



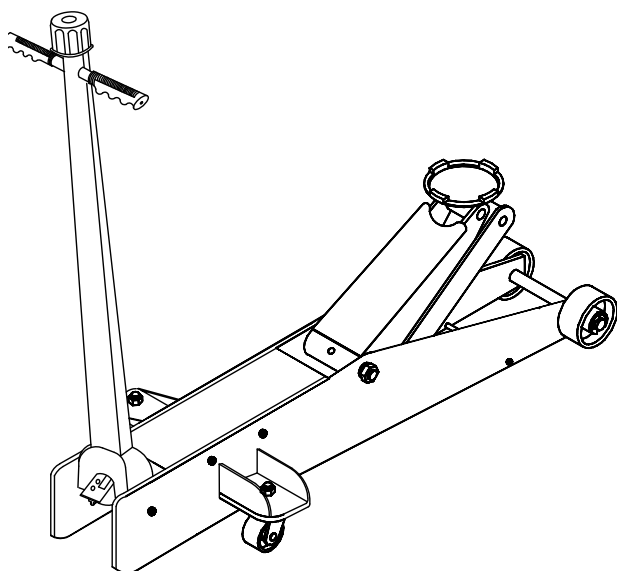
# Service Jacks

## Operating Instructions & Parts Manual

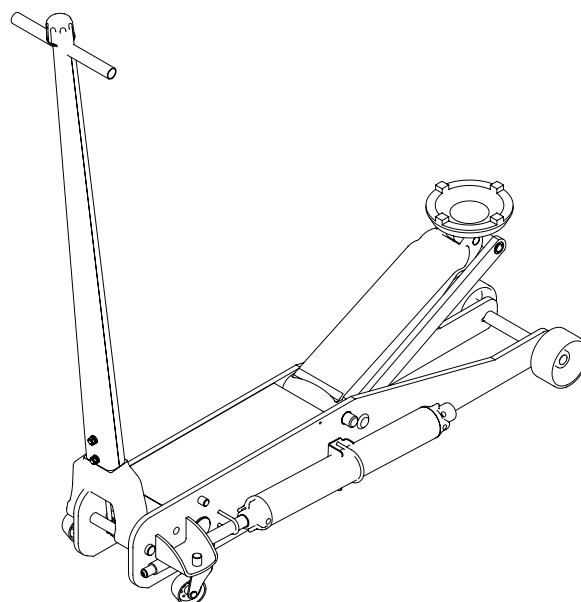
| Model Number         | Capacity |
|----------------------|----------|
| HW93657              | 4 Ton    |
| HW93667 (Air/Manual) | 4 Ton    |
| HW93660              | 10 Ton   |
| HW93662 (Air/Manual) | 10 Ton   |



**Made in the  
U.S.A.**



Model No. HW93657 & HW93660



Model No. HW93667 & HW93662



*This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.*

SFA Companies  
10939 N. Pomona Ave. Kansas City, MO 64153  
[customerservices@heinwerner-automotive.com](mailto:customerservices@heinwerner-automotive.com)

**Read this manual and follow all the Safety Rules and Operating Instructions before using this product.**

HW93657-M0\_062012

## SAFETY AND GENERAL INFORMATION

**Save these instructions.** For your safety *read, understand, and follow* the information provided with and on this jack. The owner and operator of this equipment shall have an understanding of this jack and safe operating procedures before attempting to use. The owner and operator shall be aware that use and repair of this product may require special skills and knowledge. Instructions and safety information shall be conveyed in the operator's native language before use of this jack is authorized. If any doubt exists as to the safe and proper use of this jack, remove from service immediately.

**Inspect before each use.** Do not use if broken, bent, cracked, or damaged parts (including labels) are noted. Any jack that appears damaged in any way, operates abnormally or is missing parts, shall be removed from service immediately and the manufacturer notified. If you suspect that the jack was subjected to a shock load (a load dropped suddenly, unexpectedly upon it), immediately discontinue use until the jack has been checked by a factory authorized service center (contact distributor or manufacturer for list of Authorized Service Centers). It is recommended that an annual inspection be done by qualified personnel. Replace worn or damaged parts with Hein-Werner Authorized Replacement Parts only. Labels and owner's manuals are available from manufacturer.

## PRODUCT DESCRIPTION

Hein-Werner Hydraulic Service Jacks are designed to lift, not support, rated capacity loads consisting of one end of a vehicle. Immediately after lifting, the load must be supported by a pair of appropriately rated jack stands.

**⚠ WARNING:** *NEVER use a hydraulic jack as a stand-alone device. After lifting, immediately support the lifted vehicle with a pair of appropriately rated jack stands. NEVER place any portion of your body beneath the vehicle when lifting OR lowering.*

## SPECIFICATIONS

| Model   | Capacity | Min. Height | Max. Height | Chassis Length | Wheel to Wheel Width | Min. Air Pressure for Rated Load | Gross Weight |
|---------|----------|-------------|-------------|----------------|----------------------|----------------------------------|--------------|
| HW93657 | 4 Ton    | 5"          | 25-3/4"     | 49"            | 15"                  | N/A                              | 219 lb.      |
| HW93667 |          |             |             |                |                      | 140 psi                          | 233 lb.      |
| HW93660 | 10 Ton   | 6-3/4"      | 25-1/2"     | 53-1/2"        | 20 1/2"              | N/A                              | 420 lb.      |
| HW93662 |          |             |             |                |                      | 140 psi                          | 435 lb.      |

### ⚠ WARNING

- Study, understand, and follow all instructions before operating this device.
- Do not exceed rated capacity.
- Use only on hard, level surface.
- Lifting device only. Immediately after lifting, support the vehicle with appropriate means.
- Do not move or dolly the vehicle while on the jack.
- Lift only on areas of the vehicle as specified by the vehicle manufacturer.
- No alterations shall be made to this product.
- Failure to heed these markings may result in personal injury and/or property damage.

### ⚠ WARNING



To avoid crushing and related injuries:

- Never work on, under or around a load supported only by hydraulic jack.
- Always use adequately rated jack stands.
- Chock each unlifted tire in both directions.
- Do not use this device to lift, level, lower, support nor move a house, mobile home, travel trailer, camper or any building structure.
- Be alert and sober when using this product. Do not operate under the influence of drugs or alcohol.

## ASSEMBLY

Equipment required:

1. Needle nose locking pliers
2. Snap-ring pliers (Models HW93657 & HW93667 only)
3. 15 /16" wrench (Models HW93660 & HW93662 only)
4. Hammer
5. All necessary hardware is assembled loosely onto the jack.

### Instructions

1. *Models HW93657 and HW93667:* (ref. figure 1)  
Remove the retaining rings and the handle pin from the jack base that connects through the handle fork.  
*Models HW93660 and HW93662:* (ref. figure 2)  
Remove the 5/8"-18 bolts and the handle pin from the jack base that connects through the handle fork.
2. Remove the #6-32 screw and nut from the universal receptacle.
3. Pull the universal assembly out a minimum of 1-3/4".
4. Clamp the needle nose locking pliers onto the rod so that the universal assembly will not retract back into the handle.
5. Slide the universal assembly into the handle socket so that it extends out the other side.
6. Insert the pivot pin that was removed in step 1 back through the handle and handle socket (may have to gently tap the pin with a hammer).
7. *Models HW93660 & HW93662:* align the pivot pin with the holes on the side plates that the pivot pin was removed from and tighten the 5/8"-18 bolts into the pivot pin until secure.
8. Connect the universal assembly to the universal receptacle rod using the #6-32 screw and nut (finger tighten only).
9. Remove the needle nose locking pliers.
10. Replace plug on hydraulic unit with vent screw from owners manual bag.
11. Jack is now operational and ready for use.

## PREPARATION (ref. Figures 3 & 4)

### Before Use

1. Verify that the product and application are compatible, if in doubt contact Hein-Werner Technical Service.
2. Before use, read the operator's manual completely and familiarize yourself thoroughly with the product, its components and recognize the potential hazards associated with its use.
3. To familiarize yourself with the basic operation of these jacks, locate and turn the release valve knob:
  - a. *Clockwise* until firm resistance is felt to further turning. This is the '**CLOSED**' release valve position used to raise the load.
  - b. *Counter-clockwise*, but no more than 1/2 full turn from the closed position. This is the '**OPEN**' release valve position used to lower the load. The further the release valve knob is turned counter-clockwise, the faster the load will descend.
4. Reinstall the air vent screw.
5. Check that the jack rolls freely. Raise and lower the unloaded saddle throughout the lift range to ensure the pump and release valve operate smoothly.
6. Replace worn or damaged parts and assemblies with Hein-Werner Replacement Parts only. Lubricate as instructed in Maintenance Section.

**Bleeding/Venting Trapped Air** - With saddle fully lowered, remove cover plate then remove air vent screw. Pump the operating handle through 6 to 8 full strokes. Ensure the oil level is within ~3/16" from the inner cylinder as viewed from the air vent screw hole.

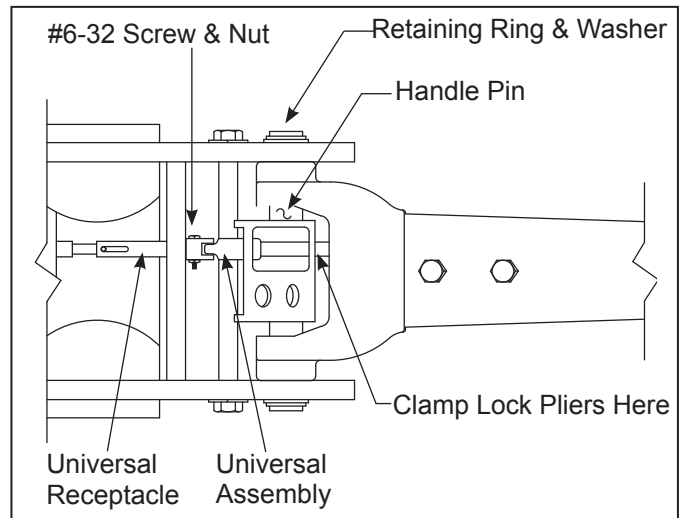


Figure 1- Assembly Illustration for HW93657 & HW93667

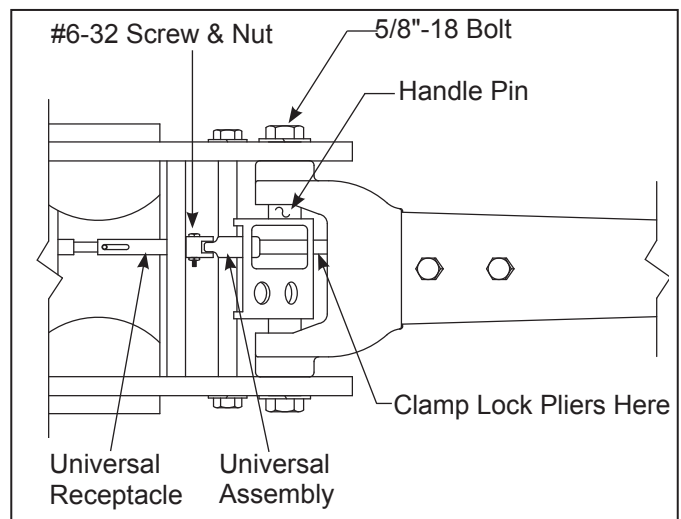


Figure 2- Assembly Illustration for HW93660 & HW93662

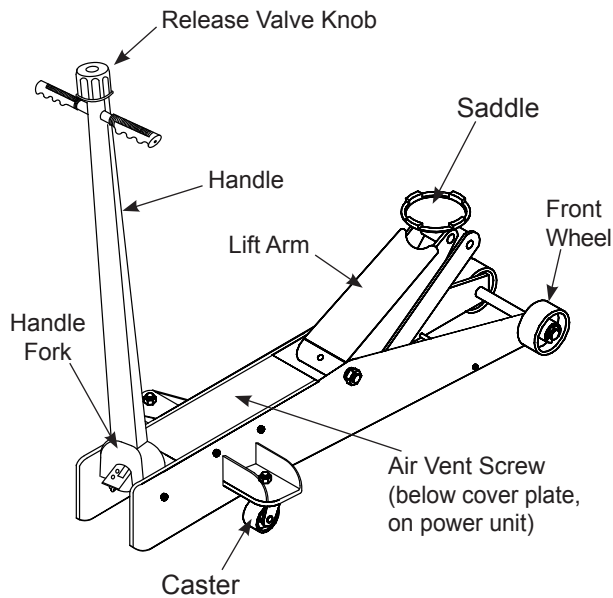


Figure 3 - Model HW93657 & HW93660 Nomenclature

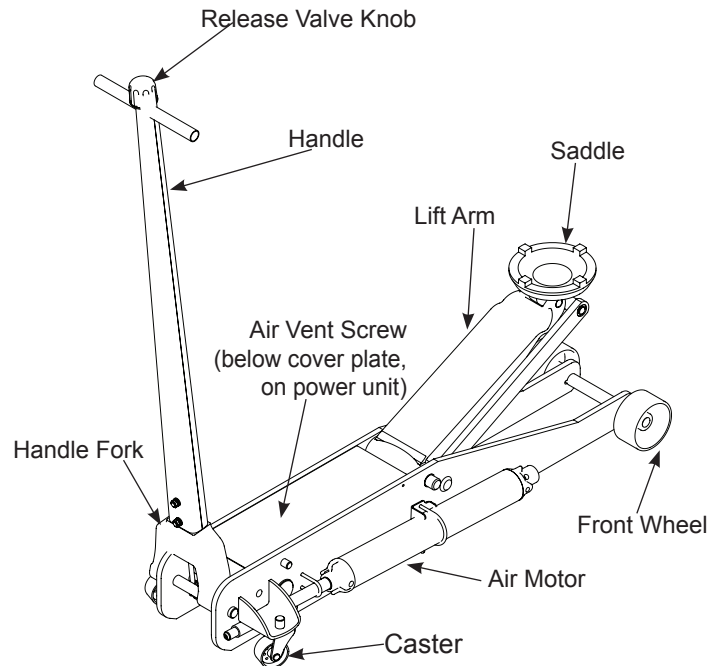


Figure 4 - Model HW93667 & HW93662 Nomenclature

## OPERATION

### Lifting

**WARNING:** Only attachments and/or adapters supplied by the manufacturer shall be used.

1. Follow the vehicle manufacturer's recommended guidelines for lifting. Engage the emergency brake and chock each unlifted wheel in both directions to prevent inadvertent vehicle movement.
2. Locate and close the release valve by turning the release valve knob clockwise until firm resistance is felt.
3. Refer to the vehicle manufacturer owner's manual to locate approved lifting points on the vehicle. Center jack saddle under lift point.
4. Verify lift point then use handle pump to contact lift point. To lift, pump handle or squeeze air control valve (model HW93667 & HW93662) until load reaches desired height.
5. Transfer the load to appropriately rated jack stands.

### Lowering

**WARNING:** Clear all tools and personnel before lowering load. Open release valve slowly. The further you turn the release valve knob counter-clockwise, the faster the load will descend. Maintain control of the load at all times.

1. Raise load high enough to clear the jack stands.
2. Remove jack stands.
3. Slowly turn the release valve knob counter-clockwise, but no more than 1/2 full turn. *If the load fails to lower:*
  - a. Use another jack to raise the vehicle high enough to reinstall jack stands.
  - b. Remove the malfunctioning jack and then the jack stands.
  - c. Using the functioning jack, lower the load by turning the release valve knob counter-clockwise, but no more than 1/2 full turn.
4. After removing jack from under the load, push saddle down to reduce ram exposure to rust and contamination.

## MAINTENANCE

**NOTICE:** Use only a good grade hydraulic jack oil. Avoid mixing different types of fluid and never use brake fluid, turbine oil, transmission fluid, motor oil or glycerin. Improper fluid can cause failure of the jack and the potential for sudden and immediate loss of load. Hein-Werner hydraulic jack oil HW93291 or equivalent is recommended.

### Adding oil

1. Lower saddle fully.
2. Set jack in its upright, level position.
3. Locate and remove air vent screw.
4. Follow the BLEEDING/VENTING Trapped Air procedure on page 3.
5. Reinstall the air vent screw.

### Changing oil

For best performance and longest life, completely replace hydraulic fluid at least once a year.

1. Lower saddle fully.
2. Remove the air vent screw.
3. Lay the jack on its side and drain the fluid into a suitable container.

**NOTICE:** Dispose of hydraulic fluid in accordance with local environmental regulations.

4. Fill reservoir with oil and follow the BLEEDING/VENTING Trapped Air procedure on page 3.
5. Reinstall the air vent screw.

### Lubrication

A periodic coating of light lubricating oil to pivot points, axles and hinges will help prevent rust and keep wheels, castors and pump assemblies moving freely.

### Cleaning

Periodically check pump piston and ram for signs of rust or corrosion. Clean as needed and wipe with an oily cloth.

**NOTICE:** Never use sandpaper or abrasive material on ram or pump piston.

### Storage

Lower the saddle to its lowest position when not in use.

## TROUBLESHOOTING

| Symptom                             | Possible Causes                                                                                                             | Corrective Action                                                                                                                                            |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jack will not lift load             | <ul style="list-style-type: none"><li>• Release knob not tightly closed</li><li>• Overload condition</li></ul>              | <ul style="list-style-type: none"><li>• Ensure release knob tightly closed</li><li>• Remedy overload condition</li></ul>                                     |
| Jack bleeds off after lift          | <ul style="list-style-type: none"><li>• Hydraulic unit malfunction</li></ul>                                                | <ul style="list-style-type: none"><li>• Discontinue use, contact Hein-Werner Technical Service</li></ul>                                                     |
| Jack will not lower after unloading | <ul style="list-style-type: none"><li>• Reservoir overfilled</li><li>• Linkages binding</li><li>• Fluid level low</li></ul> | <ul style="list-style-type: none"><li>• Drain fluid to proper level</li><li>• Clean and lubricate moving parts</li><li>• Ensure proper fluid level</li></ul> |
| Will not lift to full extension     | <ul style="list-style-type: none"><li>• Fluid level low</li></ul>                                                           | <ul style="list-style-type: none"><li>• Ensure proper fluid level</li></ul>                                                                                  |

## REPLACEMENT PARTS (ref. pgs. 6 thru 19)

Not all components of this jack are replacement items, but are illustrated as a convenient reference for location and position in the assembly sequence. When ordering parts, give model number, part number and parts description. Call or write for current pricing: Hein-Werner Customer Support, 10939 N. Pomona Ave. Kansas City, MO 64153. Phone: (816)891-6390; E-mail: customerservices@heinwerner-automotive.com

Model HW93657 Replacement Parts Illustration Part I (ref. parts list on pg. 8)

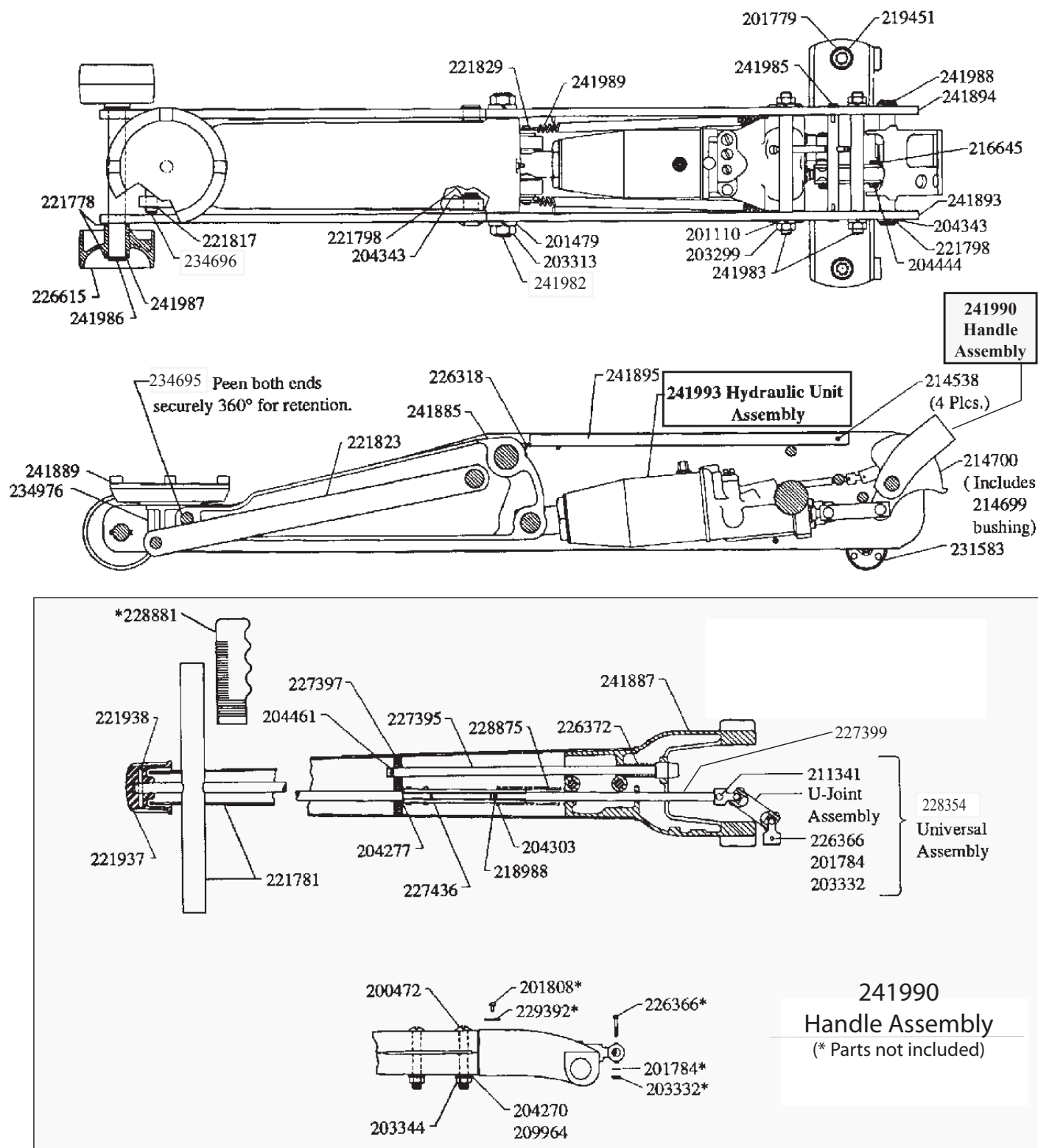


Figure 5 - Parts Illustration for Model HW93657

Model HW93657 Replacement Parts Illustration Part II - Hydraulic Unit (ref. parts list on pg. 8)

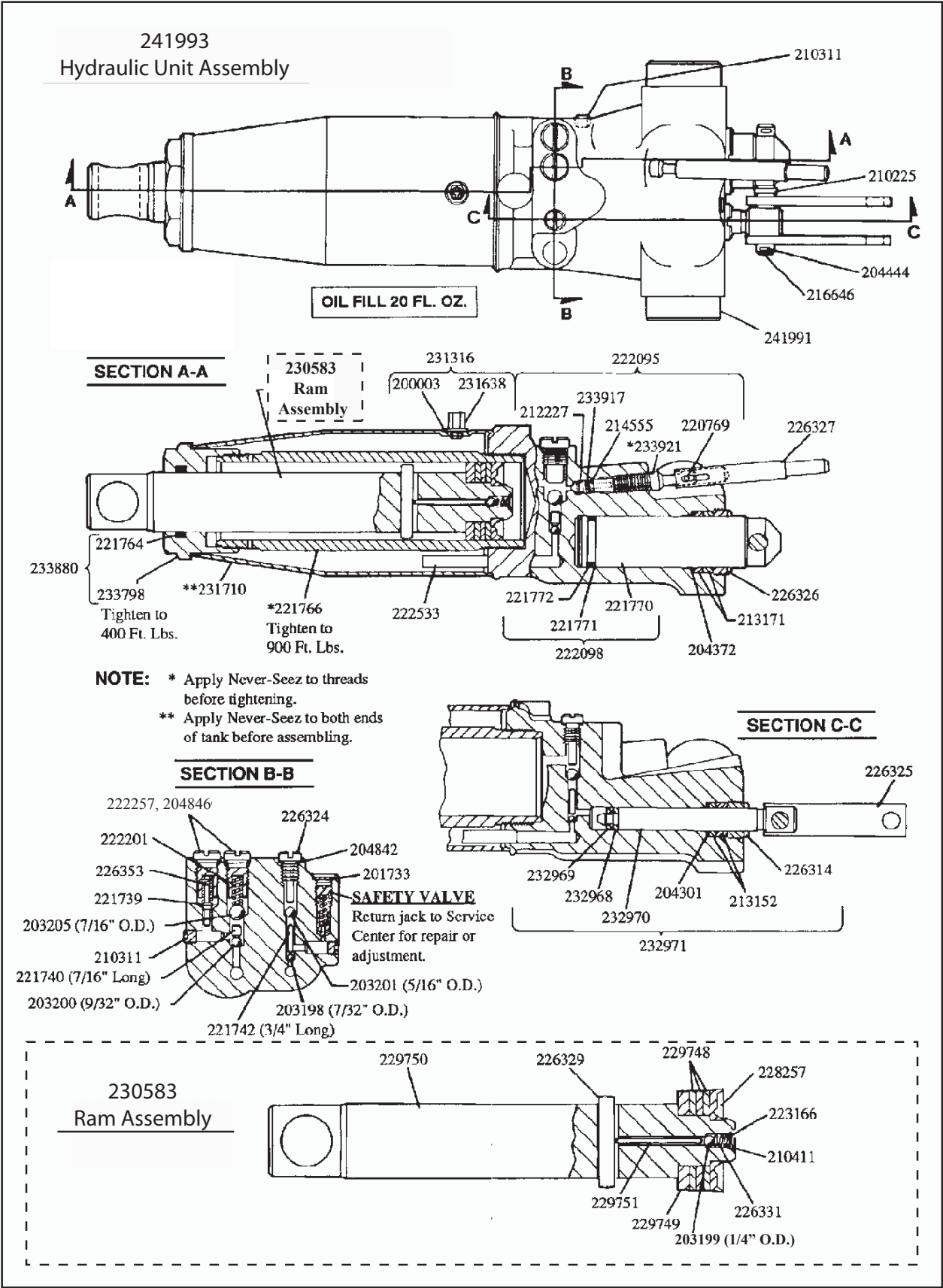


Figure 6 - Parts Illustration for Model HW93657 (Hydraulic Unit)



## Model HW93657 Replacement Parts List (ref. to illustrations on pg. 6 & 7)

| <u>Part#</u> | <u>Description</u>  | <u>Qty</u> | <u>Part#</u> | <u>Description</u>     | <u>Qty</u> | <u>Part#</u>                     | <u>Description</u>     | <u>Qty</u> |
|--------------|---------------------|------------|--------------|------------------------|------------|----------------------------------|------------------------|------------|
| 200003*      | Gasket              | 1          | 221740       | Ball Stop Plug (7/16") | 1          | 229751                           | Pin                    | 1          |
| 200472       | Screw               | 2          | 221742       | Ball Stop Plug (3/4")  | 1          | 230583                           | Ram Assy               | 1          |
| 201110       | Lockwasher          | 4          | 221764*      | Ram Quad Ring          | 1          | 231316                           | Vent Valve Assy        | 1          |
| 201479       | Lockwasher          | 2          | 221766       | Cylinder               | 1          | 231583                           | Rear Caster            | 2          |
| 201733       | Plug                | 1          | 221770       | Low Pressure Pump      | 1          | 231638                           | Filler Screw           | 1          |
|              |                     |            | 221771*      | Washer                 | 1          | 231710                           | Oil Tank               | 1          |
| 201779       | Lockwasher          | 2          |              |                        |            |                                  |                        |            |
| 201784       | Lockwasher          | 1          | 221772*      | Quad ring              | 1          | 232968*                          | Back-up Washer         | 1          |
| N/A          | Rivet               | 2          | 221778       | Washer                 | 4          | 232969*                          | U-cup                  | 1          |
| 203198*      | Ball (7/32")        | 1          | 221781       | Handle and Cross Bar   | 1          | 232970                           | Pressure Pump          | 1          |
| 203199*      | Ball (1/4")         | 1          | 221798       | Retainer Ring          | 4          | 232971                           | Pressure Pump Kit      | 1          |
|              |                     |            | 221817       | Retainer Ring          | 2          | 233798                           | Tank Nut               | 1          |
| 203200*      | Ball (9/32")        | 1          |              |                        |            |                                  |                        |            |
| 203201*      | Ball (5/16")        | 1          | N/A          | Parallel Link          | 2          | N/A                              | Tank Nut/Quad Ring     | 1          |
| 203205*      | Ball (7/16")        | 1          | 221829       | Pin                    | 1          | 233917*                          | Plastic Spring         | 1          |
| 203299       | Jam Nut             | 4          | 221937       | Turning Knob           | 1          | 233921                           | Release Stem           | 1          |
| 203313       | Jam Nut             | 2          | 221938       | Roll Pin               | 1          | 234695                           | Bellcrank Pin          | 1          |
|              |                     |            | 222095       | Release Stem Kit       | 1          | 234696                           | Parallel Link Pin      | 1          |
| 203332       | Nut                 | 1          |              |                        |            |                                  |                        |            |
| 203344       | Jam Nut             | 2          | 222098       | Speed Pump Assy        | 1          | 234976                           | Cap Housing            | 1          |
| 204270       | Washer              | 2          | 222201*      | Spring                 | 1          | N/A                              | Bellcrank              | 1          |
| 204277       | Washer              | 1          | 222257       | Plug Poppet Valve      | 2          | 241887                           | Handle Socket          | 1          |
| 204301       | Washer              | 1          | 222533*      | Screen                 | 2          | 241889                           | Lift cap               | 1          |
|              |                     |            | 223166*      | Ram Screen             | 1          | N/A                              | Sideplate Assy         | 1          |
| 204303       | Washer              | 1          |              |                        |            |                                  |                        |            |
| 204343       | Washer              | 4          | 226314       | Gland Nut              | 1          | N/A                              | Sideplate Assy         | 1          |
| 204372       | Washer              | 1          | 226318       | Grease Fitting         | 1          | 241895                           | Hydraulic Unit Cover   | 1          |
| 204444       | Cotter Pin          | 3          | 226324       | Pressure Plug          | 1          | 241907                           | Repair Kit (Hyd. Unit) | -          |
| 204461       | Cotter Pin          | 1          | 226325       | Pump Link              | 2          | 241982                           | Fulcrum Pin            | 1          |
|              |                     |            | 226326       | Nut                    | 1          | 241983                           | Sideplate Tie Rod      | 2          |
| 204842*      | Copper Gasket       | 1          |              |                        |            |                                  |                        |            |
| 204846       | Gasket Ring         | 2          | 226327       | Slotted Tube           | 1          | 241985                           | Support Rod            | 1          |
| 209964       | Lockwasher          | 2          | 226329       | Pin                    | 1          | 241986                           | Front Axle             | 1          |
| 210225       | Spacer              | 1          | 226331*      | Spring                 | 1          | 241987                           | Retainer Ring          | 2          |
| 210311       | Pipe Plug           | 3          | 226353*      | Spring                 | 1          | 241988                           | Handle Pivot Pin       | 1          |
| 210411*      | Washer              | 1          | 226366       | Hex Head Bolt          | 1          | 241989                           | Extension Spring       | 2          |
|              |                     |            |              |                        |            |                                  |                        |            |
| 211341       | Rivet               | 1          | 226372       | Spring                 | 1          | 241990                           | Handle Assy            | 1          |
| 212227       | Release Valve       | 1          | 226615       | Front Wheel            | 2          | N/A                              | Hydraulic Unit Casting | 1          |
| 213152*      | Packing Ring        | 2          | 227395       | Plunger Assy           | 1          | 241993                           | Hydraulic Unit Assy    | 1          |
| 213171*      | Packing Ring        | 2          | 227397       | Release Link           | 1          |                                  |                        |            |
| 214538       | Groove Pin          | 4          | 227399       | Extension Rod          | 1          | HW93657-K0 Label Kit (not shown) |                        |            |
|              |                     |            |              |                        |            | HW93657-M0 Manual                |                        |            |
| 214555*      | O-ring              | 1          | 227436       | Turning Rod Assy       | 1          |                                  |                        |            |
| 214699       | Bushing             | 1          | 228257*      | U-cup                  | 1          | (*) Items included in Repair Kit |                        |            |
| 214700       | Handle Segment Assy | 1          | 228354       | Universal Assy         | 1          | 241907                           |                        |            |
| 216645       | Pin                 | 1          | 228875       | Spring                 | 1          |                                  |                        |            |
| 216646       | Pump Pin            | 1          | 228881       | Grip                   | 2          |                                  |                        |            |
|              |                     |            |              |                        |            |                                  |                        |            |
| 218988       | Roll Pin            | 1          | N/A          | Serial Plate           | 1          |                                  |                        |            |
| 219451       | Hex Nut             | 2          | 229748*      | Heel Plate             | 3          |                                  |                        |            |
| 220769       | Cross Pin           | 1          | 229749       | Washer                 | 1          |                                  |                        |            |
| 221739*      | Poppet              | 1          | 229750       | Ram                    | 1          |                                  |                        |            |



This diagram illustrates the exploded view of the 231962 Handle Assembly. The main assembly consists of the 231962 Handle Assembly, the 241551 Hydraulic Unit Assembly, and the 231474 Linkage Assembly. The 231962 Handle Assembly includes components such as 217653, 226318, 229915, 231963, 232620, 201110, 229929, 230006, 216645, 231419, 201110, 203297, 212689, 203292, 201115, 203272, 203299, 229937, 201481, 203323, 226271, 201789, 229938, 207169, 229912, 229939, and 229911. The 241551 Hydraulic Unit Assembly includes components such as 244253, 241538, 214700 (Includes 214699 Bushing.), 204444, 229933, 229934, 229910, 229927, 232619, 229946, 231430, 244317, and 229947. The 231474 Linkage Assembly includes components such as 229913, 226318, 227397, 204461, 204277, 229952, 226372, 229949, 229951, 211341, 226366, 201784, 203332, 227436, 218988, 228875, 204303, 221938, 221781, 221937, 221809, 200472, 209964, 204270, and 203344. The diagram also shows the 231962 Hydraulic Unit Assembly and the 231962 Handle Assembly. Torque specifications are provided for several components: 125-175 Ft. Lbs. for 201110 and 203292, and 450-550 Ft. Lbs. for 203323 and 203299.

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# Model HW93660 Replacement Parts Illustration Part II - Hydraulic Unit (ref.parts list on pg. 11)

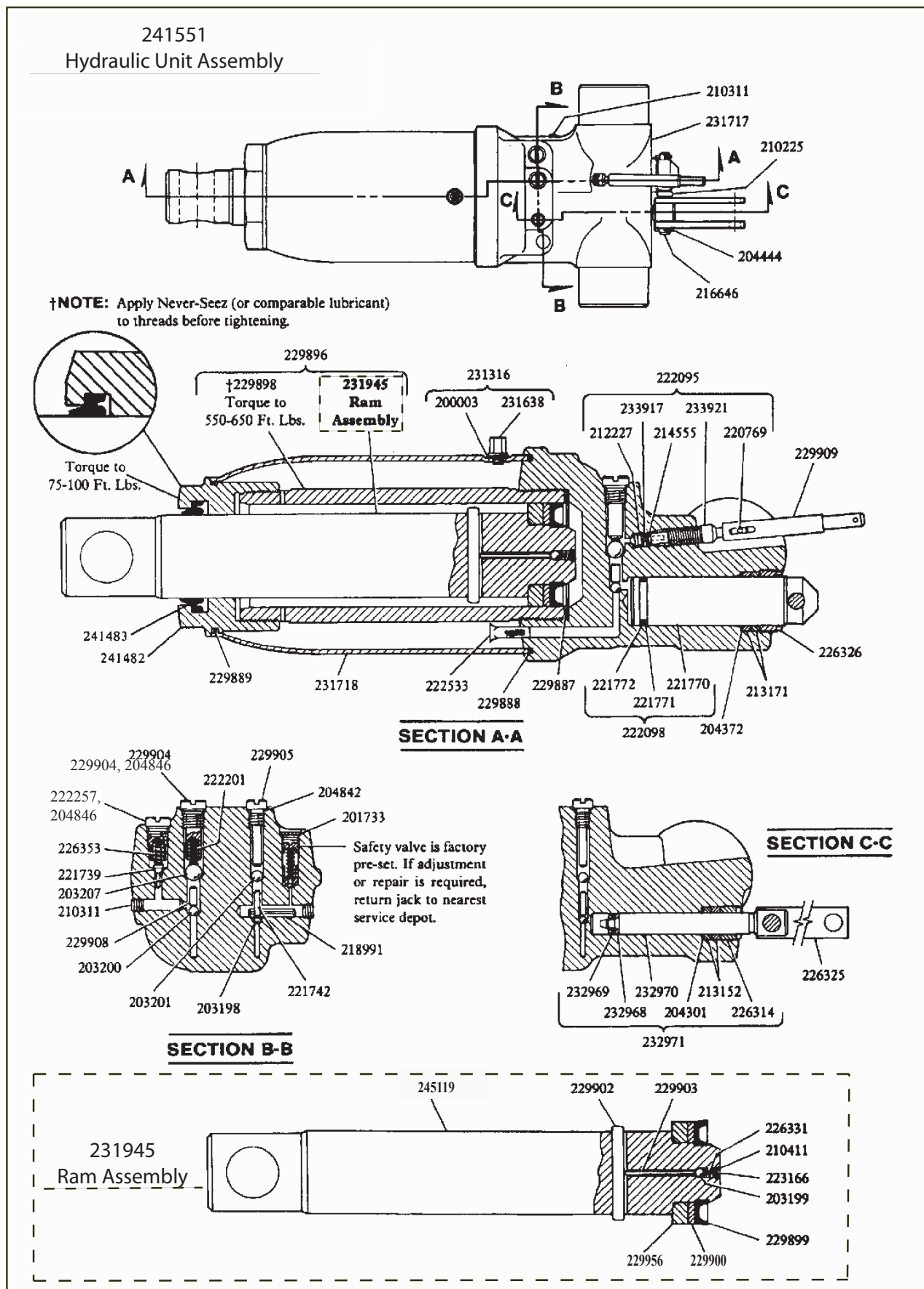


Figure 8 - Parts Illustration for Model HW93660 (Hydraulic Unit)

## Model HW93660 Replacement Parts List (ref. illustrations on pg. 9 & 10)

| <u>Part#</u> | <u>Description</u>          | <u>Qty</u> | <u>Part#</u> | <u>Description</u>   | <u>Qty</u> | <u>Part#</u> | <u>Description</u>           | <u>Qty</u> |
|--------------|-----------------------------|------------|--------------|----------------------|------------|--------------|------------------------------|------------|
| 200003       | Gasket                      | 1          | 220769       | Cross Pin            | 1          | 229927       | Cap Housing                  | 1          |
| 200472       | Bolt                        | 2          | 221739       | Poppet               | 1          | 229929       | Bearing                      | 1          |
| 201110       | Lockwasher                  | 4          | 221742       | Ball Stop Plug       | 1          | 229932       | Spring                       | 2          |
| 201115       | Lockwasher                  | 2          | 221770       | Speed Pump           | 1          | 229933       | Plate                        | 2          |
| 201481       | Lockwasher                  | 2          | 221771*      | Back-up Washer       | 1          | 229934       | Pin                          | 1          |
| 201733       | Expansion Plug              | 1          | 221772       | Quad Ring            | 1          | 229937       | Caster                       | 2          |
| 201784       | Lockwasher                  | 1          | 221781       | Handle & Cross Bar   | 1          | 229938       | Pin                          | 1          |
| 201789       | Lockwasher                  | 2          | 221809       | Handle Grip          | 2          | 229939       | Front Axle                   | 1          |
| 203198*      | Ball                        | 1          | 221937       | Release Knob         | 1          | 229946       | Pin                          | 1          |
| 203199*      | Ball                        | 1          | 221938       | Roll Pin             | 1          | 229947       | Retaining Ring               | 4          |
| 203200*      | Ball                        | 1          | 222095       | Release Stem Assy.   | 1          | N/A          | Handle Socket                | 1          |
| 203201*      | Ball                        | 1          | 222098       | Speed Pump Assy.     | 1          | 229951       | Extension Rod                | 1          |
| 203207*      | Ball                        | 1          | 222201*      | Spring               | 1          | 229952       | Plunger Assy                 | 1          |
| 203272       | Nut                         | 2          | 222257       | Plug                 | 1          | 229956       | Heel Plate                   | 1          |
| 203297       | Nut                         | 2          | 222533*      | Screen               | 2          | 230006       | Bumper Pin                   | 1          |
| 203299       | Nut                         | 2          | 223166*      | Screen               | 1          | 230407       | Universal Assy               | 1          |
| 203323       | Nut                         | 2          | 224253       | Cover                | 1          | 231316       | Filler Plug/Gasket Assy      | 1          |
| 203332       | Nut                         | 1          | N/A          | Fulcrum Pin          | 1          | 231419       | Fulcrum Pin                  | 1          |
| 203344       | Nut                         | 2          | 226314       | Gland Nut            | 1          | 231420       | Bolt                         | 2          |
| 204270       | Washer                      | 2          | 226318       | Grease Fitting       | 5          | N/A          | Parallel Link                | 2          |
| 204277       | Washer                      | 1          | 226325       | Pump Link            | 2          | N/A          | Bell Crank & Fittings        | 1          |
| 204301       | Washer                      | 1          | 226326       | Gland Nut            | 1          | 231638       | Filler Plug & Vent Valve     | 1          |
| 204303       | Washer                      | 1          | 226331       | Spring               | 1          | 231717       | Base                         | 1          |
| 204372       | Washer                      | 1          | 226353*      | Spring               | 1          | 231718       | Oil Tank                     | 1          |
| 204444       | Cotter Pin                  | 4          | 226366       | Bolt                 | 1          | 231945       | Ram Assy                     | 1          |
| 204461       | Cotter Pin                  | 1          | 226372       | Plunger Spring       | 1          | 231962       | Handle Assy                  | 1          |
| 204842*      | Gasket                      | 1          | 227397       | Link                 | 1          | 231963       | Front Wheel Assy             | 2          |
| 204846       | Gasket Ring                 | 2          | 227436       | Turning Rod Assy.    | 1          | 232619       | Lifting Cap                  | 1          |
| 207169       | Nut                         | 2          | 228875       | Spring               | 1          | 232620       | Swivel Pin                   | 1          |
| 209964       | Lockwasher                  | 2          | 229887*      | O-ring               | 1          | 232968*      | Back-up Washer               | 1          |
| 210225       | Spacer                      | 1          | 229888*      | O-ring               | 1          | 232969*      | U-cup Packing                | 1          |
| 210311       | Pipe Plug                   | 3          | 229889*      | O-ring               | 1          | 232970       | Pressure Pump                | 1          |
| 210411*      | Washer                      | 1          | N/A          | Ram & Cylinder Assy. | 1          | 232971       | Pressure Pump &              | 1          |
| 211341       | Rivet                       | 1          | 229898       | Cylinder             | 1          |              | Gland Packing Assy.          |            |
| 212227       | Release Valve               | 1          | 229899*      | U-cup Packing        | 1          | 233917       | Plastic Spring               | 1          |
| 212689       | Bolt                        | 2          | 229900*      | Back-up Washer       | 1          | 233921       | Release Stem                 | 1          |
| 213152*      | Packing Ring                | 2          | 229902       | Cross Pin            | 1          | 240616       | Repair Kit (Hyd. Unit)       | -          |
| 213171*      | Packing Ring                | 2          | 229903       | Pin                  | 1          | 241482       | Tank Nut                     | 1          |
| 214538       | Groove Pin                  | 4          | 229904       | Plug                 | 1          | 241483*      | Seal                         | 1          |
| 214555*      | O-ring                      | 1          | 229905       | Plug                 | 1          | 241551       | Hydraulic Unit Assy          | 1          |
| 214699       | Bushing                     | 1          | 229908       | Spacer               | 1          | 244317       | Pin                          | 1          |
| 214700       | Handle Segment<br>& Bushing | 1          | 229909       | Slotted Tube         | 1          | 245119       | Ram                          | 1          |
| 216645       | Pin                         | 1          | 229910       | Retaining Ring       | 2          |              |                              |            |
| 216646       | Pin                         | 1          | 229911       | Retaining Ring       | 2          | HW93660-K0   | Label Kit (not shown)        |            |
| 217653       | Roll Pin                    | 2          | 229912       | Washer               | 4          | HW93657-M0   | Manual                       |            |
| 218988       | Roll Pin                    | 1          | N/A          | Bell Crank           | 1          |              |                              |            |
| 218991       | Roll Pin                    | 1          | 231963       | Front Wheel          | 2          | (*)          | Items included in Repair Kit |            |
|              |                             |            |              |                      |            | 240616       |                              |            |

Model HW93662 Replacement Parts Illustration Part I (ref. parts list on pg. 14)

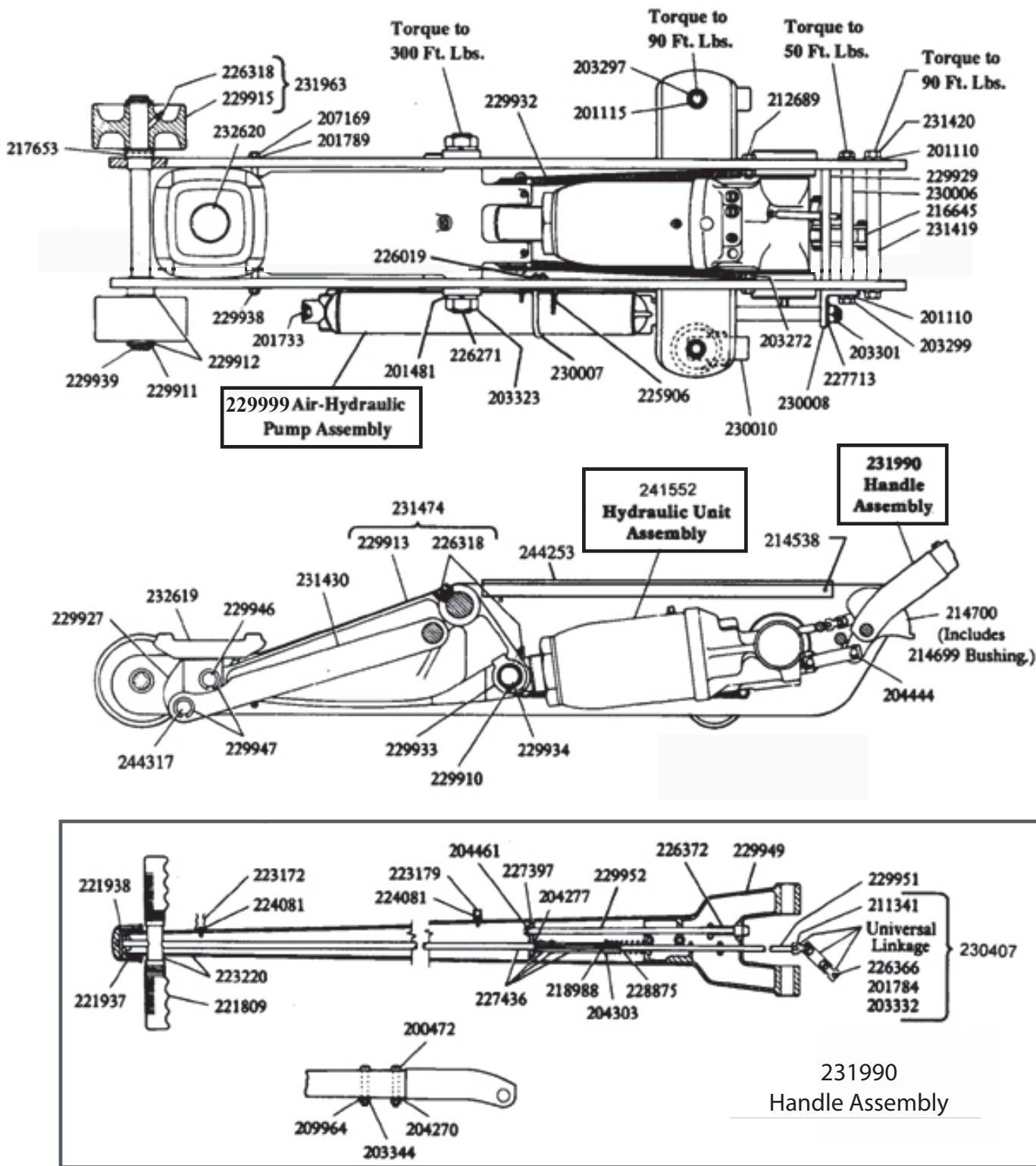


Figure 9 - Parts Illustration for Model HW93662

# Model HW93662 Replacement Parts Illustration Part II - Hyd Unit (ref. parts list on pg. 14)

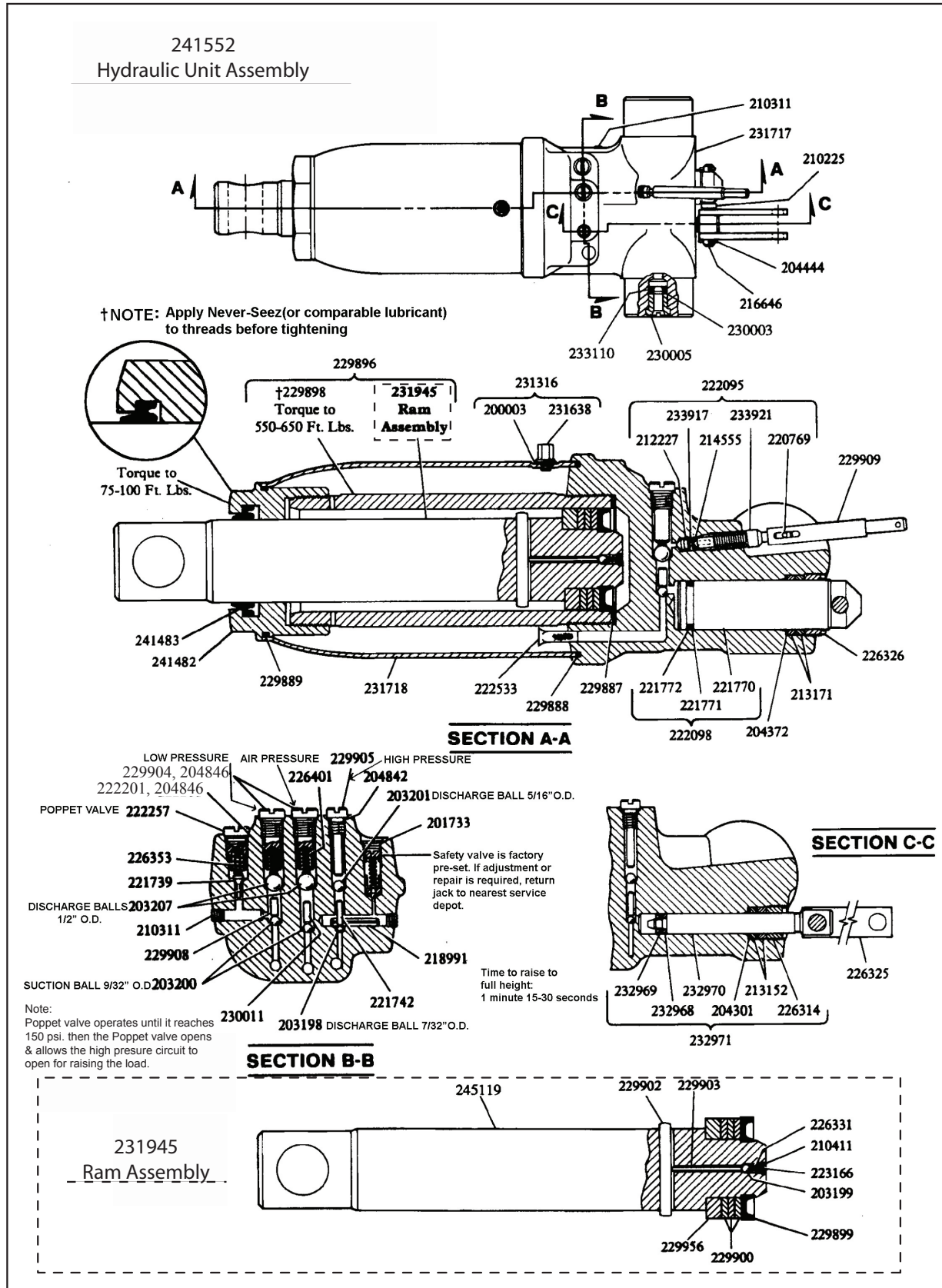
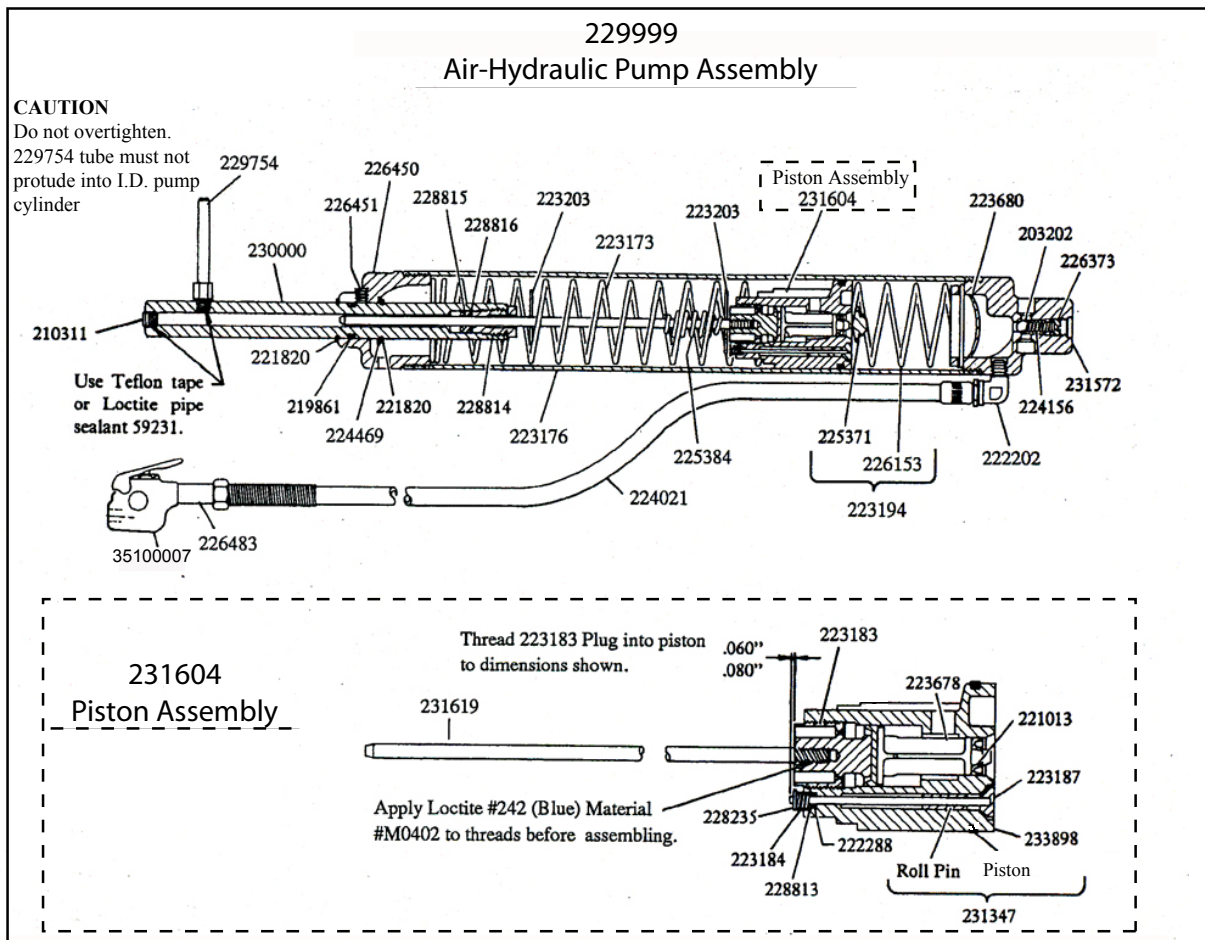


Figure 10 - Parts Illustration for Model HW93662 (Hydraulic Unit)



## Model HW93662 Replacement Parts Illustration Part III - Air Hyd. Pump



## Model HW93662 Replacement Parts List (ref. illustrations on pgs. 12, 13 & 14)

| <u>Part#</u> | <u>Description</u> | <u>Qty</u> | <u>Part#</u> | <u>Description</u> | <u>Qty</u> | <u>Part#</u> | <u>Description</u> | <u>Qty</u> |
|--------------|--------------------|------------|--------------|--------------------|------------|--------------|--------------------|------------|
| 200003       | Gasket             | 1          | 204270       | Washer             | 2          | 214555*      | O-ring             | 1          |
| 200472       | Bolt               | 2          | 204277       | Washer             | 1          | 214699       | Bushing            | 1          |
| 201110       | Lockwasher         | 4          | 204301       | Washer             | 1          | 214700       | Handle Segment &   | 1          |
| 201115       | Lockwasher         | 2          | 204303       | Washer             | 1          |              | Bushing            |            |
| 201481       | Lockwasher         | 2          |              |                    |            | 216645       | Pin                | 1          |
|              |                    |            | 204372       | Washer             | 1          |              |                    |            |
| 201733       | Expansion Plug     | 1          | 204444       | Cotter Pin         | 4          | 216646       | Pin                | 1          |
| 201784       | Lockwasher         | 1          | 204461       | Cotter Pin         | 1          | 217653       | Roll Pin           | 2          |
| 201789       | Lockwasher         | 2          | 204842*      | Gasket             | 1          | 218988       | Roll Pin           | 1          |
| 203198*      | Ball (7/32")       | 1          | 204846       | Gasket Ring        | 3          | 218991       | Roll Pin           | 1          |
| 203199*      | Ball (1/4")        | 1          | 207169       | Nut                | 2          | 219861       | O-ring             | 1          |
| 203200*      | Ball (9/32")       | 1          | 209964       | Lockwasher         | 2          | 220769       | Cross Pin          | 1          |
| 203201*      | Ball (5/16")       | 1          | 210225       | Spacer             | 1          | 221013#      | U-cup Packing      | 1          |
| 203202       | Ball (11/32")      | 1          | 210311       | Pipe Plug          | 3          | 221739       | Poppet             | 1          |
| 203207*      | Ball               | 1          | 210411*      | Washer             | 1          | 221742       | Ball Stop Plug     | 1          |
| 203272       | Nut                | 2          | 211341       | Rivet              | 1          | 221770       | Speed Pump         | 1          |
| 203297       | Nut                | 2          | 212227       | Release Valve      | 1          | 221771*      | Back-up Washer     | 1          |
| 203299       | Nut                | 2          | 212689       | Bolt               | 2          | 221772       | Quad Ring          | 1          |
| 203301       | Jam Nut            | 1          | 213152*      | Packing Ring       | 2          | 221809       | Handle Grip        | 2          |
| 203323       | Nut                | 2          | 213171*      | Packing Ring       | 2          | 221820       | Retaining Ring     | 2          |
| 203332       | Nut                | 1          | 214538       | Groove Pin         | 4          | 221937       | Release Knob       | 1          |
| 203344       | Nut                | 2          |              |                    |            |              |                    |            |



## Model HW93662 Replacement Parts List (cont.)

| <u>Part#</u> | <u>Description</u> | <u>Qty</u> | <u>Part#</u> | <u>Description</u>  | <u>Qty</u> | <u>Part#</u>                     | <u>Description</u>                  | <u>Qty</u> |
|--------------|--------------------|------------|--------------|---------------------|------------|----------------------------------|-------------------------------------|------------|
| 221938       | Roll Pin           | 1          | 228813       | Washer              | 1          | 230407                           | Universal Assy.                     | 1          |
| 222095       | Release Stem Assy. | 1          | 228814#      | Gland Nut           | 1          | 231316                           | Filler Plug & Gasket Assy.          | 1          |
| 222098       | Speed Pump Assy.   | 1          | 228815#      | U-cup Packing       | 1          |                                  |                                     |            |
| 222201*      | Spring             | 1          |              |                     |            |                                  |                                     |            |
| BJ479096     | Elbow              | 1          | 228816#      | Washer              | 1          | 231347                           | Piston & Roll Pin                   | 1          |
|              |                    |            | 228875       | Spring              | 1          | 231419                           | Fulcrum Pin                         | 1          |
| 222257       | Plug               | 1          | 229754       | Pin                 | 1          | 231420                           | Bolt                                | 2          |
| 222288#      | O-ring             | 1          | 229887*      | O-ring              | 1          | N/A                              | Parallel Link                       | 2          |
| 222533*      | Screen             | 2          | 229888*      | O-ring              | 1          |                                  |                                     |            |
| 223166*      | Screen             | 1          |              |                     |            | N/A                              | Bell Crank/Fittings                 | 1          |
| 223172       | Hose Clip          | 1          | 229889*      | O-ring              | 1          | 231572                           | Cylinder Cap                        | 1          |
|              |                    |            | N/A          | Ram/Cylinder Assy   | 1          | 231604                           | Piston Assy.                        | 1          |
| 223173       | Return Spring      | 1          | 229898       | Cylinder            | 1          | 231619                           | Rod, Pump                           | 1          |
| 223176       | Cylinder, Air      | 1          | 229899*      | U-cup Packing       | 1          | 231638                           | Filler plug/Vent Valve              | 1          |
| 223179       | Hose Clip          | 2          | 229900*      | Back-up Washer      | 1          |                                  |                                     |            |
| 223183       | Plug               | 1          |              |                     |            | 231733                           | Base                                | 1          |
| 223184       | Spring             | 1          | 229902       | Cross Pin           | 1          | 231718                           | Oil Tank                            | 1          |
|              |                    |            | 229903       | Pin                 | 1          | 231945                           | Ram Assy.                           | 1          |
| 223187#      | Valve & Plunger    | 1          | 229904       | Plug                | 1          | 231963                           | Front Wheel Assy.                   | 2          |
| 223194       | Spring & Cushion   | 1          | 229905       | Plug                | 1          | 231990                           | Handle Assy.                        | 1          |
| 223203       | Trip Washer        | 2          | 229908       | Spacer              | 1          |                                  |                                     |            |
| 223220       | Handle & Cross Bar | 1          |              |                     |            | 232619                           | Lifting Cap                         | 1          |
| 223678       | Packing & Piston   | 1          | 229909       | Slotted Tube        | 1          | 232620                           | Swivel Pin                          | 1          |
|              |                    |            | 229910       | Retaining Ring      | 2          | 232968*                          | Back-up Washer                      | 1          |
| 223680       | Screen             | 1          | 229911       | Retaining Ring      | 2          | 232969*                          | U-cup Packing                       | 1          |
| 224021       | Hose, Air          | 1          | 229912       | Washer              | 4          | 232970                           | Pressure Pump                       | 1          |
| 224081       | Screw              | 2          | N/A          | Bell Crank          | 1          |                                  |                                     |            |
| 224156       | Spring             | 1          |              |                     |            | 232971                           | Pressure Pump & Gland Packing Assy. | 1          |
| 224469       | Washer             | 1          | 231963       | Front Wheel         | 2          | 233110                           | Pump U-cup                          | 1          |
|              |                    |            | 229927       | Cap Housing         | 1          | 233622                           | Screw                               | 4          |
| 225371       | Rubber Cushion     | 1          | 229929       | Bearing             | 1          | 233897                           | Ring, Sealing                       | 1          |
| 225384       | Trip Spring        | 1          | 229932       | Spring              | 2          |                                  |                                     |            |
| 225906       | Bracket, Speed pak | 1          | 229933       | Plate               | 2          |                                  |                                     |            |
| 226153       | Spring             | 1          |              |                     |            | 233917                           | Plastic Spring                      | 1          |
| 226271       | Fulcrum Pin        | 1          | 229934       | Pin                 | 1          | 233921                           | Release Stem                        | 1          |
|              |                    |            | 229938       | Pin                 | 1          | 240564                           | Repair Kit (Air Pump)               | -          |
| 226314       | Gland Nut          | 1          | 229939       | Front Axle          | 1          | 240616                           | Repair Kit (Hyd. Unit)              | -          |
| 226318       | Grease Fitting     | 5          | 229946       | Pin                 | 1          | 241482                           | Tank Nut                            | 1          |
| 226325       | Pump Link          | 2          | 229947       | Retaining Ring      | 4          |                                  |                                     |            |
| 226326       | Gland Nut          | 1          |              |                     |            | 241483*                          | Seal                                | 1          |
| 226331       | Spring             | 1          | N/A          | Handle Socket       | 1          | 241552                           | Hydraulic Unit Assy.                | 1          |
|              |                    |            | 229951       | Extension Rod       | 1          | 244253                           | Cover                               | 1          |
| 226353*      | Spring             | 1          | 229952       | Plunger Assy.       | 1          | 244317                           | Pin                                 | 1          |
| 226366       | Bolt               | 1          | 229956       | Heel Plate          | 1          | 245119                           | Ram                                 | 1          |
| 226372       | Plunger Spring     | 1          | 229999       | Air Hyd. Pump Assy. | 1          |                                  |                                     |            |
| 226373       | Adjusting Screw    | 1          |              |                     |            | 35100007                         | Air Valve                           | 1          |
| 226401       | Spring             | 1          | 230000       | Pump Cylinder       | 1          | HW93662-K0 Label Kit (not shown) |                                     |            |
|              |                    |            | 230003       | Back-up Washer      | 1          | HW93657-M0 Manual                |                                     |            |
| 226450       | End Block          | 1          | 230005       | Gland Nut           | 1          |                                  |                                     |            |
| 226451       | Set Screw          | 2          | 230006       | Bumper Pin          | 1          | (*) Items included in Repair Kit |                                     |            |
| 226483       | Pipe Nipple        | 1          | 230007       | U-bolt              | 1          | 240616                           |                                     |            |
| 227397       | Link               | 1          | 230008       | Bracket             | 1          |                                  |                                     |            |
| 227436       | Turning Rod Assy.  | 1          | 230010       | Caster              | 2          | (#) Items included in Repair Kit |                                     |            |
| 227713       | Lockwasher         | 1          | 230011       | Spacer              | 1          | 240564                           |                                     |            |
| 228235       | Cotter Pin         | 1          |              |                     |            |                                  |                                     |            |

Model HW93667 Replacement Parts Illustration Part I (ref. parts list on pg. 18)

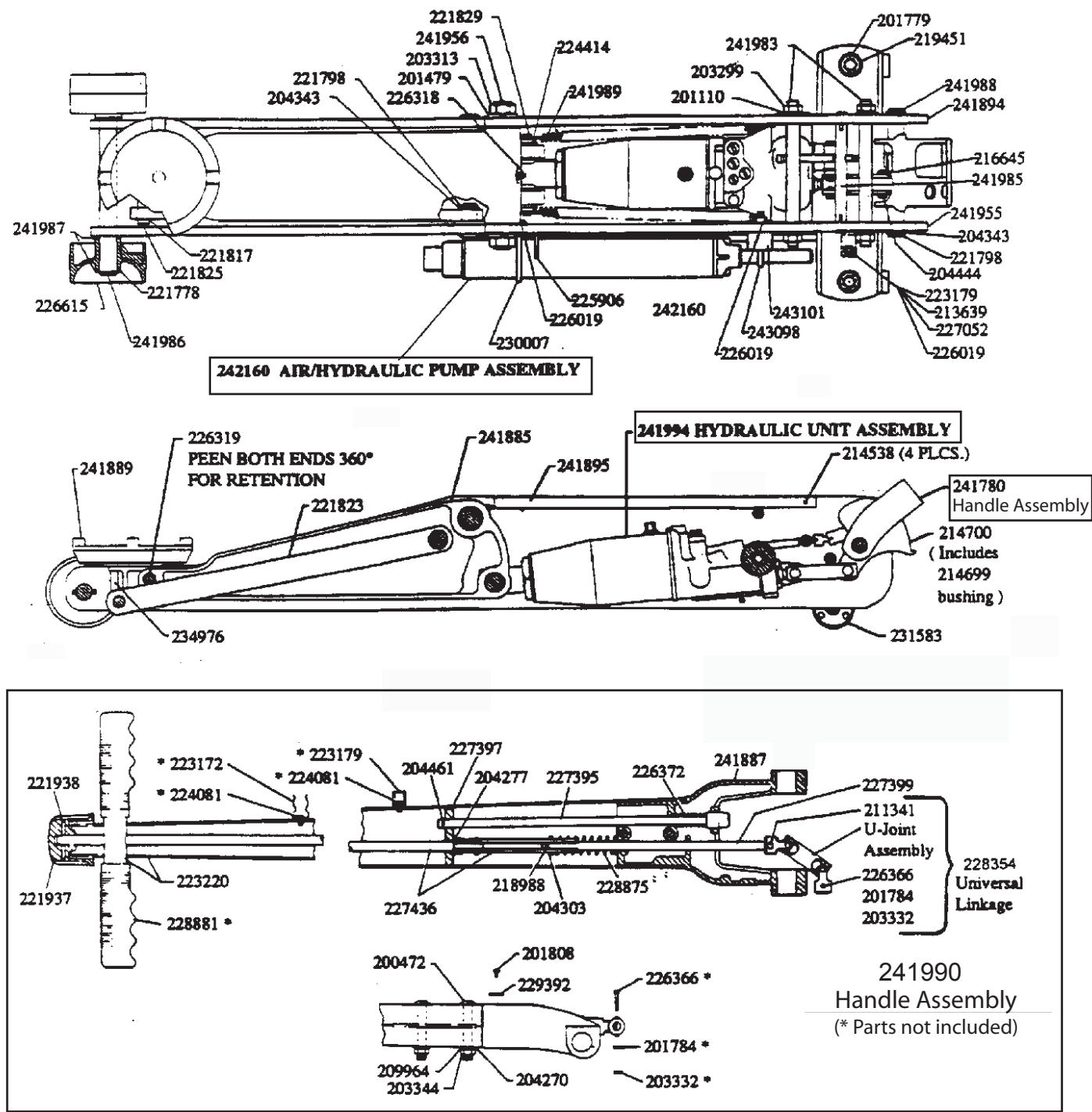


Figure 12 - Parts Illustration for Model HW93667

**Model HW93667 Replacement Parts Illustration Part II - Hyd Unit** (ref. parts list on pg. 18)

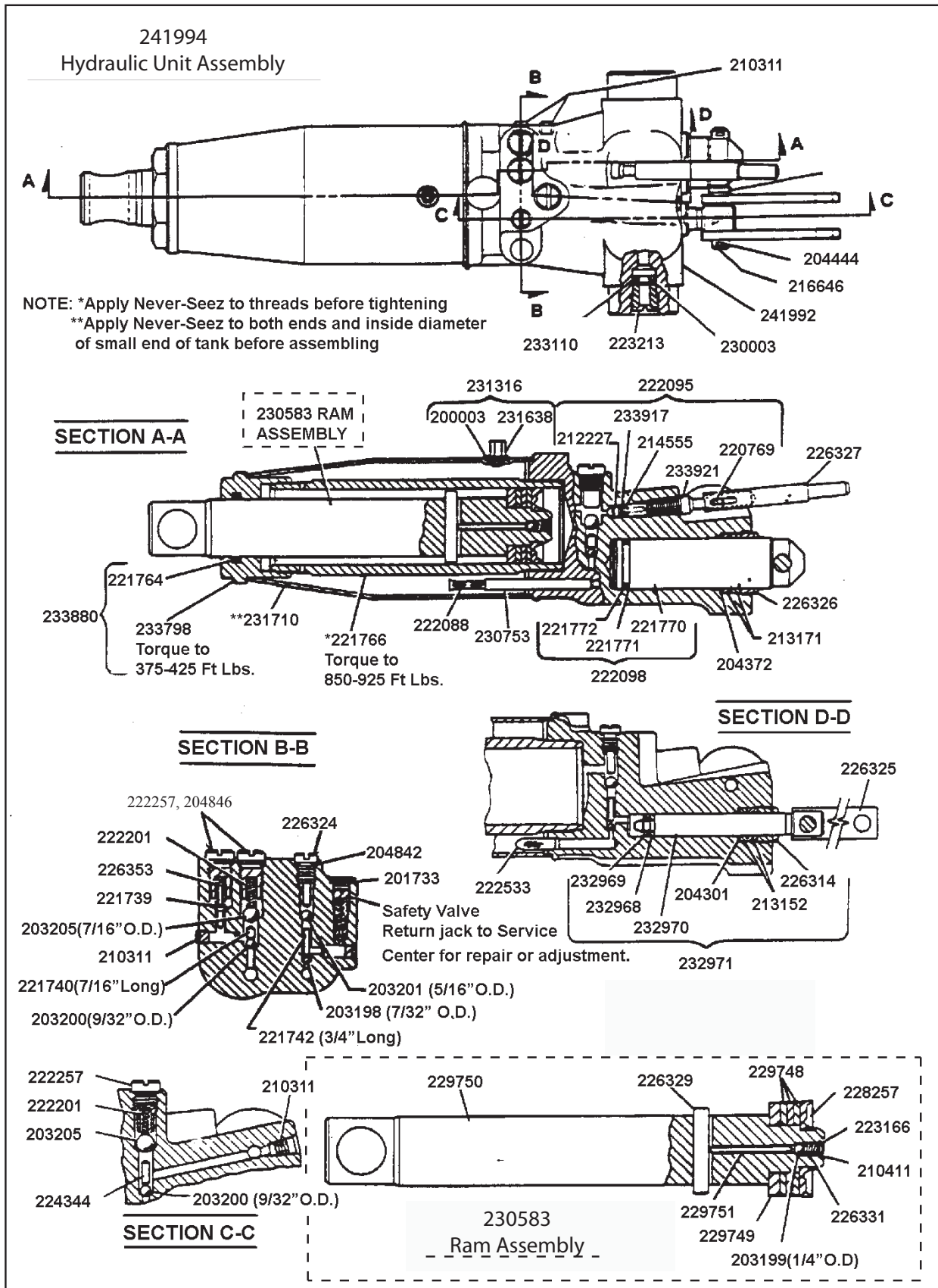


Figure 13 - Parts Illustration for Model HW93667 (Hyd. Unit)

## Model HW93667 Replacement Parts Illustration Part III - Air Hyd. Pump

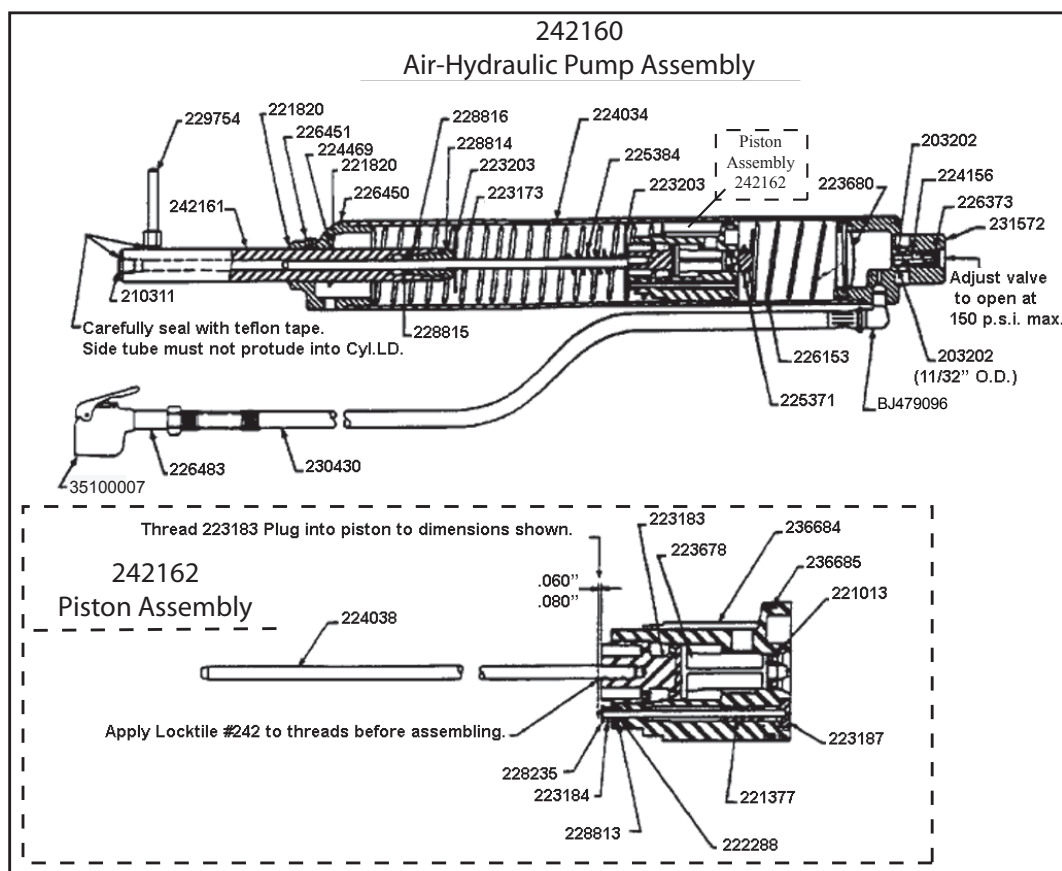


Figure 14 - Parts Illustration for Model HW93667 (Air Hyd. Pump)

### Model HW93667 Replacement Parts List (ref. illustrations on pgs. 16, 17 & 18)

| Part#   | Description   | Qty | Part#   | Description         | Qty | Part#   | Description            | Qty |
|---------|---------------|-----|---------|---------------------|-----|---------|------------------------|-----|
| 200003* | Gasket        | 1   | 204301  | Washer              | 1   | 216645  | Pin                    | 1   |
| 200472  | Screw         | 2   | 204303  | Washer              | 1   | 216646  | Pump Pin               | 1   |
| 201110  | Lockwasher    | 4   | 204343  | Washer              | 4   | 218988  | Roll Pin               | 1   |
| 201479  | Lockwasher    | 2   | 204372  | Washer              | 1   | 219451  | Hex Nut                | 2   |
| 201733  | Plug          | 1   | 204444  | Cotter Pin          | 3   | 220769  | Cross Pin              | 1   |
| 201779  | Lockwasher    | 2   | 204461  | Cotter Pin          | 1   | 221013# | U-cup Packing          | 1   |
| 201784  | Lockwasher    | 1   | 204842* | Copper Gasket       | 1   | 221377  | Roll Pin               | 1   |
| N/A     | Rivet         | 2   | 204846  | Gasket Ring         | 2   | 221739* | Poppet                 | 1   |
| 203198* | Ball (7/32")  | 1   | 209964  | Lockwasher          | 2   | 221740  | Ball Stop Plug (7/16") | 1   |
| 203199* | Ball (1/4")   | 1   | 210225  | Spacer              | 1   | 221742  | Ball Stop Plug (3/4")  | 1   |
|         |               |     | 210311  | Pipe Plug           | 4   |         |                        |     |
| 203200* | Ball (9/32")  | 1   |         |                     |     | 221764* | Ram Quad Ring          | 1   |
| 203201* | Ball (5/16")  | 1   | 210411* | Washer              | 1   | N/A     | Cylinder               | 1   |
| 203202  | Ball (11/32") | 1   | 211341  | Rivet               | 1   | 221770  | Low Pressure Pump      | 1   |
| 203205* | Ball (7/16")  | 1   | 212227  | Release Valve       | 1   | 221771* | Washer                 | 1   |
| 203299  | Jam Nut       | 4   | 213152* | Packing Ring        | 2   | 221772* | Quad ring              | 1   |
|         |               |     | 213171* | Packing Ring        | 2   |         |                        |     |
| 203313  | Jam Nut       | 2   |         |                     |     | 221778  | Washer                 | 2   |
| 203332  | Nut           | 1   | 213639  | Bolt                | 1   | 221798  | Retainer Ring          | 4   |
| 203344  | Jam Nut       | 2   | 214538  | Groove Pin          | 4   | 221817  | Retainer Ring          | 2   |
| 204270  | Washer        | 2   | 214555* | O-ring              | 1   | 221820  | Retaining Ring         | 1   |
| 204277  | Washer        | 1   | 214699  | Bushing             | 1   | N/A     | Parallel Link          | 2   |
|         |               |     | 214700  | Handle Segment Assy | 1   |         |                        |     |

## Model HW93667 Replacement Parts List (cont.)

| <u>Part#</u> | <u>Description</u> | <u>Qty</u> | <u>Part#</u> | <u>Description</u> | <u>Qty</u> | <u>Part#</u>                     | <u>Description</u>      | <u>Qty</u> |
|--------------|--------------------|------------|--------------|--------------------|------------|----------------------------------|-------------------------|------------|
| 234696       | Parallel Link Pin  | 1          | 226353*      | Spring             | 1          | 233917*                          | Plastic Spring          | 1          |
| 221829       | Pin                | 1          | 226366       | Hex Head Bolt      | 1          | 233921                           | Release Stem            | 1          |
| 221937       | Turning Knob       | 1          | 226372       | Spring             | 1          | 234976                           | Cap Housing             | 1          |
| 221938       | Roll Pin           | 1          | 226373       | Adjusting Screw    | 1          | 236684                           | Piston                  | 1          |
| 222088       | Screen Assembly    | 1          | N/A          | End block          | 1          |                                  |                         |            |
|              |                    |            |              |                    |            | 236685                           | Sealing Ring            | 1          |
| 222095       | Release Stem Kit   | 1          | 226451       | Set Screw          | 2          | 240564                           | Repair Kit (Hyd. Pump)  | 1          |
| 222098       | Speed Pump Assy    | 1          | 226483       | Pipe Nipple        | 1          | 241990                           | Handle                  | 1          |
| 222201*      | Spring             | 1          | 226615       | Front Wheel        | 2          | N/A                              | Bellcrank               | 1          |
| BJ479096     | Elbow              | 1          | 227052       | Washer             | 1          | 241887                           | Handle Socket           | 1          |
| 222257       | Plug Poppet Valve  | 2          | 227395       | Plunger Assy       | 1          | 241889                           | Lift Cap                | 1          |
|              |                    |            |              |                    |            |                                  |                         |            |
| 222288#      | O-ring             | 1          | 227397       | Release Link       | 1          | N/A                              | Sideplate Assy          | 1          |
| 222533*      | Screen             | 2          | 227399       | Extension Rod      | 1          | 241895                           | Hydraulic Unit Cover    | 1          |
| 223166*      | Ram Screen         | 1          | 227436       | Turning Rod Assy   | 1          | 241907                           | Repair Kit (Hyd. Unit)- |            |
| 223172       | Hose Clip          | 1          | 228235       | Cotter Pin         | 1          | N/A                              | Sideplate Assy          | 1          |
| 223173       | Return Spring      | 1          | 228257*      | U-cup              | 1          | 241982                           | Fulcrum Pin             | 1          |
|              |                    |            |              |                    |            |                                  |                         |            |
| 223179       | Hose Clip          | 2          | 228354       | Universal Linkage  | 1          | 241983                           | Sideplate Tie Rod       | 2          |
| 223183       | Plug               | 1          | 228813       | Washer             | 1          | 241985                           | Support Rod             | 1          |
| 223184       | Spring             | 1          | 228814#      | Gland Nut          | 1          | 241986                           | Front Axle              | 1          |
| 223187#      | Valve & Plunger    | 1          | 228815#      | U-cup Packing      | 1          | 241987                           | Retainer Ring           | 4          |
| 223203       | Trip Washer        | 2          | 228816#      | Washer             | 1          | 241988                           | Handle Pivot Pin        | 1          |
|              |                    |            |              |                    |            |                                  |                         |            |
| 223213       | Gland Nut          | 1          | 228875       | Spring             | 1          | 241989                           | Extension spring        | 2          |
| 223220       | Handle & Cross Bar | 1          | 228881       | Grip               | 2          | 241992                           | Hydraulic Unit Casting  | 1          |
| 223678       | Packing & Piston   | 1          | N/A          | Serial plate       | 1          | 241994                           | Hydraulic Unit Assy     | 1          |
| 223680       | Screen             | 1          | 229748*      | Heel Plate         | 3          | 242160                           | Air Hyd. Pump Assy      | 1          |
| 224034       | Air Cylinder       | 1          | 229749       | Washer             | 1          | 242161                           | Pump Cylinder           | 1          |
|              |                    |            |              |                    |            |                                  |                         |            |
| 224038       | Pump Rod           | 1          | 229750       | Ram                | 1          | 242162                           | Piston Assembly         | 1          |
| 224081       | Screw              | 3          | 229751       | Pin                | 1          | 243098                           | U-bolt                  | 1          |
| 224156       | Spring             | 1          | 229754       | Extension Tube     | 1          | 243101                           | Sleeve                  | 1          |
| 224344       | Ball Stop Plug     | 1          | 230003*      | Back-up Washer     | 1          | 35100007                         | Air Valve               | 1          |
| 224414       | Retaining Ring     | 1          | 230007       | U-bolt             | 1          |                                  |                         |            |
|              |                    |            |              |                    |            |                                  |                         |            |
| 224469       | Washer             | 1          | 230430       | Air Hose Assy      | 1          | HW93667-K0 Label Kit (not shown) |                         |            |
| 225371       | Rubber Cushion     | 1          | 230583       | Ram Assy           | 1          | HW93657-M0 Manual                |                         |            |
| 225384       | Trip Spring        | 1          | 230753       | Suction Tube       | 1          | (*) Items included in Repair Kit |                         |            |
| 225906       | Bracket, Speed Pak | 1          | 231316       | Vent Valve Assy    | 1          | 241907                           |                         |            |
| 226019       | Lock Nut           | 4          | N/A          | Cylinder Cap       | 1          | # Items included in Repair Kit   |                         |            |
|              |                    |            |              |                    |            | 240564                           |                         |            |
|              |                    |            |              |                    |            |                                  |                         |            |
| 226153       | Spring             | 1          | 231583       | Rear Caster        | 2          |                                  |                         |            |
| 226314       | Gland Nut          | 1          | 231638       | Filler Screw       | 1          |                                  |                         |            |
| 226318       | Grease Fitting     | 1          | 231710       | Oil Tank           | 1          |                                  |                         |            |
| N/A          | Bellcrank Pin      | 1          | 232968*      | Back-up Washer     | 1          |                                  |                         |            |
| 226324       | Pressure Plug      | 1          | 232969*      | U-cup              | 1          |                                  |                         |            |
|              |                    |            |              |                    |            |                                  |                         |            |
| 226325       | Pump Link          | 2          | 232970       | Pressure Pump      | 1          |                                  |                         |            |
| 226326       | Nut                | 1          | 232971       | Pressure Pump Kit  | 1          |                                  |                         |            |
| 226327       | Slotted Tube       | 1          | 233110       | Pump U-cup         | 1          |                                  |                         |            |
| 226329       | Pin                | 1          | 233798       | Tank Nut           | 1          |                                  |                         |            |
| 226331*      | Spring             | 1          | N/A          | Tank Nut & Quad    |            |                                  |                         |            |
|              |                    |            |              | Ring               | 1          |                                  |                         |            |





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