

Instructions



Air Operated Diesel Exhaust Fluid (DEF) Dispense System

334203A

EN

For pumping and dispensing diesel exhaust fluid. Not approved for use in European explosive atmosphere locations. For professional use only.

50 psi (0.3 MPa, 3.4 bar) Maximum Fluid Working Pressure

50 psi (0.3 MPa, 3.4 bar) Maximum Air Input Pressure



Important Safety Instructions

Read all warnings and instructions in this manual. Save these instructions.

Model No. 24V677

Wall mounted with meter

Model No. 24V678

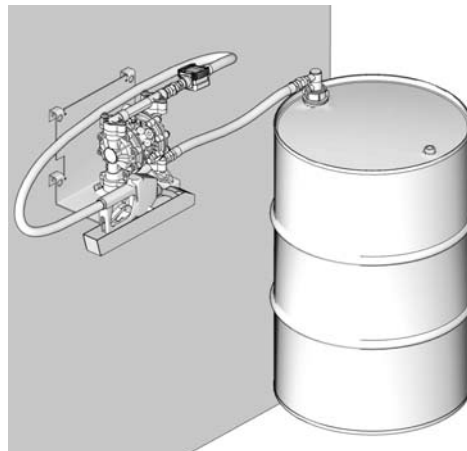
Wall mounted without meter

Model No. 24V679

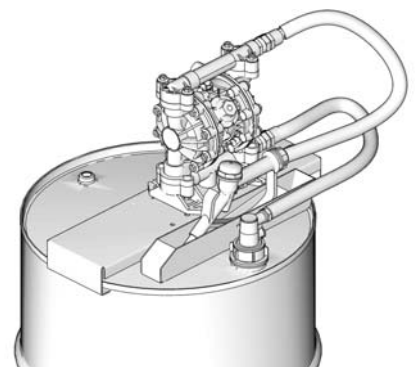
Drum mounted without meter

Model No. 24V686

Drum mounted with meter



Model 24V677



Model 24V679

Related Manuals:








333467 Meter





308981 Husky Pump

333468 Automatic Nozzle

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.

 WARNING	
 	<p>FIRE AND EXPLOSION HAZARD</p> <p>When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources, such as cigarettes and portable electric lamps. • Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline. • Do not plug or unplug power cords or turn lights on or off when flammable fumes are present. • Ground all equipment in the work area. • Use only grounded hoses. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
 	<p>PRESSURIZED EQUIPMENT HAZARD</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"> • Follow the Pressure Relief Procedure when you stop spraying/dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.
 	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • Read MSDSs to know the specific hazards of the fluids you are using. • Route exhaust away from work area. If diaphragm ruptures, fluid may be exhausted into the air. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

 WARNING	
 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer’s warnings. For complete information about your material, request MSDS from distributor or retailer. • Do not leave the work area while equipment is energized or under pressure. • 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.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>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. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

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, follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing the equipment.

1. Turn OFF air supply to pump.
2. Place a container below nozzle to catch drainage.
3. Open the nozzle.

Installation

Typical Installations

Model 24V677 - Wall Mounted, with Meter

Model 24V678 - Wall Mounted, no Meter

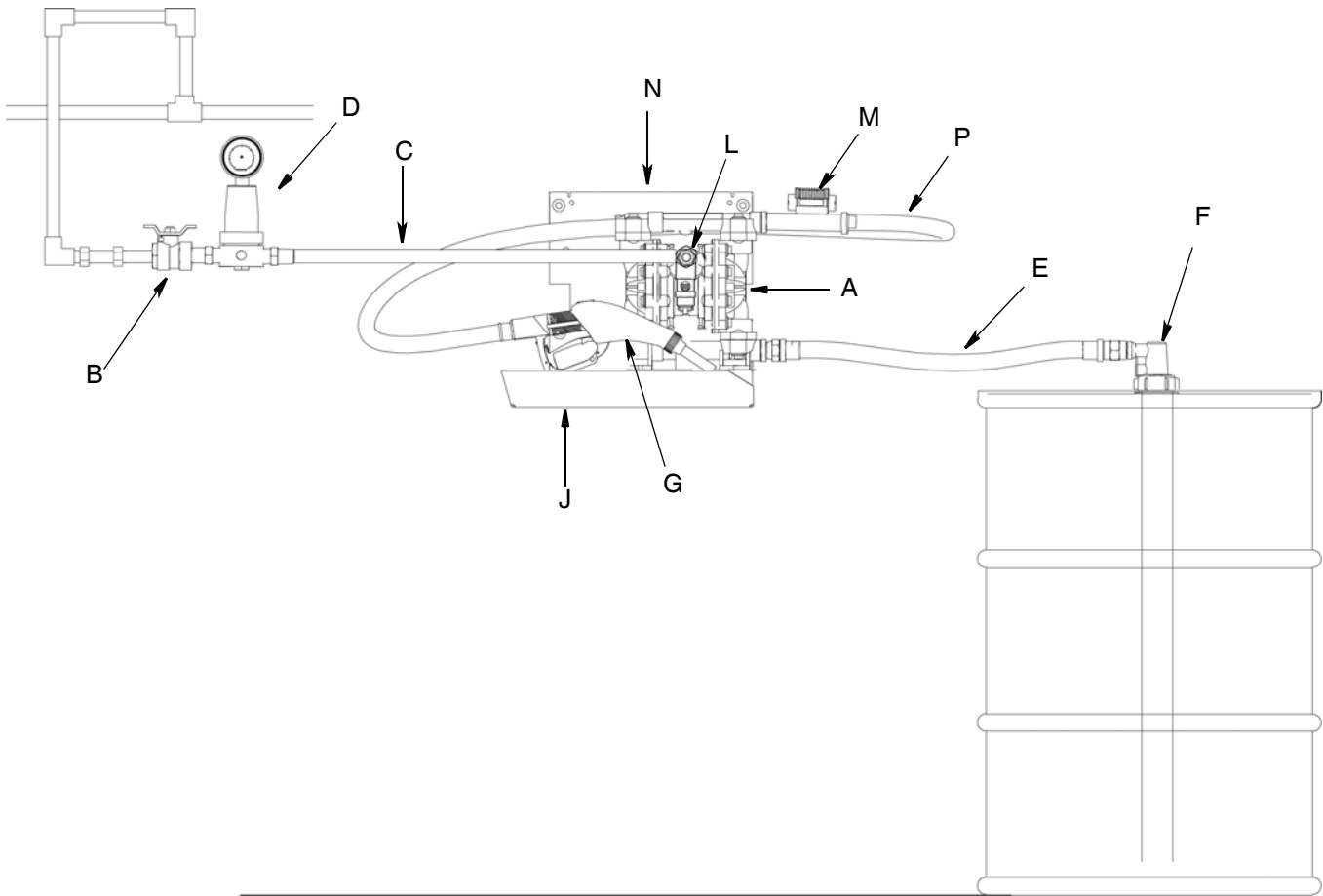


FIG. 1

Key

- A Pump
- B Bleed-type master air valve (required for pump)
- C Air supply line
- D Pump air regulator (required)
- E Fluid suction hose
- F Inlet suction kit (sold separately)
- G Fluid nozzle
- J Nozzle bracket and bath
- L Safety valve - set to 50 psi (3.4 bar, 0.34 MPa) (required)
- M Meter
- N Wall mounting bracket
- P Fluid dispense hose

Model 24V679 - Drum Mounted without Meter
Model 24V686 - Drum Mounted with Meter

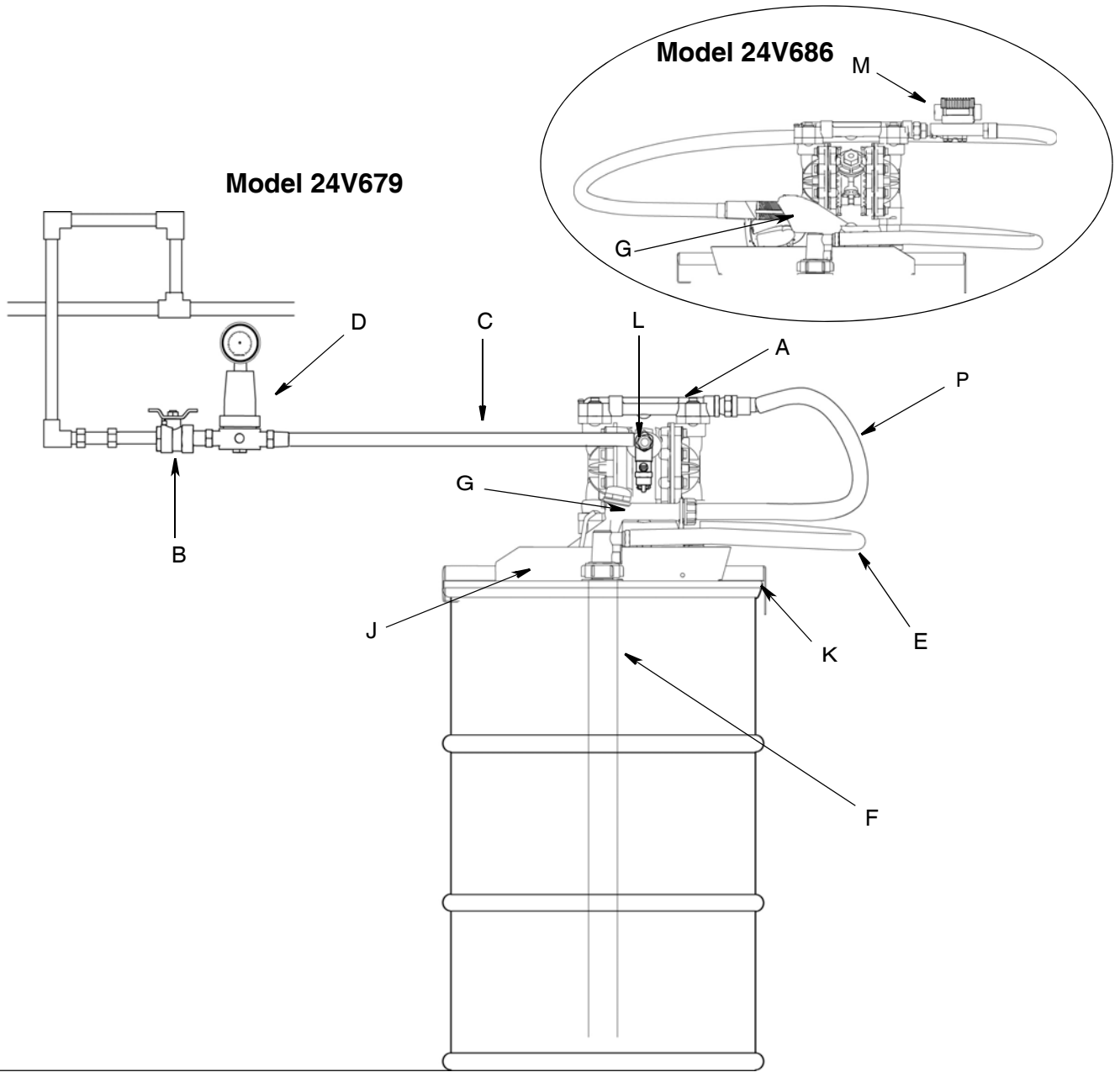


FIG. 2

Key

- | | | | |
|---|---|---|---|
| A | Pump | K | Drum bracket |
| B | Bleed-type master air valve (required for pump) | L | Safety valve - set to 50 psi (3.4 bar, 0.34 MPa) (required) |
| C | Air supply line | M | Meter |
| D | Pump air regulator (required) | P | Fluid dispense hose |
| E | Fluid suction hose | | |
| F | Inlet suction kit (sold separately) | | |
| G | Fluid nozzle | | |
| J | Nozzle tray and bath | | |

General Installation Information

- The Typical Installation illustrations provided on pages 4 - 5 are only guidelines for installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs.
- The letters included in the following instructions refer to letters shown in Typical Installation examples (FIG. 1 - FIG. 2, pages 4 - 5). The numbers included in the following instruction refer to the Parts pages beginning on page 10.
- To ensure your system is compatible with fluids being pumped, always use genuine Graco replacement parts and accessories.
- Tighten all connections firmly to avoid air and/or fluid leaks.
- Storage tanks should be securely anchored to prevent shifting or tipping when empty or full.

NOTICE



To maintain the integrity and purity of the AUS32 (Aqueous Urea Solution 32.5%) and ensure proper operation of equipment:

- Once the system is assembled it must remain sealed to insure the integrity of the fluid. Breaking the seal on the system can lead to fluid contamination.
- After dispensing DEF, drain all the fluid from the nozzle, making sure it is pointing downward when stored in the nozzle holder. DEF remaining in the nozzle tip and exposed to air will crystallize and can plug the nozzle.
- DO NOT lay the dispensing nozzle on the ground or on any surface that may contaminate the nozzle tip and compromise the purity of the DEF.

Inlet Suction Kit (sold separately)

Install inlet suction kit. See Inlet Suction Kit instruction manual for installation instructions.

Air Line

!						
<p>A bleed-type master air valve (B) is required in your system to relieve trapped air between the valve and the pump. Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from fluid splashing in the eyes or on skin, injury from moving parts or contamination from hazardous fluids.</p>						

Locate one bleed-type master air valve (B) close to the pump and use it to relieve trapped air (FIG. 3). For drum mounted installations only, also locate a second master air valve upstream from all air line accessories and use it to isolate them during cleaning and repair.

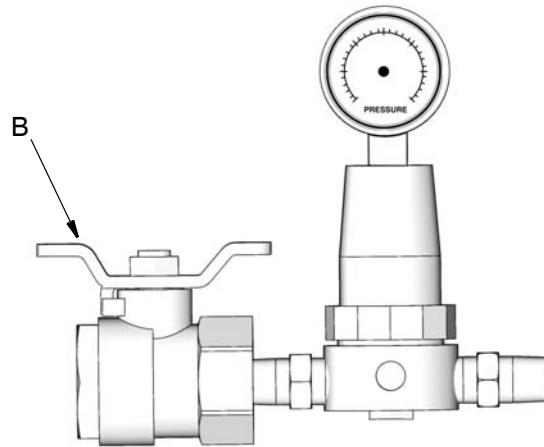


FIG. 3

1. Using the hardware provided install the air controls to the air inlet of the pump as shown in FIG. 3. Use a minimum 1/4 in. (6.3 mm) ID air hose.
2. Install an air line quick disconnect coupler onto the end of the air supply line (C) and screw the mating fitting into the pump air inlet snugly. Do not connect the coupler to the fitting yet.

Fluid Supply Hose

Install the fluid supply hose (E) fluid fitting into the pump inlet snugly. **Do not over-tighten.**

NOTE: At the inlet, if the fluid pressure is greater than 15 psi (0.1 MPa, 1 bar) the diaphragm life will be shortened.

Mounting Bracket (2) Installation

See *Wall Mounting Kit 24F870 instructions (below) or Drum Mounting Bracket 24V679 or 24V686 instructions, page 7.*

- When installing bracket, be sure the mounting surface can support the weight of the pump, hoses and all accessories, as well as the stress caused during operation.
- On all installations mount the pump using screws and nuts provided.
- Always keep nozzle bath tray filled with water.

Wall Mounting Kit 24F870 (2): Models 24V677 and 24V678 only. For a list of Kit parts referenced in the installation instructions, see page 12.

The Nozzle Holder and Mounting Bracket are also identified as items J and N on the Typical Installation Diagram provided on page 4.

1. Determine location to install mounting plate (2f).
2. Use holes the plate (2f) as a template. Mark mounting hole locations. Pre-drill mounting holes in mounting surface.
3. Use screws (2a) to install plate (2f).
4. Align holes in nozzle holder bracket (2h) with holes in plate (2f). Use screws (2b), nuts (2e) and washers (2d) to install meter tray plate.
5. Place nozzle bath (2g) in nozzle holder bracket (2h). Fill bath with water. **Keep meter bath filled with water at all times.**

Drum Mounting Bracket (2): Model 24V679 or 24V686. For a list of Kit parts referenced in the installation instructions, see page 12.

The Nozzle Holder and Drum Bracket are also identified as item J and K on the Typical Installation Diagram provided on page 5.

1. Position drum mounting plate (2f) on top of drum.
2. Use screws (2b), nuts (2e) and washers (2d) to install mounting plate to pump.
3. Align holes in nozzle holder bracket (2h) with holes in plate (2f). Use screws (2b), nuts (2e) and washers (2d) to install meter tray plate.
4. Place nozzle bath tray (2g) in nozzle holder bracket (2h). Fill bath with water. **Keep nozzle bath tray filled with water at all times.**

Pump (1)

Install pump (1) to mounting bracket (2). For complete pump instructions refer to the pump instruction manual included with your system.

- If necessary, change the orientation of the fluid inlet and outlet ports on the pump. See pump instruction manual for this procedure.
- Retorque bolts per specifications.

Suction Hose (8)

Install suction hose (8).

- a. Slide two hose clamps to (11) over hose (8).
- b. Install one end of hose (8) to dispense coupler hose barb (included in the Inlet Suction Kit).
- c. Tighten one hose clamp (11) over end of hose (8) and dispense coupler hose barb (included in the Inlet Suction Kit).
- d. Install other end of hose (8) over barbed end of fitting (17).
- e. Tighten second hose clamp (11) over end of hose (8) and barbed end of fitting (17).
- f. Install seal (14) on the 3/4 inch end of fitting (15).

Installation

- g. Install 3/4 inch end of fitting (15) into pump suction port (1a).
- h. Install non-hose side of fitting (17) to 1 in. end of fitting (15).

Meter (10) (Optional)

1. Install swivel fitting (16) to meter inlet (10a).
2. Install seal (14) on the 3/4 inch end of fitting (15).
3. Install 3/4 inch end of fitting (15) into pump outlet port (1b).
4. Connect swivel fitting (16) to 1 in. end of fitting (15).

Dispense Hose (9)

1. Slide one hose clamp (11) over dispense hose (9).
2. Insert barbed end of fitting (17) into one end of dispense hose (9).
3. Tighten one hose clamp (11) over end of hose (9) and barbed end of fitting (17).

Installations with a Meter

4. Install non-hose side of fitting (17) to meter connection (10b). Hand tighten.

Installations without a Meter

4. Install seal (14) on the 3/4 inch end of fitting (15).
5. Install 3/4 inch end of fitting (15) into pump outlet port (1b).
6. Install non-hose side of fitting (17) to 1 in. end of fitting (15). Hand tighten.

Nozzle (3)

Install nozzle to hose.

1. Slide boot (13) over end of dispense hose (9).
2. Slide hose clamp (11) over the end of dispense hose (9).

3. Insert barbed end of nozzle fitting (a) (included with nozzle) into the end of the dispense hose (9).

NOTE: Verify fitting collar (b) is in place prior to installing this fitting.

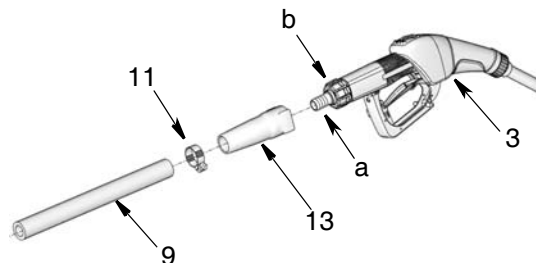


FIG. 4

4. Tighten hose clamp (11) over the end of the hose (9) and nozzle fitting (a).
5. Slide boot (13) into place over hose clamp (11).

Priming

1. Hold dispensing nozzle (3) open. At the same time slowly open the pump air regulator (D) until the pump (1) starts to cycle.
2. Allow the pump to cycle slowly until all the air has been pushed out of the lines and the pump is primed.
3. If the pump doesn't prime, the pump outlet fitting and slowly run the pump until you see fluid filling the pump.
4. Then tighten the connection.

Flushing

After initial assembly and installation, flush the entire dispensing system by pumping 5-10 gallons of DEF through it. This purges the system of air and insures any impurities that may have been in the system are washed out.

Dispose of the DEF used to flush the system using approved DEF handling procedures. Do not return the fluid to the drum or tote or use it in a vehicle.

Operation

The letters included in the following instructions refer to letters shown in Typical Installation examples (FIG. 1 - FIG. 2, pages 4 - 5). The numbers included in the following instruction refer to the Parts pages beginning on page 10.

NOTICE

- To maintain the integrity and purity of the AUS32 (Aqueous Urea Solution 32.5%) and ensure proper operation of equipment:
 - Once the system is assembled it must remain sealed to insure the integrity of the fluid. Breaking the seal on the system can lead to fluid contamination.
 - After dispensing DEF, drain all the fluid from the nozzle, making sure it is pointing downward when stored in the nozzle holder. DEF remaining in the nozzle tip and exposed to air will crystallize and can plug the nozzle.
 - DO NOT lay the dispensing nozzle on the ground or on any surface that may contaminate the nozzle tip and compromise the purity of the DEF.
- The automatic shut-off will only perform within the specified flow ranges of the nozzle. Always verify the system performance is within these flow ranges. See Technical Data, page 13.

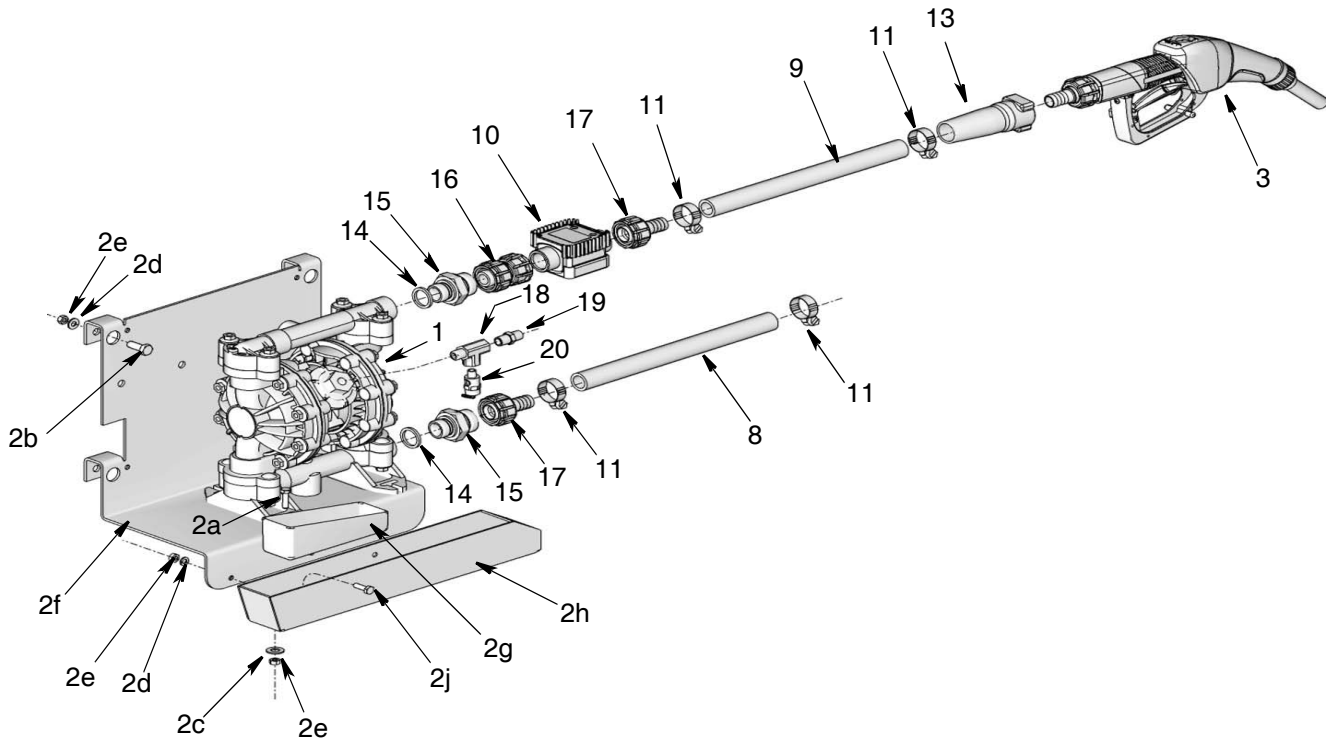
1. Prime pump (1). See Priming, page 8.
2. Insert nozzle (3) into DEF tank.
3. Turn air supply on.
4. Squeeze nozzle handle to dispense DEF.
5. When dispense is complete, release nozzle handle to stop dispensing DEF.
6. Place nozzle in nozzle bath.
7. Turn air supply off.

Parts

Wall Mounted with Meter: Model 24V677
Wall Mounted without Meter: Model 24V678

Ref	Part No.	Description	Qty	Ref	Part No.	Description	Qty
1	24G745	PUMP, diaphragm, plastic, bsp	1	16	127720	FITTING, swivel, 1 in. (f) x 1 in. (f) BSP (model 24V677 only)	1
2	24W186	KIT, pump bracket, 3 in 1 (Includes 2a-2j; see Kits, page 12)	1	17	127657	FITTING, union, 3/4 barb x 1 in. BSP	2
3	127649	NOZZLE	1	18	116504	FITTING, tee	1
8		HOSE, cpld, 6 ft., 3/4bspp x cut	1	19	156971	FITTING, nipple, short	1
9*		HOSE, 20 ft., 3/4 bspp x 3/4 bspp	1	20	116306	VALVE, safety, 50 psi (3.4 bar, 03.4 MPa)	1
10	127663	METER, flow (model 24V677 only)	1				
11	103927	CLAMP, hose	4				
13	15T366	BOOT	1				
14		SEAL	2				
15	127804	FITTING, nipple, 3/4 in. BSPP x 1 in. BSPP (includes Ref. No. 14)	2				

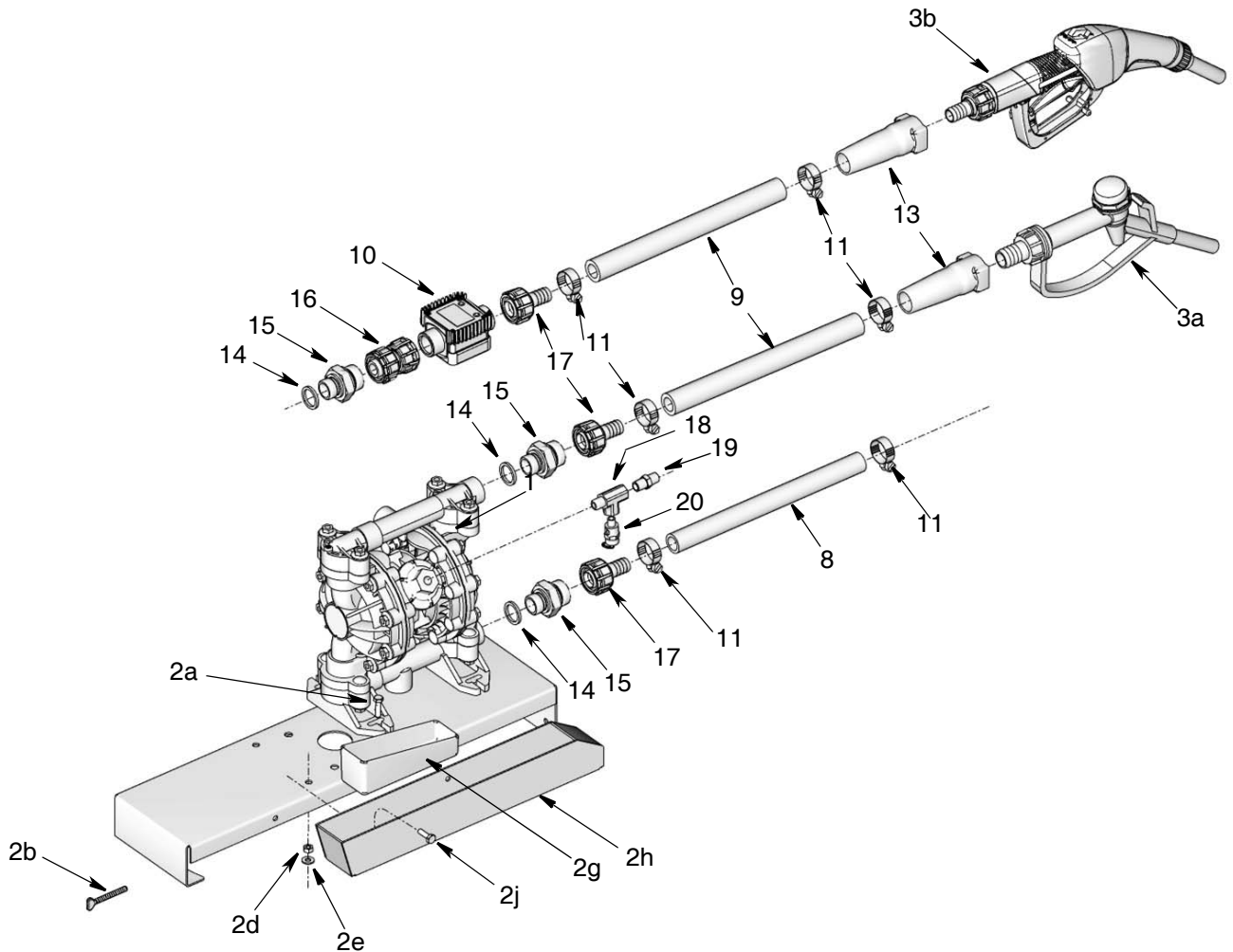
* A 6-ft dispense hose is available from Graco. See Hose Kits, page 12



Drum Mounted without Meter: Model 24V679
Drum Mounted with Meter: Model 24V686

Ref	Part No.	Description	Qty	Ref	Part No.	Description	Qty
1	24G745	PUMP, diaphragm, plastic, bsp	1	16	127720	FITTING, swivel, 1 in. (f) x 1 in. (f) BSP (model 24V686 only)	1
2	24W185	KIT, pump bracket, drum mount (Includes 2a-2j; see Kits, page 12)	1	17	127657	FITTING, union, 3/4 barb x 1 in. BSP	2
3a	125078	NOZZLE, manual (model 24V679)	1	18	116504	FITTING, tee	1
3b	127649	NOZZLE, w/swivel (model 24V686)	1	19	156971	FITTING, nipple, short	1
8		HOSE, 2 ft., 3/4 bsp x cut, inlet	1	20	116306	VALVE, safety, 50 psi (3.4 bar, 0.34 MPa)	1
9*		HOSE, 12 ft.	1				
10	127663	METER, flow (model 24V686 only)	1				
11	103927	CLAMP, hose	4				
13	15T366	BOOT, swivel 3/4 black	1				
14		SEAL	2				
15	127804	FITTING, nipple, 3/4 in. BSPP x 1 in. BSPP (included Ref. No. 14)	2				

* A 6-ft dispense hose is available from Graco. See Hose Kits, page 12.



Bracket Kits

Ref. 2 - Bracket 24W186: Models 24V677 / 24V678

2a	SCREW, cap, hex head	4
2b	SCREW, cap, hex head	4
2c	WASHER	4
2d	WASHER, plain	14
2e	NUT, hex	7
2f	PLATE, pump mount	1
2g	HOLDER, nozzle bath	1
2h	BRACKET, nozzle holder	1
2j	SCREW, HH, 1/4 x 20 x 0.75"	3

Ref. 2 - Bracket 24W185: Model 24V679 / 24V686

2a	SCREW, cap, hex head	4
2b	SCREW, thumb, 1/4-20 x 2"	2
2d	WASHER, plain	12
2e	NUT, hex	6
2f	PLATE, pump mount	1
2g	HOLDER, nozzle bath	1
2h	BRACKET, nozzle holder	1
2j	SCREW, HH, 1/4 x 20 x 0.75"	2

Hose Kits

Ref. 8 - 24W148: DEF Suction Hose Kit: 2-foot; 2V679 and 24V686

HOSE, suction, 2-foot	1
CLAMP, hose	2

Ref. 9 - 24W154: DEF Dispense Hose Kit: 12-foot; 24V679 and 24V686

HOSE, dispense, 12-foot	1
CLAMP, hose	2

Ref. 8 - 24W149: DEF Suction Hose Kit: 6-foot; 24V677 and 24V678

HOSE, suction, 6-foot	1
CLAMP, hose	2

Ref. 9 - 24W161: DEF Dispense Hose Kit: 20-foot; 24V677 and 24V678

HOSE, dispense, 20-foot	1
CLAMP, hose	2

Ref. 9 - 24W161: DEF Dispense Hose Kit: 6-foot (optional)

HOSE, dispense, 6-foot	1
CLAMP, hose	2

Technical Data

Pump

Maximum fluid working pressure	50 psi (0.3 MPA, 3.4 bar)
Air pressure operating range	30 to 50 psi (0.2 to 0.3 MPA, 2.1 to 3.4 bar)
Operating temperature: <i>based on mechanical stress only and may be altered significantly by pumping certain chemicals. Consult engineering guides for chemical compatibilities and temperature limits or contact your Graco distributor.</i>	
Minimum	40°F (4.4°C)
Maximum	88°F (31.0°C)
Maximum air consumption	28 scfm (0.672 cubic meters/min.)
Maximum free flow delivery	6.5 gpm (25 lpm)
Maximum pump speed	163 cpm
Gallons (Liters) per cycle	0.04 (0.15)
Sound power level (measured per ISO standard 9614-2)	
At 70 psig (0.48 MPA, 4.8 bar) at 50 cycles per minute	77 dBa
At 100 psig (0.7 MPA, 4 bar) at maximum cycles per minute	95 dBa
Sound pressure level (measured 1 meter from pump)	
At 70 psig (0.48 MPA, 4.8 bar) at 50 cycles per minute	67 dBa
At 100 psig (0.7 MPA, 4 bar) at maximum cycles per minute	85 dBa
Air inlet size	1/4 npt(f)
Air exhaust port size	3/8 npt(f)
Fluid inlet size	1/2 and 3/4 in. bspp (f)
Fluid outlet size	1/2 and 3/4 in. bspp (f)
Wetted parts (in addition to ball, seat and diaphragm materials)	polypropylene, PTFE, fluoroelastomer, SST
Pump Weight (approximate)	6.5 lbs (2.9 kg)
System Weight (approximate)	35 lbs (15.8 kg)

Meter

See Meter instruction manual 333467

Husky Pump

See Husky Pump instruction manual 308981

Automatic Nozzle (model 127649 only)

See Nozzle instruction manual 333468

Graco Extended 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 twenty-four (24) 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.

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Graco Information

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.

Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 334XXX

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