



ProBell® Cart Systems

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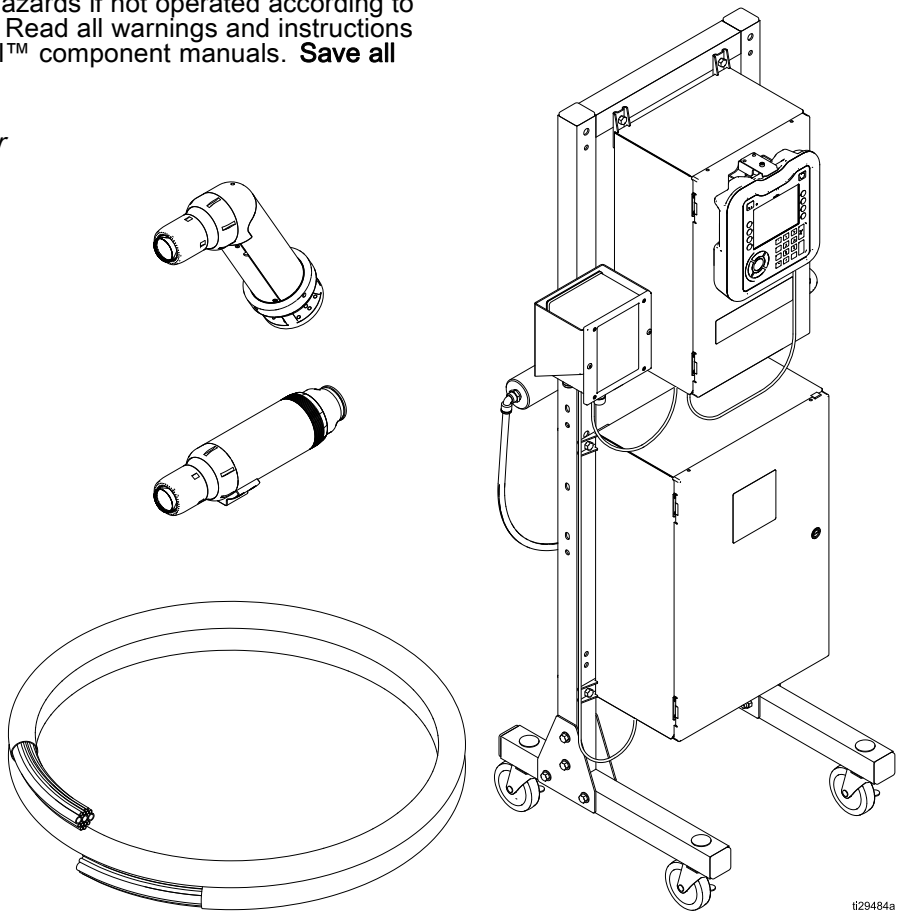
ProBell Rotary Applicator System for electrostatic finishing and coating applications using solventborne or waterborne spray materials. Not approved for use in explosive atmospheres or hazardous locations. For professional use only.



Important Safety Instructions

This equipment could present hazards if not operated according to the information in the manuals. Read all warnings and instructions in this manual and in all ProBell™ component manuals. **Save all instructions.**

100 psi (0.7 MPa, 7.0 bar) Maximum Air Inlet Pressure



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Models

ProBell Cart Systems include applicator, 20 meter (65 ft.) hose bundle, Electrostatic Controller, Speed Controller, Electronic Air Controller, and System Logic Controller. The systems differ by the applicator, hose bundle, and electrostatic controller included. See the tables below for a description of the models available.

SOLVENTBORNE PROBELL CART SYSTEM				
CART MODEL	APPLICATOR MODEL	APPLICATOR STYLE	NOZZLE SIZE (mm)	CUP SIZE (mm)
P1A130	R1A130	STANDARD	0.75	15
P1A140	R1A140	STANDARD	1	15
P1A150	R1A150	STANDARD	1.25	15
P1A230	R1A230	HOLLOW WRIST	0.75	15
P1A240	R1A240	HOLLOW WRIST	1	15
P1A250	R1A250	HOLLOW WRIST	1.25	15
P3A130	R3A130	STANDARD	0.75	30
P3A140	R3A140	STANDARD	1	30
P3A150	R3A150	STANDARD	1.25	30
P3A160	R3A160	STANDARD	1.5	30
P3A230	R3A230	HOLLOW WRIST	0.75	30
P3A240	R3A240	HOLLOW WRIST	1	30
P3A250	R3A250	HOLLOW WRIST	1.25	30
P3A260	R3A260	HOLLOW WRIST	1.5	30
P5A140	R5A140	STANDARD	1	50
P5A150	R5A150	STANDARD	1.25	50
P5A160	R5A160	STANDARD	1.5	50
P5A240	R5A240	HOLLOW WRIST	1	50
P5A250	R5A250	HOLLOW WRIST	1.25	50
P5A260	R5A260	HOLLOW WRIST	1.5	50
24Z261	This model does not contain the ProBell® Rotary Applicator or the hose bundle.			
* All applicators ship with a serrated aluminum bell cup. See the Cup Selection Charts in the Applicator manual to see all available cups.				
** Solventborne systems come with hose bundle 24Z169 which includes air lines, fluid lines, fiber optic cable, system power cable, and ground cable.				






WATERBORNE PROBELL CART SYSTEM				
CART MODEL	APPLICATOR MODEL	APPLICATOR STYLE	NOZZLE SIZE (mm)	CUP SIZE (mm)
P1A138	R1A138	STANDARD	0.75	15
P1A148	R1A148	STANDARD	1	15
P1A158	R1A158	STANDARD	1.25	15
P1A238	R1A238	HOLLOW WRIST	0.75	15
P1A248	R1A248	HOLLOW WRIST	1	15
P1A258	R1A258	HOLLOW WRIST	1.25	15
P3A138	R3A138	STANDARD	0.75	30
P3A148	R3A148	STANDARD	1	30
P3A158	R3A158	STANDARD	1.25	30
P3A168	R3A168	STANDARD	1.5	30
P3A238	R3A238	HOLLOW WRIST	0.75	30
P3A248	R3A248	HOLLOW WRIST	1	30
P3A258	R3A258	HOLLOW WRIST	1.25	30
P3A268	R3A268	HOLLOW WRIST	1.5	30
P5A148	R5A148	STANDARD	1	50
P5A158	R5A158	STANDARD	1.25	50
P5A168	R5A168	STANDARD	1.5	50
P5A248	R5A248	HOLLOW WRIST	1	50
P5A258	R5A258	HOLLOW WRIST	1.25	50
P5A268	R5A268	HOLLOW WRIST	1.5	50
24Z717	System for waterborne applicators. This model does not contain the ProBell® Rotary Applicator or the hose bundle.			
* All applicators ship with a serrated aluminum bell cup. See the Cup Selection Charts in the Applicator manual to see all available cups.				
**Waterborne systems come with hose bundle 24Z712 which includes air lines, fiber optic cable, system power cable, and ground cable. Fluid lines purchased separately.				









Related Manuals







Manual No.	Description
334452	ProBell® Rotary Applicator, Instructions/Parts
334626	ProBell® Rotary Applicator, Hollow Wrist, Instructions/Parts
3A3657	ProBell® Electrostatic Controller
3A3953	ProBell® Speed Controller
3A3954	ProBell® Air Controller
3A3955	ProBell® System Logic Controller
3A4384	ProBell® System CGM Installation Kit
3A4346	ProBell® Hose Bundles Kit
3A4738	ProBell® Reflective Speed Sensor Kit
3A4799	ProBell® Air Filters Kit

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h2 style="margin: 0;">WARNING</h2>	
   	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work location can ignite or explode. Paint or solvent flowing through the system can cause static sparking. To help prevent fire or explosion:</p> <ul style="list-style-type: none"> • Electrostatic equipment must be used only by trained, qualified personnel who understand the requirements of this manual. • Ground all equipment, personnel, object being sprayed, and conductive objects in or close to the spray location. Resistance must not exceed 1 megohm. See Grounding instructions. • Do not use pail liners unless they are conductive and grounded. • Always use the required arc detection settings and maintain a Safe Distance of 6 inches (152 mm) between the applicator and the workpiece. • Stop operation immediately if static sparking or repeated arc detection errors occur. Do not use equipment until you identify and correct the problem. • Check applicator resistance and electrical grounding daily. • Use and clean equipment only in a well ventilated location. • Interlock the applicator air and fluid supply to prevent operation unless ventilation air flow is above the minimum required value. • Use only Group IIA or Group D materials. • Always turn off and discharge the electrostatics when flushing, cleaning or servicing equipment. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc). • Do not plug or unplug power cords or turn lights on or off when flammable fumes are present. • Keep the spray area clean at all times. Use non-sparking tools to clean residue from the booth and hangers. • Keep a working fire extinguisher in the work location. • Interlock the Electrostatic Controller and fluid supply with the booth ventilation system to disable operation if the air flow falls below minimum values. Follow your local codes. • Use cleaning solvents with highest possible flash point when flushing or cleaning equipment. • To clean the exterior of the equipment, cleaning solvents must have a flash point at least 15°C (59°F) above ambient temperature. Non-ignitable fluids are preferred.

 <h1 style="margin: 0;">WARNING</h1>	
 	<p>ELECTRIC SHOCK HAZARD This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment. • Connect only to grounded power source. • All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
  	<p>PRESSURIZED EQUIPMENT HAZARD Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> • Follow the Pressure Relief Procedure when you stop spraying/dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.
 	<p>EQUIPMENT MISUSE HAZARD Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Specifications in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Specifications in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request the Safety Data Sheet (SDS) from distributor or retailer. • Turn off all equipment and follow the Pressure Relief Procedure when equipment is not in use. • Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only. • Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards. • Make sure all equipment is rated and approved for the environment in which you are using it. • Use equipment only for its intended purpose. Call your distributor for information. • Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces. • Do not kink or over bend hoses or use hoses to pull equipment. • Keep children and animals away from work location. • Comply with all applicable safety regulations.

 <h1 style="margin: 0;">WARNING</h1>	
 	<p>PLASTIC PARTS CLEANING SOLVENT HAZARD</p> <p>Many solvents can degrade plastic parts and cause them to fail, which could cause serious injury or property damage.</p> <ul style="list-style-type: none"> • Use only compatible water-based solvents to clean plastic structural or pressure-containing parts. • See Technical Specifications in this and all other equipment instruction manuals. Read fluid and solvent manufacturer’s Safety Data Sheet (SDS) and recommendations.
	<p>ENTANGLEMENT HAZARD</p> <p>Rotating parts can cause serious injury.</p> <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Do not wear loose clothing, jewelry or long hair while operating equipment. • Equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
	<p>TOXIC FLUID OR FUMES</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • Read the Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>Wear appropriate protective equipment when in the work location to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

ProBell System Information

This manual provides instructions on how to complete the assembly of a cart-mounted ProBell Rotary Applicator System, which includes the following components.

- The **Rotary Applicator** comes in various models. See the Models list for applicators that are available with a system. Manuals 334452 or 334626 are the main source of system information. They include installation and operation instructions as well as maintenance and repair information.
- The **System Logic Controller** controls and monitors the rotary applicator system functions through the user interface or through communication with a PLC. A System Logic Controller is required if your system includes a Speed Controller or an Air Controller. Mount the System Logic Controller in the non-hazardous area. Manual 3A3955 contains all information needed to understand the setup and operation of the system via the user interface. It also contains detailed troubleshooting and event code information.
- The **Speed Controller** directs the turbine air and brake air to the applicator. The controller uses a fiber optic signal from the ProBell applicator to provide precise closed-loop control of the bell cup rotation speed. The Speed Controller must be mounted in the non-hazardous area, as close to the applicator as possible to minimize pressure loss in the air lines. Manual 3A3953 contains specific installation, troubleshooting, repair, and parts for this component.
- The **Air Controller** electronically controls the inner and outer shaping air. It also provides air activation signals for the paint, dump, and solvent (cup wash) valves in the applicator. Mount the Air Controller in the non-hazardous area, as close to the applicator as possible to minimize pressure loss in the air lines. See Manual 3A3954 for installation instructions and features of each air controller,

specific installation, troubleshooting, repair, and parts for this component.

- The **Electrostatic Controller** sends power to the applicator power supply, which increases the voltage to the level set at the controller. It must be mounted in the non-hazardous area. See ProBell Electrostatic Controller manual 3A3657 for all information needed to understand this user interface.
- The **Twenty Meter (65 ft) Hose Bundle Kit** includes 9 air lines, a fiber optic cable, power supply cable, grounding cable, and 3 fluid lines (purchase fluid lines separately for waterborne systems).
- The **CGM (Communication Gateway Module)** provides a control link between the ProBell system and a selected field bus. This linkage provides the means for remote monitoring and control by external automation systems. The ProBell system supports Modbus TCP, EtherNet/IP, DeviceNet, and PROFINET. One gateway can support two ProBells. System requires a ProBell system CGM installation kit and gateway. See the tables below.

Table 1 ProBell System CGM Installation Kit

Part Number	Field Bus	Manual
24Z574	All	3A4384

Table 2 Communication Gateway Module

Part Number	Field Bus	Manual
CGMDN0	DeviceNet	312864
DGMEMP0	EtherNet/IP	312864
DGMPN0	PROFINET	312864
24W462	Modbus TCP	334183

Electrical Inputs and Outputs

The following discrete I/O connections can be used to drive the system remotely.

Speed Controller

- System status output
- Optional Interlock input

Electronic Air Controller



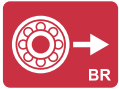




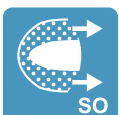

- Paint Trigger Input
- Optional Interlock Input

Electrostatic Controller

- Safe-to-Move Output
- Error Output
- Actual Spraying Current Output
- Actual Spraying Voltage Output
- Electrostatics Discharged Output
- SAFE POSITION Interlock Input
- 24 VDC Interlock Input
- System Interlock
- Electrostatic Enable Input

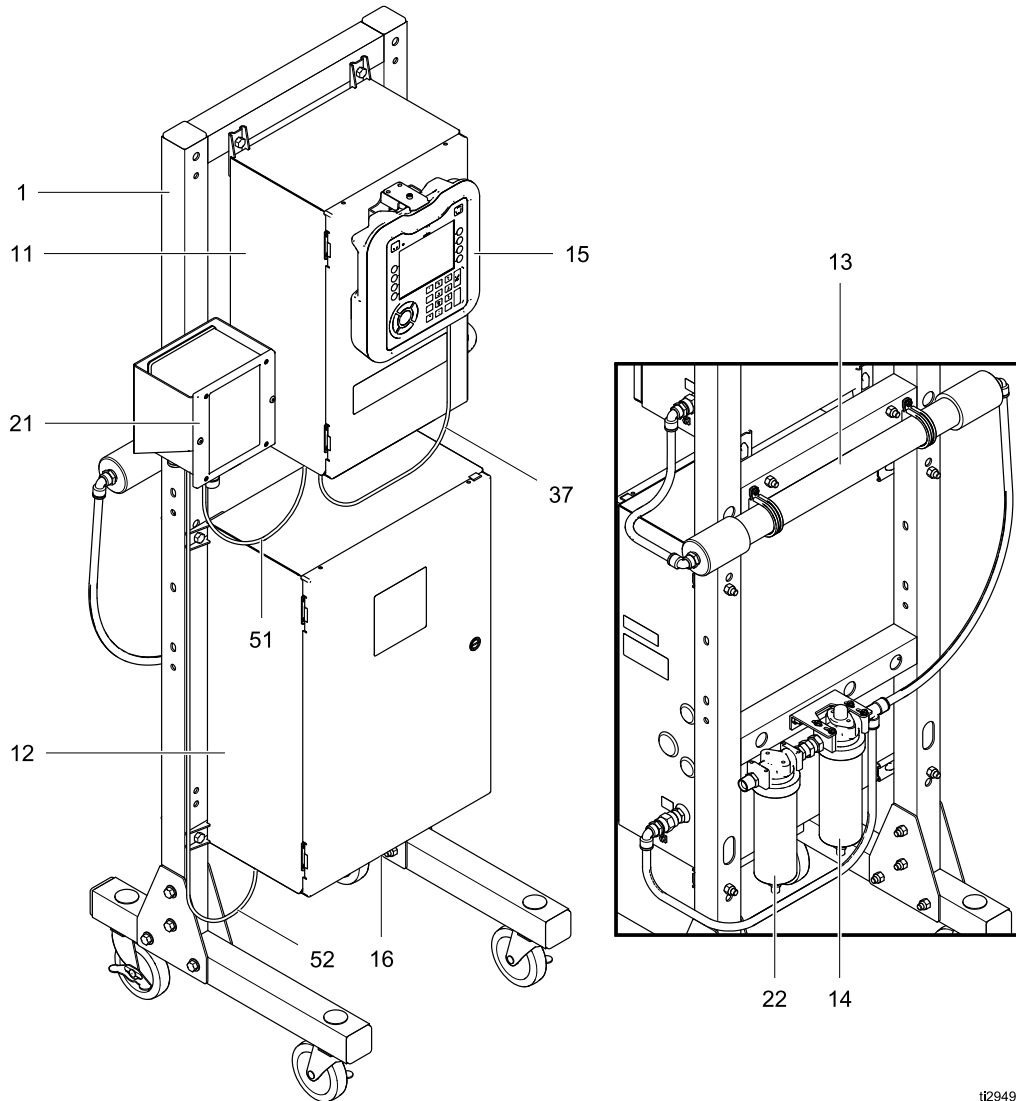
System Connections and Features

The following air connections are included within the ProBell system.

Air Line	Port Label	Speed Controller Connections	Electronic Air Controller Connections
B (Bearing Air)		✓	
BK (Braking Air)		✓	
BR (Bearing Air Return)		✓	
DT (Dump Valve Trigger)			✓
PT (Paint Valve Trigger)			✓
ST (Solvent Valve Trigger)			✓
SI (Shaping Air Inner)			✓
SO (Shaping Air Outer)			✓
TA (Turbine Air)		✓	
Auxiliary Triggers (for system flexibility)	1, 2, 3,		✓

Installation

System Components



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KEY:

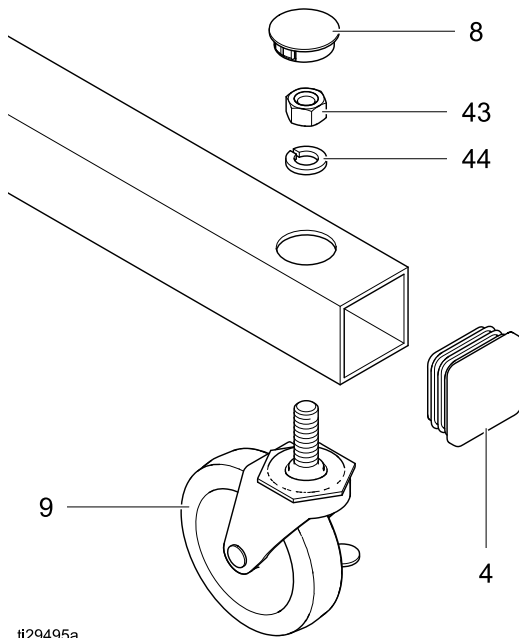
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|----|---------------------------|----|---------------------------|
| 1 | Cart | 21 | Electrostatic Controller |
| 11 | Speed Controller | 22 | Air Filter |
| 12 | Electronic Air Controller | 37 | CAN cable (1 m, 3.3 ft) |
| 13 | Dryaire Membrane Filter | 51 | CAN cable (0.5 m, 1.6 ft) |
| 14 | Filter Coalescer | 52 | CAN cable (1.5 m, 4.9 ft) |
| 15 | System Logic Controller | | |
| 16 | Power Supply | | |

Install Optional Wheels

				
<p>To reduce the risk of fire and explosion, do not install equipment approved only for a non-hazardous location in a hazardous location.</p>				

Follow these steps to install the wheels that are included with the cart system. If wheels are not needed, use a forklift or two people to move or lift the cart system.

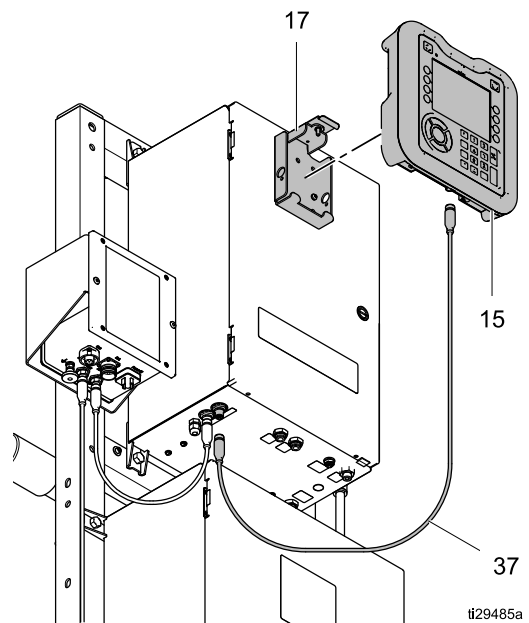
1. With two people, remove the cart system from the pallet.
2. Install the wheels (9), washers (44), and nuts (43). Tighten the nuts securely.
3. Install the end plugs (4, 8).
4. When the cart is in the desired location, lock all four wheels.



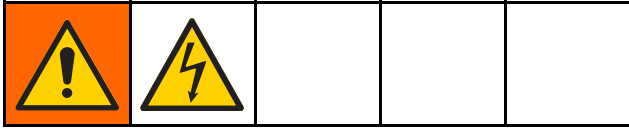
Install the System Logic Controller

To protect it from damage during shipping, the System Logic Controller is packaged separately. It is already loaded with the necessary software.

1. Snap the System Logic Controller (15) into the bracket (17) on the front of the Speed Controller (11).
2. Connect a CAN/power cable (37) from the CAN port on the System Logic Controller to the CAN port on the Speed Controller.
3. An optional Light Tower Kit, PN 24K337, is available for connection to the System Logic Controller.



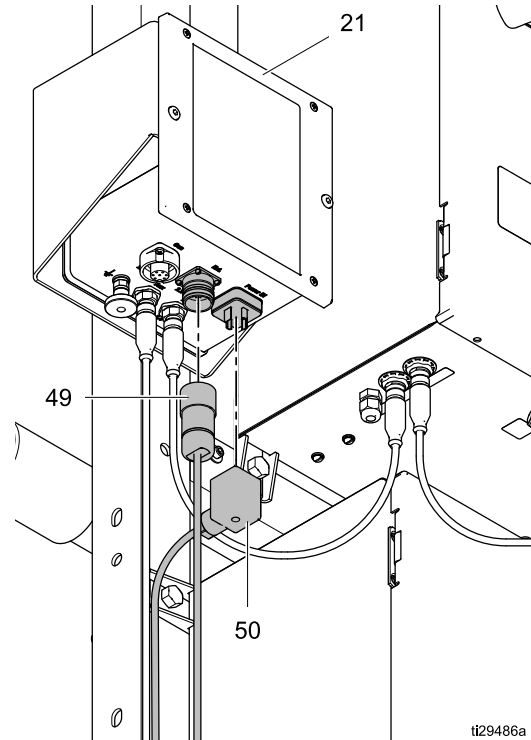
Connect the Electrostatic Controller



As much as possible, cables and tubing are connected at the factory. Two additional connections are needed for the Electrostatic Controller (21).

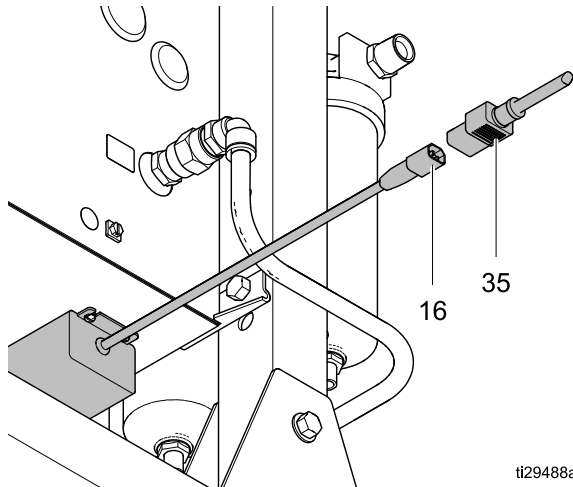
1. For any installation that involves discrete integration, connect the discrete I/O cable (49) from the I/O cable connection on the Electrostatic Controller to a PLC or other device. Two discrete I/O interlock connections are supplied and must be satisfied. See Manual 3A3657 for detailed information on each pin and for interlock requirements.
2. Connect the power cord (50) to the input power connection on the Electrostatic Controller and secure with the connector screw. This connection is required for all installations. The Electrostatic Controller can operate at 100–240 VAC (50–60 Hz). Connect the leads to a power source according to local electrical codes. Pin 3 on the input power connection is the system interlock. Pin 3 must have line voltage applied to satisfy the system interlock. See Manual 3A3657 for information on each pin and for interlock requirements.

3. Connect the Power Supply Cable from Port R on the applicator to the power connector on the Electrostatic Controller. This connection should already be made at the factory for Pxxxx systems.

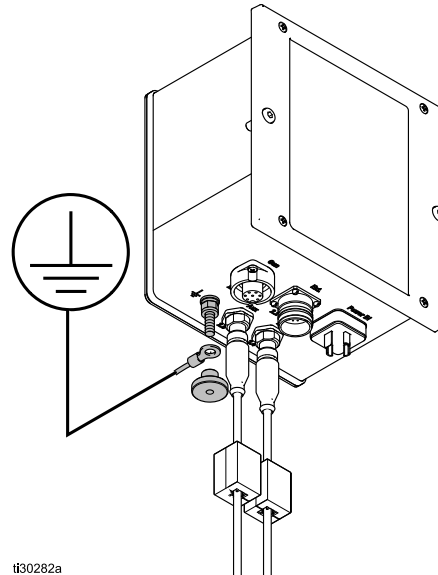


Connect Power Supply

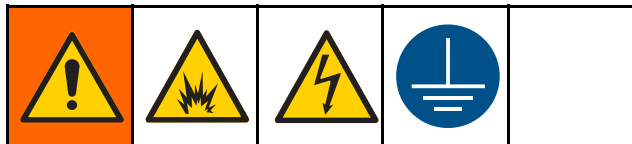
The power supply is installed at the factory on the bottom of the Air Controller. Connect the power cord (35) to the power supply connector (16). The supplied power cord has a NEMA 5–15P plug to connect to AC power.



the grounding lug on the Electrostatic Controller to a true earth ground.



Ground the System



When operating the electrostatic bell, any ungrounded objects in the spray location (people, containers, tools, etc.) can become electrically charged. Improper grounding can result in static sparking, which can cause a fire, explosion, or electric shock.

Ground all equipment, personnel, object being sprayed, and conductive objects in or close to the spray location. Follow the grounding instructions below.

For full system grounding instructions and requirements, see your applicator manual (334452 or 334626). The ground wire from the applicator may be connected to the ground lug on the electrostatic controller. All cart components are connected together for grounding. Connect a ground wire from

Complete the Installation

If a complete system (Pxxxxx) was purchased, lines and cables (except fluid) are connected to the appropriate controller at the factory. To complete the setup and installation of the rotary applicator and system, follow the instructions in the ProBell Rotary Applicator manuals.

Connect Air Supply

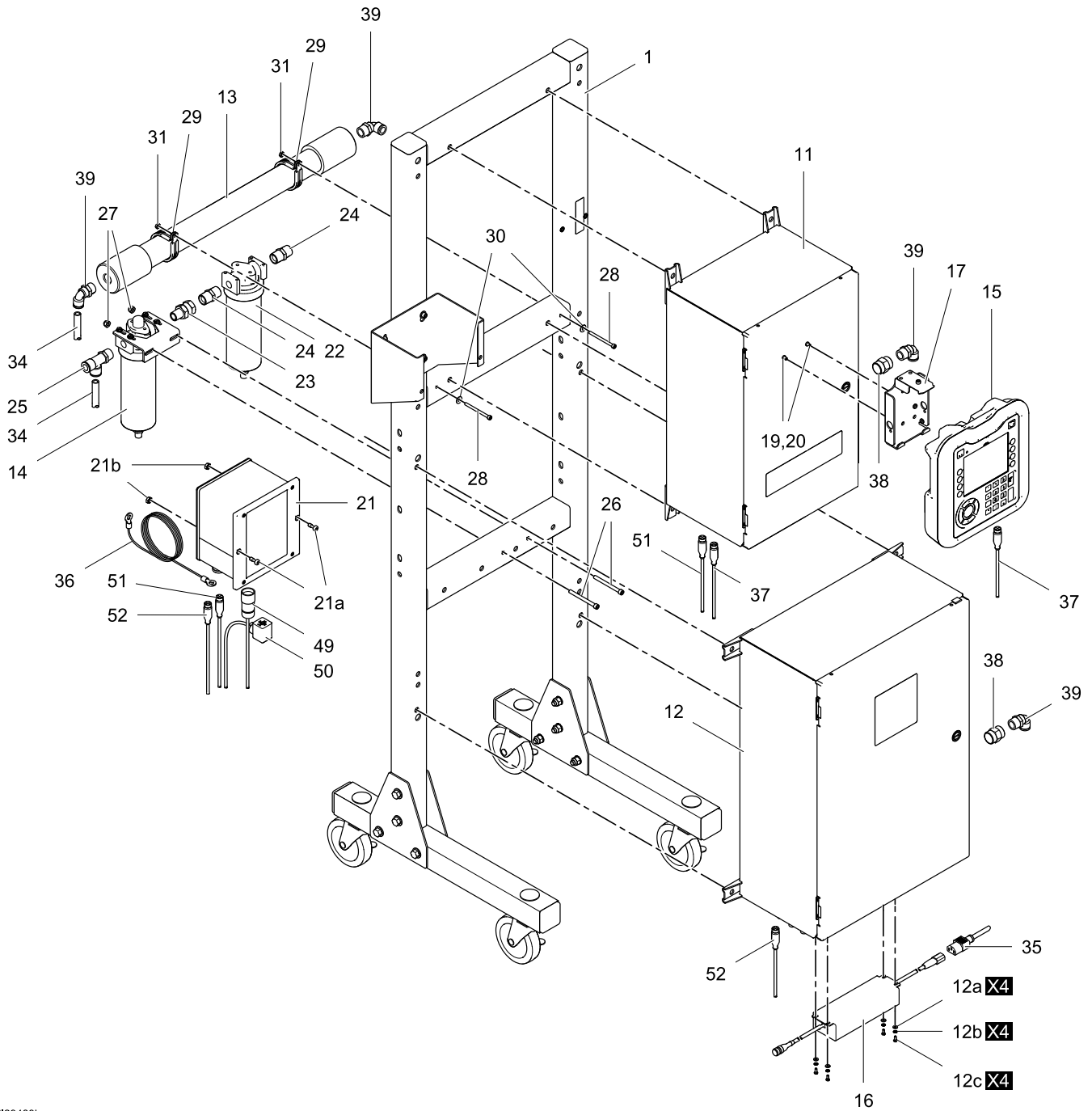
NOTICE

Air that is not filtered to specification can clog bearing air passages and cause bearing failure. See the ProBell applicator manual for filter requirements.

1. Required air filters have been installed on the cart at the factory.
2. Connect the air supply to the main air inlet on your air controller.

NOTE: Once air is applied it flows freely out of Port B on the Speed Controller.

Parts — ProBell System



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Parts — ProBell System

Ref	Part	Description	Qty
1	24Z225	CART KIT	1
11	24Z220	SPEED CONTROLLER, includes Ref. 60	1
12	24Z222	AIR CONTROLLER, includes Refs. 12a, 12b, 12c, and 60	1
12a	151395	WASHER, flat	4
12b	103181	WASHER, lock	4
12c	100518	SCREW, machine, pan head, #6–32 x 0.375 in.	4
13*	118560	DRYER, membrane	1
14*	234403	FILTER, air	1
15	24Z223	CONTROLLER, system logic	1
16	24Z224	POWER SUPPLY, 24 VDC, 2.5A, 60W, C13; includes Refs. 12a, 12b, 12c, and 35	1
17†	277853	BRACKET, mounting, system logic controller	1
19†	106084	SCREW, machine, pan head	2
20†	111307	WASHER, lock, external	2
21		CONTROLLER, electrostatic	1
	24Z098	solventborne, for all Pxxxx0 models and Model 24Z261; kit includes Refs. 36, 49, and 50	
	24Z099	waterborne, for all Pxxxx8 and Model 24Z717; kit includes Refs. 36, 49, and 50	
22*	234402	FILTER, air	1
23*	190451	ADAPTER, swivel, 1/2 npt-1/2 nptm	1
24*	158491	NIPPLE, 1/2–14 npt	2
25*	— — —	TEE, 1/2 OD tube x 3/4 npt	1
26†*	107218	SCREW, cap, socket head, 1/4–20 x 2.75	4

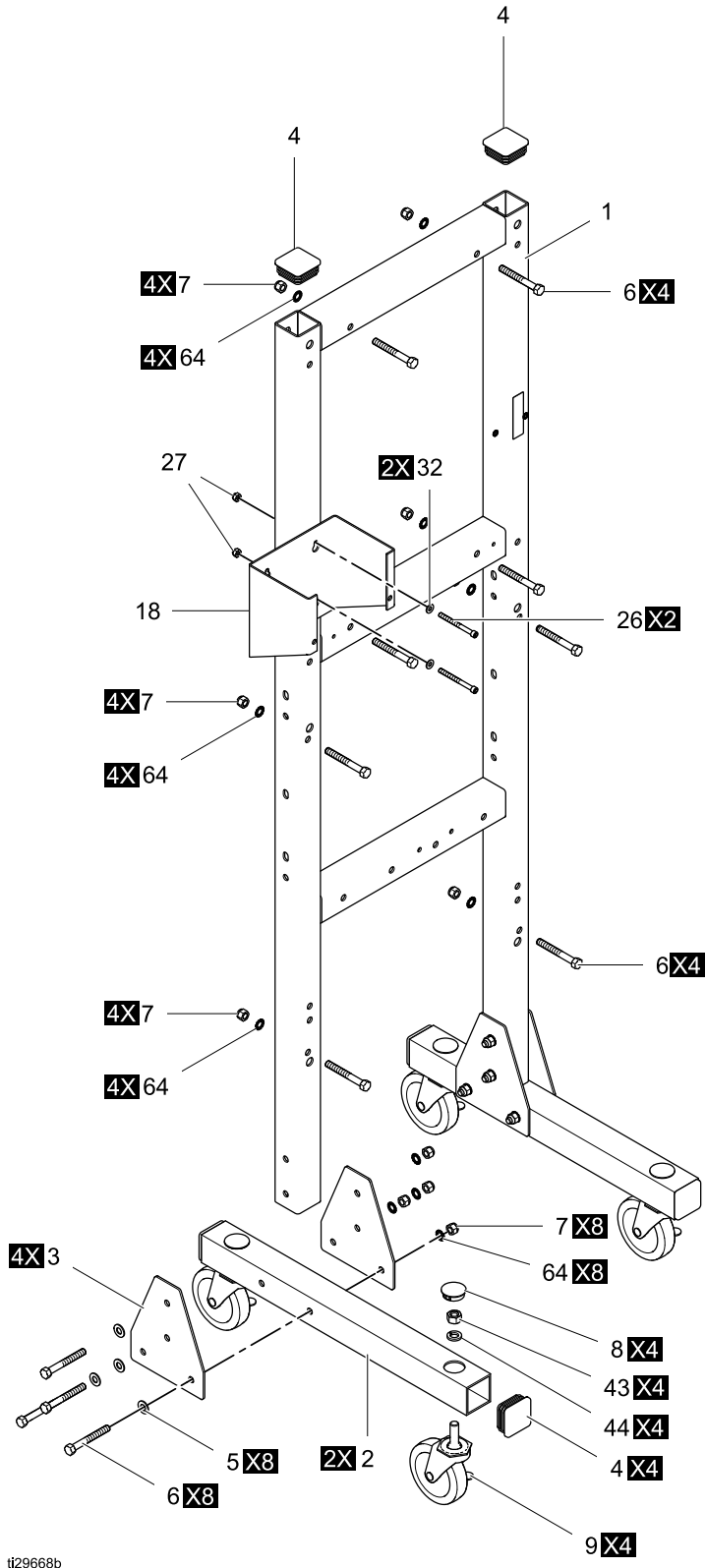
Ref	Part	Description	Qty
27†*	102040	NUT, lock	4
28*	107183	SCREW, cap, socket head #10–24 x 2.5	2
29*	17M296	CLAMP, loop, 2 inch	2
30*	112776	WASHER	2
31*	113505	NUT, keps, hex head	2
34*	— — —	TUBE, nylon, 1/2 OD x 3/8 ID	5
35	245202	CORDSET, USA, 10 ft (3 m), 13A, 120V	1
36	223547	WIRE, ground, 25 ft (7.6 m); not shown	1
37	121001	CABLE, CAN, female/female, 1 m (3.3 ft)	1
38*	158581	COUPLING, hex, 1/2 npt x 1/2 npt	2
39*	15V204	ELBOW, 1/2 npt x 1/2 tube	4
46	— — —	RING, terminal	3
47	— — —	HOLDER, tie	3
48	102478	STRAP, tie wiring	1
49	— — —	CABLE, I/O, 20 m (66 ft), included with Ref. 21	1
50	— — —	CABLE, power, included with Ref. 21	1
51	130193	CABLE, CAN, 0.5 m (1.6 ft)	1
52	121002	CABLE, CAN, 1.5 m (4.9 ft)	1
53	— — —	APPLICATOR, see Models section	1
54	— — —	HOSE BUNDLE, see Models section	1
60▲	17K394	LABEL, warning	3

* Included in Air Filter Kit 25C822.

† Included in Cart Kit 24Z225.

▲ Replacement Warning labels, signs, tags, and cards are available at no cost.

Parts — Cart Kit 24Z225



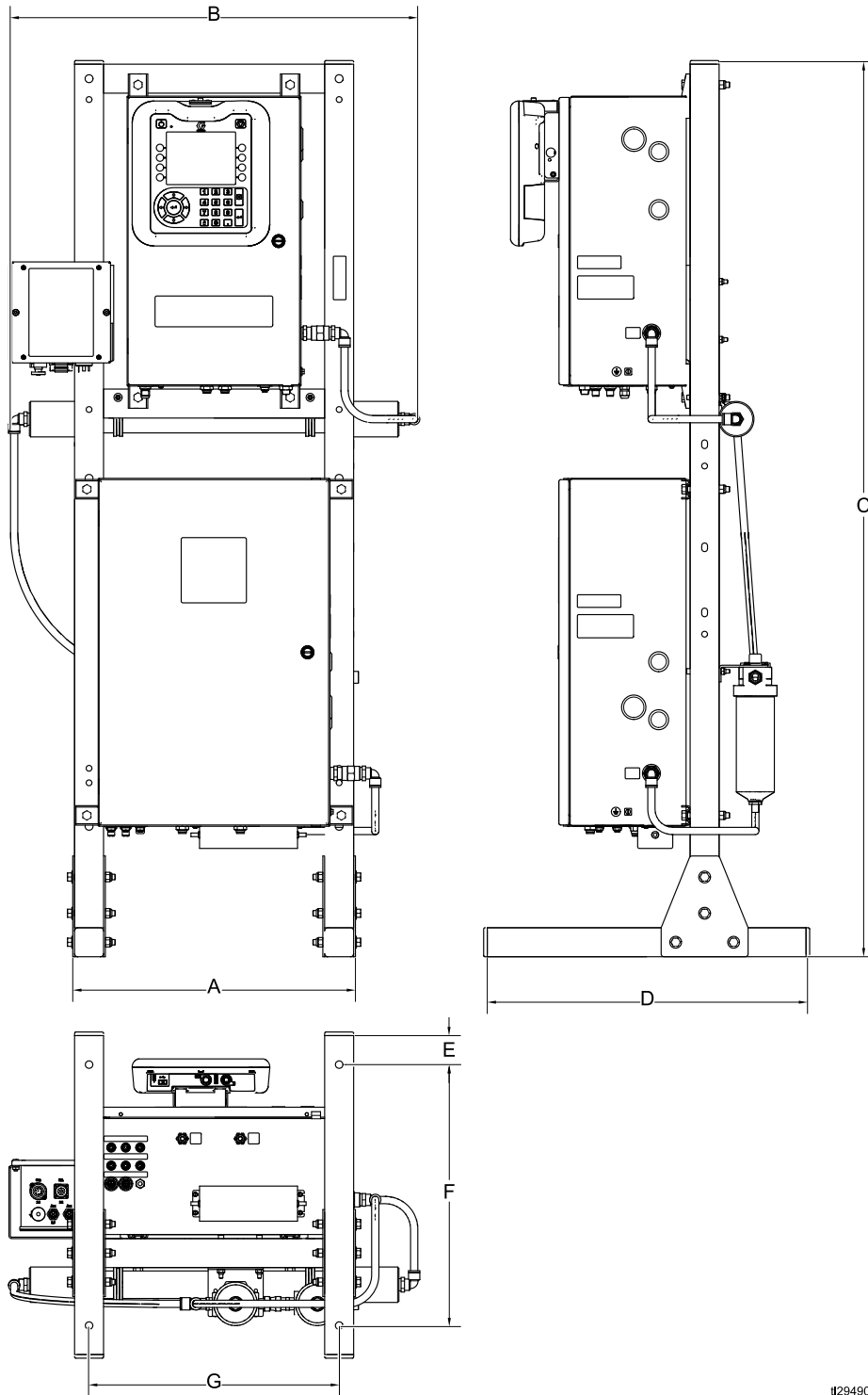
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Parts — Cart Kit 24Z225

Ref	Part	Description	Qty
1	— — —	FRAME	1
2	— — —	LEG, cart	2
3	— — —	PLATE, gusset	4
4	115313	PLUG, tube	6
5	100731	WASHER	8
6	100454	SCREW, cap, hex, 3/8–16 x 3 inch	16
7	101566	NUT, lock	16
8	114575	PLUG, button	4
9	16F207	CASTER, swivel	4
17†	277853	BRACKET, mounting, system logic controller	1

Ref	Part	Description	Qty
18	17H288	BRACKET, mounting, electrostatic controller	1
19†	106084	SCREW, machine, pan head	2
20†	111307	WASHER, lock, external	2
26	107218	SCREW, cap, socket head, 1/4–20 x 2.75	2
27	102040	NUT, lock	2
32	100086	WASHER	2
43	100321	NUT	4
44	100018	WASHER	4
64	100639	WASHER, Lock	16
† Not shown, see Parts — ProBell System, page 16			

Dimensions



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A	B	C	D	E	F	G
19.26 in. (48.9cm)	28.4 in. (72.1 cm)	64.7 in. (164.3 cm)	22.0 in. (55.9 cm)	2.0 in. (5.1 cm)	18.0 in. (45.7 cm)	17.26 in. (43.8 cm)

Technical Specifications

For ProBell Rotary Applicator information, see Manual 334452 or 334626.

For Electrostatic Controller information, see Manual 3A3657.

ProBell Cart System		
	US	Metric
Maximum working air pressure	100 psi	0.69 MPa, 6.9 bar
Ambient temperature range	41°F to 104°F	5°C to 40°C
Cart system power supply (24Z224)		
Power connection	Straight IEC 320–C13 male connector and a North American NEMA 5–15P ISP male plug are provided.	
External power requirements	100-240 VAC, 50/60 Hz, 2 amp maximum draw, 15 amp maximum circuit breaker recommended	
Electrostatic controller power supply		
Power connection	Power cord with 4–wire leads is provided	
External power requirements	100-240VAC, 50-60Hz, 1 amp maximum draw, 15 amp maximum circuit breaker recommended	
Sound data	Less than 70 dB(A)	
Air inlet connection	1/2 NPT (external thread)	
Weight		
Model 24Z261 or 24Z717 (Cart equipment without applicator or hoses)	197 lb.	89 kg.
Models Pxxxxx (Full system)	239 lb.	108 kg.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be 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 general wear and tear, or 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 of Graco equipment with 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.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, 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.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

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Graco Information

For the latest information about Graco products, visit www.graco.com. For patent information, see www.graco.com/patents.

To place an order, contact your Graco Distributor or call to identify the nearest distributor.
Phone: 612-623-6921 or **Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

All written and visual data contained in this document reflects the latest product information available at the time of publication.

Graco reserves the right to make changes at any time without notice.

Original Instructions. This manual contains English, MM 3A4232

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