Parts **INSTRUCTIONS–PARTS LIST** **309127**

Rev. C

This manual contains important warnings and information.
READ AND KEEP FOR REFERENCE.

INSTRUCTIONS

GRACO

First choice when quality counts.™

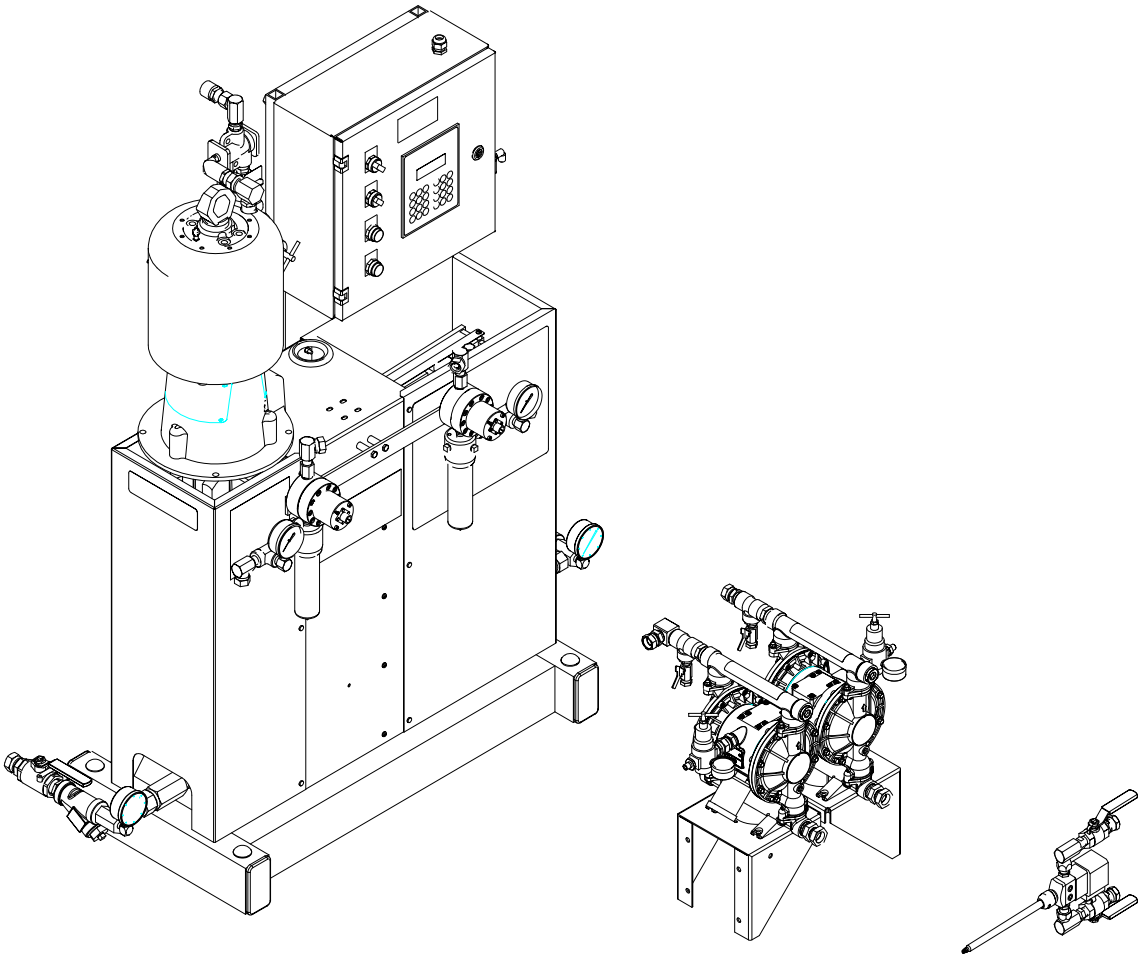
Variable Ratio Proportioner Package

LAMINATING ADHESIVE METER MIX DISPENSE SYSTEM

2000 psi (14 MPa, 140 bar) Maximum Fluid Working Pressure
120 psi (0.84 MPa, 8.4 bar) Maximum Air Input Pressure

Part No. 233039

Composed of: 243506 Dispense Valve Kit
243507 Husky Feed Pump Module
243536 Laminating Adhesive Pump and Control Module



GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440–1441

Graco Inc. is registered to I.S. EN ISO 9001

Table of Contents

List of Figures

List of Tables

Symbols

Warning Symbol

⚠ WARNING

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

Caution Symbol

⚠ CAUTION

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

⚠ WARNING

INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

Any misuse of the equipment or accessories, such as over pressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, can cause them to rupture and result in splashing in the eyes or on the skin, other serious injury, or fire, explosion or property damage.

- This equipment is for professional use only. Observe all warnings. Read and understand all instruction manuals, warning labels, and tags before you operate this equipment. If you are not sure, or if you have questions about installation or operation, call your Graco distributor.
- Never alter or modify any part of this equipment; doing so could cause it to malfunction.
- Read all instruction manuals, warnings, tags, and labels before operating the equipment.
- Check all equipment regularly and repair or replace worn or damaged parts immediately.
- Never exceed the recommended working pressure or the maximum air inlet pressure stated on your pump.
- Do not exceed the maximum working pressure of the lowest rated component in your system. This equipment has a 2000 psi (14 MPa, 140 bar) maximum working pressure at 120 psi (0.84 MPa, 8.4 bar) maximum incoming air pressure.
- Be sure that all fluids and solvents are chemically compatible with the wetted parts shown in the **Technical Data** section of the instruction manual for each component. Always read the manufacturer's literature before you use fluid or solvent in the pump.
- Never move or lift a pump under pressure. If dropped, the fluid section may rupture. Always follow the **Pressure Relief Procedure** on page 18 before you move or lift the pump.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not expose Graco hoses to temperatures above 82°C (180°F) or below –40°C (–40°F).
- Wear hearing protection when operating this equipment.
- Comply with applicable local, state, and national fire, electrical, and other safety regulations.
- Do not lift pressurized equipment.
- To reduce the risk of splashing fluid, follow the pressure relief procedure for your equipment before servicing.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly and result in serious injury.

⚠ WARNING

MOVING PARTS HAZARD

- Moving parts can pinch fingers.
- Keep clear of all moving parts when starting or operating the equipment.

TOXIC FLUID HAZARD

Improper handling of hazardous fluids or inhaling toxic vapors can cause extremely serious injury or death from splashing in the eyes, ingestion, or bodily contamination. Observe all the following precautions when you handle hazardous or potentially hazardous fluids.

- Know what fluid you are pumping and its specific hazards. Take precautions to avoid a toxic fluid spill.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.
- Store hazardous fluid in an appropriate, approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Secure the fluid outlet hose tightly into the receiving container to prevent it from coming loose and improperly draining the fluid.
- Provide adequate ventilation.
- Graco does not manufacture or supply any of the reactive chemical components that may be used in this equipment and is not responsible for their effects. Graco assumes no responsibility for loss, damage, expense or claims for personal injury or property damage, direct or consequential, arising from the use of such chemical components.

INJECTION HAZARD

Spray from the spray gun, hose leaks, or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Splashing fluid in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin might look like just a cut, but it is a serious injury. Get immediate medical attention.
- Do not point the gun/valve at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip/nozzle.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Do not ”blow back” fluid; this is not an air spray system.
- Check the gun diffuser operation weekly. Refer to the gun manual.
- Always have the trigger guard on the gun when dispensing.
- Be sure the gun/valve trigger safety operates before dispensing.
- Lock the gun/valve trigger safety when you stop dispensing.
- Follow the Pressure Relief Procedure on page 17 whenever you: are instructed to relieve pressure; stop spraying/dispensing; clean, check, or service the equipment; and install or clean the spray tip/nozzle.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn, damaged, or loose parts immediately. Do not repair high pressure couplings; you must replace the entire hose.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

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

- To reduce the risk of static sparking, ground the pump and all other equipment used or located in the work area. Check your local electrical code for detailed grounding instructions for your area and type of equipment. See **Grounding** on page 17.
- If you experience any static sparking or even a slight shock while using this equipment, **stop pumping immediately.** Check the entire system for proper grounding. Do not use the system again until you have identified and corrected the problem.
- If the diaphragm fails, the fluid is exhausted along with the air.
- Do not smoke in the work area. Do not operate the equipment near a source or ignition or an open flame, such as a pilot light.

United States Government safety standard have been adopted under the Occupational Safety and Health Act. You should consult these standards–particularly the General Standards, Part 1910, and the Construction Standards, Part 1926.

Scope

This instruction manual contains installation instructions, general operation instructions, and parts lists for your Variable Ratio Proportioner Package. Consult the appropriate component instruction manuals (see Table 2. Related Publications on page 9) for specific operating information.

Unpacking and Repacking

Your Variable Ratio Proportioner Package is carefully packaged in three boxes for shipment by Graco. One box contains the Laminating Adhesive Meter Mix Dispense System Pump and Control Module (Figure 1), the second box contains the Husky pump module with hoses (Figure 2), and the third box contains the dispense valve with hoses (Figure 3). When the package arrives, perform the following procedure to unpack the units:

1. Inspect the shipping boxes carefully for shipping damage. Contact the carrier promptly if damage is discovered.
2. Unseal the boxes and inspect the contents carefully. There should not be any loose or damaged parts.
3. Compare the packing slip against all items included in the box. Any shortages or other inspection problems should be reported immediately.
4. Store the boxes and packing materials in a safe place for future use. Graco recommends saving all packing materials in case the unit needs to be shipped again.
5. Contact your Graco distributor to arrange for support.

Repair and Repacking the Product

When the Variable Ratio Proportioner Package requires service, it is the purchaser's responsibility to have the unit repaired. As an option, the purchaser can have the unit repaired by an authorized Graco distributor. Contact your Graco distributor to make these arrangements.

Figure 1. Laminating Adhesive Meter Mix Dispense System Pump and Control Module 243936

Figure 2. Husky Feed Pump Module 243507

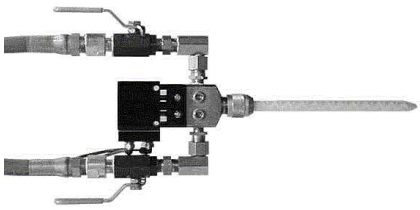


Figure 3. Dispense Valve 243506

Service

Service by an Authorized Graco Distributor

The Variable Ratio Proportioner Package can be serviced by an authorized Graco distributor. Contact your Graco distributor to make these arrangements. When packing the parts/system, perform the following steps:

1. Retrieve the original box and packing materials for shipment.
2. Place the Variable Ratio Proportioner Package component(s) and any loose or damaged parts in the same box used in the original shipment. Fill the box with filler material to minimize the possibility of damage.
3. Seal the box tightly to protect its contents and prevent shipping damage.
4. Insure your shipment for the proper replacement value of its contents.
5. Ship the Variable Ratio Proportioner Package component(s) freight prepaid to your authorized Graco distributor for service.

Installation

Recommended Parts

The following parts, or equivalent, are required for installation of your Variable Ratio Proportioner Package (See Table 1).

Table 1. Recommended Parts or Equivalent

Qty	Item	Manufacturer Address
2	Horizontal Drum Storage Rack PN 2W582	Grainger 724 South 3rd Street Minneapolis, MN 55415 612- 531-0300
2	Disposable Cartridge w/window PN 40451	WA Hammond Drierite Co. PO Box 460 Xenia, OH 45385 937- 376-2927
2	Drum Adapter with ¾" or 2" NPT P/N 50001	WA Hammond Drierite Co. PO Box 460 Xenia, OH 45385 937- 376-2927
2	2" Tubing w/90° quick couplers P/N AJH90-90-32–32X13"	Minnesota Flexible Corp. 803 Transfer Road St. Paul, MN 55114 800-351-9069
4	Polyprop Ball Valve 2"X2"QC P/N AJH30112-C-PP	Minnesota Flexible Corp. 803 Transfer Road St. Paul, MN 55114 800-351-9069
2	Polyprop Ball Valve 2"M X 2"F P/N AJH30112-A-PP	Minnesota Flexible Corp. 803 Transfer Road St. Paul, MN 55114 800-351-9069

Recommended Tools

Graco suggests having the following tools available for installation of your Variable Ratio Proportioner Package.

- 14" Adjustable wrench
- 8" Adjustable wrench

Related Publications

See Table 2 for related publications. These instruction forms are provided with the system in a binder (P/N 196162).

Table 2. Related Publications

Instruction Manual	Description
309000	2K Dispense Valve
308479	Husky Pump
307592	Senator Air Motor
308547	Relief Valve
307944	Displacement Pump
308168	Air Regulator
307273	Fluid Filter
309125	Ratio Monitoring System
308778	G3000 Gear Meter

About the Typical Installations

The Variable Ratio Proportioner Package is designed to proportion, mix, and dispense two–component fluids. The typical installation shown in Figure 4 and Figure 5 is only a guideline in setting up a complete dispensing system. For clarity, various components are shown in the correct order but may not be shown in the exact position of the installed system. For assistance in designing your system, contact your Graco distributor.

NOTE: When pressure feeding the proportioning pump, monitor the fluid pressure gauges located at the proportioning pump inlets to monitor proper adjustment of the feed pump pressures. Never exceed 25% of the Variable Ratio Proportioner Package outbound fluid pressure on the feed supply.

Installation

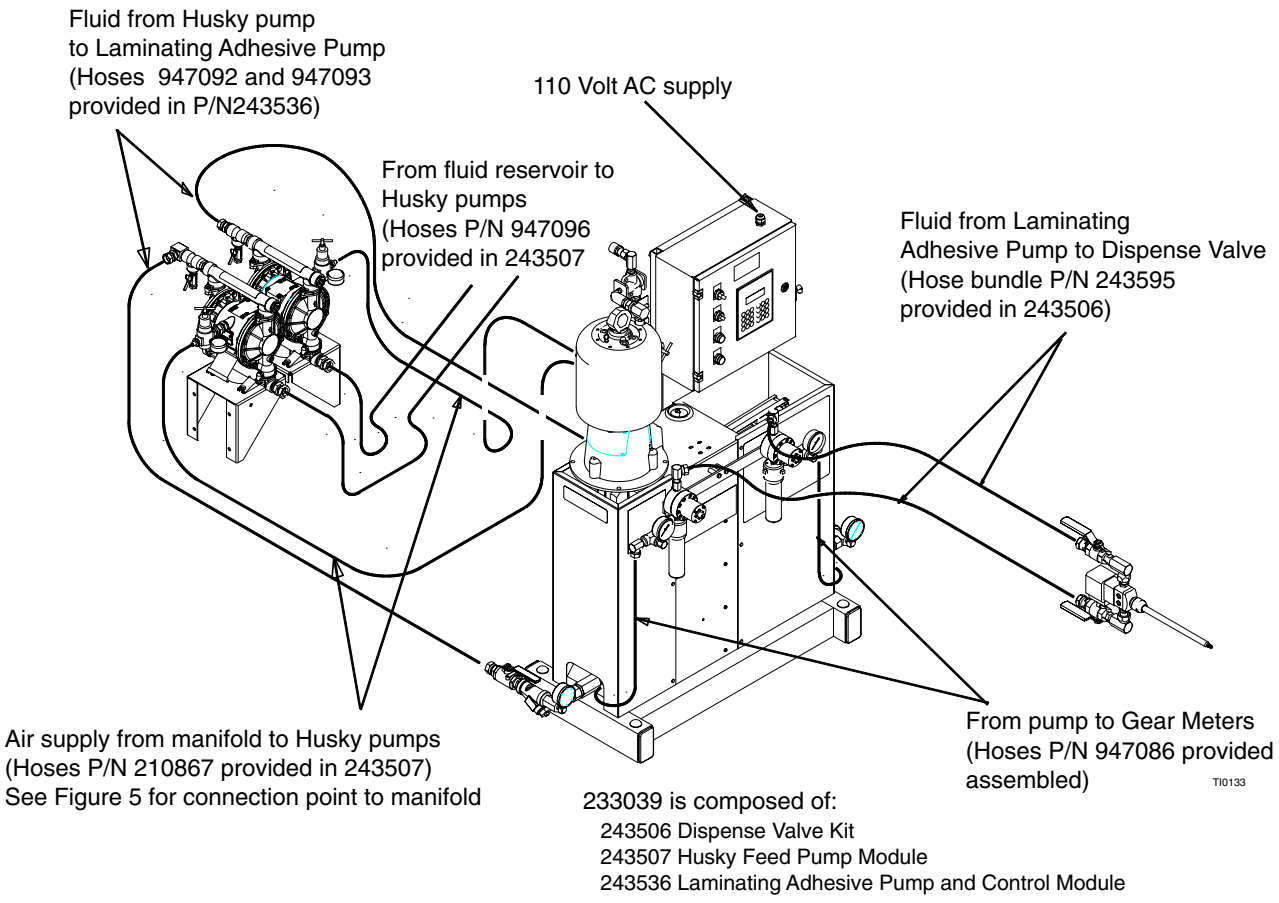


Figure 4. 233039 Typical Installation (Fluid Connections)

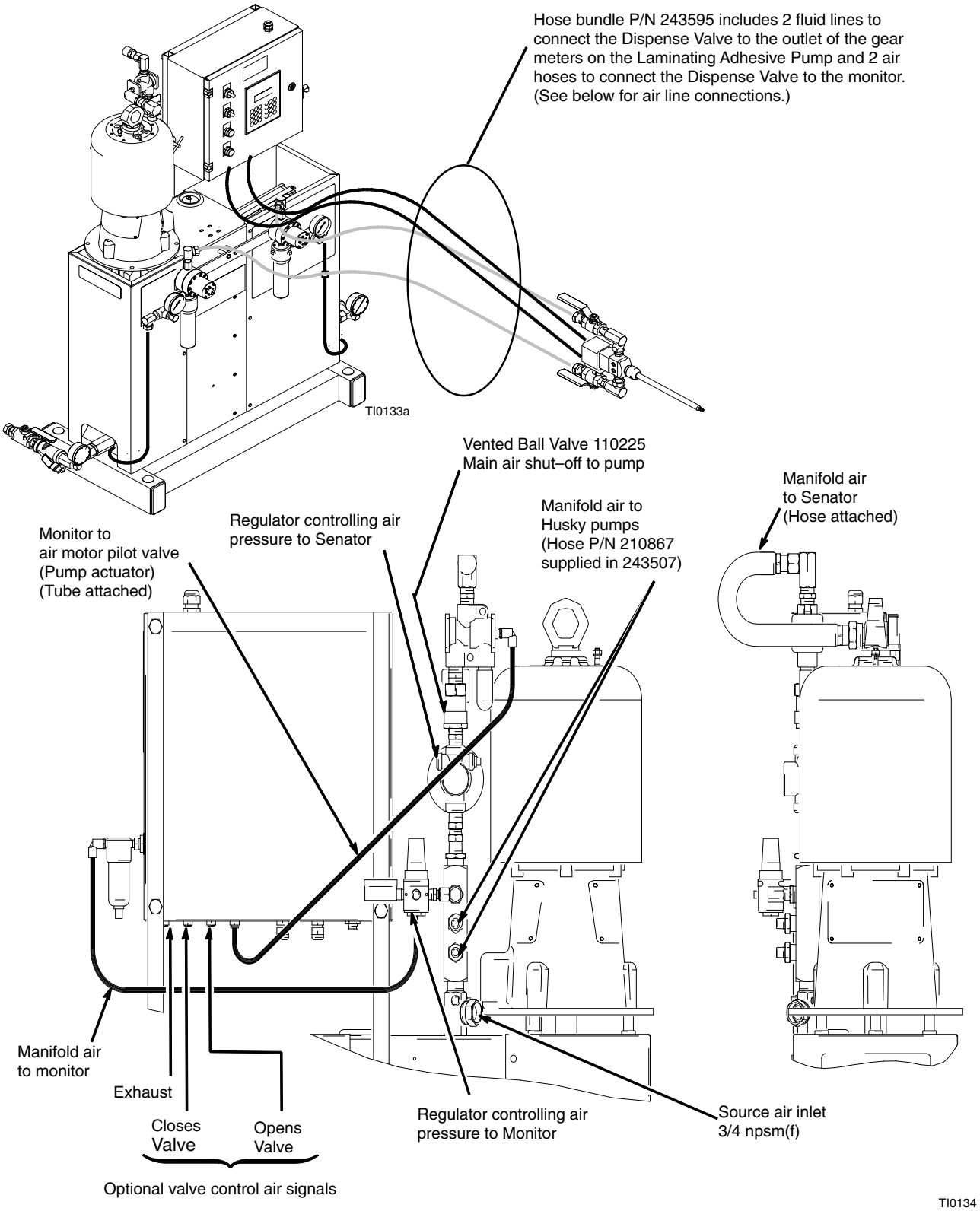


Figure 5. Typical Installation (Air Connections)

Optional Hoses

Optional hoses are listed in Table 3.

Table 3. Optional Hoses

Optional hoses from Husky's to Laminating Adhesive Pump	Length	Coupling	Max WPR	Part Number
Moisture–Lok Hose – 3/4" ID	6 foot	¾ npt (m)	1500 psi	947091
	10 foot	¾ npt (m)	1500 psi	947092
	15 foot	¾ npt (m)	1500 psi	947093
	25 foot	¾ npt (m)	1500 psi	947094
	50 foot	¾ npt (m)	1500 psi	947095
Optional hoses from Laminating Adhesive Pump to Gun	**Length**	**Coupling**	**Max WPR**	**Part Number**
Ref: Current hoses Moisture–Lok Hose – ½"ID	25 foot	1/2 npt (m)	2000 psi	947089
Teflon Hose – .308" ID	6 foot	3/8 npt (m)*	4000 psi	685600
	10 foot	3/8 npt (m)*	4000 psi	685601
	15 foot	3/8 npt (m)*	4000 psi	685602
	25 foot	3/8 npt (m)*	4000 psi	685603
Teflon Hose – .401" ID	10 foot	1/2 npt (m)	4000 psi	685604
Teflon Hose – .617" ID	6 foot	¾ npt (m)*	4000 psi	685605
	10 foot	¾ npt (m)*	1500 psi†	685606
	15 foot	¾ npt (m)*	1500 psi†	685607
	25 foot	¾ npt (m)*	1500 psi†	685608

* 3/8 npt and 3/4 npt couplings require additional fitting changes (applies to hose from unit to gun only).

† Pressure rating of system is normally 2000 psi. If these hoses are used, do not exceed 1500 psi (psi rating of hoses).

Installation

General Information

- The typical installation shown in Figure 4. **233039 Typical Installation (Fluid Connections)** is only a guide for installation.
- Contact your Graco distributor for assistance in planning installation to suit your needs.
- Always use Genuine Graco Parts and Accessories.

WARNING

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

1. Read **TOXIC FLUID HAZARD** on page 4.
2. Use fluids and solvents which are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.

Install the air line accessories in the source air supply line. Mount these accessories on the wall or on a bracket. Be sure the airline supplying the accessories is grounded.

Install the air line and accessories as follows:

1. Use a grounded, flexible air hose with a minimum of ½" (13 mm) ID. The source air inlet is 3/4 npsm(f).
2. You may install an air line quick disconnect between the line and the inlet.

NOTE: Do not connect the coupler to the fitting until you are ready to operate the pump.

3. Install an air line filter to remove harmful dirt and moisture from the compressed air supply.
4. Locate a bleed–type master air valve close to the pump and use it to relieve trapped air. **Read the accompanying WARNING.**

Installation

Mounting

WARNING

EQUIPMENT MISUSE HAZARD

The LAMINATION ADHESIVE Pump and Control Module weighs 385 lb. (174.6 kg.) and should never be moved or lifted by one person. To prevent equipment damage or personal injury, engage an adequate number of personnel and use support devices, if necessary, such as a forklift, hand truck, and hoist when moving and installing the LAMINATION ADHESIVE Pump and Control Module.

Mount Laminating Adhesive Pump and Control Module (243536)

The laminating adhesive pump and control module consists of a pump and control. For more information about the air motor, refer to Instruction Manual 307592. For more information about the pump, refer to Instruction Manual 307944. For more information about the control module/monitor, refer to Instruction Manual 309125.

Position the laminating adhesive pump and control module in a suitable location on a flat floor positioner.

WARNING

The pump exhaust air may contain contaminants. Ventilate area if the contaminants could affect your fluid supply. See Air Exhaust Ventilation on page 17.

Mount Floor Stand Pumps (243507)

Two Husky double diaphragm pumps are mounted on a floor stand as shown in Figure 2. For more information about the pumps, refer to Instruction Manual 308479.

Position the Husky pump module in a suitable location. Ensure the distance between the Husky module and the pump and control module is sufficient to prevent any sharp bends or kinks in the hoses.

Fluid Inlet Lines

Attach hoses to the fluid inlet ports as shown in Figure 4).

- Use hoses part number 947096 (6’ X 1” ID).
- Husky fluid inlets are 1“ NPSM female fittings.
- Do not pressure feed pumps; diaphragm life will be shortened.

Fluid Outlet Lines

Attach hoses as shown in Figure 4.

- Use hoses part number 947092 (10‘ X ¾“ID) and 947093 (15‘ X 3/4“ID) between inlets to the laminating adhesive pump and the outlets to the Husky pump.
- Husky fluid outlets are 3/4“ NPSM female fittings.

NOTE: Elbow (23, page 30) installed at both outlet ports is optional.

Mount Dispense Valve (243506)

The hose bundle attached to the dispense valve contains two fluid lines with ½ NPT(m) ends and two air lines for triggering the valve. Mount dispense valve 243506 where desired and connect the hoses as follows:

1. Attach the fluid lines to the outlet ports at meters as shown in Figure 4.
2. Attach the air lines to the ports on the control box as shown in Figure 5.

Installation

Mount Barrel Stand

Mount the barrel stand as follows:

1. Position the barrel stand (see Table 1. Recommended Parts or Equivalent) in a suitable location. Ensure the distance between the Husky pump module and the barrels is sufficient to prevent any sharp bends or kinks in the hoses.

NOTE: Both ports on the lid of each bottom barrel must be 2” NPT (see Figure 6). Top barrels must have a 2” NPT port towards the bottom and the port at the top can be either 2” NPT or 3/4” NPT.

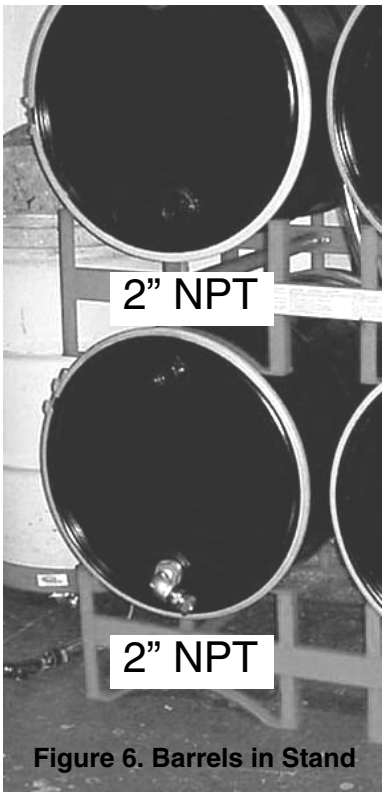


Figure 6. Barrels in Stand

Installation

2. Install a Polypropylene Ball Valve 2”X2”QC (A) (see Table 1. Recommended Parts or Equivalent, Figure 9 and Figure 7) at the bottom of each drum to be placed on top of the barrel stand.

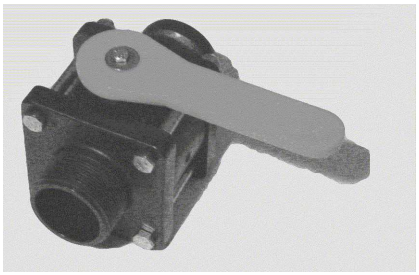


Figure 7. Polypropylene Ball Valve

3. Install a Polypropylene Ball Valve 2”X2”QC (A)(see Figure 9) at the top port of the drums to be placed on the bottom of the barrel stand.
4. Install a Polypropylene Ball Valve 2”M X 2”F (B)(Figure 10) at the bottom port of the drums to be placed on the bottom of the barrel stand.

NOTE: Verify all valves are closed.

5. Install the four drums in the barrel stand.
6. Install two Disposable Cartridges (see Table 1. Recommended Parts or Equivalent) as shown in Figure 8, at the top port of each top drum.

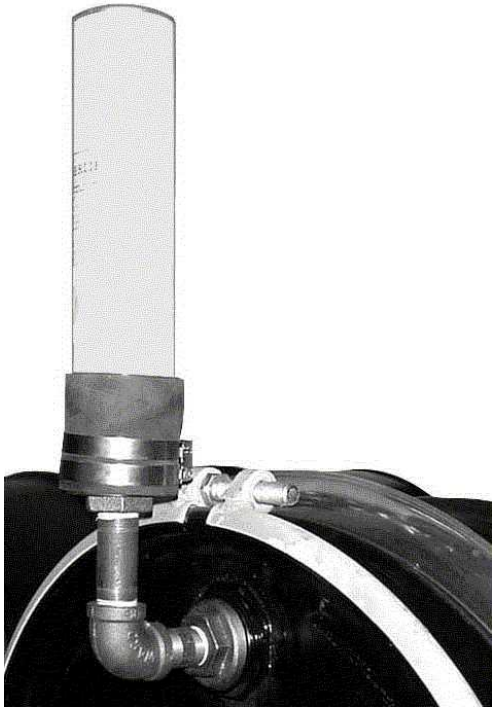


Figure 8. Disposable Cartridge with Window

7. Install a 2” Tubing w/90° quick coupler (see Table 1. between each top and bottom barrel as shown in Figure 9.

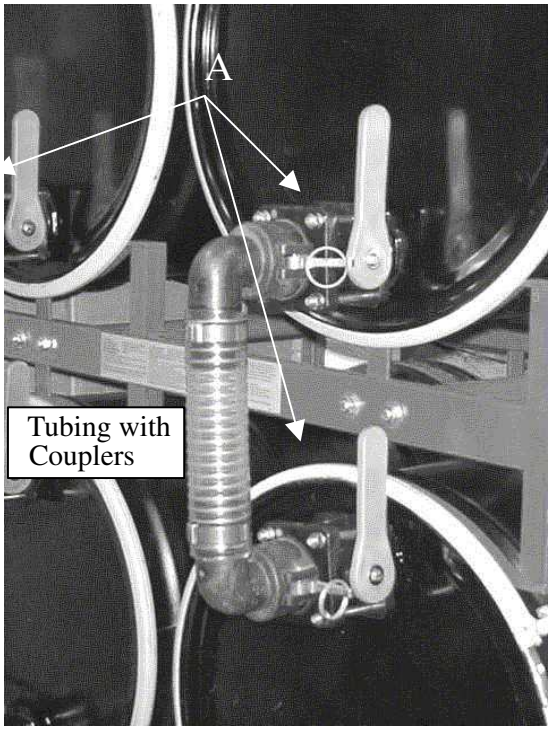


Figure 9. 2” Tubing Between Barrels

8. Install fittings (100467, 160022, and 102283) on valves of bottom barrels as shown in Figure 10 for connection to the inlet hose from the Husky pump (947096)

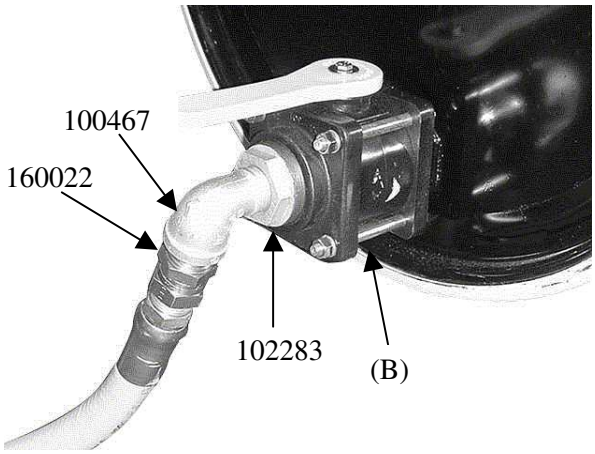


Figure 10. Bottom Barrel Fittings

Installation

Grounding

WARNING

FIRE AND EXPLOSION HAZARD
This pump must be grounded. Before operating the pump, ground the system as explained below. Also, read the section **FIRE OR EXPLOSION HAZARD** on page 5.

Attaching the ground wire to the grounding connector will ground the air motor and the wetted parts.

US Code (NFPA 77 Static Electricity) recommends a conductivity greater than 50 x 10^{-12} Siemans/meter (mho/meter) over your operating temperature range to reduce the hazard of fire. Consult your fluid supplier to determine the conductivity or resistivity must be less than 2 x 10^{-12} ohm–centimeters.

Note: When pumping conductive flammable fluids, *always* ground the fluid system. See the WARNING above.

Ground all of this equipment:

Pump: See See Table 2 for related publications. These instruction forms are provided with the system in a binder
(P/N 196162).

- *Air and fluid hoses:* Use only electrically conductive hoses.
- *Air compressor:* Follow manufacturer's recommendations.
- *Spray gun/dispense valve:* Ground through connection to a properly grounded fluid hose and pump.
- *Fluid supply drum:* Follow your local code.
- *All solvent pails used when flushing:* Follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.
- *Maintain grounding continuity when flushing or relieving pressure:* Hold a metal part of the spray gun/dispense valve firmly against the side of a grounded METAL pail, then trigger the gun/valve.

Air Exhaust Ventilation

WARNING

TOXIC FLUID HAZARD

Read the **USING HAZARDOUS FLUIDS** on page 3 and **FIRE AND EXPLOSION HAZARD** on page 5 before you operate this pump.

Diaphragm failure will cause the fluid being pumped to exhaust with the air.

Operation

Pressure Relief Procedure

WARNING

PRESSURIZED EQUIPMENT HAZARD
The equipment stays pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid, accidental spray from the gun or splashing fluid, follow this procedure whenever you

- Are instructed to relieve the pressure
- Stop pumping
- Check, clean, or service any system equipment
- Install or clean fluid nozzles

1. Using the vented ball valve (Figure 5. **Typical Installation (Air Connections)**), shut off the air to the pump.
2. Open the dispensing valve, if used.
3. Open the fluid drain valve to relieve all fluid pressure, having a container ready to catch the drainage.

Flushing the System Before First Use

CAUTION

Do not allow the pump to run dry. It will quickly accelerate to a high speed, causing damage. If your pump is running to fast, stop it immediately and check the fluid supply. If the container is empty and air has been pumped into the lines, refill the container and prime the pump and the lines, or flush and leave it filled with a compatible solvent. Eliminate all air from the fluid system.

The system was tested in 10W oil. If the oil could contaminate the fluid you are pumping, flush the system thoroughly with a compatible solvent.

NOTE: Flush the mixer, hose and gun/valve often enough to prevent fluid from reacting or curing in them. Contact your fluid manufacturer for the effective pot life of the fluid you are using.

1. Put the pump intake hoses of the feed pumps into 5 gallon (20 liter) containers of compatible solvent. Refer to the fluid manufacturer's recommendations.
2. Start the pump.
3. Do not install the spray tip/nozzle yet. Hold a metal part of the gun/valve firmly to the side of a grounded metal pail. Using the lowest possible fluid pressure, trigger the gun/valve into the pail.
4. When clean solvent comes from the gun/valve, release the trigger and carefully check all connections in the system for leaks.
5. Take the hoses out of the solvent and trigger the gun/valve until all solvent has been pumped out of the hoses.

Operation

Starting and Adjusting the System

WARNING

To reduce the risk of injuring or amputating a hand, fingers or other body parts, never place your hands or any part of your body or any tools inside the safety panel at any time, for any reason, while the unit is operating.

WARNING

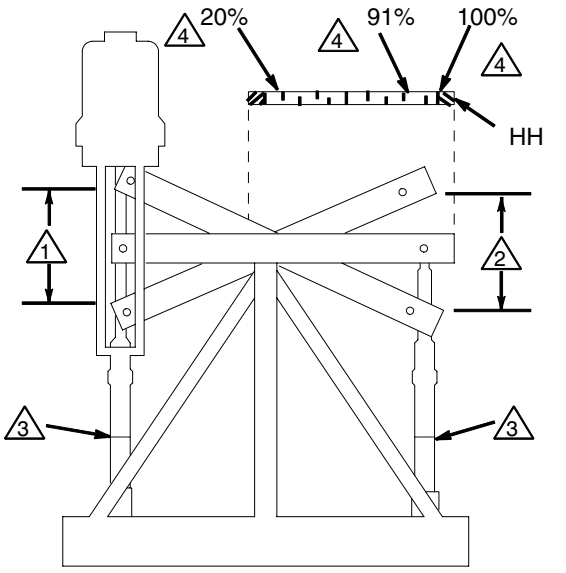
TOXIC FLUID HAZARD
Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed. always follow the **Pressure Relief Procedure** on page 18 before lifting the pump.

For operating instructions for each component in the system, please reference the appropriate manuals noted in Table 2. Related Publications.

Set the Ratio

Figure 11 shows the relationship between the primary pump and the secondary pump.

NOTE: The (91) index setting provides equal primary and secondary pump stroke lengths. 100 is 1.1 times the primary pump stroke, allowing adjustability on both sides of the nominal ratio setting of 91. The same primary and secondary pump models are used and a 91 setting will give a 1:1 ratio.



KEY
HH Lever Arm Index

1 Primary Stroke – 4” (102 mm)
2 Secondary Stroke
3 Effective Area
4 Index Setting

Figure 11. Index Setting

Relationship Between Primary and Secondary Pump

Moving the secondary pump closer to the primary pump (to a lower index setting) reduces the secondary stroke length, reducing its fluid output. Moving the secondary pump further from the priming pump (to a higher index setting) increases the secondary stroke length, which increases its fluid output.

Calculate the Ratio Setting

Example:

A 3:1 ratio of base to catalyst is required.

Since the primary and secondary pumps are identical, determine the base to catalyst (index) setting by dividing 91 (the nominal ratio setting) by 3 (the required ratio)

$$91 \div 3 = 30.3.$$

NOTE: The ratio index is only a reference point and ratio checks must be performed to qualify the exact ratio set desired.

Operation

Setting the Secondary Pump(s)

The numbers of the pump settings, calculated from the procedures in the section, Calculate the Ratio Setting, correspond to the scale numbers on the lever arm (49) of the VRHC. See Figure 12.

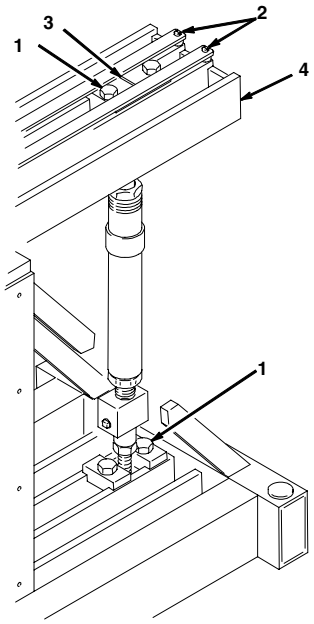


Figure 12. Secondary Pump

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 18 before lifting the pump.

1. Relieve the pressure.
2. Flush the unit as instructed on page 18 before setting the pump.
3. Remove the safety panel.
4. Loosen the four capscrews (16) holding the secondary pump(s) in place.
5. Open the fluid outlet and lift or push the lever arm to the horizontal position.
6. Move the secondary pump so that the line on the index clamp (30) is at the desired setting on the scale (26).
7. With the secondary pump as vertical as possible, tighten the four screws (16) to 50 ft–lb (78 N.m).
8. Replace the safety panel.

System Shutdown

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 18 before lifting the pump.

At the end of the work shift, relieve the pressure.

Short Term Shut–down

1. Using the vented ball valve (Figure 5. **Typical Installation (Air Connections)**), shut off the compressed air supply.
2. Relieve the system of pressure by opening the dispense valve or fluid valve. Have a container ready to catch the overflow.

Lubrication

CAUTION

Lubrication of the pump is not required. Oil is exhausted through the muffler, which could contaminate your fluid supply or other equipment. Excessive lubrication can also cause the pump to malfunction.

Flushing and Storage

Flush the system often enough to prevent the fluid you are pumping from curing, drying, or freezing in the system and damaging it. Follow the **Pressure Relief Procedure** on page 18 before storing it for any length of time. Use a compatible solvent.

Long Term Shut–down

1. Flush out system thoroughly.
2. Leave compatible solvent in the system.
3. Shutoff the compressed air supply to the system.
4. Relieve the system of pressure.

Operation

Tightening Threaded Connections

1. Before each use, check all hoses for wear or damage, and replace as necessary.
2. Check to be sure all threaded connections are tight and leak–free.
3. Check and re–torque all threaded connections at least every two months.

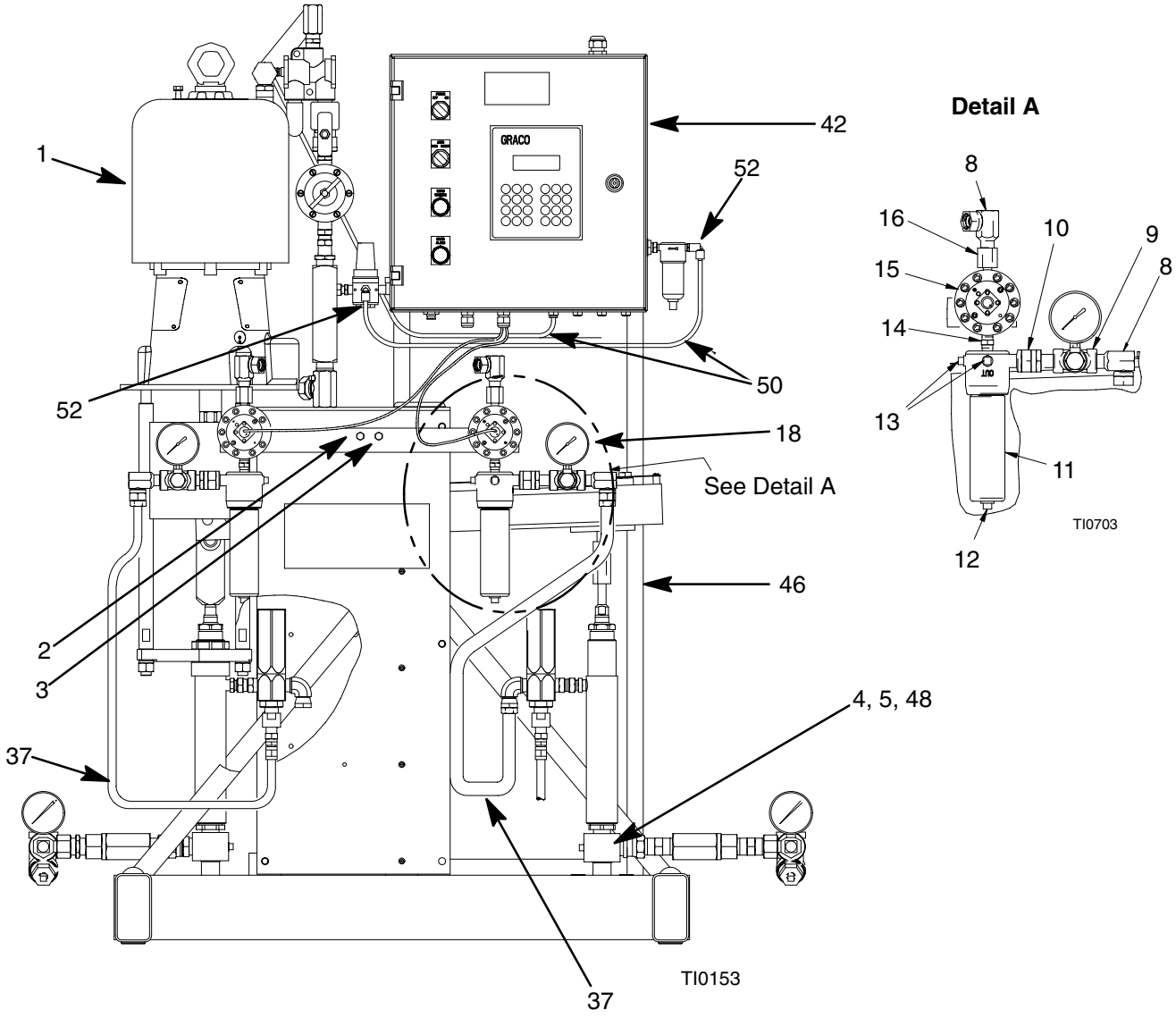
Preventive Maintenance Schedule

- Establish a preventive maintenance schedule, based on the service history of the system.
- Periodically clean the internal air filter on the air inlet of the pump.

Notes

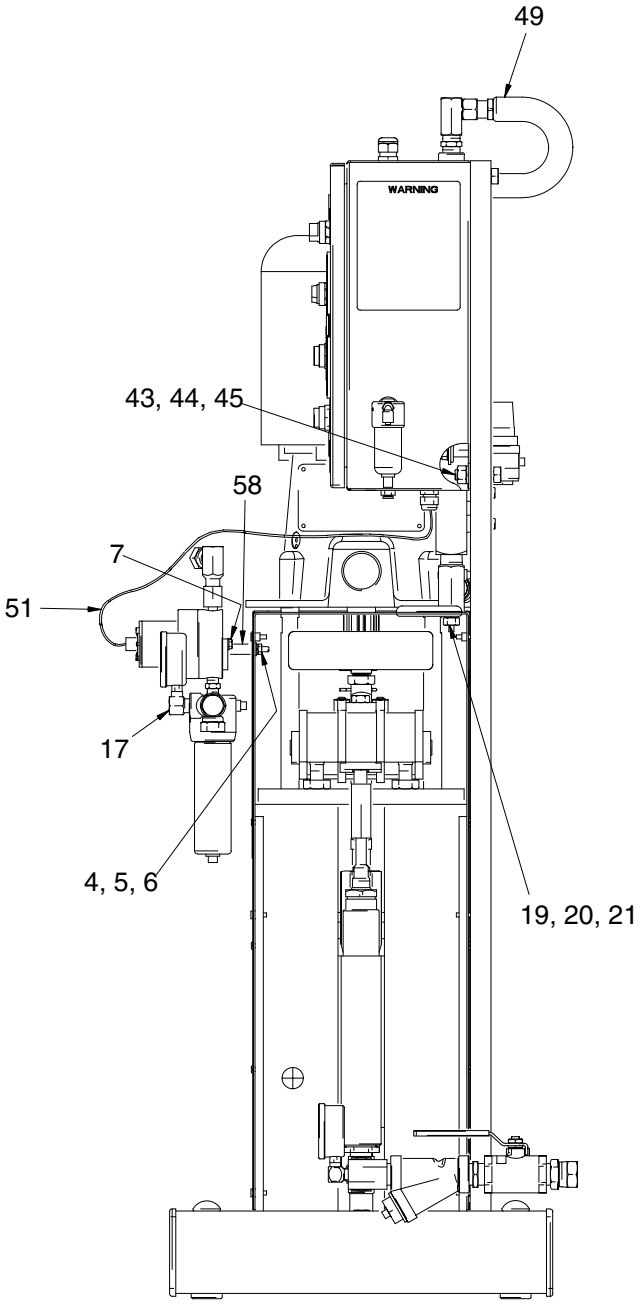
Parts

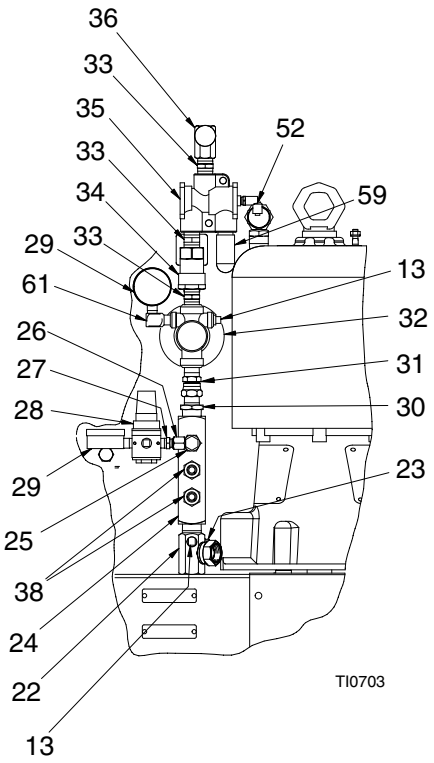
Laminating Adhesive Pump and Control Module 243536



Parts

Laminating Adhesive Pump and Control Module 243536





Parts

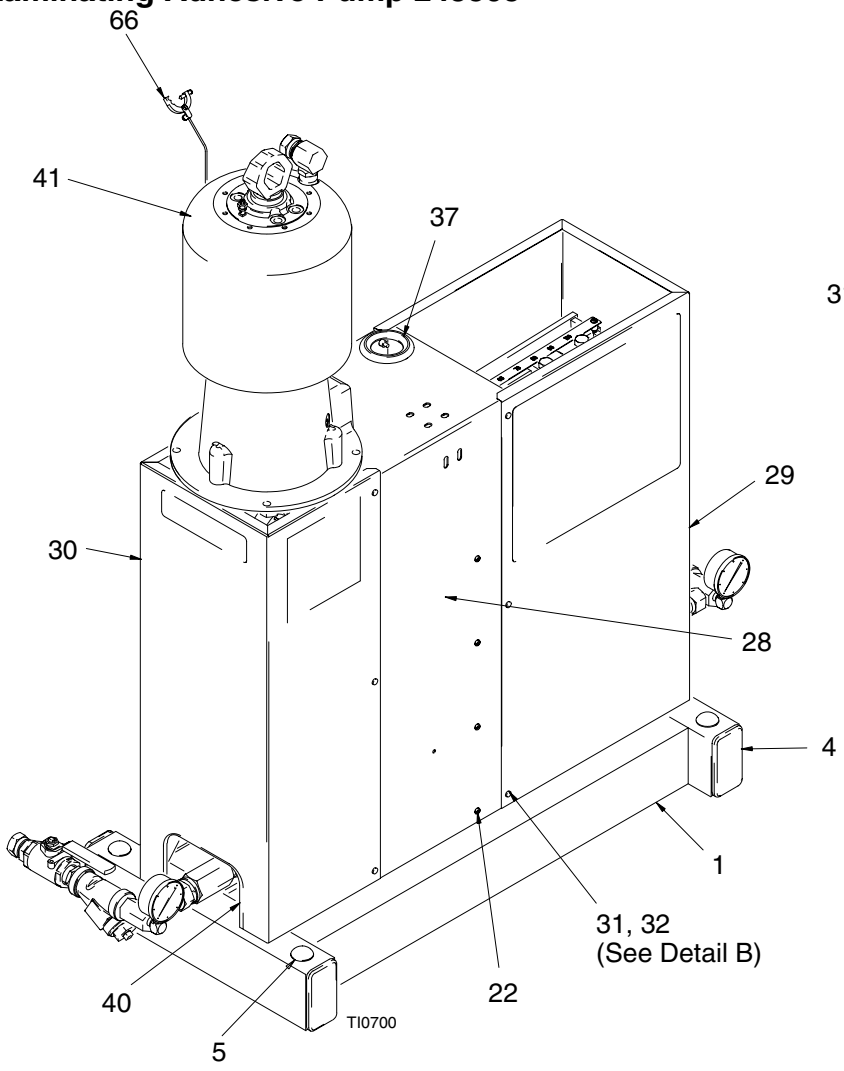
Laminating Adhesive Pump and Control Module 243536

Ref. No.	Part No.	Description	Qty.
1	243505	PUMP MODULE, laminating adhesive	1
2	626458	BRACKET, VRHC	1
3	104429	SCREW, cap, hex hd	2
4	110755	WASHER, plain	3
5	100016	WASHER, lock	3
6	100015	NUT, hex, mscr	2
7	114182	SCREW, machine, hex flange hd	4
8	217430	UNION, swivel, 90°	4
9	100483	TEE, pipe	2
10	949709	VALVE, check; 3/8 mbe	2
11	218029	FILTER, fluid	2
		See manual 307273	
12	100040	PLUG, pipe	2
13	100509	PLUG, pipe	6
14	156971	NIPPLE, short	2
15	239716	METER, gear, G3000	2
		See manual 308778	
16	150287	COUPLING	2
17	164259	ELBOW, street	2
18	102814	GAUGE, press, fluid	2
19	100132	WASHER, flat	1
20	100133	WASHER, lock	1
21	100131	NUT, full, hex	1
22	207675	MANIFOLD, air	1
23	100403	PLUG, pipe	1
24	601950	MANIFOLD, air supply	1
25	100206	BUSHING, pipe	1
26	155541	UNION, swivel, 90°	1
27	162453	NIPPLE	1
28	111804	REGULATOR, air	1
29	101180	GAUGE, press	2
30	157191	FITTING, adapter	1
31	156684	UNION, adapter	1
32	206197	REGULATOR, air	1
		See manual 308168	
33	158491	FITTING, nipple	3
34	110225	VALVE, vented, 2–way	1
35	104632	VALVE, piloted	1
36	157416	UNION, swivel, 90°	1
37	947086	HOSE, coupled; 6’; moist–Lok	2
38	162449	FITTING, nipple, reducing	2
42	233061	MONITOR, ratio	1
		See manual 309125	
43	100060	SCREW, cap, hex hd	4
44	100321	NUT	4
45	100018	WASHER, lock, spring	4
46	626796	FRAME	1
48	100058	SCREW, cap, hex hd	1
49	214952	HOSE, coupled	1
50	503128	TUBE; polyethylene; 1/4 OD	5.5’
51	241799	CABLE ASSY.	2
52	597151	FITTING, elbow	3
54*	947092	HOSE, coupled; 10’; moist–lok	1
55*	947093	HOSE, coupled; 15’; moist–lok	1
58	188622	SPACER	2
59	512912	MUFFLER; polyethylene; 1/2 npt	1
61	187357	ELBOW, street	1

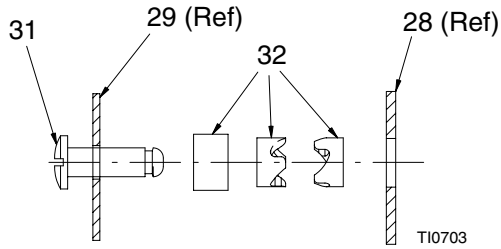
* Not shown

Parts

Laminating Adhesive Pump 243505

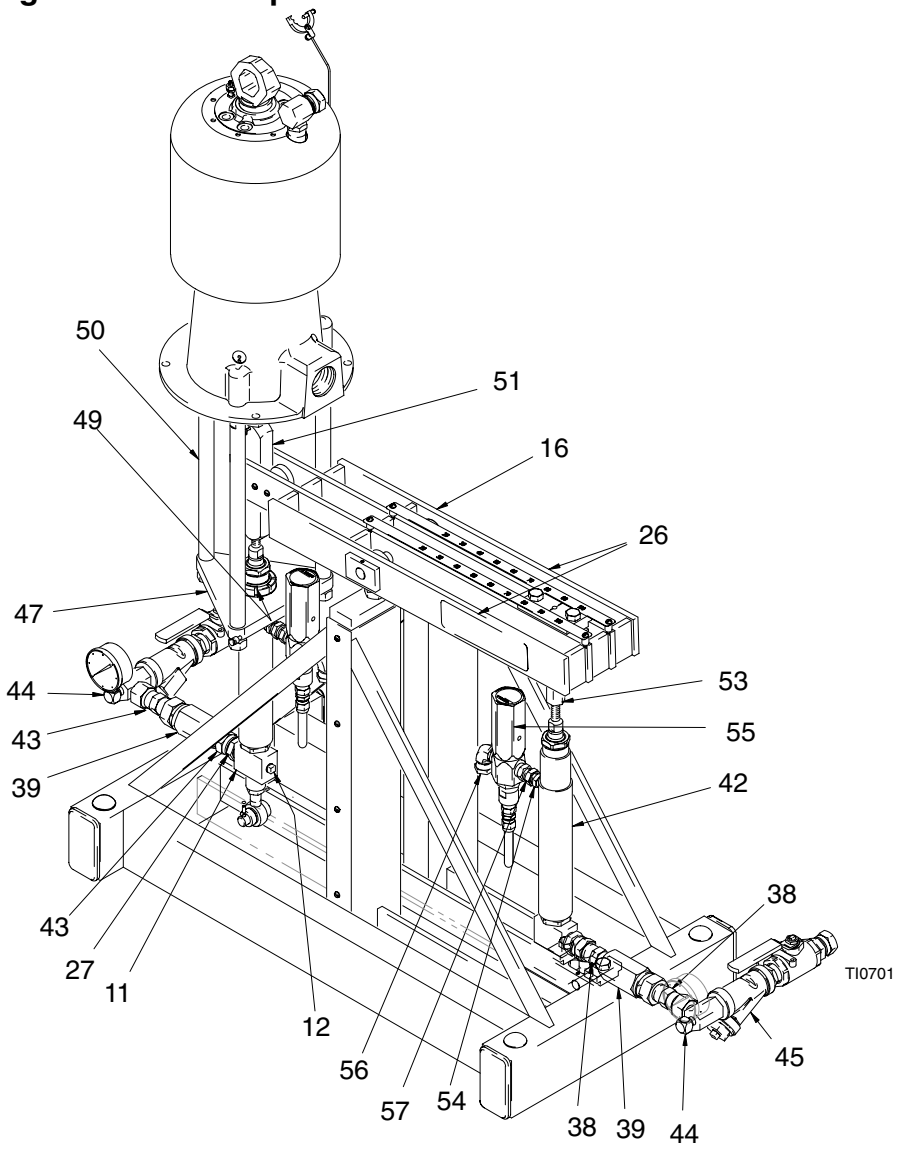


Detail B



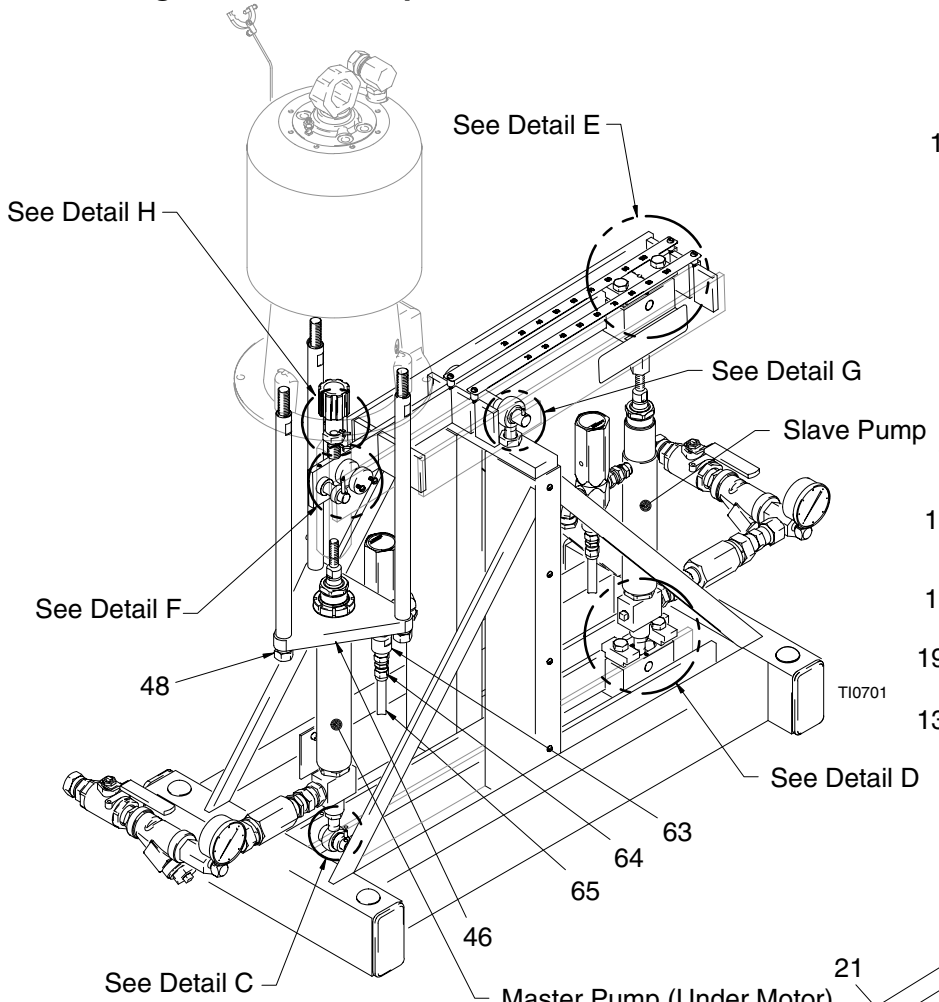
Parts

Laminating Adhesive Pump 243505

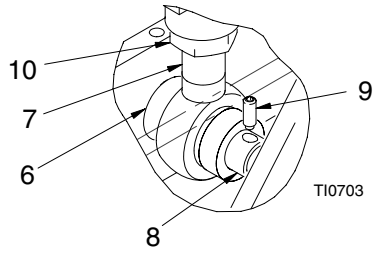


Parts

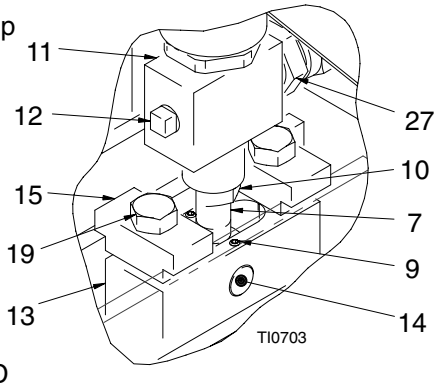
Laminating Adhesive Pump 243505



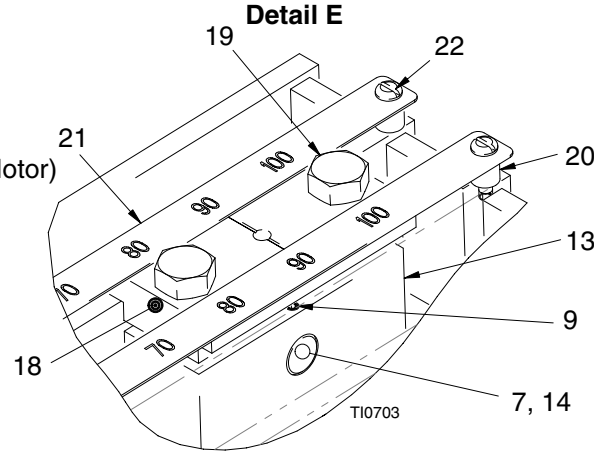
Detail C



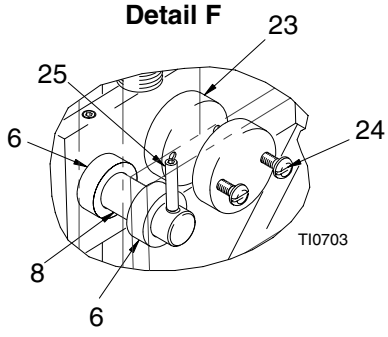
Detail D



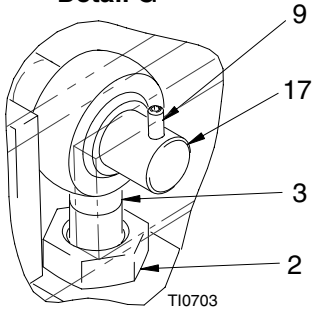
Detail E



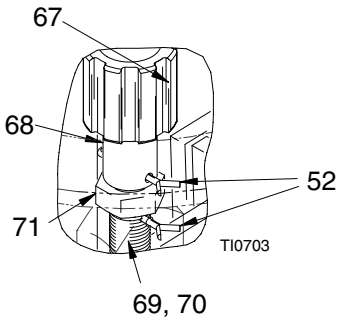
Detail F



Detail G



Detail H



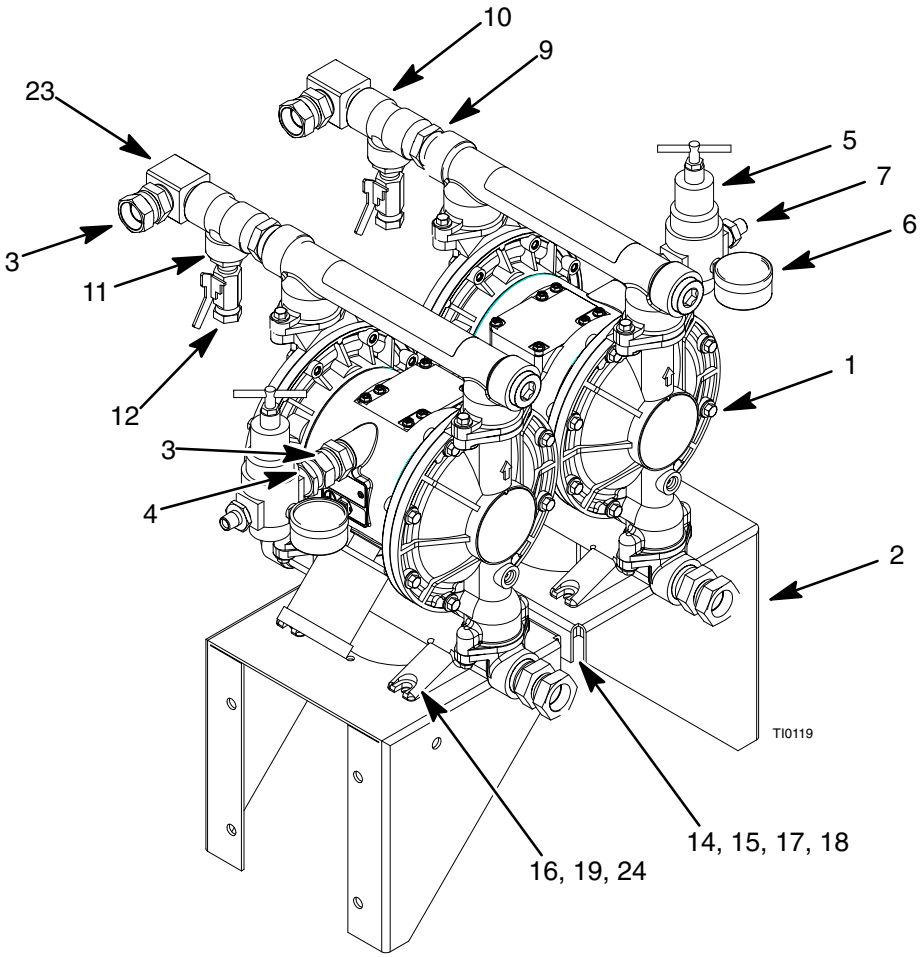
Parts

Laminating Adhesive Pump 243505

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	215665	FRAME	1	38	175013	NIPPLE, pipe	2
2	100071	NUT, hex	2	39	116293	VALVE, check	2
3	105752	BEARING, rod end	2	40	062035	CHANNEL; rubber	2.4’
4	189559	CAP, end	4	41	217540	MOTOR, air	1
5	101747	PLUG, button	4			See manual 307592	
6	177086	SPACER	4	42	239388	PUMP, displacement	2
7	105751	BEARING, rod end	3			See manual 307944	
8	177107	SHAFT, pivot, pump	2	43	160032	NIPPLE	2
9	105762	SCREW, set, hex	8	44	100840	ELBOW, street	2
10	100155	NUT	2	45	244356	KIT, installation	1
11	177101	MANIFOLD, inlet	2	46	623920	SPACER, tie plate	1
12	100509	PLUG, pipe	2	47	625436	PLATE, tie	1
13	177100	SUPPORT, pivot pin	2	48	101712	NUT, lock	3
14	177106	SHAFT, pivot housing	2	49	164417	NUT, lock	1
15	177089	CLAMP, top	2	50	623919	ROD, tie	3
16	215664	FRAME, pivot	1	51	623917	ROD, connecting	1
17	177105	SHAFT, pivot, frame	1	52	100103	PIN, cotter	2
18	177099	CLAMP, top	1	53	177113	ROD, connecting	1
19	100060	SCREW, cap, hex hd	4	54	162485	NIPPLE, adapter	2
20	159463	SPACER	4	55	237062	VALVE, relief	2
21	177042	GAUGE, designation	2			See manual 308547	
22	103836	SCREW, machine, bdg hd	12	56	C19024	FITTING, elbow, swivel	2
23	177108	PLATE, wear	2	57	158256	UNION, swivel	2
24	102790	SCREW, machine	4	63	156022	ADAPTER	2
25	108038	SCREW, set, hex soc	2	64	205439	COUPLING, hose	2
27	157785	UNION, swivel	2	65	061134	HOSE; nylon	4’
28	177118	WRAPPER, VRHC	1	66	237569	WIRE ASSY.; 25’	1
29	177119	WRAPPER, VRHC	1	67	168210	NUT, shouldered	1
30	177120	WRAPPER, VRHC	1	68	168211	NUT, connecting rod	1
31	108036	STUD, fastener	11	69	168212	ROD, connecting	1
32	108037	FASTENER, fractional	11	70	158674	O–RING	1
37	158244	GROMMET, follow plate	1	71	101936	NUT, jam, hex	1

Parts

Floor Stand Pump Parts 243507



NOTE: Apply pipe sealant to all npt threads.

Parts

Floor Stand Pump Parts

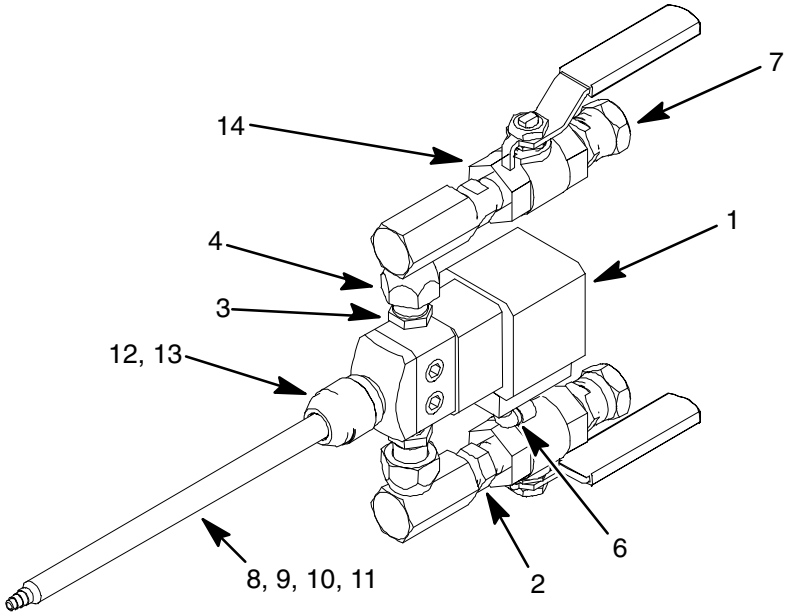
Item	Part Number	Description	Qty		Item	Part Number	Description	Qty
1	D73311	PUMP, Husky (See Manual 308479)	1		13*	210867	HOSE, coupled	2
2	189233	BRACKET	2		14	100014	SCREW, cap, hex hd	2
3	157785	UNION, swivel	4		15	196196	SPACER, pump brackets	1
4	160032	NIPPLE	2		16	100450	SCREW, cap, hex hd	8
5	104267	REGULATOR, air, 125 lb	2		17	100016	WASHER, lock	2
6	100960	GAUGE, pressure, air	2		18	100015	NUT, hex MSCR	2
7	162449	FITTING, nipple, reducing	2		19	100214	WASHER, lock	8
8†	160022	UNION, adapter	4		20*	102283	BUSHING, pipe brass	2
9	158555	NIPPLE, reducing	2		21*	100467	ELBOW, street, pipe	2
10	500517	FITTING, tee, ¾" NPT	2		23	166590	ELBOW, street	2
11	100505	BUSHING, pipe	2		24	111303	NUT, hex	8
12	208391	VALVE, ball	2		25*	947096	HOSE, coupled, 6' moist–lok	2

*Not shown

† Quantity 2 shipped loose

Parts

Dispense Valve Parts 243506



NOTE: Apply pipe sealant to all npt threads.

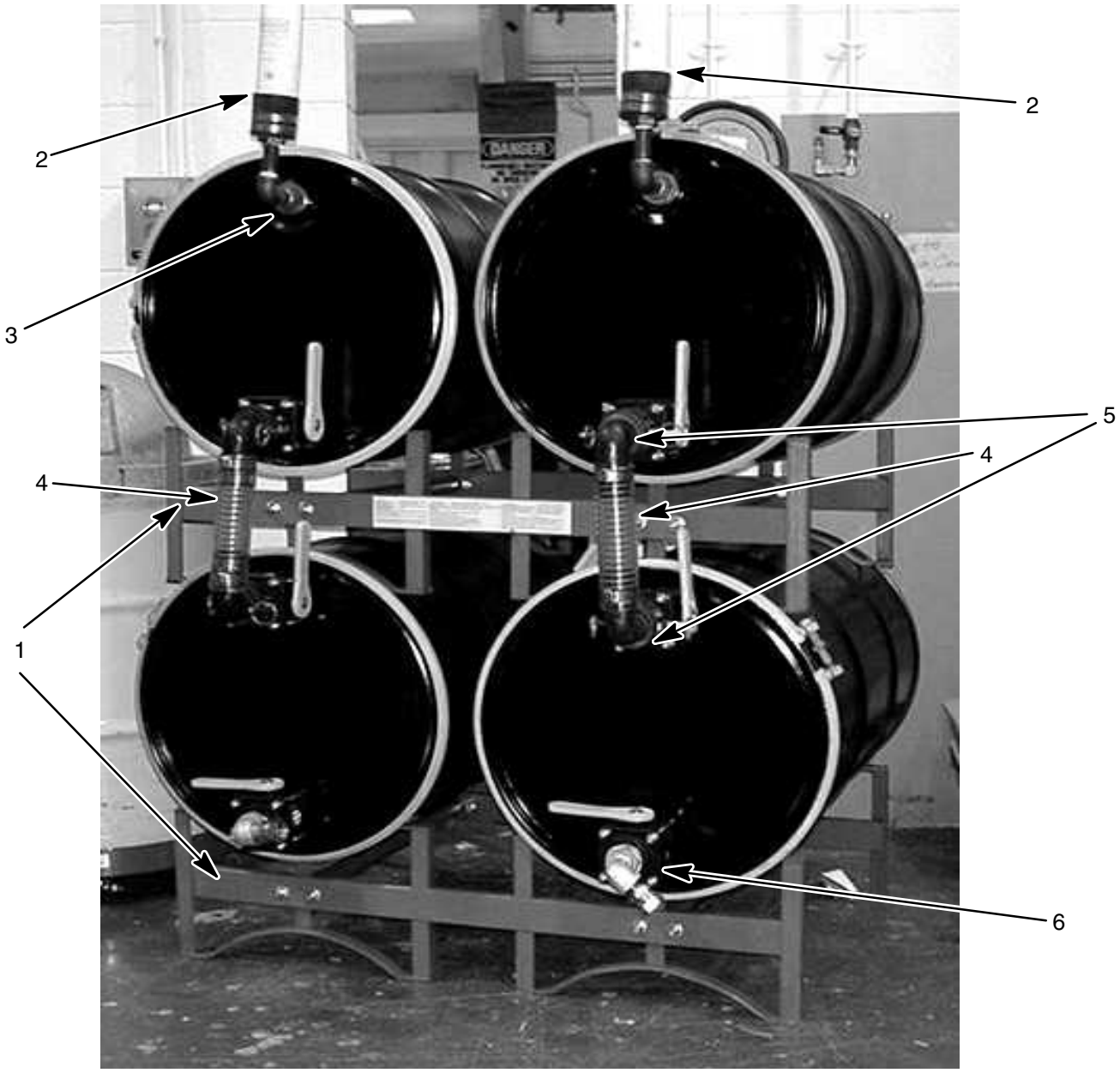
Item	Part Number	Description	Qty		Item	Part Number	Description	Qty
1	965534	VALVE, 2K–UL, machine mount SST (See Manual 309000)	1		8†	512013	NOZZLE, mixer	25
2	501684	VALVE, check	2		9†	512014	NOZZLE, mixer	25
3	157350	NIPPLE, pipe, hex	2		10†	512016	NOZZLE, mixer	25
4	155677	FITTING, union, adapter, 90 deg	2		11†	512017	NOZZLE, mixer	25
5*	243595	KIT, accessory, hose, hi flow	1		12†	512290	NUT, mixer	1
6	598140	FITTING, elbow 5/32T x 1/8” NPT (M)	2		13†	512291	NUT, mixer	1
7	162505	NIPPLE, pipe, hex	2		14	512149	VALVE, ball, 2000 psi, 3/8” NPT (F)	2

* Not shown

† Shipped loose in box

Parts

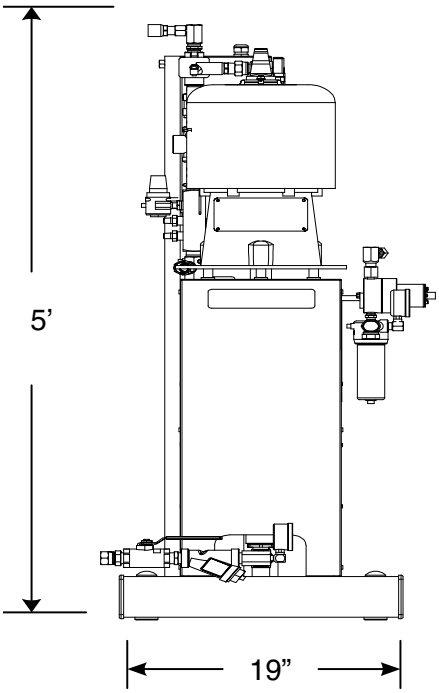
Suggested Barrel Stand Parts

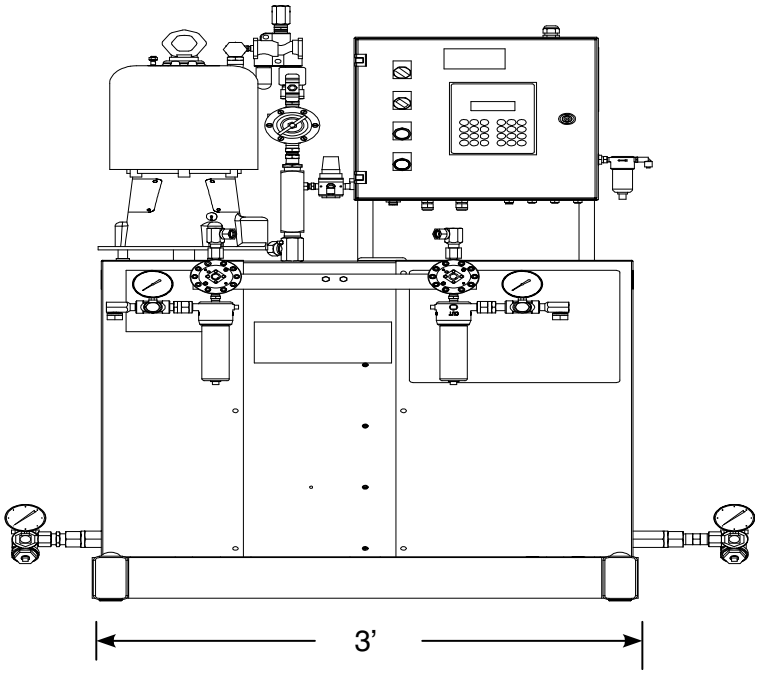


Item	Part Number	Description	Qty		Item	Part Number	Description	Qty
1		RACK, horizontal storage (See Table 1. Recommended Parts or Equivalent)	2		4		TUBING (See Table 1. Recommended Parts or Equivalent)	2
2		CARTRIDGE, disposable (See Table 1. Recommended Parts or Equivalent)	2		5		VALVE, ball, QC, polyprop (See Table 1. Recommended Parts or Equivalent)	4
3		ADAPTER, drum (See Table 1. Recommended Parts or Equivalent)	2		6		VALVE, ball, M x F, polyprop (See Table 1. Recommended Parts or Equivalent)	2

Notes

Dimensions





Graco Standard Warranty

Graco warrants all equipment manufactured by Graco 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. 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
The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procedures concernées.

Graco Phone Numbers

TO PLACE AN ORDER, contact your Graco distributor, or call one of the following numbers to identify the distributor closest to you:

1–800–367–4023 Toll Free
612–623–6921
612–378–3505 Fax

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.

Sales Offices: Minneapolis, Detroit
International Offices: Belgium, Korea, Hong Kong, Japan

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440–1441
www.graco.com

PRINTED IN USA 309127 January 2000, Revised June 2001