Displacement Pump

3600 psi (250 bar, 24.8 MPa) Maximum Working Pressure

Model 248204, Series A
Ultra® Max II and Ultimate Mx II 695 and 795

Model 248205, Series A
Ultra Max II and Ultimate Mx II 1095 and 1595

Model 249059, Series A
TexSpray™ Mark V

Model 249057, Series A
TexSpray Mark V

Model 277069, Series A
LineLazer™ IV 3900

Model 277070, Series A
LineLazer™ IV 5900
WARNING

EQUIPMENT MISUSE HAZARD
Misuse can cause death or serious injury.

- Do not exceed the maximum working pressure temperature rating of the lowest rated system component. See Technical Data in all equipment manuals.
- Use fluids and solvents compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read manufacturer fluid and solvent warnings.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not alter or modify equipment.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use equipment only for its intended purpose. Call your Graco distributor for information.
- 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.
- Comply with all applicable safety regulations.

MOVING PARTS HAZARD
Moving parts can pinch or amputate your fingers.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving or servicing equipment, follow the Pressure Relief Procedure on page 3. Disconnect power cord.

INJECTION HAZARD
High-pressure fluid from gun, hose leaks or ruptured components will pierce skin. This may look like just cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.

- Do not point the gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not spray without tip guard and trigger guard installed.
- Engage the gun trigger safety when you stop spraying.
- Follow the Pressure Relief Procedure on page 3 if the spray tip clogs and before cleaning, checking or servicing the equipment.
Service

Pressure Relief Procedure

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESSURIZED EQUIPMENT HAZARD</td>
</tr>
<tr>
<td>The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. To reduce the risk of an injury from accidental spray from the gun, splashing fluid, or moving parts, follow the <strong>Pressure Relief Procedure</strong> whenever you:</td>
</tr>
<tr>
<td>• are instructed to relieve the pressure,</td>
</tr>
<tr>
<td>• stop spraying,</td>
</tr>
<tr>
<td>• check or service any of the system equipment,</td>
</tr>
<tr>
<td>• or install or clean the spray nozzle.</td>
</tr>
</tbody>
</table>

1. Engage gun safety latch.
2. Turn ON/OFF switch to OFF.
3. Unplug power cord.
4. Disengage gun safety latch. Hold metal part of gun against grounded metal pail and trigger gun into pail to relieve pressure.
5. Engage gun safety latch.
6. Open any fluid drain valves in system. Leave drain valve open until ready to dispense again.

Pump Repair Kits

<table>
<thead>
<tr>
<th>Pump</th>
<th>Repair Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>248204</td>
<td>248212</td>
</tr>
<tr>
<td>248205, 249057, 249059</td>
<td>248213</td>
</tr>
</tbody>
</table>

Tools Needed

- Vise
- 12 in. adjustable, open end wrench (2)
- Hammer, 20 oz maximum
- Small screwdriver
- Throat Seal Liquid
- Pick or long small screwdriver

Cleaning and Inspecting Parts

1. Clean and inspect parts. Pay particular attention to the ball seats in the intake valve and piston, which must have no nicks or wear, and to the inside of the sleeve and the outside of the piston rod, which must not be worn or scratched. Replace worn or damaged parts.

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPONENT RUPTURE HAZARD</td>
</tr>
<tr>
<td>Never use sharp or pointed tools to remove sleeve or other components which could result in pump rupture and cause serious bodily injury. If the sleeve cannot be removed easily, return the sleeve and cylinder to your Graco distributor for removal.</td>
</tr>
</tbody>
</table>

2. Remove and clean the sleeve when you are repacking the pump.
Service

Repair When Pump Is Off The Sprayer

Disassembling the pump

Fig. 1. Remove packing nut (202) and throat adjustment spacer (228).

Fig. 2. Unscrew intake valve from cylinder.

Fig. 3. Disassemble intake valve. Clean and inspect. O-ring (227) may require a pick for removal.

Fig. 4. Tap piston rod out of cylinder with a hammer or flip over and tap piston rod out against a bench.

Note: Sleeve may come out of cylinder with piston rod.

Fig. 5. Remove piston rod from sleeve, or remove sleeve from cylinder.
Service

![WARNING](image)

**COMPONENT RUPTURE HAZARD**

Do not clean or wipe the piston valve threads. Cleaning the piston valve threads could destroy the special sealing patch and cause the piston valve to come loose during operation, causing pump bursting and possible serious bodily injury.

Fig. 6. Unscrew piston valve from piston rod. Clean and inspect parts. The piston has a special thread locking/sealing patch. Do not remove the patch. The patch allows four disassembly/assembly procedures before it is necessary to apply Loctite® to the threads.

Fig. 7. Remove packings and glands from piston rod.

**Assembling the pump**

Fig. 8. Remove throat packings and glands from cylinder. Discard throat packings and glands.

Fig. 9. Soak all leather packings in SAE 30W oil for 1 hour minimum prior to assembly. Stack male gland (204) on piston rod. Alternately stack UHMWPE (208) and leather (218) packings (note orientation) on piston rod. Install female gland (217). Install piston wiper (216) (note orientation) and backup washer (229) on piston valve (210). The special sealing patch on piston valve threads is good for four repackings. Use Loctite® on piston valve threads after four repackings.
Service

Fig. 10. Install ball (206) in piston rod. If Loctite® is applied to piston valve threads, ensure that none gets on ball.

Fig. 11. Tighten piston valve to piston rod as specified:

- Torque to 27 +/- 3 ft-lb (248204)
- Torque to 55 +/- 3 ft-lb (248205, 249057, 249059)

Fig. 12. Soak all leather packings in SAE 30W oil for 1 hour minimum prior to assembly. Place male gland (204) in cylinder. Alternately stack UHMWPE (203) and leather packings (223) (note orientation). Place female gland (224) in top of cylinder. Seat packings.

Fig. 13. Install seal (201) into packing nut (202). Install throat adjustment spacer (228) onto packing nut. Loosely install packing nut into cylinder.
**Service**

Fig. 14. Grease piston packings.

Fig. 15. Slide piston assembly into bottom of sleeve.

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⚠️ **CAUTION**

Do not slide piston assembly into top of sleeve as this may damage piston packing.

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Fig. 16. Grease top inch or two of piston rod that will go through the cylinder throat packings.

Fig. 17. Grease o-rings (221) and place on sleeve. Slide sleeve/piston rod assembly into bottom of cylinder. Replace o-ring (207) if desired.

Note: O-ring (207) is not required for safe pump operation.
Fig. 18. Reassemble intake valve with new o-ring (227), seat (212) and ball (214). Seat may be flipped over and used on other side. Clean seat thoroughly.

Fig. 19. Install intake valve on cylinder. If a wrench is used torque as follows:
- 67 +/- 5 ft-lb (model 248204)
- 80 +/- 5 ft-lb (Model 248205, 249057, 249059)
If a wrench is not used, be sure intake valve is bottomed out against cylinder.

Fig. 20. Torque packing nut (202) down onto adjustment spacer (228) 100 +/-10 in-lb.
Remove throat adjustment spacer (228) when pump packings begin to leak after much use. Then tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before a repacking is required.
Service

Repair When Pump Is On The Sprayer

**WARNING**

**INJECTION HAZARD**

To reduce the risk of serious injury, whenever you are instructed to relieve pressure, follow the **Pressure Relief Procedure** on page 3.

Fig. 1. Remove intake valve.

Fig. 2. Push up retaining spring (26).

Fig. 3. Push out pin (29).

Fig. 4. Disassemble intake valve. Clean and inspect. O-ring (227) may require a pick for removal.
Fig. 5. Remove piston rod and sleeve.

Fig. 6

Fig. 7. Remove packing nut (202)

Fig. 8. Invert piston rod and insert into cylinder to force out throat packings.

Fig. 9. Insert piston rod into cylinder with pin hole up and piston valve down. Insert pin into piston rod and crank shaft.
Service

Fig. 10. Remove piston valve from piston rod with a wrench.

Fig. 10

Fig. 11. Remove pin and piston rod from cylinder.

Fig. 11

Fig. 10. Remove piston valve from piston rod with a wrench.

Fig. 10

Fig. 12. Soak all leather packings in SAE 30W oil for 1 hour minimum prior to assembly. Stack male gland (204). Alternately stack UHMWPE (203) and leather (223) packings (note orientation). Install female gland (224). Install seal (201) and packing nut (202) and throat adjustment spacer (228).

Fig. 12

Fig. 13. Remove packings and glands from piston rod.

Fig. 13
Fig. 14. Soak all leather packings in SAE 30W oil for 1 hour minimum prior to assembly. Stack male gland (219) on piston rod. Alternately stack UHMWPE (208) and leather (218) packings (note orientation) on piston rod. Install female gland (217). Install piston wiper (216) and backup washer (229) (note orientation) on piston valve (210). The special sealing patch on piston valve threads is good for four repackings. Use Loctite® on piston valve threads after four repackings.

Fig. 10. Install ball (206) in piston rod. If Loctite® is applied to piston valve threads, ensure that none gets on ball. Install piston valve on piston rod. Torque as follows:
- 27 +/-3 ft-lb (model 248204)
- 55 +/-3 ft-lb (Model 248205, 249057, 249059)

CAUTION

Do not slide piston assembly into top of sleeve as this may damage piston packing.

Assure V-packing and u-cup are not rolled over or damaged.

Fig. 16. Grease piston packings.

Fig. 17. Slide piston assembly into bottom of sleeve.

Fig. 18. Grease top inch or two of piston rod that will go through the cylinder throat packings.
Service

Fig. 19. Grease o-ring (221) and place on sleeve. Slide sleeve/piston rod assembly into bottom of cylinder. Replace o-ring (207) if desired.

Note: O-ring (207) is not required for safe pump operation.

Fig. 20. Torque seal and packing nut (202) down onto throat adjustment spacer (228) to 100 +/−10 in-lb.

Remove throat adjustment spacer (228) when pump packings begin to leak after much use. Then tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before a repacking is required.

Fig. 21. Push up retaining spring (26) with screwdriver.

Fig. 22. Push in pin (29).

Note: Make sure retaining ring falls into slot.
Fig. 23. Reassemble intake valve with new o-rings (227) and (230), seat (212) and ball (214). Seat may be flipped over and used on other side. Clean seat thoroughly.

Fig. 24. Install intake valve on cylinder. Torque:
70 +/- 5 ft-lb (model 248204)
80 +/- 5 ft-lb (Model 248205, 249057, 249059)
Technical Data

Maximum working pressure .................. 3600 psi
(250 bar, 24.8 MPa)
Fluid inlet size ......................... 1-5/16–12 un(m)
Fluid outlet size
248204 .............................................. 1/4 npt(f)
248205, 249057, 249059 ......................... 3/8 npt(f)
Wetted parts ................................. stainless steel, PTFE,
leather, nylon, zinc-plated carbon steel,
tungsten carbide, chrome plating, Viton®,
Delrin®, polyethylene

NOTE: Delrin® and Viton® are Company registered trademarks. Loctite® is a Loctite Company registered trademark.
## Parts – Pump 248204, 277069

### Model 248204, Series A; 277069, Series A

<table>
<thead>
<tr>
<th>Ref No.</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty.</th>
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<tbody>
<tr>
<td>201</td>
<td>179810</td>
<td>SEAL, throat</td>
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</tr>
<tr>
<td>202</td>
<td>193046</td>
<td>NUT, packing</td>
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<tr>
<td>203*</td>
<td>192692</td>
<td>V-PACKING, throat, V-Max™ UHMWPE, blue</td>
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<tr>
<td>204*</td>
<td>15C987</td>
<td>GLAND, male, throat</td>
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<tr>
<td>205</td>
<td>243346</td>
<td>CYLINDER, pump Model 278204</td>
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</tr>
<tr>
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<td>195891</td>
<td>Model 277069</td>
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<tr>
<td>206*</td>
<td>105444</td>
<td>BALL, sst, 0.3125 in.</td>
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<tr>
<td>207*</td>
<td>114054</td>
<td>PACKING, o-ring</td>
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<tr>
<td>208*</td>
<td>192693</td>
<td>V-PACKING, piston V-Max™ UHMWPE, blue</td>
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<td>210</td>
<td>239932</td>
<td>VALVE, piston</td>
<td>1</td>
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<tr>
<td>212†</td>
<td>239922</td>
<td>KIT, seat, carbide includes 214 and 227</td>
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<td>213</td>
<td>15C785</td>
<td>VALVE, intake (foot), Model 248204</td>
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<td>195892</td>
<td>VALVE, intake, Model 277069</td>
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<td>214†</td>
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<td>192624</td>
<td>GUIDE, ball</td>
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<td>216*</td>
<td>118503</td>
<td>WIPER, piston</td>
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<td>217*</td>
<td>178969</td>
<td>GLAND, female, piston</td>
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<td>178939</td>
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<td>196880</td>
<td>GLAND, male</td>
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<td>220</td>
<td>248209</td>
<td>SLEEVE, cylinder</td>
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<td>221*</td>
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<td>O-RING, PTFE</td>
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<td>248206</td>
<td>ROD, piston</td>
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<td>227†</td>
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<td>228</td>
<td>192714</td>
<td>SPACER, throat, nut</td>
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<tr>
<td>229*</td>
<td>15C997</td>
<td>WASHER, backup</td>
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<tr>
<td>230*</td>
<td>118494</td>
<td>O-RING, Viton (not used on Lo-boy)</td>
<td>1</td>
</tr>
</tbody>
</table>

* These parts are also included in Repair Kit 248212, which may be purchased separately.

† These parts are also included in Carbide Seat Kit 239922, which may be purchased separately.
## Parts – Pumps 248205, 249057, 249059, 277070

**Model 248205, Series A; 249057, Series A; 249059, Series A; 277070, Series A**

<table>
<thead>
<tr>
<th>Ref No.</th>
<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>201+</td>
<td>183171</td>
<td>PLUG</td>
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<td>202</td>
<td>193032</td>
<td>NUT, packing</td>
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<td>203+</td>
<td>193124</td>
<td>V-PACKING</td>
<td>4</td>
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<td>204+</td>
<td>15C989</td>
<td>GLAND, packing, male, throat</td>
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<td>205</td>
<td>243347</td>
<td>CYLINDER, pump</td>
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<td>206</td>
<td>101947+</td>
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<td>116327+</td>
<td>Model 249059, ceramic</td>
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<td>240150</td>
<td>VALVE, piston</td>
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<td>KIT, SEAT, carbide includes 214 and 227</td>
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<td>213</td>
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<td>HOUSING, intake (foot)</td>
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<td>118504</td>
<td>WIPER, piston</td>
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<td>V-PACKING, leather, piston</td>
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<td>GLAND, packing, male</td>
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<td>SLEEVE, cylinder</td>
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<td>229+</td>
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<td>O-RING, Viton</td>
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</tr>
</tbody>
</table>

* These parts are also included in Repair Kit 248213, which may be purchased separately.
† These parts are also included in Carbide Seat Kit 244199, which may be purchased separately
+ These parts are included in Pump Repair Kit 249189.
Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of 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
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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”.

TO PLACE AN ORDER, contact your Graco distributor, or call 1–800–690–2894 to identify the nearest distributor.