

# Instructions – Parts List

## Falcon and Falcon II

### Air-Assisted and

### Airless Packages



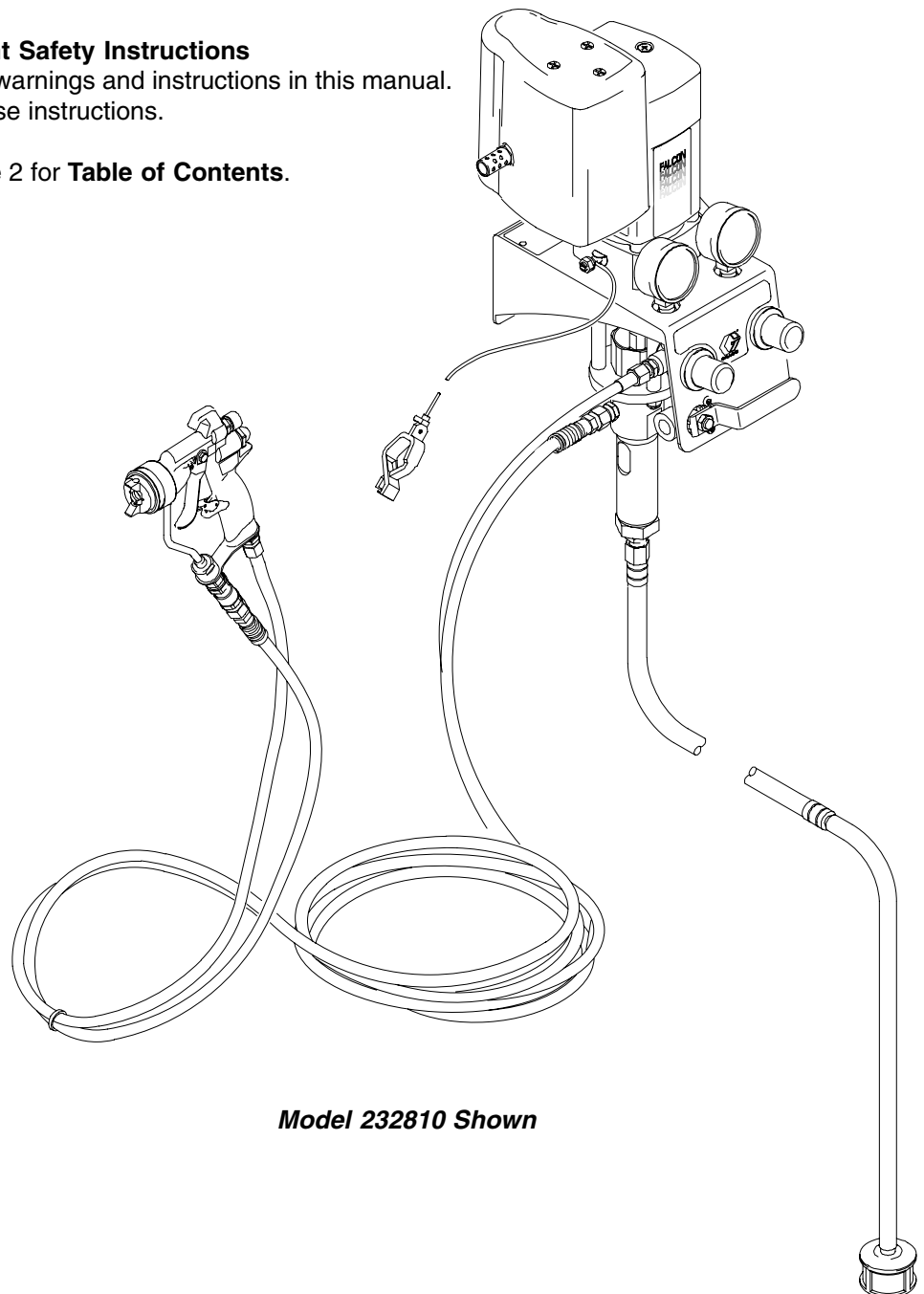
308994 rev.M



#### Important Safety Instructions

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

See page 2 for **Table of Contents**.



*Model 232810 Shown*

PROVEN QUALITY. LEADING TECHNOLOGY.

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441  
Copyright 1999, Graco Inc. is registered to I.S. EN ISO 9001



# Table of Contents

List of Models .....	2	Maintenance .....	16
Symbols .....	3	Parts .....	18
Warnings .....	3	Technical Data .....	28
Installation .....	6	Dimensions .....	30
Wall Mounting Template .....	9	Graco Warranty .....	32
Operation .....	11	Graco Information .....	32

## List of Models

### Air-Assisted Packages

Package Part No.	Series	Pump Model	Maximum Fluid Working Pressure	Maximum Air Input Pressure	Gun Ball/ Seat Material
232810	D	Falcon 10:1 wall mount	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	plastic
232812	C	Falcon 10:1 wall mount	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	no gun, no hoses
232815	D	Falcon II 20:1 wall mount	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	plastic
232817	C	Falcon II 20:1 wall mount	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	no gun, no hoses
232820	B	Falcon 10:1 4-wheel cart mount	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	plastic
232822	B	Falcon 10:1 4-wheel cart	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	no gun, no hoses
232823	A	Falcon 20:1 4-wheel cart	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	plastic
233938	A	Falcon 20:1 4-wheel cart	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	no gun no hoses
233939	A	Falcon 20:1 2-wheel cart	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	plastic
233064	B	Falcon 10:1 2-wheel cart	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	plastic
233065	B	Falcon 10:1 2-wheel cart	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	plastic
288124	A	Falcon 10:1 wall mount	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	carbide
288125	A	Falcon 10:1 2-wheel cart	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	carbide
288126	A	Falcon 10:1 4-wheel cart mount	1000 psi (6.9 MPa, 69 bar)	100 psi (0.7 MPa, 6.9 bar)	carbide
288127	A	Falcon II 20:1 wall mount	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	carbide
288128	A	Falcon 20:1 2-wheel cart	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	carbide
288129	A	Falcon 20:1 4-wheel cart	1500 psi (10.3 MPa, 103.5 bar)	68 psi (0.5 MPa, 4.7 bar)	carbide

# List of Models

## Airless Package

Package Part No.	Series	Pump Model	Maximum Fluid Working Pressure	Maximum Air Input Pressure	Gun Ball/ Seat Material
15D077	A	Falcon 20:1 stand	2000 psi (13.7 MPa, 137 bar)	100 psi (0.7 MPa, 6.9 bar)	carbide

## Symbols

### Warning Symbol



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

### Caution Symbol



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

## ! WARNING



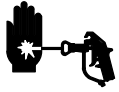
INSTRUCTIONS

### EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. Refer to the **Technical Data** on page 28 for the maximum working pressure of this equipment.
- 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.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 180°F (82°C) or below 0°F (-18°C).
- Do not kink or over bend hoses or use hoses to pull equipment.
- Wear hearing protection when operating this equipment.
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.
- Keep hands and clothing away from any moving parts.

# **WARNING**



## **SKIN INJECTION HAZARD**

Spray from the gun, hose leaks, or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed 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 surgical treatment.**
- Do not point the gun at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Always have the tip guard and the trigger guard on the gun when spraying.
- Check the gun diffuser operation weekly. Refer to the gun manual.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** on page 12 whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; and install or clean the spray tip.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn, damaged, or loose parts immediately. Permanently coupled hoses cannot be repaired; replace the entire hose.
- Use only Graco approved hoses. Do not remove any spring guard that is used to help protect the hose from rupture caused by kinks or bends near the couplings.

# **WARNING**



## **FIRE AND EXPLOSION HAZARD**

Improper grounding, poor ventilation, open flames or sparks can cause a hazardous condition and result in a fire or explosion and serious injury.

- Ground all equipment in the work area. Refer to **Grounding** on page 10.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop spraying immediately**. Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being sprayed.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Electrically disconnect all equipment in the spray area.
- Extinguish all open flames or pilot lights in the spray area.
- Do not smoke in the spray area.
- Do not turn on or off any light switch in the spray area while operating or if fumes are present.
- Do not operate a gasoline engine in the spray area.
- Keep a fire extinguisher in the work area.



## **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.

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.

# Installation

## 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 safe, efficient 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.

The following manuals are included with this equipment:

311001 AA Series Spray Gun or 309639 FTx II Spray Gun

308995 Falcon and Falcon II Air Motors

308996 Falcon and Falcon II Pumps

## Prepare the Site

**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.

Fig. 1. Ensure that the wall is strong enough to support the weight of the pump and accessories, fluid, hoses, and stress caused during pump operation.

Ensure that you have an adequate compressed air supply.

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

Install a bleed-type shutoff valve (B) in the air line to isolate the air line components for servicing. Install an air line filter (C) and a moisture trap and drain valve (D) 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.

# Installation

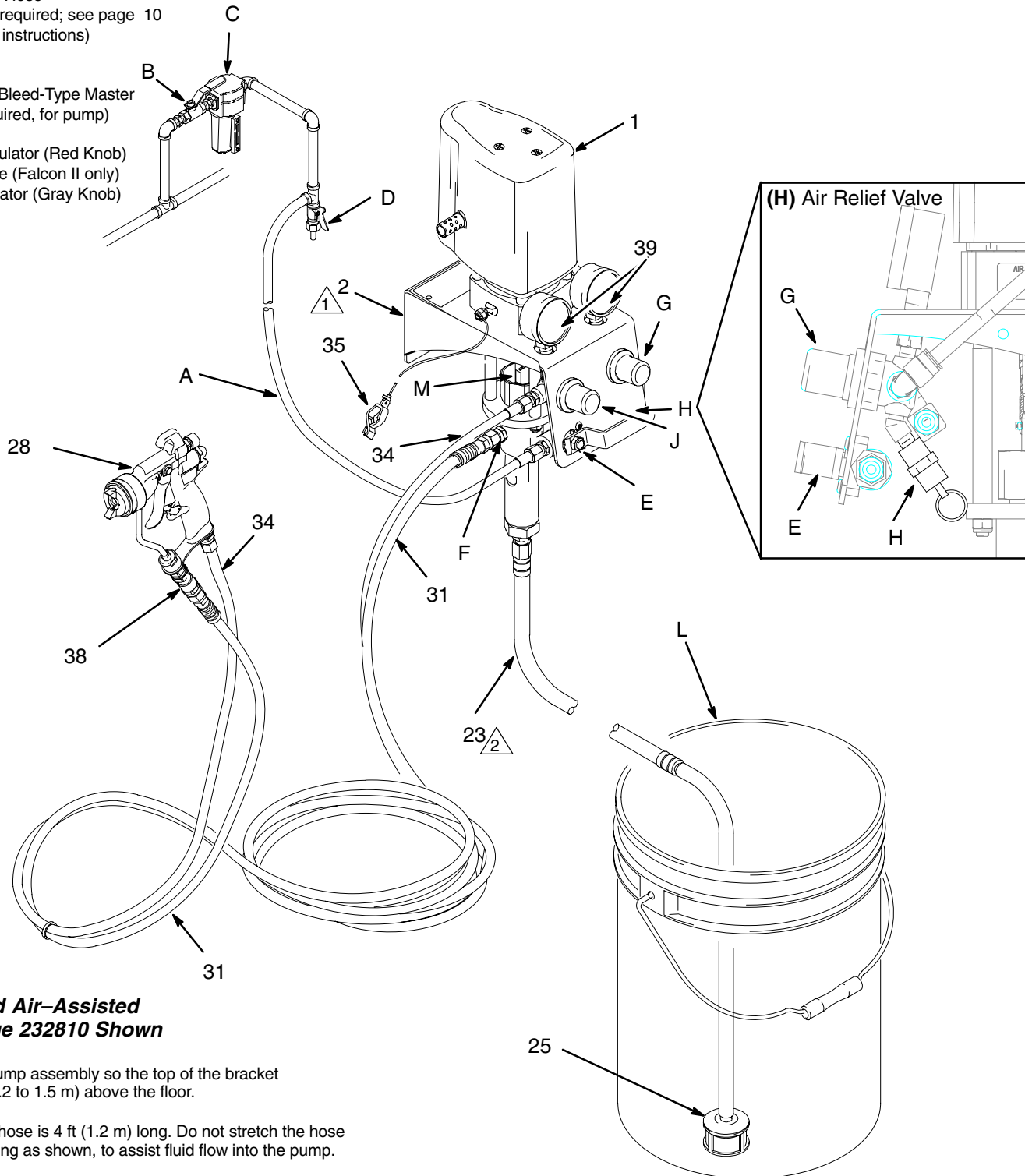
## KEY

### SUPPLIED COMPONENTS

- 1 Pump
- 2 Wall Bracket
- 23 Suction Hose
- 25 Strainer
- 28 Air-Assisted Alpha Spray Gun
- 31 Gun Fluid Supply Hose
- 34 Gun Air Supply Hose
- 35 Ground Wire (required; see page 10 for installation instructions)
- 38 Gun Swivel
- 39 Lens Covers
- E Red-Handled Bleed-Type Master Air Valve (required, for pump)
- F Pump Outlet
- G Pump Air Regulator (Red Knob)
- H Air Relief Valve (Falcon II only)
- J Gun Air Regulator (Gray Knob)
- M Wet Cup

### COMPONENTS YOU MUST SUPPLY

- A Electrically Conductive Air Supply Hose
- B Bleed-Type Master Air Valve
- C Air Line Filter
- D Air Line Moisture Trap and Drain Valve
- L 5 Gallon Pail



### Wall-Mounted Air-Assisted Spray Package 232810 Shown

- 1 Mount the pump assembly so the top of the bracket is 4 to 5 ft (1.2 to 1.5 m) above the floor.
- 2 The suction hose is 4 ft (1.2 m) long. Do not stretch the hose tight; let it hang as shown, to assist fluid flow into the pump.

Fig. 1

9140B

# Installation

## Supplied Components

### **WARNING**

A red-handled bleed-type master air valve (E) is supplied. This component helps reduce the risk of serious injury, including fluid injection and splashing of fluid in the eyes or on the skin, and injury from moving parts when adjusting or repairing the pump.

The bleed-type master air valve relieves air trapped between this valve and the pump after the valve is closed. Trapped air can cause the pump to cycle unexpectedly.

- **Fig. 1. The red-handled bleed-type master air valve (E)** is required in your system to relieve air trapped between it and the air motor and gun when the valve is closed (see the **WARNING** above). Do not block access to the valve.
- **The pump air regulator with red knob (G)** controls pump speed and outlet pressure by adjusting the air pressure to the pump.
- **The air relief valve (H)** (on Falcon II and Air-Assisted packages only) opens automatically to prevent overpressurization of the pump.
- **The gun air regulator with gray knob (J)** adjusts the air pressure to the air-assisted Alpha spray gun (28).
- **The suction hose (23)** allows the pump to draw fluid from a 5 gallon pail (L). Also supplied is a **filter (25)**.
- **The air-assisted Alpha spray gun (106)** dispenses the fluid. The gun houses the spray tip (33 not shown), which is available in a wide range of sizes for different spray patterns and rates of flow. The standard tip included with this package is AAM413 (Falcon) or AAM415 (Falcon II). The package also includes a tip of choice. Both tips are unassembled. Refer to gun manual 311001 for tip installation.

- **The FTx II Airless Spray Gun (106)** dispenses the fluid. The gun houses the spray tip (33, not shown), which is available in a wide range of sizes for different spray patterns and rates of flow. The standard tip included with this Package is LTX517. The package also includes fine-finish tip FFT312. Refer to gun manual 309639 for tip installation.

### **WARNING**

Hoses must be connected correctly. An incorrectly installed hose may burst causing serious injury.

- The **red hose (34)** provides the gun air supply (Air-Assisted gun package only).
- The **blue hose (31)** provides the gun fluid supply.
- **The gun swivel (38)** allows for freer gun movement and comes attached to the blue hose.

## Install the Pump – Wall Mount Packages

**NOTE:** Before mounting the pump on the wall, ensure that the wall is strong enough to support the weight of the pump and accessories, fluid, hoses, and the stress caused during pump operation.

1. Position template (Fig. 2, page 9) 4.5 ft above floor. Drill four holes in wall.
2. Lift the pump assembly into position and bolt the pump bracket (2) to the wall. Use 3/8 in. bolts and washers to mount the pump module to the wall. Use bolts that are long enough to keep the pump bracket from vibrating during operation. Check bolts periodically.



## WALL MOUNTING TEMPLATE

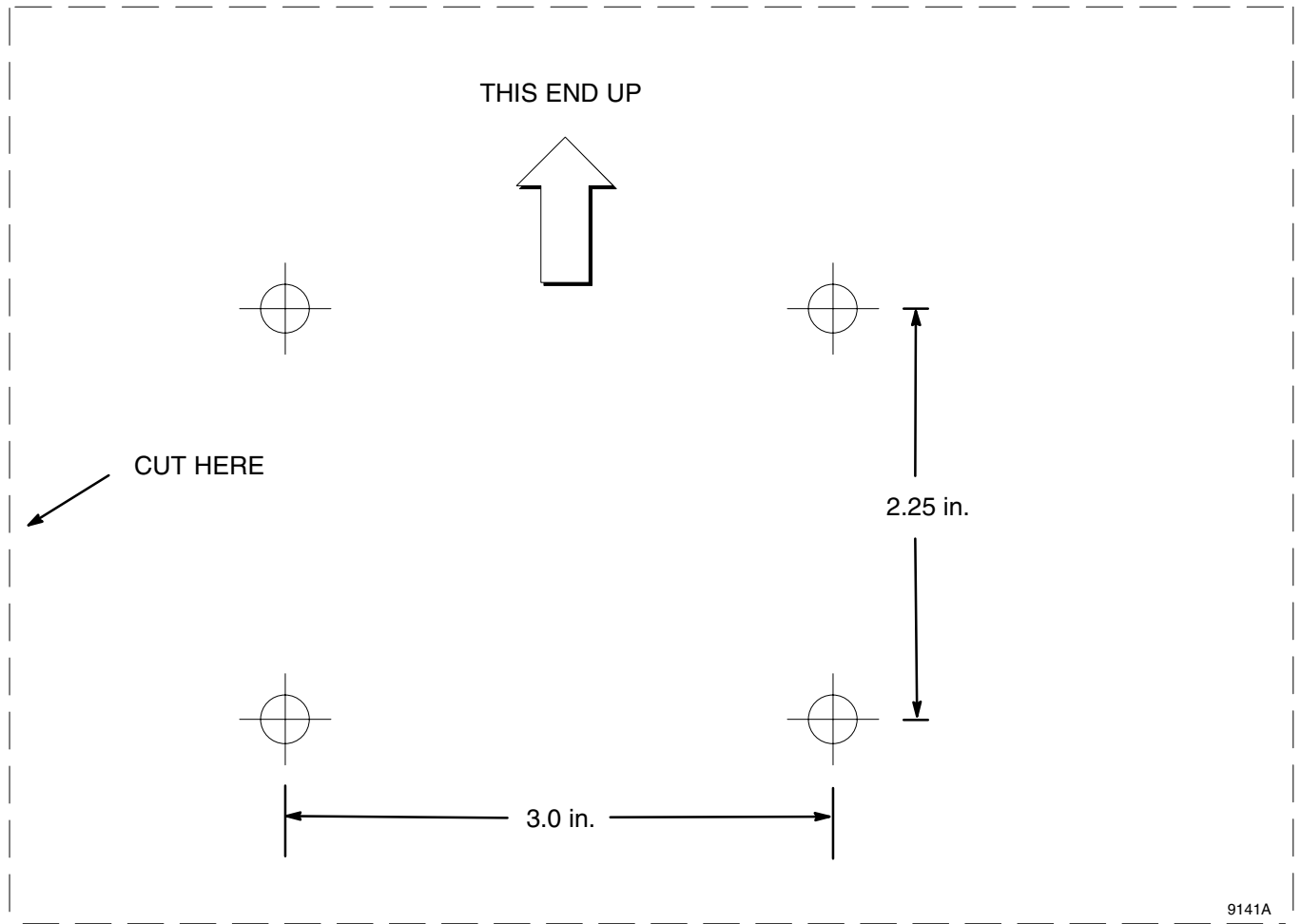


Fig. 2

# Installation

## Grounding

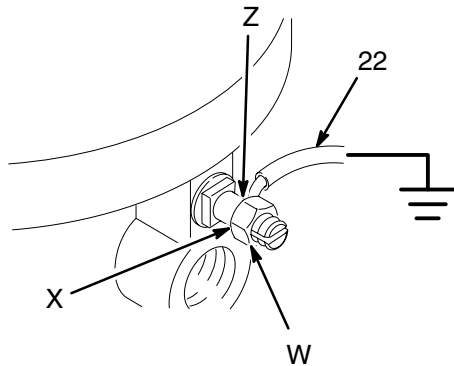
### WARNING



#### **FIRE AND EXPLOSION HAZARD**

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

1. *Pump*: use the ground wire and clamp (supplied). See Fig. 3. Loosen the grounding lug locknut (W) and washer (X). Insert one end of the ground wire (22) into the slot in lug (Z) and tighten the locknut securely. Connect the other end of the wire to a true earth ground.



**Fig. 3**

0720

2. *Pump air supply and fluid hoses*: Use only electrically conductive hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity. Check the electrical resistance of your air and fluid hoses at least once a week. If the total resistance to ground exceeds 29 megohms, replace the hose immediately.

**NOTE:** Use a meter that is capable of measuring resistance at this level.

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

4. *Spray gun*: ground through connection to a properly grounded fluid hose and pump.
5. *Fluid supply container*: follow your local code.
6. *Object being sprayed*: follow your local code.
7. *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.
8. *To maintain grounding continuity when flushing or relieving pressure*, hold a metal part of the spray gun firmly to the side of a grounded *metal* pail, then trigger the gun.

## Setup

1. Fig.1. Attach end of blue fluid hose (31) without gun swivel (38) to pump outlet (F).
2. (Air-Assisted Packages Only) Attach one end of red air hose (34) to gun air regulator with gray knob (J).

### WARNING

Hoses must be connected properly. An incorrectly installed hose may burst causing serious injury.

3. (Air-Assisted Packages Only) Attach remaining end of red air hose (34) to air inlet at base of gun (28).
4. Attach gun swivel to gun (28) fluid inlet.
5. (Air-Assisted Packages Only) Tape red air hose (34) and blue fluid hose (31) together as needed.
6. (Air-Assisted Packages Only) Apply lens cover (39) to both regulator gage lenses.

# Operation

## KEY

- 1 Pump
- 2 Wall Bracket
- 23 Suction Hose
- 25 Filter
- 28 Air-Assisted Spray Gun
- 31 Gun Fluid Supply Hose
- 34 Gun Air Supply Hose
- 35 Ground Wire
- 38 Gun Filter/Swivel
- A Electrically Conductive Air Supply Hose
- B Bleed-Type Master Air Valve (for accessories)
- C Air Line Filter
- E Red-Handled Bleed-Type Master Air Valve (required, for pump)
- G Pump Air Regulator
- J Gun Air Regulator
- L 5 Gallon Pail
- M Wet-Cup

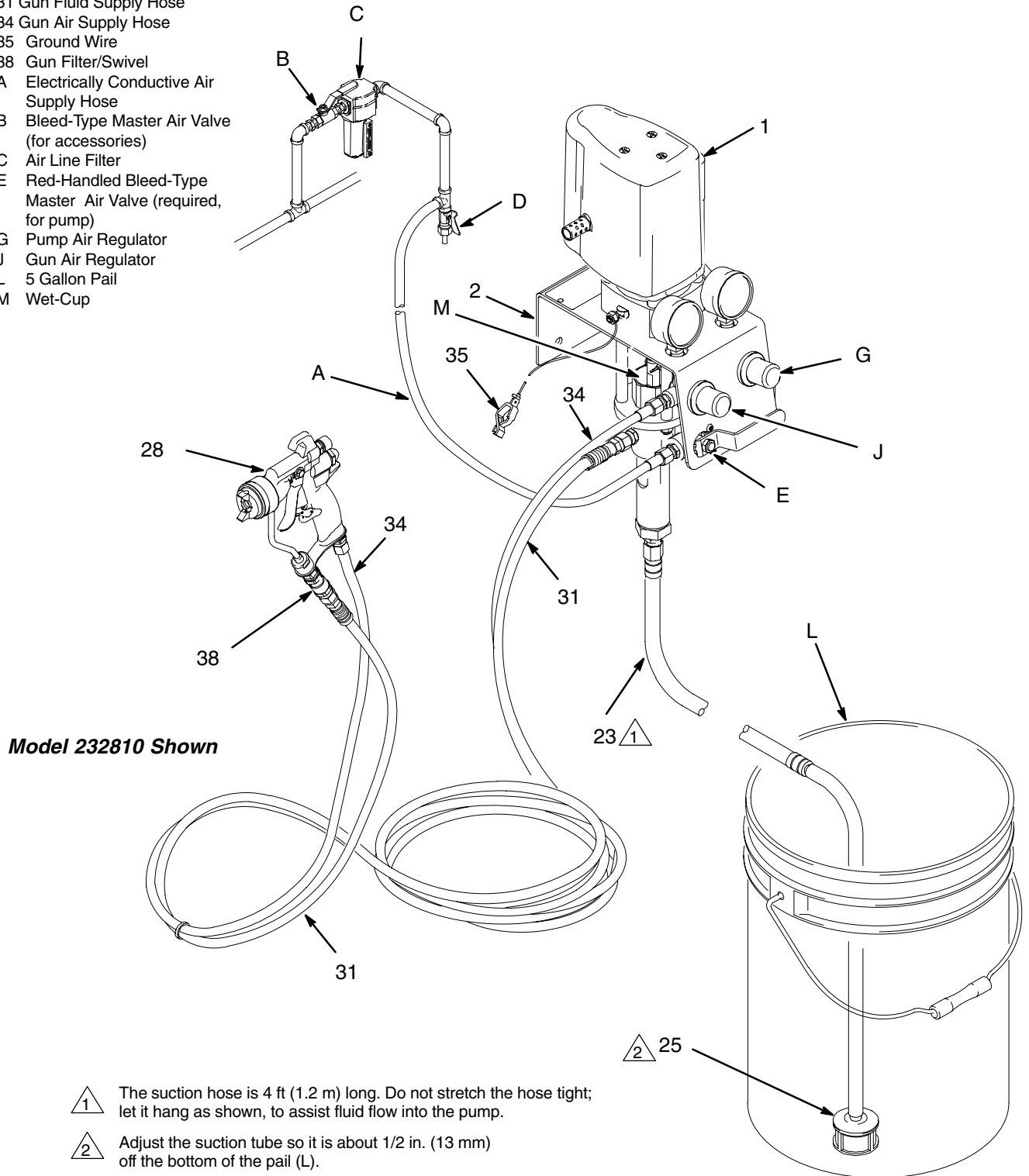


Fig. 4

9140B

# Operation

## Pressure Relief Procedure

### WARNING



#### SKIN INJECTION HAZARD

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

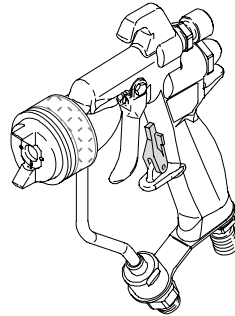
- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray tip.

## Air-Assisted Packages

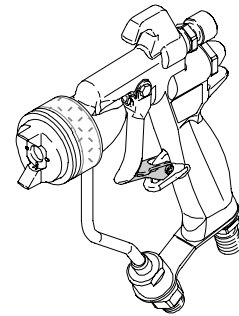
1. Fig. 4. Shut off power to the pump by closing the bleed-type master air valve (E, required in the system).
2. Fig. 5. Unlock the gun trigger safety.
3. Hold a metal part of the gun firmly to the side of a grounded metal waste container and trigger the gun to relieve the fluid pressure.
4. Lock the gun trigger safety.
5. If you suspect that the spray tip is completely clogged or that pressure has not been fully relieved after following the steps above, **very slowly** loosen the air cap retaining ring to relieve pressure in the cavity between the ball/seat shutoff and the plugged tip. Clear the tip orifice.
6. If you suspect that the gun fluid filter or the fluid hose is completely clogged or that pressure has not been fully relieved after following the steps above, **very slowly** loosen the hose end coupling at the gun and relieve pressure gradually. Then loosen completely to clear the obstruction.

## Airless Packages

1. Fig. 4. Shut off power to the pump by closing the bleed-type master air valve (E, required in the system).
2. Lock the gun trigger safety.
3. Remove tip.
4. Unlock the gun trigger safety.
5. Hold the metal part of the gun firmly to the side of a grounded metal waste container and trigger the gun to relieve the fluid pressure.
6. Lock the gun trigger safety.
7. Turn Prime/Spray valve to PRIME.



**Gun Trigger  
Safety Unlocked**



**Gun Trigger  
Safety Locked**

**Fig. 5**

9255A

### WARNING

*If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, **very slowly** loosen the hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.*

# Operation

## Wet Cup

Fig. 4. Before starting, fill wet cup (M) 1/3 full with Graco Throat Seal Liquid (TSL) or compatible solvent.

### WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** at left.

## Flush the Pump Before First Use

The pump is tested with lightweight oil, which is left in to protect the pump parts. If the fluid you are using may be contaminated by the oil, flush it out with a compatible solvent. See **Flushing** on page 16.

## Prime the Pump

1. Fig. 4. Remove tip guard and spray tip from gun (28). Refer to gun manual.
2. Close gun air regulator with gray knob (J) by turning knob counter clockwise reducing pressure to zero. Close pump air regulator with red knob (G) by turning knob counter clockwise reducing pressure to zero. Close bleed-type air valves (B, E).
3. Connect air line (A) to bleed type air valve (E).
4. Check that all fittings throughout system are tightened securely.
5. Position pail (L) close to pump. Suction hose (23) is 4 ft (1.2 m) long. Do not stretch hose tight; let it hang as shown in Fig. 4, to assist fluid flow into pump.
6. Hold metal part of gun (28) firmly to side of grounded metal pail and hold trigger open.
7. Open bleed-type air valves (B, E). Slowly turn clockwise pump air regulator with red knob (G) increasing pressure until pump starts.
8. Cycle pump slowly until all air is pushed out and pump and hoses are fully primed.
9. Release gun trigger and lock trigger safety. Pump should stall against pressure.

## Install the Spray Tip

### WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

Relieve the pressure by shutting off air valve and then trigger the gun. Install the spray tip and tip guard as explained in your separate gun manual, supplied.

The fluid output and pattern width depend on the size of the spray tip, the fluid viscosity, and the fluid pressure. Use the **Spray Tip Selection Chart** in your gun instruction manual as a guide for selecting an appropriate spray tip for your application.

# Operation

## Adjust the Spray Pattern – Air-Assisted Packages

### WARNING



#### SKIN INJECTION HAZARD

To reduce the risk of component rupture and serious injury, including injection, do not exceed the gun's maximum fluid working pressure of 1500 psi (10 MPa, 105 bar) or the maximum working pressure of the lowest rated component in the system.

### WARNING



#### COMPONENT RUPTURE HAZARD

Do not exceed the **maximum fluid and air pressure** of this gun. Higher pressures can cause parts to rupture and result in serious injury.

1. Do not turn on air supply. Set fluid pressure at low starting pressure. For low viscosity fluids (less than 25 sec, #2 Zahn cup) with lower percent solids (typically less than 40%), start at 300 psi (2.1 MPa, 21 bar) at pump outlet. For fluids with higher viscosity or higher solids content, start at 600 psi (4.2 MPa, 42 bar). Fluid pressure is con-

trolled by air regulator supplying pump. See example following.

#### Example:

Pump Ratio	x	Pump Air Regulator Setting	=	Fluid Pressure
Falcon I (10:1 ratio)	x	30 psi (0.21 MPa, 2.1 bar)	=	300 psi (2.1 MPa, 21 bar)
Falcon II (20:1 ratio)	x	30 psi (0.21 MPa, 2.1 bar)	=	600 psi (4.2 MPa, 42 bar)

2. Trigger gun to check atomization; do not be concerned about pattern shape.
3. Increase fluid pressure in 100 psi (0.7 MPa, 7 bar) increments, just to point where further increase in fluid pressure does not significantly improve fluid atomization. See example following.

#### Example:

Pump Ratio	x	Pump Air Regulator Setting (increments)	=	Fluid Pressure (increments)
Falcon I (10:1 ratio)	x	10 psi (0.07 MPa, 0.7 bar)	=	100 psi (0.7 MPa, 7 bar)
Falcon II (20:1 ratio)	x	5 psi (0.035 MPa, 0.35 bar)	=	100 psi (0.7 MPa, 7 bar)

# Operation

- Fig. 6. Close off pattern adjustment air by turning knob (S) clockwise (in) all the way. This sets gun for its widest pattern.
- Fig. 7. Set atomizing air pressure at about 5 psi (0.35 bar, 35 kPa) when triggered. Check spray pattern, then slowly increase air pressure until tails are completely atomized and pulled into spray pattern. Do not exceed 100 psi (0.7 MPa, 7 bar) air pressure to gun.

Fig. 6. *For narrower pattern*, turn pattern adjustment valve knob (S) counterclockwise (out). If pattern is still not narrow enough, increase air pressure to gun slightly or use different size tip.

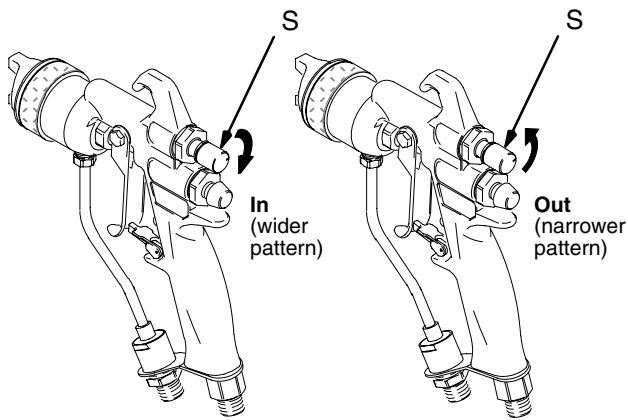


Fig. 6

9131A

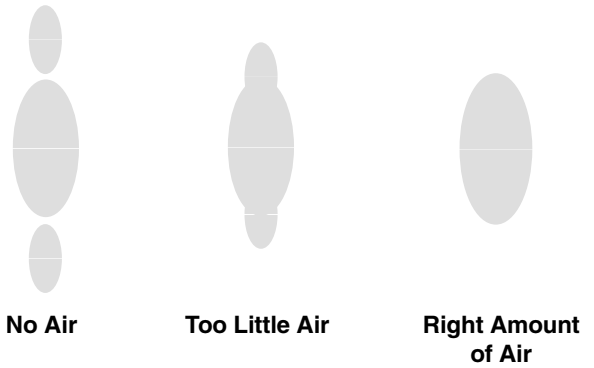


Fig. 7

0792

## Shutdown and Care of the Pump

### **WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

Always flush the pump before the fluid dries on the displacement rod. See **Flushing the Pump** on page 16.

# 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.

Fig.1. Replace lens covers (39) on regulator gauge lenses when dirt makes gouges difficult to read.

### WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

## Flushing the Pump

### WARNING



#### **FIRE AND EXPLOSION HAZARD**

Before flushing, read the section **FIRE AND EXPLOSION HAZARD** on page 5. Be sure the entire system and flushing pails are properly grounded. Refer to **Grounding** on page 10.

Flush the pump:

- Before first use
- When changing colors or fluids

- Before fluid dries or settles out in a dormant pump (check the pot life of catalyzed fluids)
- Before storing the pump.

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.

### WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

1. Fig. 4. Relieve the pressure.
2. Remove tip guard and spray tip from gun. Refer to separate gun manual.
3. Place suction hose (23) in container of solvent.
4. Hold metal part of gun firmly to side of grounded *metal* pail.
5. Start pump. Always use lowest possible fluid pressure when flushing.
6. Trigger gun. Flush system until clear solvent flows from gun.
7. Relieve pressure.
8. Clean tip guard, spray tip, and fluid filter element separately, then reinstall them.
9. Clean inside and outside of suction hose.

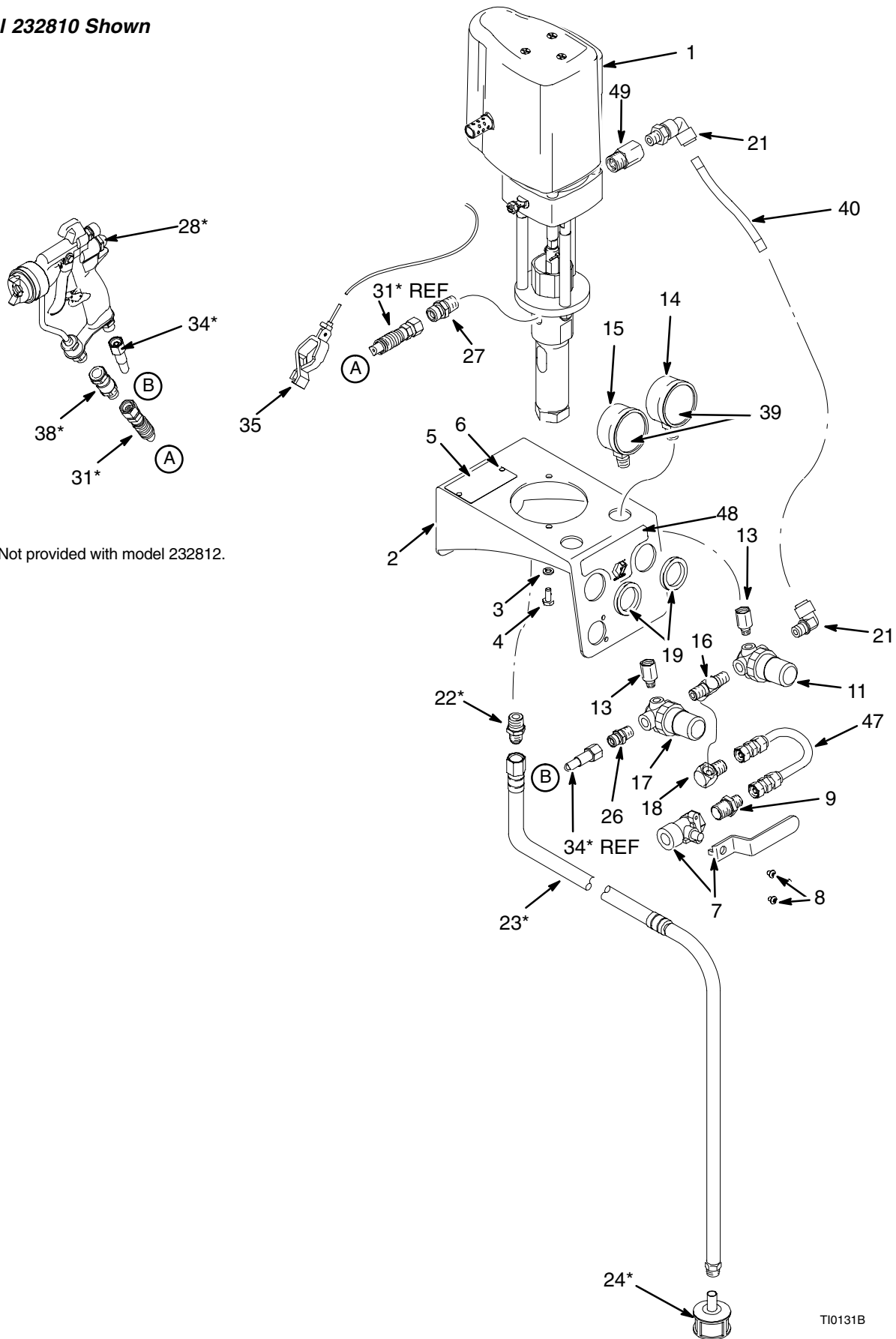


## Notes

[illegible]

# Falcon Parts Drawing

Model 232810 Shown



\* Not provided with model 232812.

TI0131B

# Falcon Parts List

## Falcon

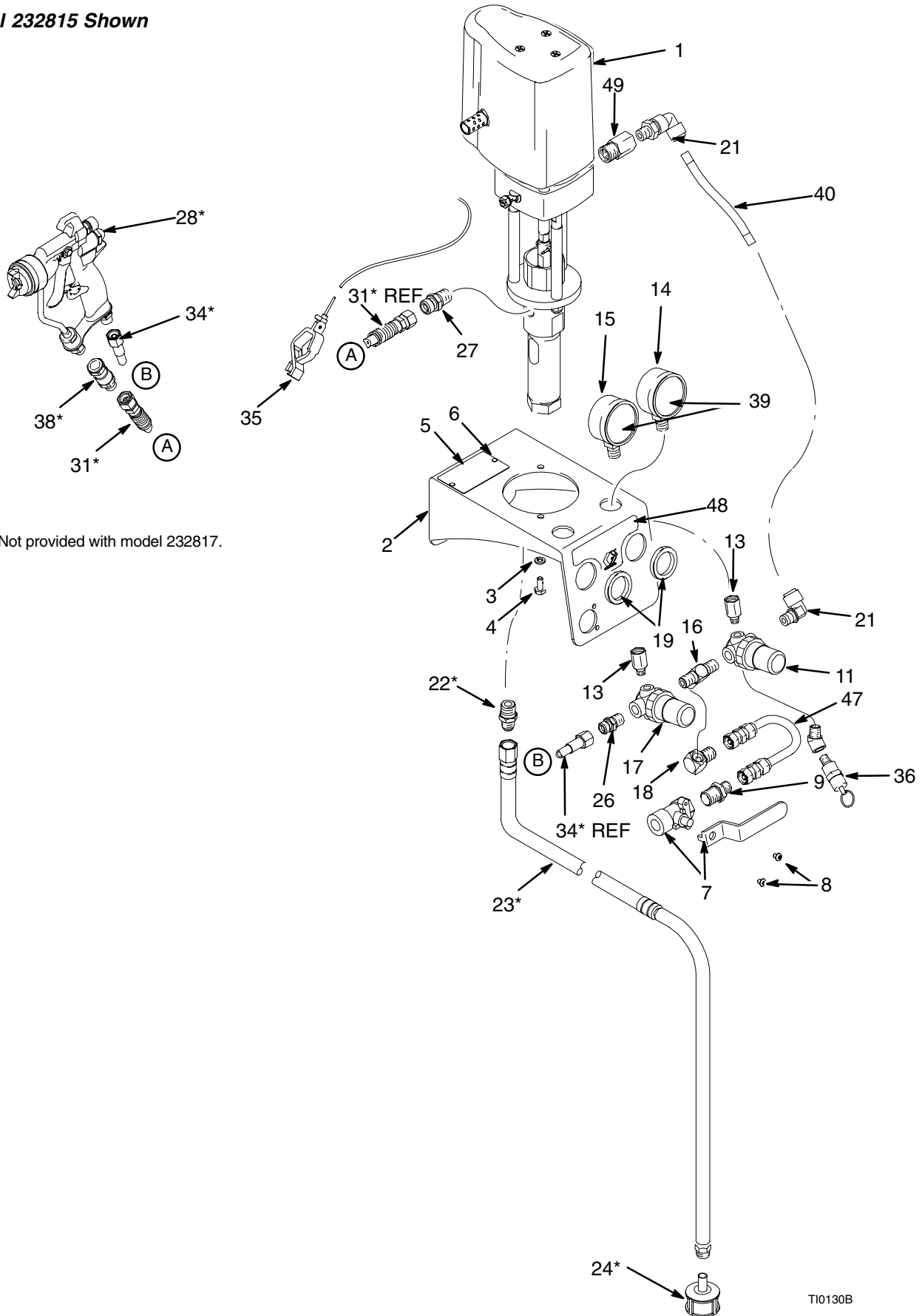
Models: 232810, 232812 and 288124

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	241594	PUMP, Falcon, 10:1 (see manual 308996)	1	26	162453	NIPPLE	1
2	243594	BRACKET, pump	1	27	166846	FITTING, adapter	1
3	100016	WASHER, lock	2	28*	249233	GUN ASSY, plastic (see manual 311001) (used on model 232810)	1
4	100270	SCREW, cap, hex hd	2		287926	GUN ASSY, carbide (see manual 311001) (used on model 288124)	1
5	15C287	PLATE, designation	1	31*	241812	HOSE, fluid, coupled, 25 ft (used on models 232810 and 232811)	1
6	104088	RIVET, blind	2	32*	AAMXXX	TIP, optional (user selected – not shown)	1
7	114362	VALVE, ball, valve	1	33*	AAM413	TIP, spray (not shown)	1
8	114381	SCREW, cap, button hd	2	34*	241811	HOSE, air, coupled, 25 ft (used on models 232810 and 232811)	1
9	157350	FITTING	1	35	238909	WIRE, grounding assy	1
11	115242	REGULATOR, air, 1/4 npt	1	38*	115898	SWIVEL (used on models 232810 and 232811)	1
13	159840	ADAPTER	2	39	193199	LENS COVER SHEET	1
14	160430	GAUGE, pressure, air	1	40	061374	TUBE, polyurethane, round, 6.67 in.	1
15	115252	GAUGE, pressure, air	1	47	115840	HOSE, coupled	1
16	115219	FITTING, tee, 1/4 npt	1	48	196157	LABEL	1
17	115243	REGULATOR, air, 1/4 npt	1	49	159841	FITTING	1
18	100840	FITTING, tube, qd	1				
19	115244	NUT, regulator	2				
21	115841	FITTING, tube, qd, swivel	2				
22*	112100	ADAPTER, male (used on models 232810 and 232811)	1				
23*	241634	HOSE, coupled, suction (used on models 232810 and 232811)	1				
24*	218798	STRAINER (used on models 232810 and 232811)	1				

\* Not provided with model 232812.

# Falcon II Parts Drawing

Model 232815 Shown



TI0130B

# Falcon II Parts List

## Falcon II

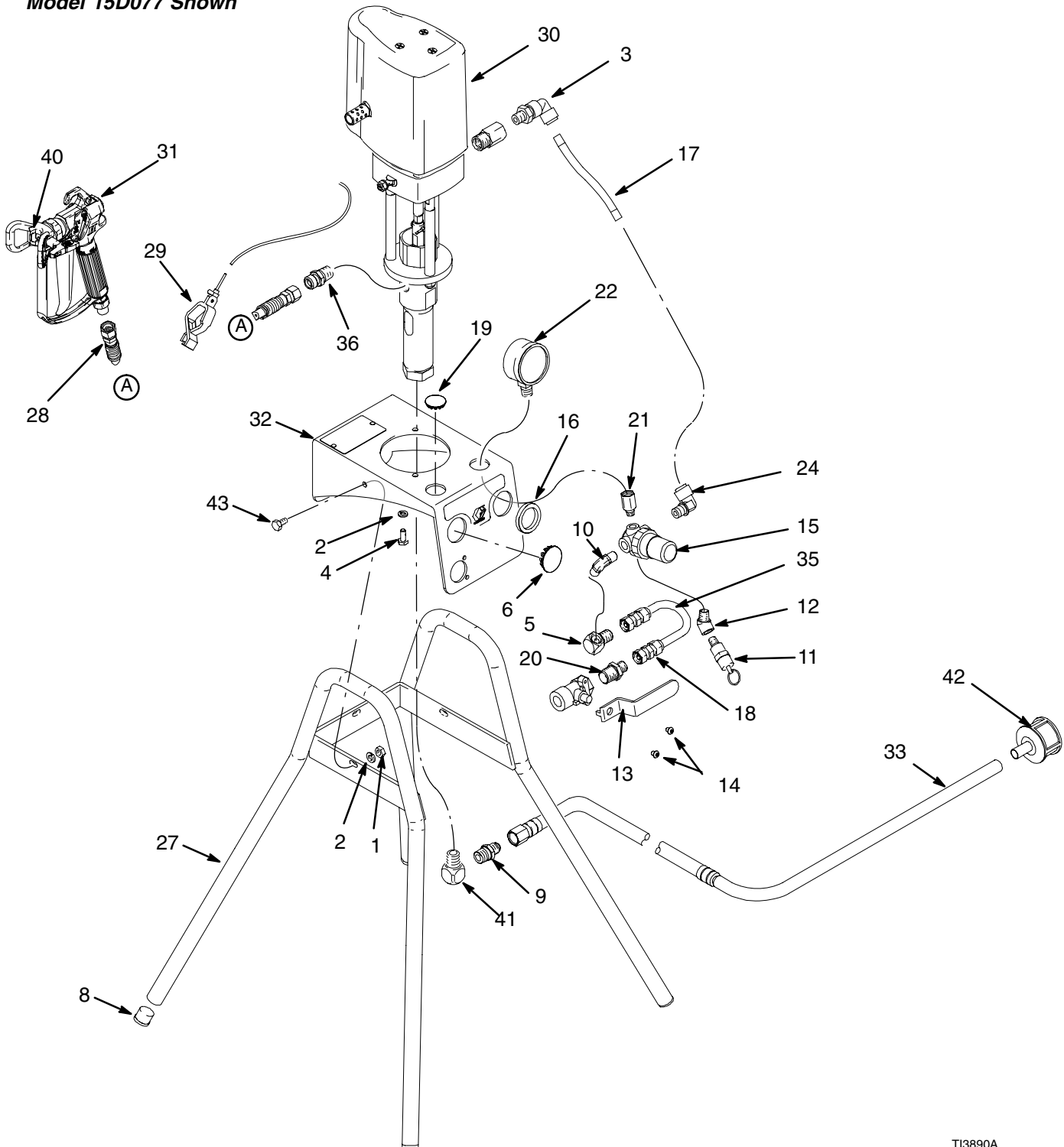
Models: 232815, 232817 and 288127

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	241595	PUMP, Falcon, 20:1 (see manual 308996)	1	26	162453	NIPPLE	1
2	243594	BRACKET, pump	1	27	166846	FITTING, adapter	1
3	100016	WASHER, lock	2	28*	249233	GUN ASSY, plastic (see manual 311001) (used on model 232815)	1
4	100270	SCREW, cap, hex hd	2		287926	GUN ASSY, carbide (see manual 311001) (used on model 288127)	1
5	15C287	PLATE, designation	1	31*	241812	HOSE, fluid, coupled, 25 ft (used on models 232815 and 232816)	1
6	104088	RIVET, blind	2	32*	AAMXXX	TIP, optional (user selected – not shown)	1
7	114362	VALVE, ball, valve	1	33*	AAM415	TIP, spray (not shown)	1
8	114381	SCREW, cap, button hd	2	34*	241811	HOSE, air, coupled, 25 ft (used on models 232815 and 232816)	1
9	157350	FITTING	1	35	238909	WIRE, grounding assy	1
11	115242	REGULATOR, air, 1/4 npt	1	36	115288	VALVE, relief	1
13	159840	ADAPTER	2	37	113630	FITTING, elbow	1
14	160430	GAUGE, pressure, air	1	38*	115898	SWIVEL (used on models 232815 and 232816)	1
15	115252	GAUGE, pressure, air	1	39	193199	LENS COVER SHEET	1
16	115219	FITTING, tee, 1/4 npt	1	40	061374	TUBE, polyurethane, round, 6.67 in.	1
17	115243	REGULATOR, air, 1/4 npt	1	47	115840	HOSE, coupled	1
18	100840	FITTING, tube, qd	1	48	196157	LABEL	1
19	115244	NUT, regulator	2	49	159841	FITTING	1
21	115841	FITTING, tube, qd, swivel	2				
22*	112100	ADAPTER, male (used on models 232815 and 232816)	1				
23*	241634	HOSE, coupled, suction (used on models 232815 and 232816)	1				
24*	218798	STRAINER (used on models 232815 and 232816)	1				

\* Not provided with model 232817.

# Airless Falcon II with Stand Parts Drawing

Model 15D077 Shown



TI3890A

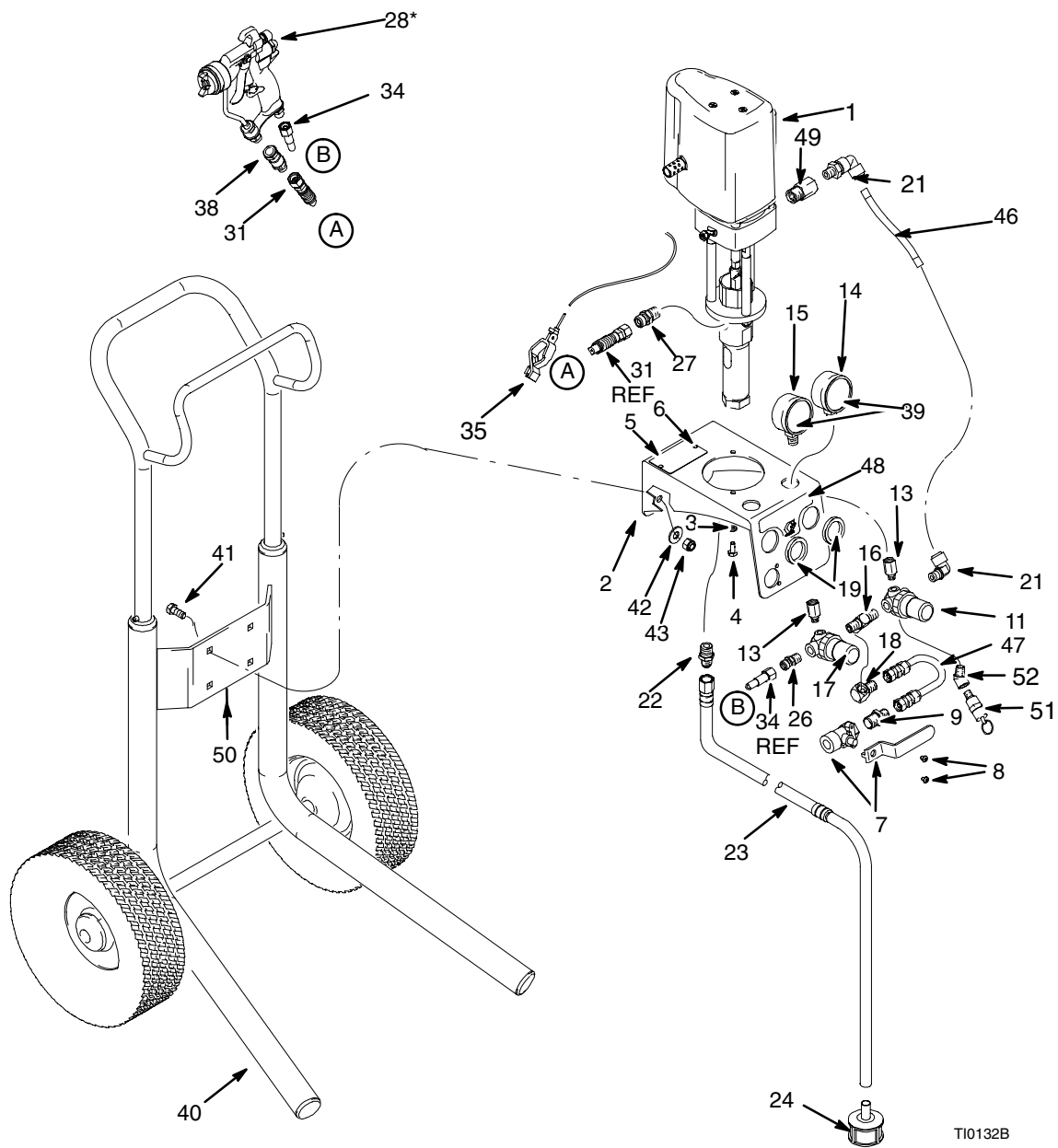
# Airless Falcon II with Stand Parts List

## Model 15D077

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	100015	NUT, hex	4	21	159840	ADAPTER	1
2	100016	WASHER, lock	6	22	160430	GAUGE, press, air	1
3	159841	ADAPTER	1	24	195342	ADAPTER, 1/8(m) x 1/4(f), sst	1
4	100270	SCREW, hex	2	27	218743	FRAME, stand, pump	1
5	100840	ELBOW, street	1	28	223540	HOSE, coupled, 25 ft.	1
6	101342	PLUG, button	1	29	238909	WIRE, grounding assembly	1
8	108175	PLUG	4	30	241595	PUMP, falcon 20:1	1
9	156849	PIPE, nipple	1	31	246232	GUN, spray, FTx II	1
10	110249	ADAPTER, elbow 90° male	1	32	243594	BRACKET, mounting	1
11	113498	VALVE, safety	1	33	244432	HOSE, coupled, suction	1
12	113630	ELBOW, street, 45° 1/8 NPT	1	35	061374	TUBE, polyurethane	7ft.
13	114362	VALVE, ball, air	1	36	166846	FITTING, adapter	1
14	114381	SCREW, cap	2	40	FFT312	TIP, spray, rac 5, fine finish	1
15	115242	REGULATOR, air, 1.4 NPT	1	41	155699	ELBOW, street	1
16	115244	NUT, regulator	1	42	218798	STRAINER	1
17	115840	HOSE, coupled	1	43	100022	SCREW, cap, hex	4
18	115841	FITTING, elbow	2	44	LTX517	TIP, spray, rac 5, latex	1
19	116569	BUTTON, plug	1				
20	157350	ADAPTER, 3/8 NPT x 1/4 NPT	1				

# Falcon with 2-Wheel Cart Parts Drawing

Model 233064 Shown





# Falcon with 2-Wheel Cart Parts List

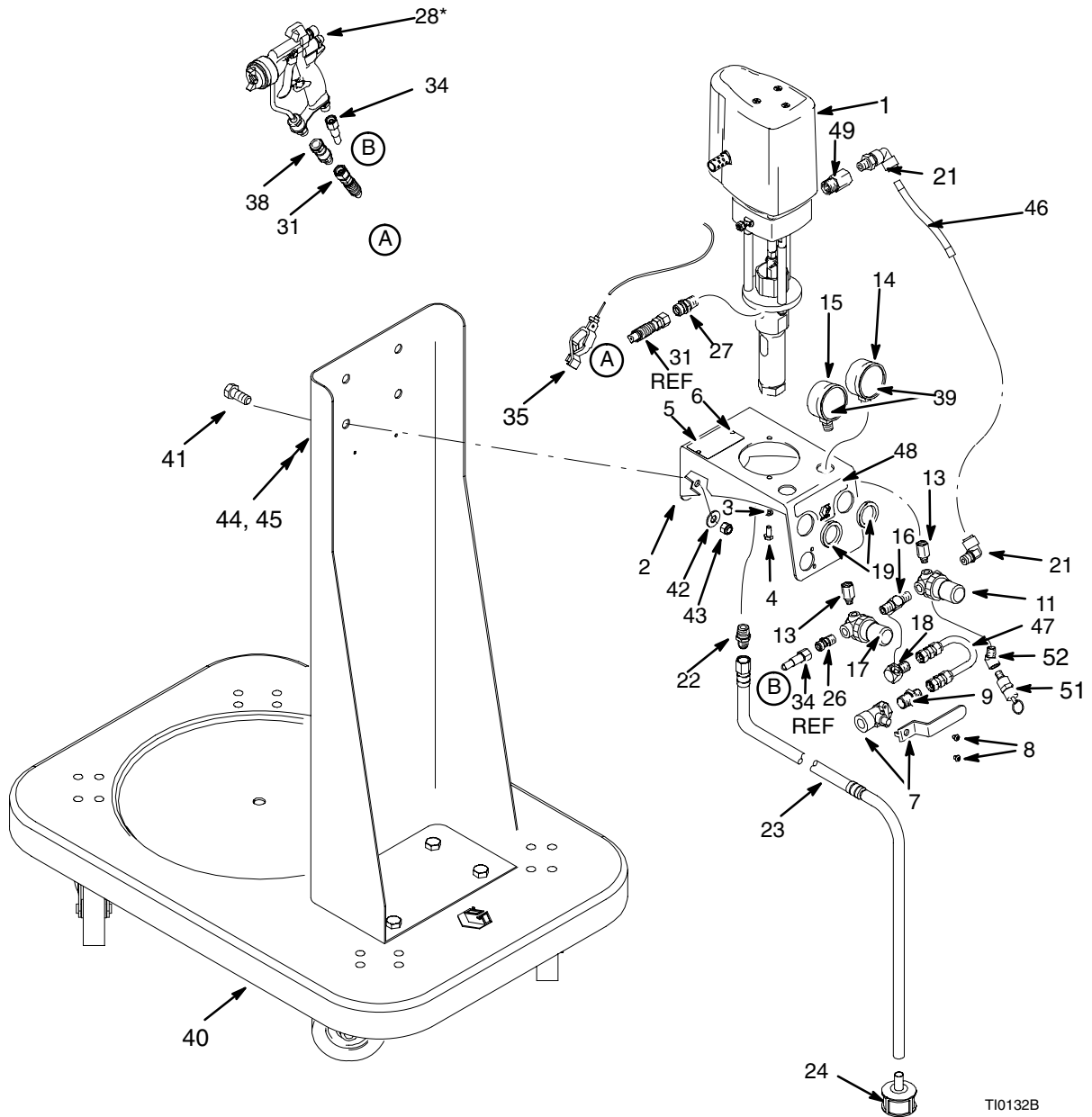
## Falcon

Models: 233064, 233939, 288125 and 288128

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	241594	PUMP, Falcon, 10:1 (233064,233065) (see manual 308996)		27	166846	FITTING, adapter	1
	241595	PUMP, Falcon, 20:1 (233939,233945)	1	28	249233	GUN ASSY, plastic (see manual 311001) (used on model 233064)	1
2	243594	BRACKET, pump	1		287926	GUN ASSY, carbide (see manual 311001) (used on models 288125 and 288128)	1
3	100016	WASHER, lock	2	31	241812	HOSE, fluid, coupled, 25 ft	1
4	100270	SCREW, cap, hex hd	2	32	AAMXXX	TIP, optional (user selected – not shown)	1
5	15C287	PLATE, designation	1	33	AAM413	TIP, spray (not shown)	1
6	104088	RIVET, blind	2	34	241811	HOSE, air, coupled, 25 ft	1
7	114362	VALVE, ball, valve	1	35	238909	WIRE, grounding assy	1
8	114381	SCREW, cap, button hd	2	38	115898	SWIVEL	1
9	157350	FITTING	1	39	193199	LENS COVER SHEET	1
11	115242	REGULATOR, air, 1/4 npt	1	40	243606	CART, 2-wheel	1
13	159840	ADAPTER	2	41	115847	BOLT, carriage	4
14	160430	GAUGE, pressure, air	1	42	100123	WASHER	
15	115252	GAUGE, pressure, air	1		100023	WASHER (233939, 233945)	4
16	115219	FITTING, tee, 1/4 npt	1	43	111040	NUT	4
17	115243	REGULATOR, air, 1/4 npt	1	46	061374	TUBE, polyurethane, round, 6.67 in.	1
18	100840	FITTING, tube, qd	1	47	115840	HOSE, coupled	1
19	115244	NUT, regulator	2	48	196157	LABEL	1
21	115841	FITTING, tube, qd, swivel	2	49	159841	FITTING	1
22	112100	ADAPTER, male	1	50	292030	LABEL (233939, 233945)	1
23	241634	HOSE, coupled, suction	1	51	115288	VALVE, safety (233939, 233945)	1
24	218798	STRAINER	1	52	113630	ELBOW, street, 45° (233939, 233945)	1
26	162453	NIPPLE	1				

# Falcon with 4-Wheel Cart Parts Drawing

Model 232820 Shown



T10132B

# Falcon with 4-Wheel Cart Parts List

## Falcon

Models: 232820, 232822, 232823, 233938, 288126, 288129

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	241594	PUMP, Falcon, 10:1 (232820, 232821, 232822, see manual 308996)		24*	181163	HOUSING, filter (used on models 232820, 232821, 232823, and 232824)	1
	241595	PUMP, Falcon, 20:1 (232823, 232824, 233938)	1	26	162453	NIPPLE	1
2	243594	BRACKET, pump	1	27	166846	FITTING, adapter	1
3	100016	WASHER, lock	2	28*	249233	GUN ASSY, plastic (see manual 311001) (used on models 232820 and 232823)	1
4	100270	SCREW, cap, hex hd	2		287926	GUN ASSY, carbide (see manual 311001) (used on models 288126 and 288129)	1
5	15C287	PLATE, designation	1	31*	241812	HOSE, fluid, coupled, 25 ft (used on models 232820, 232821, 232823, and 232824)	1
6	104088	RIVET, blind	2	32*	AAMXXX	TIP, optional (user selected – not shown) (used on model 232823)	1
7	114362	VALVE, ball, valve	1	33*	AAM413	TIP, spray (not shown)	
8	114381	SCREW, cap, button hd	2		AAM415	TIP, spray (not shown) (used on model 232824 only)	1
9	157350	FITTING	1	34*	241811	HOSE, air, coupled, 25 ft (used on models 232820 and 232821)	1
11	115242	REGULATOR, air, 1/4 npt	1	35	238909	WIRE, grounding assy	1
13	159840	ADAPTER	2	38*	115898	SWIVEL (used on models 232820, 232821, 232823, and 232824)	1
14	160430	GAUGE, pressure, air	1	39	193199	LENS COVER SHEET	1
15	115252	GAUGE, pressure, air	1	40	241646	CART, 4-wheel	1
16	115219	FITTING, tee, 1/4 npt	1	41	115847	BOLT, carriage	4
17	115243	REGULATOR, air, 1/4 npt	1	42	100123	WASHER, flat	4
18	100840	FITTING, tube, qd	1	43	111040	NUT, lock	4
19	115244	NUT, regulator	2	44	290128	PLATE, designation	1
21	115841	FITTING, tube, qd, swivel	1	45	104088	RIVET, blind	2
22*	112100	ADAPTER, male (used on models 232820, 232821, 232823, and 232824)	1	46	061374	TUBE, polyurethane, round, 6.67 in.	1
23*	241634	HOSE, coupled, suction (used on models 232820, 232821, 232823, and 232824)	1	47	115840	HOSE, coupled	1
24*	218798	STRAINER (used on models 232820, 232821, 232823, and 232824)	1	49	159841	FITTING	1
				51	115288	VALVE, safety (used on models 232823, 232824, 233938)	1
				52	113630	ELBOW, street, 45° (used on models 232823, 232824, 233938)	1

\* Not provided with models 232822 and 232938.

# Technical Data

Category	Data
Maximum fluid working pressure	<i>Part No:</i> 232810, 232812, 232820, 232822, 233064, 288124, 288125, 288126: 1000 psi (7 MPa, 70 bar) 232815, 232817, 232823, 233938, 233939, 233945, 288127, 288128, 288129: 1500 psi (10 MPa, 100 bar) 15D077: 2000 psi (13.7 MPa, 137 bar)
Maximum air input pressure	<i>Part No:</i> 232810, 232812, 232820, 232821, 15D077, 288124, 288125, 288126: 100 psi (0.7 MPa, 7 bar) 232815, 232817, 232823, 233938, and 233939, 288127, 288128, 288129: 68 psi (0.5 MPa, 4.7 bar)
Maximum gun air input pressure	50 psi (0.35 MPa, 3.5 bar)
Ratio	<i>Part Nos.</i> 232810, 232812, 232820, 232822, 233064, 288124, 288125, 288126: 10:1 <i>Part Nos.</i> 232815, 232817, 232823, 233938, 233939, 288127, 288128, 288129, 15D077: 20:1
Maximum operating temperature	120°F (66°C)
Weight	<i>Part Nos.</i> 232810, 232812, 232815, 232817, 232823, 233938, 233939, 233945, 288124, 288127, 288128, 288129 : 25 lb (11.3 Kg) 15D077: 28 lb (12.7 Kg) 232820, 232821, 232822, 288126: 45 lb (20 Kg) 233064, 233065, 288125: 60 lb (27 Kg)
Wetted parts	<i>Pump:</i> See pump manual 308996 <i>Spray Gun:</i> See gun manual 311001 or 309639 <i>Motor:</i> See motor manual 308995

## Sound Pressure Levels dB(A)

(measured at 1 meter from unit)

Air Motor	Input Air Pressures at 20 cycles per minute		30 cycles per minute
	40 psi (0.28 MPa, 2.8 bar)	70 psi (0.48 MPa, 4.8 bar)	100 psi (0.7 MPa, 7 bar)
Falcon	66.47 dB(A)	67.53 dB(A)	70.81 dB(A)
Falcon II	68.40 dB(A)	70.34 dB(A)	74.56 dB(A)

## Sound Power Levels dB(A)

(tested in accordance with ISO 9614–2)

Air Motor	Input Air Pressures at 20 cycles per minute		30 cycles per minute
	40 psi (0.28 MPa, 2.8 bar)	70 psi (0.48 MPa, 4.8 bar)	100 psi (0.7 MPa, 7 bar)
Falcon	70.06 dB(A)	71.31 dB(A)	74.78 dB(A)
Falcon II	71.47 dB(A)	70.72 dB(A)	77.38 dB(A)

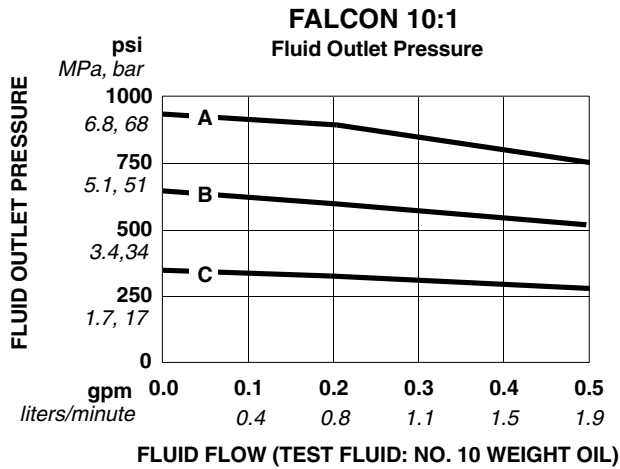
# Technical Data

## Performance Charts

**To find Fluid Outlet Pressure** (psi/MPa/bar) at a specific fluid flow (lpm/gpm) and operating air pressure (psi/MPa/bar):

1. Locate fluid flow rate along bottom of chart.
2. Follow vertical line up to intersection with selected fluid outlet pressure curve.
3. Follow left to scale to read fluid outlet pressure.

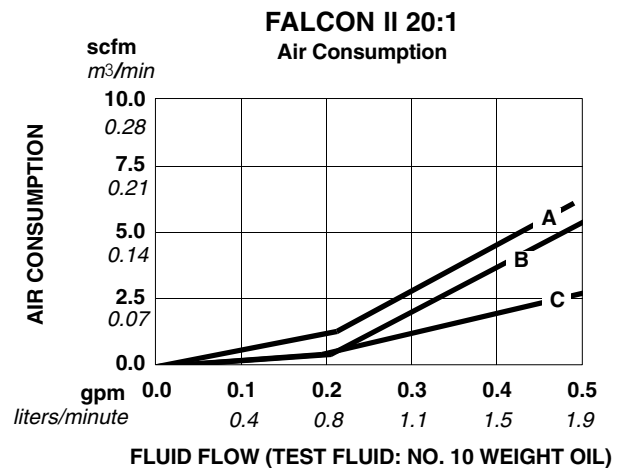
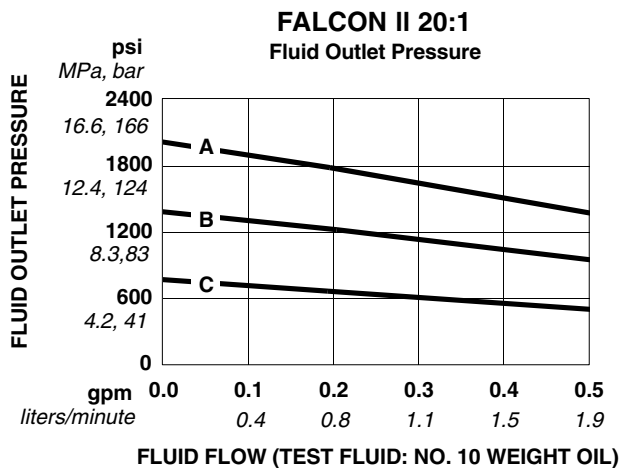
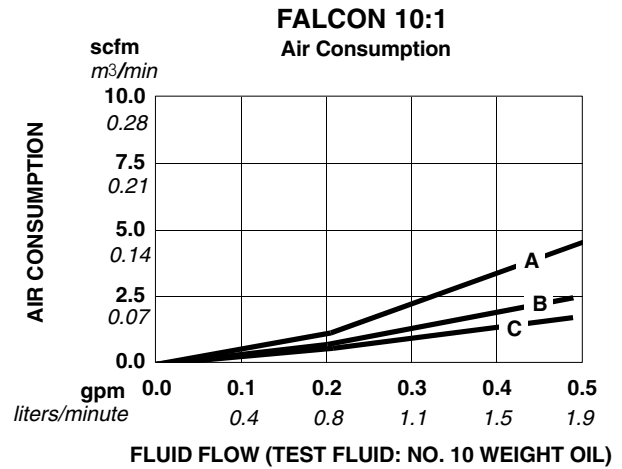
- A** 100 psi (0.7 MPa, 7 bar) air pressure  
**B** 70 psi (0.49 MPa, 4.9 bar) air pressure  
**C** 40 psi (0.28 MPa, 2.8 bar) air pressure



**To find Pump Air Consumption** (m<sup>3</sup>/min or scfm) at a specific fluid flow (lpm/gpm) and air pressure (psi/MPa/bar):

1. Locate fluid flow rate along bottom of chart.
2. Read vertical line up to intersection with selected air consumption curve.
3. Follow left to scale to read air consumption.

- A** 100 psi (0.7 MPa, 7 bar) air pressure  
**B** 70 psi (0.49 MPa, 4.9 bar) air pressure  
**C** 40 psi (0.28 MPa, 2.8 bar) air pressure

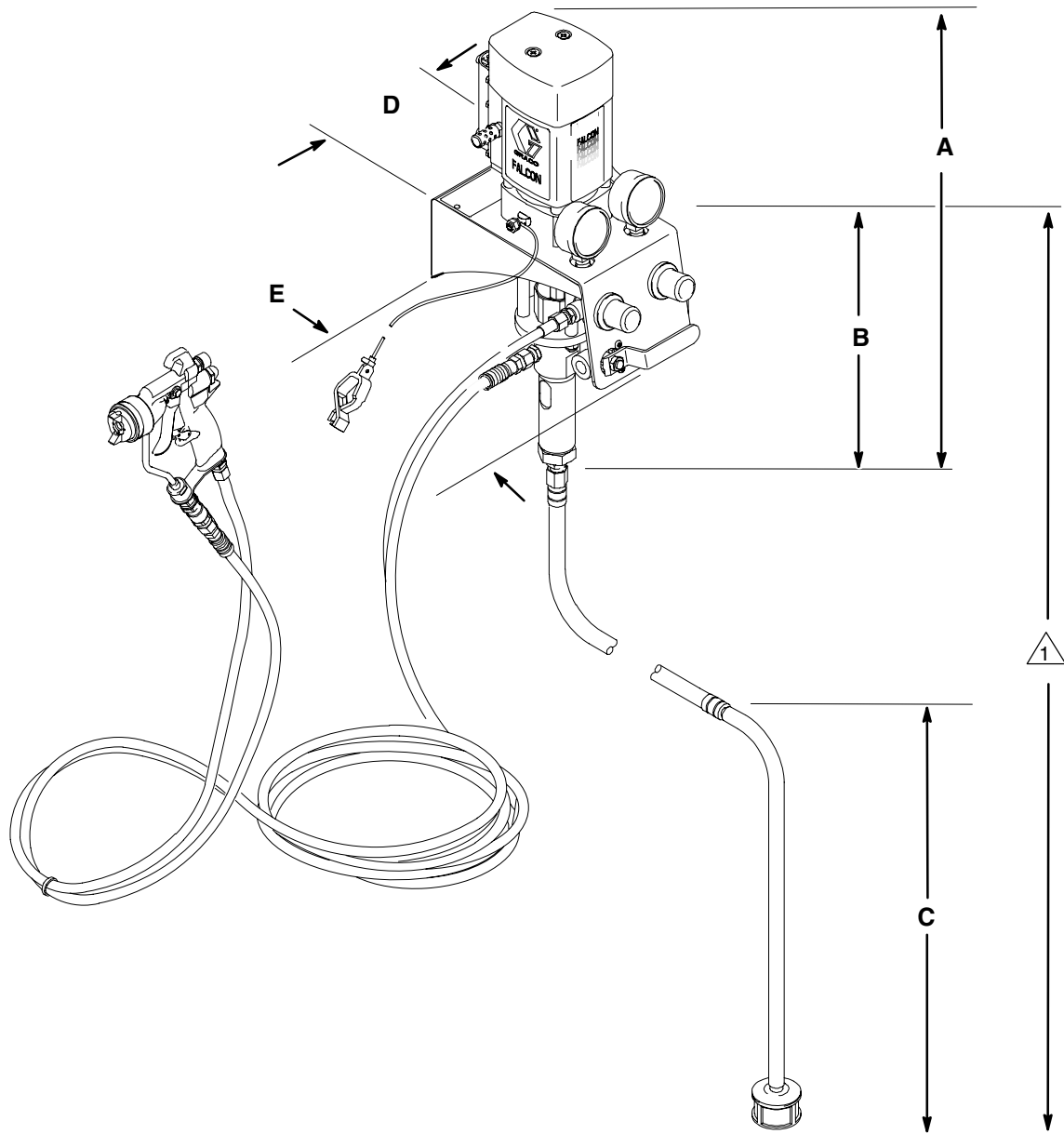


# Dimensions

## Model 232810 Shown



Mount the pump assembly so the top of the bracket is 4 to 5 ft (1.2 to 1.5 m) above the floor.



9139A

Pump Model	A	B	C	D	E
232810 to 232812, 288124 Falcon 10:1	21.2 in. (538 mm)	13 in. (330 mm)	17 in. (432 mm)	5.5 in. (139 mm)	10.6 in. (269 mm)
232815 to 232817, 288127 Falcon II 20:1	21.2 in. (538 mm)	13 in. (330 mm)	17 in. (432 mm)	5.5 in. (139 mm)	10.6 in. (269 mm)
232820 to 232822, 288126 Falcon 10:1 232823, 233938, 288129 Falcon 20:1 (4-wheel cart)	37.6 in. (955 mm)	13 in. (330 mm)	17 in. (432 mm)	16 in. (406 mm)	25.2 in. (640 mm)
233064, 288125 Falcon 10:1 233939, 288128 Falcon 20:1 (2-wheel cart)	38.5 in. (978 mm)	13 in. (330 mm)	17 in. (432 mm)	20.8 in. (528 mm)	20.3 in. (516 mm)

## Notes

[illegible]

# 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 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 présent 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 procédures concernées.

# Graco Information

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

**1-800-328-0211 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.*

MM 308994

**Graco Headquarters:** Minneapolis  
**International Offices:** Belgium, China, Japan, Korea

**[www.graco.com](http://www.graco.com)**

308994M 6/1999, Revised 7/2006