

INSTRUCTIONS-PARTS LIST

This manual contains IMPORTANT
WARNINGS AND INSTRUCTIONS
READ AND RETAIN FOR REFERENCE



308-025

Rev B
Supersedes A

HIGH EFFICIENCY LOW PRESSURE™ H.E.L.P. 8000 SYSTEM

10 psi (0.7bar) OPERATING AIR PRESSURE

15 psi (1 bar) MAXIMUM OPERATING AIR PRESSURE*

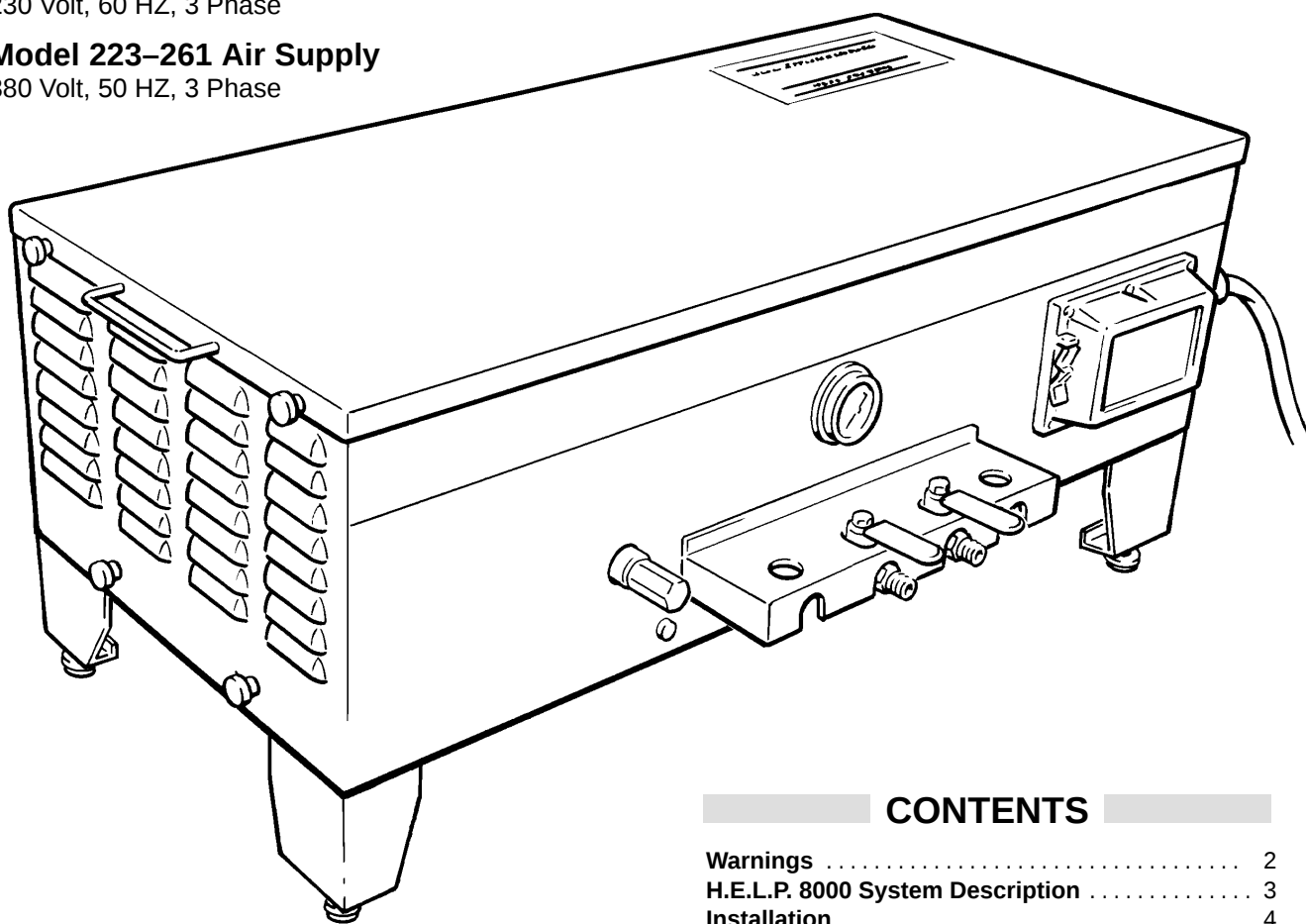
Model 223-260 Air Supply

230 Volt, 60 HZ, 3 Phase

Model 223-261 Air Supply

380 Volt, 50 HZ, 3 Phase

H.E.L.P. 8000 System shown
with optional Wheel Kit installed.
See ACCESSORIES to order.



*The Maximum Operating Air Pressure is the highest level of output air pressure allowed.

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WARNINGS

FOR PROFESSIONAL USE ONLY. OBSERVE ALL WARNINGS.

Read and understand all instruction manuals, tags, and warning labels before operating equipment.

EQUIPMENT MISUSE HAZARD

General Safety

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

ALWAYS follow the **Pressure Relief Procedure**, at right, before cleaning, removing, or servicing any system equipment.

NEVER try to stop or deflect leaks with your hand or body.

NEVER alter or modify any part of this equipment; doing so could cause it to malfunction.

CHECK all spray equipment regularly and repair or replace worn or damaged parts immediately.

System Pressure

This air supply has a MAXIMUM OPERATING AIR PRESSURE of 15 psi (1.05 bar). Never exceed this pressure.

DO NOT exceed the maximum working pressure of any component or accessory used in your system.

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including splashing in the eyes or on the skin or injury from moving parts, always follow this procedure when shutting off the system, when checking or servicing any part of the spray system, when installing, cleaning or changing fluid nozzles, and whenever you stop spraying.

1. Turn off the air and fluid supply to the gun.
2. Trigger the gun into a grounded metal waste container to relieve air and fluid pressure.

FIRE OR EXPLOSION HAZARD

Static electricity is created by the flow of fluid through the pump and hose. If every part of the spray equipment is not properly grounded, sparking may occur, and the system may become hazardous. Sparks can ignite fumes from solvents and the fluid being sprayed, dust particles and other flammable substances, whether you are spraying indoors or outdoors, and can cause a fire or explosion and serious bodily injury and property damage.

Sparking may also occur when plugging in or unplugging a power supply cord. The System 8000 power cord **MUST** be connected at least 10 feet (3 m) from the spray area. **DO NOT** plug in or unplug any power supply cords in the spray area when there is any chance of igniting fumes still in the air.

If you experience any static sparking or even a slight shock while using this equipment, **STOP SPRAYING IMMEDIATELY**. Check entire system for proper grounding. **DO NOT** use the system again until the problem has been identified and corrected.

The System 8000 **MUST** be properly grounded to reduce the risk of static electricity discharge. All wiring **MUST** be done by a qualified electrician.

Grounding

To reduce the risk of static sparking, ground the sprayer 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. **BE SURE** to ground all of this spray equipment:

1. **8000 System:** ground by connecting the power cord ground wire to a true earth ground. See page 4.
2. **Fluid Hoses:** use only grounded hoses. See **Hose Grounding Continuity**, at right.

3. **Spray Gun:** obtain grounding through connection to a properly grounded fluid hose and fluid supply unit.
4. **Object being sprayed, if conductive:** according to local code.
5. **Fluid supply container:** according to local code.
6. **All solvent pails used when flushing:** according to local code. Use only conductive, metal pails. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts the grounding continuity.
7. **To maintain grounding continuity when flushing or relieving pressure,** always hold a metal part of the gun firmly to the side of a grounded metal pail, then trigger the gun.

Hose Grounding Continuity

Proper hose grounding continuity is essential to maintaining a grounded spray system. Check the electrical resistance of your fluid hoses at least once a week. If your hose does not have a tag on it which specifies the maximum electrical resistance, contact the hose supplier or manufacturer for the maximum resistance limits. Use a resistance meter in the appropriate range for your hose to check the resistance. If the resistance exceeds the recommended limits, replace it immediately. An ungrounded or poorly grounded hose can make your system hazardous.

MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers or other body parts. **KEEP CLEAR** of moving parts when starting or operating the system. **DO NOT** operate the 8000 System with the air intake enclosure removed.

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.

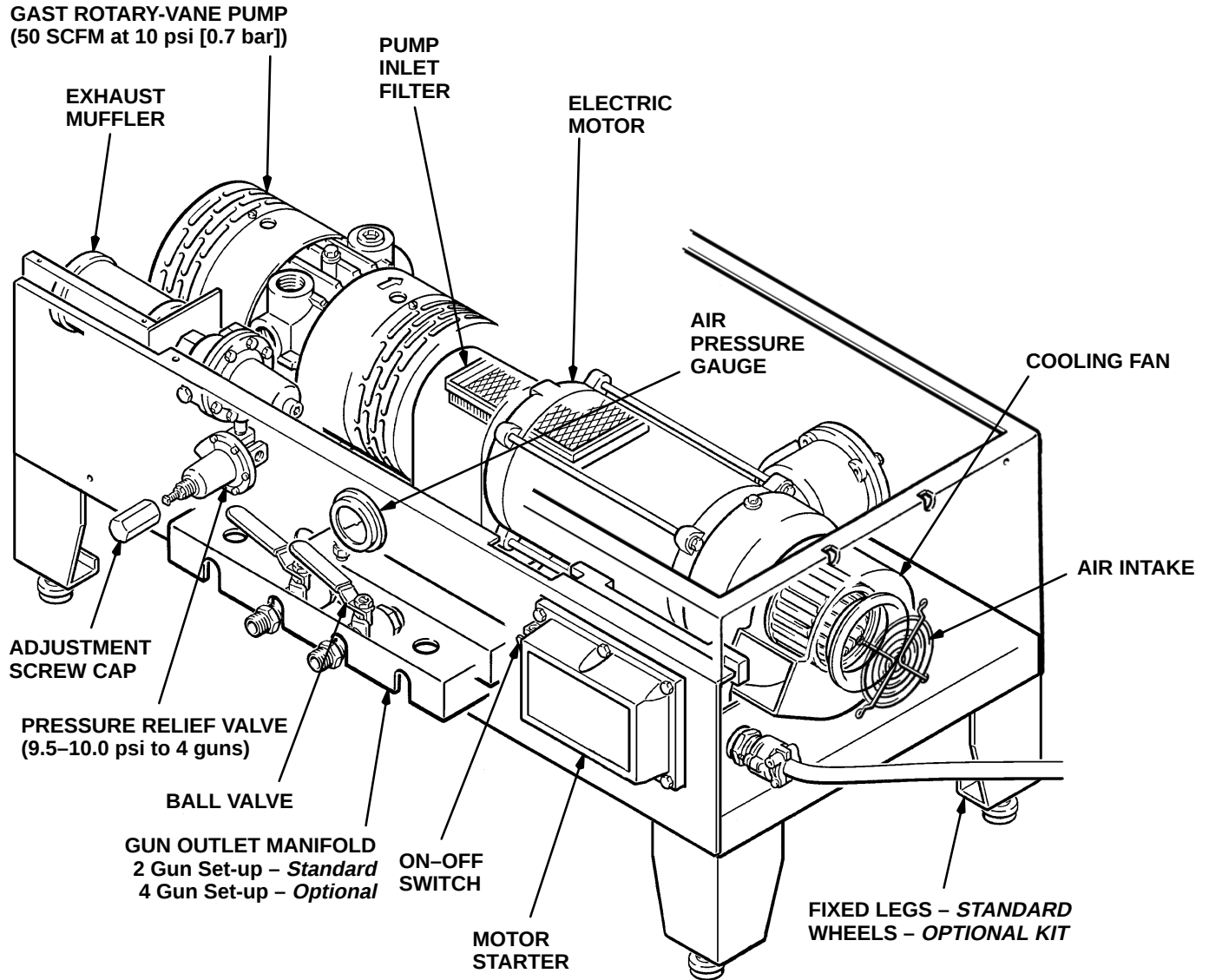


Fig 1

The High Efficiency Low Pressure (H.E.L.P.) 8000 System was designed to supply 10 psi (0.7 bar) air pressure with high air volume. This produces the highest quality finish with today's fluids, as well as the Low V.O.C. (*volatile organic compound*) fluids of tomorrow.

This system accurately supplies 9.5 to 10 psi (0.6 to 0.7 bar) air pressure for up to four H.E.L.P. 1200 guns, with no loss of air flow. Although the 8000 System can have an output air pressure of 15 psi (1.05 bar), for compliant operation, 10 psi (0.7 bar) or lower output air pressure is recommended.

NOTE: 10 psi (0.7 bar) air pressure is required to meet all new regulations for areas required to comply with S.C.A.Q.M.D. Rules.

A high-temperature air hose assembly (*part no. 110-380*) is included with the standard system. It is recommended that at the end of this hose, you attach a 15 ft (4.575 m) air hose assembly (*part no. 223-263*) along with a 5 ft (1.525 m) flexible hose assembly (*part no. 223-296*).

This hose combination produces the best atomization with high transfer efficiency. See ACCESSORIES for other hose lengths.

INSTALLATION

Ventilate the Spray Booth

WARNING

To prevent hazardous concentrations of toxic and/or flammable vapors, spray only in a properly ventilated spray booth. **Never operate the spray gun unless ventilation fans are operating.**

Check and follow all of the National, State and Local codes regarding air exhaust velocity requirements.

Check and follow all local safety and fire codes.

Locating the 8000 System

Place the system in a clean-air environment.

NOTE: The atomizing air is pulled into the system's intake from the surrounding air, where it is filtered, eliminating dirt and moisture condensation concerns.

The system is wired for a Class I, Division 2, hazardous location. The 8000 System can be placed near the spray environment, but the power cord connection, **MUST** be outside of a 10 ft. (3 m) radius from the spray area. The motor, motor starter, and power connections are all explosion-proof components.

WARNING

To reduce the risk of fire and explosion, which can cause serious bodily injury and property damage, the System 8000 power cord connection, **MUST** be outside of a 10 ft (3 m) radius from the spray area.

NOTE: It is preferable to place the unit away from the spray booth to minimize over-spray on the unit. Use the air hose supplied to reach the spray area.

Place the 8000 System on a level floor. Lock the casters if your unit includes the optional wheel kit.

Connecting the Power Cord

WARNING

To ensure the 8000 System is properly grounded and reduce the risk of fire and explosion, the system's power cord connection **MUST** be wired by a qualified electrician.

Read and follow the specifications below and wire the power cord. Refer to Fig 2.

- The 8000 System has a 4-wire, 12 gauge power cord for 3 phase power.
- **Model 223–260:** The motor connection is factory wired for 230 volt, 60 hertz, 3 phase power. The full load current draw is 12.5 amps. The power cord **MUST** be wired to a 20 amp (*minimum*) circuit.

- **Model 223–261:** The motor connection is factory wired for 380 volt, 50 hertz, 3 phase power. The full load current draw is 6.5 amps. The power cord **MUST** be wired to a 15 amp (*minimum*) circuit.

Checking for Proper Motor Rotation

CAUTION

BE SURE the motor is wired to rotate *clockwise* **ONLY**. *Counterclockwise* motor rotation will result in internal damage or breakage of pump vanes.

The motor **MUST** be wired to **ONLY** rotate *clockwise* (as you face the back of the motor). The correct direction of rotation is also marked on the air supply vane pump. Check for proper motor rotation as instructed below.

1. Briefly start the motor by pulsing the motor starter switch on for one second before turning it off again.
2. Check which direction the cooling fan (in the air intake enclosure) is turning. Refer to Fig 1.
3. If the fan is turning *clockwise*, the power cord is wired correctly.
4. If the fan is turning *counterclockwise*, switch the connection points between the red power wire and black power wire. Then recheck for proper rotation.

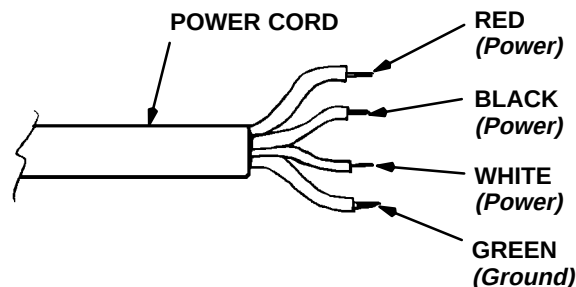


Fig 2

NOTE: A wiring diagram and schematic of the motor are shown on page 7.

Connecting the Air Hose and Spray Gun

Connect the atomizing air hose between the system's high-temperature hose and the flexible air hose swivel fitting (if ordered). Hand tighten the air hose fittings or lightly torque with a wrench. **DO NOT** overtighten!

Connect the flexible hose to the gun quick disconnect air inlet. See ACCESSORIES to order hoses.

NOTE: An optional 4-gun manifold kit is available. It includes additional fittings and hoses for a full 4-gun operation. See ACCESSORIES to order.

WARNING

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including splashing in the eyes or on the skin or injury from moving parts, always follow this procedure when shutting off the system, when checking or servicing any part of the spray system, when installing, cleaning or changing fluid nozzles, and whenever you stop spraying.

1. Turn off the air and fluid supply to the gun.
2. Trigger the gun into a grounded metal waste container to relieve fluid pressure.

WARNING

The 8000 System air outlet fittings reach temperatures up to 150° F (51° C). To reduce the risk of burns, especially when removing or attaching the hose connections, avoid contact with the fittings while the unit is operating and for a minimum of 15 minutes after the 8000 System is turned off.

Start-up

NOTE: See Instruction Manual 308-008 to properly operate the H.E.L.P. G1200 spray gun.

1. Turn the 8000 System ON-OFF switch to ON. Open the ball valve. See Fig 1.
2. Check the pressure gauge reading. The system pressure was factory set at 10 psi (0.7 bar), with one gun triggered, after the unit reached full temperature.
3. At "cold" start-up, the initial pressure will read about 1 psi (0.07 bar) lower than the stabilized pressure setting. Operate the 8000 system for 30 minutes to allow the pressure to stabilize.
4. If an air pressure lower than 10 psi (0.7bar) is adequate for atomizing the lower viscosity fluids, lower the air pressure to increase transfer efficiency. Use the adjustment screw on the front of the 8000 system as instructed below.

Adjusting the Air Pressure

NOTE: Only adjust the pressure after the 8000 System has operated for a minimum of one hour.

1. Remove the hex shaped cap (A) covering the adjustment screw (C). See Fig 3.
2. Loosen the jam nut (B) and adjust the pressure by turning the stud (C) in the direction indicated by the arrows.
3. Tighten the jam nut (B) and replace the adjustment screw cap (A).

WARNING

To avoid damaging the pump, *NEVER* exceed the 8000 System's 15 psi (1.05 bar) **MAXIMUM WORKING PRESSURE** rating.

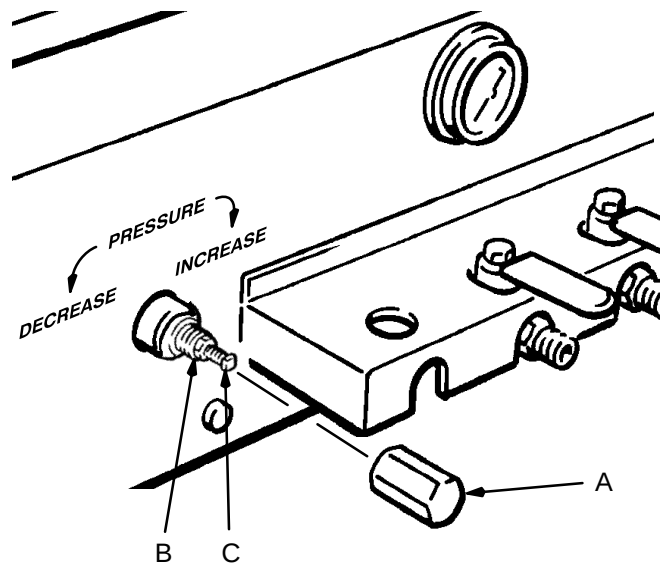


Fig 3

Shutdown

Turn the 8000 System ON-OFF switch to OFF. Follow the **Pressure Relief Procedure Warning** above.

MAINTENANCE

WARNING

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including splashing in the eyes or on the skin or injury from moving parts, always follow this procedure when shutting off the system, when checking or servicing any part of the spray system, when installing, cleaning or changing fluid nozzles, and whenever you stop spraying.

1. Turn off the air and fluid supply to the gun.
2. Trigger the gun into a grounded metal waste container to relieve fluid pressure.

- Check the pump inlet filter once a week. Replace it if necessary.

To replace the filter, remove the four screws securing the top plate. See the PARTS DRAWING, page 8. Remove the old filter and install a new one.

The filter is available to order from Graco (see parts list) or can be purchased at most automotive supply stores (Fram, part no. CA3559).

SERVICE

Replacing the Pump Vanes

A repair kit is available to replace the pump vanes. See ACCESSORIES. To install the pump vanes, refer to the instructions supplied with the kit.

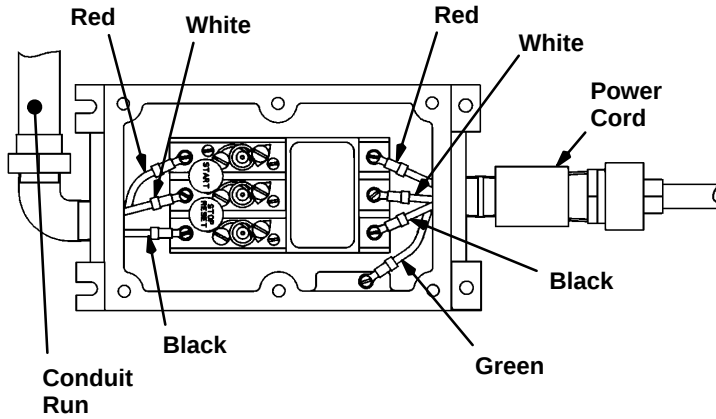
NOTE: A wiring diagram and schematic of the motor are shown on page 7.

TROUBLESHOOTING CHART

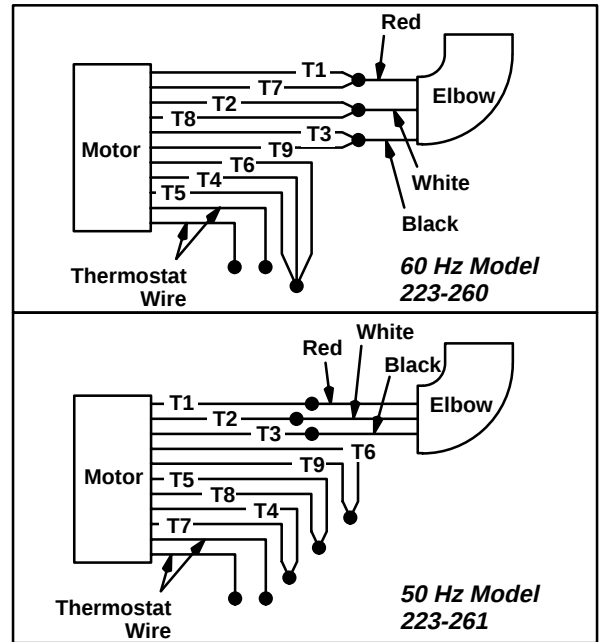
PROBLEM	WHAT TO CHECK	WHAT TO DO
Air Pressure Gauge readings low	1. Pressure Relief Valve adjustment 2. Ball Valves 3. Pressure Gauge	1. Adjust to increase pressure 2. Close the ball valves not connected to a hose or gun 3. Check for damaged gauge; replace if necessary
Air Pressure Gauge readings vary more than 1.0 to 2.0 psi (0.07 to 0.14 bar) from normal range	1. Loose Tubing Fittings to the gauge or relief valve 2. Pressure Relief Valve	1. Tighten the fittings 2. Pressure relief valve internal parts may be worn; replace the valve
Air Pressure Gauge readings fluttering; pump noise level higher	1. Pressure Relief Valve	1. Pressure relief valve internal parts loose or worn; replace the valve
8000 System's power shuts off	1. Motor Starter Thermal Protection Heater Coils tripped to open circuit 2. System won't restart after turning starter switch off and on 3. System won't restart after cool down Possible motor failure	1. Try resetting by turning the starter switch OFF then ON again 2. Wait for system to cool down before trying to restart again 3. Check for air blockage at the cooling blower inlet. Check for loose blower hub setscrew; tighten if loose Replace motor
Low air flow output	1. Pump Vanes may be worn, lowering pump flow output.	1. Replace pump vanes (see SERVICE, above)

WIRING DIAGRAM

WIRING OF MOTOR STARTER

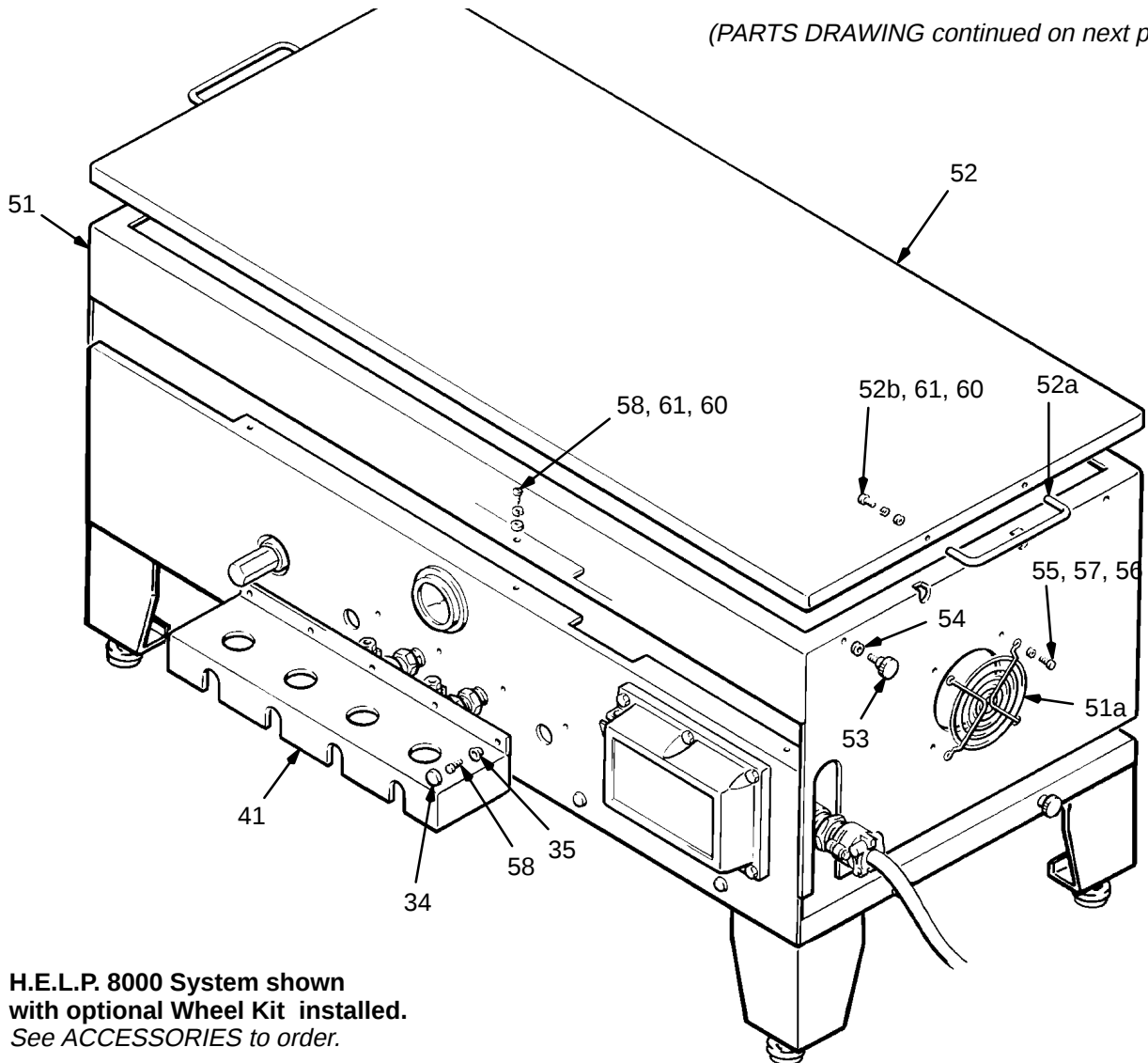


WIRING SCHEMATIC OF STARTER TO MOTOR



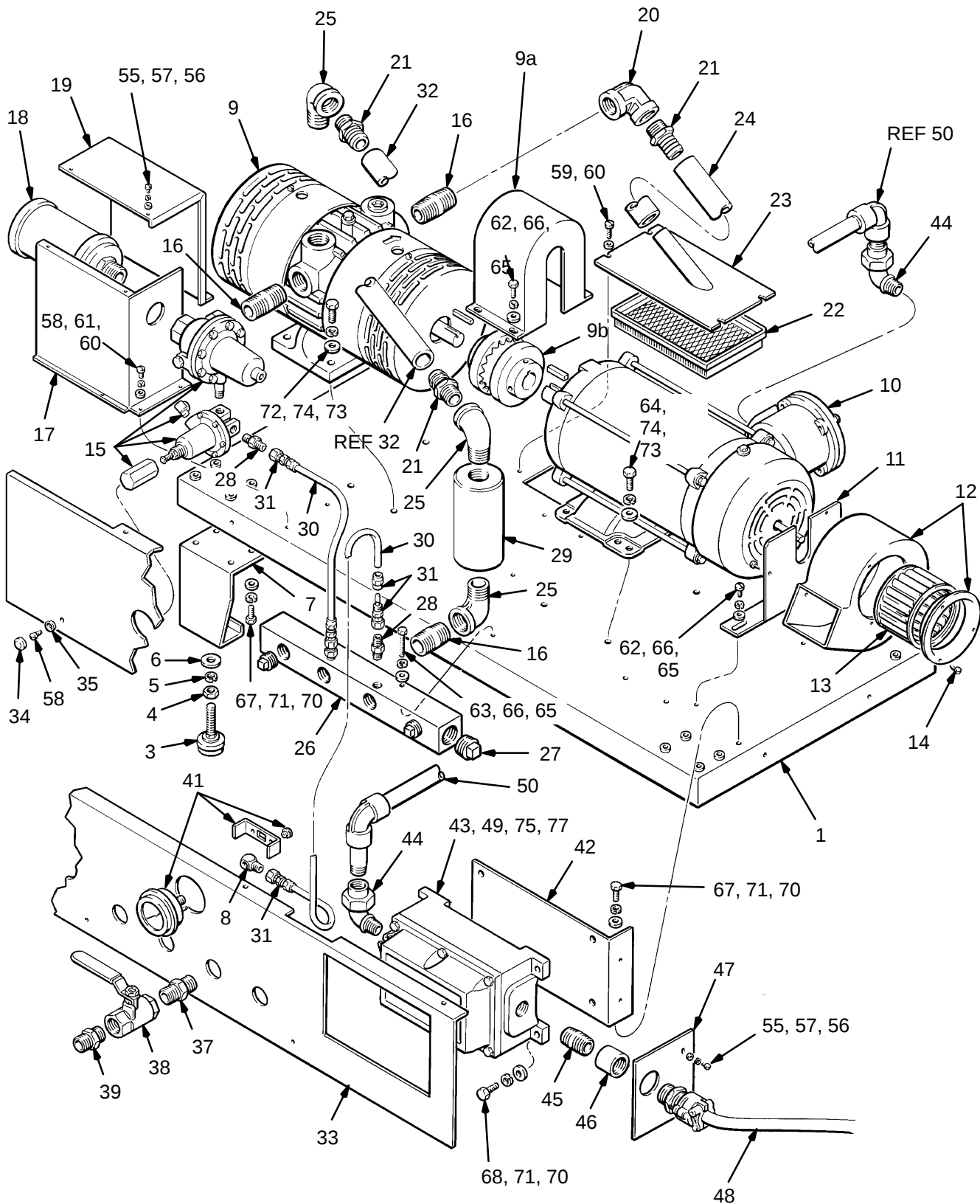
PARTS DRAWING

(PARTS DRAWING continued on next page)



H.E.L.P. 8000 System shown
with optional Wheel Kit installed.
See ACCESSORIES to order.

PARTS DRAWING



NOTE: Apply anaerobic pipe sealant to all threaded pipe connections (*not including electrical connections*).

Pump Vane Repair Kit 223–226

Includes four pump vanes and two ball bearings. Follow the instructions supplied with the kit to install the pump vanes. (This repair kit is also available from Gast Manufacturing as Kit Part No. K490.)

PARTS LIST

Model 223-260

H.E.L.P. 8000, 60 Hz

REF NO.	PART NO.	DESCRIPTION	QTY
1	185-666	PLATE, base	1
2	185-912	LEG, left (<i>not shown</i>)	2
3	110-544	LEVELER, leg	4
4	100-338	NUT, jam; 1/2"-13	4
5	100-018	WASHER, spring, lock	4
6	157-204	WASHER	4
7	185-684	LEG, right	2
8	100-840	ELBOW, street; 1/4-18 npt	1
9	110-355	PUMP, vane; 50 scfm	1
9a	110-392	•GUARD, coupler	1
9b	110-393	•COUPLER, motor	1
10	110-363	MOTOR, AC, 5 HP	1
11	185-664	BRACKET, blower housing	1
12	110-517	HOUSING, blower fan	1
13	110-352	BLOWER, wheel, centrifugal (set screw included)	1
14	104-628	SCREW, tapping, pnh; 8 x 3/8"	3
15	110-353	VALVE, pressure relief	1
16	100-485	NIPPLE, pipe; 1"-11-1/2 npt	3
17	185-683	BOX, baffle, LT	1
18	110-359	MUFFLER, air motor	1
19	185-682	BOX, baffle, RT	1
20	110-536	ELBOW, adapter, 90° female; 1"-11-1/2 nptf	1
21	110-531	FITTING, hose, barbed, 1" npt	3
22	110-526	FILTER, air	1
23	185-680	COVER, air filter	1
24	185-687	HOSE, air filter;	1
25	100-467	ELBOW, street, pipe; 1"-11-1/2 npt	3
26	185-668	MANIFOLD, four gun	1
27	100-345	PLUG, pipe; 1"-11-1/2 nptf	2
28	156-971	NIPPLE, short; 1/4-18 npt	3
29	223-227	EXPANDER, air	1
30	185-909	TUBING; 1/4" ID; 12" (305 mm) long	2
31	205-447	COUPLING, hose, swivel; 1/4-18 npsm	4
32	185-910	HOSE, manifold; 1" ID; 7.4" (188 mm) long	1
33	223-217	PANEL, front	1
34	110-522	SCREW, cap, raised head	8
35	110-523	WASHER, cap retaining	8
37	160-032	NIPPLE; 3/4-14 npt	2
38	185-913	VALVE, ball; 3/4-14 NPT	2
39	110-357	HANDLE, 5/16" dia.	2
40	185-688	GUARD, heat, four gun	1
41	110-519	GAUGE, 0 to 15 psi (0 to 1.05 bar)	1
42	185-677	BRACKET, motor starter	1
	110-518	STARTER, motor; 5 HP; 60 HZ; <i>Model 223-260 only</i>	1
	110-516	STARTER, motor; 5 HP; 50 HZ; <i>Model 223-261 only</i>	1

Model 223-261

H.E.L.P. 8000, 50 Hz

REF NO.	PART NO.	DESCRIPTION	QTY
44	727-866	ELBOW, 90	2
45	110-530	NIPPLE, close, conduit; 3/4 npt	1
46	110-529	REDUCER, electrical; 3/4 x 1" nptf	1
1			
47	185-678	PLATE, motor starter bracket	1
48	223-218	CORD, power	1
49	100-732	WASHER	1
50	223-219	CONDUIT RUN	1
51	223-220	SHROUD; Includes item 51a & qty. 4 ea. of items 55, 56, 57	1
51a	110-521	•GUARD, finger	1
52	223-221	COVER, shroud; Includes items 52a, 52b & qty. 4 ea. items 60, 61	1
52a	110-537	•HANDLE, cover	2
52b	103-374	•SCREW, mach., pn hd.; 10-32 UNC-2A x 5/8"	4
53	110-532	KNOB; 1/4-20 thd. stud	8
54	110-533	WASHER, flat, nylon; 1/4"	8
55	100-518	SCREW, mach., rd. hd.; #6-32 x 3/8"	8
56	103-876	WASHER, flat	8
57	100-068	WASHER	8
58	100-036	SCREW, mach., pnh; 10-24 UNC-2A x 1/2"	15
59	100-610	SCREW, mach., pnh; 10-24 UNC-2A x 7/8"	4
60	104-046	WASHER, plain	15
61	100-020	WASHER, lock	11
62	100-022	SCREW, cap, hex hd.; 1/4-20 UNC-2A x 3/4"	6
63	103-547	SCREW, mach. hex hd.; 1/4-20 UNC-2A x 2-3/4"	2
64	100-680	SCREW, cap, hex hd; 3/8-16 UNC-2A x 7/8"	4
65	801-023	WASHER, flat	8
66	100-016	WASHER, lock	8
67	100-057	SCREW, cap, hex hd; 5/16-18 UNC-2A x 3/4"	19
68	100-450	SCREW, cap, hex hd.; 5/16-18 UNC-2A x 1"	4
70	100-023	WASHER, flat	23
71	100-214	WASHER, lock	23
72	100-003	SCREW, cap, hex hd.; 3/8-16 UNC-2A x 1-1/2"	4
73	100-731	WASHER	8
74	100-133	WASHER, lock	8
75	110-538	CONNECTOR, wire nut	4
77	110-539	CONNECTOR, wire nut	2
81	110-380	HOSE, air, EPDM Rubber; 10 ft (3.050 m) long; 3/4 in. (19 mm) ID, 3/4-11.5 NH swivel fittings); 15 psi (1 bar) Maximum Working Pressure (<i>not shown</i>)	2

H.E.L.P. 8000 GUN AND HOSE SYSTEMS

H.E.L.P. 8000 Gun and Hose System Part No.	H.E.L.P. 8000 Part No. (60 Hz)	H.E.L.P. G1200 Spray Gun Part No. (0.055 orifice)	Air Hose Assembly Part No.	Four-Gun Manifold Kit Part No.
224-087	223-260	223-252 (qty 2)	223-274 (qty 2)*	none
224-088	223-260	223-252 (qty 4)	223-274 (qty 4)*	223-223

*Includes 25 ft (7.625 m) Atomizing Air Hose Assembly 223-265 and 5 ft (1.525 m) Flexible Air Hose Assembly 223-296.

ACCESSORIES

HIGH-TEMP. AIR HOSE ASSEMBLY

15 psi (1 bar) MAXIMUM WORKING PRESSURE

This hose is connected to the 8000 System for high-temperature application. EPDM Rubber, 3/4 in. (19 mm) ID, 3/4-11.5 NH male x female swivel fittings

110-380	10 ft (3.050 m) long
110-381	15 ft (4.575 m) long
110-382	25 ft (7.625 m) long
110-383	35 ft (10.675 m) long

ATOMIZING AIR HOSE ASSEMBLY

15 psi (1 bar) MAXIMUM WORKING PRESSURE

0.75 in. (19 mm) ID, 3/4-11.5 NH male x female swivel fittings, natural-color polyethylene

223-262	10 ft (3.050 m) long
223-263	15 ft (4.575 m) long
223-264	20 ft (6.100 m) long
223-265	25 ft (7.625 m) long
223-266	35 ft (10.675 m) long

FLEXIBLE AIR HOSE ASSEMBLY

15 psi (1 bar) MAXIMUM WORKING PRESSURE

0.62 in. (16 mm) ID, 3/4-11.5 NH female swivel fitting (to air hose) and male fitting (to gun quick-disconnect). Install for more flexible movement of the spray gun.

223-295	3 ft (0.912 m) long
223-296	5 ft (1.525 m) long
223-297	6 ft (1.830 m) long
223-298	10 ft (3.050 m) long

ONE-WAY AIR SHUT-OFF VALVE 110-367

Install in standard quick-disconnect (provided with gun assembly) to turn off air pressure to the spray gun.



AIR HOSE COUPLING WASHER 110-366

Replacement washer for use in female swivel end of air hose.

WHEEL KIT 223-224

To ease portability of the H.E.L.P. 8000 System. Includes two 5 in. (127 mm) tires, two locking casters, and a handle to install on one end of the system.

WALL MOUNT BRACKET KIT 223-225

Includes modular frame parts that must be assembled on site. The kit allows multiple hole pattern mounting to a solid wall section.

FOUR-GUN MANIFOLD KIT 223-223

To convert the manifold to a full four-gun operation. Includes the following parts:

Part No.	Description	Qty
185-913	Ball Valve, 3/4 npt	2
160-032	Nipple, hex, 3/4 npt	2
110-357	Fitting, hose, 3/4 npt	2
110-380	Air Hose, EPDM, 3/4 in. (19 mm) ID, 3/4-11.5 NH swivel fittings (male x female) 10 ft (3.050 m) long	2

H.E.L.P. G1200 SPRAY GUN

See Manual No. 308-008.

ONE QUART PRESSURE CUP KIT 223-270

See Manual No. 308-065.

HOW TO ORDER REPLACEMENT PARTS

1. To be sure you receive the correct replacement parts, kits or accessories, always give all of the information requested in the chart below.
2. Check the parts list to identify the correct part number; do not use the ref. no. when ordering.
3. Order all parts from your nearest Graco distributor.

6 digit Part Number	Qty	Part Description

TECHNICAL DATA

Power Requirements

Model 223–260 230 V, 60 HZ, 3 Phase,
20 Amp Minimum
Model 223–261 380 V, 50 HZ, 3 Phase,
15 Amp Minimum

Operating Ambient Temperature . . 40° F to 104° F
4.4° C to 40° C

Power Cord No. 12 AWG, 4 Wire,
Type SO, 20 ft (6.1 m)

Maximum Working Pressure 15 psi (1.05 bar)

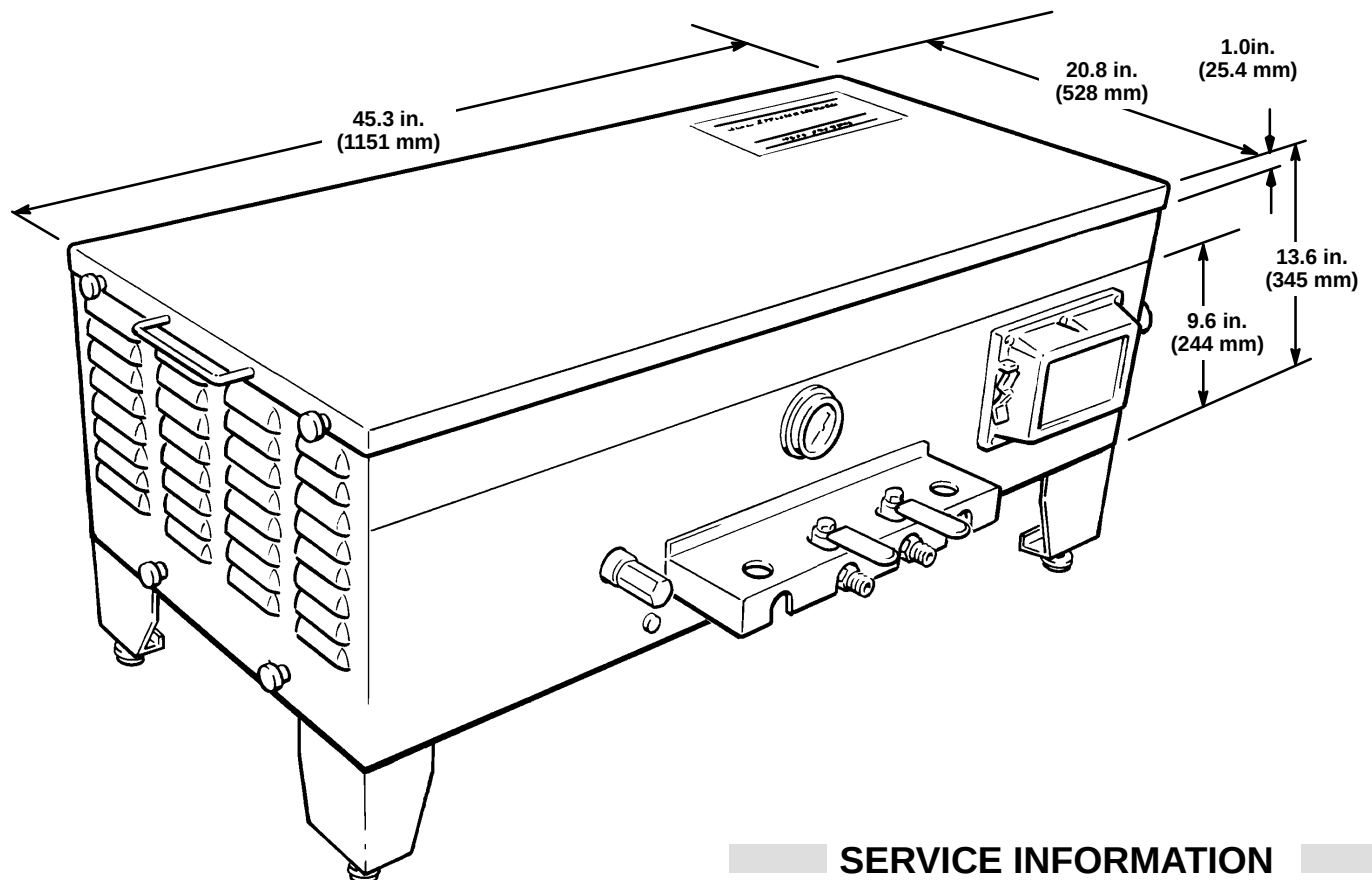
Operating Air Pressure 0–10 psi (0–0.7 bar)

Maximum Air Flow 51 SCFM at 10 psi (0.7 bar)

Outlet Ports . . . 2 outlets standard (4 outlets optional)
3/4–11.5 NH Air Hose Thread (male)

Motor Starter Manual Type, NEMA 7

DIMENSIONAL DRAWING



SERVICE INFORMATION

This manual was revised to update the text on page 4, add a wiring schematic for 50 Hz Model 223–261, and add the H.E.L.P. 8000 Gun and Hose Systems, the Air Hose Quick-Disconnect, and the Air Hose Coupling Washer to the Accessories section.

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 claimed defect. 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.

IMPORTANT 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**

Factory Branches: Atlanta, Chicago, Dallas, Detroit, Los Angeles, West Caldwell (N.J.)

Subsidiary and Affiliate Companies: Canada; England; Switzerland; France; Germany; Hong Kong; Japan; Korea

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