BINKS

BINKS® RHINO™

TM Industrial Finishing 2004

7039-X0000-0

Conventional* or HVLP*

*Air cap assembly ordered separately.
See page 8.

U.S. PATENT NO.
6,935,577

The following instructions provide the necessary information for the proper operation and preventive maintenance, and service for the Binks Rhino spray gun. Please read and understand all information in this document in order to obtain the maximum performance and life from the Rhino spray gun.

The Binks Rhino is an automatic spray gun designed especially for use in extreme environments spraying porcelain enamel and ceramic glaze materials. It is a completely sealed spray gun, intended for use in "wash down" environments. It is exceptionally rugged in construction and is built to stand up under continuous hard use. When properly cared for, it will produce beautiful, uniform finishing results long after most other spray guns have worn out.

If you have questions or do not understand the information presented, call your nearest Binks representative.

SPECIFICATIONS:

Maximum Fluid Pressure:	100 psi/6.9 bar
Maximum Atomizing Air Pressure:	120 psi/8.3 bar
Maximum Cylinder Air Pressure:	120 psi/8.3 bar
Minimum Cylinder Air Pressure:	40 psi/2.8 bar
Maximum Air Pressure for HVLP Compliance:	Consult Air Cap Data
Gun Body:	Forged Aluminum
Fluid Path:	Stainless Steel
Fluid Inlet Size:	3/8" NPS(m)
Atomizing Air Inlet Size:	1/4" NPS(m)
Cylinder Air Inlet Size:	1/4" NPS(m)
Gun Weight:	2.6 lbs/1.2 kg
Mounting Hole:	1/2"

Replaces Part Sheet 77-2801R-3 | **Part Sheet 77-2801R-4**

In this part sheet, the words **WARNING**, **CAUTION** and **NOTE** are used to emphasize important safety information as follows:

⚠ WARNING
Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

⚠ CAUTION
Hazards or unsafe practices which could result in minor personal injury, product or property damage.

NOTE
Important installation, operation or maintenance information.

⚠ WARNING

MACHINE MANUAL
Read all instructions in the manual before operating and servicing this product.

⚠ WARNING

The following hazards may occur during the normal use of this equipment.
Read the following chart before using this equipment.

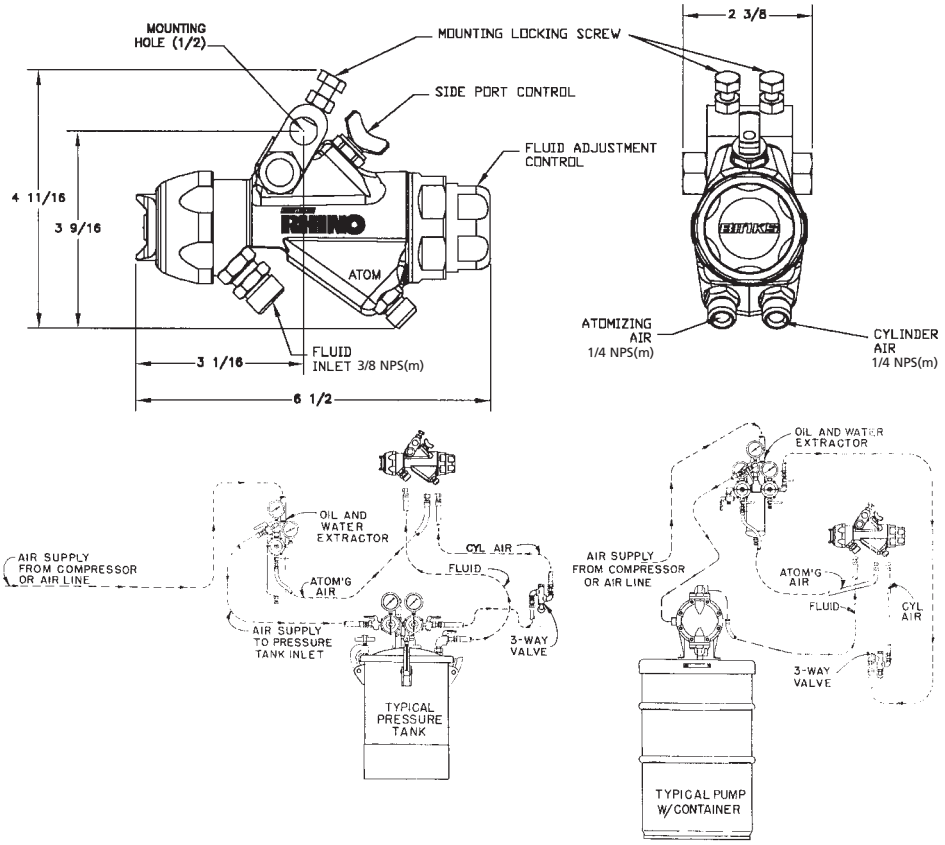
HAZARD	CAUSE	SAFEGUARD
General Safety	Improper operation or maintenance of equipment.	Operators should be given adequate training in the safe use and maintenance of the equipment (in accordance with the requirements of NFPA-33, Chapter 15). Users must comply with all local and national codes of practice and insurance company requirements governing ventilation, fire precautions, operation, maintenance and housekeeping. These are OSHA Sections 1910.94 and 1910.107 and NFPA-33. Risk is reduced by avoiding or lessening factors 1-7.
Toxic Fluid Hazard	Certain materials may be harmful if inhaled, or if there is contact with skin	Follow the requirements of the Material Safety Data Sheet by your coating material manufacturer. Know the specific hazards of the material. 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 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. Always wear the appropriate protective clothing, gloves, and eyewear. Store hazardous fluids in approved containers only. Dispose of hazardous fluids in accordance with all state, local, and national guidelines.
Equipment Misuse Hazard	Improper operation or maintenance of equipment.	This equipment is for professional use only. Use the equipment only for its intended purpose. If you are unsure about its purpose, call your local Binks representative. Do not alter or modify this equipment. Use only genuine Binks parts. Do not exceed the maximum working pressure of the lowest rated system component. Route all hoses away from sharp edges, moving parts, hot surfaces, and high traffic areas. Do not use hoses to pull the equipment. Use only Binks approved hoses. Equipment misuse can cause the equipment to fail, malfunction, or start unexpectedly and result in injury.
Eye Hazard	During use or cleaning and flushing, materials can be forcefully expelled potentially causing eye injury.	Wear safety glasses with side shields which conform to ANSI Z87.1 or European Norm 166.

MOUNTING SPECIFICATIONS & SET-UP INSTRUCTIONS

NOTE

Numbers in parentheses refer to individual items shown in the exploded drawing on page 6.

1. For gun operation, air pressure to cylinder, “CYL”, should be a minimum of 40 psi (60 psi for quickest response).
2. For minimum response time, air line to gun cylinder air from 3-way valve should be small diameter and as short as possible.
3. Air supplied to gun should of free of dirt and moisture. An oil and water extractor is recommended for this purpose.
4. The Rhino can either be mounted with the 1/2" hole on the mounting bracket (2) or the 1/2" hole in the gun body.
5. The gun should be connected to the fluid supply with 3/8" minimum diameter material hose fitted with 3/8 NPS(f) fitting.
6. The gun should be connected to the cylinder air supply line with 5/16" diameter air hose with 1/4 NPS(f) fitting.
7. The gun should be connected to the atomizing air supply line with 5/16" diameter air hose with 1/4 NPS(f) fitting.
8. The Rhino mounting bracket (2) was designed to be used as a repeatable mount. When pulling the Rhino off line, the mounting bracket (2) can remain in position. This will ensure that when the Rhino is placed back on line, it will be mounted in the exact same position as previously. To pull the Rhino off line, simply disconnect the hoses and remove the bolt (33). The Rhino comes off and leaves the mounting bracket (2) in position.



OPERATION & SPRAY INSTRUCTIONS

FLUID CONTROL ADJUSTMENT

To obtain the most accurate adjustments and minimum needle wear, the fluid flow should be controlled by the fluid nozzle (29) orifice size and pressure to the gun with the needle full open. A fluid regulator may also be used. When conditions require it, fluid flow can be controlled with the needle adjuster (4). Turn clockwise to restrict the flow. Turn counter clockwise to increase the flow. See fluid nozzle data chart for available fluid nozzle orifice sizes.

PATTERN ADJUSTMENT

Spray width adjustment is made by the side port control (3). Turn clockwise for a narrow spray pattern. Turn counter clockwise for a wide spray pattern. Direction of the fan spray—horizontal, vertical, or any position in between—is made by loosening the air cap retaining ring (13 or 41) and rotating the air cap assembly (14 or 40) to the desired position.

GENERAL SPRAY INSTRUCTIONS & CLEANING

NOTE

Numbers in parentheses refer to individual items shown in the exploded drawing on page 6.

GENERAL SPRAY INSTRUCTIONS

NOTE

The Rhino gun was designed to spray water based material such as porcelain enamel. Solvents or paints should never be sprayed with the Rhino gun.

1. The Binks Rhino was designed to be used as either an HVLP or conventional air spray gun. Depending on the application, the Rhino can be switched to HVLP or conventional simply by changing air cap assemblies (14 or 40). **NOTE: Item 40 can only be used with Item 41 retaining ring.** Consult a Binks representative to determine which air cap assembly will work best for your applications.
2. To compensate for needle and fluid nozzle wear, an adjustment is provided on the fluid needle. Adjust the needle lock nuts (35, 36) to provide adequate clearance between the diaphragm piston (19) and the front lock nut (35) on the needle (25). The fluid needle motion should allow for air to flow before the fluid and should shut off the fluid before the air is shut off. The recommended clearance between the diaphragm piston (19) and the front lock nut (35) is 1/16".
3. Air and fluid pressures to gun should be turned off when gun is not in use. This will prevent pressure from building up in gun due to leakage and causing unexpected triggering.
4. Gun should be flushed thoroughly with water when not in use. This will prevent material from drying inside the gun.
5. To reduce overspray and obtain maximum efficiency, always spray with the lowest possible air and fluid pressures that produce an acceptable pattern.

LUBRICATION

The Rhino gun was designed to operate without lubrication. Accordingly, the needle packings, air piston, and side port control need not be lubricated. If excessive needle drag occurs, a small amount of petroleum jelly may be spread on the needle.

CLEANING

NOTE

The Rhino gun was designed to be used for water based material such as porcelain enamel. Solvents should never be used to clean the Rhino gun. Clean parts with water. The Rhino gun parts have a tough exterior finish. Brushes may be used if needed.

HOW TO SERVICE YOUR RHINO GUN

⚠CAUTION

Never use metal instruments to clean or scrape the air cap assembly (14). The air cap assemblies have been carefully machined and assembled. Altering or damaging them will cause faulty spray.

⚠CAUTION

Be sure to relieve all fluid and air pressures from gun before servicing.

NOTE

Never bend the fluid needle (25) when servicing the Rhino gun. Damage may occur.

NOTE

Never use metal instruments to remove or service the diaphragm (20). Damage may occur, resulting in faulty operation.

⚠CAUTION

The needle adjuster (4) is spring loaded. Care must be taken during removal to prevent injury or damage.

TO REPLACE THE FLUID PACKING CARTRIDGE (27)

Service Symptoms:

- ***Material is leaking from fluid packing***
- ***Excessive drag on fluid needle. Gun will not trigger on or off***

To ease in maintenance, the fluid packing (27) in the Rhino gun was designed to be changed as a cartridge.

1. Remove the needle adjuster (4) from the end cap (8). This is done to relieve the needle pressure from the fluid nozzle (29), assisting in re-assembly. Leave needle (25) in gun.
2. Remove the air cap retaining ring (13 or 41) with the air cap assembly (14 or 40) and air cap retaining clip (28) inside it. They come off as an assembly.
3. Remove the four #8-32 allen head screws (34).
4. Remove the head (16) from the gun body (10).
5. Remove the packing cartridge (27) from the gun head (16).
6. Clean any remaining material out of the gun head (16) with water. Clean any remaining material off of the needle.
7. Tighten the new cartridge into the head to 30-35 foot-pounds.
8. Place a new needle wiper (31) onto the needle.
9. Check the head gasket (18) for damage. If damaged, it must be replaced. Place the head gasket onto the pins in the gun body.
10. Replace the gun head (16) back onto the gun body (10).
11. Tighten the four #8-32 allen head screws (34) to a torque of 30-35 inch-pounds.
12. Replace air cap assembly back onto head and adjust to desired position.
13. Replace the needle adjuster (4) back onto the end cap (8) and adjust to desired position.

TO REPLACE THE AIR PACKING CARTRIDGE (26)

Service Symptoms:

- ***Excessive air is leaking from gun body in area of air packing cartridge***
- ***Excessive drag on fluid needle. Gun will not trigger on or off***

To ease in maintenance, the air packing cartridge (26) in the Rhino gun was designed to be changed as a cartridge.

1. Remove the needle adjuster (4) from the end cap (8).
2. Remove the needle return spring (7).
3. Remove the end cap (8) using a 1-7/8" wrench.
4. Remove the piston return spring (6).
5. Remove the needle (25) taking extreme care not to bend it.
6. Remove the diaphragm (20), diaphragm piston (19), valve piston (21), and u-cup seal (23). These items come out as an assembly. Take care not to damage the diaphragm with a tool.
7. Remove the valve seat (22) using a ratchet with a 13/16" socket.
8. Remove the air packing cartridge (26) using a ratchet with extension and a 5/16" socket.
9. Apply a small amount of Loctite 577 to the threads on the new cartridge. Tighten the new cartridge into the gun body (10).
10. Place a new valve gasket (24) on the shoulder of the valve seat (22). Apply a small amount of Loctite 577 to the threads of the valve seat (22). Tighten the valve seat in to the gun body to a torque of 20-25 foot-pounds.
11. Inspect the diaphragm (20) and u-cup seal (24) for damage. If either is damaged, they must be replaced. Return the diaphragm assembly back into gun body.
12. Replace the needle (25) and piston return spring (6) back onto gun. A small amount of petroleum jelly may be applied to needle. Take care not to bend the needle.
13. Tighten the end cap (8) onto the gun. Make sure the end cap is snugly tightened. Apply torque of 20-25 foot-pounds.
14. Replace the needle return spring (7) and needle adjuster (4). Adjust the needle adjuster to the desired position.

GENERAL SPRAY INSTRUCTIONS & CLEANING

TO REPLACE THE DIAPHRAGM (20)

Service Symptoms:

- ***Gun will not trigger on***
- ***Gun triggers on and then slowly triggers off unintentionally***

1. Remove the needle adjuster (4) from the end cap (8).
2. Remove the needle return spring (7).
3. Remove the end cap (8) using a 1-7/8" wrench.
4. Remove the piston return spring (6).
5. Remove the fluid needle (25) taking extreme care not to bend the needle.
6. Remove the diaphragm (20), diaphragm piston (19), valve piston (21), and u-cup seal (23). These items come out as an assembly.
7. Place a 7/16 inch wrench on the flats of the valve piston (21). Place an 11/16 inch wrench on the diaphragm piston (19). Unscrew the diaphragm piston.
8. Clean the diaphragm piston of any dirt or debris.
9. Place a new diaphragm (20) back onto the diaphragm piston (19).
10. Tighten the diaphragm piston back into the valve piston. Tighten until the diaphragm piston is snug and the diaphragm (20) will not rotate between the valve piston (21) and the diaphragm piston (19), approximately 20-25 inch-pounds.
11. Check the u-cup seal (23) for damage. If damaged, it must be replaced.
12. Return the diaphragm assembly back into the gun body (10).
13. Replace needle (25), piston return spring (6), end cap (8), needle return spring (7), and needle adjuster (4). A small amount of petroleum jelly may be applied to the needle. Take care not to bend the needle. Make sure the end cap is snugly tightened, 20-25 foot-pounds.
14. Turn the needle adjuster to the desired position.

TO REPLACE THE AIR CAP ASSEMBLY (14 OR 40)

Service Symptoms:

- ***Faulty spray***

1. Remove the air cap retaining ring (13 or 41) with the air cap assembly (14 or 40) and air cap retaining clip (28) inside it. They come off as an assembly.
2. Using a pair of pliers, remove the air cap retaining clip (28). The air cap assembly (14 or 40) will now fall out of the air cap retaining ring.
3. Place a new air cap assembly (14 or 40) into the retaining ring (13 or 41).
4. Using your fingers or a pair of pliers, replace the retaining clip (28) back into the retaining ring (13 or 41). The clip seats into a groove in the retaining ring.
5. Check for damage on the o-ring (17). If damaged, it must be replaced.
6. Replace the air cap assembly back onto the gun.

TO REPLACE THE FLUID NOZZLE (29)

Service Symptoms:

- ***Fluid dripping or leaking from front of gun***

1. Remove the air cap retaining ring (13 or 41) with the air cap assembly (14 or 40) and air cap retaining clip (28) inside it. They come off as an assembly.
2. Remove the needle adjuster (4) from the end cap (8). This is done to relieve the needle pressure from the fluid nozzle (29), assisting in re-assembly.
3. Remove the nozzle nut (30).
4. Remove the fluid nozzle (29). If it is jammed inside the nozzle nut (30), push it out with a non metallic instrument.
5. Place a new fluid nozzle (29) inside the nozzle nut (30), making sure that the markings on the new fluid nozzle are the same as the old one or that the markings are consistent with the fluid needle (25).
6. Tighten the nozzle nut back (30) onto the gun head (16) to a torque of 20-25 ft-lbs.
7. Check for damage on the o-ring (17). If damaged, it must be replaced.
8. Replace the air cap assembly back onto the gun.
9. Replace the needle adjuster (4). Adjust the needle adjuster to the desired position.

TO REPLACE THE NEEDLE:

Service Symptoms:

- ***Fluid dripping or leaking from front of gun***
- ***Material is leaking from fluid packing***

1. Remove the needle adjuster (4) from the end cap (8).
2. Remove the needle return spring (7).
3. Using a pair of pliers, remove the fluid needle (25), taking extreme care not to bend the needle.
4. Loosen the rear locknut (36), paying close attention to the position of the locknuts.
5. Remove the front locknut (35) and the rear locknut (36) from the needle (25).
6. Inspect the front locknut (35) for damage. If it is damaged, it must be replaced.
7. Replace the locknuts onto the new needle in the same position that they were in.
8. Tighten the rear locknut (36) against the front locknut (35).
9. Replace the needle back into the gun, again paying special attention not to bend the needle. A small amount of petroleum jelly may be applied to needle.
10. To compensate for needle (25) and fluid nozzle (29) wear, an adjustment is provided on the fluid needle. If adjustment is needed, adjust the needle locknuts to provide adequate clearance between the diaphragm piston (19) and the front lock (35) nut on the needle. The fluid needle motion should allow for air to flow before the fluid and should shut off the fluid before the air is shut off
11. Replace the needle return spring (7) and needle adjuster (4). Adjust the needle adjuster to the desired position.

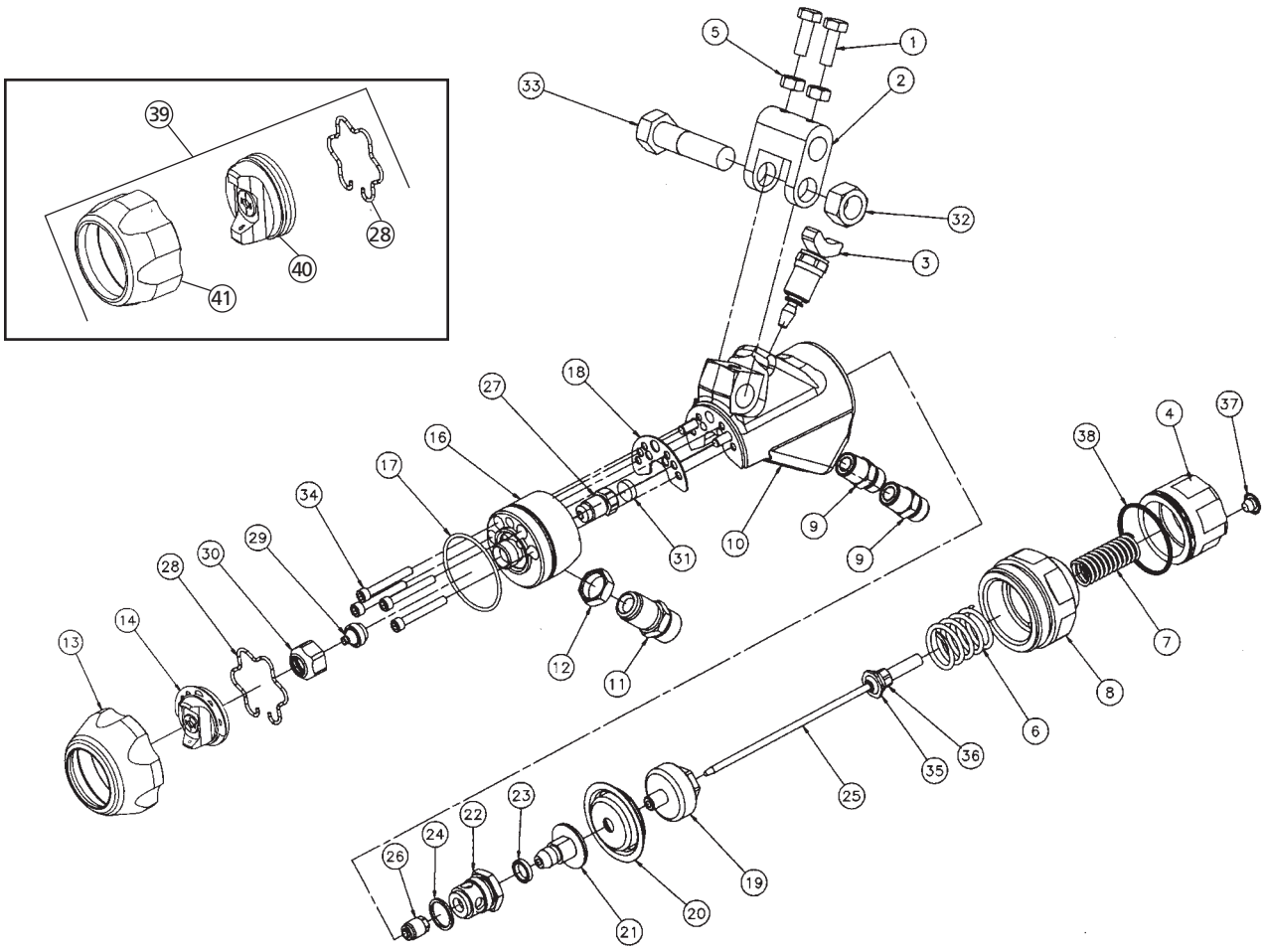
TO REPLACE THE AIR VALVE (20, 21, 22, 23, 24)

Service Symptoms:

- ***Excessive air is leaking from front of gun when triggered off***

1. Remove the needle adjuster (4) from the end cap (8).
2. Remove the needle return spring (7).
3. Remove the end cap (8) using a 1-7/8" wrench.
4. Remove the piston return spring (6).
5. Remove the fluid needle (25) taking extreme care not to bend the needle.
6. Remove the diaphragm (20), diaphragm piston (19), valve piston (21), and u-cup seal (23). These items come out as an assembly. Take care not to damage the diaphragm with a tool.
7. Remove the valve seat (22) using a ratchet with a 13/16 inch socket.
8. Place a new valve gasket (24) on the shoulder of the new valve seat (22). Tighten the valve seat into the gun body to torque of 20-25 foot-pounds. Place a small amount of Loctite 577 on the threads of the valve seat before assembly.
9. Remove the valve piston (21) from the diaphragm piston (19), using a 7/16 inch wrench and an 11/16 inch wrench.
10. Place a new u-cup (23) onto a new valve piston (21). The flat side of the u-cup faces the diaphragm.
11. Inspect the diaphragm (20) for damage. If it is damaged, it must be replaced.
12. Tighten the diaphragm piston back into the valve piston. Tighten until the diaphragm piston (19) is snug and the diaphragm (20) will not rotate between the valve piston (21) and diaphragm piston (19) approximately 20-25 inch-pounds.
13. Return the diaphragm assembly back into the gun body.
14. Replace needle, piston return spring, end cap, needle return spring, and needle adjuster. A small amount of petroleum jelly may be applied to the needle. Take care not to bend the needle. Make sure the end cap is snugly tightened, approximately 20-25 foot-pounds.
15. Turn the needle adjuster to the desired position.

BINKS RHINO AUTOMATIC SPRAY GUN



PARTS LIST

When ordering, please specify Part No.

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	20-6761	1/4-20 X 3/4 HEX HEAD SS	2
2	54-5537	MOUNTING BRACKET	1
3	54-5515	SIDE PORT ASSEMBLY	1
4	54-5536	NEEDLE ADJUSTER	1
5	20-6234	1/4-20 NUT SS	2
6	54-5534	PISTON RETURN SPRING	1
7	54-5533	NEEDLE RETURN SPRING	1
8	54-5535	END CAP	1
9	54-5525	AIR CONNECTION	2
10	54-5504	GUN BODY SUB-ASSEMBLY	1
11	54-5509	FLUID INLET FITTING	1
12	54-5510	FLUID FITTING LOCKNUT	1
13	54-5506	AIR CAP RETAINING RING	REF
14	SPECIFY	AIR CAP ASSY. (ORDER SEPARATELY – SEE PAGE 8)	REF
16	54-5502	GUN HEAD	1
17	20-6510+*	O-RING	1
18	54-5503+	HEAD GASKET	1
19	54-5532	DIAPHRAGM PISTON	1
20	54-5531+*	DIAPHRAGM	1
21	54-5530	VALVE PISTON	1
22	54-5524	VALVE SEAT	1
23	54-5518+	U-CUP SEAL	1
24	54-5529+	NYLON GASKET	1

ITEM NO.	PART NO.	DESCRIPTION	QTY.
25	SPECIFY	NEEDLE ASSEMBLY	1
26	54-5526+*	AIR PACKING CARTRIDGE	1
27	54-5511+*	FLUID PACKING CARTRIDGE	1
28	54-5507	AIR CAP RETAINING CLIP	REF
29	SPECIFY	FLUID NOZZLE (SEE PAGE 8)	1
30	54-5508	NOZZLE NUT	1
31	54-5538+*	NEEDLE WIPER	1
32	20-2424	1/2-13 NUT SS	1
33	20-2422	1/2-13 X 2 HEX HEAD SS	1
34	20-6759	#8-32 X 1 1/4 ALLEN HEAD SS	4
35	54-5521	FRONT LOCK NUT	1
36	54-5520	REARLOCK NUT	1
37	54-5522+	UMBRELLA VALVE	1
38	20-6747+	O-RING	1
39	46-4620	R-CAP3™ AIR CAP ASSY. (CONVENTIONAL)	REF
40	46-4619•	R-CAP3™ AIR CAP SUB-ASSY. (CONVENTIONAL) (Requires R-CAP3™ Air Cap Ret. Ring)	REF
41	54-5557•	R-CAP3™ AIR CAP RETAINING RING (CONVENTIONAL) (Used With R-CAP3™ Air Cap Assy. Only)	REF

+ Available as part of Rebuild Kit (54-5540)

* Available as part of Repair Kit (54-5541)

• Purchased separately.

TROUBLESHOOTING

CONDITION	CAUSE	CORRECTION
Heavy top or bottom pattern	Horn holes plugged. Obstruction in fluid nozzle. Cap and/or tip seat dirty.	Clean. Ream with non-metallic point or toothpick. Clean. Clean.
Heavy right or left side pattern	Left or right side horn holes plugged. Obstruction in fluid nozzle.	Clean. Ream with non-metallic point or toothpick. Clean.
	Remedies for the top-heavy, bottom-heavy, right-heavy and left-heavy patterns: 1) Determine if the obstruction is on the air cap assembly or the fluid nozzle. 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 assembly. Clean the air cap assembly as previously instructed. 2) If the defect is not inverted, it is on the fluid nozzle. Replace. 3) Check for dried material just inside the opening. Remove by washing with water.	
Heavy center pattern	Fluid pressure too high for atomization air Material flow exceeds air cap assy.'s capacity. Atomizing pressure too low. Material too thick.	Balance air and fluid pressure. Thin or lower fluid flow. Increase pressure. Thin to proper consistency.
Split spray pattern	Atomization air pressure too high. Fluid pressure too low.	Reduce pressure, balance with fluid pressure. Increase fluid pressure balance with air pressure.
Jerky or fluttering spray	Loose or damaged fluid nozzle/seat. Material level too low. Obstruction in fluid passage. Air in fluid supply line.	Tighten or replace. Refill. Flush with water. Check fluid hoses.
Will not spray or trigger	Excessive drag on fluid needle. No air pressure at gun. Needle adjuster not open enough. Diaphragm damaged or worn. Umbrella valve damaged or worn	Clean packing with water and lightly lubricate. Check air supply and air lines. Open needle adjuster. Replace. Replace.
Excessive overspray	Too much atomization air pressure Gun too far from work surface.	Reduce pressure. Adjust to proper distance.
Excessive fog	Too much atomization air pressure.	Reduce pressure.
Dry spray	Atomization air pressure too high. Gun tip too far from work surface. Gun motion too fast.	Reduce air pressure. Adjust to proper distance. Slow down.
Fluid leaking from packing	Packing cartridge loose. Packing worn or damaged	Tighten. Replace cartridge.
Fluid leaking or dripping from front of gun. Fluid needle does not shut off.	Valve seal worn or damaged. Dried material in packing. Fluid tip or needle worn or damaged. Foreign matter in tip. Needle return spring broken. Wrong size needle or tip. Excessive drag on fluid needle.	Replace. Clean packing with water or replace. Replace tip or needle. Clean with water. Replace. Replace. Clean packing with water and lightly lubricate or replace cartridge.
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 pressure. Mix properly. Fix gun at right angle to work surface and adapt to proper gun speed.
Thin, sandy coarse finish drying before it flows out	Gun too far from surface. Too much air pressure.	Check distance. Normally 8"-12". Reduce air pressure and check spray pattern.
Gun triggers on and then slowly triggers off unintentionally	Diaphragm damaged or worn. Umbrella valve damaged or worn. Problem with trigger air supply.	Replace. Replace. Check air valves and lines.
Thick, dimpled finish "orange peel"	Gun too close to surface. Too much material coarsely atomized. Air pressure too low. Material not properly mixed. Surface rough, oily or dirty.	Check distance. Normally 8"-12". Increase air pressure or decrease fluid pressure. Increase air pressure or decrease fluid pressure. Follow manufacturer's mixing instructions. Properly clean and prepare work surface.
Excessive air is leaking from gun when triggered off.	Valve piston damaged or worn. Valve seat damaged or worn. Valve gasket damaged, worn or installed incorrectly. Air packing cartridge assembly damaged or worn.	Replace. Replace. Replace and install correctly. Replace.

AIR CAP ASSEMBLY/FLUID NOZZLE/FLUID NEEDLE DATA

						GUN INLET PRESSURE			
						30 PSI	50 PSI	70 PSI	
AIR CAP	AIR CAP ASS'Y P.N.	AIR CAP TYPE.	FLUID NOZZLE PART NO.	FLUID NOZZLE ORIFICE SIZE	FLUID NEEDLE PART NUMBER	SCFM	SCFM	SCFM	PATTERN SIZE AT 50 PSI AIR INLET PRESSURE @ 12" DISTANCE
R-CAP 1™	46-4617	CONV.	45-6809	.110 / 2.8 mm	47-6809	12.6	18.6	24.7	16
R-CAP 1™	46-4617	CONV.	45-6810	.086 / 2.2 mm	47-6810	14.4	21.3	28.7	10
R-CAP 1™	46-4617	CONV.	45-6811	.070 / 1.8 mm	47-6811	16	24.2	33	8
R-CAP 1™	46-4617	CONV.	45-6812	.052 /1.3 mm	47-6812	18.8	28.2	43.8	8
R-CAP 2™	46-4618	HVLP	45-6809	.110 / 2.8 mm	47-6809	14.4 @ 20 PSI INLET			12
R-CAP 2™	46-4618	HVLP	45-6810	.086 / 2.2 mm	47-6810	16.2 @ 20 PSI INLET			10
R-CAP 2™	46-4618	HVLP	45-6811	.070 / 1.8 mm	47-6811	16.2 @ 20 PSI INLET			8
R-CAP 2™	46-4618	HVLP	45-6812	.052 /1.3 mm	47-6812	14.8 @ 20 PSI INLET			8
R-CAP 3™	46-4620	CONV.	45-6809	.110 / 2.8 mm	47-6809	15.5	23.1	31.3	26
R-CAP 3™	46-4620	CONV.	45-6810	.086 / 2.2 mm	47-6810	15.5	23.3	31.6	20
R-CAP 3™	46-4620	CONV.	45-6811	.070 / 1.8 mm	47-6811	18.3	27.7	37.4	18
R-CAP 3™	46-4620	CONV.	45-6812	.052 /1.3 mm	47-6812	21	31.8	42.2	16
R-CAP 4™	46-4622	CONV.	45-6809	.110 / 2.8 mm	47-6809	14.8	21.5	29.3	26
R-CAP 4™	46-4622	CONV.	45-6810	.086 / 2.2 mm	47-6810	16.1	24	32.5	24
R-CAP 4™	46-4622	CONV.	45-6811	.070 / 1.8 mm	47-6811	18.3	27.5	40.2	22
R-CAP 4™	46-4622	CONV.	45-6812	.052 /1.3 mm	47-6812	29	33.2	46	18

RHINO AUTOMATIC SPRAY GUN MODELS*	FLUID ORIFICE SIZE
7039-1000-0	.110" (2.8 mm)
7039-2000-0	.086" (2.2 mm)
7039-3000-0	.070" (1.8 mm)
7039-4000-0	.052" (1.3 mm)
***Spray guns are sold without air cap assembly to allow customization of set-ups.**	

AIR CAP ASSEMBLIES
(sold separately)

AIR CAP	PART NO.	TECHNOLOGY
R-CAP-1	**46-4617**	Conventional
R-CAP-2	**46-4618**	HVLP
R-CAP-3	**46-4620**	Conventional
R-CAP-4	**46-4622**	Conventional

KITS

REBUILD KIT (54-5540)

ITEM NO.	PART NO.	DESCRIPTION	QTY.
17	20-6510	O-RING	1
18	54-5503	HEAD GASKET	1
20	54-5531	DIAPHRAGM	2
23	54-5518	U-CUP SEAL	1
24	54-5529	NYLON GASKET	1
26	54-5526	AIR PACKING CARTRIDGE	1
27	54-5511	FLUID PACKING CARTRIDGE	1
31	54-5538	NEEDLE WIPER	10
37	54-5522	UMBRELLA VALVE	1
38	20-6747	O-RING	1

REPAIR KIT (54-5541)

ITEM NO.	PART NO.	DESCRIPTION	QTY.
20	54-5531	DIAPHRAGM	2
26	54-5526	AIR PACKING CARTRIDGE	1
27	54-5511	FLUID PACKING CARTRIDGE	1
31	54-5538	NEEDLE WIPER	10

R-CAP2™ HVLP AIR CAP TEST KIT (54-5542)

Industrial Finishing

Binks has authorized distributors throughout the world. For technical assistance or the distributor nearest you, see listing below.

U.S./Canada Technical Service Office:

195 Internationale Blvd., Glendale Heights, IL 60139
Toll-Free Telephone: 1-888-992-4657 (U.S.A. and Canada only)
Toll-Free Fax: 1-888-246-5732

WARRANTY

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

Binks Worldwide Sales and Service Listing: www.binks.com

77-2801R-4 Revisions: (P1) Updated text; (P6) Updated Parts List; (P8) Updated charts.

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