

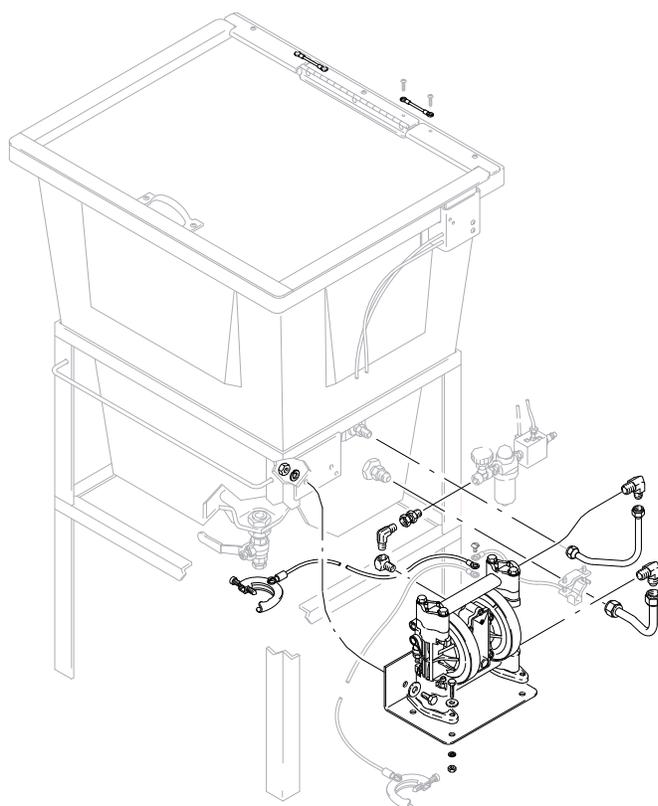
Pro-Wash™ Gun Washer

Husky 307™ Pump Upgrade Kit

For Gun Washers with a Mini-Flo™ Supply Pump

Kit 236—290

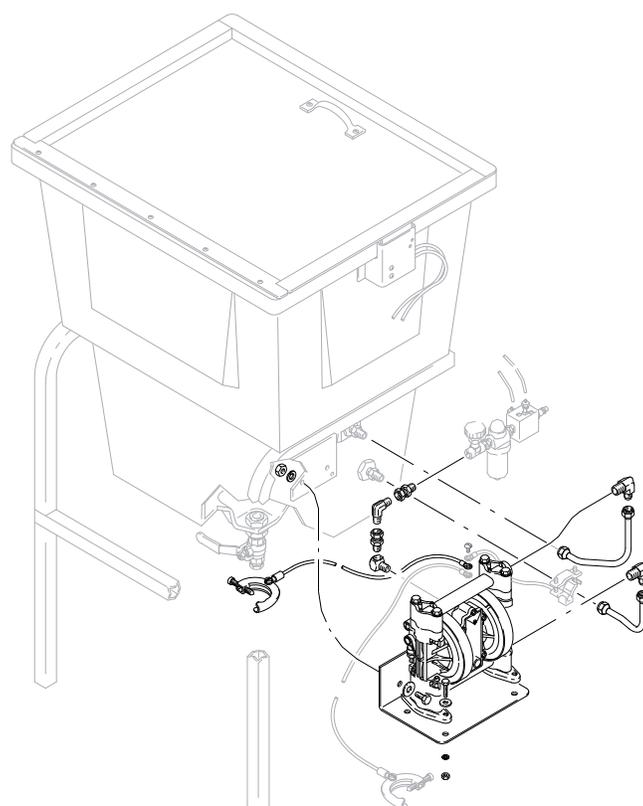
For Model 110—484 Gun Washer, Series A
100 psi (7 bar) Maximum Working Pressure



02466

Kit 236—289

For Model 110—820 Gun Washer
100 psi (7 bar) Maximum Working Pressure



02467

WARNING

Hazard of Using Fluids Containing Halogenated Hydrocarbons

Never use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents with gun washers or guns having wetted aluminum or galvanized parts. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious bodily injury and/or substantial property damage.

Consult your fluid suppliers to ensure that the fluids being used are compatible with aluminum parts.

Refer to the Technical Data in your pump and gun washer manuals for "Wetted Parts" information.

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WARNINGS

For Professional Use Only. Observe All Warnings.

Read and understand all instruction manuals, tags, and warning labels before operating equipment.

EQUIPMENT MISUSE HAZARD

General Safety

Any misuse of the equipment or accessories, such as overpressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, can cause them to rupture and result in serious bodily injury, including eye injury, fire, explosion or property damage.

A safety device has been installed to shut off the pump when the gun washer lid is opened. Do not tamper with or alter this device. Serious bodily injury, including blindness, could result.

The gun washer lid has been designed to close automatically unless supported by hand. Never attempt to overcome this safety feature by propping the cover open with an object or by any other means.

Never alter or modify any part of this equipment.

Check all equipment regularly and repair or replace worn or damaged parts immediately.

Take precautions to avoid a hazardous fluid spill. See **USING HAZARDOUS FLUIDS** on page 3.

System Pressure

The Husky 307 pump develop 100 psi (7 bar) *Maximum Fluid Working Pressure* at 100 psi (7 bar) *Maximum Incoming Air Pressure*. Never exceed these maximum pressures, or the maximum working pressure of the lowest rated component in your system.

Fluid Compatibility

Be sure all fluids and solvents used are chemically compatible with the “Wetted Parts” shown in the **Technical Data** in your pump and gun washer manuals. Always read the solvent manufacturer’s literature before using the solvent in this equipment.

If the Husky 307 pump diaphragm fails, non-wetted parts will be exposed to the fluid, along with the wetted parts. Check the pump manual for a list of non-wetted materials.

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including splashing fluid or solvent in the eyes or on the skin, always shut off the air to the pump, relieve all system pressure, and drain the solvent from the gun washer tank before checking, adjusting, cleaning, moving, or repairing any part of the system.

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards – particularly the General Standards, Part 1910, Sections 1910.106 and 1910.107 – should be consulted.

USING HAZARDOUS FLUIDS

Improper handling of hazardous fluids or inhaling toxic vapors can cause extremely serious bodily injury, even death, due to splashing in the eyes, ingestion, or bodily contamination. Know what fluid you are pumping and its specific hazards. Store hazardous fluid in an appropriate, approved container. Dispose of it according to all Local, State and Federal regulations for hazardous fluids. Observe all the following precautions when handling known or potentially hazardous fluids.

1. Always wear appropriate clothing and equipment, such as eye protection and breathing apparatus, to protect yourself.
2. Pipe and dispose of the exhaust air safely. If the diaphragm fails, the fluid is exhausted along with the air, through the muffler. When pumping flammable or hazardous fluids, you must vent the exhaust to a safe place, away from people, animals,

or food handling areas. Place a container at the end of the air exhaust line to catch the fluid. See Fig. 1.

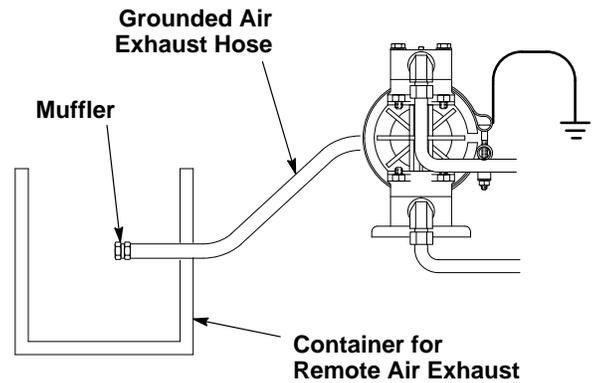


Fig. 1

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FIRE OR EXPLOSION HAZARD

Flammable Liquid

Flammable liquid solvent vapors may ignite. Always keep all ignition sources such as static electricity, sparks, arcs, open flames (including pilot lights), and hot objects (including cigarettes) away from the gun washer and solvent.

Make sure the *ES ON-OFF* valve lever (electrostatics) is “OFF” before cleaning an electrostatic gun.

Never allow solvent to enter the air passage of any electrostatic gun. Plug the gun air inlet before cleaning the gun.

Use only solvents recommended by spray gun manufacturer.

Always use solvent with the highest possible flash-point.

Use only non-conductive solvent when cleaning electrostatic guns.

The PRO-Wash gun washer is classified as a temporary storage container. To reduce the risk of fire or explosion, be sure to drain the solvent into a proper storage container and store it according to the local code for flammable liquids when shutting down your system.

Static Sparking

Static electricity is created by the fluid flowing through the pump and hose. If the equipment is not properly grounded, sparking may occur, and the system may become hazardous. 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 cause a fire or explosion, serious bodily injury, and property damage.

If you experience any static sparking or even a slight shock while using this equipment, **stop using the equipment immediately**. Do not use the equipment again until the cause of the problem is identified and corrected.

Grounding

To reduce the risk of static sparking, ground the pump and all other equipment used or located in the gun washer area. Check your local electrical code for detailed grounding instructions for your area and type of equipment. *Ground all of this equipment:*

- *Gun Washer:* ground as instructed on page 6 or 8. Check grounding continuity as instructed on page 10.
- *Air and Fluid hoses:* Use only grounded hoses with a maximum of 500 ft. (150 m) combined hose length to ensure grounding continuity.
- *Air compressor:* Ground according to manufacturer's recommendations.
- *Ground all solvent pails used when flushing and draining* according to local code. Use only metal pails, which are conductive. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts the grounding continuity.
- *Fluid supply container:* Ground according to local code.

Installation

These kits were designed to replace the Mini-Flo pump with a Husky™ 307 pump.

WARNING

Separate manuals are supplied with some components of your gun washer. Read and understand all the instruction manuals before operating. Refer to Service Manual 308–194 for Husky pump operation.

The Husky 307 pump develop 100 psi (7 bar) *Maximum Fluid Working Pressure* at 100 psi (7 bar) *Maximum Incoming Air Pressure*. Never exceed these maximum pressures, or the maximum working pressure of the lowest rated component in your system.

Be sure that all fluids and solvents used are chemically compatible with the wetted parts listed in your separate component manuals.

Remove the Mini-Flo Pump

NOTE: Model 110–484 Gun Washer is shown in Fig. 2. Follow the same procedure for Model 110–820.

1. Drain all solvent from the tank and tubing.
2. Disconnect both ground wires (A) from the washer frame. Retain the ground wire and fasteners. See Fig. 2.
3. Disconnect the grounding clamp (B) from the pump fluid inlet. Retain the fasteners and grounding assembly.
4. Disconnect the fluid inlet (C) and outlet tubes (D) from the side of the tank.
5. Label each tube (E) with tape as to where it attaches to the air manifold (F) for reconnection later. Remove the tubes from the air manifold.
6. Remove the Mini-Flo pump (G) from the washer frame by removing the u-bolt and bracket (H).
7. Disconnect the air valve, lubricator, and manifold (F) from the pump and retain in one assembled piece.

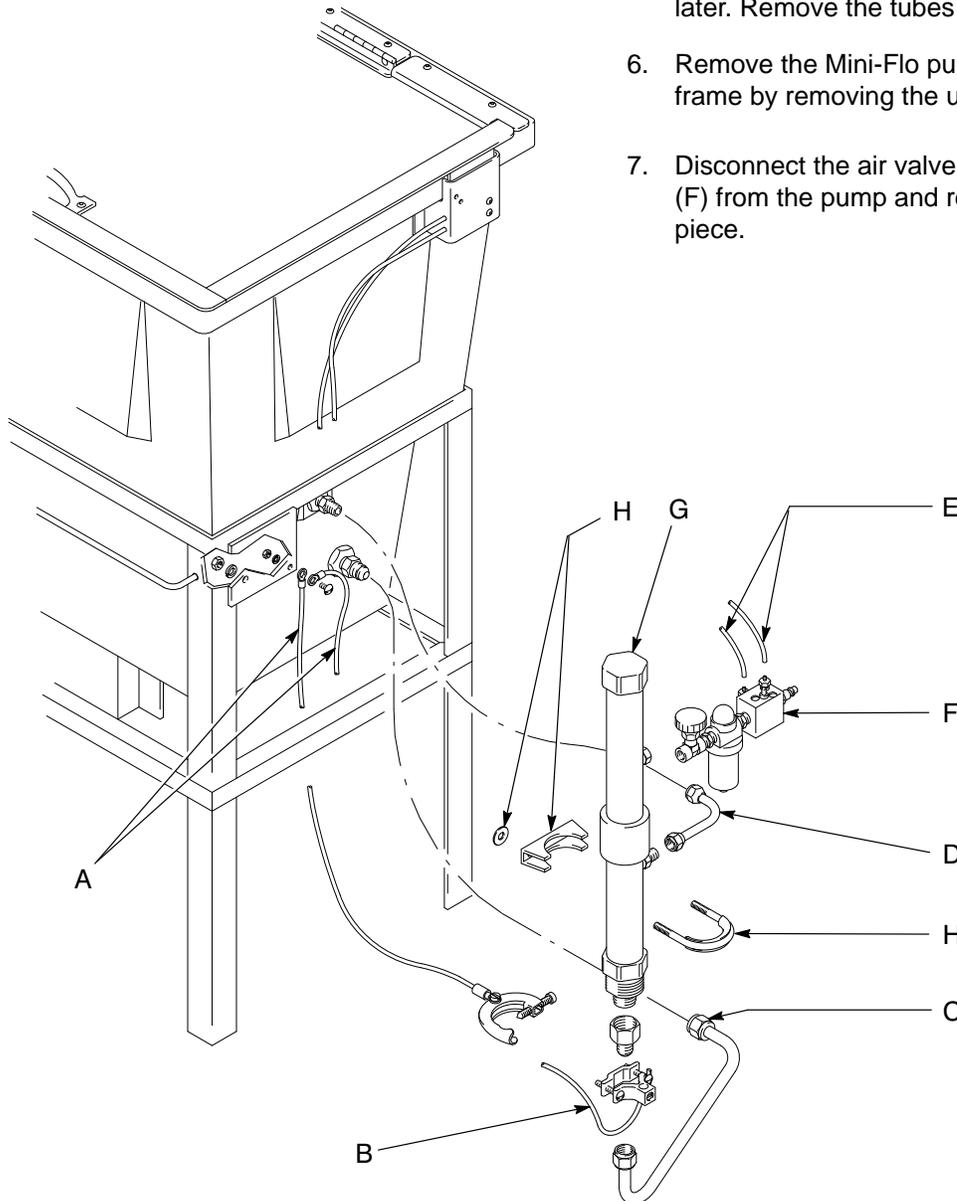


Fig. 2

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Installation and Parts

Installing the Husky Pump on the Model 110–484 Gun Washer

NOTE: Refer to Fig. 4 to assemble. Only the numbered parts are included with the kit.

1. Mount the bracket (1) securely to the gun washer with two 3/8" bolts, washers, lock washers and nuts (4, 5, 6, & 7).
2. Install the 3/8" npt end of the elbow (13) into the pump fluid outlet, using pipe thread tape.
3. Install the 3/8" npt end of the elbow (14) into the pump fluid inlet. Position the elbows (13, 14) parallel to the pump body as shown in Fig. 4. Tighten them securely, leaving 3/8" of thread exposed.
4. Install the swivel fitting (12) into the air valve, lubricator, and manifold assembly (F), using pipe thread tape. Tighten it securely.
5. Install the elbow (19) into the pump air inlet, using pipe thread tape. Position the threaded hole in the elbow to face directly upward as shown. Tighten it securely.
6. Install the adapter (16) into the elbow (19) using pipe thread tape. Position the adapter to face the fluid inlet/outlet side of the pump as shown. Tighten it securely.
7. Assemble the swivel fitting (12), air valve, lubricator, and manifold assembly (F) to the adapter (16), then hand tighten.
8. Connect all three grounding wires (J) to the pump grounding strap (K) as shown in Fig. 3. Use the nuts, washers, and screws (L, M, N) retained from the Mini-Flo removal.
9. Mount the Husky pump (18) on the bracket (1) with the air exhaust facing the gun washer. Use the four 1/4" bolts, washers, lock washers, and nuts (8, 9, 10, & 11) to secure the pump.
10. Position the air valve, lubricator and manifold assembly (F) parallel to the gun washer tank and pump and tighten the swivel fitting (12).
11. Connect the outlet fluid tube (2) between the gun washer fluid inlet and the pump outlet elbow (13). Tighten until snug; do not over tighten.
12. Connect the inlet fluid tube (3) between the gun washer fluid outlet and the pump inlet elbow (14). Tighten until snug; do not over tighten.
13. Remove the screws on the lid hinge as shown in Fig. 4. Install the two jumpers (17).
14. Attach the ground clamp (B¹), retained from the Mini-Flo pump removal, to the fluid inlet tube (3) at the side of the tank. (Also refer to Fig. 7, page 10, for placement of the ground clamp.)

15. Attach the ground clamp (15) to the gun washer tank drain valve (P). (Also refer to Fig. 7.)
16. Reconnect the black and blue colored tubes to the appropriate manifold ports.
17. Connect the other ground clamp (B²), retained from the Mini-Flo pump, to a true earth ground.

This completes the installation of the Husky 307 pump. Check grounding continuity as instructed on page 10. Refer to pages 10 and 11, as well as your Gun Washer Manual, for operating procedures.

Parts List for Kit No. 236–290

Ref. No.	Part No.	Description	Qty.
1	189–035	BRACKET, pump	1
2	112–452	TUBE ASSEMBLY; outlet	1
3	112–453	TUBE ASSEMBLY; inlet	1
4	100–101	SCREW, cap; 3/8–16 x 1.0" (25.4 mm)	2
5	100–023	WASHER, flat	2
6	100–133	WASHER, lock	2
7	100–307	NUT, hex; 3/8–16	2
8	100–021	SCREW, cap; 1/4–20 x 1.0" (25.4 mm)	4
9	100–527	WASHER, flat	4
10	100–016	WASHER, lock	4
11	100–015	NUT, hex; 1/4–20	4
12	156–823	ADAPTER, male elbow	1
13	112–454	ELBOW, street; 90° 3/8 npt(m) x 3/8 JIC	1
14	112–455	ELBOW, street; 90° 3/8 npt(m) x 1/2 JIC	1
15	236–297	GROUNDING CLAMP ASSEMBLY	1
16	110–249	ADAPTER, 90° male elbow	1
17	236–313	GROUND JUMPER CABLE ASSEMBLY	2
18	235–234	PUMP, 307 Husky; See 308–194 for parts	1
19	100–840	ELBOW, street; 1/4 npt(m x f)	1

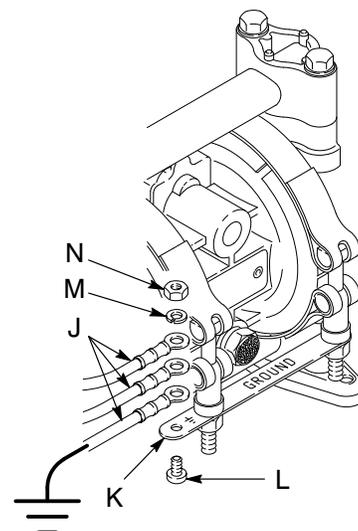


Fig. 3

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Installation and Parts

Kit No. 236–290

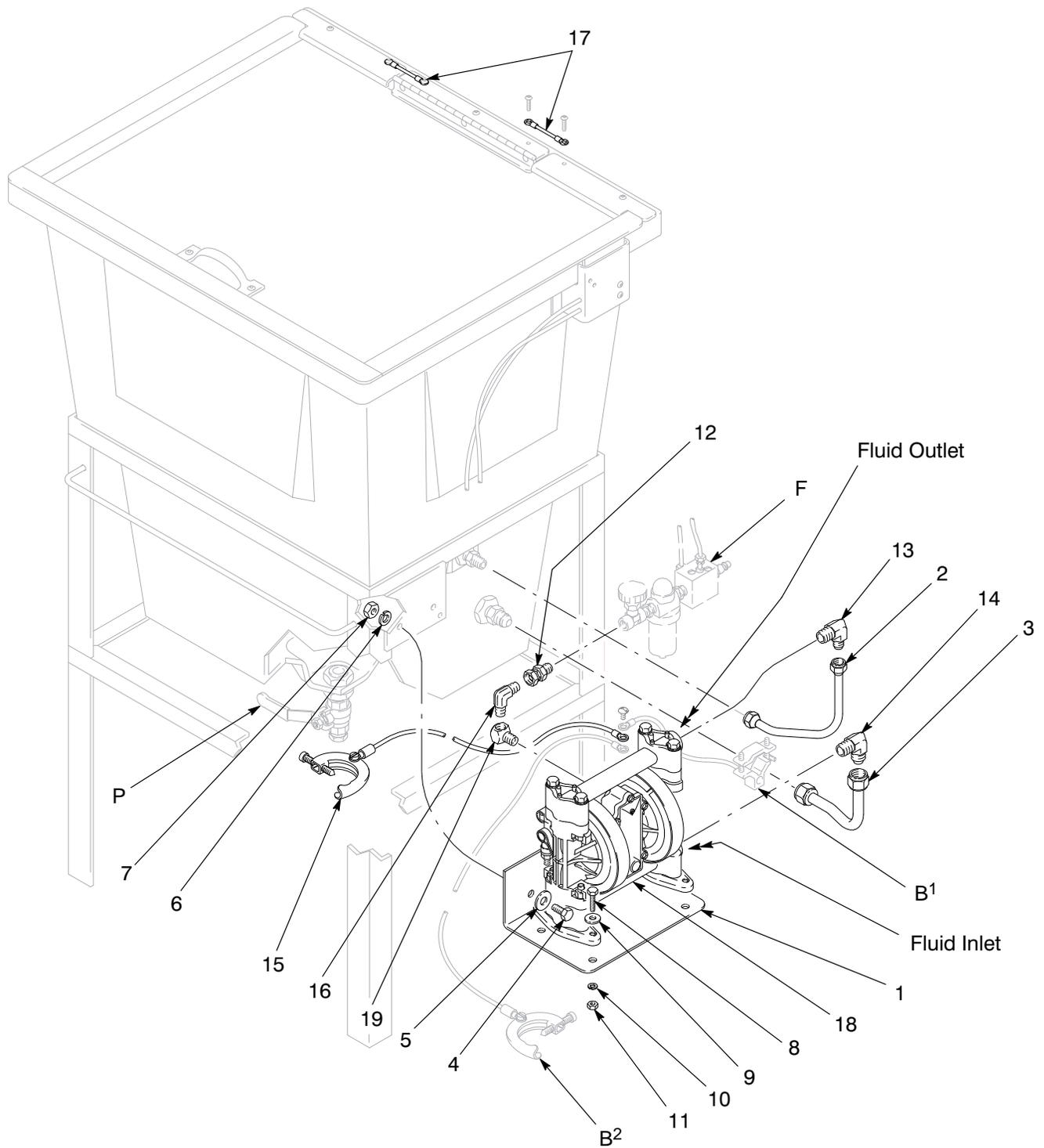


Fig. 4

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Installation and Parts

Installing the Husky Pump on the Model 110–820 Gun Washer

NOTE: Refer to Fig. 6 to assemble. Only the numbered parts are included with the kit.

1. Mount the bracket (1) securely to the gun washer with two 3/8" bolts, washers, lock washers and nuts (4, 5, 6, & 7).
2. Install the 3/8" npt end of the elbows (13) into the pump fluid outlet and inlet, using pipe thread tape. Position the elbows parallel to the pump body as shown in Fig. 6. Tighten them securely, leaving 3/8" of thread exposed.
3. Install the swivel fitting (12) into the air valve, lubricator, and manifold assembly (F), using pipe thread tape. Tighten it securely.
4. Install the elbow (19) into the pump air inlet, using pipe thread tape. Position the threaded hole in the elbow to face directly upward as shown. Tighten it securely.
5. Install the swivel fitting (12) into the elbow (19), using pipe thread tape. Tighten it securely.
6. Install the adapter (16) into the swivel fitting (12). Position the adapter to face the fluid inlet/outlet side of the pump as shown. Hand tighten it.
7. Assemble the swivel fitting (12), air valve, lubricator, and manifold assembly (F) to the adapter (16), then hand tighten.
8. Connect all three grounding wires (J) to the pump grounding strap (K) as shown in Fig. 5. Use the nuts, washers, and screws (L, M, N) retained from the Mini-Flo removal.
9. Mount the Husky pump (18) on the bracket (1) with the air exhaust facing the gun washer. Use the four 1/4" bolts, washers, lock washers, and nuts (8, 9, 10, & 11) to secure the pump.
10. Position the air valve, lubricator and manifold assembly (F) parallel to the gun washer tank and pump and tighten the swivel fitting (12).
11. Connect the outlet fluid tube (2) between the gun washer fluid inlet and the pump outlet elbow (13). Tighten until snug; do not over tighten.
12. Connect the inlet fluid tube (3) between the gun washer fluid outlet and the pump inlet elbow (13). Tighten until snug; do not over tighten.
13. Attach the ground clamp (B¹), retained from the Mini-Flo pump removal, to the fluid inlet tube (3) at the side of the tank. (Also refer to Fig. 7, page 10, for placement of the ground clamp.)

14. Attach the ground clamp (15) to the gun washer tank drain valve (P). (Also refer to Fig. 7.)
15. Reconnect the tubes to the appropriate manifold ports.
16. Connect the other ground clamp (B²), retained from the Mini-Flo pump, to a true earth ground.

This completes the installation of the Husky 307 pump. Check grounding continuity as instructed on page 10. Refer to pages 10 and 11, as well as your Gun Washer Manual, for operating procedures.

Parts List for Kit No. 236–289

Ref. No.	Part No.	Description	Qty.
1	189–035	BRACKET, pump	1
2	112–461	TUBE ASSEMBLY; outlet	1
3	112–462	TUBE ASSEMBLY; inlet	1
4	100–101	SCREW, cap; 3/8–16 x 1.0" (25.4 mm)	2
5	100–023	WASHER, flat	2
6	100–133	WASHER, lock	2
7	100–307	NUT, hex; 3/8–16	2
8	100–021	SCREW, cap; 1/4–20 x 1.0" (25.4 mm)	4
9	100–527	WASHER, flat	4
10	100–016	WASHER, lock	4
11	100–015	NUT, hex; 1/4–20	4
12	156–823	ADAPTER, swivel	2
13	112–454	ELBOW, street; 90° 3/8 npt(m) x 3/8 JIC	2
15	236–297	GROUNDING CLAMP ASSEMBLY	1
16	110–249	ADAPTER, 90° male elbow	1
18	235–234	PUMP, 307 Husky; See 308–194 for parts	1
19	100–840	ELBOW, street; 1/4 npt(m x f)	1

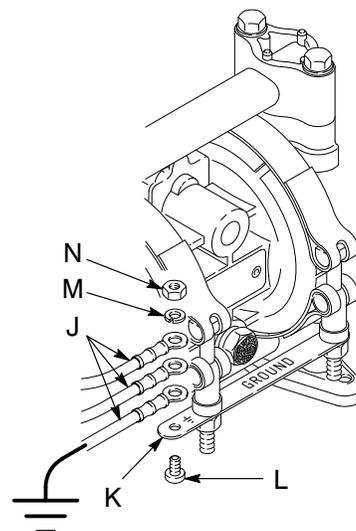


Fig. 5

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Installation and Parts

Kit No. 236–289

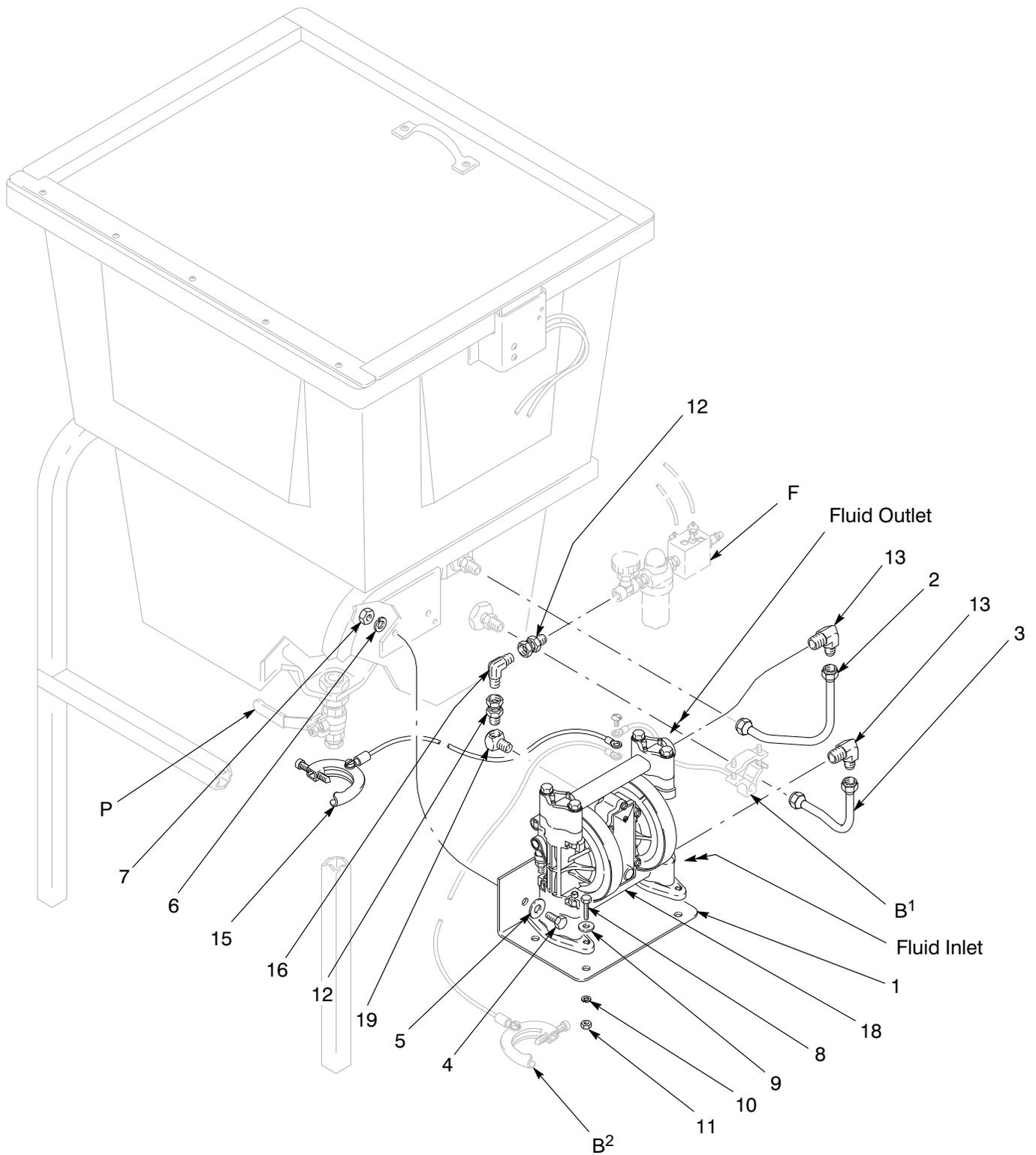


Fig. 6

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Gun Washer Grounding Continuity

WARNING

To reduce the risk of static sparking, the pump and all other equipment used or located in the gun washer area must be grounded and there must be electrical continuity between the gun washer's fluid tank, divider plate, frame, and main ground wire. Follow the instructions below to check grounding continuity.

Check the continuity between the gun washer parts listed in the chart below and true earth ground before operating the gun washer and again, after servicing it. Refer to Fig. 7. If electrical continuity is lost, check the grounding connections and reconnect them as needed.

Gun Washer Part	Grounding Connection
Husky 307 Pump (18)	Ground wire (B ²) between pump grounding strap* & true earth ground
Pump Inlet Tube (3)	Ground wire (B ¹) between pump grounding strap* & pump inlet tube
Tank Divider Plate (A)	Jumper wire (F) between divider plate & lid bracket
Lid Bracket (B)	Jumper wire (G) between lid bracket & tank
Lid Hinges (C) – Gun Washer 110–484 only	Hinge ground straps (17), on each end of lid
Fluid Manifold (D)	Jumper wire (H) between lid bracket & tank fluid manifold
Gun Washer Drain Valve (P)	Ground wire & clamp (15) between drain valve & pump grounding strap

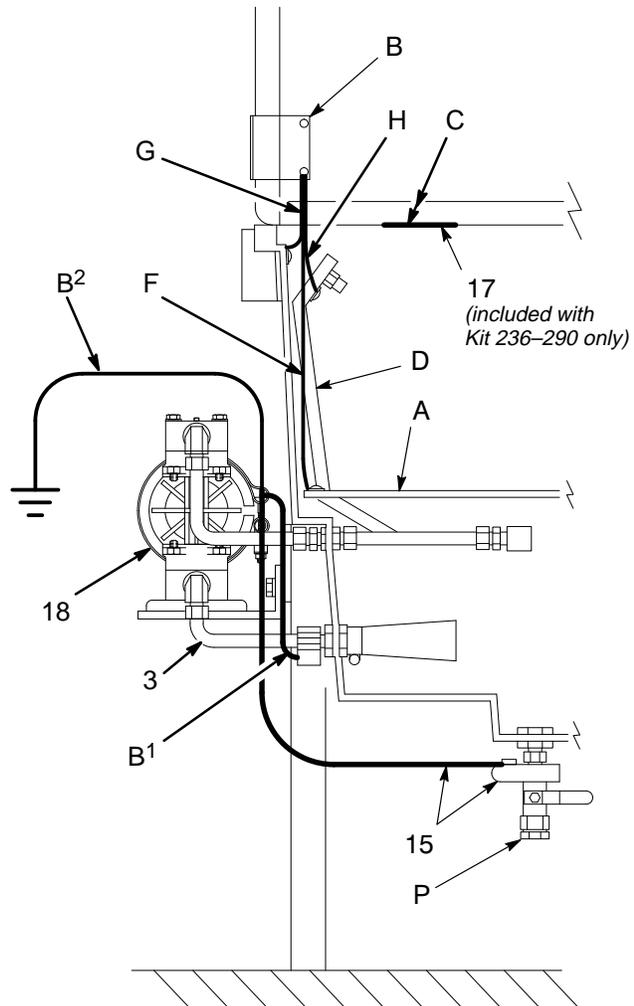


Fig. 7

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* See Fig. 3 or 5 for a detail of the pump grounding strap.

Operation

Operating the Gun Washer

WARNING

Always open the gun washer lid slowly.

Always wear proper eye protection when operating or servicing this equipment. Consult the solvent Material Safety Data Sheet for other precautionary requirements.

The gun washer lid has been designed to close automatically unless supported by hand. Never attempt to overcome this safety feature by propping the cover open with an object or by any other means.

NOTES:

- Cleaning operation should not exceed 60 seconds. Longer operation will not improve the cleaning process and will cause unnecessary wear on the pump.
 - See your gun washer manual for additional operating instructions.
1. Fill the tank with solvent 1/2 to 1 inch (12.7 to 25.4 mm) above the filter. Do not add more than 5 gallons (18.91 liters) of fluid to the tank. Make sure all adapter chains and cables are inside the gun washer tank.
 2. Close the gun washer lid and set the air pressure to the pump between 40 to 75 psi (2.8 to 5.2 bar).

Operation

Operating the Gun Washer (continued)

3. Press the start button on the reset valve block to start the gun washer. Slowly open the air valve until the pump starts to cycle.

WARNING

To reduce the risk of fire or explosion, always clean-up any solvent leaks or spills immediately. Repair any leaking components before operating the gun washer again.

Pump Operation and Maintenance

See the pump instruction manual provided with the Gun Washer Upgrade Kit for operation and maintenance of the pump.

Air Cut-off Switch and Reset Block

WARNING

A safety device has been installed to shut off the pump when the gun washer lid is opened. Do not tamper with or alter this device. Serious bodily injury, including blindness, could result.

The air connections between the air cut-off switch and reset block shown in Fig. 8 must *always* be connected.

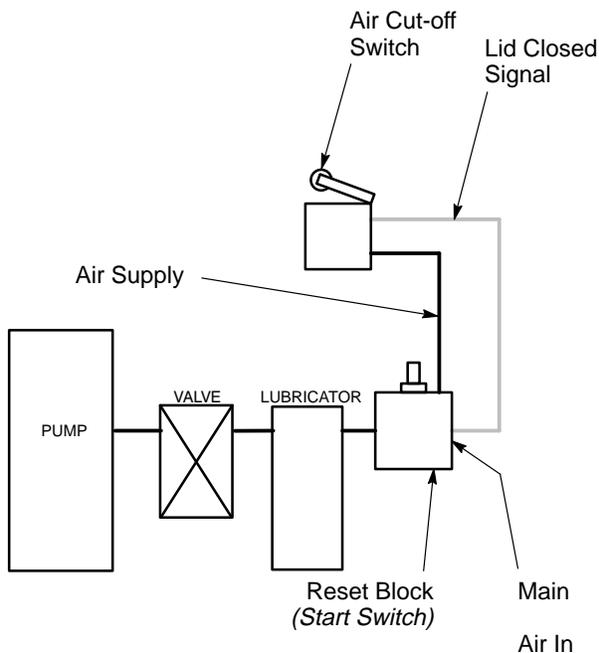


Fig. 8

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Gun Washer Shutdown and Care

WARNING

When shutting down the gun washer and before checking, cleaning, adjusting, moving, or servicing it, always disconnect the air supply, relieve pressure, and drain the solvent into a proper solvent container. This will reduce the risk of serious injury, including splashing in the eyes or on the skin, fire, explosion, or electric shock.

1. Drain the solvent from the gun washer tank daily. Place a proper solvent container under the fluid drain valve on the bottom of the tank and open the fluid drain valve.

WARNING

The PRO-Wash gun washer is classified as a temporary storage container. To reduce the risk of fire or explosion, be sure to drain the solvent into a proper storage container and store it according to the local code for flammable liquids when shutting down your system.

2. Wipe the inside of the tank with a cloth or use a brush to remove any built-up paint residue.
3. Thoroughly clean the gun washer filter with a brush.
4. Change the solvent completely when it is no longer thoroughly cleaning the painting equipment. If the gun washer is being filled with old solvent, be sure to filter the solvent before filling the gun washer tank.

NOTE: If the solvent is thoroughly filtered daily to remove paint residue, it can usually be reused for 2 to 8 weeks (depending on gun washer usage).

The Graco Warranty and Disclaimers

WARRANTY

Graco warrants all equipment manufactured by it 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. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven 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, 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 with Graco equipment of 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 claim. 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.

DISCLAIMERS AND LIMITATIONS

The terms of this warranty constitute purchaser's sole and exclusive remedy and are in lieu of any other warranties (express or implied), **including warranty of merchantability or warranty of fitness for a particular purpose**, and of any non-contractual liabilities, including product liabilities, based on negligence or strict liability. Every form of liability for direct, special or consequential damages or loss is expressly excluded and denied. In no case shall Graco's liability exceed the amount of the purchase price. Any action for breach of warranty must be brought within two (2) years of the date of sale.

EQUIPMENT NOT COVERED BY GRACO WARRANTY

Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motor, 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.

Graco Phone Numbers

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you: **1-800-367-4023 Toll Free**

FOR TECHNICAL ASSISTANCE, service repair information or assistance regarding the application of Graco equipment: **1-800-543-0339 Toll Free**

Sales Offices: Atlanta, Chicago, Dallas, Detroit, Los Angeles, Mt. Arlington (N.J.)
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