

## GH™ 130/200/230/300 and DutyMax GH/EH™ 230/300 Displacement Pump

334654B

EN

*For professional use only.*

*Not approved for use in explosive atmosphere or hazardous locations.*

*For portable airless spraying of architectural paints and coatings.*

Models: 24B748, 24W995, 24W996, 24W997, 24W998, 24W999, 24X001

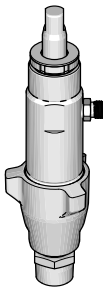


### Important Safety Instructions

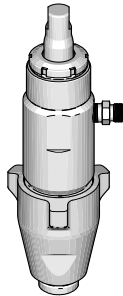
Read all warnings and instructions in this manual and related manuals.

Be familiar with the controls and the proper usage of the equipment.

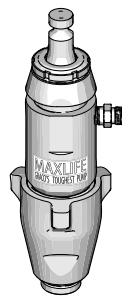
Save these instructions.



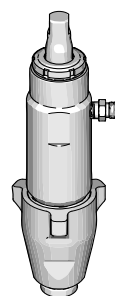
24B748



24W995



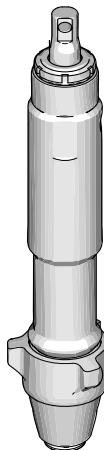
24W996



24W997



24W998



24W999



24X001

ti2524a

*Use only genuine Graco replacement parts.*

*The use of non-Graco replacement parts may void warranty.*










# Table of Contents

## Table of Contents

|                                       |           |
|---------------------------------------|-----------|
| <b>Warnings</b> .....                 | <b>3</b>  |
| <b>Repair</b> .....                   | <b>4</b>  |
| Trigger Lock .....                    | 4         |
| Pressure Relief Procedure .....       | 4         |
| Disassemble Pump .....                | 6         |
| Assemble Pump .....                   | 9         |
| <b>Notes</b> .....                    | <b>13</b> |
| <b>Parts</b> .....                    | <b>14</b> |
| Pump 24B748 .....                     | 14        |
| Parts List .....                      | 15        |
| <b>Parts</b> .....                    | <b>16</b> |
| Pump 24W995 .....                     | 16        |
| Parts List .....                      | 17        |
| <b>Parts</b> .....                    | <b>18</b> |
| Pump 24W996 .....                     | 18        |
| Parts List .....                      | 19        |
| <b>Parts</b> .....                    | <b>20</b> |
| Pump 24W997 .....                     | 20        |
| Parts List .....                      | 21        |
| <b>Parts</b> .....                    | <b>22</b> |
| Pump 24W998 .....                     | 22        |
| Parts List .....                      | 23        |
| <b>Parts</b> .....                    | <b>24</b> |
| Pump 24W999 .....                     | 24        |
| Parts List .....                      | 25        |
| <b>Parts</b> .....                    | <b>26</b> |
| Pump 24X001 .....                     | 26        |
| Parts List .....                      | 27        |
| <b>Technical Specifications</b> ..... | <b>28</b> |
| <b>Graco Standard Warranty</b> .....  | <b>29</b> |
| <b>Graco Information</b> .....        | <b>30</b> |

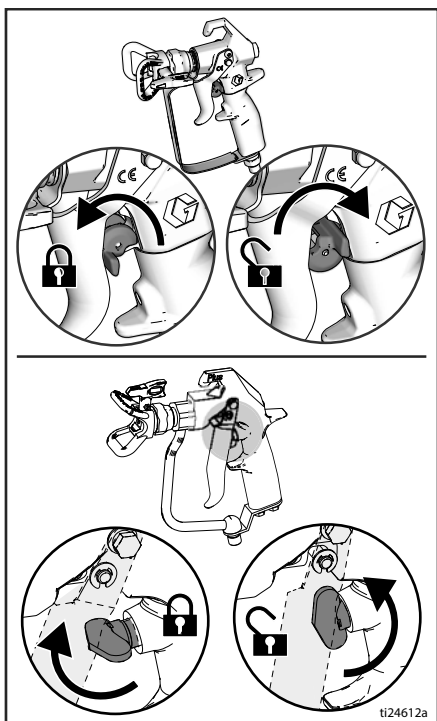
# Warnings

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.

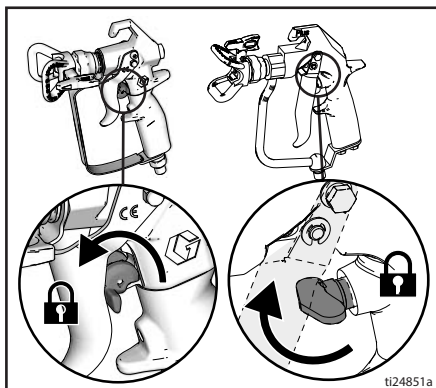
|  <b>WARNING</b>  |  |
|---|--|
|       | <p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, <b>get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not 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 energized 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>PRESSURIZED ALUMINUM PARTS HAZARD</b></p> <p>Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.</p> <ul style="list-style-type: none"> <li>• Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.</li> <li>• Do not use chlorine bleach.</li> <li>• Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.</li> </ul>  |
|   | <p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eye wear, and hearing protection.</li> <li>• Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.</li> </ul>  |
|   | <p><b>CALIFORNIA PROPOSITION 65</b></p> <p>This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.</p>   |

## Trigger Lock

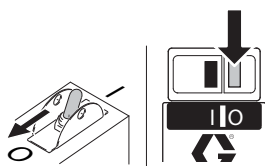
Always engage the trigger lock when sprayer is stopped to prevent the gun from being triggered accidentally by hand or if dropped or bumped.



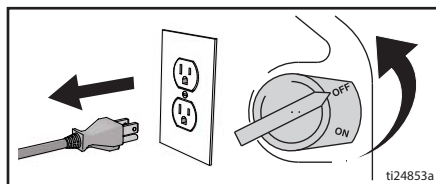
1. Engage trigger lock.



2. If applicable, turn electric motor ON/OFF switch to **OFF** position. Wait 7 seconds for power to dissipate.



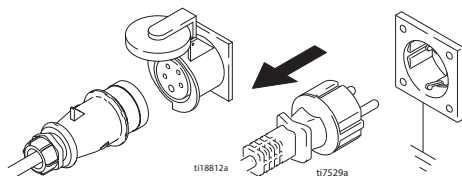
3. Unplug power cord or shut engine off.



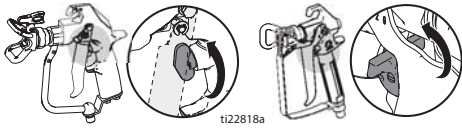
## Pressure Relief Procedure



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashed fluid and moving parts, follow the **Pressure Relief Procedure** whenever sprayer is stopped and before sprayer is cleaned or checked, and before equipment is serviced.



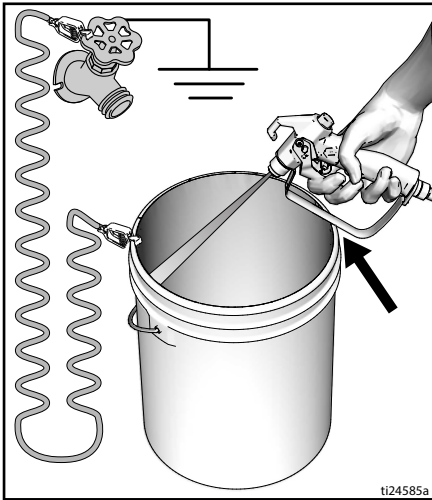
4. Disengage trigger lock.



5. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.

**Solvent and oil-based fluids:** follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete.

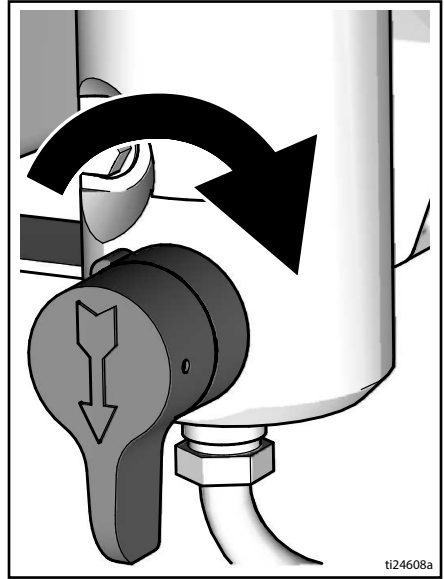
Do not place pail on a non-conductive surface such as paper or cardboard which interrupts grounding continuity.



6. Engage trigger lock.

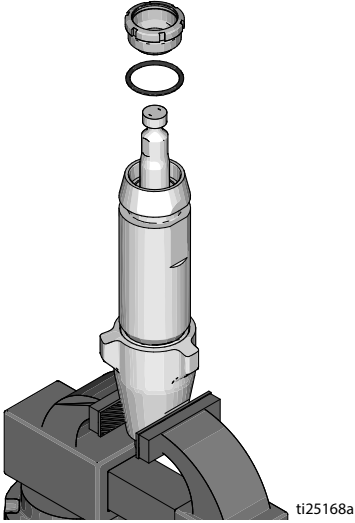


7. Open any fluid drain valves in system. Leave drain valves open until ready to spray again.

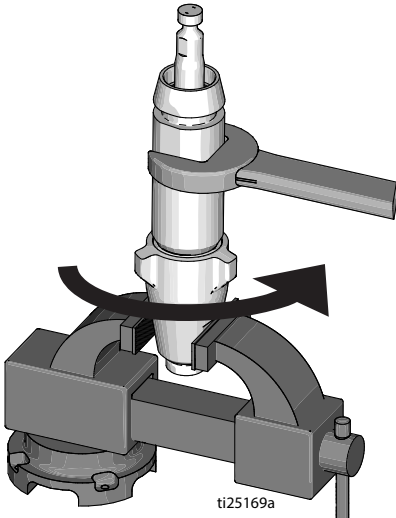


## Disassemble Pump

1. Remove packing nut and throat adjustment spacer.



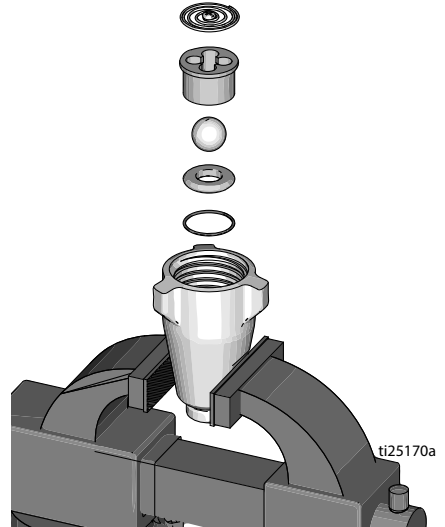
2. Unscrew cylinder from intake valve.



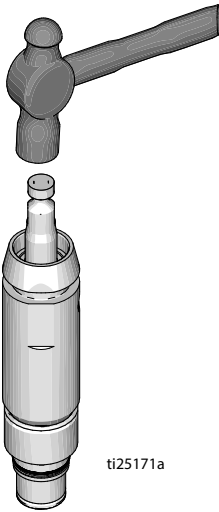
3. Disassemble intake valve. Clean and inspect. O-ring may require a pick for removal.

### NOTICE

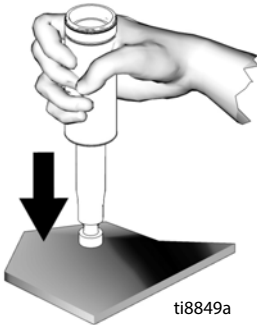
If using a pick to remove the O-ring use care to avoid damage to the machined surfaces.



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

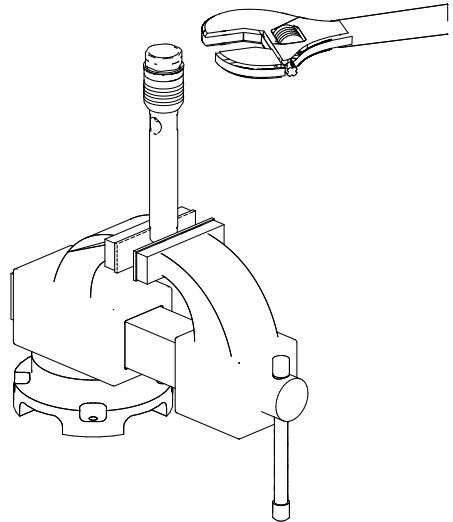


5. Remove piston rod from sleeve.



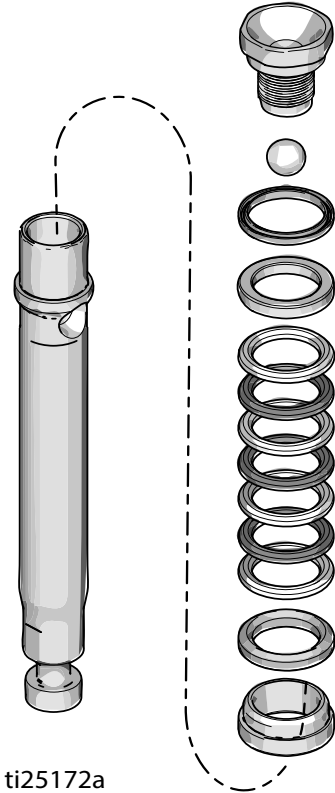
|   |  |  |  |  |
|---|--|--|--|--|
|   |  |  |  |  |
| <p>Do not clean or wipe the piston valve threads. Cleaning the piston valve threads could destroy the special sealing patch and cause the piston valve to come loose during operation, causing a pump burst and possible serious bodily injury.</p> |  |  |  |  |

6. Unscrew piston valve from piston rod.

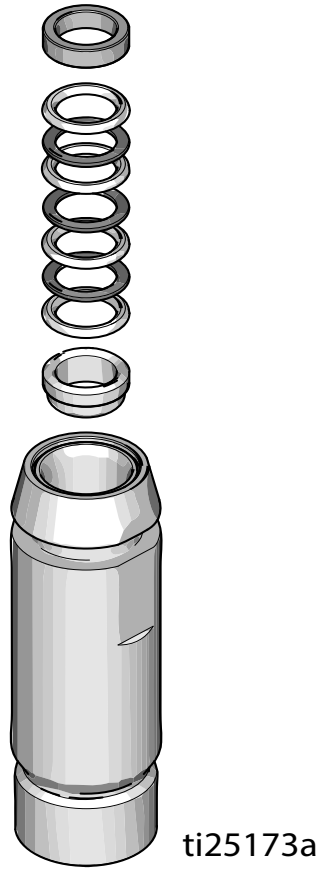


# Repair

7. Clean and inspect parts. (The piston has a special thread locking/sealing patch. Do not remove the patch. The patch allows for disassembly/assembly procedures before it is necessary to apply thread sealant to the threads. On fifth assembly apply thread sealant to threads.



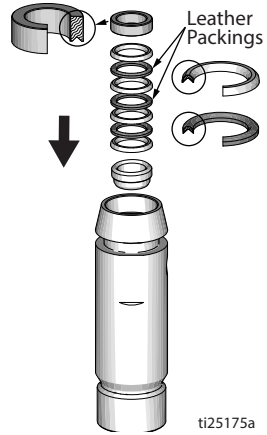
8. Remove and discard throat packing and glands from the cylinder.



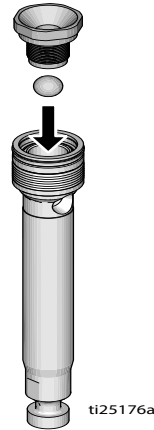


## Assemble Pump

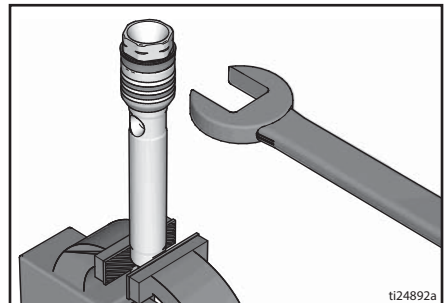
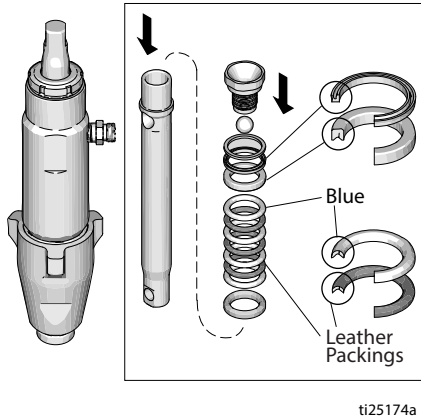
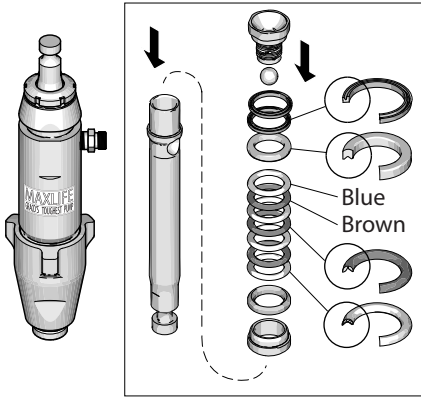
1. If applicable, soak leather packings in SAE 30W oil for one hour before assembly.



2. Install ball in piston rod. Apply thread sealant to piston valve threads; ensure that none gets on the ball.

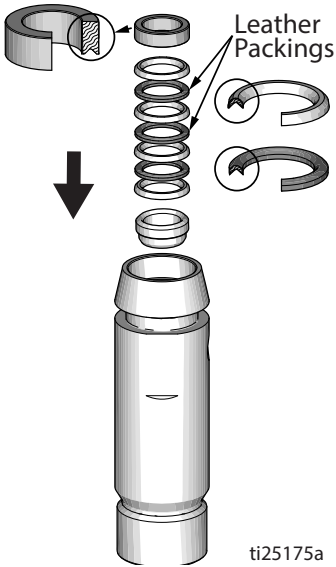


3. Torque to  $55 \pm 3$  ft-lb ( $75 \pm 4$  N·m).



# Repair

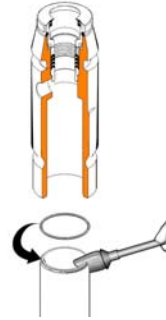
4. Assemble leather throat packings soaked earlier.



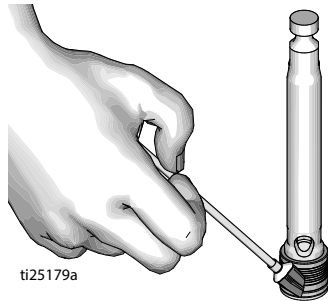
5. Loosely install packing nut with o-ring onto cylinder.



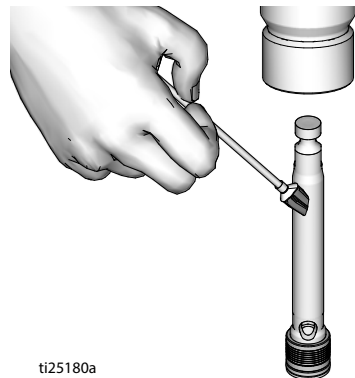
6. Install o-rings inside cylinder and on sleeve. Slide sleeve into bottom of cylinder. Replace o-ring if necessary.



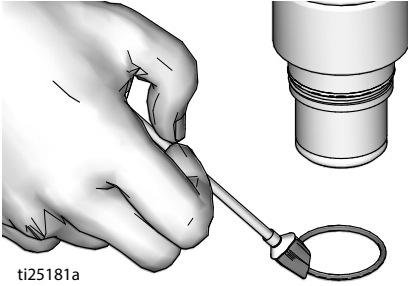
7. Apply liberal amounts of grease or oil to piston packings.



8. Grease top inch or two of piston rod that will go through the cylinder throat packings. Gently guide displacement rod up through throat packings. Tap bottom of piston valve as necessary with a leather or plastic hammer.

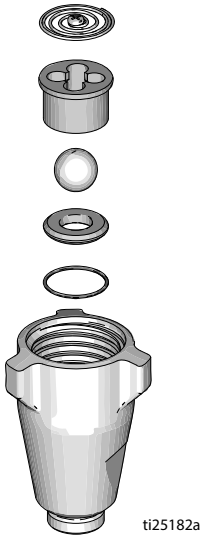


9. Grease o-ring and place on outside diameter ring groove.



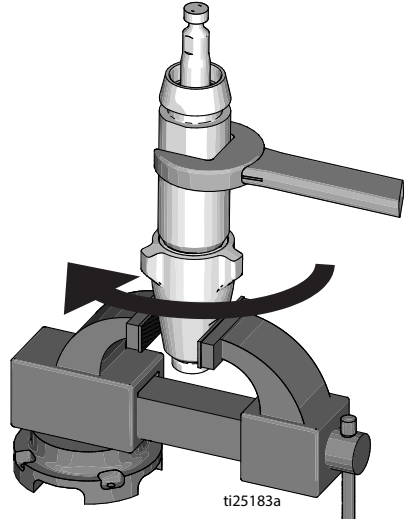
ti25181a

10. Clean seat thoroughly. Reassemble intake valve with a seat, ball, and new o-ring. Seat may be flipped over and used on other side.



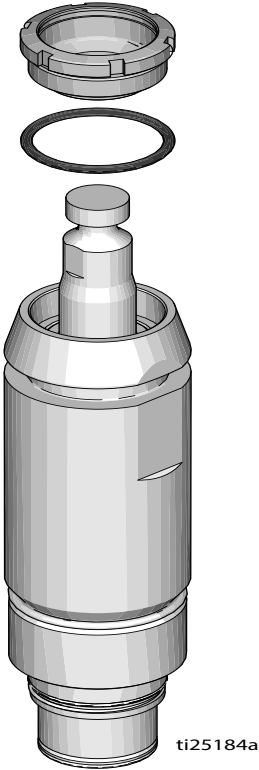
ti25182a

11. For GH130 torque foot valve to  $110 \pm 5$  ft-lb ( $149 \pm 7$  N•m). For GH200/230/300 torque foot valve to  $200 \pm 15$  ft-lb ( $271 \pm 20$  N•m).

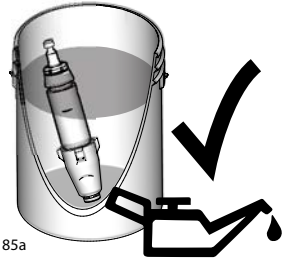


ti25183a

12. For GH130 torque packing nut to  $125 \pm 10$  in-lbs ( $14 \pm 1$  N•m). All other GH models torque packing nut to  $140 \pm 10$  in-lbs ( $16 \pm 1$  N•m).

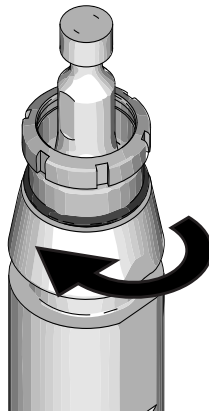


13. Storage



## Throat Packing Adjustment

When pump packings begin to leak after much use, perform **Pressure Relief Procedure**, page 4, and tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before a repacking is required. Packing nut can be tightened without o-ring removal.







## Parts List

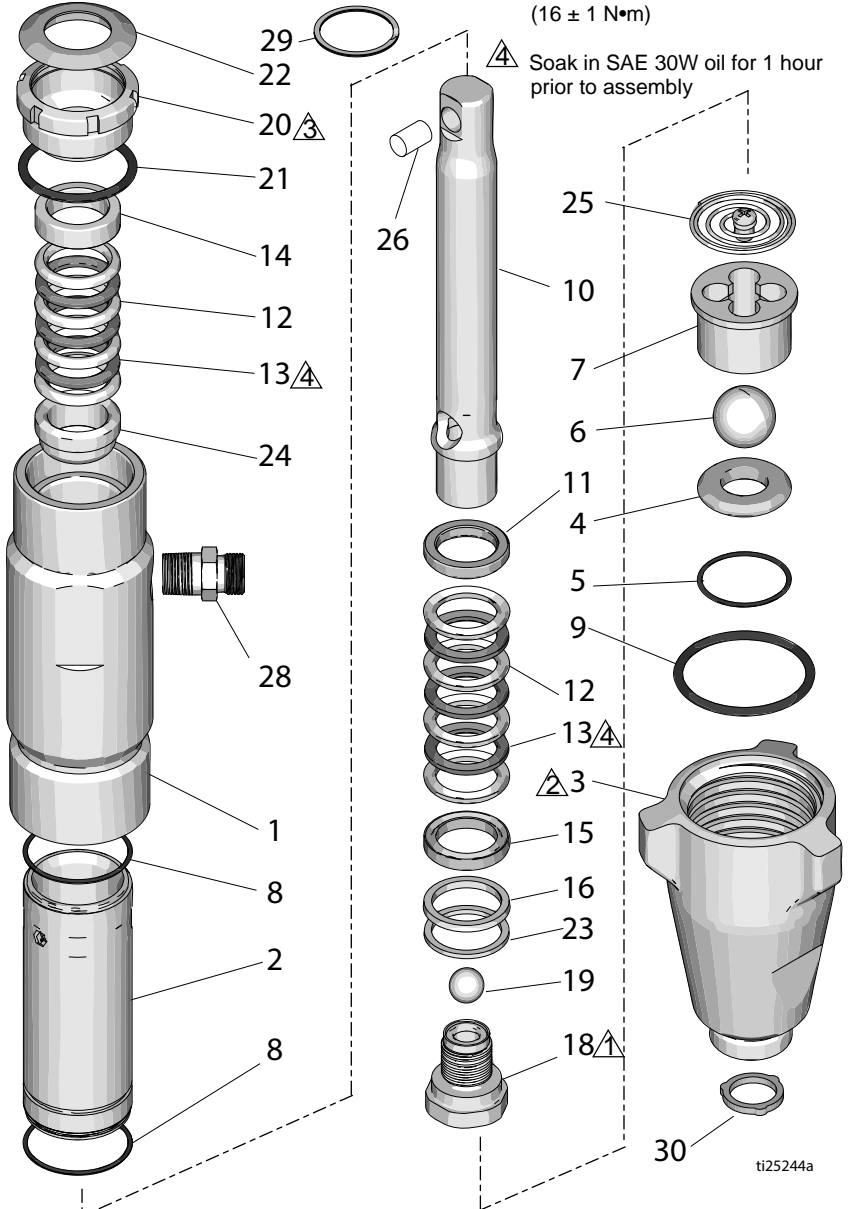
| Ref. | Part   | Description                 | Qty. |
|------|--------|-----------------------------|------|
| 1    | 288727 | CYLINDER, pump              | 1    |
| 2    | 248210 | SLEEVE, cylinder,<br>chrome | 1    |
| 3    | 195894 | HOUSING, intake             | 1    |
| 4+   | 196866 | SEAT, carbide               | 1    |
| 5+   | 108526 | PACKING, o-ring, ptfе       | 1    |
| 6+   | 102972 | BALL, metallic              | 1    |
| 7    | 193027 | GUIDE, ball                 | 1    |
| 8*   | 107098 | PACKING, o-ring             | 2    |
| 9*   | 156633 | PACKING, o-ring             | 1    |
| 10   | 288479 | ROD, piston                 | 1    |
| 12*  | 128779 | PACKING, vee                | 8    |
| 13*  | 128296 | PACKING, vee                | 3    |
| 14*  | 183185 | GLAND, packing,<br>female   | 2    |
| 16*  | 118504 | WIPER, piston               | 1    |
| 17*  | 15J382 | PACKING, vee                | 3    |
| 18*  | 24U983 | VALVE, piston               | 1    |
| 19*  | 101947 | BALL, bearing               | 1    |
| 20   | 193032 | NUT, packing                | 1    |
| 21   | C20987 | PACKING, o-ring             | 1    |
| 22*  | 183171 | PLUG                        | 1    |
| 23*  | 15C998 | WASHER, backup              | 1    |
| 24*  | 183178 | GLAND, packing, male        | 2    |
| 26   | 15J141 | PIN, pump                   | 1    |
| 27   | 15Y463 | FITTING, bushing            | 1    |
| 28   | 196178 | ADAPTER, nipple             | 1    |

\* Included in Repair Kit 288471

+ Included in Repair Kit 244199

## Parts

### Pump 24W995



ti25244a



## Parts List

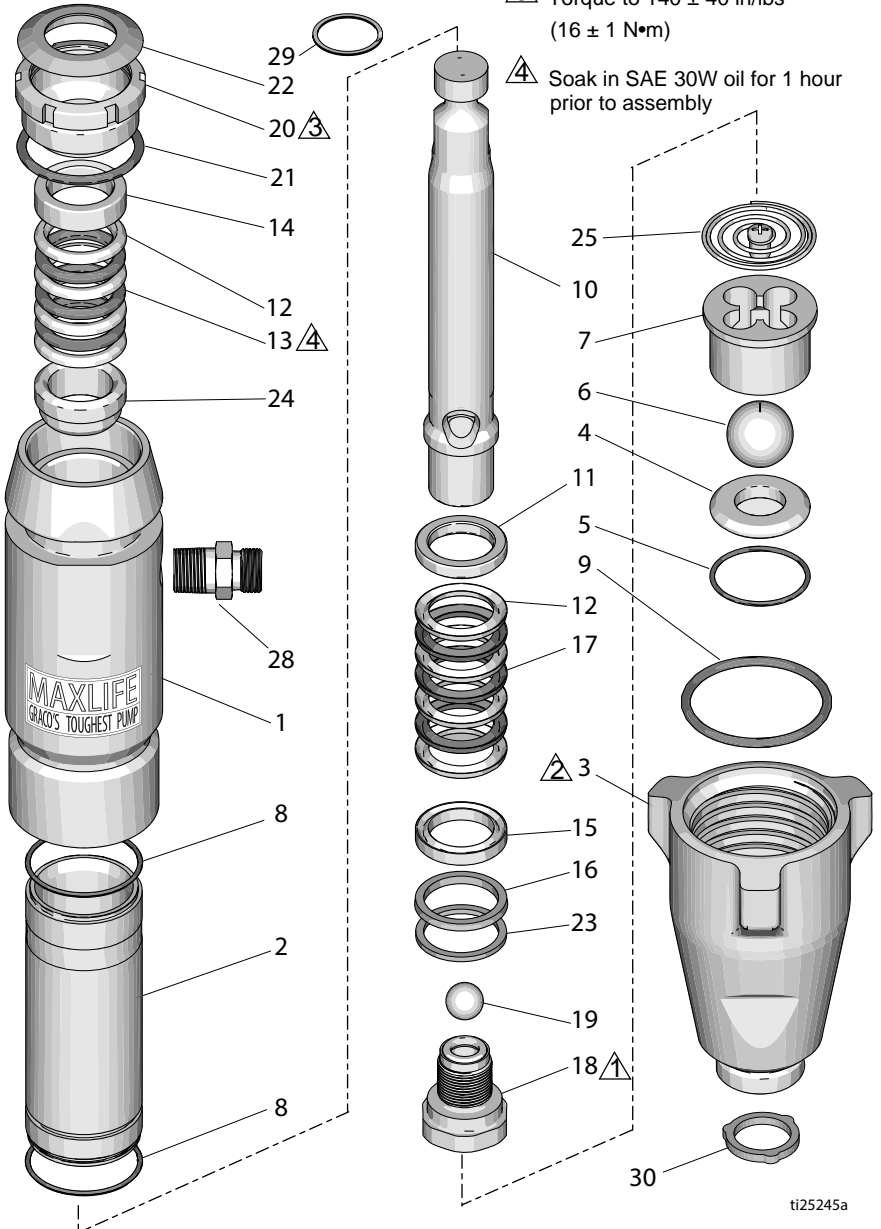
| Ref. | Part   | Description                  | Qty. |
|------|--------|------------------------------|------|
| 1    | 245413 | CYLINDER, pump               | 1    |
| 2    |        |                              | 1    |
|      | 248979 | SLEEVE, cylinder,<br>chrome  |      |
|      | 249121 | SLEEVE, cylinder,<br>MaxLife |      |
| 3    | 15E655 | HOUSING, intake              | 1    |
| 4+   | 193395 | SEAT, carbide                | 1    |
| 5*+  | 107098 | PACKING, o-ring              | 1    |
| 6*+  | 107167 | BALL, sst                    | 1    |
| 7    | 198505 | GUIDE, ball                  | 1    |
| 8*   | 108822 | PACKING, o-ring, ptfe        | 2    |
| 9*   | 160325 | PACKING, o-ring              | 1    |
| 10   |        |                              | 1    |
|      | 249000 | ROD, piston                  |      |
|      | 249119 | ROD, piston, MaxLife         |      |
| 11*  | 189585 | GLAND, packing, male         | 1    |
| 12*  | 198701 | PACKING, vee                 | 8    |
| 13*  | 198718 | PACKING, vee                 | 6    |
| 14*  | 15G657 | GLAND, female                | 1    |
| 15*  | 189588 | GLAND, packing,<br>female    | 1    |
| 16*  | 119636 | WIPER, piston                | 1    |
| 18   | 287388 | VALVE, piston                | 1    |
| 19*  | 107203 | BALL, valve, check           | 1    |
| 20   | 15J792 | NUT, packing                 | 1    |
| 21*  | 157195 | PACKING, o-ring              | 1    |
| 22*  | 112590 | PLUG, throat seal            | 1    |
| 23*  | 15J800 | WASHER, back-up              | 1    |
| 24*  | 15G658 | GLAND, male                  | 1    |
| 25   | 245256 | SPRING, intake ball          | 1    |
| 26   | 197443 | PIN, pump                    | 1    |
| 28   | 196178 | ADAPTER, nipple              | 1    |
| 29   | 116551 | RING, retaining              | 1    |
| 30   | 119566 | WASHER                       | 1    |

\* Included in Repair Kit 17D601

+ Included in Repair Kit 240918

## Parts

### Pump 24W996



ti25245a

## Parts List

| Ref. | Part   | Description               | Qty. |
|------|--------|---------------------------|------|
| 1    | 17D122 | CYLINDER, pump            | 1    |
| 2    | 249121 | SLEEVE, cylinder          | 1    |
| 3    | 15E655 | HOUSING, intake           | 1    |
| 4+   | 193395 | SEAT, carbide             | 1    |
| 5*+  | 107098 | PACKING, o-ring           | 1    |
| 6*+  | 107167 | BALL, sst                 | 1    |
| 7    | 198505 | GUIDE, ball               | 1    |
| 8*   | 108822 | PACKING, o-ring, ptfe     | 2    |
| 9*   | 160325 | PACKING, o-ring           | 1    |
| 10   | 288469 | ROD, piston               | 1    |
| 11*  | 189585 | GLAND, packing, male      | 1    |
| 12*  | 198701 | PACKING, vee              | 8    |
| 13*  | 198718 | PACKING, vee              | 3    |
| 14*  | 15G657 | GLAND, female             | 1    |
| 15*  | 189588 | GLAND, packing,<br>female | 1    |
| 16*  | 119636 | WIPER, piston             | 1    |
| 17*  | 15F875 | PACKING, vee              | 3    |
| 18   | 287388 | VALVE, piston             | 1    |
| 19*  | 107203 | BALL, valve, check        | 1    |
| 20   | 15J792 | NUT, packing              | 1    |
| 21*  | 157195 | PACKING, o-ring           | 1    |
| 22*  | 112590 | PLUG, throat seal         | 1    |
| 23*  | 15J800 | WASHER, back-up           | 1    |
| 24*  | 15G658 | GLAND, male               | 1    |
| 25   | 245256 | SPRING, intake ball       | 1    |
| 28   | 15J413 | FITTING, pump             | 1    |
| 30   | 119566 | WASHER                    | 1    |

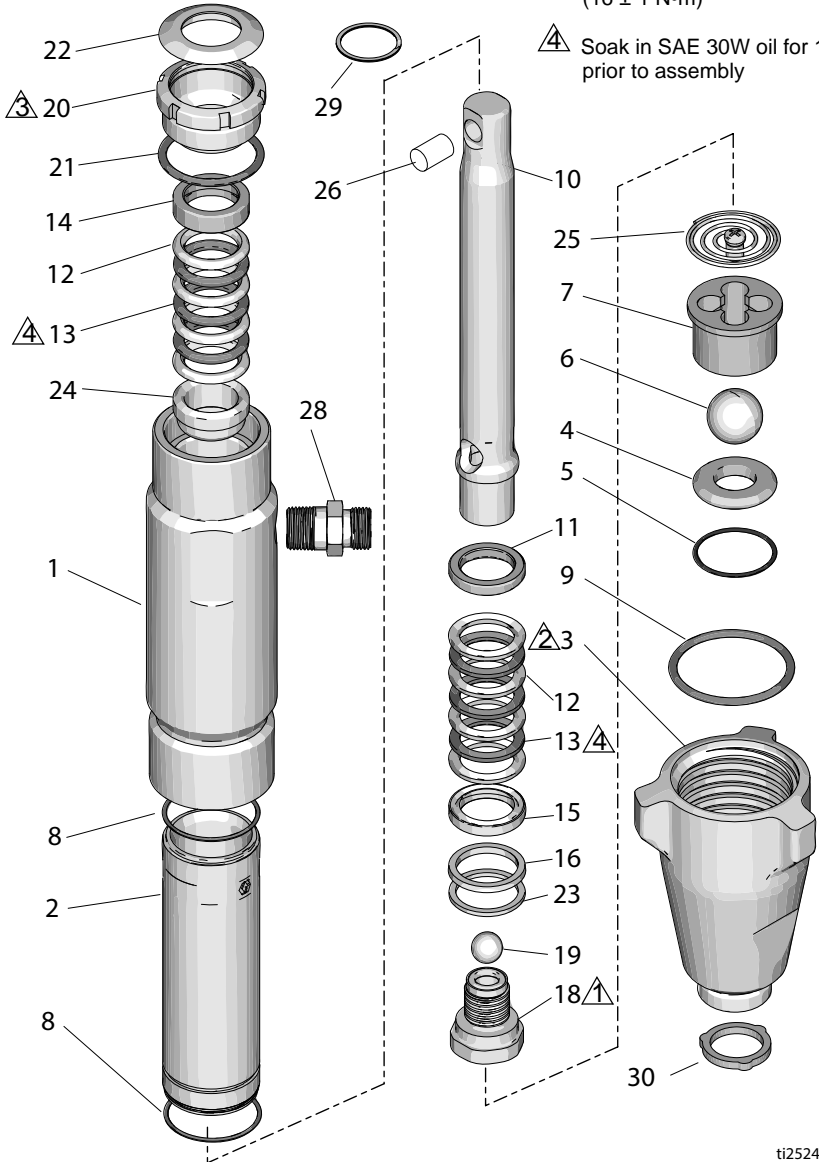
\* Included in Repair Kit 287813

+ Included in Repair Kit 240918

NOTE: For Chromex Pump Kit order 24X018

## Parts

### Pump 24W997



ti25246a

## Parts List

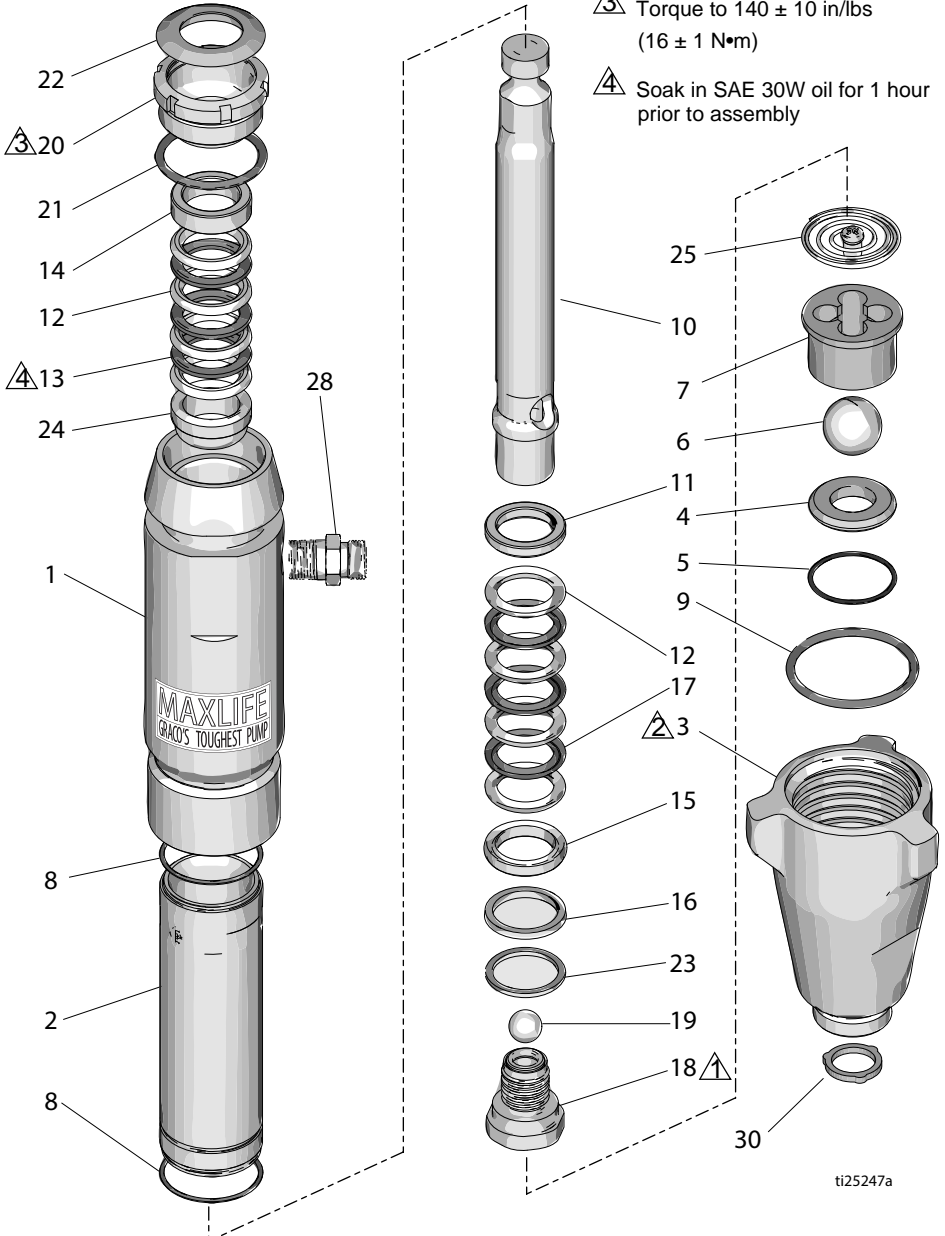
| Ref. | Part   | Description                  | Qty. |
|------|--------|------------------------------|------|
| 1    | 245932 | CYLINDER, pump               | 1    |
| 2    |        |                              | 1    |
|      | 248980 | SLEEVE, cylinder,<br>chrome  |      |
|      | 287817 | SLEEVE, cylinder,<br>MaxLife |      |
| 3    | 15E655 | HOUSING, intake              | 1    |
| 4+   | 193395 | SEAT, carbide                | 1    |
| 5*+  | 107098 | PACKING, o-ring              | 1    |
| 6*+  | 107167 | BALL, sst                    | 1    |
| 7    | 198505 | GUIDE, ball                  | 1    |
| 8*   | 108822 | PACKING, o-ring, ptfe        | 2    |
| 9*   | 160325 | PACKING, o-ring              | 1    |
| 10   |        |                              | 1    |
|      | 249001 | ROD, piston                  |      |
|      | 287816 | ROD, piston, MaxLife         |      |
| 11*  | 189585 | GLAND, packing, male         | 1    |
| 12*  | 198701 | PACKING, vee                 | 8    |
| 13*  | 198718 | PACKING, vee                 | 6    |
| 14*  | 15G657 | GLAND, female                | 1    |
| 15*  | 189588 | GLAND, packing,<br>female    | 1    |
| 16*  | 119636 | WIPER, piston                | 1    |
| 18   | 287388 | VALVE, piston                | 1    |
| 19*  | 107203 | BALL, valve, check           | 1    |
| 20   | 15J792 | NUT, packing                 | 1    |
| 21*  | 157195 | PACKING, o-ring              | 1    |
| 22*  | 112590 | PLUG, throat seal            | 1    |
| 23*  | 15J800 | WASHER, back-up              | 1    |
| 24*  | 15G658 | GLAND, male                  | 1    |
| 25   | 245256 | SPRING, intake ball          | 1    |
| 26   | 197443 | PIN, pump                    | 1    |
| 28   | 196178 | ADAPTER, nipple              | 1    |
| 29   | 116551 | RING, retaining              | 1    |
| 30   | 119566 | WASHER                       | 1    |

\* Included in Repair Kit 17D601

+ Included in Repair Kit 240918

## Parts

### Pump 24W998



## Parts List

| Ref. | Part   | Description                 | Qty. |
|------|--------|-----------------------------|------|
| 1    | 17D123 | CYLINDER, pump              | 1    |
| 2    | 287817 | SLEEVE, cylinder,<br>chrome | 1    |
| 3    | 15E655 | HOUSING, intake             | 1    |
| 4+   | 193395 | SEAT, carbide               | 1    |
| 5*+  | 107098 | PACKING, o-ring             | 1    |
| 6*+  | 107167 | BALL, sst                   | 1    |
| 7    | 198505 | GUIDE, ball                 | 1    |
| 8*   | 108822 | PACKING, o-ring, ptfе       | 2    |
| 9*   | 160325 | PACKING, o-ring             | 1    |
| 10   | 288470 | ROD, piston                 | 1    |
| 11*  | 189585 | GLAND, packing, male        | 1    |
| 12*  | 198701 | PACKING, vee                | 8    |
| 13*  | 198718 | PACKING, vee                | 3    |
| 14*  | 15G657 | GLAND, female               | 1    |
| 15*  | 189588 | GLAND, packing,<br>female   | 1    |
| 16*  | 119636 | WIPER, piston               | 1    |
| 17*  | 15F875 | PACKING, vee                | 3    |
| 18   | 287388 | VALVE, piston               | 1    |
| 19*  | 107203 | BALL, valve, check          | 1    |
| 20   | 15J792 | NUT, packing                | 1    |
| 21*  | 157195 | PACKING, o-ring             | 1    |
| 22*  | 112590 | PLUG, throat seal           | 1    |
| 23*  | 15J800 | WASHER, back-up             | 1    |
| 24*  | 15G658 | GLAND, male                 | 1    |
| 25   | 245256 | SPRING, intake ball         | 1    |
| 28   | 15J413 | FITTING, pump               | 1    |
| 30   | 119566 | WASHER                      | 1    |


\* Included in Repair Kit 287813


+ Included in Repair Kit 240918


NOTE: For Chromex Pump Replacement Kit  
order 24X019


## Parts

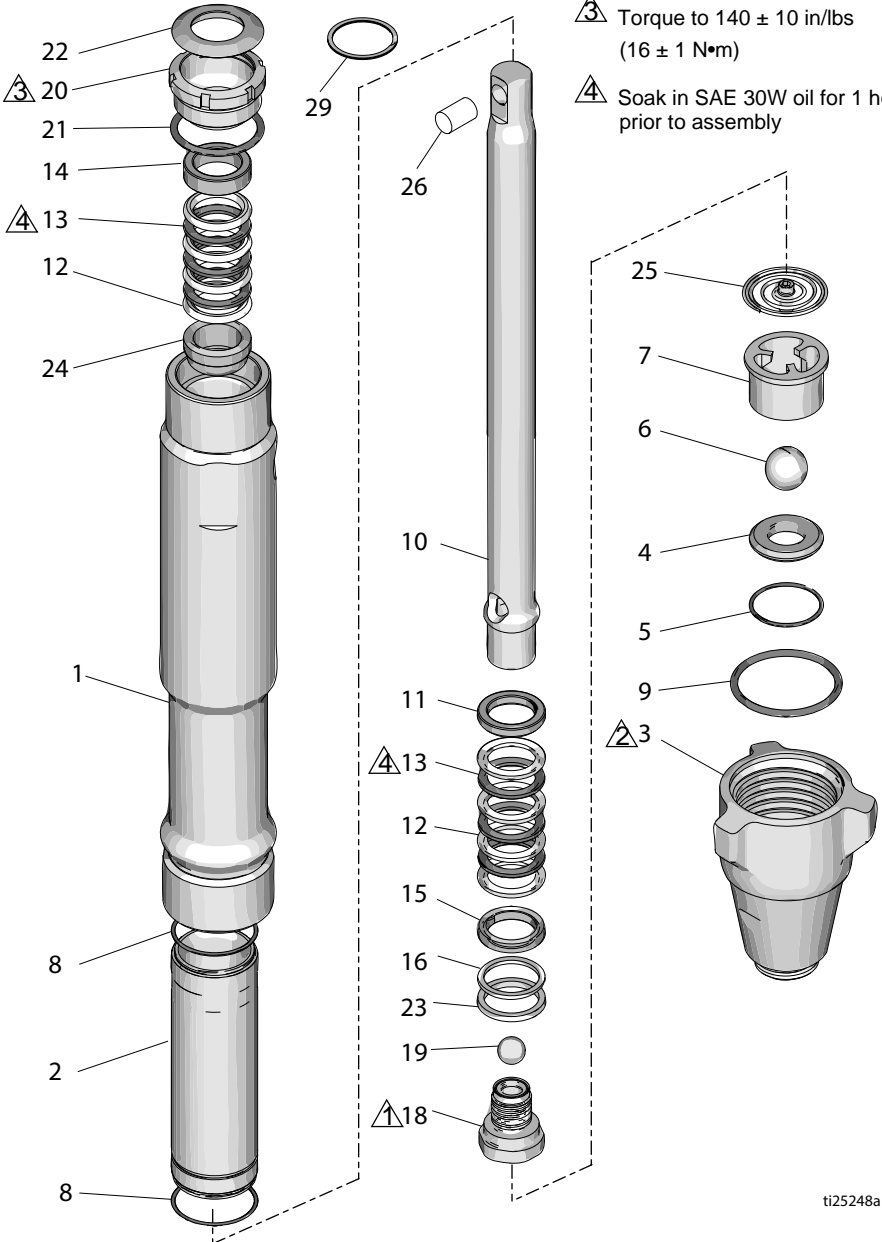
### Pump 24W999

 Torque to  $55 \pm 3$  ft/lbs  
( $75 \pm 4$  N•m)

 Torque to  $200 \pm 15$  ft/lbs  
( $271 \pm 20$  N•m)

 Torque to  $140 \pm 10$  in/lbs  
( $16 \pm 1$  N•m)

 Soak in SAE 30W oil for 1 hour  
prior to assembly



ti25248a



## Parts List

| Ref. | Part   | Description                  | Qty. |
|------|--------|------------------------------|------|
| 1    | 17D124 | CYLINDER, pump               | 1    |
| 2    |        |                              | 1    |
|      | 248980 | SLEEVE, cylinder,<br>chrome  |      |
|      | 287817 | SLEEVE, cylinder,<br>MaxLife |      |
| 3    | 15A303 | HOUSING, intake              | 1    |
| 4+   | 15J038 | SEAT, carbide                | 1    |
| 5*+  | 107098 | PACKING, o-ring              | 1    |
| 6*+  | 118602 | BALL, ceramic                | 1    |
| 7    | 193391 | GUIDE, ball                  | 1    |
| 8*   | 108822 | PACKING, o-ring, ptfе        | 2    |
| 9*   | 160325 | PACKING, o-ring              | 1    |
| 10   | 17D121 | ROD, piston                  | 1    |
| 11*  | 189585 | GLAND, packing, male         | 1    |
| 12*  | 198701 | PACKING, vee                 | 8    |
| 13*  | 198718 | PACKING, vee                 | 6    |
| 14*  | 15G657 | GLAND, female                | 1    |
| 15*  | 189588 | GLAND, packing,<br>female    | 1    |
| 16*  | 119636 | WIPER, piston                | 1    |
| 18   | 287388 | VALVE, piston                | 1    |
| 19*  | 118601 | BALL, ceramic                | 1    |
| 20   | 15J792 | NUT, packing                 | 1    |
| 21*  | 157195 | PACKING, o-ring              | 1    |
| 22*  | 112590 | PLUG, throat seal            | 1    |
| 23*  | 15F183 | WASHER, back-up              | 1    |
| 24*  | 15G658 | GLAND, male                  | 1    |
| 25+  | 24E027 | SPRING, intake ball          | 1    |
| 26   | 197443 | PIN, pump                    | 1    |
| 29   | 116551 | RING, retaining              | 1    |

\* Included in Repair Kit 24N012

+ Included in Repair Kit 24N013



## Parts List

| Ref. | Part   | Description               | Qty. |
|------|--------|---------------------------|------|
| 1    | 17D125 | CYLINDER, pump            | 1    |
| 2    | 287817 | SLEEVE, cylinder          | 1    |
| 3    | 15A303 | HOUSING, intake           | 1    |
| 4+   | 15J038 | SEAT, carbide             | 1    |
| 5*+  | 107098 | PACKING, o-ring           | 1    |
| 6*+  | 118602 | BALL, ceramic             | 1    |
| 7    | 193391 | GUIDE, ball               | 8    |
| 8*   | 108822 | PACKING, o-ring, ptfe     | 2    |
| 9*   | 160325 | PACKING, o-ring           | 1    |
| 10   | 288821 | ROD, piston               | 1    |
| 11*  | 189585 | GLAND, packing, male      | 1    |
| 12*  | 198701 | PACKING, vee              | 8    |
| 13*  | 198718 | PACKING, vee              | 3    |
| 14*  | 15G657 | GLAND, female             | 1    |
| 15*  | 189588 | GLAND, packing,<br>female | 1    |
| 16*  | 119636 | WIPER, piston             | 1    |
| 17*  | 15F875 | PACKING, vee              | 3    |
| 18   | 287388 | VALVE, piston             | 1    |
| 19*  | 118601 | BALL, ceramic             | 1    |
| 20   | 15J792 | NUT, packing              | 1    |
| 21*  | 157195 | PACKING, o-ring           | 1    |
| 22*  | 112590 | PLUG, throat seal         | 1    |
| 23*  | 15F183 | WASHER, back-up           | 1    |
| 24*  | 15G658 | GLAND, male               | 1    |
| 25+  | 24E027 | SPRING, intake ball       | 1    |

\* Included in Repair Kit 24X096

+ Included in Repair Kit 24N013

# Technical Specifications

## Technical Specifications

|                                |   |
|--------------------------------|---|
| Displacement Pumps             |   |
|                                |   |
| Maximum fluid working pressure | 3300 psi<br>25 bar, 22.8 MPa  |
| Inlet/Outlet Sizes             |   |
| Fluid inlet size               | 1-5/16 UN (m) models 24W995, 24W996, 24W997, 24W998   |
|                                | 1-11 1/2 NPSM (M) models 24W999, 24X001   |
|                                | 3/4-14 npt (m) model 24B748   |
| Fluid outlet size              | 3/8 npt (f)   |
| Wetted materials on all models | stainless steel, PTFE, leather, nylon, zinc-plated carbon steel, tungsten carbide, brass, fluorelastomer, acetal, polyethylene, ceramic |

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