

# Displacement Pump

310894R

EN

*For professional use only.*

*3300 psi (22.8 MPa, 228 bar) Maximum Working Pressure*



## Important Safety Instructions

Read all warnings and instructions in this manual. Be familiar with the controls and the proper usage of the equipment. Save these instructions.

### **Model 287512, Series A**

GMax II 3900 Sprayer, Rental Pro 360G

### **Model 287513, Series A**

GMax II 5900 Sprayer, UltraMax II 1095/1595 with ProConnect

### **Model 287579, Series A**

GMax II 5900HD Sprayer

### **Model 249122, Series A**

GMax II 7900 Sprayer, UltraMax II 1895

### **Model 287928, Series A**

Mark V™ International

### **Model 287929, Series A**

Mark V North America

### **Model 289590, Series A**

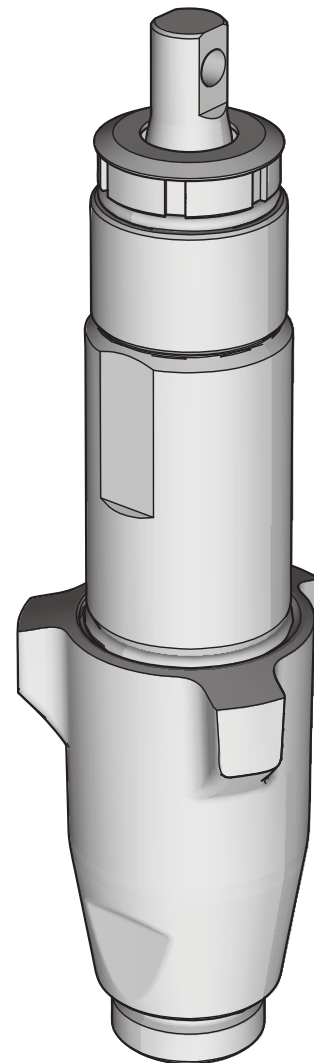
TexSpray 7900HD, Mark X, 230V, Domestic

### **Model 24B322, Series A**

TexSpray HTX2030, Top Coat Kit

### **Model 24M416, Series A**

Mark VII







ti2311

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# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

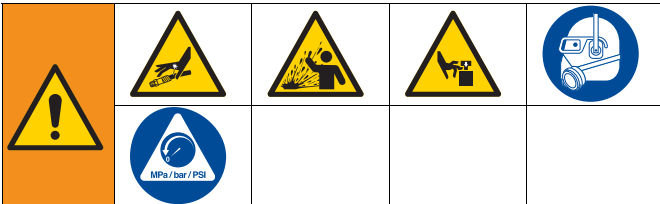
 <h1 style="margin: 0;">WARNING</h1>	
	<p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, <b>get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not aim the gun at, or spray any person or animal.</li> <li>• Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.</li> <li>• Always use the nozzle tip guard. Do not spray without nozzle tip guard in place.</li> <li>• Use Graco nozzle tips.</li> <li>• Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, follow the <b>Pressure Relief Procedure</b> for turning off the unit and relieving the pressure before removing the nozzle tip to clean.</li> <li>• Equipment maintains pressure after power is shut off. Do not leave the equipment or under pressure while unattended. Follow the <b>Pressure Relief Procedure</b> when the equipment is unattended or not in use, and before servicing, cleaning, or removing parts.</li> <li>• Check hoses and parts for signs of damage. Replace any damaged hoses or parts.</li> <li>• This system is capable of producing 3300 psi. Use Graco replacement parts or accessories that are rated a minimum of 3300 psi.</li> <li>• Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.</li> <li>• Verify that all connections are secure before operating the unit.</li> <li>• Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.</li> </ul>
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>
	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>

# Service

## Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage trigger lock.
2. Turn ON/OFF switch to OFF.
3. Unplug power cord.
4. Disengage trigger lock. Hold metal part of gun against grounded metal pail and trigger gun into pail to relieve pressure.
5. Engage the trigger lock.
6. Open all fluid drain valves in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to spray again.
7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved:
  - a. VERY SLOWLY loosen the tip guard retaining nut or the hose end coupling to relieve pressure gradually
  - b. Loosen the nut or the coupling completely.
  - c. Clear the obstruction in the hose or tip.

## Pump Repair Kits

Pump	Repair Kit
287512	248212
287513	248213
287579	248213
249122	249123
287928	249189
287929	248213
289590	249123
24B322	249123
24M416	24M830

## 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

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.



### COMPONENT RUPTURE HAZARD

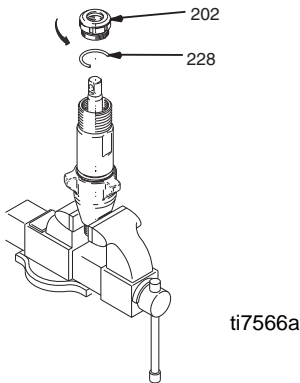
To reduce the risk of serious injury from pressurized fluid, never use sharp or pointed tools to remove sleeve. If the sleeve cannot be removed easily, return the sleeve and cylinder to a Graco distributor for removal.

**NOTE:** Remove and clean sleeve when repacking pump.

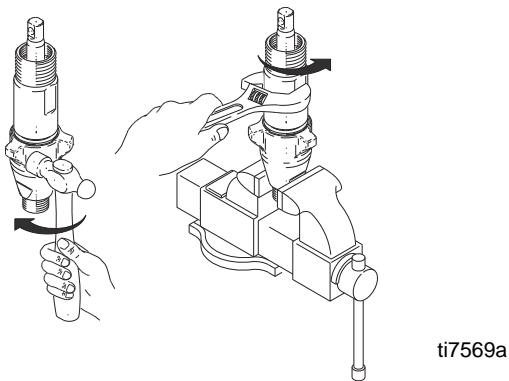
# Repair When Pump is Separated From Sprayer

## Disassembling the Pump

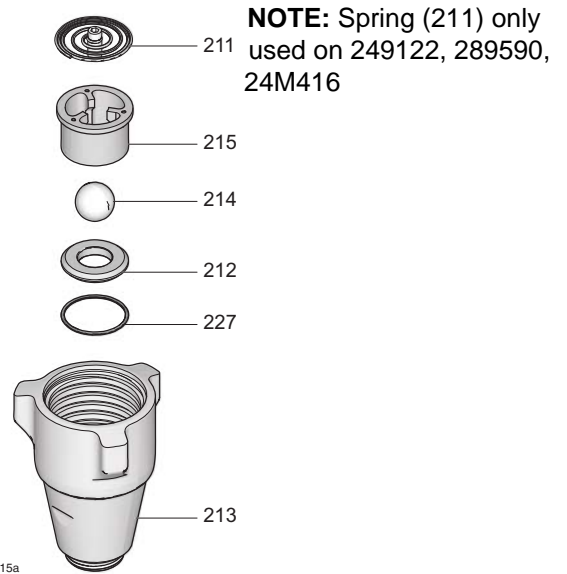
1. Remove packing nut (202) and throat adjustment spacer (228).



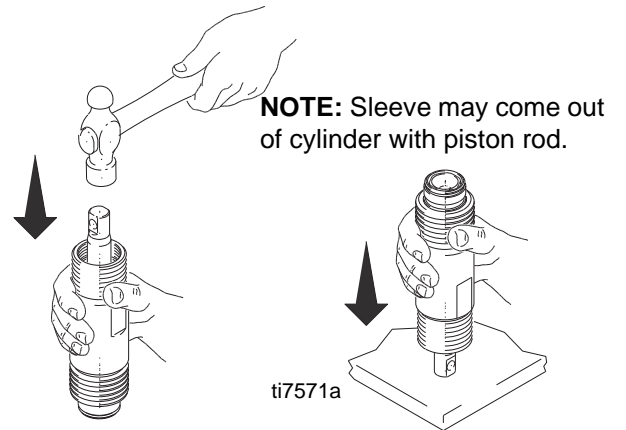
2. Unscrew intake valve from cylinder.



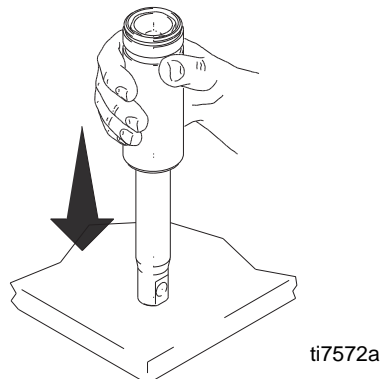
3. Disassemble intake valve. Clean and inspect o-ring (227). **NOTE:** A pick may be required to remove o-ring.





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

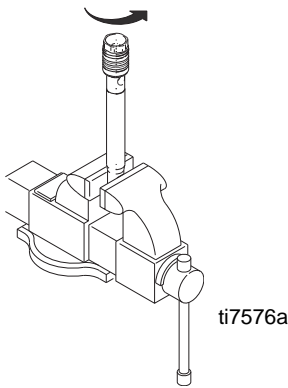


5. Remove piston rod from sleeve, or remove sleeve from cylinder.

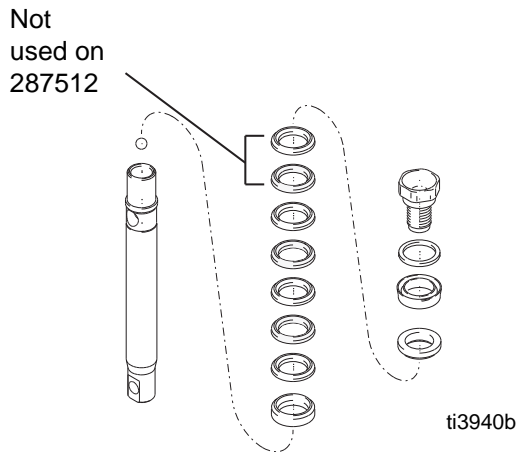


				
<p><b>COMPONENT RUPTURE HAZARD</b>                  To reduce the risk of serious injury from pressurized fluid, never use sharp or pointed tools to remove sleeve. If the sleeve cannot be removed easily, return the sleeve and cylinder to a Graco distributor for removal.</p>				

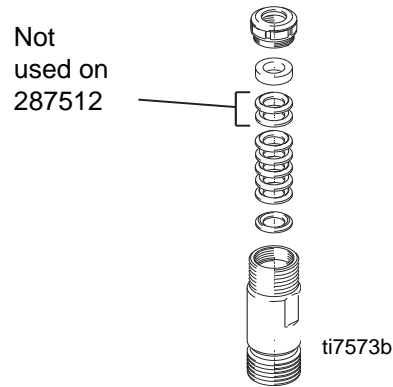
- Unscrew piston valve from piston rod. Clean and inspect parts. The piston has a special thread lock ing/sealing patch. Do not remove the patch. The patch allows four disassembly/assembly procedures before it is necessary to apply thread sealant to the threads.



- Remove packings and glands from piston rod.

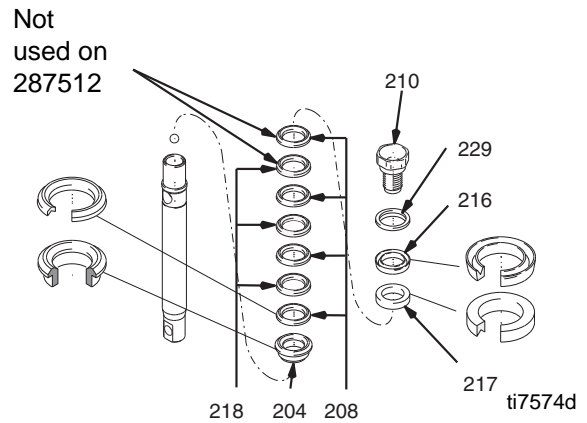


- Remove throat packings and glands from cylinder. Discard throat packings and glands.



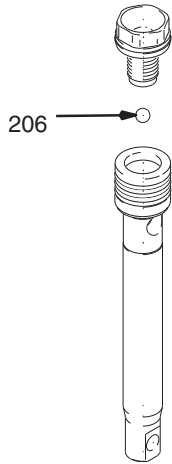
### Assembling the Pump

- 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 thread sealant on piston valve threads after four packings.



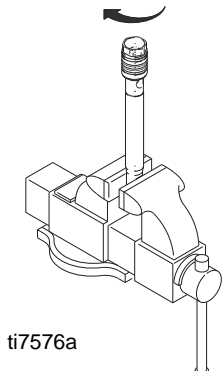
**NOTE:** Pump 249122 and 289590 do not use leather packings in piston stack. Alternately stack blue (208) and brown (218) packings on this pump.

2. Install ball (206) in piston rod. If thread sealant is applied to piston valve threads, make sure that none gets on ball.



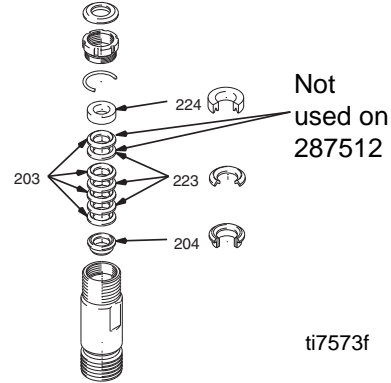
3. Tighten piston valve to piston rod as specified:

Models	Torque
287512	27 +/-3 ft-lb.(36.61 +/-4.06 N•m)
249122, 287513, 289590, 287929, 287579, 287928, 24M416	55 +/-3 ft-lb.(74.57 +/-4.06 N•m)



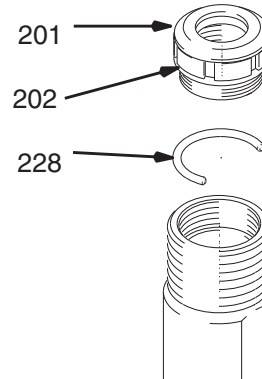
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4. Soak all leather packings in SAE 30W oil for one hour minimum prior to assembly. Place male gland (204) in cylinder. Alternately stack UHMWPE (203) and leather packings (223) (note orientation). Place female gland (224) in top of cylinder seat packings.



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5. Install seal (201) into packing nut (202). Install throat adjustment spacer (228) onto packing nut. Loosely install packing nut into cylinder.



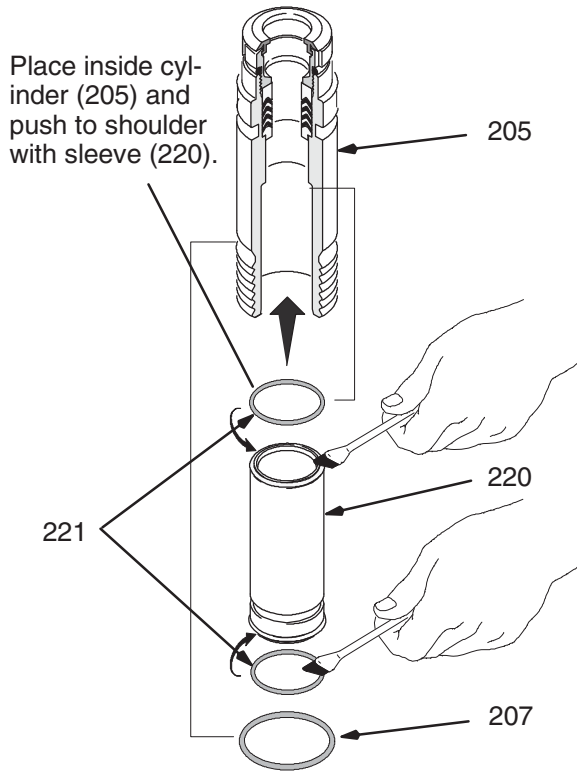
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**NOTE:** Pump 249122, 289590 and 24M416 do not use throat adjustment spacer (228). Instead (228) is an o-ring.

**NOTICE**

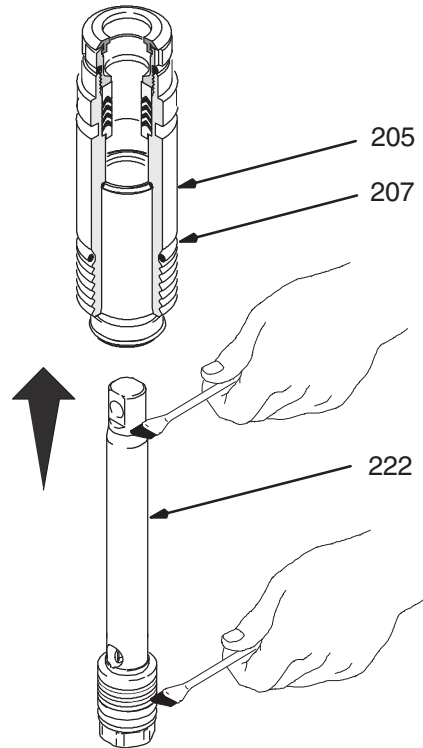
Do not slide piston assembly (222) into top of sleeve (220). This may damage piston packings.

6. Grease o-rings (221) and place inside cylinder (205) and on sleeve (220). Slide sleeve (220) into bottom of cylinder (205). Replace o-ring (207) if desired.



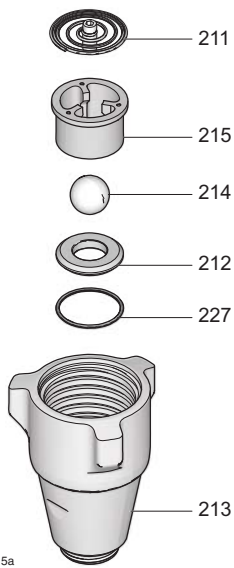
**NOTE:** O-ring (207) is not required for safe pump operation.

7. Grease top inch or two of piston rod (222) that goes through the sleeve/cylinder assembly throat packings (205). Grease piston packings at bottom of piston rod.
8. Carefully slide piston assembly (222) into bottom of sleeve/cylinder assembly (205) until pump rod protrudes at the top and piston packings are totally inside the sleeve (220).





9. 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.

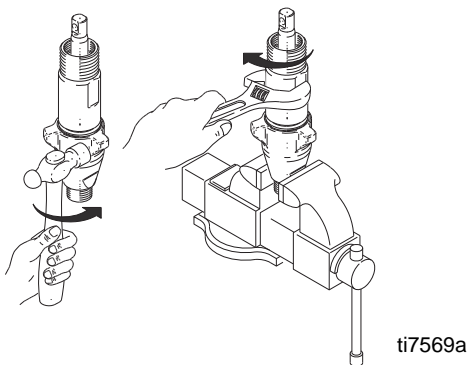


**NOTE:** Spring (211) only used on 249122, 289590, 24M516, 24M416

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10. Install intake valve on cylinder. If a wrench is used torque as follows:

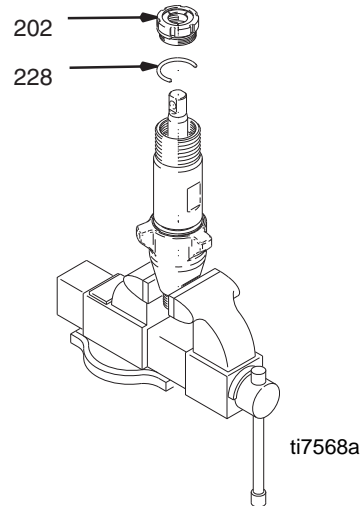
Models	Torque
287512	70 +/- 5 ft-lb (94.91 +/-6.77 N•m)
287513, 287579	80 +/- 5 ft-lb (108.5 +/-6.77 N•m)
249122, 289590, 24M416	200 +/- 15 ft-lb (271.2 +/-20.34 N•m)



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**NOTE:** If a wrench is not used, be sure intake valve is bottomed out against cylinder.

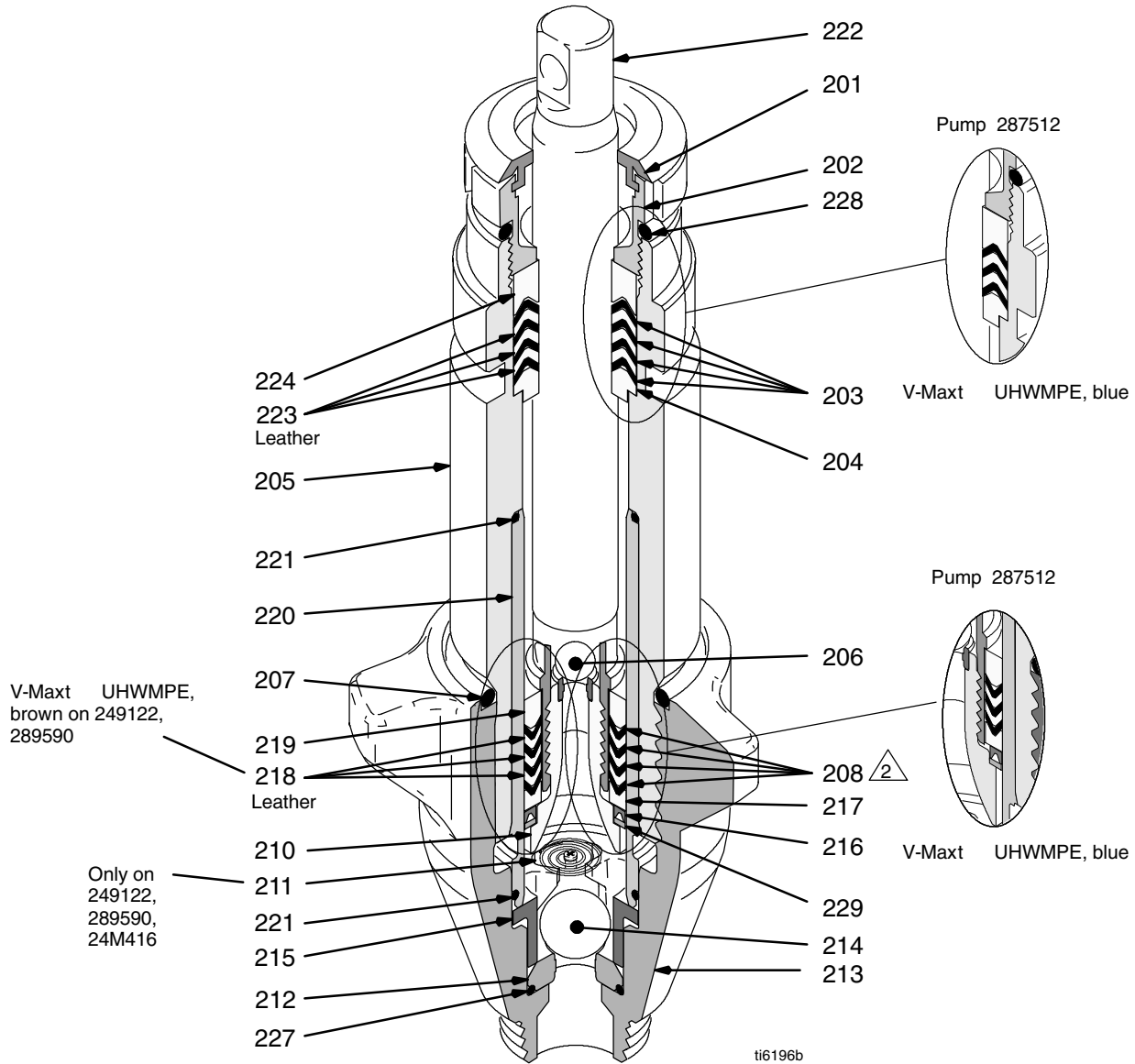
11. Torque packing nut (202) down onto adjustment spacer (228) 140 +/- 10 in-lb (15.82 +/-1.13 N•m).
12. Remove throat adjustment spacer (228) when pump packings begin to leak after extended use. Then tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before a repacking is required.



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**NOTE:** Pump 249122, 289590 and 24M416 do not use throat adjustment spacer (228). Instead (228) is an o-ring.

# Cross Sectional Reference



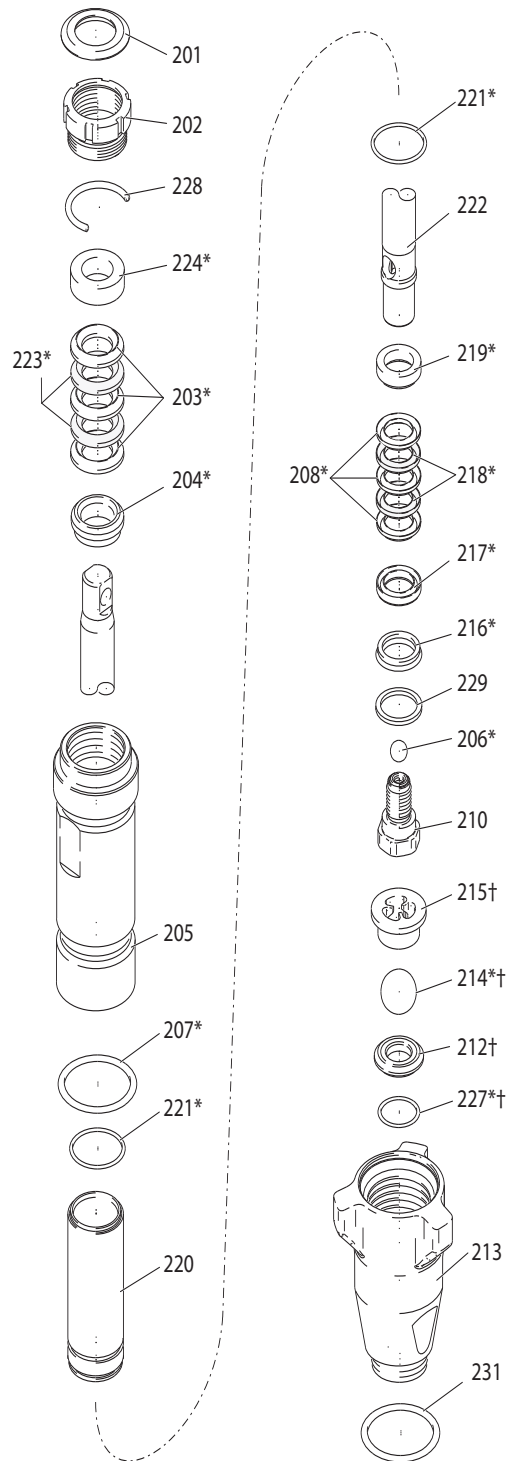
# Parts - Pump 287512

Ref.	Part	Description	Qty.
201	179810	SEAL, throat	1
202	193046	NUT, packing	1
203*	192692	V-PACKING, throat, V-Max™, UHMWPE, blue	3
204*	15C987	GLAND, male, throat	1
205	287551	CYLINDER, pump	1
206*	105444	BALL, sst, 0.3125 in.	1
207*	114054	PACKING, o-ring	1
208*	192693	V-PACKING, piston, V-MAX™, UHMWPE, blue	3
210	239932	VALVE, piston	1
212†	239922	KIT, seat, carbide (includes 214 and 227)	1
213	15C785	VALVE, intake (foot)	1
214*†	105445	BALL, sst, 0.5000 in.	1
215†	192624	GUIDE, ball	1
216*	118503	WIPER, piston	1
217*	178969	GLAND, female, piston	1
218*	178939	V-PACKING, leather, piston	2
219*	196880	GLAND, male	1
220	248209	SLEEVE, cylinder	1
221*	108526	O-RING, ptfe	2
222	248206	ROD, piston	1
223*	178940	V-PACKING, leather, throat	2
224*	15C988	GLAND, female	1
227*†	107079	PACKING, o-ring	1
228	192714	SPACER, throat, nut	1
229*	15C997	WASHER, backup	1
230††	15E802	FITTING, pump (not shown)	1
231	118494	O-RING, acetal	1
232††	15E807	TUBE, intake (not shown)	1

\* 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.

†† These parts are included with pump 287512.



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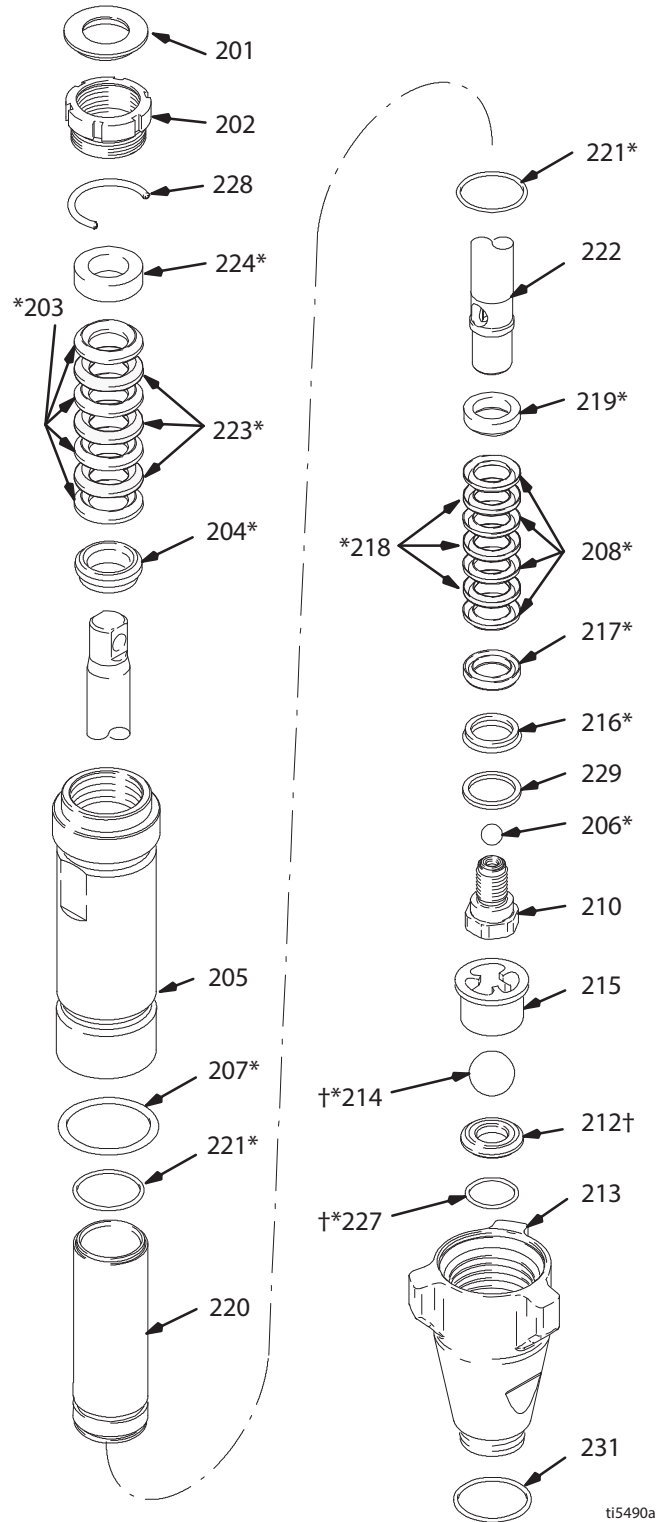
# Parts - Pump 287513

Ref.	Part	Description	Qty.
201	183171	PLUG	1
202	193032	NUT, packing	1
203*	193124	V-PACKING, throat, V-Max™, UHMWPE, blue	4
204*	15C989	GLAND, male, throat	1
205	287552	CYLINDER, pump	1
206*	101947	BALL, sst, 0.375 in.	1
207*	106556	PACKING, o-ring	1
208*	193125	V-PACKING, piston, V-MAX™, UHMWPE, blue	4
210	240150	VALVE, piston	1
212†	244199	KIT, seat, carbide (includes 214 and 227)	1
213	15E654	VALVE, intake (foot)	1
214*†	120972	BALL, metallic	1
215	193027	GUIDE, ball	1
216*	118504	WIPER, piston	1
217*	183185	GLAND, female, piston	1
218*	15E329	V-PACKING, leather, piston	3
219*	183178	GLAND, male	1
220	248210	SLEEVE, cylinder	1
221*	107098	PACKING, o-ring	2
222	248207	ROD, piston	1
223*	183175	V-PACKING, leather, throat	3
224*	15C990	GLAND, packing	1
227*†	108526	PACKING, o-ring	1
228	193127	SPACER, nut	1
229*	15C998	WASHER, backup	1
230††	15E802	FITTING, pump (not shown)	1
231	118494	O-RING, acetal	1
232††	15E806	TUBE, intake (not shown)	1

\* 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 with pump 287513.



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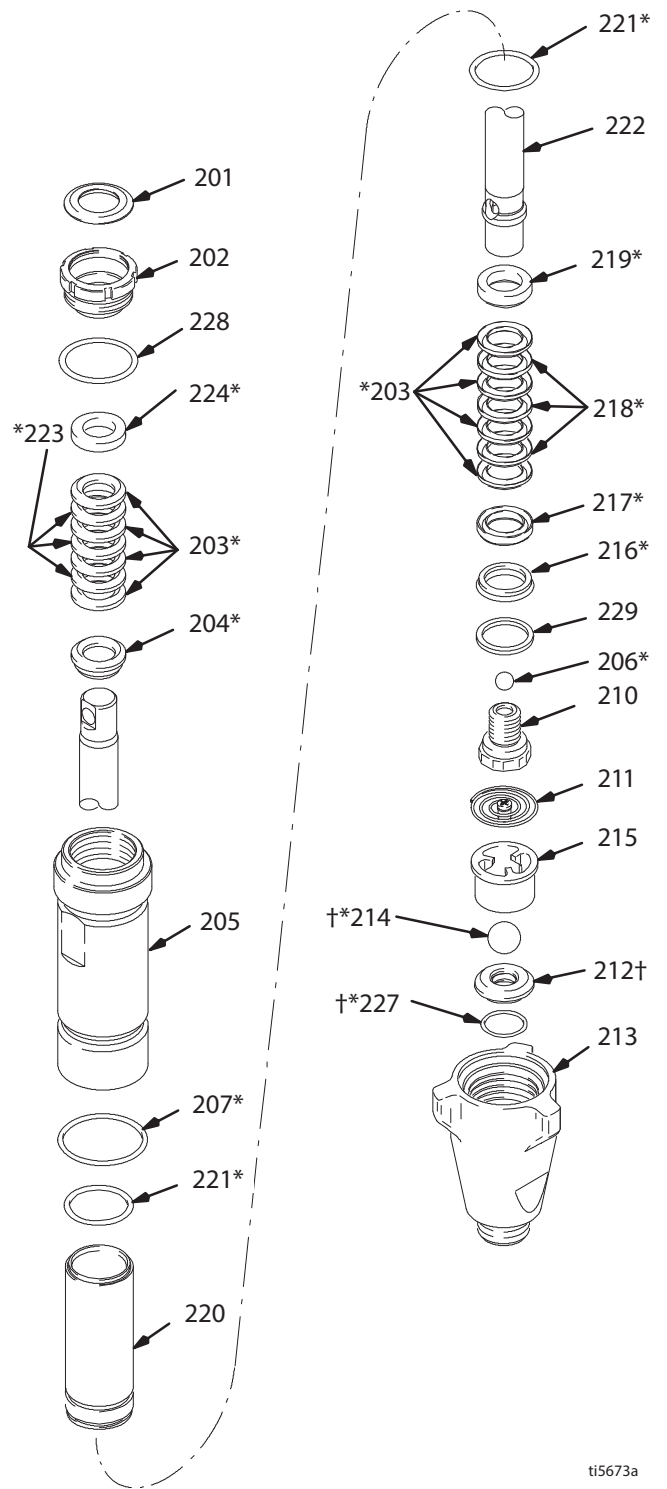
# Parts - Pump 249122

Ref.	Part	Description	Qty.
201	112590	PLUG	1
202	15E962	NUT, packing	1
203*	193722	V-PACKING, throat, V-Max™, UHMWPE, blue	8
204*	15G658	GLAND, packing, male, throat	1
205	249139	CYLINDER, pump	1
206*	107203	BALL, valve, check	1
207*	107306	PACKING, o-ring	1
210	249177	VALVE, piston	1
211	233698	SPRING, intake ball	1
212†	240918	KIT, seat, carbide (includes 214 and 227)	1
213	15E655	HOUSING, intake (foot)	1
214*†	107167	BALL, sst	1
215	198505	GUIDE, ball	1
216*	119636	WIPER, piston	1
217*	189588	GLAND, packing, female	1
218*	15E639	V-PACKING, piston, V-Max™, UHMWPE, brown	3
219*	189585	GLAND, packing, male	1
220	249121	SLEEVE, cylinder	1
221*	108822	PACKING, o-ring	2
222	249119	ROD, piston	1
223*	112591	V-PACKING, leather, throat	3
224*	15G657	GLAND, packing, female	1
227*†	107098	PACKING, o-ring	1
228	108832	SPACER, nut	1
229*	15F183	WASHER, backup	1
230††	15E802	FITTING, pump (not shown)	1
231	118494	O-RING, acetal	1
232††	15E806	TUBE, intake (not shown)	1

\* These parts are also included in Repair Kit 249123, which may be purchased separately.

† These parts are also included in Carbide Seat Kit 240918, which may be purchased separately.

† † These parts are included with pump 249122.



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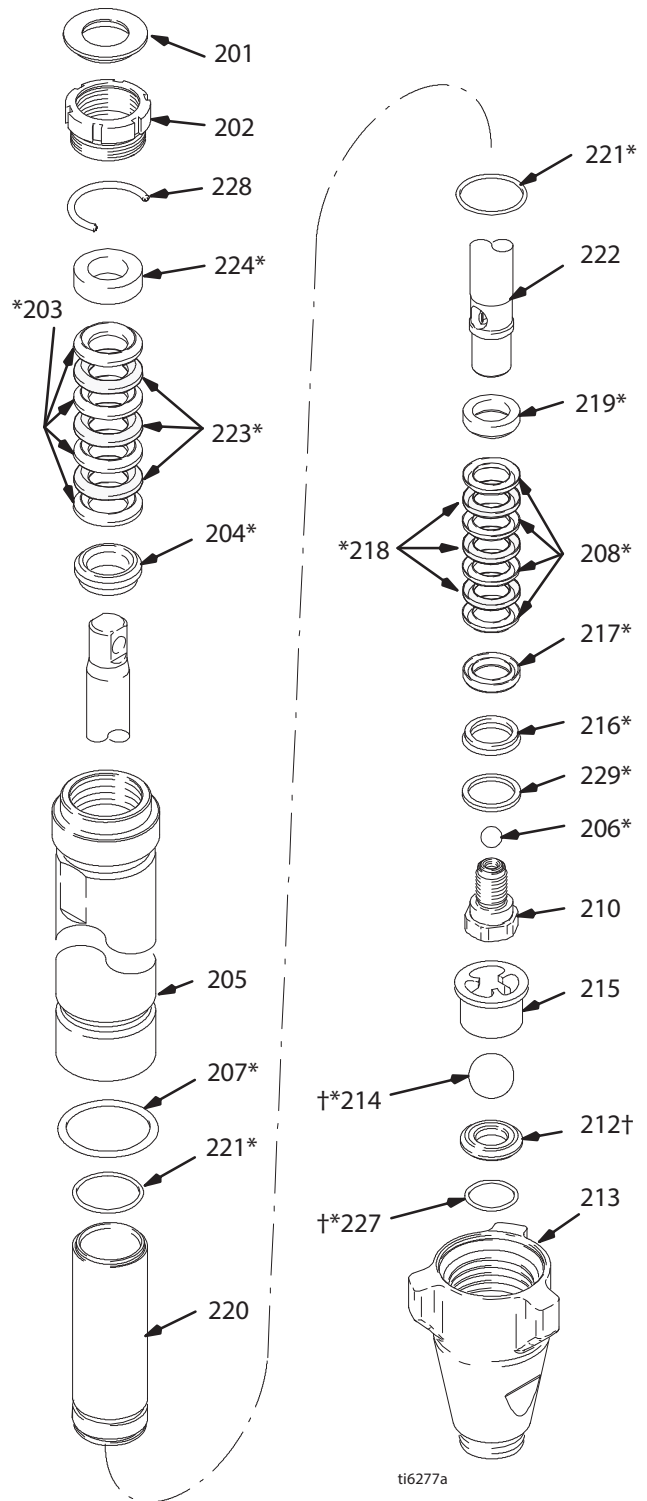
# Parts - Pump 287579

Ref.	Part	Description	Qty.
201	183171	PLUG	1
202	193032	NUT, packing	1
203*	193124	V-PACKING, throat, V-Max™, UHMWPE, blue	4
204*	15C989	GLAND, male, throat	1
205	287581	CYLINDER, pump	1
206*	101947	BALL, sst, 0.375 in.	1
207*	106556	PACKING, o-ring	1
208*	193125	V-PACKING, piston, V-MAX™, UHMWPE, blue	4
210	240150	VALVE, piston	1
212†	244199	KIT, seat, carbide (includes 214 and 227)	1
213	196753	VALVE, intake (foot)	1
214*†	102972	BALL, metallic	1
215	196967	GUIDE, ball	1
216*	118504	WIPER, piston	1
217*	183185	GLAND, female, piston	1
218*	15E329	V-PACKING, leather, piston	3
219*	183178	GLAND, male	1
220	248210	SLEEVE, cylinder	1
221*	107098	PACKING, o-ring	2
222	249028	ROD, piston	1
223*	183175	V-PACKING, leather, throat	3
224*	15C990	GLAND, packing	1
227*†	108526	PACKING, o-ring	1
228	193127	SPACER, nut	1
229*	15C998	WASHER, backup	1
230††	15E802	FITTING, pump (not shown)	1

\* 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 with pump 287579.



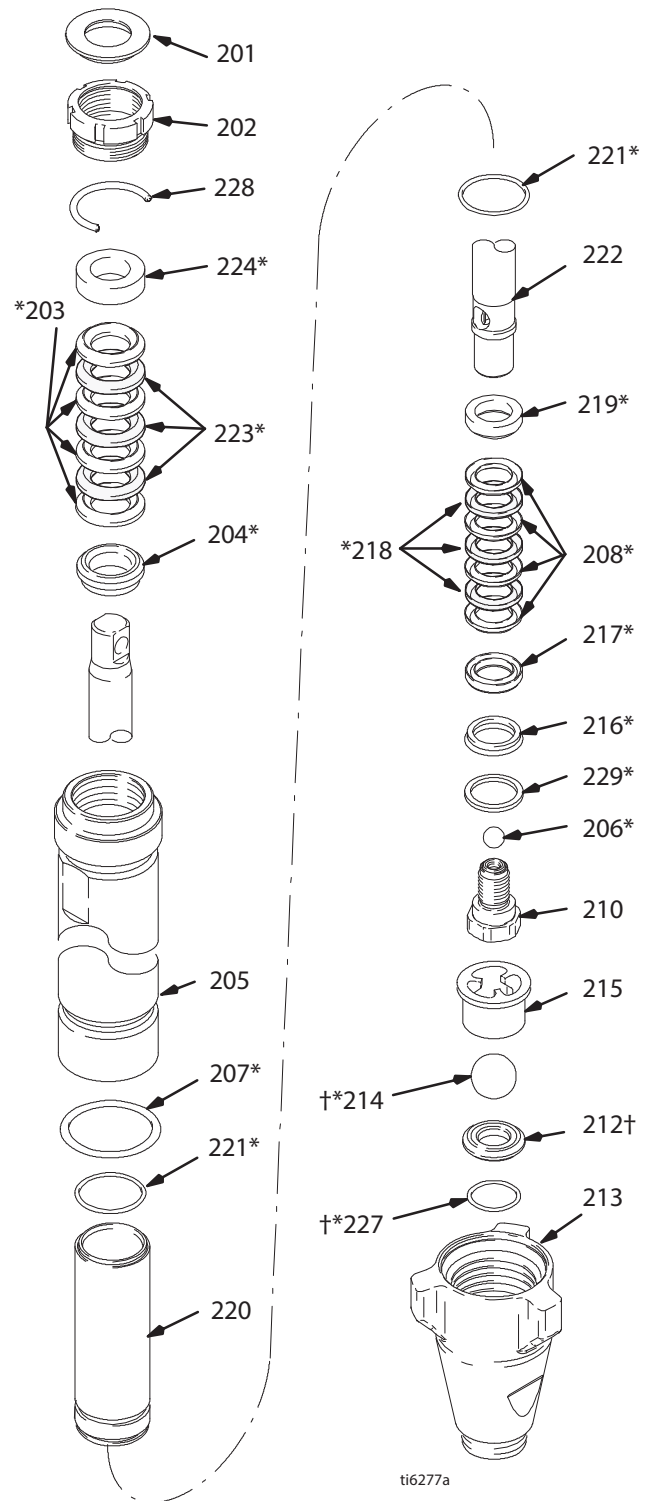
# Parts - Pump 287928

Ref.	Part	Description	Qty.
201	183171	PLUG	1
202	193032	NUT, packing	1
203*	193124	V-PACKING, throat, V-Max™, UHMWPE, blue	4
204*	15C989	GLAND, male, throat	1
205	287581	CYLINDER, pump	1
206*	116327	BALL, ceramic	1
207*	106556	PACKING, o-ring	1
208*	193125	V-PACKING, piston, V-MAX™, UHMWPE, blue	4
210	240150	VALVE, piston	1
212†	244571	KIT, seat, carbide (includes 214 and 227)	1
213	196753	VALVE, intake (foot)	1
214*†	111453	BALL, ceramic	1
215	196967	GUIDE, ball	1
216*	118504	WIPE, piston	1
217*	183185	GLAND, female, piston	1
218*	15E329	V-PACKING, leather, piston	3
219*	183178	GLAND, male	1
220	248210	SLEEVE, cylinder	1
221*	107098	PACKING, o-ring	2
222	249028	ROD, piston	1
223*	183175	V-PACKING, leather, throat	3
224*	15C990	GLAND, packing	1
227*†	108526	PACKING, o-ring	1
228	193127	SPACER, nut	1
229*	15C998	WASHER, backup	1
230††	15G880	FITTING, pump (not shown)	1

\* These parts are also included in Repair Kit 249189, which may be purchased separately.

† These parts are also included in Carbide Seat Kit 244571, which may be purchased separately.

†† These parts are included with pump 287928.



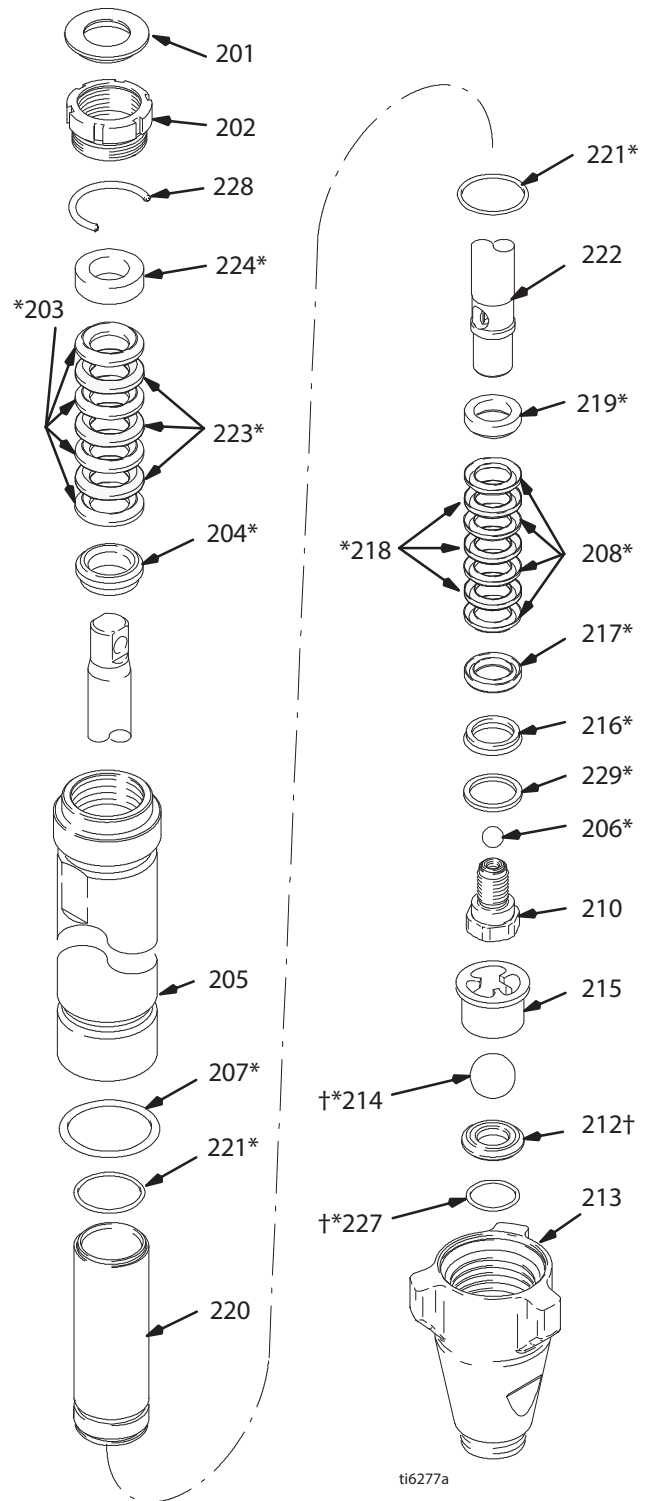
# Parts - Pump 287929

Ref.	Part	Description	Qty.
201*	183171	PLUG	1
202	193032	NUT, packing	1
203*	193124	V-PACKING, throat, V-Max™, UHMWPE, blue	4
204*	15C989	GLAND, male, throat	1
205	287581	CYLINDER, pump	1
206*	101947	BALL, sst, 0.375 in.	1
207*	106556	PACKING, o-ring	1
208*	193125	V-PACKING, piston, V-MAX™, UHMWPE, blue	4
210	240150	VALVE, piston	1
212†	244199	KIT, seat, carbide (includes 214 and 227)	1
213	196753	VALVE, intake (foot)	1
214*†	102972	BALL, metallic	1
215	196967	GUIDE, ball	1
216*	118504	WIPER, piston	1
217*	183185	GLAND, female, piston	1
218*	15E329	V-PACKING, leather, piston	3
219*	183178	GLAND, male	1
220	248210	SLEEVE, cylinder	1
221*	107098	PACKING, o-ring	2
222	249028	ROD, piston	1
223*	183175	V-PACKING, leather, throat	3
224*	15C990	GLAND, packing	1
227*†	108526	PACKING, o-ring	1
228	193127	PACKING, o-ring	1
229*	15C998	WASHER, backup	1
230††	15G880	FITTING, pump (not shown)	1

\* 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 with pump 287929.



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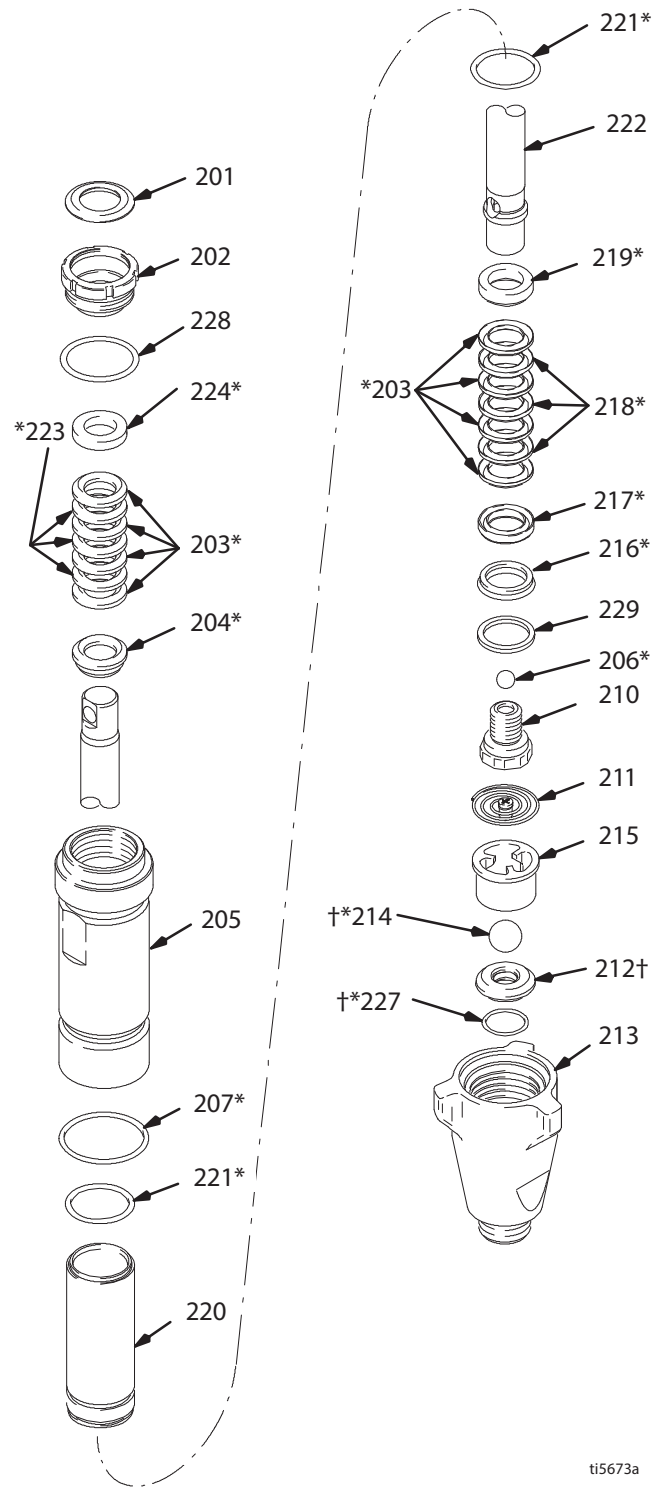
# Parts - Pump 289590

Ref.	Part	Description	Qty.
201	112590	PLUG	1
202	15E962	NUT, packing	1
203*	193722	V-PACKING, throat, V-Max™, UHMWPE, blue	8
204*	198768	GLAND, packing, male, throat	1
205	15G437	CYLINDER, pump	1
206*	107203	BALL, valve, check	1
207*	107306	PACKING, o-ring	1
210	249177	VALVE, piston	1
211	233698	SPRING, intake ball	1
212†	240918	KIT, seat, carbide (includes 214 and 227)	1
213	15A303	HOUSING, intake (foot)	1
214*†	107167	BALL, sst	1
215	193391	GUIDE, ball	1
216*	119636	WIPER, piston	1
217*	189588	GLAND, packing, female	1
218*	15E639	V-PACKING, piston, V-Max™, UHMWPE, brown	3
219*	189585	GLAND, packing, male	1
220	249121	SLEEVE, cylinder	1
221*	108822	PACKING, o-ring	2
222	288103	ROD, piston	1
223*	112591	V-PACKING, leather, throat	3
224*	194175	GLAND, packing, female	1
227*†	107098	PACKING, o-ring	1
228	108832	PACKING, o-ring	1
229*	15J800	WASHER, backup	1
230††	15G509	FITTING, pump (not shown)	1
232††	C20195	PACKING, o-ring (not shown)	1

\* These parts are also included in Repair Kit 249123, which may be purchased separately.

† These parts are also included in Carbide Seat Kit 240918, which may be purchased separately.

†† These parts are included with pump 289590.



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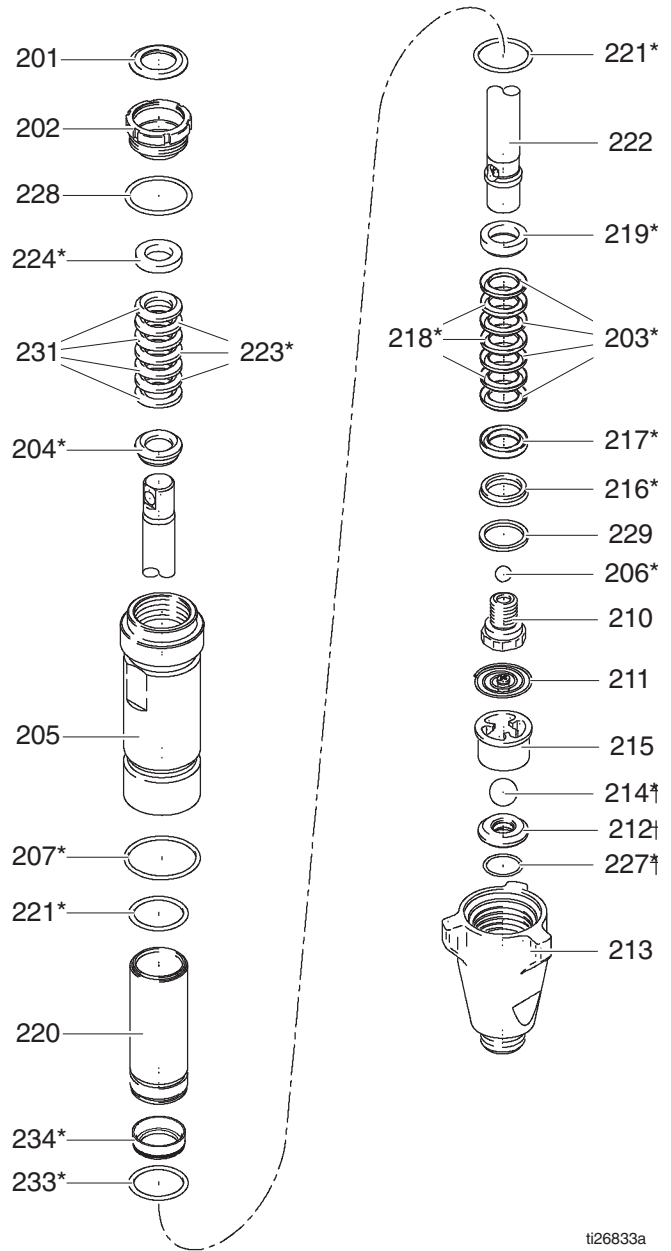
# Parts - Pump 24M416

Ref.	Part	Description	Qty.
201	183171	PLUG	1
202	193032	NUT, packing	1
203*	193125	V-PACKING	4
204*	15C989	GLAND, packing, male, throat	1
205	16M290	CYLINDER, pump	1
206*	116327	BALL, valve, check, ceramic	1
207*	160325	PACKING, o-ring	1
210	240150	VALVE, piston	1
211	24E027	SPRING, intake ball	1
212†	24M832	KIT, seat, carbide (includes 214 and 227)	1
213	15A303	HOUSING, intake (foot)	1
214*†	118602	BALL, ceramic, 0.875 in.	1
215	16M658	GUIDE, ball	1
216*	118504	WIPER, piston	1
217*	183185	GLAND, packing, female	1
218*	15E329	V-PACKING, piston, V-Max™, UHMWPE, brown	3
219*	183178	GLAND, packing male	1
220	248210	SLEEVE, cylinder	1
221*	107098	PACKING, o-ring	2
222	249028	ROD, piston	1
223*	183175	V-PACKING, leather, throat	3
224*	15C990	GLAND, packing, female	1
227*†	107098	PACKING, o-ring	1
228	C20987	PACKING, o-ring	1
229*	15C998	WASHER, backup	1
230††	15G880	FITTING, pump (not shown)	1
231††	193124	PACKING, vee	1
232††	C20195	PACKING, o-ring (not shown)	1
233*	108822	PACKING, o-ring	1
234*	16M291	SPACER, sleeve	1

\* These parts are also included in Repair Kit 24M830, which may be purchased separately.

† These parts are also included in Carbide Seat Kit 24M832, which may be purchased separately.

† † These parts are included with pump 24M416.



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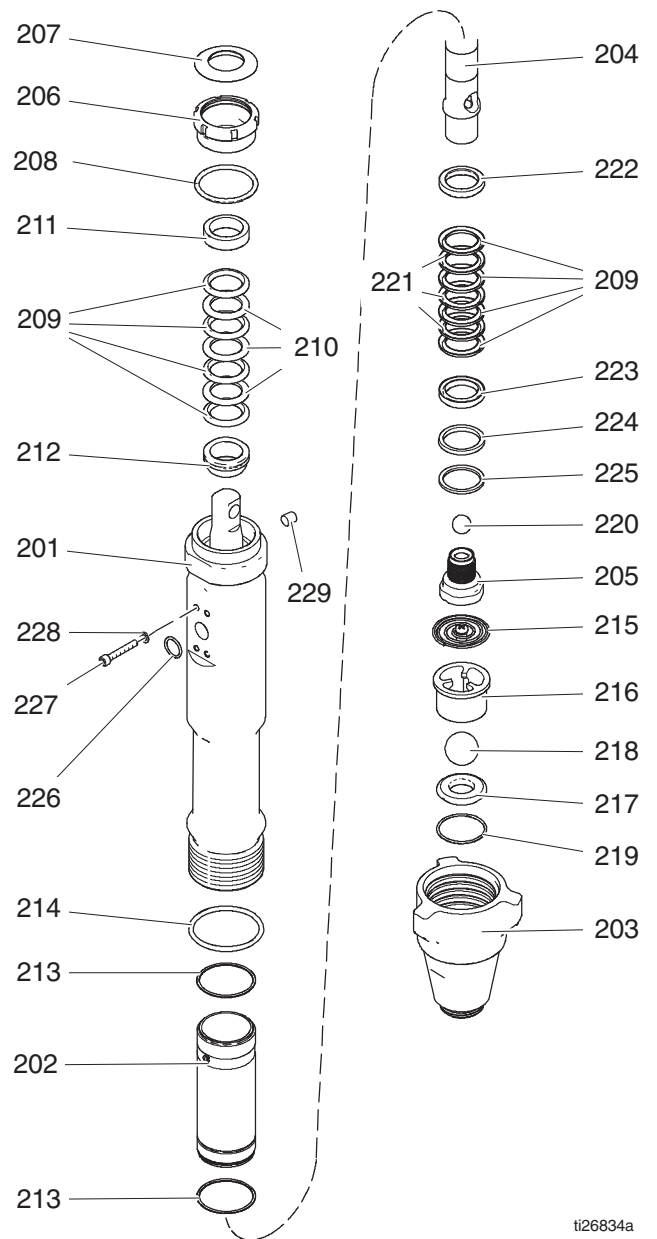
# Parts - Pump 24B322

Ref.	Part	Description	Qty.
201**		HOUSING, outlet, pump	1
202	249121	SLEEVE, cylinder	1
203	15A303	HOUSING, intake	1
204	288103	ROD, piston	1
205	249177	VALVE, piston	1
206	15E962	NUT, packing	1
207	112590	PLUG, throat, seal	1
208	157195	PACKING, o-ring	1
209*	193722	PACKING, vee, piston	8
210*	112591	PACKING, vee, leather	3
211*	194175	GLAND, female	1
212*	198768	GLAND, packing, male	1
213*	108822	PACKING, o-ring	2
214	160325	PACKING, o-ring	1
215	233698	SPRING, intake ball	1
216	193391	GUIDE, ball	1
217	193395	SEAT, carbide	1
218*†	107167	BALL, sst	1
219*†	107098	PACKING, o-ring	1
220*	107203	BALL, valve, check	1
221*	15E639	PACKING, vee	3
222*	189585	GLAND, packing, male	1
223*	189588	GLAND, packing, female	1
224*	119636	WIPER, piston	1
225	15J800	WASHER, back-up	1
226**	115719	PACKING, o-ring, 015, FKM	1
227**	104705	SCREW, cap, sch	4
228**	100020	WASHER, lock	4
229**	116618	MAGNETS (must be installed with same polarity)	3
††	15X083	MANIFOLD (order separately)	

\* These parts are also included in Repair Kit 249123, which may be purchased separately.

† These parts are also included in Carbide Seat Kit 240918, which may be purchased separately.

\*\* Included in Cylinder Kit 24B525.



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