

# Operating Instructions



## Two-, Three-, and Four-Stage HVLP Turbine Sprayers

### 240V AC 50/60 Hz

**HVLP 2500 with Two-Stage Turbine**  
Model 233430

*5 psi (34 kPa, 0.3 bar) Maximum Working Pressure*

**HVLP 3800 with Three-Stage Turbine**  
Model 233431

*6 psi (41 kPa, 0.4 bar) Maximum Working Pressure*

**HVLP 4900 with Four-Stage Turbine**  
Model 233433

*8 psi (55 kPa, 0.5 bar) Maximum Working Pressure*

### 120V AC 50/60 Hz

**HVLP 3800 with Three-Stage Turbine**  
Model 233438

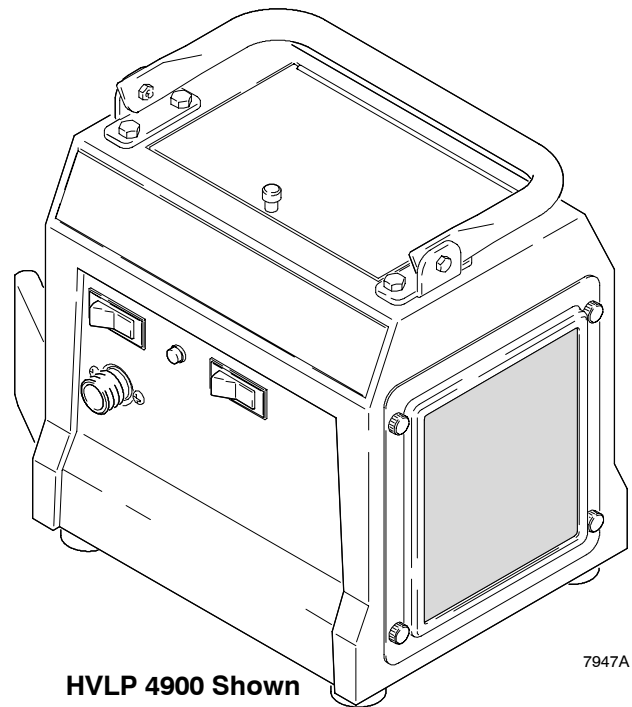
*6 psi (41 kPa, 0.4 bar) Maximum Working Pressure*

**HVLP 4900 with Four-Stage Turbine**  
Model 233439

*8 psi (55 kPa, 0.5 bar) Maximum Working Pressure*

### Related Manuals

HVLP Compressor/Cart ..... 309244  
HVLP Turbine Gun ..... 309205



HVLP 4900 Shown

7947A



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## Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow instructions.

## Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow instructions.

### You will need:

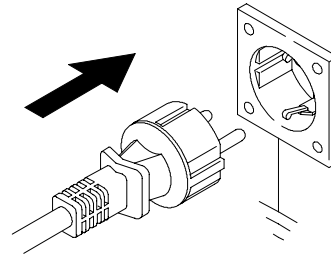
Cleaning fluids: a compatible solvent; water-based paint also requires soap and water.

### Suggested proper clothing:

- Safety glasses
- Sturdy boots or shoes
- Respirator
- Gloves

### Power Requirements:

- 120V AC 50/60 Hz, 15A circuit with a grounded outlet (models 233438 and 233439)
- 240V AC 50/60 Hz, 8A circuit with a grounded outlet (models 233430, 233431 and 233433)
- Extension cord must be 3-wire, 1.5 mm<sup>2</sup>. no longer than 15 m.



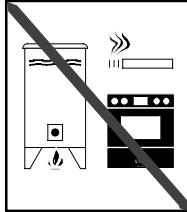


# WARNINGS

KNOW ALL HAZARDS BEFORE OPERATING SPRAYER!

**Fire and explosion hazard:** Solvent and paint fumes can ignite or explode.

- Sprayers generate sparks. Keep sprayer at least 20 feet (6 m) from explosive vapors.
- **Use in an extremely well ventilated area.**
- Eliminate all ignition sources; such as pilot lights, cigarettes and static arcs from plastic drop cloths. Do not plug or unplug power cords or turn lights on or off in spray area.
- Ground Sprayer, object being sprayed, paint and solvent pails.
- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use could result in a chemical reaction, with the possibility of explosion.



**Equipment Misuse Hazard:** Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- Before operating equipment, read all instruction manuals, tags, and labels.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed maximum working pressure (WPM) of the lowest-rated system component:
  - HVLP 2500 turbine - 5 psi (0.3 bar, 34 kPa)
  - HVLP 3800 turbine - 6 psi (0.4 bar, 41 kPa)
  - HVLP 4900 turbine - 8 psi (0.5 bar, 55 kPa)
- Use fluids and solvents that are compatible with the equipment wetted parts. See Specifications on page for this information.
- Wear hearing protection when operating this equipment.
- Do not "blow back" fluid; this is not an air spray system
- Follow Pressure Relief before cleaning, checking or servicing the equipment.

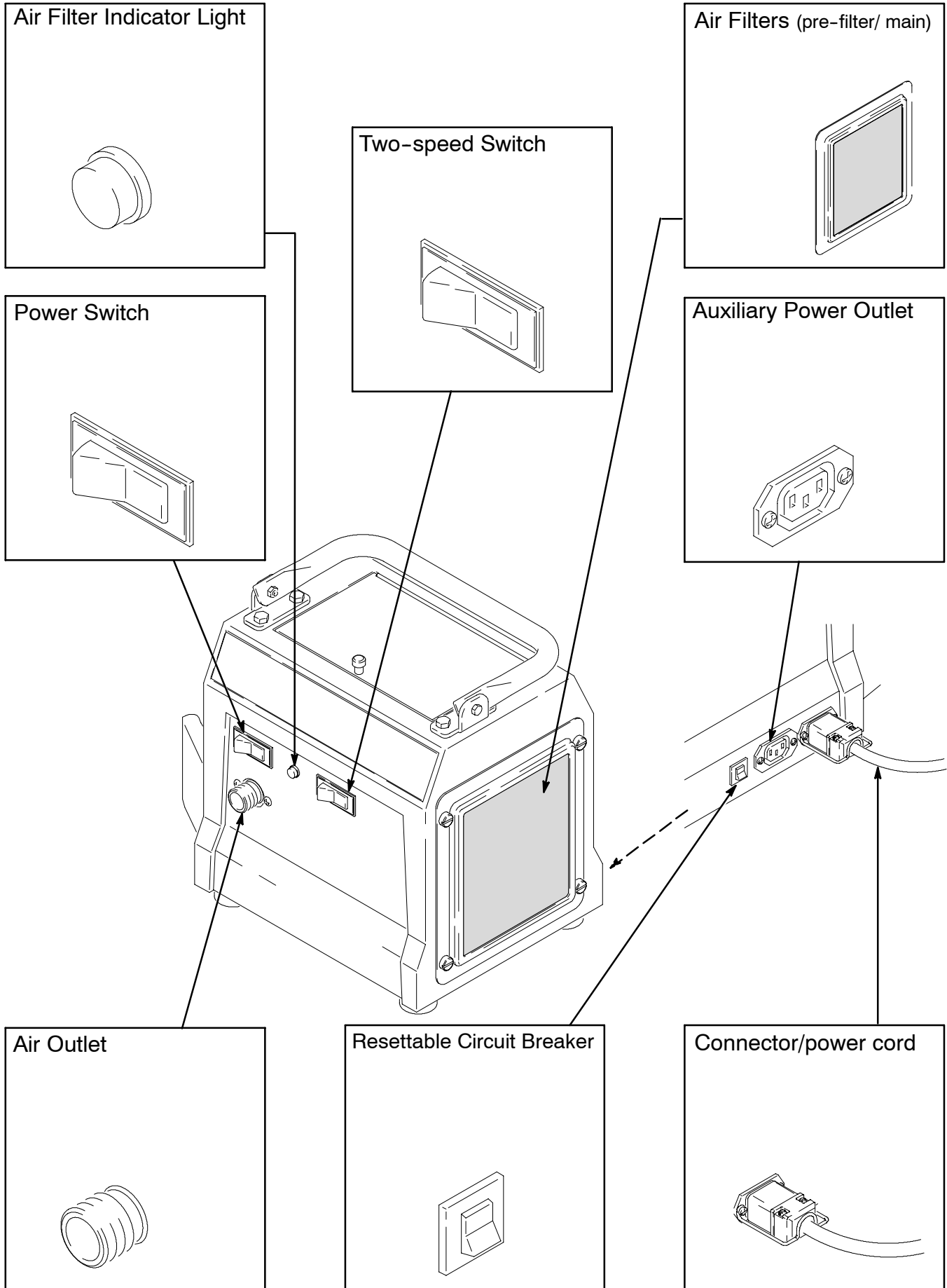


**TOXIC FLUID HAZARD:** Hazardous fluid or toxic fumes can cause serious injury or death if splashed in eyes, on skin, inhaled, or swallowed.

- Know specific hazards of fluid you are using and take protective measures as recommended by the fluid and solvent manufacturer.



# Component Identification

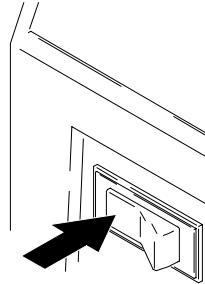


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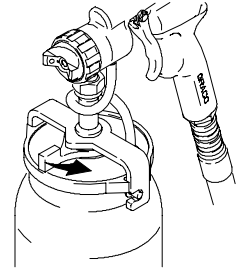
**PRESSURE RELIEF** - Follow this procedure when cleaning, repairing or shutting down sprayer



**Follow these instructions whenever you stop spraying.**



Turn off turbine.



Unlatch cup

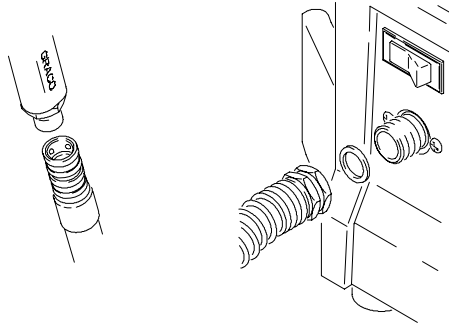
**! WARNING**

**GROUNDING** - Improper installation or alteration of the grounding plug will result in a risk of electrical shock, fire or explosion

# Setup

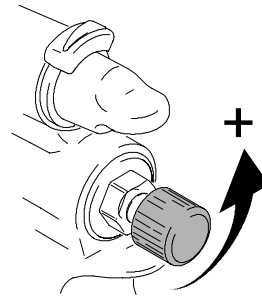
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1. Connect air hose to gun and turbine.

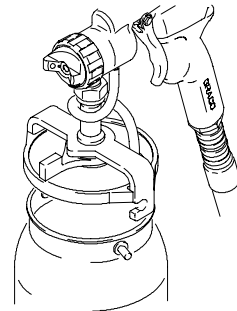


2. Turn fluid control out until trigger movement is not restricted.

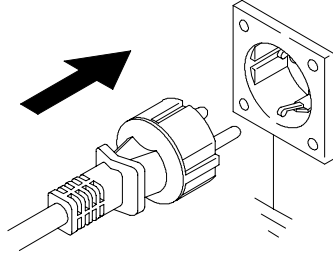
**Caution:** Turning knob too far will remove it.



3. Remove cup. Fill 3/4 full. **DO NOT OVERFILL.** Reattach and latch cup.



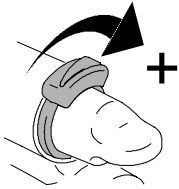
- 
4. Plug turbine power cord into a grounded outlet.



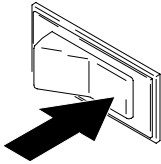
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**SPRAY** (for complete information on the HVL Turbine Gun refer to manual 309205)

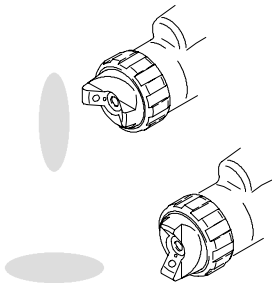
- 
1. Open air control valve.



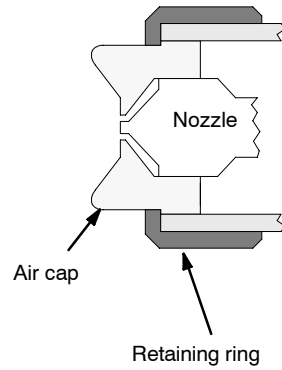
- 
2. Turn turbine on. Wait several minutes prior to spraying to allow warm-up time.



- 
3. Turn air cap to obtain desired direction.



- 
4. Lock air cap with retaining ring.



- 
5. Select spray pattern by adjusting the fluid knob and pattern selection knob. The air control adjusts the TOTAL air to the pattern and gun.

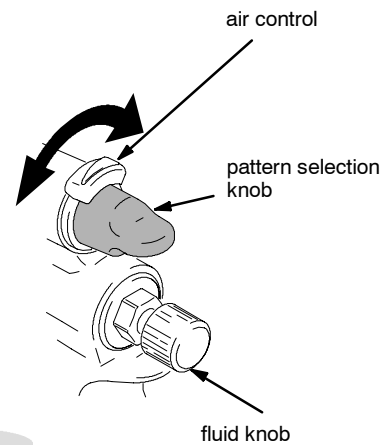
Round Pattern  
Set knob to RND



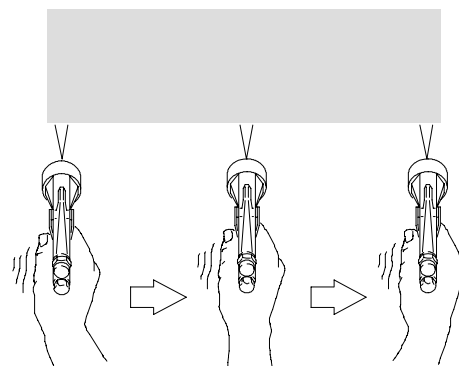
Vertical Pattern  
Set knob to FAN



Horizontal Pattern  
Set knob to FAN



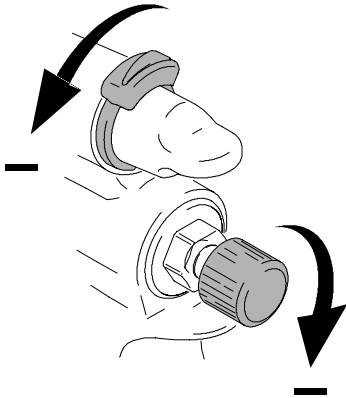
- 
6. Hold gun perpendicular, 6-8 inches from surface. Move gun first, then pull gun trigger to spray.





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7. To control over-spray, reduce air flow or reduce fluid volume.

**Note:** If fluid is not atomizing properly, fluid may need to be thinned further, or a different tip size may be used.



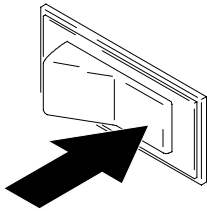
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## OPERATING THE TURBINE

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1. Turn turbine on several minutes prior to spraying to allow warm-up time.

**Note:** The turbine does NOT automatically shut off. When the turbine is not used for an extended period of time, turn it off.



# Shutdown

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Perform **Pressure Relief procedure** described on page 2. Clean spray gun following procedure described in HVL Purbine Gun manual 309205.

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# Maintenance

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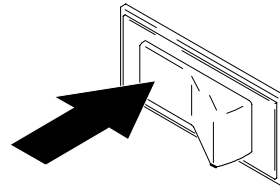
**Daily:** Turbine systems are lifetime lubricated. The only maintenance required is filter cleaning and replacement.

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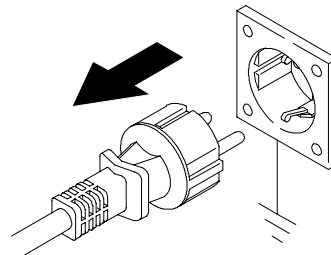
## Cleaning the Filter

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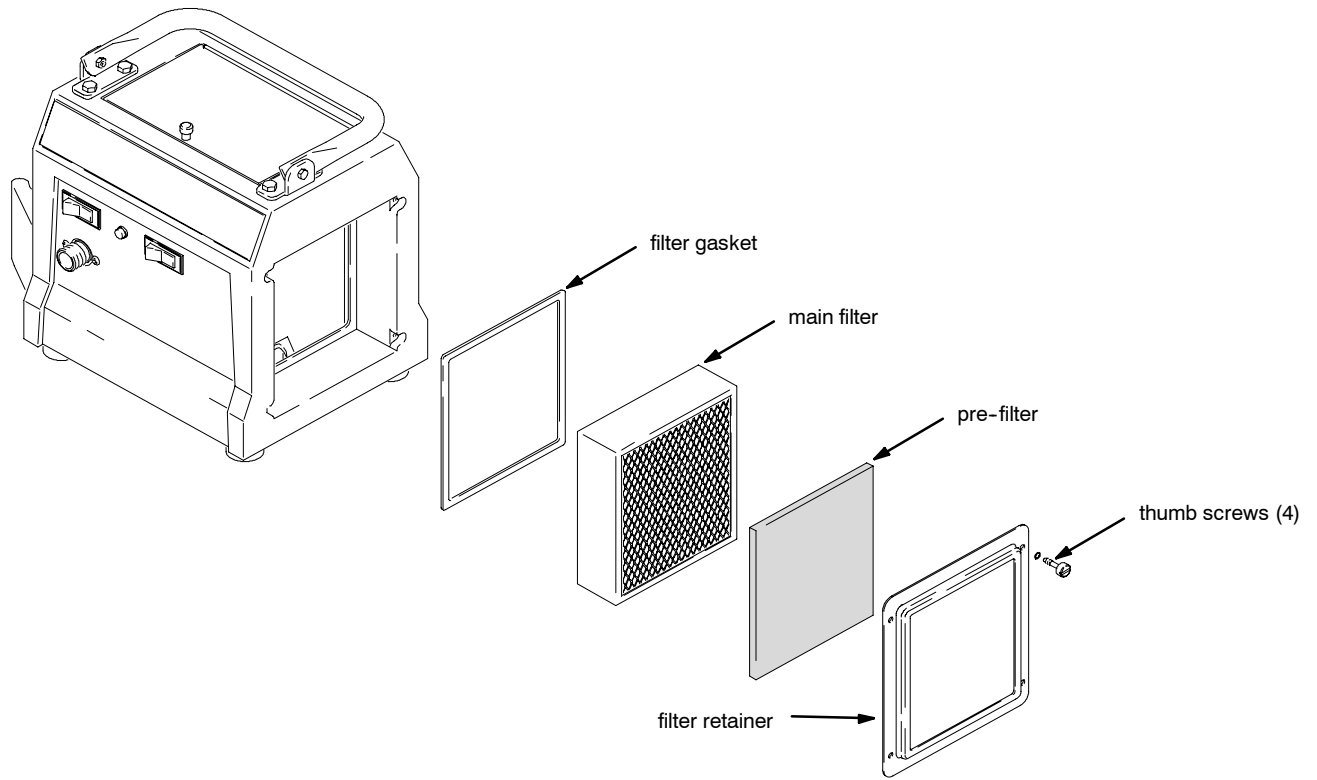
1. Turn off turbine.



2. Unplug turbine.



- 
3. Loosen four thumbscrews and remove filter retainer, prefilter and main filter.



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4. Clean main filter using one of the following three methods:

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## Method 1

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1. Tap filter gently on flat surface – dirty side down.

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## Method 2

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1. Direct compressed air (100 psi (7 bar, 70 kPa) through the filter panel in operation direction of arrows on side of filter (from the clean side to the dirty side).

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### **Method 3**

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1. Soak filter for 15 minutes in water and mild detergent.

- 
2. Rinse until clean. Air dry. DO NOT USE COMPRESSED AIR ON DAMP FILTER.

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## Weekly

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1. Check hose for cracks, leaks, and holes.  
Replace if necessary.

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## Annually or Every 600 Hours (whichever comes first)

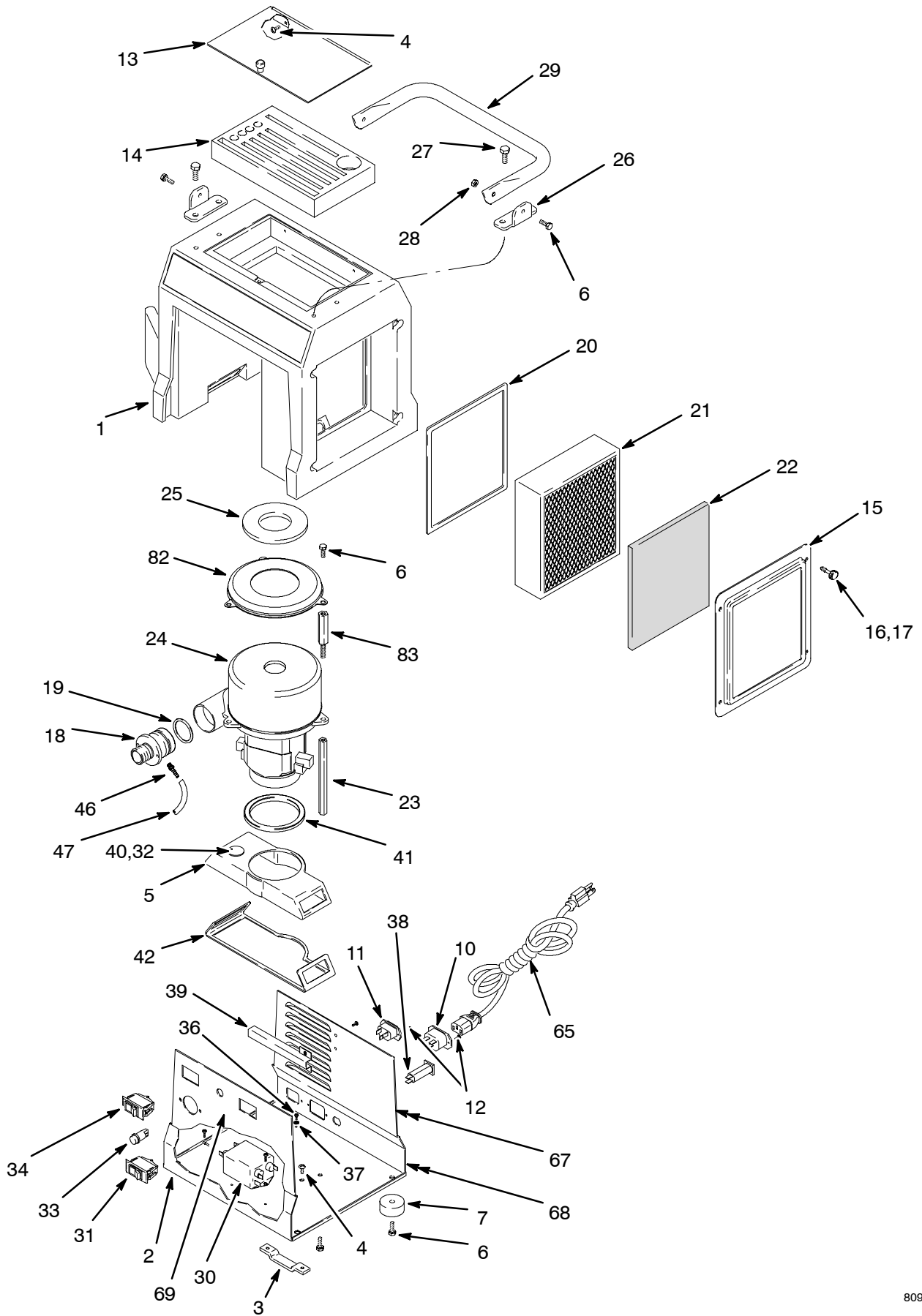
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1. Replace motor brushes after 600 hours of operation to avoid motor failure.

**Note:** It is recommended that an authorized service center perform the motor brush replacement.



# Parts Drawing



8094C



# Parts List

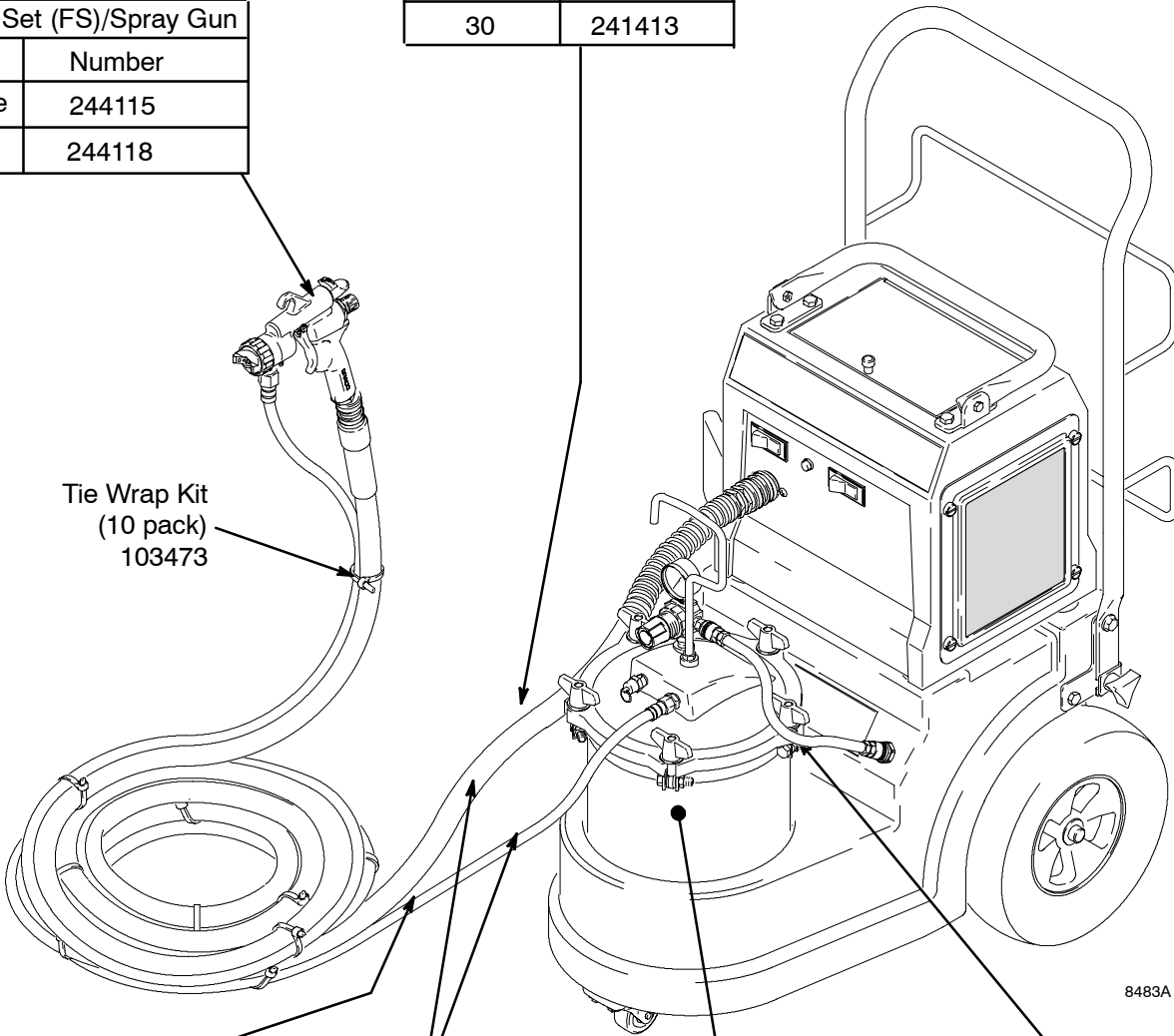
Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	276674	COVER, turbine	1	31	114658	SWITCH, rocker (HVLP 4900)	1
2	192775	BASE PLATE, turbine (HVLP 2500 and 120V & 240V HVLP 3800)	1	32	114279	SENSOR, pressure (HVLP 3800 and HVLP 4900)	1
	192774	BASE PLATE, turbine (HVLP 4900)	1	33	114286	LIGHT, indicator (HVLP 3800 and HVLP 4900)	1
	196839	BASE PLATE, turbine (120V HVLP 4900)	1	114280	LIGHT, indicator (120V HVLP 3800 & 4900)		
3	192786	PLATE, retaining	1	34	114293	SWITCH, rocker, red	1
4	106084	SCREW, pan hd	6	36	111593	SCREW, grounding	1
5	192787	DUCT, turbine	1	37	102063	WASHER, lock, external tooth	1
6	112117	SCREW, cap, hx hd	12	38	114288	BREAKER, circuit, 4A, 240V (HVLP 2500)	1
7	113817	BUMPER	4	114290	BREAKER, circuit, 8A, 240V (HVLP 3800 and 240V HVLP 4900)	1	
10	114064	PLUG, inlet	1	114403	BREAKER, circuit, 15A, 120 (HVLP 3800 and 120V HVLP 4900)	1	
11	114065	PLUG, inlet, female	1				
12	114410	SCREW, pan hd, torx	6	39	192905	PLATE, deflector (HVLP 3800 and HVLP 4900)	1
13	244166	LID, tool box	1	40	193059	GASKET, sensor (HVLP 3800 and HVLP 4900)	1
14	197054	FOAM PAD, tool box	1	41*	192845	GASKET, duct	1
15	197057	RETAINER, filter	1	42*	192846	GASKET, duct	1
16	192895	SCREW, captive	4	46	114287	FITTING, barbed (HVLP 3800 and HVLP 4900)	1
17	159486	O-RING	4	47	192810	HOSE, air (HVLP 3800 and HVLP 4900)	1
18	193057	FITTING, outlet (HVLP 2500)	1	65	116281	CORD SET, jumper IEC320, 8 ft	1
	192779	FITTING, outlet (HVLP 3800 and HVLP 4900)	1		242001	CORD SET, adapter, Cont. Europe	1
19*	156698	O-RING, buna-n	1		242002	CORD SET, adapter, Italy	1
20	192789	GASKET, filter	2		242003	CORD SET, adapter, Denmark	1
21	244137	FILTER, main, paper (HVLP 2500)	1		242004	CORD SET, adapter, Switzerland	1
	240273	FILTER, main, paper (HVLP 3800 and HVLP 4900)	1		242005	CORD SET, adapter, Australia (HVLP 2500, HVLP 3800, HVLP 4900)	1
22†	240274	FILTER, pre	1		241996	CORD SET, IEC320, UK (120V HVLP 3800 & HVLP 4900)	1
23	193068	SPACER, turbine (HVLP 2500)	3	51	RETAINER, plug	661955	1
	192780	SPACER, turbine (HVLP 3800 and HVLP 4900)	3	67▲	193095	LABEL, danger	1
24*	M71135	TURBINE, 2 stage, 240V (HVLP 2500)	1	68▲	193096	LABEL, warning	1
	M73016	TURBINE, 3 stage, 240V (HVLP 3800)	1	69	193126	LABEL, caution	1
	114651	TURBINE, 4 stage, 240V (240V HVLP 4900)	1	75	240078	#4/5 FLUID SET (HVLP 4900) <i>Not shown</i>	1
	240270	TURBINE, 3 stage, 120V (120V HVLP 3800)	1	82	194094	PLATE, turbine	1
	241122	TURBINE, 4 stage, 120V (120V HVLP 4900)	1	83		SPACER, turbine	3
25*	192812	GASKET, turbine (HVLP 2500)	1		194095	HVLP 2500	3
	192788	GASKET, turbine (HVLP 3800 and HVLP 4900)	1		194096	HVLP 3800	3
					194097	HVLP 4900	3
26	19284	BRACKET, handle	2	† Pre-filters are available in 5 packs. Order Part No. 240274.			
27	105328	SCREW, cap, hx hd	4	* Turbine Brush Kits are also available. Purchase separately: 240545 (for HVLP 2500), and 240546 (for HVLP 3800 and HVLP 4900).			
28	113414	NUT, lock	2	▲ Extra danger and warning labels are available for free.			
29	192785	HANDLE, turbine	1				
30	M71506	FILTER, suppression (HVLP 2500)	1				
	M73531	FILTER, suppression (HVLP 3800 and 240V HVLP 4900)	1				
	116168	FILTER, suppression (120V HVLP 3800 & 4900)	1				

# Accessories

Fluid Set (FS)/Spray Gun	
FS	Number
None	244115
3	244118

Standard Turbine Air Hose	
Length (ft)	Number
30	241413

Tie Wrap Kit  
(10 pack)  
103473



8483A

Material Hose	
Length (ft)	Number
30	240476

Air & Material Hose	
Length (ft)	Number
30	241423

Pressure Pot	
PTFE Lined	Number
PTFE Lined	240045

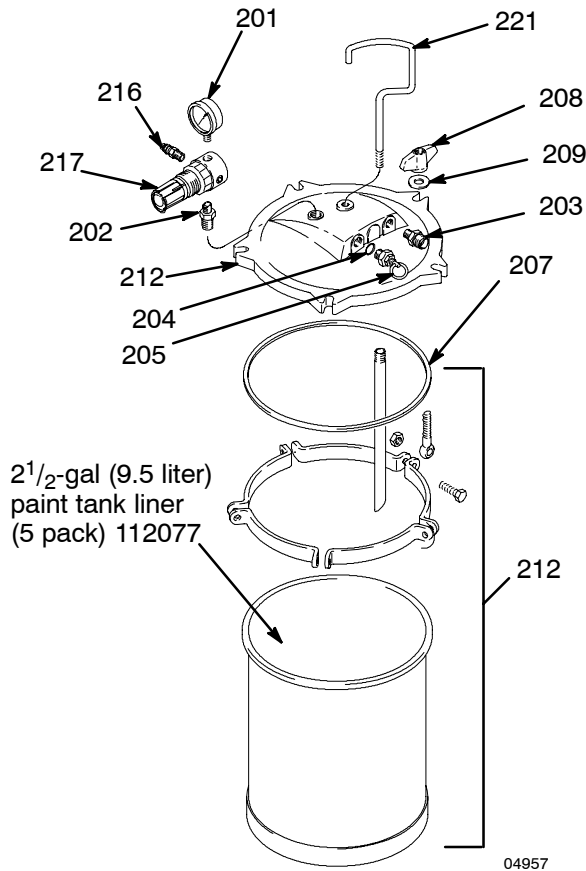
Compressor Air Hose		
Pot	Length (ft)	Number
2 <sup>1</sup> / <sub>2</sub> gal	2	240074
2 qt	30	240071

## Notes:

- See **HVLP Fine Finish Systems** brochure 300564 for all accessories.
- Non-Silicone Lubricant 111265 (4 oz) is available for fluid seals and wear areas.

# Accessories

**2<sup>1</sup>/<sub>2</sub>-Gallon (9.5 liter) PTFE® coated Pot 240045**  
 50 psi (345 kPa, 3.5 bar) Maximum Inlet Air Pressure  
 2<sup>1</sup>/<sub>2</sub>-gallon (9.5 liter) capacity, steel tank. Includes air pressure regulator, gauge, and pressure relief valve.



Ref. No.	Part No.	Description	Qty.
201	104655	PRESSURE GAUGE	1
202	151519	REDUCER, 1/4 to 1/8	1
203	M70687	COUPLING	1
204	M70676	O-RING	1
205	M70686	PRESSURE RELIEF VALVE	1
207	244953	GASKET, standard; polyethylene (3/kit)	1
	M70616	GASKET, standard; EPDM (optional - must order separately 1/kit)	1
	M70617	GASKET, solvent resistant;	1
208	M70678	WING NUT	5
209	M70677	WASHER	5
212	244288	TANK, paint, 2 <sup>1</sup> / <sub>2</sub> -gal (9.5 liter), with PTFE coat	1
216	169969	QUICK DISCONNECT, male	1
217	104815	PRESSURE REGULATOR	1
221	M71639	HANDLE	1

# Accessories

## 2-Quart (1.9 liter) Pressure Pot 287819

50 psi (345 kPa, 3.5 bar) Maximum Inlet Air Pressure

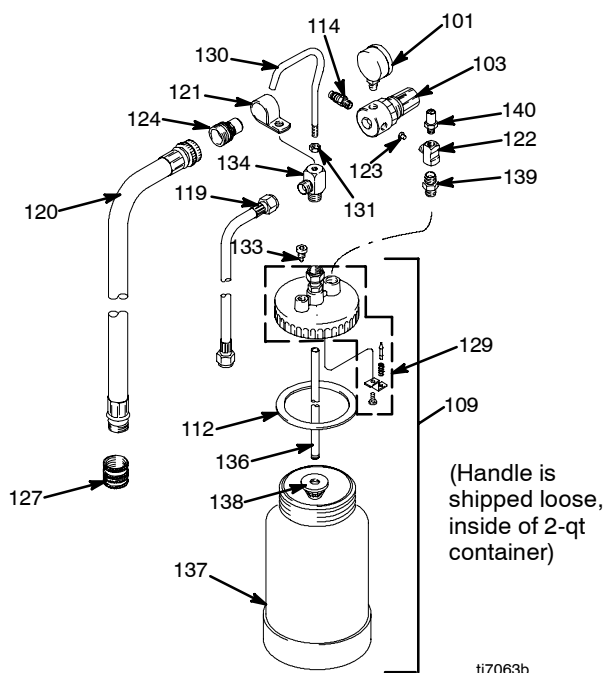
2-quart (1.9 liter) capacity, aluminum cup.

Includes air pressure regulator, 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.
101	104655	PRESSURE GAUGE	1
103	104815	PRESSURE REGULATOR	1
109	287818	POT, 2 quart (1.9 liter), aluminum	1
112	120132	GASKET	1
	287821	GASKET KIT 5-pack	1
114	169969	FITTING	1
119	240474	HOSE, fluid; 60 in. long; 1/4 in. ID	1
120	240482	HOSE, air; 54 in. (1.37 m) long	1
121	M70854	HOSE CLAMP	1
122	110440	FITTING TEE	1
123	189557	RESTRICTOR	1
124	M70399	QUICK DISCONNECT, male	1
127	M70402	QUICK DISCONNECT	1
129	287820	VALVE KIT, check repair	1
130	120130	HANDLE	1
131	120129	NUT, handle	1
133	120127	VALVE, pressure release	1
134	120128	FITTING, outlet	1
136	120125	TUBE, fluid	1
137	120126	CUP, 2 quart	1
138	193218	STRAINER	1
139	120131	FITTING, inlet	1
140	120133	VALVE, pressure relief	1

### NOTE:

- See HVLP Finish Systems brochure 300564 for all accessories.
- Non-silicone lubricant 111265 (4 oz.) is available for fluid seals and wear areas.

# Specifications

## Power requirements

All HVLP 2500, HVLP 3800 & HVLP 4900; Models 233430, 233431, & 233433 ..... 240V AC, 50/60 Hz  
HVLP 3800 & HVLP 4900; Models 233438 & 233439 ..... 120V AC, 50/60 Hz

## Amps at 240 volts

HVLP 2500 ..... 1 phase, 4A minimum  
HVLP 3800 & HVLP 4900; Models 233431 & 233433 ..... 1 phase, 8A minimum

Amps at 120 volts (HVLP 3800 & HVLP 4900; Models 233438 & 233439) ..... 1 phase, 14A minimum

## Power cord (Extension cord must be 3-wire, 1.5 mm<sup>2</sup>, no longer than 15 m.)

HVLP 2500, HVLP 3800 & HVLP 4900 ..... 1.0 mm<sup>2</sup>, 3 wire, 8 ft (2.5 m)  
120V HVLP 3800 & HVLP 4900 ..... 1.5 mm<sup>2</sup>, 3 wire, 10 ft (3 m)

## Unrestricted flow rate

HVLP 2500 ..... 58 cfm  
HVLP 3800 ..... 80 cfm  
HVLP 4900 ..... 82 cfm

## Turbine stages

HVLP 2500 ..... 2  
HVLP 3800 ..... 3  
HVLP 4900 ..... 4

## Maximum turbine hose length

HVLP 2500 ..... 40 ft (12 m)  
HVLP 3800 ..... 60 ft (18 m)  
HVLP 4900 ..... 60 ft (18 m)

Cup volume ..... 1 quart (0.95 liter)

## Wetted parts

Bare spray gun ..... stainless steel, brass, PTFE, hard-coated aluminum  
Spray gun cup ..... aluminum, polyethylene  
2-quart (1.9 liter) accessory remote pressure pot ..... aluminum, brass, polyethylene  
2<sup>1</sup>/<sub>2</sub>-gallon (9.5 liter) accessory remote pressure pot ..... steel with solvent-resistant finish,  
EPDM gasket (standard)

## Turbine shipping weight

HVLP 2500 ..... 32 lb (14.5 kg)  
HVLP 3800 ..... 34 lb (15.4 kg)  
HVLP 4900 ..... 39 lb (17.7 kg)

Turbine diameter ..... 5.7 in (144.78 mm)

## Sound level per ISO 3744

Sound power level ..... 89.0 dB(A)  
Sound pressure level ..... 78.0 dB(A)

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**TO PLACE AN ORDER**, contact your Graco distributor, or call this number to identify the distributor closest to you:  
**1-800-367-4023 Toll Free**

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mm 309243

This manual contains English

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