Adjust the air cap to “normal” position. See page 9.
	Gun fluid nozzle is not tight enough, is blocked by dried paint, or is damaged.	Tighten, clean or replace fluid nozzle.
	Cup or pressure pot cover is not tight enough or gasket damaged.	Tighten cover or replace gasket.
	Cup or pressure pot fluid tube blocked by dried paint or damaged.	Clean or replace fluid tube.
	Air flow to cup is blocked.	To check: remove the cup (leave cover connected), trigger the gun and check for air flow out of the cup lower pressure tube. If air is not flowing freely, clean the air passage tubes.
	Needle packings are not properly adjusted. Fluid loss through the packings will effect fluid pressure and cause a fluid build-up in the gun body.	Clean the gun body with solvent and the brush provided. Adjust the needle packings as instructed on page 17.
	Needle is not properly adjusted. Fluid flow will be restricted if there is too much free travel between the trigger and needle.	Adjust the needle as instructed on page 16.
	Check valve is not properly installed (upside down) or is blocked.	Properly install or replace check valve.
Fluid leaks at fluid nozzle after the trigger is released	Needle is not seating in the fluid nozzle.	• Check for a loose fluid nozzle or a bent nozzle or needle; tighten the nozzle or replace parts as needed. • Check the needle adjustment; see page 16. • Check the needle packings adjustment; see page 17.
Poor spray pattern	Air cap horn holes and/or fluid nozzle plugged.	Soak air cap and/or fluid nozzle in solvent. Clean air cap horn holes with non-metallic item to avoid permanently damaging them. See page 13.

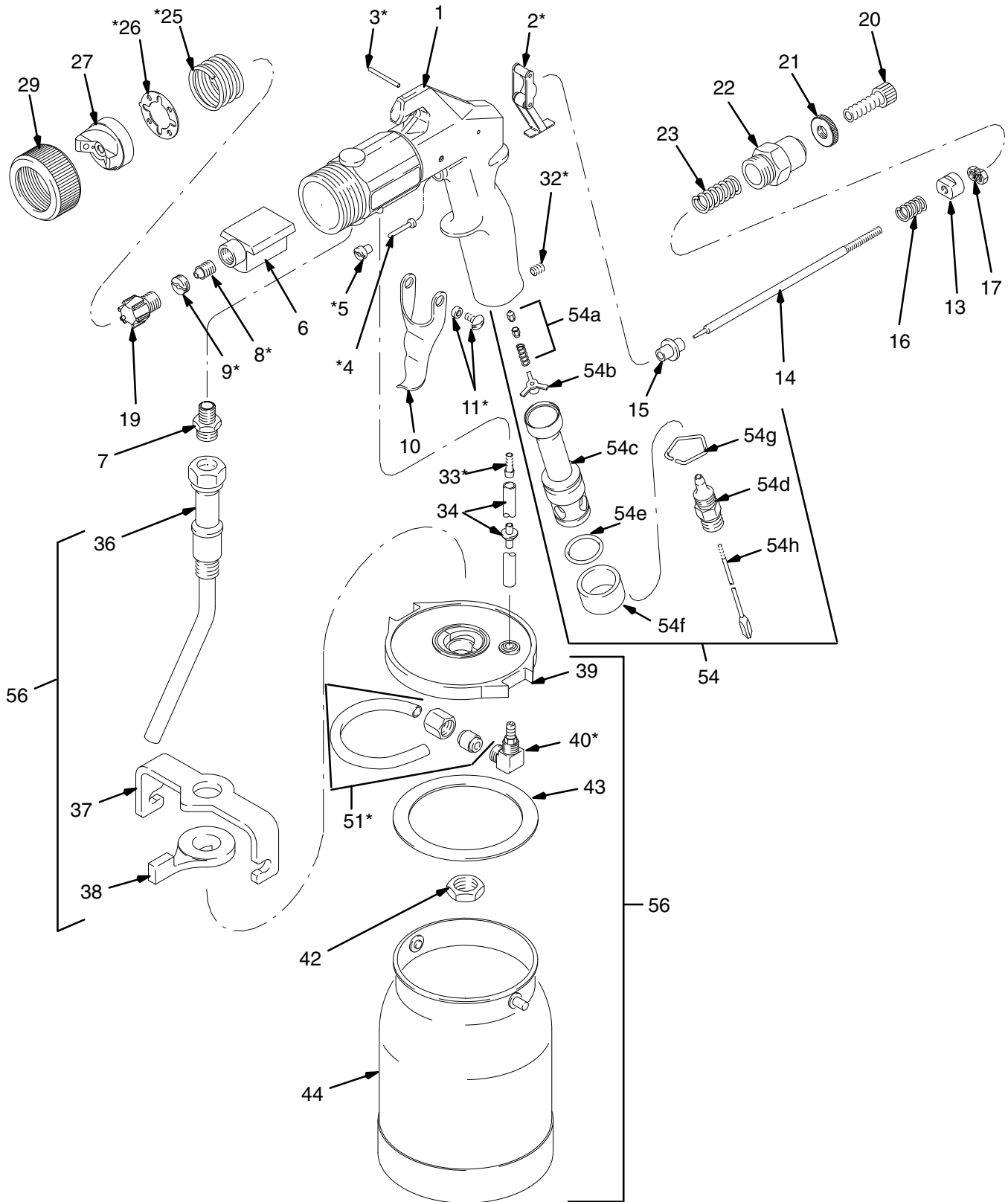
Troubleshooting

Spray Finish Problems

PROBLEM	CAUSE	SOLUTION
Orange peel finish – Paint surface not smooth	Paint droplets too large.	● Maintain proper spraying distance; see page 11. ● Do not use an air hose that is too long to provide sufficient atomization pressure. ● If droplets are still too large, reduce the fluid or use a smaller air cap.
	Paint droplets drying too fast to properly flow out of gun.	Keep the object being sprayed out of direct sunlight. When spraying in warmer temperatures, use a slower evaporating solvent or a retarder.
	Cold weather spraying.	Keep the fluid and the object being sprayed as close to room temperature as possible. When sprayed on a cold surface, most paints will become too thick to flow properly.
	Dirty venturi filter/silencer.	Clean or replace venturi filter/silencer.
Blushing – Clear coatings appear milky	Moisture condensation is trapped in the paint when spraying in hot, humid conditions.	● Store the lacquer off concrete floors, at room temperature. ● Apply lighter coats and allow for proper drying time. ● Use a slower evaporating solvent or retarder. ● Do not spray in windy conditions.
Fish eyes – Small pools on painted surface that will not fill	Silicone contamination from lubricants, grease, polish, or waxes on the surface being sprayed.	Clean all parts with a cleaning solvent; use a solvent rag and a clean rag to wipe with. Replace rags as needed. If the problem persists, use a fish eye eliminator.
Runs and sags	Applying too much paint per pass for the drying conditions.	● Move the gun faster or decrease the fluid flow. ● Maintain proper spraying distance; see page 11. ● Reduce the amount of thinner or use a faster drying thinner.
Solvent pops or bubbles	Sprayed surface drying before solvent gas can be released.	● Apply fluid in lighter coats to allow for proper evaporation. ● Use the recommended thinners. ● Follow the solutions, above, for <i>Orange peel finish–paint droplets too large</i>.

Parts for 711V Venturi Gun

711V Venturi Gun, with 1 quart (1 liter) cup



02976

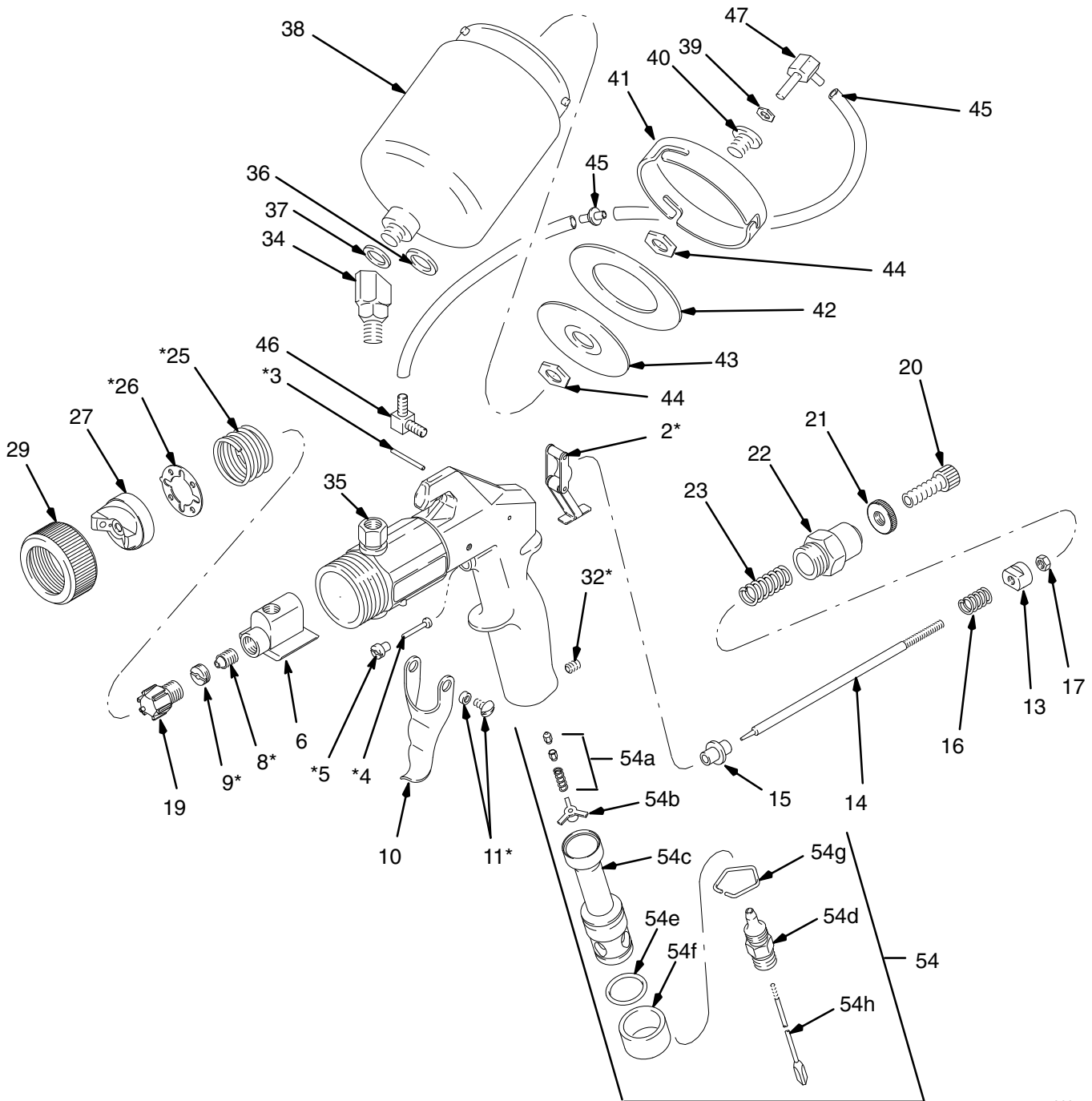
Parts for 711V Venturi Gun

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	M70373	GUN BODY	1	32*	M70430	SET SCREW, quick disconnect	1
2*	M70410	ACTUATOR, needle	1	33*	M70394	CONNECTOR, hose	1
3*	M70388	PIN, actuator	1	34	M71007	HOSE and CHECK VALVE	1
4*	M70389	AXLE, trigger	1	36	M70413	FLUID TUBE	1
5*	M70392	GUIDE, trigger axle	1	37	M70415	YOKE, cup	1
6	M70384	HOLDER, nozzle	1	38	M70417	LEVER, cup	1
7	M70401	FITTING, fluid inlet	1	39	M70422	COVER, cup	1
8*	M70381	PACKING KIT, fluid; PTFE®	1	40*	M71652	ELBOW, barbed fitting	1
9*	M70380	NUT, packing	1	42	M70420	NUT, locking	1
10	M70391	TRIGGER	1	43	M70425	GASKET, cup; polyethylene, 5 pak	1
11*	M70380	SCREW & BUSHING, kit	1	44	M70423	CUP; 1 quart (1 liter)	1
13	M70405	DRUM	1	51*	M71423	AIR PRESSURE, kit	1
		NEEDLE; See chart on pages 4 or 5 for part no.	1	54	M70966	VENTURI ASSY.; Includes items 54a–54h	1
15	M70403	RING, driving	1	54a	M71649	CAP, NUT, SPRING; kit	1
16	M70404	SPRING, driving ring	1	54b	M70970	GUIDE, spindle	1
17	M70406	LOCKING NUT, drum	1	54c	M70971	BODY, venturi	1
19		FLUID NOZZLE; Includes item 19a; See chart on pages 4 or 5 for part no.	1	54d	M70972	FITTING, air	1
20	M70467	ADJUSTMENT KNOB, fluid	1	54e	M70974	O-RING	1
21	M70466	NUT, adjustment	1	54f	M70976	FILTER/SILENCER; 10 pak	1
22	M70465	FITTING, gun	1	54g	M70978	CLIP, silencer	1
23	M70407	SPRING, needle return	1	54h	M70973	SPINDLE, venturi	1
25*	M70378	SPRING, air cap	1	55	M70612	TOOL KIT; (<i>not shown</i>) Includes a brush, T-wrench, & nozzle wrench	1
26*	M70377	PLATE, air cap detent	1	56	M70427	CUP, 1 quart (1 liter) assembly	1
27		AIR CAP; See chart on pages 4 or 5 for part no.	1	* <i>These parts are included in Repair Kit M70290, which may be purchased separately. NOTE: It is necessary to purchase the hose and check valve (34) separately when ordering the Repair Kit. Order M71007.</i>			
29	M70375	RING, air cap retaining	1				

Parts for 714HSV & 712HSV Venturi Gun

714HSV Turbine Gun, with 1/2 quart (1/2 liter) cup

712HSV Turbine Gun, with 3/4 quart (3/4 liter) cup



02977

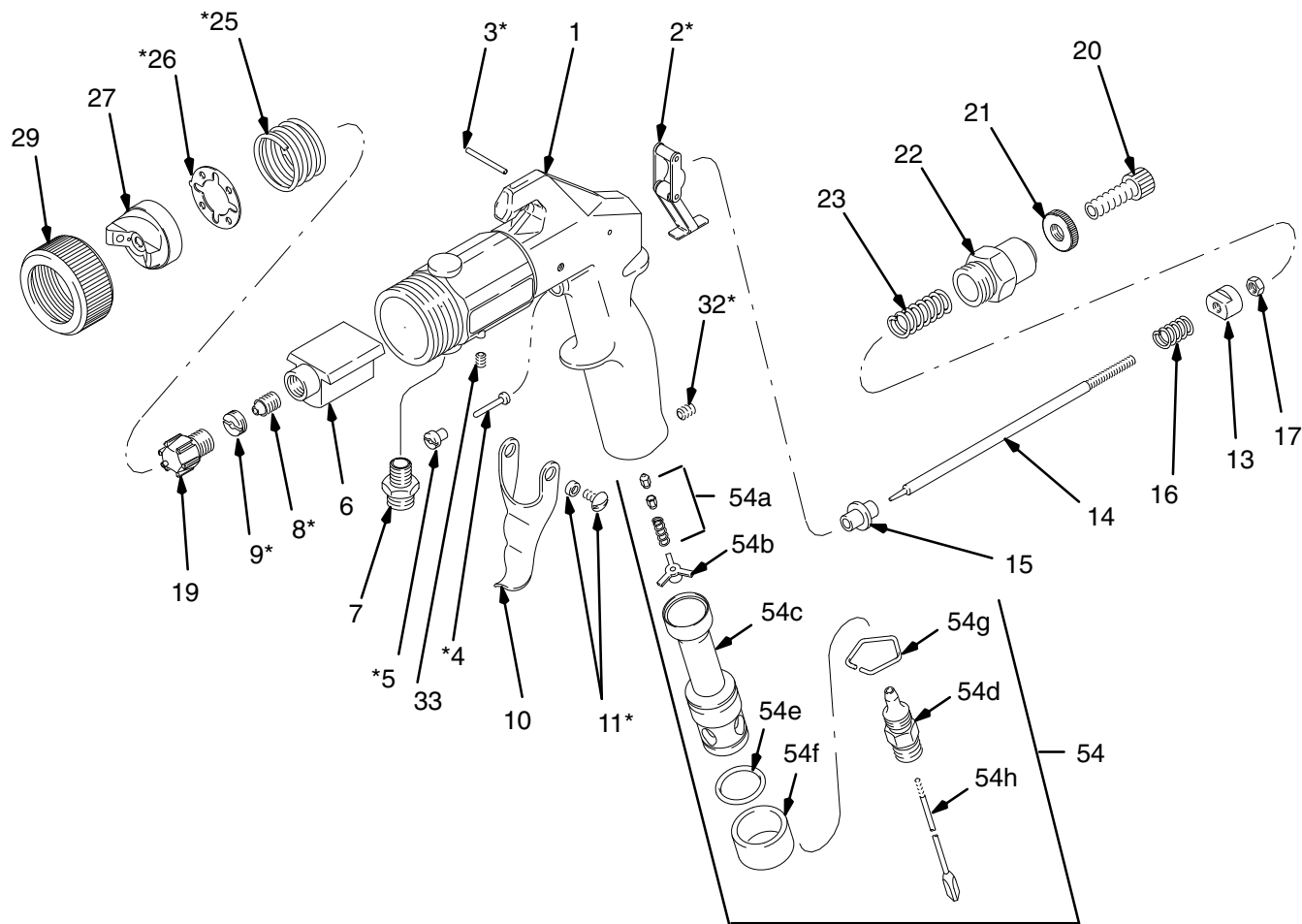
Parts for 714HSV & 712HSV Venturi Gun

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	M71114	GUN BODY	1	37	M71032	O-RING	1
2*	M70410	ACTUATOR, needle	1	38	M71035	CUP, 1/2 quart (1/2 liter);	
3*	M70388	PIN, actuator	1			Model 714HSV only	1
4*	M70389	AXLE, trigger	1		M71034	CUP, 3/4 quart (3/4 liter);	
5*	M70392	GUIDE, trigger axle	1			Model 712HSV only	1
6	M70384	HOLDER, nozzle	1	39	M71040	NUT	1
8*	M70381	PACKING KIT, fluid; PTFE [®]	1	40	M71039	FITTING	1
9*	M70380	NUT, packing	1	41	M71037	COVER, cup	1
10	M70391	TRIGGER	1	42	M71026	GASKET, cup; polyethylene, 5 pak	1
11*	M70386	SCREW & BUSHING, kit	1	43	M71021	COVER, cup	1
13	M70405	DRUM		44	M71019	NUT	2
		NEEDLE; See chart on		45	M71051	HOSE (1/4") and CHECK VALVE	1
		pages 4 or 5 for part no.	1	46	M70393	ELBOW CONNECTOR, hose	1
15	M70403	RING, driving	1	47	M71046	ELBOW CONNECTOR, hose	1
16	M70404	SPRING, driving ring	1	54	M70966	VENTURI ASSY.;	
17	M70406	LOCKING NUT, drum	1			Includes items 54a–54h	1
19		FLUID NOZZLE; Includes item		54a	M71644	CAP, NUT, SPRING; kit	1
		19a; See chart on pages 4 or 5		54b	M70970	GUIDE, spindle	1
		for part no.	1	54c	M70971	BODY, venturi	1
20	M70467	ADJUSTMENT KNOB, fluid	1	54d	M70972	FITTING, air	1
21	M70466	NUT, adjustment	1	54e	M70974	O-RING	1
22	M70465	FITTING, gun	1	54f	M70976	FILTER/SILENCER, 10 pak	1
23	M70407	SPRING, needle return	1	54g	M70978	CLIP, silencer	1
25*	M70378	SPRING, air cap	1	54h	M70973	SPINDLE, venturi	1
26*	M70377	PLATE, air cap detent	1	55	M70612	TOOL KIT; (<i>not shown</i>) Includes a	
27		AIR CAP; See chart on pages 4 or				brush, T-wrench, & nozzle wrench	1
		5 for part no.	1				
29	M70375	RING, air cap retaining	1				
32*	M70430	SET SCREW, quick disconnect	1				
34	M71031	FITTING, fluid inlet	1				
35	M71030	NUT, fluid inlet	1				
36	M71033	O-RING	1				

* These parts are included in Repair Kit M70290, which may be purchased separately. **NOTE:** It is necessary to purchase the hose and check valve (45) separately when ordering the Repair Kit. Order M71051.

Parts for 713V Venturi Gun

713V Venturi Gun



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Parts for 713V Venturi Gun

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	M70373	GUN BODY	1	23	M70407	SPRING, needle return	1
2*	M70410	ACTUATOR, needle	1	25*	M70378	SPRING, air cap	1
3*	M70388	PIN, actuator	1	26*	M70377	PLATE, air cap detent	1
4*	M70389	AXLE, trigger	1	27		AIR CAP; See chart on pages 4 or 5 for part no.	1
5*	M70392	GUIDE, trigger axle	1	29	M70375	RING, air cap retaining	1
6	M70384	HOLDER, nozzle	1	32*	M70430	SET SCREW, quick disconnect	1
7	M70401	FITTING, fluid inlet	1	54	M70966	VENTURI ASSY.;	
8*	M70381	PACKING KIT, fluid; PTFE [®]	1			Includes items 54a–54h	1
9*	M70380	NUT, packing	1	54a	M71649	CAP, NUT, SPRING; kit	1
10	M70391	TRIGGER	1	54b	M70970	GUIDE, spindle	1
11*	M70386	SCREW & BUSHING, kit	1	54c	M70971	BODY, venturi	1
13	M70405	DRUM	1	54d	M70972	FITTING, air	1
14		NEEDLE; See chart on pages 4 or 5 for part no.	1	54e	M70974	O-RING	1
15	M70403	RING, driving	1	54f	M70976	FILTER/SILENCER, 10 pak	1
16	M70404	SPRING, driving ring	1	54g	M70978	CLIP, silencer	1
17	M70406	LOCKING NUT, drum	1	54h	M70973	SPINDLE, venturi	1
19		FLUID NOZZLE; See chart on pages 4 or 5 for part no.	1	55	M70612	TOOL KIT; (<i>not shown</i>) Includes a brush, T-wrench, & nozzle wrench	1
20	M70467	ADJUSTMENT KNOB, fluid	1				
21	M70466	NUT, adjustment	1				
22	M70465	FITTING, gun	1				

* These parts are included in M70290, which may be purchased separately.

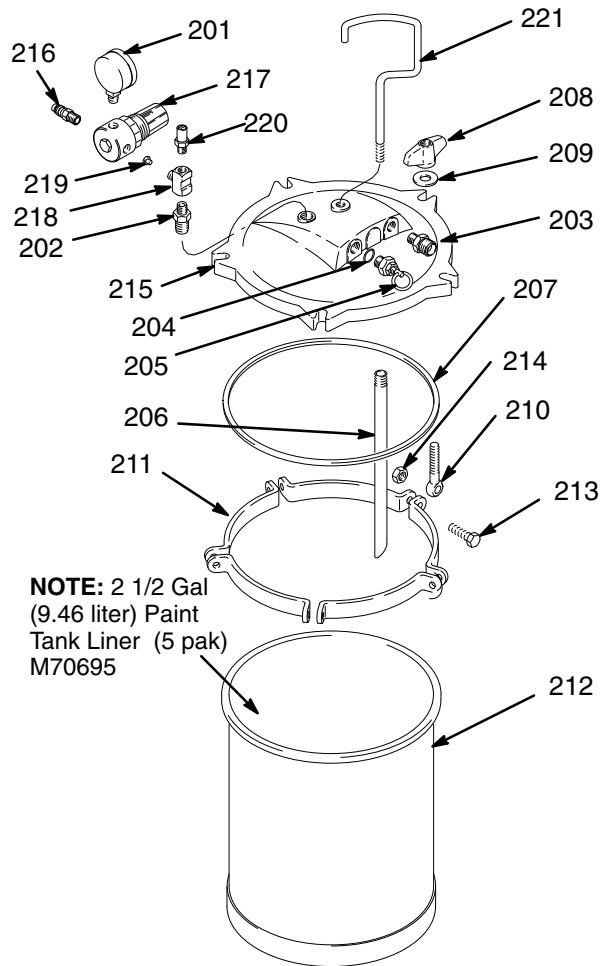
Accessories

2-1/2 Gallon Pressure Pot M70604

50 psi (3.5 bar) Maximum Inlet Air Pressure

2-1/2 gallon (9.5 liter) capacity, aluminum tank.

Includes an air pressure regulator and gauge and a pressure relief valve.



NOTE: 2 1/2 Gal
(9.46 liter) Paint
Tank Liner (5 pak)
M70695

Ref. No.	Part No.	Description	Qty.
201	104655	PRESSURE GAUGE	1
202	151519	REDUCER, 1/4 to 1/8 in.	1
203	M70687	COUPLING	1
204	M70676	O-RING	1
205	M70686	PRESSURE RELIEF VALVE RING	1
206	M70685	FLUID TUBE	1
207	103995	GASKET, standard; EPDM	1
	M70617	GASKET, solvent resistant; Thiokol (optional—must order separately)	1
208	M70678	WING NUT	5
209	M70677	WASHER	5
210	M70680	EYE BOLT	5
211	M70684	BAND	5
212	M70683	TANK, paint, 2-1/2 gallon (9.46 liter), galvanized steel with cover	1
213	M70681	SCREW, band	5
214	M70682	NUT, band	5
215	M70688	COVER	1
216	M70809	QUICK DISCONNECT, male	1
217	104815	PRESSURE REGULATOR	1
218	110440	FITTING, tee	1
219	189557	RESTRICTOR	1
220	M70727	SAFETY VALVE	1
221	M71639	HANDLE	1

2 Quart Pressure Pot 214617, Series B

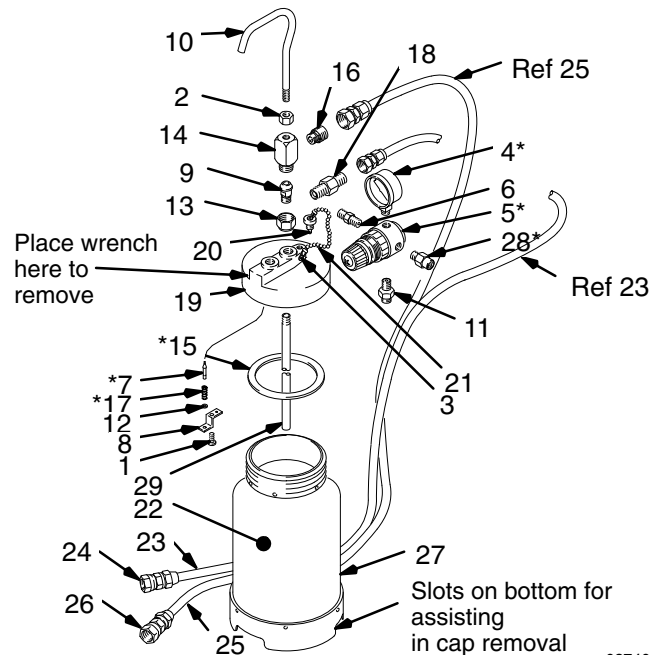
50 psi (3.5 bar) Maximum Inlet Air Pressure

2 quart (1.94 liter) capacity, aluminum cup.

Includes an air pressure regulator and gauge, pressure relief valve, and rigid hook handle.

WARNING

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in the turbine spray system, which contains aluminum and/or galvanized-coated parts. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious injury, and/or substantial property damage.



Ref. No.	Part No.	Description	Qty.
1	100-032	SCREW, rd hd; 6-32 x 1/4"	1
2	100-188	NUT, hex; 5/16-18	1
3	101-855	SCREW, rd hd, self-tapping; No. 4 x 3/16"	2
4*	104-655	GAUGE, pressure;	1
5*	104-815	REGULATOR, air; adjustable, See Manual 308-167	1
6	183-697	NIPPLE; 1/8 npt	1
7*	172-593*	VALVE, check	1
8	172-594	BRACKET, check valve	1
9	172-613	ADAPTER, handle	1
10	172-620	HANDLE	1
11	172-621	ADAPTER, 7/16 unf(m) x 1/8 npt(m)	1
12	172-622	WASHER, flat; 1/4"	1
13	172-679	NUT, hex; 3/8" x 1/8"	1
14	172-680	ELBOW; 1/2 uns(f) x 3/8 npsm(m)	1
15*	183-337	GASKET, cap	1

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Accessories

Ref. No.	Part No.	Description	Qty.
16	172-682	ADAPTER; 3/8 npsm(m) x 1/2 uns(f)	1
17*	172-684	SPRING, compression	1
18	183-696	TEE; 1/4 npt(m) x 1/4 npt(m) x 1/8 npt(f)	1
19	174-069	LID	1
20	174-075	VALVE, air control	1
21	174-100	CHAIN, ball; 3" (76.2 mm) long	1
22	176-243	LABEL	1
23	212-005	HOSE, air; 1/4" ID, 6' (1.83 m) long; cpd 1/4 npsm(fbe) swivel; Includes item 24	1
24	104-415	.COUPLING	2
25	212-006	HOSE, fluid; 1/4" ID, 6'-8" (2.03 m) long; cpd 3/8 npsm(fbe) swivel; Includes item 26	1
26	104-084	.COUPLING	2
27	214-602	CUP	1
28*	214-691	VALVE, relief; 50 psi (3.5 bar).	1
29	172-881	TUBE	1

* Recommended "tool box" spare parts. Keep on hand to reduce down time.

NOTE: See Selection Charts on pages 4 and 5 to order fluid sets.

Lubricant 111-265

One 4 oz. (113 gram) tube sanitary (non-silicone) lubricant for fluid seals and wear areas.

#4 Ford Viscosity Cup M70702

To measure viscosity of fluid.

1 Quart (1 liter) Cup Lid M70610

For air tight storage of fluid.

3/4 Quart (3/4 liter) Cup Assembly (over) M71047

(Aluminum)

3/4 Quart (3/4 liter) Cup Assembly (over) M71048

(Nylon)

3/4 Quart (3/4 liter) and 1/2 Quart (1/2 liter) Cup Gaskets (over) M71027

5 pak of polyethylene gaskets for use with M71047.

1 Quart (1 liter) Cup Assembly (under) M70427

Includes complete cup-under assembly to convert a 713V gun to a 711V gun. In addition, it is necessary to order the M71007 hose and check valve kit.

1 Quart (1 liter) Cup Gaskets (under) M70425

5 pak of polyethylene gaskets.

Mini Air Regulator and Gauge M70669

Venturi Filter/Silencers (10 pak) M70976

Hose and Cup (under) Check Valve (711V Venturi Gun) M71007

To help prevent the cup from de-pressurizing after the air is shut off.

Hose and Cup (over) Check Valve (714HSV and 712 HSV Venturi Guns) M71051

To help prevent the cup from de-pressurizing after the air is shut off.

Contractor User Kit M70704

Includes:

Part No.	Description	Qty.
M70395	Air pressure tube	3
M70439	1.0 mm Air Cap	1
M70444	2.0 mm Air Cap	1
M70448	1.0 mm Fluid Nozzle	1
M70450	2.0 mm Fluid Nozzle	1
M70424	Cup Gasket	5
M70456	1.0 mm Needle Assembly	1
M70460	2.0 mm Needle Assembly	1
M70464	Material Strainer	1

Automotive User Kit M70705

Includes:

Part No.	Description	Qty.
M70395	Air pressure tube	3
M70434	0.5 mm Air Cap	1
M70437	0.7 mm Air Cap	1
M70634	1.2 mm Fluid Nozzle	1
M70448	1.0 mm Fluid Set	1
M70424	Cup Gasket	5
M70637	1.2 mm Needle Assembly	1
M70456	1.0 mm Needle Assembly	1
M70464	Material Strainer	1

The Graco Warranty and Disclaimers

WARRANTY

Graco warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for, any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility with Graco equipment of structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claim. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor and transportation.

DISCLAIMERS AND LIMITATIONS

The terms of this warranty constitute purchaser's sole and exclusive remedy and are in lieu of any other warranties (express or implied), **including warranty of merchantability or warranty of fitness for a particular purpose**, and of any non-contractual liabilities, including product liabilities, based on negligence or strict liability. Every form of liability for direct, special or consequential damages or loss is expressly excluded and denied. In no case shall Graco's liability exceed the amount of the purchase price. Any action for breach of warranty must be brought within two (2) years of the date of sale.

EQUIPMENT NOT COVERED BY GRACO WARRANTY

Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motor, switches, hose, etc.) are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

Technical Data

Maximum Inlet Fluid Pressure	50 psi (3.5 bar)
Maximum Inlet Air Pressure	90 psi (6.2 bar)
Atomizing Air Pressure	10 psi (0.7 bar)
Air Inlet	Quick-disconnect
Fluid Inlet	3/8 nps
Wetted Parts	
<i>Bare Spray Gun</i>	Stainless Steel, PTFE® Hard-coated Aluminum, Brass
<i>Spray Gun Cups</i>	Aluminum, Polyethylene
<i>2 Quart Accessory</i>	
<i>Remote Pressure Pot</i> . . .	Aluminum, Polyethylene
<i>2-1/2 Gallon Accessory</i>	
<i>Remote Pressure Pot</i>	Galvanized Steel, EPDM (standard)

PTFE

Graco Phone Numbers

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you: **1-800-328-0211 Toll Free**

FOR TECHNICAL ASSISTANCE, service repair information or assistance regarding the application of Graco equipment: **1-800-543-0339 Toll Free**

Sales Offices: Atlanta, Chicago, Dallas, Detroit, Los Angeles, Mt. Arlington (N.J.)
Foreign Offices: Canada; England; Korea; Switzerland; France; Germany; Hong Kong; Japan

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