

# Merkur<sup>®</sup> Electrostatic Airspray Packages

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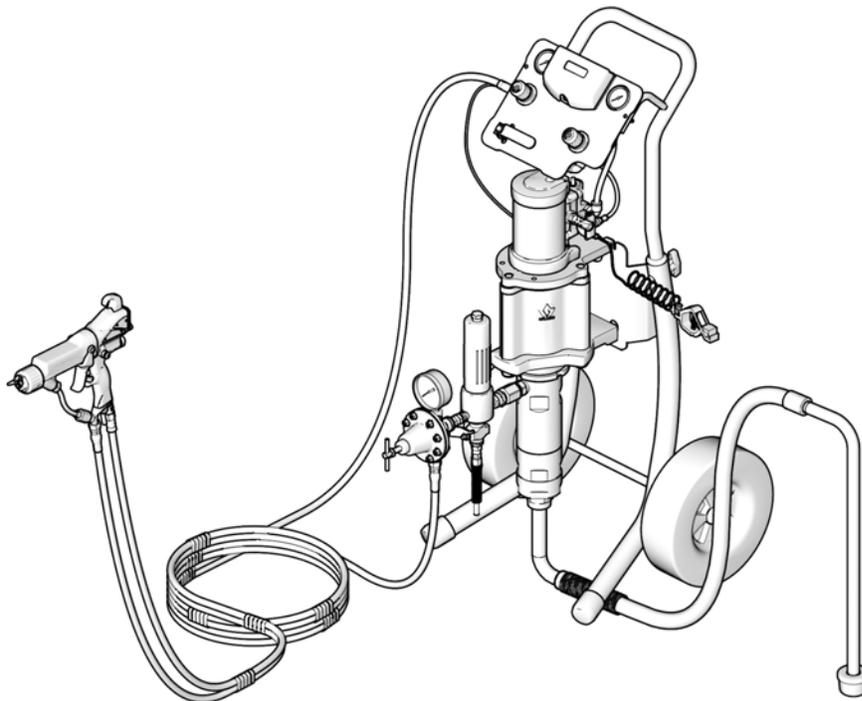
*For electrostatic finishing and coating applications in hazardous or non-hazardous locations. For professional use only.*

See pages 4 to 5 for model information, including maximum working pressure and approvals.



## Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment.  
Save these instructions.



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# Content

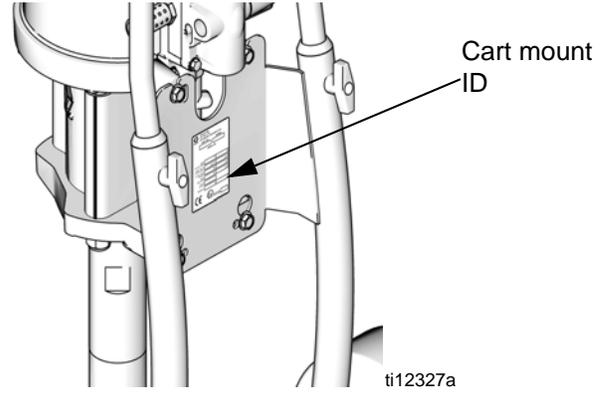
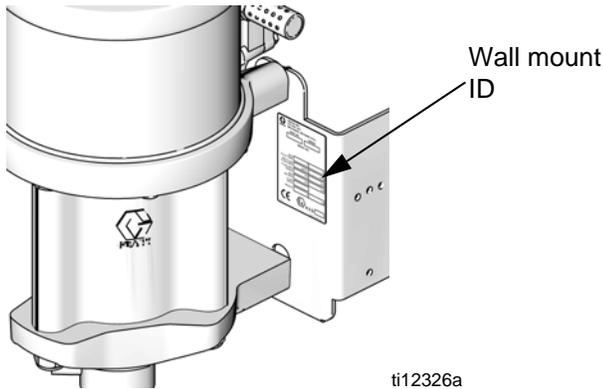
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## Related Manuals

Manual	Description
312792	Merkur® Displacement Pump
312794	Merkur® Pump Assembly
312796	NXT® Air Motor
3A2494	Pro Xp™ Electrostatic Air Spray Gun
307273	Fluid Outlet Filter
313541	DataTrak Kits

# Models

Check the identification plate (ID) for the 6-digit part number of your package. Use the following matrix and tables to define the components of your package. For example, package number **G03C10** represents a Merkur package (**G**), with a 3:1 ratio pump (**03**), cart mounting (**C**), and the components shown for (**10**) in the table on page 5.



<b>G</b>	<b>03</b>		<b>C</b>		<b>10</b>
First Digit	Second and Third Digits (Ratio)		Fourth Digit (Package Type)		Fifth and Sixth Digit (Components Included)
<b>G</b> (Merkur Package)	<b>03</b>	3:1	<b>C</b>	Cart Mount	See Table, page 24
			<b>W</b>	Wall Mount	

## Merkur 3:1 Packages

(G03Wxx and G03Cxx)

Maximum Inlet Air Pressure 50 psi (.34 MPa, 3.4 bar)

Maximum Fluid Working Pressure: 120 psi (.83 MPa, 8.3 bar)

Model		Pump Assembly	Gun	Fluid Reg. (241976) (234272)*	Air Controls		Hoses		Accessories		Data-Trak	Approvals
Wall Mount	Cart Mount				Pump Only	Pump and Gun	Gun Fluid Hose (25 ft.) (50 ft.)‡	Gun Air Hose (25 ft.) (50 ft.)‡	Siphon Kit	Fluid Filter		
G03W10	G03C10	W03EBS	L60T10	✓		✓	✓	✓	✓	✓	✓	†
G03W11	G03C11	W03EAS	L60T10	✓		✓	✓	✓	✓	✓		◆
G03W12	G03C12	W03EBS	L85T10	✓		✓	✓	✓	✓	✓	✓	†
G03W13	G03C13	W03EAS	L85T10	✓		✓	✓	✓	✓	✓		◆
G03W13	G03C13	W03EAS	None									◆
-----	G03C17	W03EAS	None	✓*		✓	✓	✓	✓	✓		◆
-----	G03C19	W03EAS	None	✓*		✓	✓‡	✓‡	✓	✓		◆

**NOTE:** Fluid regulator 241976 is ACETAL and not compatible with a lacquer thinner.

\* Fluid regulator 234272 is an air piloted fluid regulator. The air pilot signal is to be provided by the end user.

‡ Model G03C19 includes a 50 ft. Gun Fluid Hose and Gun Air Hose. All other models include only a 25 ft. Gun Fluid Hose and Gun Air Hose.

◆   II 2G Ex h IIB T6 Gb

†   II 2(1) G Ex h [ja Ga] IIA T3 Gb X

DataTrak™ Module includes agency approvals listed below.



Pro Xp™ Manual Electrostatic Air Spray Gun includes agency approvals listed below.

For use in Class I Div. I hazardous locations using Group D spray materials.



For use in Group II, Zone 1 areas using Group IIA spray materials.



# 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><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire, explosion, and electric shock:</p> <ul style="list-style-type: none"> <li>• Electrostatic equipment must be used only by trained, qualified personnel who understand the requirements of this manual.</li> <li>• Ground all equipment, personnel, object being sprayed, and conductive objects in or close to spray area. Resistance must not exceed 1 megohm. See <b>Grounding</b> instructions.</li> <li>• Only use grounded Graco conductive air supply hoses.</li> <li>• Do not use pail liners unless they are conductive and grounded.</li> <li>• <b>Stop operation immediately</b> if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.</li> <li>• Check gun resistance, hose resistance, and electrical grounding daily.</li> <li>• Use and clean equipment only in well ventilated area.</li> <li>• Interlock the gun air and fluid supply to prevent operation unless ventilation air flow is above the minimum required value.</li> <li>• Use only Group IIA or Group D materials.</li> <li>• Never spray or flush solvent at high pressure.</li> <li>• To clean the exterior of the equipment, cleaning solvents must have a flash point at least 15°C or 59° F above ambient temperature. Non-ignitable fluids are preferred.</li> <li>• Always turn the electrostatics off when flushing, cleaning or servicing equipment.</li> <li>• Eliminate all ignition sources such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).</li> <li>• Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Keep the spray area clean at all times. Use non-sparking tools to clean residue from the booth and hangers.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
	<p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>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"> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying/dispensing and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>



# WARNING



## EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.



- 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 Safety Data Sheets (SDSs) 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 area.
- Comply with all applicable safety regulations.



## MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.



- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.



## TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheets (SDSs) 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.



# WARNING



## PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.



## SPECIFIC CONDITIONS OF SAFE USE

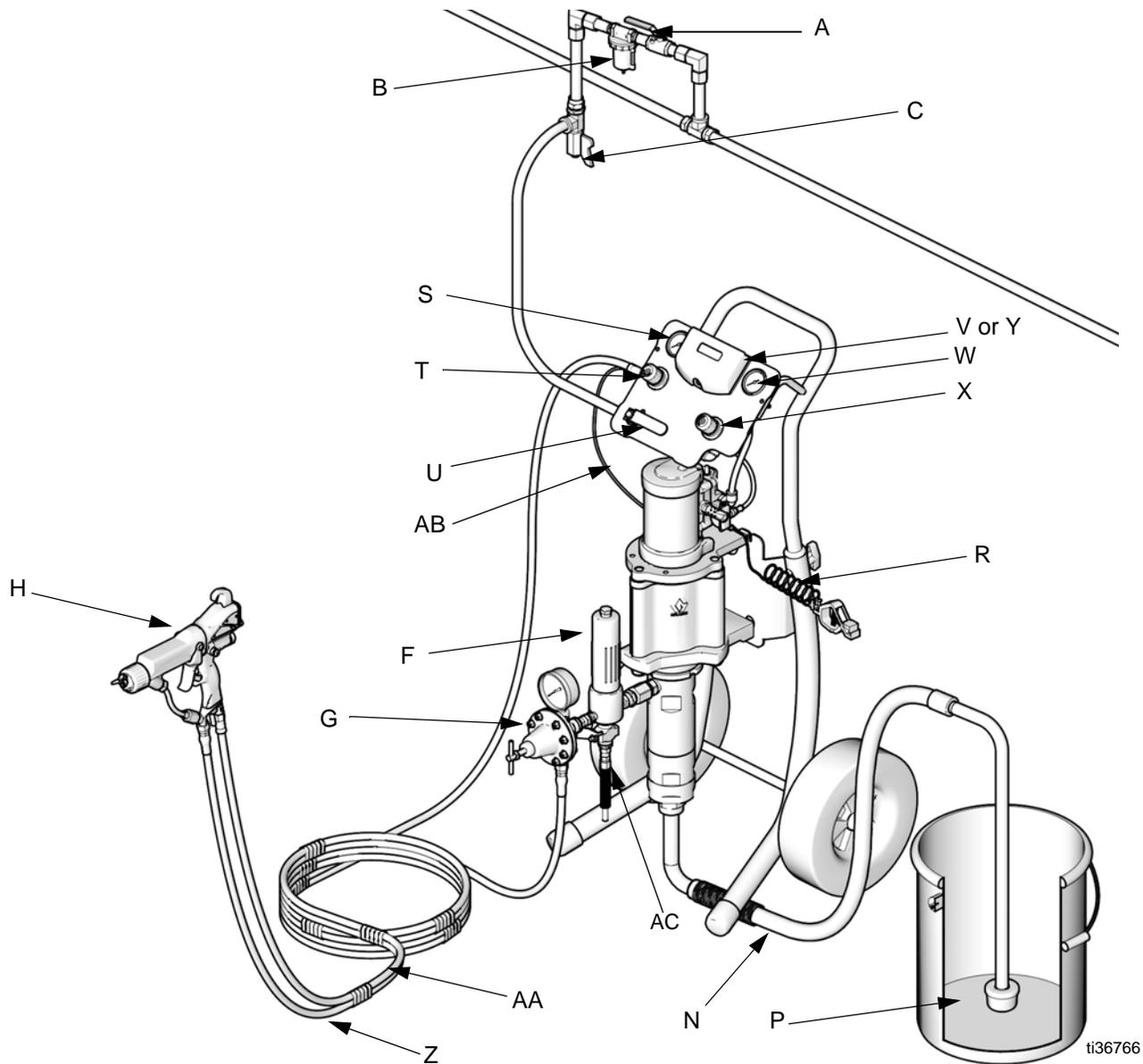
Equipment must comply with the following conditions to avoid a hazardous condition which can cause fire or explosion.



- All labels and identification plates must be cleaned with a damp cloth (or equivalent).
- The electronic monitoring system is required to be grounded. See **Grounding** instructions.

# Typical Installation

Package components vary. See page 24 to determine the components included in your model. Any item designated as required is not included in the packages but is necessary for operation.



**FIG. 1. Typical Installation**

**Key:**

- |  |   |
|--|---|
| A Air Shutoff Valve (required)           | T Gun Air Pressure Regulator              |
| B Air Filter                             | U Bleed-type Master Air Valve             |
| C Air Line Moisture Trap and Drain Valve | V DataTrak                                |
| F Fluid Filter                           | W Pump Air Pressure Gauge                 |
| G Fluid Regulator                        | X Pump Air Pressure Regulator             |
| H Electrostatic Air Spray Gun            | Y Insert (for models without DataTrak)    |
| N Suction Hose and Tube                  | Z Gun Fluid Hose                          |
| P Strainer                               | AA Electrically Conductive Gun Air Hose   |
| R Pump Grounding Wire                    | AB Electrostatic Spray Gun Grounding Wire |
| S Gun Air Pressure Gauge                 | AC Fluid Drain Valve                      |

## General Information

**NOTE:** Reference numbers and letters in parentheses in the text refer to the callouts in the figures and the parts drawing.

**NOTE:** Always use Genuine Graco Parts and Accessories, available from your Graco distributor. If you supply your own accessories, be sure they are adequately sized and pressure-rated for your system.

FIG. 1 is only a guide for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to suit your particular needs.

## Prepare the Operator

All persons who operate the equipment must be trained in the operation of all system components as well as the proper handling of all fluids. All operators must thoroughly read all instruction manuals, tags, and labels before operating the equipment.

## Prepare the Site

Ensure that you have an adequate compressed air supply.

**NOTE:** The compressed air supply to the gun must be clean and dry, to prevent damage to the finish. Use a coalescing air filter in the main air supply line.

Bring a compressed air supply line from the air compressor to the pump location. Refer to the performance charts in your pump assembly manual to find the air consumption of your pump. Be sure all air hoses are properly sized and pressure-rated for your system. Use only electrically conductive hoses. The air hose should have a 3/8 npt(m) thread. A quick disconnect coupling is recommended.

Install a bleed-type shutoff valve (A) in the air line to isolate the air line components for servicing. Install an air line filter (B) and a moisture trap and drain valve (C) to help remove moisture and contaminants from the compressed air supply.

Keep the site clear of any obstacles or debris that could interfere with the operator's movement.

Have a grounded, metal pail available for use when flushing the system.

## Mount the Pump

Mount the pump directly to the wall or to a Graco cart. See page 27 for mounting kits.

### Wall-Mounted Pumps

1. Be sure the wall can support the weight of the pump, bracket, hoses and accessories, as well as the stress caused during operation.
2. Position the wall bracket about 4-5 ft (1.2-1.5 m) above the floor. For ease of operation and service, make sure the pump air inlet, fluid inlet, and fluid outlet ports are easily accessible.
3. Using the wall bracket as a template, drill 0.4 in. (10 mm) mounting holes in the wall. Wall mounting dimensions are shown on page 30.
4. Attach the bracket to the wall. Use 3/8 in. (9 mm) screws that are long enough to keep the pump from vibrating during operation.

**NOTE:** Be sure the bracket is level.

### Cart-Mounted Pumps

Kit 24E885 is available if you plan to bolt your cart to the floor. It includes two spacers that keep the legs stable. Bolts not included.

## Ventilate the Spray Booth

				
Provide fresh air ventilation to avoid the buildup of flammable or toxic vapors. Do not operate the gun unless ventilation fans are operating.				

Electrically interlock the gun air supply with the ventilators to prevent gun operation without ventilating fans operating. Check and follow all Local codes and regulations regarding air exhaust velocity requirements.

**NOTE:** High velocity air exhaust will decrease the operating efficiency of the electrostatic system. Air exhaust velocity of 100 ft/min (31 linear meters/minute) should be sufficient.

## Components

See FIG. 1. **Components vary by package ordered.** See table on page 24. Your package may include:

- A bleed-type master air valve (U) is required in your system to relieve air trapped between it and the air motor and gun when the valve is closed. Do not block access to the valve.
- The pump air regulator (X) controls pump speed and outlet pressure by adjusting the air pressure to the pump.
- The air relief valve (not shown) opens automatically to prevent overpressurization of the pump.
- The gun air regulator (T) adjusts the air pressure to the electrostatic spray gun (H).
- The electrostatic air spray gun (H) dispenses the fluid.
- The suction hose (N) with strainer (P) allows the pump to draw fluid from a 5 gallon (19 liter) pail.
- A fluid filter (F) with a 60 mesh (250 micron) stainless steel element filters particles from fluid as it leaves the pump.
- A fluid drain valve (AC) relieves fluid pressure in the hose and gun.
- DataTrak (V) provides pump diagnostics and material usage information. See page 17.

## Air and Fluid Hoses

- The gray hose (AA) provides the gun air supply.
- The blue hose (Z) provides the gun fluid supply.

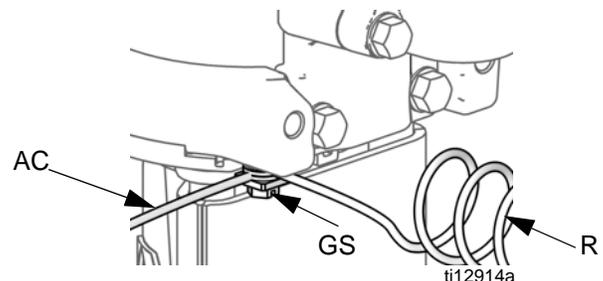
## Grounding



When operating the electrostatic gun, any ungrounded objects in the spray area (people, containers, tools, etc.) can become electrically charged. The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

The following are minimum grounding requirements for a basic electrostatic system. Your system may include other equipment or objects which must be grounded. Check your local electrical code for detailed grounding instructions. Your system must be connected to a true earth ground.

**Pump:** Verify that the ground screw (GS) is attached and tightened securely to the air motor. Connect the other end of the ground wire (R) to a true earth ground.



**FIG. 2. Ground Screw and Wire**

**Electrostatic Spray Gun:** Use only the Graco Electrically Conductive Air Supply Hose (supplied). Connect the Gun Grounding Wire (AC) to the ground screw (GS) on the air motor.

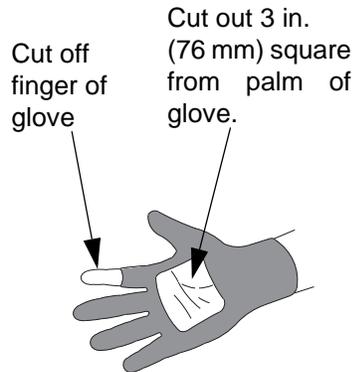
**Air compressor:** follow manufacturer's recommendations.

**All air and fluid lines** must be properly grounded. Use only grounded hoses with a maximum of 500 feet (150m) combined hose length to ensure grounding continuity.

**Object being sprayed:** keep the workpiece hangers clean and grounded at all times. Follow local code.

**All electrically conductive objects or devices** in the spray area, including paint containers, wash cans and tools, must be properly grounded.

**All persons entering the spray area:** shoes must have conductive soles, such as leather, or personal grounding straps must be worn. Rubber or plastic shoe soles are not conductive. The operator must not wear gloves that insulate the hand from the spray gun. The gloves must be conductive or modified as shown.



**The floor of the spray area** must be electrically conductive and grounded. Do not cover the floor with cardboard or any non-conductive material that would interrupt grounding continuity.

**Flammable liquids** in the spray area must be kept in approved, grounded containers. Do not store more than the quantity needed for one shift.

**Fluid supply container:** follow local code.

**All solvent pails:** follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity.

**DataTrak:** The DataTrak electronic monitoring system is required to be grounded. Do not remove it from its standard mounting location on the air control panel.

## Setup

1. See FIG. 1. Attach the gun fluid hose (Z) to the fluid regulator (G) outlet.
2. Attach other end of the gun fluid hose (Z) to the gun fluid inlet.
3. Attach the right-hand thread end of the air hose (AA) to the gun air regulator (T).
4. Attach the left-hand thread end of the gun air hose (AA) to the Electrostatic air spray gun (H) air inlet.
5. Apply lens cover to both regulator gauge lenses.
6. Verify that suction hose fittings are tight.

# Operation



When operating the electrostatic gun, any ungrounded objects in the spray area (people, containers, tools, etc.) can become electrically charged. The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

2. Close the bleed-type master air valve (U).
3. Trigger the gun into a grounded metal waste container to relieve pressure.
4. Open all fluid drain valves in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to spray again.
5. If you suspect the nozzle or hose is clogged or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen hose end coupling to relieve pressure gradually, then remove completely. Clear hose or nozzle obstruction.

## Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.

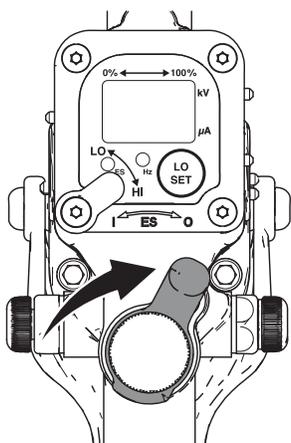


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as splashing fluid and moving parts, follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing the equipment.

## Flush Before Using Equipment

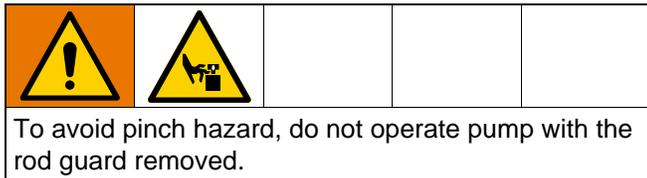
The equipment was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment. See **Flush the Pump**, page 15.

1. Turn the gun's ES ON/OFF lever to OFF.



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## Wet Cup



Before starting, fill wet cup 1/3 full with Graco Throat Seal Liquid (TSL) or compatible solvent.

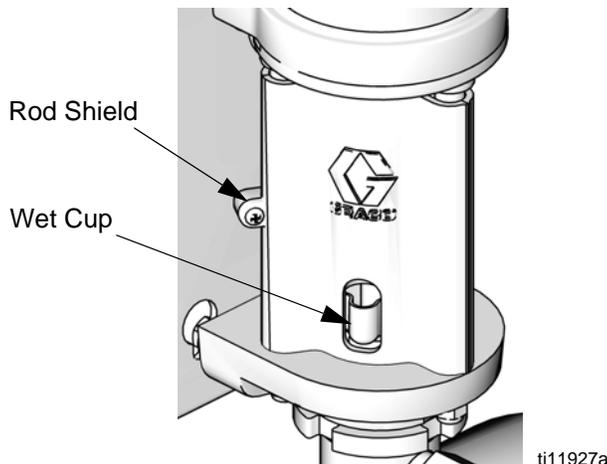


FIG. 3. Fill Wet Cup

## Prime the Pump

1. Turn the gun's ES ON/OFF lever to OFF.
2. Close gun air regulator (T) and pump air regulator (X) by turning knobs counterclockwise reducing pressure to zero. Close bleed-type air valve (U). Also verify that all drain valves (C) are closed.
3. Connect air supply line to bleed-type master air valve (U).
4. Check that all fittings throughout system are tightened securely.
5. Position pail close to pump. Suction hose is approximately 4 ft (1.2 m) long. Do not stretch hose tight; let it hang to assist fluid flow into pump.
6. Hold part of gun (H) firmly to side of grounded metal pail, and hold trigger open.

**NOTE:** If your pump has DataTrak, see **DataTrak Operation** on page 18 or your separate NXT air motor manual for DataTrak instructions.

7. *Datatrak equipped units with runaway protection only:* enable the prime/flush function by pushing the prime/flush button on the DataTrak.
8. Open bleed-type master air valve (U). Slowly turn clockwise pump air regulator (X) increasing pressure until pump starts.
9. Cycle pump slowly until all air is pushed out and pump and hoses are fully primed.
10. *Datatrak equipped units with runaway protection only:* disable the prime/flush function by pushing the prime/flush button on the DataTrak.
11. Release gun trigger. Pump should stall against pressure.

### NOTICE

Never allow the pump to run dry of the fluid being pumped. A dry pump quickly accelerates to a high speed, possibly damaging itself. If your pump accelerates quickly, or is running too fast, stop it immediately and check the fluid supply. If the supply container is empty and air has been pumped into the lines, refill the container and prime the pump and the lines with fluid, or flush and leave it filled with a compatible solvent. Be sure to eliminate all air from the fluid system.

## Gun Setup

See **Pro Xp™ Electrostatic Air Spray Gun** manual (3A2494) for instructions on how to properly setup the spray gun.

## Shutdown



Follow **Pressure Relief Procedure**, page 13.

Always flush the pump before the fluid dries on the displacement rod. See **Flush the Pump** on page 15.

# Maintenance

## Preventive Maintenance Schedule

The operating conditions of your particular system determine how often maintenance is required. Establish a preventive maintenance schedule by recording when and what kind of maintenance is needed, and then determine a regular schedule for checking your system.

Replace lens covers on regulator gauge lenses when dirt makes gauges difficult to read.

## Tighten Threaded Connections

Before each use, check all hoses for wear or damage. Replace as necessary. Check that all threaded connections are tight and leak-free.

## Flush the Pump



To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at the lowest possible pressure.

Flush the pump:

- Before first use
- When changing colors or fluids
- Before repairing equipment
- Before fluid dries or settles out in a dormant pump (check the pot life of catalyzed fluids)
- At the end of the day
- Before storing the pump.

Flush at the lowest pressure possible. Flush with a fluid that is compatible with the fluid you are pumping and with the wetted parts in your system. Check with your fluid manufacturer or supplier for recommended flushing fluids and flushing frequency.

1. Follow **Pressure Relief Procedure**, page 13.
2. Be sure the ES ON/OFF lever is turned to OFF.
3. Place siphon tube in grounded metal pail containing cleaning fluid.
4. Close gun air regulator (T) and pump air regulator (X) by turning knob counterclockwise, reducing pressure to zero.
5. Set pump to lowest possible fluid pressure, and start pump.
6. Hold a part of the gun firmly to a grounded metal pail.
7. *DataTrak equipped units with runaway protection only*: enable the prime/flush function by pushing the prime/flush button on the DataTrak.
8. Trigger gun. Flush system until clear solvent flows from gun.
9. *DataTrak equipped units with runaway protection only*: disable the prime/flush function by pushing the prime/flush button on the DataTrak.
10. Follow **Pressure Relief Procedure**, page 13.
11. Clean the inside and outside of the suction tube.

## Wet Cup

Fill the wet cup 1/3 full with Graco Throat Seal Liquid (TSL). Maintain level daily.

# Troubleshooting



1. Follow **Pressure Relief Procedure**, page 13, before checking or repairing pump.
2. Check all possible problems and causes before disassembling pump.
3. For all problems related to electrostatics, see **Troubleshooting**, in your gun manual.

Problem	Cause	Solution
Pump fails to operate.	Restricted line or inadequate air supply; closed or clogged valves.	Clear line or increase air supply. Check that the valves are open.
	Obstructed fluid hose or gun; fluid hose ID is too small.	Open, clear*; use hose with larger ID.
	Fluid dried on the displacement rod.	Clean; always stop the pump at the bottom of its stroke; keep the wet-cup 1/3 filled with Graco throat seal liquid (TSL).
	Dirty, worn, or damaged air motor parts.	Clean or repair air motor. See NXT Air Motor manual 312796.
	DataTrak models only: Air valve cannot cycle because solenoid pin is extended	Enable runaway protection (See <b>DataTrak Operation, Setup Mode</b> , page 18). Bleed air from motor. Press  on the DataTrak display to retract solenoid pin.
Pump operates, but output is low on both strokes.	Restricted line or inadequate air supply; closed or clogged valves.	Clear line or increase air supply. Check that the valves are open.
	Obstructed fluid hose or gun; fluid hose ID is too small.	Open, clear*; use hose with larger ID.
	Worn packings in displacement pump.	Replace packings. See manual Displacement Pump 312792.
Pump operates, but output is low on downstroke.	Held open or worn ball check valves or piston packings.	Clear valve; replace packings. See Pump Assembly manual 312794.
Erratic or accelerated pump speed.	Exhausted fluid supply.	Refill and prime.
	Held open or worn ball check valves or packings.	Clear valve, replace packings; see Pump Assembly manual 312794.
Fluid being pumped is visible in the TSL reservoir.	Worn throat packings.	Replace throat packings. See Pump Assembly manual 312794.
Fluid is visible in the overflow chamber.	Damaged bellows.	Replace. See Displacement Pump manual 312793.

\* To determine if the fluid hose or gun is obstructed, follow the **Pressure Relief Procedure**. Disconnect the fluid hose from the pump and place a container at the pump fluid outlet to catch any fluid. Turn on the air just enough to start the pump. If the pump starts when the air is turned on, the obstruction is in the hose or gun.

# DataTrak Controls and Indicators

## Key for FIG. 4

- AA Runaway Limit, in cycles per minute (user settable; 00=OFF)
- AB Lower Displacement (user settable)
- AC Flow Rate Units (user settable to  $\updownarrow$ /min, gpm [US], gpm [Imperial], oz/min [US], oz/min [Imperial], l/min, or cc/min)
- AD LED (fault indicator when lit)
- AE Display
- PF Prime/Flush Key (Enables Prime/Flush mode. While in Prime/Flush mode, runaway protection is disabled and the batch totalizer [BT] will not count.) LED will flash while in Prime/Flush mode.
- RK Reset Key (Resets faults. Press and hold for 3 seconds to clear the batch totalizer.) Push to toggle between flow rate and cycle rate. With runaway protection enabled, push to extend and retract the solenoid pin.
- CF Cycle/Flow Rate
- BT Batch Totalizer
- GT Grand Totalizer
- RT Runaway Toggle (enable/disable)
- UT E1 Toggle
- DT E2 Toggle
- ST E5 Toggle

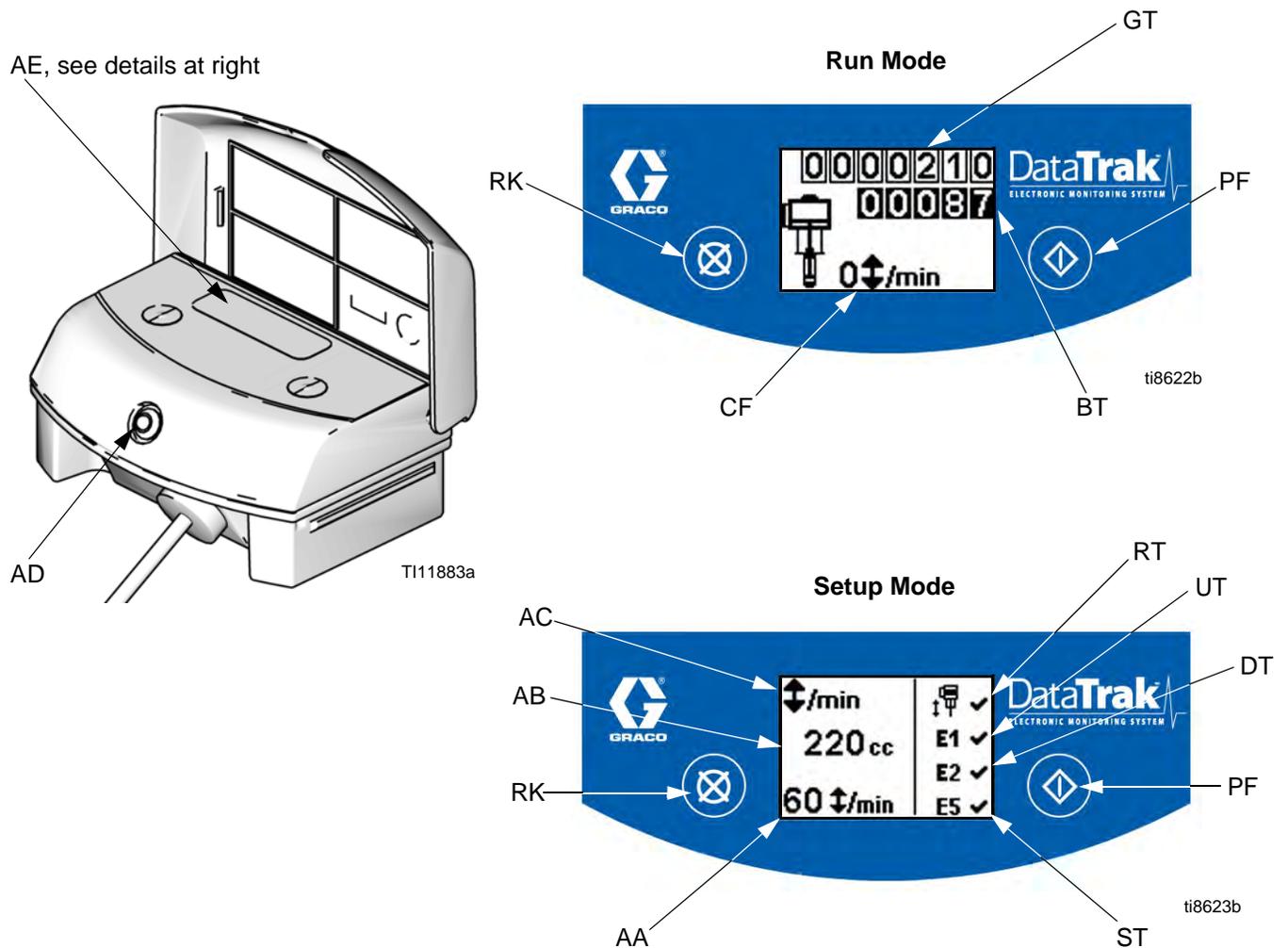


FIG. 4. DataTrak Controls and Indicators

# DataTrak Operation

**NOTE:** The display (AE) will turn off after 1 minute to save battery life. Press any key to wake up the display.

**NOTICE**

To prevent damage to the softkey buttons, do not press the buttons with sharp objects such as pens, plastic cards, or fingernails.

## Setup Mode

1. See FIG. 4. Press and hold  for 5 seconds until Setup menu appears.
2. To enter settings for runaway (if equipped), lower size, and flow rate units, and to enable runaway, E1, E2, and E5 error options, press  to change the value, then  to save the value and move the cursor to the next data field. See page 20 for a description of E1, E2, and E5 error codes.

**NOTE:** Graco recommends setting runaway (if equipped) to 60 . All DataTrak modules are shipped with runaway protection not enabled.

**NOTE:** When runaway, E1, E2, and E5 error options are enabled, a ✓ will appear on the setup screen. See FIG. 4.

3. Move the cursor to the E5 error enable option field, then press  once more to exit Setup mode.

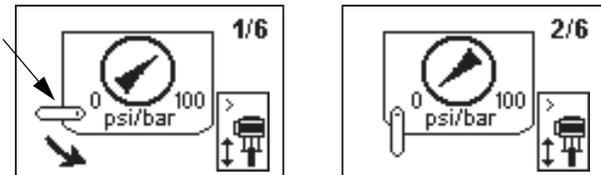
## Run Mode

### Pump Runaway

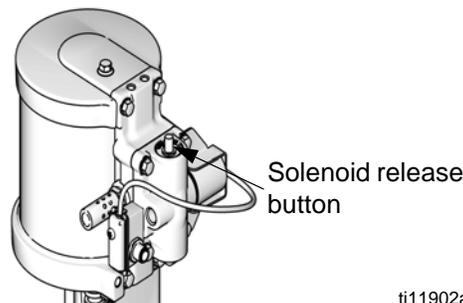
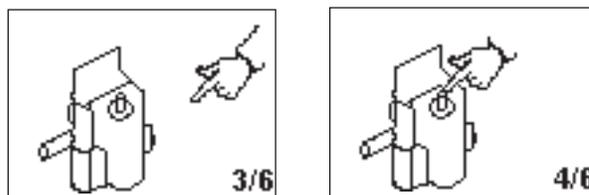
**NOTE:** DataTrak is available with and without runaway protection.

1. See FIG. 4. If pump runaway occurs, the runaway solenoid will actuate, stopping the pump. The LED (AD) will flash and the display (AE) will indicate a runaway condition (see Table 1). The display will cycle through six instruction screens.

2. Runaway Screens 1 and 2: To reset the runaway solenoid, close the master air valve (U). Wait for air to completely bleed off the air motor.



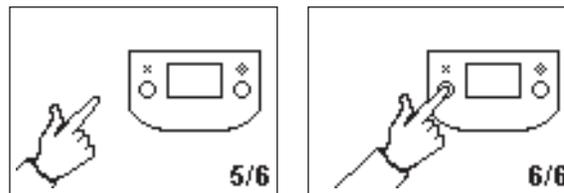
3. Runaway Screens 3 and 4: After the air is bled off, push the solenoid release button down to reset the air valve. The button will pop back up when the air valve is repressurized.



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**FIG. 5. Reset the Air Valve**

4. Runaway Screens 5 and 6: Press  to clear the diagnostic code and reset the runaway solenoid.



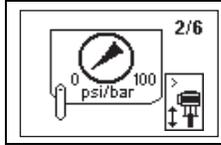
5. Open bleed-type master air valve (U) to restart pump.

**NOTE:** To disable runaway monitoring, go to setup mode and set runaway value to 0 (zero) or toggle (RT) off  (see FIG. 4).

## Prime/Flush

1. See FIG. 4. To enter Prime/Flush mode, press any key to wake up the display, then press . The Prime/Flush symbol will appear in the display and

the LED will flash



2. While in Prime/Flush mode, runaway protection is disabled and the batch totalizer (BT) will not count. The grand totalizer (GT) continues to count.
3. To exit Prime/Flush mode, press any key to wake up the display, then press . The Prime/Flush symbol will disappear from the display and the LED will stop flashing.

## Counter/Totalizer

See FIG. 4. The last digit of the batch totalizer (BT) represents tenths of gallons or liters. To reset the totalizer, press any key to wake up the display, then press and hold  for 3 seconds.

- If AC is set to gallons or ounces, BT and GT display gallons.
- If AC is set to liters or cc, BT and GT display liters.
- If AC is set to cycles, BT and GT display cycles.

Press  to toggle between flow rate units and cycles. A letter under the BT display indicates that both BT and GT are displaying gallons (g) or liters (l). No letter means both BT and GT are displaying cycles.

## Display

See FIG. 4. The display (AE) will turn off after 1 minute of inactivity in Run mode or 3 minutes in Setup mode. Press any key to wake up the display.

**NOTE:** DataTrak will continue to count cycles when display is off.

**NOTE:** The display (AE) may turn off if a high-level static discharge is applied to the DataTrak. Press any key to wake up the display.

## Diagnostics

DataTrak can diagnose several problems with the pump. When the monitor detects a problem, the LED (AD, FIG. 4) will flash and a diagnostic code will appear on the display. See Table 1.

To acknowledge the diagnosis and return to the normal operating screen, press  once to wake up the display, and once more to clear the diagnostic code screen.

**Table 1: Diagnostic Codes**

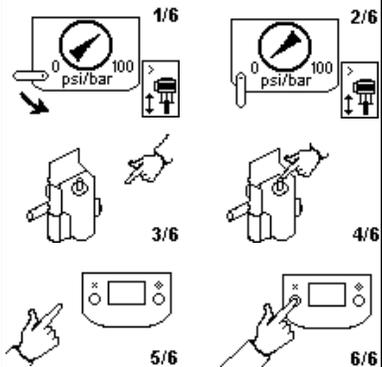
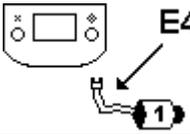
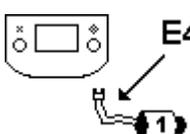
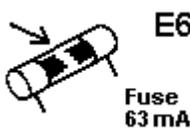
Symbol	Code	Code Name	Diagnosis	Cause
		Runaway (DataTrak only)	Pump running faster than set runaway limit.	<ul style="list-style-type: none"> <li>• Increased air pressure.</li> <li>• Increased fluid output.</li> <li>• Exhausted fluid supply.</li> </ul>

Table 1: Diagnostic Codes

Symbol	Code	Code Name	Diagnosis	Cause
	E-1	Diving Up	Leak during upstroke.	Worn piston valve or packings.
	E-2	Diving Down	Leak during downstroke.	Worn intake valve.
	E-3	Low Battery	Battery voltage too low to stop runaway.	Low battery. Replace battery; see page 22.
	E-4	Service Component 1 (units with runaway protection only)	Problem with stopping runaway.	<ul style="list-style-type: none"> <li>Damaged solenoid.</li> <li>Damaged valve carriage.</li> <li>Runaway (RT, FIG. 4) protection may be enabled with pump that is not equipped with a runaway solenoid valve. Enter setup screen and disable runaway protection.</li> </ul>
	E-4	Disconnected Solenoid (units with runaway protection only)	Solenoid is disconnected.	<ul style="list-style-type: none"> <li>Solenoid unplugged.</li> <li>Damaged solenoid wires.</li> </ul>
			Solenoid is not engaging piston cup	<ul style="list-style-type: none"> <li>Bracket and solenoid not tight against air valve housing.</li> </ul>
	E-5	Service Component 2	Problem with sensing valve movement.	<ul style="list-style-type: none"> <li>Sensors unplugged.</li> <li>Sensors mounted incorrectly.</li> <li>Damaged sensors.</li> <li>Damaged valve carriage.</li> </ul>
	E-6	Blown Fuse	Fuse is blown. Replace fuse; see page 22.	<ul style="list-style-type: none"> <li>Faulty solenoid or solenoid wiring.</li> <li>Extreme temperatures (above 140°F [60°C]).</li> <li>Runaway (RT, FIG. 4) protection may be enabled with pump that is not equipped with a runaway solenoid valve. Enter setup screen and disable runaway protection.</li> </ul>

## Replace DataTrak Battery or Fuse

				
<p>To reduce the risk of fire and explosion, the battery and fuse must be replaced in a non-hazardous location.</p> <p>Use only an approved replacement battery, shown in TABLE 2, and an approved fuse, shown in TABLE 3. Use of an unapproved battery or fuse will void Graco's warranty and Intertek and Ex approvals.</p>				

- Remove two screws on back of module to access battery.
- Disconnect the used battery and replace with an approved battery. See Table 2.

Table 2. Approved Batteries
Energizer® brand alkaline # 522
Varta® brand alkaline # 4922
Ultralife® brand lithium # U9VL
Duracell® brand alkaline # MN1604

### Replace Battery

- Unscrew cable from the back of the reed switch assembly. See FIG. 6.
- Remove the cable from the two cable clips.

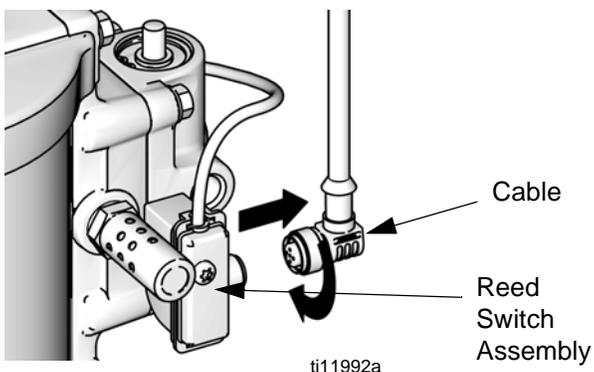


FIG. 6. Disconnect DataTrak

- Remove DataTrak module from bracket. See FIG. 7. Take module and attached cable to a non-hazardous location.

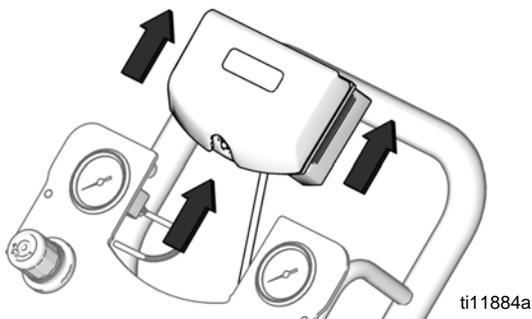


FIG. 7. Remove DataTrak

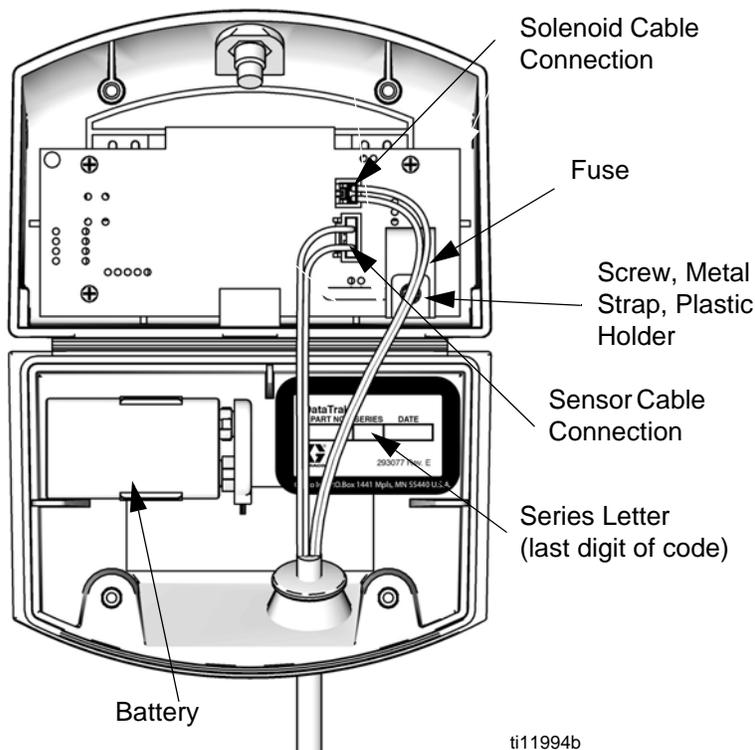
### Replace Fuse

1. Remove the screw, metal strap, and plastic holder.
2. Pull the fuse away from the board.
3. Replace with an approved fuse from Table 3.

<b>DataTrak Part Number</b>	<b>Series*</b>	<b>Fuse Required ‡</b>
289822	A or B	24C580
	C and later	24V216
All other part numbers	A	24C580
	B and later	24V216

\* FIG. 8 shows where to find the Series letter.

‡ Graco Part Numbers

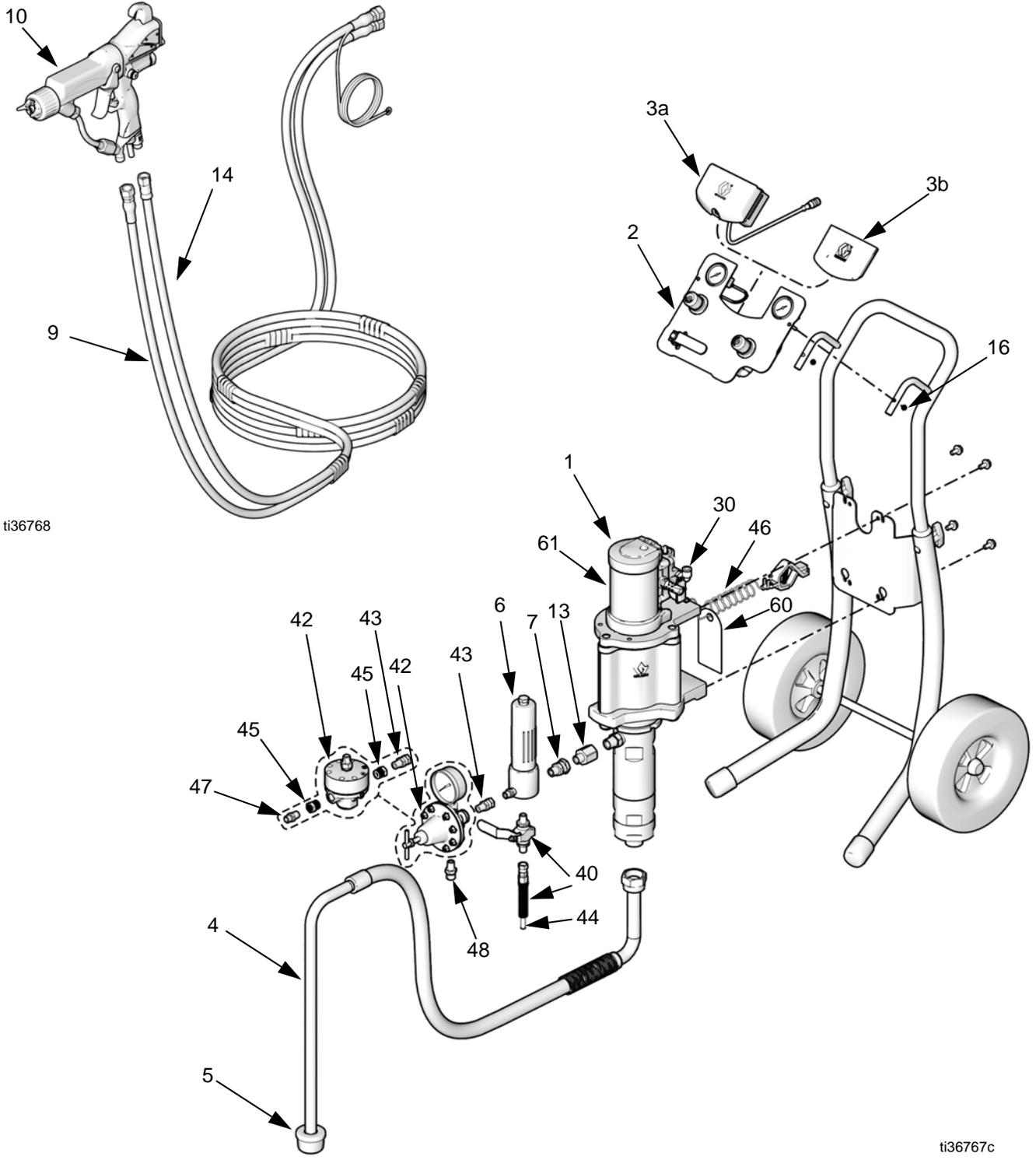


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**FIG. 8. DataTrak Battery and Fuse Location**

# Parts

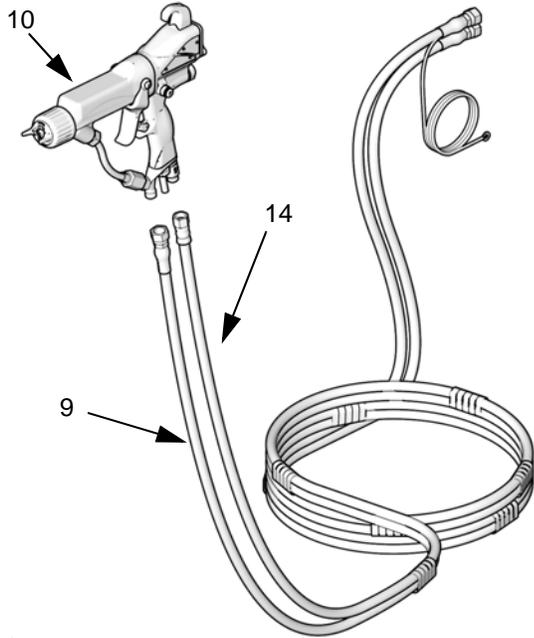
## Cart Mount



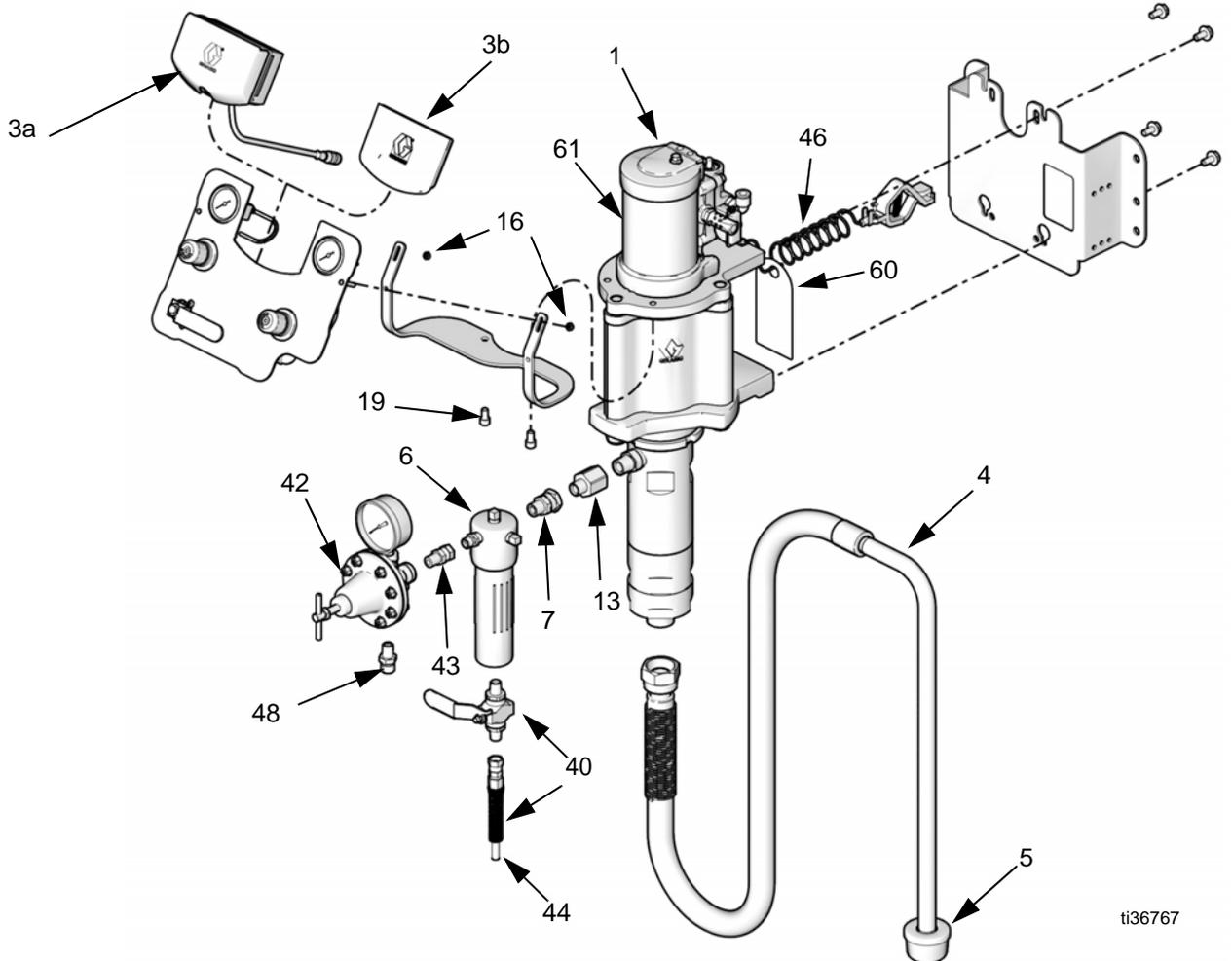
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# Wall Mount



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## Parts

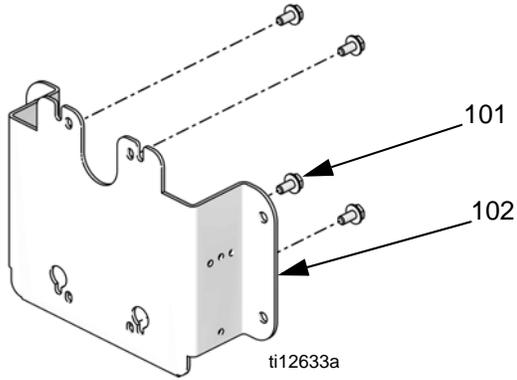
Ref	Part	Description	Qty
1	W03EAS W03EBS	ASSEMBLY, pump G03W11, G03W13, G03W17, G03W19, G03C11, and G03C13 G03W10, G03W12, G0C10, and G03C12	1
2	24E459	PANEL, air control, <i>see page 28</i>	1
3a	289822	DATATRAK, assembly; <i>see manual 313541</i>	1
3b	277794	INSERT, panel (included with Part 2)	1
4	24A231 24A232	HOSE, suction (includes Part 5) Cart Mount Wall Mount	1
5	256726	STRAINER, package of 10 (included with Part 4)	1
6	223160	FILTER, fluid (includes Part 7)	1
7	235208	FITTING, union, 3/8-18 npsm x 3/8-18 npt (included with Part 6)	1
9	235339 241812 24B562	HOSE, coupled, fluid 25 ft.(G03C10-G03C13) (G03W10-G03W13) 25 ft. (G03C17) 50 ft. (G03C19)	1
10	L60T10 L85T10	GUN, 60 KV ES (G03C10, G03C11) 85KV ES (G03C12, G03C13)	1
13	121237	ADAPTER, outlet, 3/8 nptm x 1/2 nptf	1
14	244965 244967 24N736 24N738	HOSE, coupled, gun air, grounded 25 ft. (G03C10-G03C13, G03C17) (G03W10-G03W13) (G03C19) 25 ft. (G03C17) 50 ft. (G03C19)	1

Ref	Part	Description	Qty
16	105332	NUT, lock, M5 x 0.08 (included with Part 49)	2
17	19A605	BRACKET, air controls, wall mount units	1
19	116940	SCREW, cap, sh, 5/16-18, wall mount units	1
30	121141	FITTING, swivel elbow, 3/8 t X 1/4 mnpt	1
36	112534	COUPLING, air (item is not shown; item is shipped loose) (G03W10-G03W13)	1
40	256425	KIT, drain valve G03C17, G03C19	
42	241976 234272	REGULATOR, pressure fluid G03C10-G03C13 G03W10-G03W13 G03C17, G03C19	1
43	17K624	FITTING, swivel, 1/4 npt, 316 sst	1
44	061132	DRAIN, hose	1
45	125214	BUSHING, 3/8" x 1/4" G03C17 and G03C19	2
46	238909	WIRE, grounding assembly	1
47	162453	FITTING, 1/4 npsm x 1/4 npt (G03C10-G03C13, G03C17, G03C19)	1
48	112494	NIPPLE (G03C04-G03C09)	1
60▲	290079	LABEL, safety, ground wire	1
61▲	15M302	LABEL, cover, motor	1

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

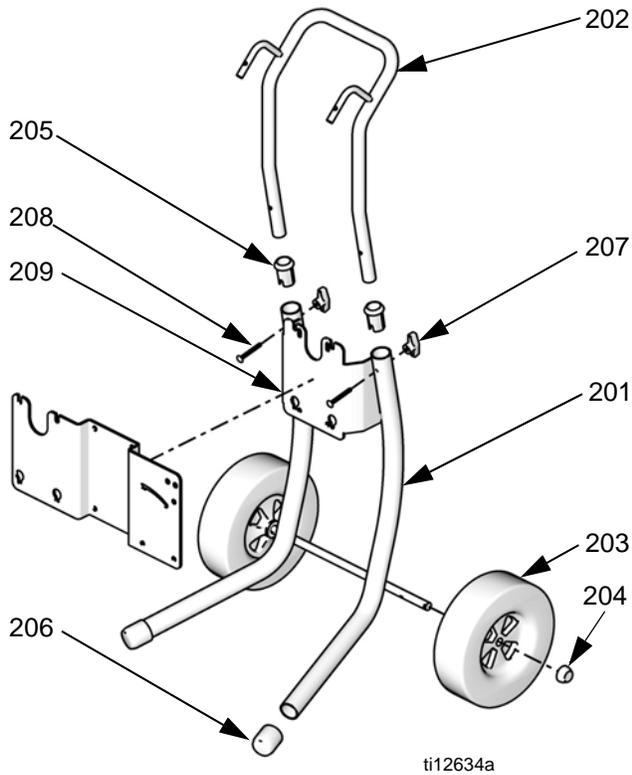
# Kits

## Wall Mount Kit 24A578 (non-Bellows)



Ref.	Description	Qty
101	SCREW, cap, M8 x 1.25	4
102	PLATE, wall mount	1

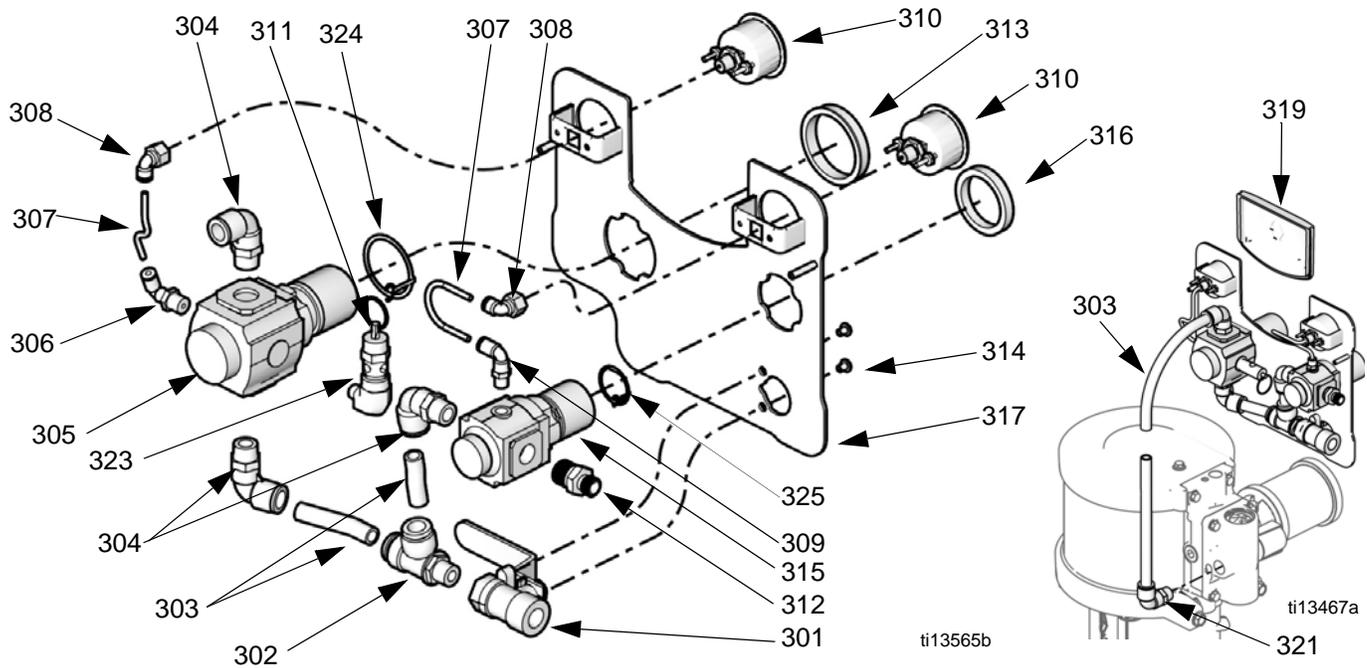
## Cart Mount Kit 256427 (non-Bellows)



Ref.	Part	Description	Qty
201	-----	CART, frame	1
202	-----	HANDLE, cart	1
203	119451	WHEEL, semi-pneumatic	2
204	119452	CAP, hub	2
205	-----	SLEEVE, cart handle	2
206	15C871	CAP, leg	2
207	115480	KNOB, t-handle	2
208	116630	SCREW, carriage	2
209	-----	BRACKET, heater, cart	1

----- Not sold separately.

# Pump and Gun Control Panel Kits



## Kit 24A581 and Kit 24A584

Ref.	Part	Description	Qty
301	114362	VALVE, ball	1
302	15T643	SWIVEL, tee, 3/8 npt(m) x 1/2T	1
303	-----	TUBE, 1/2 OD, cut to fit, order Tubing Kit 24D496	1.3 ft.
304	121212	ELBOW, swivel, 1/2T x 3/8 npt(m)	3
305	15T536	REGULATOR, air, pump, 3/8 npt	1
306	-----	ELBOW, swivel, 5/32 T x 1/4 npt	1
307	-----	TUBE, black, cut to fit, order Tubing Kit 24D496	4 in.
308	15T498	SWIVEL, 90°, 5/32T x 1/8 npt(f)	2
309	15T866	ELBOW, swivel, 5/32T x 1/8 npt	1
310	15T500	GAUGE, pressure	2
311	116306	VALVE, safety, 50 psi	1
312	164672	ADAPTER	1

Ref.	Part	Description	Qty
313	15T538	NUT, regulator	1
314	114381	SCREW, cap, button head	2
315	15T539	REGULATOR, air, gun, 3/8 npt	1
316	116514	NUT, regulator	1
317	-----	PANEL	1
319	-----	INSERT	1
320	105332	NUT, lock (not shown)	2
321	-----	ELBOW, 1/2T x 1/2 npt	1
322	-----	COVER, lens, 12 sticker sheet (not shown), order Kit 24A540 for 5 sheets	1
323	-----	ELBOW, 1/4 npt(f) x 1/8 npt(m)	1
324	24P814	RING, grounding	1
325	24P813	RING, grounding	1

----- Not sold separately.

## Air Controls Mounting Kit (non-Bellows)

Includes one mounting bracket (49), two lock nuts (16), and two hex head screws (51).

Kit	Packages
24E883	Air Controls Mounting Kit, Wall Mount

## DataTrak

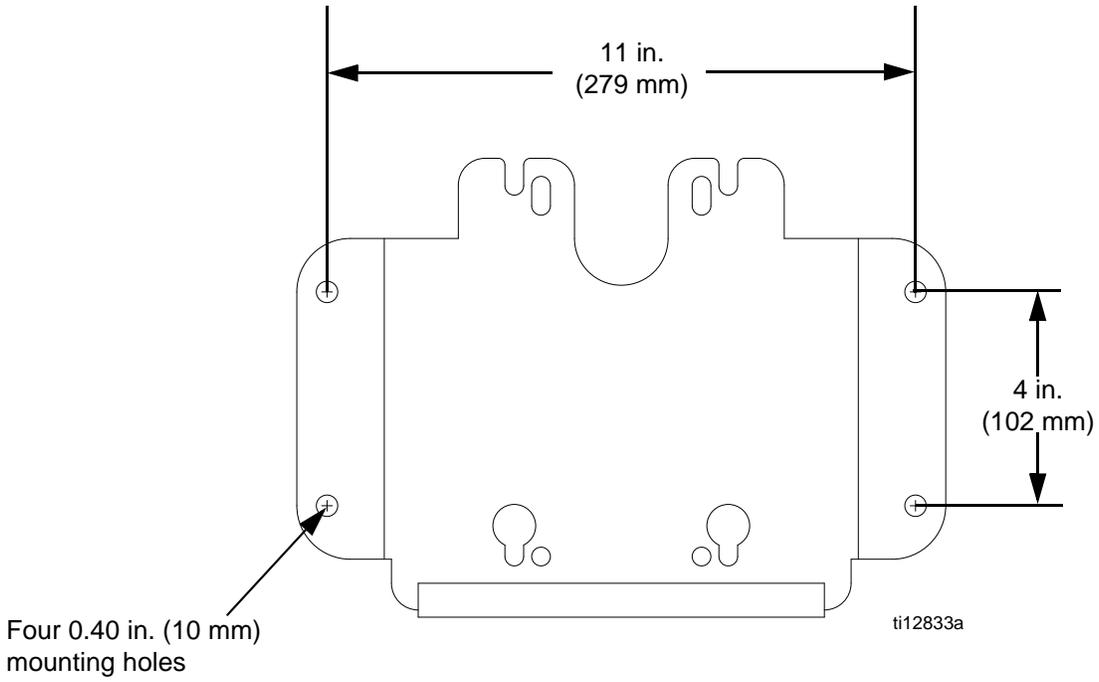
**NOTE:** See DataTrak manual, 313541, for all DataTrak related part numbers and kit information, including the reed switch and solenoid.

## Drain Valve Kit 256425

Includes drain valve (40), coupling, and hose.

# Mounting Dimensions

## Wall Bracket (Non-Bellows)



# Technical Specifications

<b>Merkur Electrostatic Airspray Packages</b>		
	<b>U.S.</b>	<b>Metric</b>
<b>Maximum Fluid Working Pressure</b>	100 psi	0.7 MPa, 7.0 bar
<b>Maximum Pump Air Inlet Pressure</b>	50 psi	0.34 MPa, 3.4 bar
<b>Maximum Gun Air Inlet Pressure</b>	100 psi	0.7 MPa, 7.0 bar
<b>Ratio</b>	3:1	
<b>Ambient Air Temperature Range</b>	35-120°F	2-49°C
<b>Maximum Operating Temperature</b>	120°F	49°C
<b>Sound Data</b>	See Technical Data in air motor manual 312796.	
<b>Wetted Parts (displacement pump)</b>	See manual 312792 (Merkur) or 312793 (Merkur Bellows).	
<b>Wetted Parts (spray gun)</b>	See manual 3A2494 (Pro Xp Electrostatic Air Spray Gun).	
<b>Wetted Parts (fluid hoses)</b>	nylon	
<b>Wetted Parts (suction assembly)</b>	stainless steel, nylon	
<b>Wetted Parts (fluid filter)</b>	See manual 307273 (Fluid Outlet Filter).	
<b>Wetted Parts (drain valve)</b>	stainless steel, nylon	

# 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.

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For patent information, see [www.graco.com/patents](http://www.graco.com/patents).

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Original instructions. This manual contains English. MM 3A7004

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