

# OPERATION – UTILIZAÇÃO – FONCTIONNEMENT – FUNCIONAMIENTO



309378

Rev. B

## HydraMax™ Sprayers

### HydraMax 225

#### Models 233640, 233641

3600 psi (248 bar, 24.8 MPa) Maximum Working Pressure  
Pressão máxima de trabalho de 3600 psi (248 bar, 24.8 MPa)  
Pression maximale de service 3600 lb/in² (248 bar, 24.8 MPa)  
Presión máxima de operación 3600 psi (248 bar, 24.8 MPa)

### HydraMax 300

#### Model 233650

3600 psi (248 bar, 24.8 MPa) Maximum Working Pressure  
Pressão máxima de trabalho de 3600 psi (248 bar, 24.8 MPa)  
Pression maximale de service 3600 lb/in² (248 bar, 24.8 MPa)  
Presión máxima de operación 3600 psi (248 bar, 24.8 MPa)

### HydraMax 350

#### Model 233660

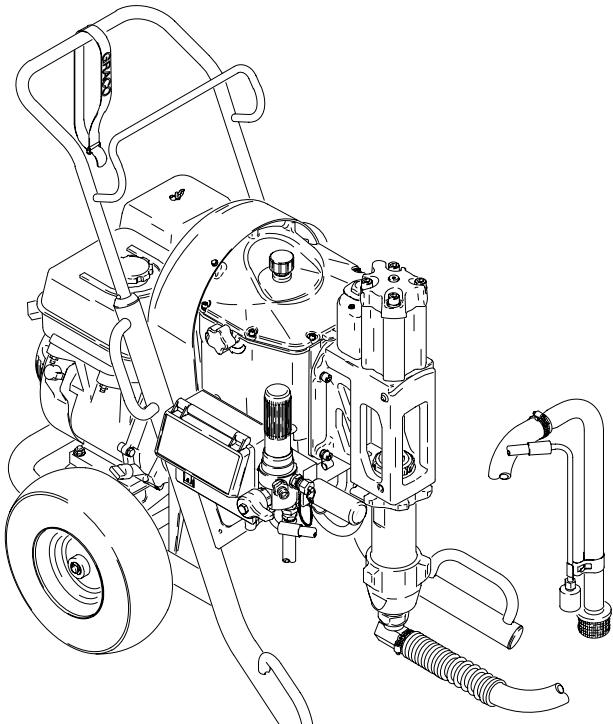
4000 psi (276 bar, 27.6 MPa) Maximum Working Pressure  
Pressão máxima de trabalho de 4000 psi (276 bar, 27.6 MPa)  
Pression maximale de service 4000 lb/in² (276 bar, 27.6 MPa)  
Presión máxima de operación 4000 psi (276 bar, 27.6 MPa)

All models not available in all countries.

Nem todos os modelos existem à disposição em todos os países.

Tous les modèles ne sont pas disponibles dans tous les pays.

Hay modelos que no se distribuyen en todos los países.



233660

### How To Perform:

• Component Identification	T11388A	3
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## ⚠ WARNING

**Fire and explosion hazard:** Solvent and paint fumes can ignite or explode.

To help prevent a fire and explosion:

- Use only in an extremely well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes and plastic drop cloths (static arc hazard). Do not plug or unplug power cords or turn lights on or off in spray area.
- Ground Sprayer, object being sprayed, paint and solvent pails.
- Hold gun firmly to side of grounded pail when triggering into pail.
- Use only conductive airless paint hose.
- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use could result in a chemical reaction, with the possibility of explosion.
- Do not fill fuel tank while engine is running or hot.
- Do not flush with gasoline.



## ⚠ ADVERTÊNCIA

**Perigo de incêndio e explosão:** os solventes e os vapores da pintura poderão explodir ou incendiar.

Para ajudar a evitar incêndio e explosão:

- Utilize unicamente em áreas extremamente bem ventiladas.
- Elimine todas as fontes de ignição, tais como luzes piloto, cigarros e arcos de estática resultantes dos plásticos de proteção. Não ligue nem desligue os cabos de alimentação ou as luzes numa área de pulverização.
- Ponha em contato com a terra o pulverizador, o objeto a ser pulverizado, e os baldes de tinta e de solventes.
- Segure a pistola firmemente de encontro ao lado do balde em contato com a terra, quando estiver descarregando para dentro do mesmo.
- Utilize somente tubos flexíveis condutores para pintura a alta pressão.
- Não utilize 1,1,1-tricloroetano, cloreto de metíleno, outros solventes de hidrocarbonetos halogenados ou líquidos contendo tais solventes em equipamento de alumínio pressurizado. Tal utilização poderá resultar numa reação química, com possibilidade de explosão.
- Nunca abasteça o depósito de combustível com o motor em funcionamento ou quente.
- Não faça a descarga com gasolina.

**Fluid injection and high pressure hazard:** High pressure spray or leaks can inject fluid into the body.

To help prevent injection, always:

- Engage trigger safety latch when not spraying.
- Keep clear of nozzle and leaks.
- Never spray without a tip guard.
- Do **PRESSURE RELIEF** if you stop spraying or begin servicing sprayer.
- Do not use components rated less than sprayer **Maximum Working Pressure**.
- Never allow children to use this unit.

If high pressure fluid pierces your skin, the injury might look like "just a cut". But it is a serious wound! Get immediate medical attention.

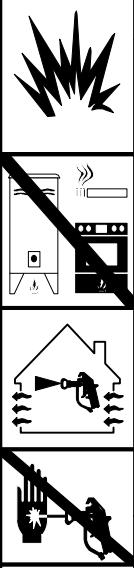


## ⚠ MISE EN GARDE

**Danger d'incendie et d'explosion :** les gaz de solvant et de peinture peuvent s'enflammer ou exploser.

Pour éviter les risques d'incendie et d'explosion :

- N'utiliser l'appareil que dans une zone extrêmement bien aérée.
- Éliminer toute source d'inflammation ; telle que veilleuses, cigarettes et arcs d'électricité statique créés par les toiles de peintre en plastique. Ne pas brancher et débrancher de cordons électriques, ou allumer et éteindre des lumières dans la zone de pulvérisation.
- Mettre à la terre le pulvérisateur, l'objet à pulvériser ainsi que les seaux de peinture et de solvants.
- Tenir le pistolet fermement contre la paroi d'un seau mis à la terre lorsqu'on pulvérise dans le seau.
- N'utiliser qu'un flexible pour peinture pulvérisée sans air.
- Ne jamais utiliser de trichloroéthane 1,1,1, de chlorure de méthylène, d'autres solvants à base d'hydrocarbures halogénés, ni de produits contenant de tels solvants dans un équipement sous pression en aluminium. Cela pourrait provoquer une réaction chimique avec risque d'explosion.
- Ne jamais remplir le réservoir d'essence lorsque le moteur est chaud ou en marche.
- Ne pas rincer avec de l'essence.

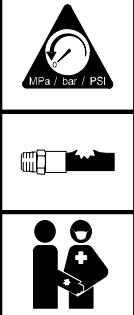


**Danger d'injection de fluide et haute pression :** la pulvérisation sous haute pression ou les fuites peuvent injecter des fluides dans le corps.

Pour éviter les risques d'injection, toujours :

- Bloquer le loquet de sécurité de la gâchette à la fin de la pulvérisation.
- Se tenir loin de la buse et des fuites.
- Ne jamais pulvériser sans anti-gouttes.
- DÉCHARGER LA PRESSION à la fin de la pulvérisation ou avant de réparer le pulvérisateur.
- Ne pas utiliser de composants dont la pression nominale est inférieure à la **pression maximale de service du système**.
- Ne jamais permettre aux enfants d'utiliser cet appareil.

**Si un fluide haute pression perce la peau,** la blessure peut paraître une "simple coupure" Mais il s'agit bien d'une lésion grave! Consulter immédiatement un médecin.



## ⚠ ADVERTENCIA

**Peligro de incendio o explosión:** Los gases de los disolventes y de la pintura pueden inflamarse o provocar una explosión.

Para prevenir incendios y explosiones:

- Use únicamente en un área muy bien ventilada.
- Suprima todas las fuentes de ignición; como luces piloto, cigarrillos y arcos estáticos de carpetas plásticas para protección contra pintura. No enchufe ni desenchufe cables de alimentación ni apague ni encienda las luces en un área de pulverización.
- Ponga a tierra el pulverizador, el objeto que recibe el chorro pulverizado, las cubetas de pintura y disolvente.
- Sostenga firmemente la pistola a un lado de la cubeta puesta a tierra cuando dispare dentro de ella.
- Use solamente mangueras para pintura conductora sin aire.
- No utilice nunca tricloroetano-1,1,1, cloruro de metíleno ni otros disolventes a base de hidrocarburos halógenos o fluidos que contengan dichos disolventes en un equipo a presión de aluminio. El uso de estas sustancias puede provocar una intensa reacción química, con riesgos de explosión.
- Nunca llene el estanque de combustible mientras el motor esté en marcha o caliente.
- No lave con gasolina.



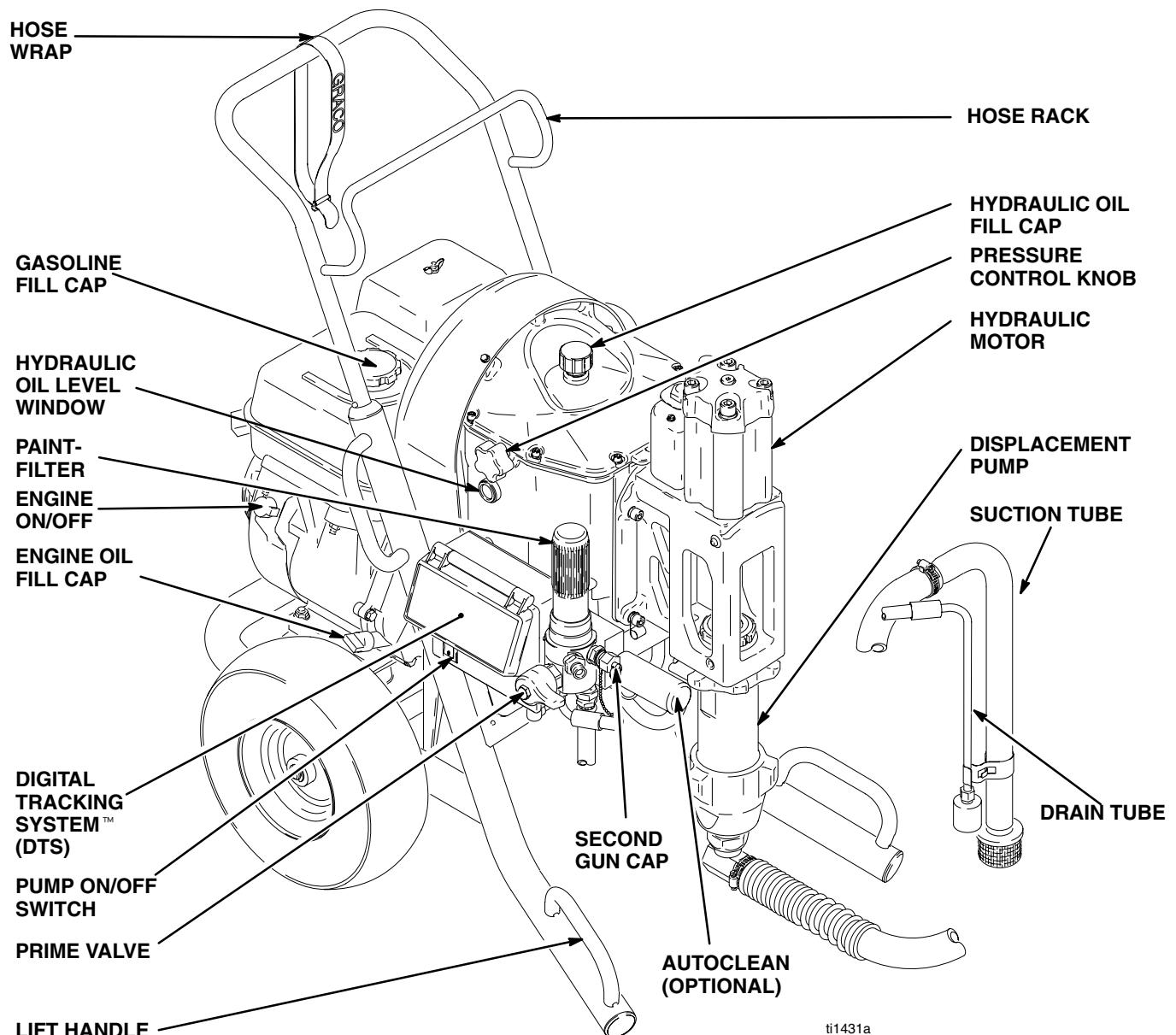
**Peligro de inyección de fluido y alta presión:** por la pulverización o las filtraciones a alta presión se pueden inyectar fluidos en el organismo.

Para prevenir la inyección en la piel, siempre:

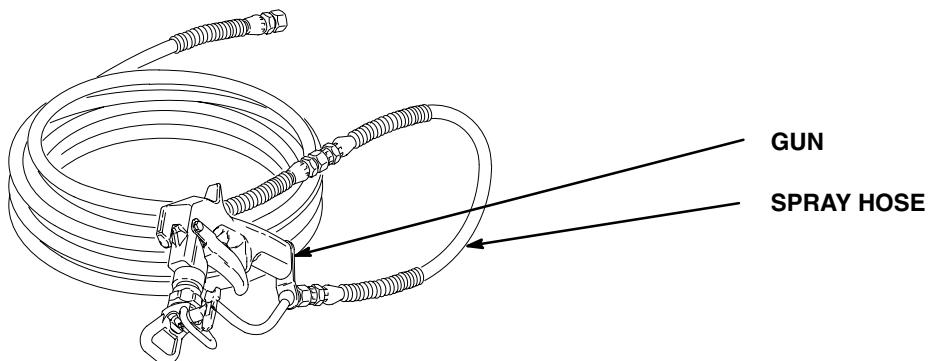
- Enganche el seguro del gatillo cuando no use el pulverizador.
- No se acerque a la boquilla ni a las filtraciones.
- Nunca aplique fluido pulverizado sin un guardaboquilla.
- Realice el **ALIVIO DE PRESIÓN** si deja de pulverizar fluido o repara el pulverizador.
- No use componentes de capacidad nominal inferior a la **presión máxima de operación del pulverizador**.
- No permita que niños usen esta unidad.

**Si fluido de alta presión le penetra la piel,** la lesión podría parecer "sólo un corte". ¡Es una lesión seria! Consulte de inmediato al médico.

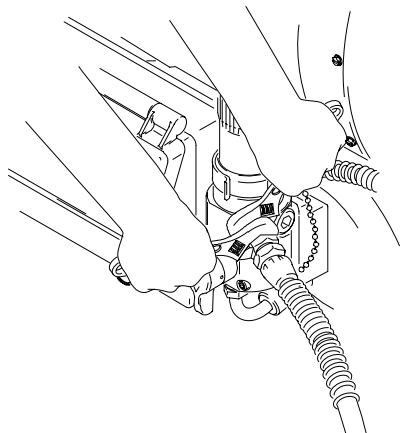
# Component Identification



ti1431a



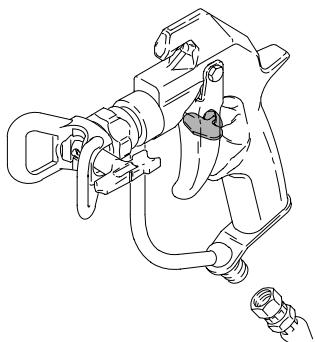
# Setup



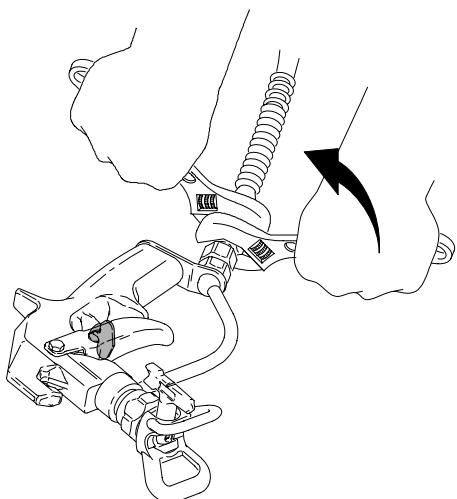
1. Connect appropriate Graco high-pressure hose to sprayer. Tighten securely.



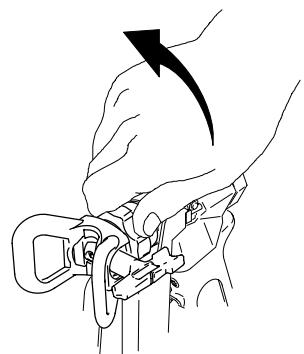
**Note:** Remove second gun port cap for multiple guns and repeat steps 1 – 4, 7, 8, 10



2. Connect other end of hose to gun.

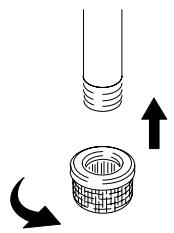


3. Tighten securely.

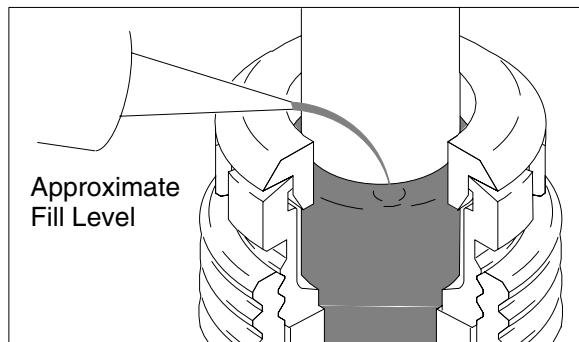


4. Remove tip guard.

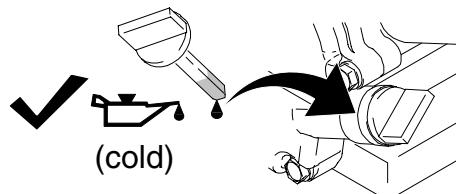
- 
5. Install clean inlet strainer.



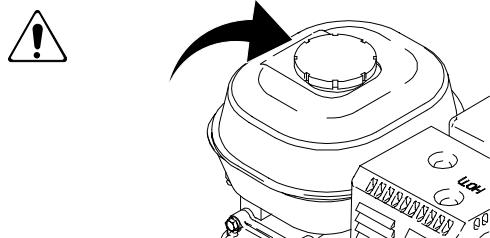
6. Fill throat packing nut with TSL to prevent premature packing wear.  
Do this each time you spray and store.



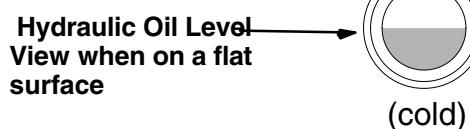
- 
7. Check engine oil level. Add SAE 10W–30 (summer) or 5W–20 (winter), if necessary.



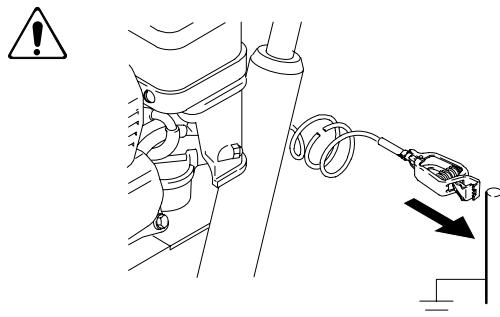
- 
8. Fill fuel tank.



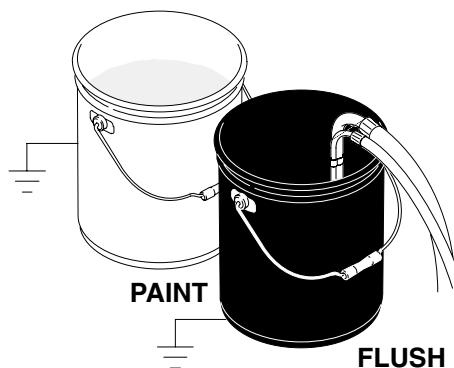
- 
9. **Check hydraulic oil level.** Add *only* Graco Hydraulic Oil, 169236 (5 gal/18.9 liter) or 207428 (1 gal/3.8 liter).  
Hydraulic tank capacity is 2.75 gallon.



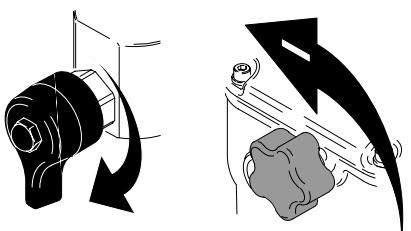
- 
10. Ground sprayer with grounding clamp.



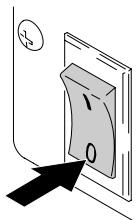
# Startup



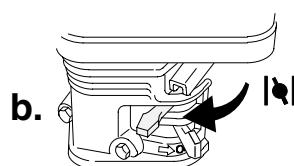
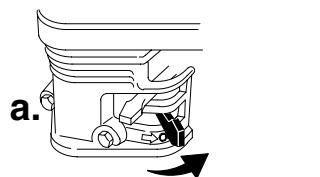
1. Place suction tube and drain tube in grounded metal pail partially filled with flushing fluid. Attach ground wire to pail and to true earth ground.



2. Turn prime valve down.  
Turn pressure control to lowest pressure.

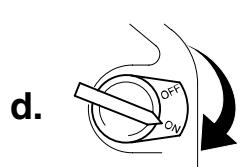
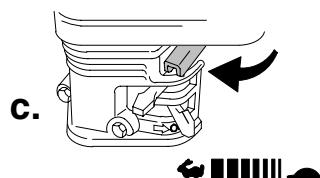


3. Set pump switch OFF.

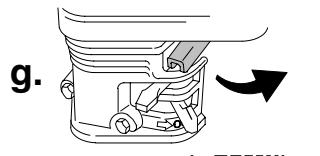
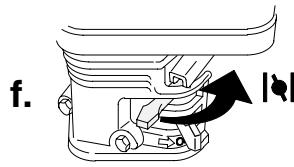
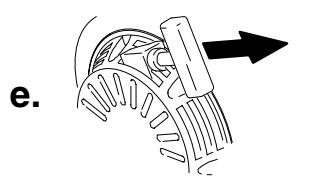


4. Start engine

- a. Move fuel valve to open
- b. Move choke to closed
- c. Set throttle to fast
- d. Set engine switch ON
- e. Pull starter cord
- f. After engine starts, move choke to open
- g. Set throttle to desired setting

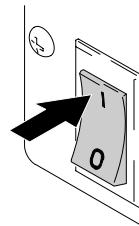


**- Display is functional after engine starts -**

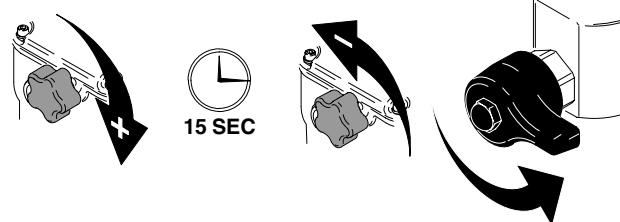


# Startup

5. Set pump switch ON.  
– Hydraulic motor is now active –



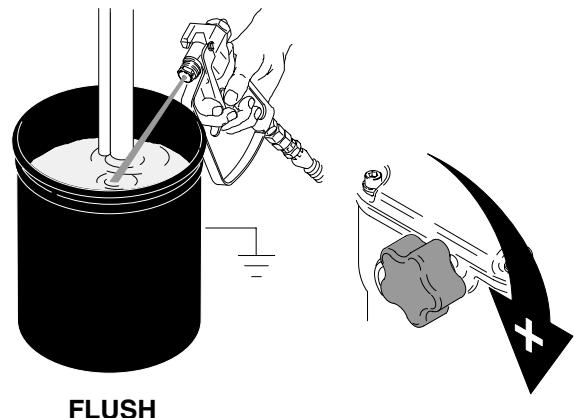
6. Increase pressure enough to start hydraulic motor stroking and allow fluid to circulate for 15 seconds; turn pressure down, turn prime valve horizontal.



7. Take spray gun trigger safety OFF.



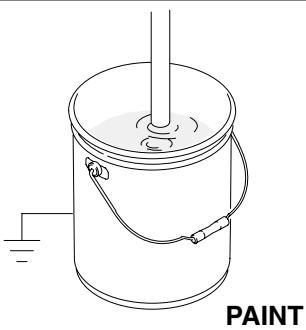
8. Hold gun against grounded metal flushing pail. Trigger gun and increase fluid pressure slowly until pump runs smoothly.



**Note:** Inspect fittings for leaks.   **Do not stop leaks with your hand or a rag!** If leaks occur, turn sprayer OFF immediately. Do Pressure Relief in Cleanup, 1. – 3. on page 14. Tighten leaky fittings. Repeat Startup, 1. – 5. If no leaks, continue to trigger gun until system is thoroughly flushed. Proceed to 6.

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9. Place siphon tube in paint pail.



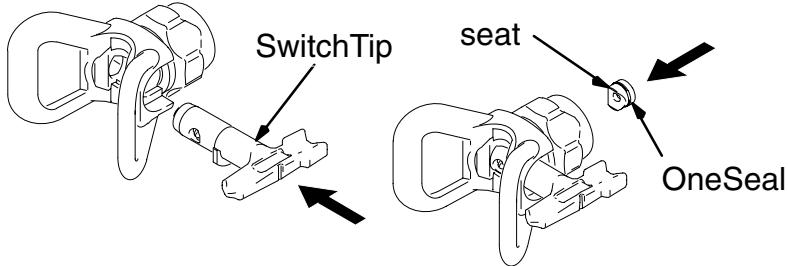
10. Trigger gun again into flushing fluid pail until paint appears. Assemble tip and guard, page 8.

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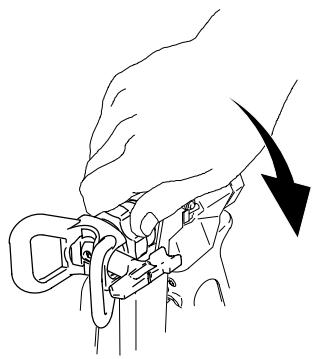
### SwitchTip and Guard Assembly

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1. Insert SwitchTip. Insert seat and OneSeal.



2. Screw assembly onto gun. Hand tighten.



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## Operation

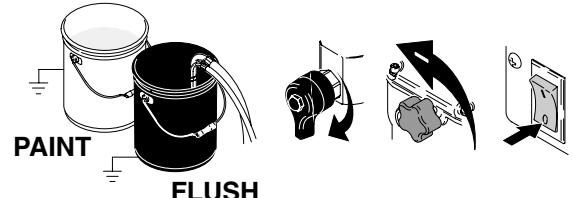
Close cover when spraying  
to protect from overspray



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### Main Menu

1. Do **Startup** steps 1. – 3.  
Pressure must be at zero.



2. Start engine, page 6.

Pressure display appears. Use short presses on DTS button to cycle through Pressure, Job Gallons, Lifetime Gallons and AutoClean Timer (optional).



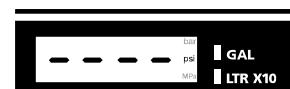
3. Short press DTS button to move to Job Gallon.



4. Press and hold to reset to zero, or short press DTS button to move to Lifetime Gallon.



5. Short press DTS button to return to Pressure.



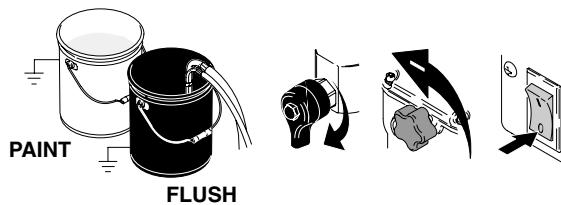
**Note:** HydraMax units with optional AutoClean move to AutoClean Shut-Off Timer

6. HydraMax sprayers are shipped with AutoClean Shut-Off Timer in disabled mode. Use Manual 309380 to enable this feature. Use Manual 309278 to use AutoClean Shut-Off Timer.

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## Secondary Menu

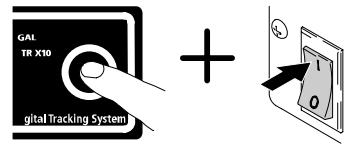
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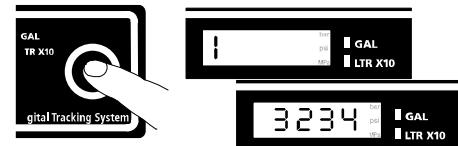
1. Do **Startup** steps 1. – 3.  
Pressure must be at zero.



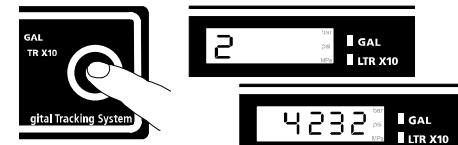
2. Start engine, page 6. Pressure display appears.



3. Simultaneously press DTS button and set pump on/off switch on.



Resettable Hour Meter appears. Use short presses on DTS button to cycle through stored data.



4. Press and hold to reset to zero, or short press DTS button to move to Lifetime Hour Meter
-

- 
5. Short press DTS button to move to Lifetime Gallons (all pressures)



- 
6. Short press DTS button to cycle through pressure measure (bar, psi, MPa) options



- 
7. Press and hold DTS button to select pressure measure (psi shown) and move to volume measures



- 
8. Short press DTS button to select volume measure (gal, liter).



- 
9. Press and hold DTS button to select desired volume measure shown, and move to AutoClean on/off selection.



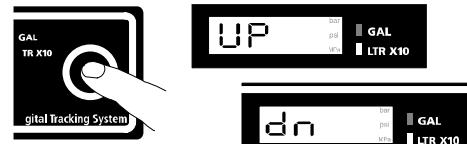
- 
10. Short press DTS button to toggle between A-on and A-OFF. Press and hold DTS button to add/remove AutoClean Shut-Off Timer to/from Main Menu.



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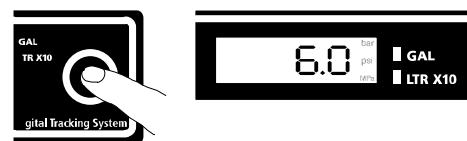
11. Short press DTS button to move to Diagnostics (first display Is **UP**)

- a. Increase pressure a small amount
- b. Short press DTS button to move hydraulic piston rod down (**dn**)
- c. Short press DTS button to move hydraulic piston rod up (**UP**)



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12. Long press DTS button to move to Software Revision display



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13. Short or Long press DTS button to move to Model display. Short press DTS again to return to beginning of **Secondary Menu**



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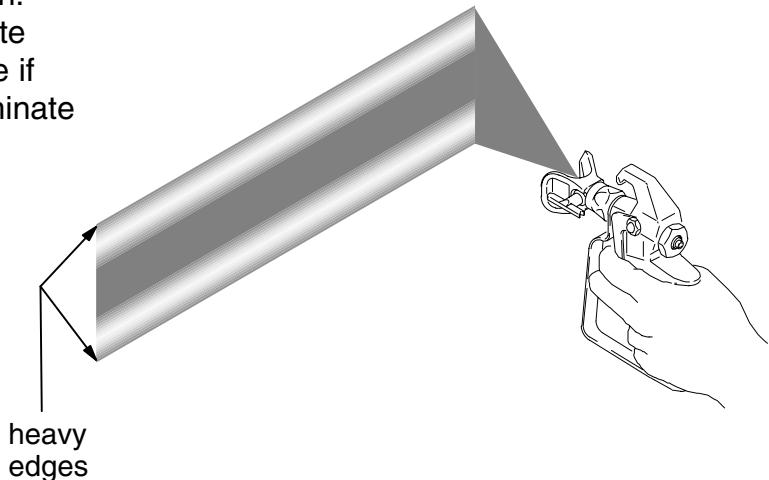
14. Set pump switch OFF to return to **Main Menu**

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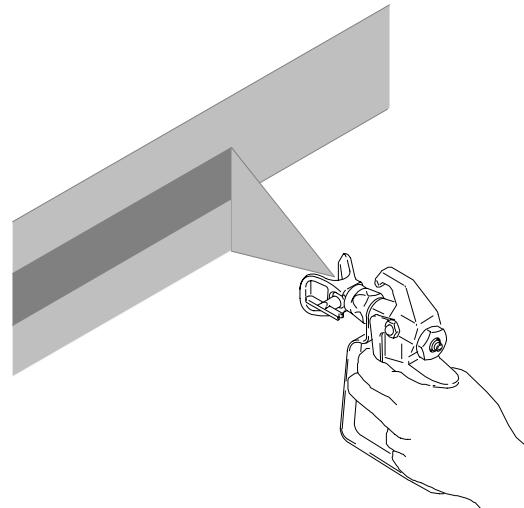
## Spray Test Pattern

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1. Trigger gun and spray test pattern. Slowly adjust pressure to eliminate heavy edges. Use smaller tip size if pressure adjustment can not eliminate heavy edges.



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2. Hold gun perpendicular, 10–12 in. (25–30 cm) from surface. Spray back and forth. Use strokes overlapped by 50%. Start gun movement before triggering gun and release trigger before stopping gun movement.

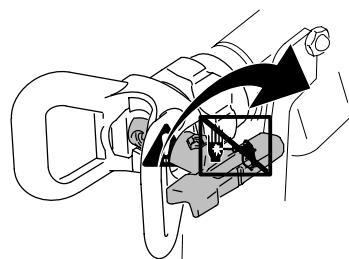


## Clearing Tip Clogs

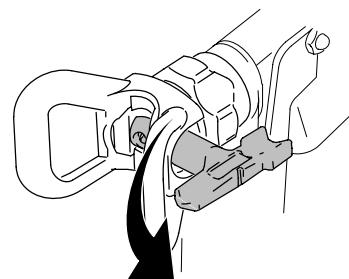
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1. Release trigger, put trigger safety ON. Rotate SwitchTip. Take trigger safety OFF and trigger gun to clear the clog.

Never point gun towards your hand or into a rag!



- 
2. Put trigger safety ON, return SwitchTip to original position, take trigger safety OFF and continue spraying.



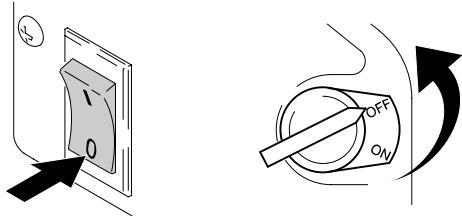
# Cleanup

Perform **AutoClean procedure (Manual 309278)** or follow conventional flushing procedure that follows:



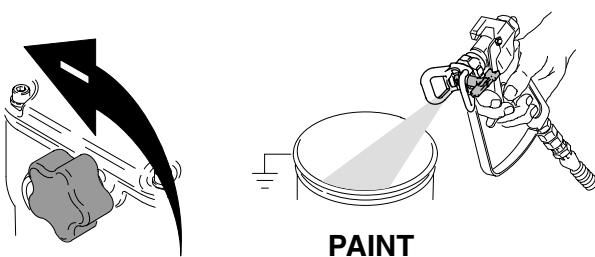
## Pressure Relief

1. Set **DTS** pump switch OFF.  
Turn engine **OFF**.



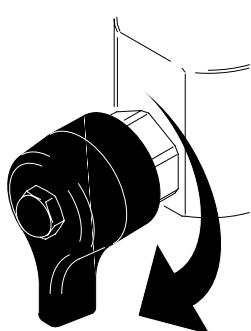
## Pressure Relief

2. Turn pressure to lowest setting.  
Trigger gun to relieve pressure.

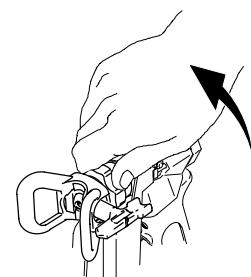


## Pressure Relief

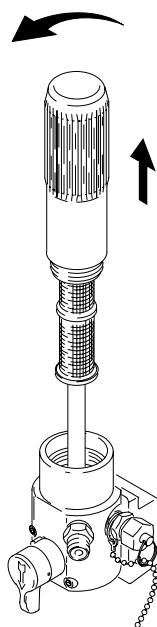
3. Turn prime valve down.



4. Remove guard and SwitchTip.



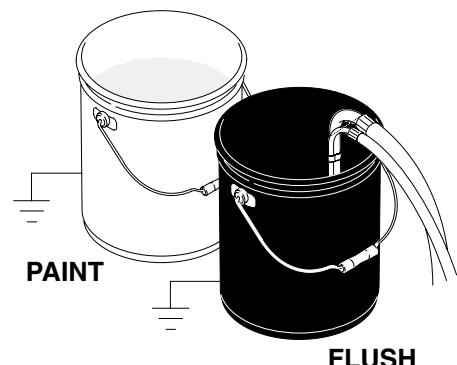
- 
5. Unscrew bowl, remove filter. Assemble without filter. Clean filter.

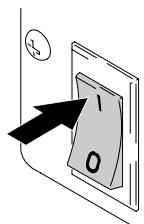
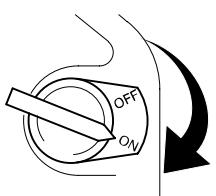


- 
6. Clean filter, guard and SwitchTip in flushing fluid.

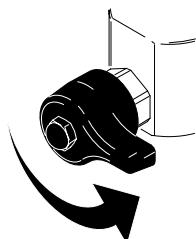


- 
7. Remove siphon tube set from paint and place in flushing fluid. Use water for water base paint and mineral spirits for oil base paint.

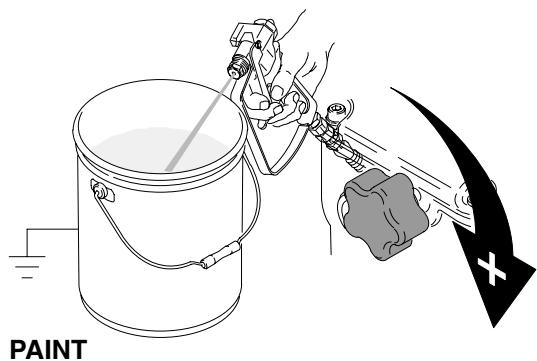




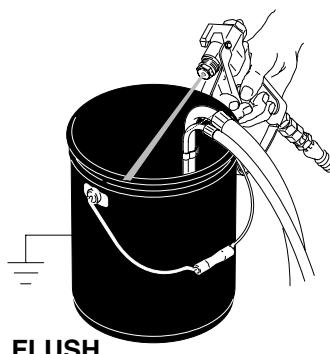
- 
8. Turn engine **ON** and start engine.  
Set **DTS** pump switch **ON**.



- 
9. Turn prime valve horizontal.

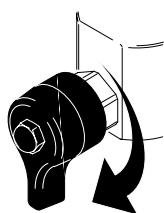


10. Hold gun against paint pail. Take trigger safety **OFF**. Trigger gun until flushing fluid appears.  
Turn pressure control up until motor begins to drive pump.



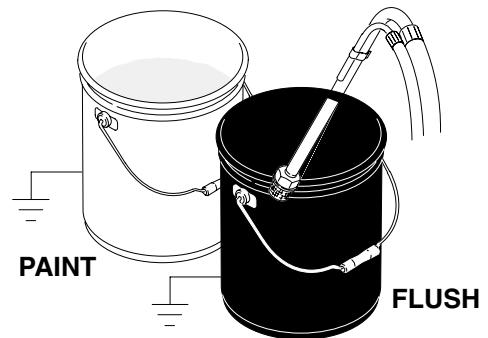
- 
11. Move gun to flushing pail, hold gun against pail, trigger gun to thoroughly flush system.

Release trigger and put trigger safety **ON**.



- 
12. Turn prime valve down and allow flushing fluid to circulate for approximately 20 seconds to clean drain tube.

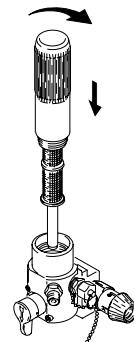
- 
13. Raise siphon tube above flushing fluid and run sprayer for 15 to 30 seconds to drain fluid. Turn DTS pump switch OFF. Turn engine **OFF**.



**Caution:** If flushing with water, do not leave water in sprayer. Flush again with mineral spirits, oil or Pump Armor and leave this protective coating in the sprayer to help prevent freezing or corrosion and increase sprayer life.

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14. Make sure plastic center tube is tightened securely. Install filter bowl and filter. Hand tighten filter bowl. Hand tighten gun handle.



- 
15. Wipe sprayer, hose and gun with a rag soaked in water or mineral spirits.



- 
16. Clean tip, guard and gasket with a soft bristle brush to prevent part failure due to dried materials. Assemble parts and attach loosely onto gun.



# Troubleshooting

## WARNING



### INJECTION HAZARD

To reduce risk of serious injury, whenever instructed to relieve pressure, do steps 1. – 3.; page 14.

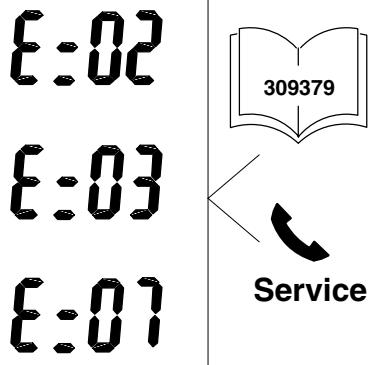
PROBLEM	CAUSE	SOLUTION
Gas engine pulls hard (won't start)	Hydraulic pressure is too high	Turn hydraulic pressure knob counterclockwise to lowest setting
Gas engine will not start	Switch OFF, low oil, no gasoline	Consult engine manual, supplied
Gas engine doesn't work properly		Consult engine manual, supplied
Gas engine operates, but displacement pump doesn't operate	Pump switch is OFF  Pressure setting too low  Displacement pump outlet filter (if used) is dirty or clogged  Tip or tip filter (if used) is clogged  Hydraulic fluid too low  Hydraulic pump worn or damaged  Displacement pump rod seized by dried paint  Directional valve not shifting	Set pump switch ON  Increase pressure, page 7  Clean the filter  Remove tip and/or filter and clean  Shut off sprayer and add fluid immediately*. See page 5.  Bring sprayer to Graco distributor for repair  Service pump. See manual 309277.  Set pump switch OFF, then ON. Manual 309379.
Displacement pump operates, but output is low on upstroke	Piston ball check not seating properly. Piston packings worn or damaged.	Service piston ball check. See manual 309277. Replace packings. See manual 309277.
Displacement pump operates but output is low on downstroke and/or on both strokes	Piston packings worn or damaged.  Intake valve ball check not seating properly.  Suction tube air leak	Remove clip and retighten or replace packings. See manual 309277.  Service intake valve ball check. See manual 309277.  Tighten suction tube
Paint leaks and runs over side of wetcup	Loose wet-cup  Throat packings worn or damaged	Tighten just enough to stop leakage  Replace packings. See manual 309277
Excessive leakage around hydraulic motor piston rod wiper	Piston rod seal worn or damaged	Replace these parts. See manual 309379
Fluid delivery is low	Pressure setting too low  Displacement pump outlet filter (if used) is dirty or clogged  Intake line to pump inlet is not tight  Hydraulic motor is worn or damaged  Large pressure drop in fluid hose	Increase pressure, page 7  Clean filter  Tighten  Bring sprayer to Graco distributor for repair  Use larger diameter hose

PROBLEM	CAUSE	SOLUTION
The sprayer overheats	Cooler is damaged	Replace
	Oil level is low	Fill with oil. See page 5.
Spitting from gun	Air in fluid pump or hose	Check for loose connections on siphon assembly, tighten, then reprime pump
	Loose intake suction	Tighten
	Fluid supply is low or empty	Refill supply container
DTS does not display	Loose wiring	Remove cover and correct poor connections
	Bad LCD or board	Bring sprayer to Graco distributor for repair
DTS displays error codes	Various over-pressure conditions	Page 19

\*Check hydraulic fluid level often. Do not allow it to become too low. Use only Graco approved hydraulic fluid, page 5.

## DTS Error Codes

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Reference Repair Manual 309379 or call your distributor for service

# Graco Warranty

Graco warrants all equipment listed in this manual which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special extended or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance or 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.

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, gas engines, 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**

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## **ADDITIONAL WARRANTY COVERAGE**

Graco does provide extended warranty and wear warranty for products described in the "Graco Contractor Equipment Warranty Program".

## **Graco Phone Number**

**TO PLACE AN ORDER**, contact your Graco distributor, or call this number to identify the distributor closest to you:  
**1-800-690-2894 Toll Free.**

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Graco reserves the right to make changes at any time without notice.*

**Sales Offices:** Minneapolis, Detroit  
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