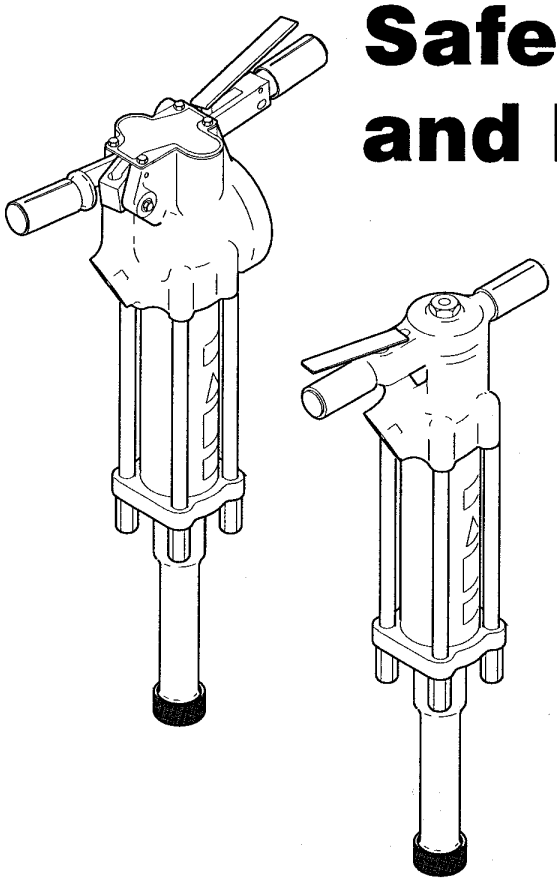
STANLEY®

SD67

Hydraulic Spike Driver

Safety, Operation and Maintenance Manual



⚠ DANGER

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

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INDEX

SERVICING SD67 SPIKE DRIVERS: This manual contains safety, operation, and detailed maintenance instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.

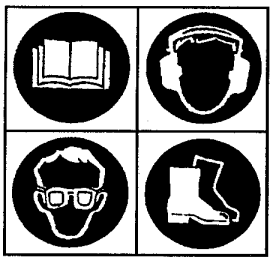
⚠ DANGER

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at one of the numbers listed on the back of this manual and ask for a Customer Service Representative.

SAFETY PRECAUTIONS



Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 3.

GENERAL SAFETY PRECAUTIONS

The SD67 Hydraulic Spike Driver will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the grinders and hoses before operation. Failure to do so could result in personal injury or equipment damage.

- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear and head protection, and safety shoes at all times when operating the tool.
- Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Always connect hoses to the tool hose couplers before energizing the hydraulic power source. Be sure all hose connections are tight.
- Do not operate the tool at oil temperatures above 140°F/60°C. Operation at higher temperatures can cause higher than normal temperatures at the tool which can result in operator discomfort.
- Do not operate a damaged, improperly adjusted, or incompletely assembled spike driver.
- Do not weld, cut with an acetylene torch, or hardface the spike driver.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

SAFETY SYMBOLS

Safety symbols are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

DANGER

This safety symbol may appear on the tool. It is used to alert the operator of an action that could place him/her or others in a life threatening situation.

⚠ WARNING

This safety symbol appears in these instructions to identify an action that could cause bodily injury to the operator or other personnel.

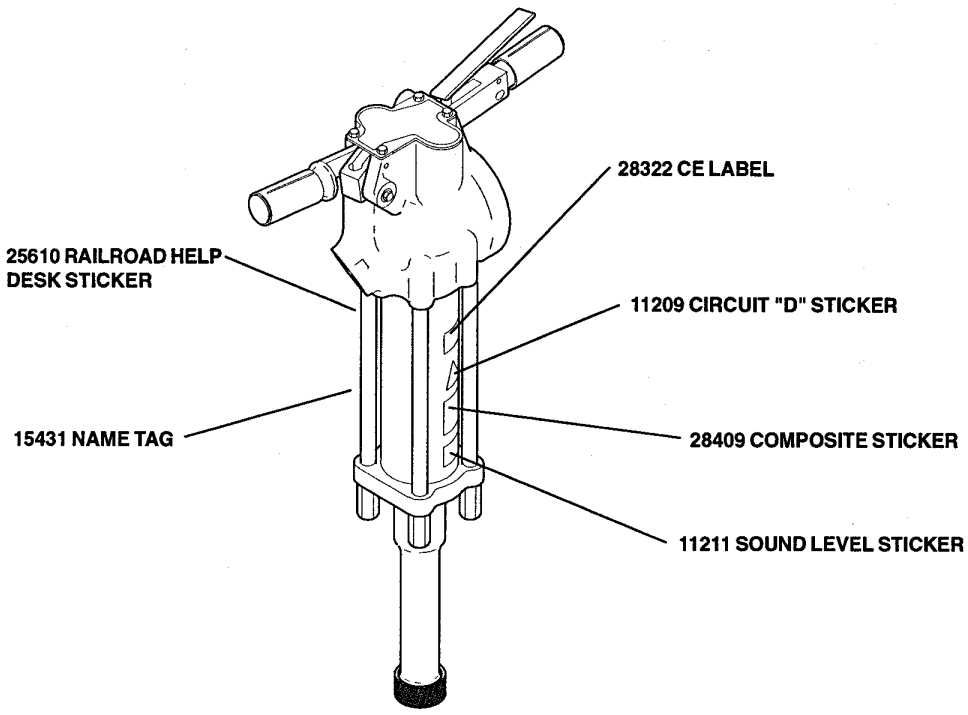
IMPORTANT

Always observe safety symbols. They are included for your safety and for the protection of the tool.

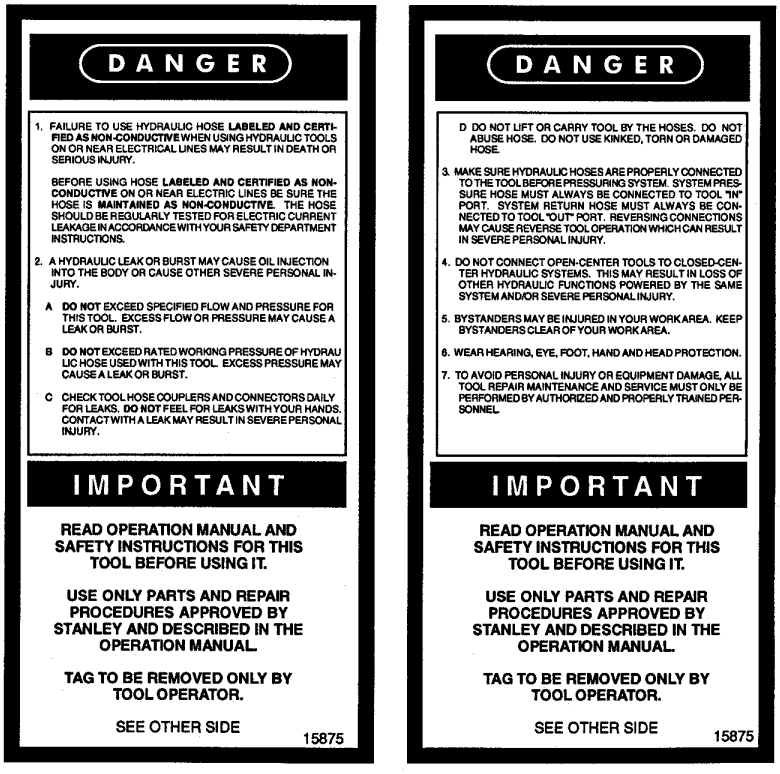
LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

TOOL STICKERS & TAGS

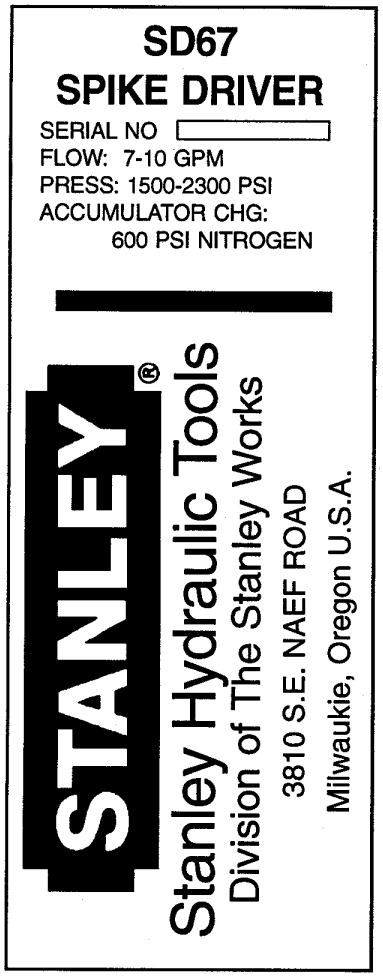


The safety tag (p/n 15875) at right is attached to the tool when shipped from the factory. Read and understand the safety instructions listed on this tag before removal. We suggest you retain this tag and attach it to the tool when not in use.



SAFETY TAG P/N 15875 (shown smaller then actual size)

TOOL STICKERS & TAGS CONT.

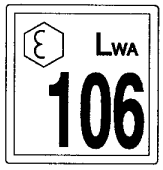


NAME TAG STICKER p/n 15431
(shown smaller than actual size)

A nameplate sticker is attached to the spike driver on the cylinder below the handle. Never exceed the flow and pressure levels specified on this sticker.

The information listed on the flow and pressure sticker must be legible at all times. Replace this sticker if it becomes worn or damaged. A re-placement is available from your local Stanley distributor.

RAILROAD HELP DESK STICKER
p/n 25610 (shown actual size) (USA Models Only)



SOUND LEVEL STICKER
p/n 11211
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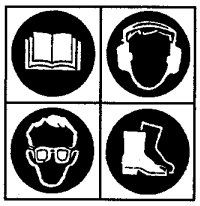

COMPOSITE STICKER
p/n 28409
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CIRCUIT "D" STICKER
p/n 11209
(shown smaller than actual size)

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

Hydraulic hose types authorized for use with Stanley Hydraulic Tools are as follows:

❶ Certified non-conductive

❷ Wire-braided (conductive)

❸ Fabric-braided (not certified or labeled non-conductive)

Hose ❶ listed above is the only hose authorized for use near electrical conductors.

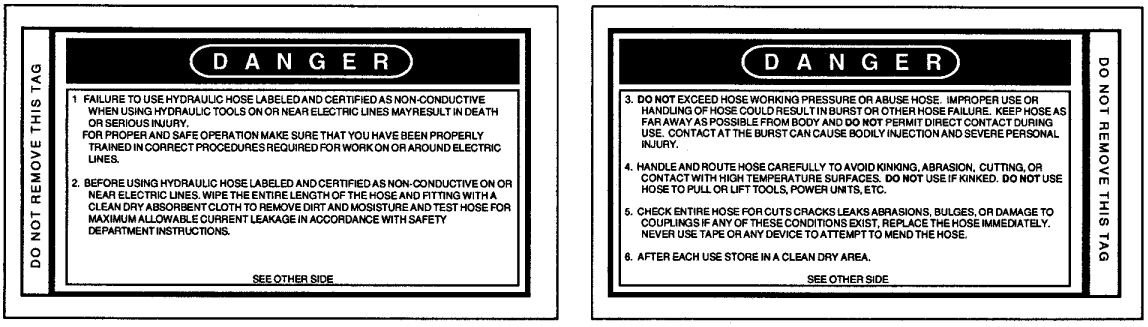
Hoses ❷ and ❸ listed above are **conductive** and **must never** be used near electrical conductors.

To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley Hydraulic Tools. DO NOT REMOVE THESE TAGS.

If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained at no charge from your Stanley Distributor.

❶ CERTIFIED NON-CONDUCTIVE HOSE

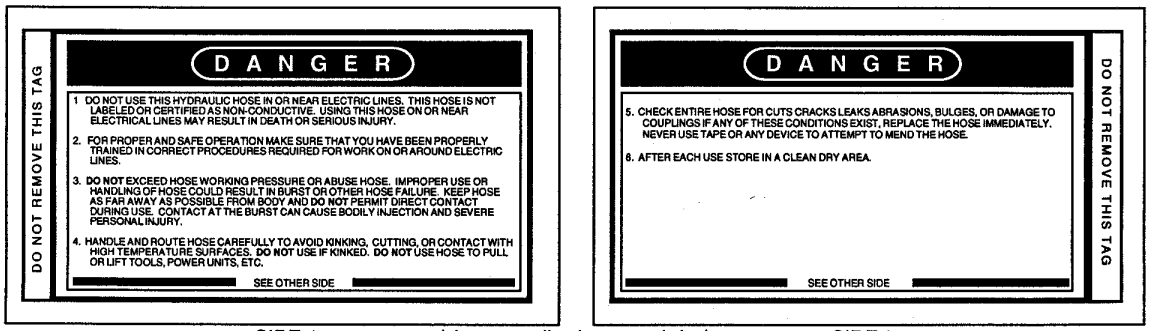
This tag is attached to all certified **non-conductive** hose.



SIDE 1 (shown smaller then actual size) SIDE 2

❷ AND ❸ WIRE-BRAIDED AND FABRIC-BRAIDED (NOT CERTIFIED OR LABELED NON-CONDUCTIVE) HOSE

This tag is attached to all **conductive** hose.



SIDE 1 (shown smaller then actual size) SIDE 2

HOSE PRESSURE RATING

The rated working pressure of the hydraulic hose **must be equal or higher than** the relief valve setting on the hydraulic system.

HYDRAULIC REQUIREMENTS

IMPORTANT

In addition to the Safety Precautions on pages 3 thru 6 of this manual, observe the following for equipment protection and care.

- Always store an idle tool in a clean dry space, safe from damage or pilferage.

- Do not exceed the rated limits or use the tool for applications beyond its design capacity.

- Always keep critical tool markings, such as lables and warning stickers legible.

- Always replace hoses, couplings and other parts with replacement parts recommended by Stanley Hydraulic Tools. Supply hoses must have a minimum working pressure rating of 2500 psi/175 bar.

- Permit only experienced personnel to perform tool repair.

- Be sure to wipe all couplers clean before connecting. Use only lint-free cloths.

- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling the grinder. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.

- Check fastener tightness often and before each use daily.

HYDRAULIC SYSTEM REQUIREMENTS

- The hydraulic system should provide a flow of 7-10 gpm/26-38 lpm at an operating pressure of 2000 psi/140 bar. Recommended relief valve setting is 2100-2250 psi/145-155 bar.

- The system should have no more than 250 psi/17 bar backpressure measured at the tool end of the operating hoses. The system conditions for measurement are at maximum fluid viscosity of 400 ssu/82 centistokes (minimum operating temperatures).

- The hydraulic system should have enough heat rejection capacity to limit the maximum oil temperature to 140°F/60°C at the maximum expected ambient temperature. The recommended minimum cooling capacity is 5 hp/3.73 kW at a 40° F/22°C difference between ambient temperature and oil temperature.

- The hydraulic system should have a minimum of 25 micron filtration. Recommend using filter elements sized for a flow of at least 30 gpm/114 lpm for cold temperature startup and maximum dirt holding capacity.

- The hydraulic fluid used should have a viscosity between 100 and 400 ssu/20 and 82 centistokes at the maximum and minimum expected operating temperatures. Petroleum base hydraulic luids with antiwear properties and a viscosity index over 140 ssu/28 centistokes will meet the recommended requirements over a wide range of operating temperatures.

- The recommended hose size is .500 inch/12 mm I.D. up to 50 ft/15 m long and .625 inch/16 mm I.D. minimum up to 100 ft/30 m long.

- Quick disconnect couplings must conform to NFPA T3.20,15/EHTMA specifications.

PREOPERATION PROCEDURES

• PREPARATION FOR INITIAL USE

Each unit as shipped has no special unpacking or assembly requirements prior to usage. Inspection to assure the unit was not damaged in shipping and does not contain packing debris is all that is required.

• CHECK HYDRAULIC POWER SOURCE

1. Using a calibrated flowmeter and pressure gauge, check that the hydraulic power source develops a flow of 7-10 gpm/26-38 lpm at 1500-2000 psi/105-140 bar.

2. Make certain the hydraulic power source is equipped with a relief valve set to open at 2100-2250 psi/145-155 bar minimum.

3. Check that the hydraulic circuit matches the tool for open-center (OC) operation.

• CHECK TOOL

1. Make sure all tool accessories are correctly installed. Failure to install tool accessories properly can result in damage to the tool or personal injury.

2. There should be no signs of leaks.

3. The tool should be clean, with all fittings and fasteners tight.

• CHECK TRIGGER MECHANISM

1. Check that the trigger operates smoothly and is free to travel between the "ON" and "OFF" positions.

• CONNECT HOSES

1. Wipe all hose couplers with a clean lint-free cloth before making connections.

2. Connect the hoses from the hydraulic power source to the hose couplers on the spike driver. It is a good practice to connect the return hose first and disconnect it last to minimize or avoid trapped pressure within the spike driver.

3. Observe flow indicators stamped on hose couplers to be sure that oil will flow in the proper direction. The female coupler is the inlet coupler. **NOTE: The pressure increase in uncoupled hoses left in the sun may result in making them difficult to connect. When possible, connect the free ends of operating hoses together.**

OPERATING PROCEDURES

1. Observe all safety precautions.

2. Place the spike driver foot firmly on the spike to be driven.

3. Move the hydraulic circuit control valve to the "ON" position.

4. Squeeze the trigger to start the spike driver. Adequate down pressure is very important. When the spike fully sets in the tie, release the trigger.

NOTE: Partially depressing the trigger allows the tool to operate at a slow speed, making it easy to start the spike in the tie.

COLD WEATHER OPERATION

If the spike driver is to be used during cold weather, preheat the hydraulic fluid at low engine speed. When using the normally recommended fluids, fluid temperature should be at or above 50° F/10° C (400 ssu/82 centistokes) before use.

SERVICE INSTRUCTIONS

Good maintenance practices will keep the spike driver on the job and increase its service life.

A very important maintenance practice is to keep the hydraulic fluid clean at all times. Contaminated hydraulic fluid causes rapid wear and/or failure of internal parts.

Follow the procedures contained in the HYDRAULIC SYSTEM REQUIREMENTS section of this manual to ensure peak performance from the tool. Never disassemble the spike driver unless proper trouble-shooting procedures have isolated the problem to an internal part. Then, only disassemble it to the extent necessary to replace the defective part. KEEP CONTAMINANTS SUCH AS DIRT AND GRIT AWAY FROM INTERNAL PARTS AT ALL TIMES.

Always determine and correct the cause of the problem prior to reassembly. Further wear and tool failure can result if the original cause is not corrected.

DISASSEMBLY

PRIOR TO DISASSEMBLY

• Clean the exterior of the tool.

• Obtain a seal kit to replace all seals exposed during disassembly. Note the orientation of seals before removing them. Install new seals in the same position as original seals.

HANDLE & ACCUMULATOR DISASSEMBLY
Standard Handle Models
Refer To Illustration 1.

1. Secure the spike driver in a bench vise, with the "IN" and "OUT" ports up, clamping on the flow sleeve tube between the side rods. Soft vise jaws are recommended.

2. Remove the pigtail hose assemblies.

Note: The spike driver is full of fluid and will drip from the ports when the hoses are removed.

1. Remove the valve cap assembly (75) from the top of the handle. Loosen the 5/8- inch hex charging valve lock nut 1-1/2 turns. Discharge the accumulator down to approximately 20 psi/1.4 bar.

IMPORTANT

Do not completely discharge the accumulator at this time.

2. Remove the four side rod nuts (65). Remove the spike driver foot assembly (57 or 67) by tapping the top of the flange with a plastic or rubber hammer to drive it from the seal carrier (52). Remove the cup seal, seal washer and rod wiper (48, 49 & 50) from the seal carrier using the proper o-ring tools to avoid damage to grooved surfaces.

3. Remove the compression coil spring and the ram from the spike driver foot (54 & 55).

4. Remove the handle assembly (44) from the flow sleeve assembly (39) by tapping on alternate ends of the side rods (40) with a plastic or rubber hammer while pulling on the handle.

AUTOMATIC VALVE BODY & ACCUMULATOR ASSEMBLY

5. If the automatic valve body (53) remains in the handle assembly, the accumulator assembly and automatic valve body can be removed by placing a 3/4-inch hex deep socket with a 6-inch/15 cm extension over the charging valve (16) and tapping the extension with a plastic or rubber hammer.

Note: Make sure the thin washer (35) between the automatic valve body and the accumulator chamber (68) is properly located in its counterbore before driving the automatic valve body and accumulator out of the handle.

6. If the accumulator cylinder (70) remains inside the handle, it can be removed using the accumulator cylinder puller (Part Number 05640) which seats on the inside lower contour of the accumulator cylinder. Use a rod that extends through the charge valve hole in the handle and drive out the cylinder by tapping on the rod or use a slide hammer through the 1/2-inch/12.5 mm hole provided in the puller.

7. If the entire accumulator assembly was removed in step 5, discharge the accumulator assembly completely and proceed to step 8.

8. To remove the accumulator chamber and diaphragm (70) from the accumulator cylinder, Place the assembly on disassembly tools (Part Numbers 05508 and 04910). Use a rag in the bottom of the flow sleeve removal tube (Part Number 04910) to protect the accumulator chamber. Drive the chamber and diaphragm out by tapping or pushing with an arbor press on the charge valve end while protecting the valve with a 3/4-inch hex deep socket.

9. Squeeze the accumulator diaphragm and slide it off the charge valve end of the accumulator chamber.

10. Remove the cup seal (36) and back-up washer (31) from the accumulator chamber.

11. Secure the accumulator chamber in a vise with soft jaws to remove the charging valve.

IMPORTANT

Avoid damage to the counterbore of the chamber.

TRIGGER

12. Remove the trigger (12) from the handle by driving out the 1/4-inch/6.4 mm diameter Spirol Pin.

VALVE SPOOL

13. Remove the valve spool (7) by driving out two 3/16 x 1-3/8 inch/5 mm x 35 mm roll pins (71) and tap the end of the spool. The valve spring (8) will eject the spool from the bore bringing the washer and bushing with it.

14. Remove the valve spool spring by turning the handle on end.

15. Remove the orifice plug (23) from the bottom of the valve spool bore with a long 1 1/4-inch hex wrench.

HANDLE & ACCUMULATOR DISASSEMBLY
Anti-Vibration Handle Models
Refer to Illustration 2.

1. Remove the modified plug (15) and discharge the accumulator completely.

2. Remove the four side rod nuts (65). Remove the spike driver foot assembly (57) by tapping the top of the flange with a plastic or rubber hammer to drive it from the seal carrier (52). Remove the cup seal, seal washer and rod wiper (48, 49 & 50) from the seal carrier using the proper o-ring tools to avoid damage to grooved surfaces.

3. Remove the compression coil spring (54) and the ram (55) from the spike driver foot.

4. Remove the handle assembly from the flow sleeve assembly by tapping on alternate ends of the side rods with a plastic or rubber hammer while pulling on the handle.

5. If the automatic valve body (53) remains in the handle assembly, it can be removed by using a special tool (30939 sleeve & 05046 bearing puller).

6. The spacer is removed by using a 7/8 inch collet (30956 collet) and a bearing puller from the 05064 bearing puller kit.

7. The sintered filter (27) and o-rings (28) are removed by simply picking them out.

ACCUMULATOR

8. Clamp the handle assembly in a vice with soft jaws and unscrew the charge valve (16). Make sure the accumulator has been discharged before removing the charge valve.

9. Unscrew the accumulator plug (46) using special tool 29135 accumulator plug wrench.

10. Lift out the accumulator diaphragm (45).

TRIGGER

11. Remove 4 capscrews (9) and lift off the top plate (66).

12. Unscrew the two pivot screws (21) and lift out the two handles (11 & 13) and four springs 18 & 19). Remove the lever (10) and trigger (12) from the handle by driving out the roll pins (17).

VALVE SPOOL

13. Remove the spirolox retaining ring, then remove the SAE plug (26) located at the bottom of the spool bore. Pick out the spring (8) and then push the valve spool (7) out.

FLOW SLEEVE TUBE DISASSEMBLY

1. Follow steps 1 through 4 of the HANDLE AND

ACCUMULATOR DISASSEMBLY for STANDARD HANDLES or steps 1 through 4 for ANTI-VIBRATION HANDLES.

2. If the automatic valve body remains in the flow sleeve tube, complete the following steps.

a. Remove the washer (35) and piston (47).

b. Place the split rings (p/n 04908) between the automatic valve body and flow sleeve tube.

c. Place the flow sleeve assembly (with split rings in place) on the flow sleeve removal tube (p/n 04910) with the automatic valve body down.

d. Using an arbor press and an aluminum disc or accumulator cylinder puller (p/n 05640) to protect the flow sleeve, push on the flow sleeve (39) to remove the automatic valve body.

IMPORTANT

Use a rag in the bottom of the removal tube to protect the automatic valve body when it drops out.

e. The automatic valve body, automatic valve (42), four 5/16 x 2-inch/8 mm x 51 mm push pins (56) from the flow sleeve and two 3/16 x 1-1/4 inch/5 mm x 32 mm push pins (43) from the automatic valve body will come out.

3. Remove the flow sleeve from the flow sleeve tube (63) as follows:

a. Place the split ring (p/n 04908) on top of the flow sleeve removal tube (p/n 04910).

b. Place the flow sleeve tube assembly on top of split rings.

c. With an arbor press, and an aluminum disc or accumulator cylinder puller (p/n 05640) to protect the flow sleeve, push the flow sleeve out of the tube.

IMPORTANT

Use a rag in the bottom of the removal tube to protect the flow sleeve when it drops out.

FOOT DISASSEMBLY

1. Follow steps 2 and 3 of the HANDLE AND ACCUMULATOR DISASSEMBLY for STANDARD HANDLES or steps 2 and 3 for ANTI-VIBRATION HANDLES.

ASSEMBLY

PRIOR TO ASSEMBLY

- Clean all parts with a degreasing solvent.
- Ensure that all seals exposed during disassembly are replaced with new parts.
- Apply clean grease or o-ring lubricant to all parts during assembly.
- Obtain a seal kit so that all seals exposed during disassembly can be replaced. **Note:** For orientation of parts identified in the following procedures, see the parts illustration.

HANDLE ASSEMBLY
Standard Handle Models
Refer to Illustration 1.

1. Install the orifice plug (23) in the bottom of the valve spool bore with a long 1/4-inch hex wrench.

2. Replace (in this order) the spring (8), valve spool (7), bushing (4) (with wiper ring (3) toward stem end of valve spool) and washer (2) in the valve spool bore. Secure by driving the two 3/16 x 1-5/8 inch/5 x 41 mm spirol pins (71) through the handle on top of the washer.

3. Replace the trigger (12). Install a 1/4-inch/6.4 mm diameter spirol pin (72). To ease installation of the pin, align the trigger with a 1/4-inch/6 mm diameter rod or punch from the opposite side of the handle.

HANDLE ASSEMBLY
Anti-Vibration Handle Models
Refer to Illustration 2.

1. Install the orifice plug (23) through the bottom port (OUT PORT) into the threaded hole near the bottom of the spool bore.

2. Place the accumulator valve block (44) on a

bench top with (trigger handle side down). Lubricate an o-ring (28) and place it into the bottom of the bore in the valve block. Place the sintered filter on top of this o-ring. Lubricate another o-ring (28) and place it on top of the sintered filter.

3. Lubricate o-ring (29) and install it onto the spacer (30). Install the backup washer (31) and cup seal (36) (with lips facing out) into the bore in the spacer. Install the completed assembly into the accumulator valve block.

4. Install the SAE plug (26).

5. Turn the valve block over (trigger handle side up). Install (in this order) the spring (8), valve spool (7), bushing (with rod wiper (3), o-ring (6) and o-ring (5) installed) and washer into the valve spool bore. Secure by installing the spirolox retaining ring (1).

6. Install the springs (19) and (18).

7. Install the trigger (12) into the trigger handle (13) and secure with a spirol pin (17). Install the lever (10) into the trigger handle and secure with a spirol pin. Install the completed assembly onto the accumulator valve block and secure with a pivot screw (21) applied with Kopr-Kote antiseize compound.

8. Install the handle (11) onto the accumulator valve block and secure with a pivot screw applied with Kopr-Kote antiseize compound.

9. Place the top plate (66) over the top of the accumulator valve block and secure with 4 cap-screws (9).

10. Set the completed assembly aside.

FLOW SLEEVE TUBE ASSEMBLY

The best way to assemble the flow sleeve (39), automatic valve body (53) and piston (47) is by using an assembly fixture such as that shown in figure 2. The fixture permits the parts to be stacked vertically during the assembly process. After the parts are stacked, the handle assembly can then be placed on top of the stacked parts and tapped into place.

The assembly fixture shown in figure 2 should be constructed of aluminum or brass and should be at least 3-1/2 in/88 mm high but no more than 8 in/203 mm high.

The instructions in this section require the use of the assembly fixture shown in figure 2. If a fixture cannot be acquired, use an assembled foot assembly and clamp it into a vice.

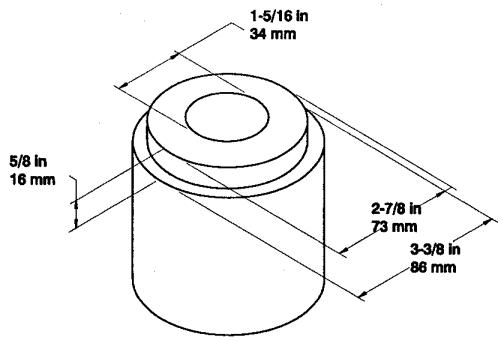


Figure 2.

1. Lubricate the flow sleeve (39) and install it into the flow sleeve tube (63). Orientation is as shown in the parts illustration. The flow sleeve has a wide grooove around the outside of one end. Install this end first. Then place the flow sleeve tube and flow sleeve on top of the assembly fixture shown in figure 2.

2. Apply grease and install an o-ring (38) onto the flow sleeve tube.

3. Apply lubricant and install 4 push pins (56) into the holes in the top of the flow sleeve tube. One end of each push pin contains a machined surface. This surface must be facing up as each push pin is installed. Each push pin must slide freely in or out of the hole in the flow sleeve. If a push pin does not slide freely or seems to stick, the hole may contain contamination or the top edge of the hole contains a burr. Remove burrs with a deburring tool, clean the hole thoroughly and try the push pin again.

4. Tap the roll pin (43) into the hole on the automatic valve body (53).

5. Apply grease and install an o-ring (38) onto the valve body (53).

6. Lubricate and install 2 push pins (43) into the holes in the valve body. One end of each push pin contains a machined surface. This surface must be facing up as each push pin is installed. Each push pin must slide freely in or out of the hole in the valve body. If a push pin does not slide freely or seems to stick, the hole may contain contamination or the top edge of the hole contains a burr. Remove burrs with

a deburring tool, clean the hole thoroughly and try the push pin again.

7. Lubricate the automatic valve (42) and install it into the valve body. The automatic valve must freely slide back and forth. If it does not, the valve body or valve may contain contaminants or the bore of the valve body contains burrs. Remove the push pins and scrub the bore of the valve body with emery cloth and then thoroughly clean the bore, push pin holes and valve. Reinstall the push pins and valve.

8. Grasp the automatic valve body and valve so that one or more fingers are gripping the valve to prevent it and the push pins from falling out when the valve body and valve are turned upside down (roll pin facing down). Place the assembly on top of the flow sleeve making sure the roll pin aligns with the appropriate hole in the flow sleeve.

9. Lubricate and install the piston (47) into the top of the automatic valve body.

10. Install the washer (35), small end first, over the stem of the piston and onto the automatic valve body.

11. If you are working with a standard handle model, proceed to the steps below. If you are working with an anti-vibration handle model, proceed to step 1. under "INSTALLING THE HANDLE ASSEMBLY, for Anti-Vibration Handle Models".

ACCUMULATOR - Standard Handle Models Only

12. Screw the charging valve into the accumulator chamber.

13. Apply a light coating of WD-40 to the accumulator diaphragm and accumulator chamber and slide the accumulator diaphragm onto the accumulator chamber from the charging valve end.

14. Use grease or rubber lubricant on the inside of the accumulator cylinder and the outside diameter of the diaphragm. Push the accumulator chamber and diaphragm, charging valve end first, halfway into the accumulator cylinder. The parts are assembled from the end of the cylinder with the chamfer on the outside diameter. Be sure the accumulator diaphragm is free of wrinkles and the seal bead is in its groove before completing the assembly. An arbor press is required to completely seat the assembly using short movements during the last 1/2-inch/12 mm of travel to gently seat the diaphragm.

IMPORTANT

Do not use a hammer or powered arbor press.

15. Test charge the accumulator assembly as follows:

a. Place the accumulator assembly in a vise with soft jaws clamping on ends of the accumulator chamber. Do not overtighten the vise and distort the accumulator cylinder.

b. Loosen the charging valve lock nut 1-1/2 turns.

c. Charge the accumulator with nitrogen to 600 psi/41 bar. (It may be necessary to charge it 50-75 psi/3.4-5 bar high to overcome the pressure drop through the charging system.)

d. Check for leaks.

16. Apply grease and install a new o-ring around the accumulator cylinder. Apply grease and install a new back-up washer and cup seal (lips facing out) in the accumulator chamber counterbore.

17. Install the accumulator assembly over the stem of the piston and down to the top of the automatic valve body.

INSTALLING THE HANDLE ASSEMBLY
Standard Handle Models
Refer to Illustration 1.

1. Apply grease liberally to the o-ring surfaces on the accumulator, automatic valve body, flow sleeve tube and to the bore of the handle assembly.

2. Place the handle assembly over the top of the accumulator and then tap it down until the lower part of the handle block covers the o-ring on the flow sleeve tube.

3. Lay the completed handle and flow sleeve assembly over being careful to prevent movement of the flow sleeve when the assembly fixture is removed.

4. Place the completed assembly horizontally (oil ports up) in a vice with soft jaws and clamp on the flow sleeve tube.

5. Follow steps 1 through 6 of the "FOOT ASSEM-

BLY" for installation of the foot assembly.

6. Charge the accumulator with 600 psi/42 bar nitrogen as described in the "CHARGING THE ACCUMULATOR" section.

7. Install the valve cap.

INSTALLING THE HANDLE ASSEMBLY
Anti-Vibration Handle Models
Refer to Illustration 2.

1. Apply grease liberally to the o-ring surfaces on the automatic valve body, flow sleeve, the cup seal in the spacer and the bore of the handle assembly.

2. Place the handle assembly over the piston and automatic valve being careful to align the spacer with the stem of the piston. Tap the handle down until the lower part of the handle block covers the o-ring on the flow sleeve tube.

3. Lay the completed handle and flow sleeve assembly over being careful to prevent movement of the flow sleeve when the assembly fixture is removed.

4. Place the completed assembly horizontally (accumulator up) in a vice with soft jaws and clamp on the flow sleeve tube.

5. Follow steps 1 through 6 of the "FOOT ASSEMBLY" for installation of the foot assembly.

ACCUMULATOR

6. Lubricate the diaphragm inside and out with WD40 and install it into the handle.

7. Apply Kopr-Kote antiseize to the thread surfaces of the accumulator plug and handle assembly and install the accumulator plug. Tighten to 200 lb. ft./ 270 Nm using special tool 29135 Accumulator Plug Wrench.

8. Install the charge valve.

9. Charge the accumulator with 600 psi/42 bar nitrogen as described in the "CHARGING THE ACCUMULATOR" section.

10. Install the plug.

FOOT ASSEMBLY

1. Apply grease and install the o-ring (51) onto the seal carrier.

2. Apply grease and install the rod wiper, seal washer and cup seal into the seal carrier. Install the seal carrier into the bottom of the flow sleeve tube.

3. Install the ram and compression coil spring into the spike driver foot.

4. Install the foot over the side rods and into the flow sleeve tube.

5. Install the four side rod nuts. Tighten in 20 ft lb/25 Nm increments to 75 ft lb/100 Nm in a cross pattern.

6. On Spike Drivers with interchangeable spike cups, install the appropriate spike cup with 242 loctite.

CHARGING THE ACCUMULATOR

CHARGING THE ACCUMULATOR

To check or charge the accumulator the following equipment is required:

- Accumulator tester (Part Number 02835).
- Charging assembly (Part Number 06545) (includes a regulator, hose and fitting).
- NITROGEN bottle with a 800 psi/56 bar minimum charge.

1. On charge valves containing 5/8 inch hex locking nuts, first loosen the locking nut 1-1/2 turns.

2. Holding the chuck end of the Stanley tester (p/n 02835), turn the gauge fully counterclockwise to ensure the stem inside the chuck is completely retracted.

3. Thread the tester onto the charging valve of the tool accumulator (do not advance the gauge-end into the chuck end. Turn as a unit). Seat the chuck on the accumulator charging valve and hand tighten only.

4. Advance the valve stem by turning the gauge-end clockwise.

5. Connect the charging assembly to the valve on the tester.

6. Adjust the regulator on the nitrogen bottle to 600 psi/42 bar.

NOTE: It may be necessary to set the regulator at 650-700 psi/45-48 bar to overcome any pressure drop through the charging system.

7. Open the valve on the charging assembly hose. When the tester gauge reads 600 to 700 psi/42 to 48 bar, close the valve on the charging assembly hose and remove the charging assembly.

8. Turn the gauge end of the tester fully counterclockwise to retract the plunger in the chuck. Remove the tester from the charge valve.

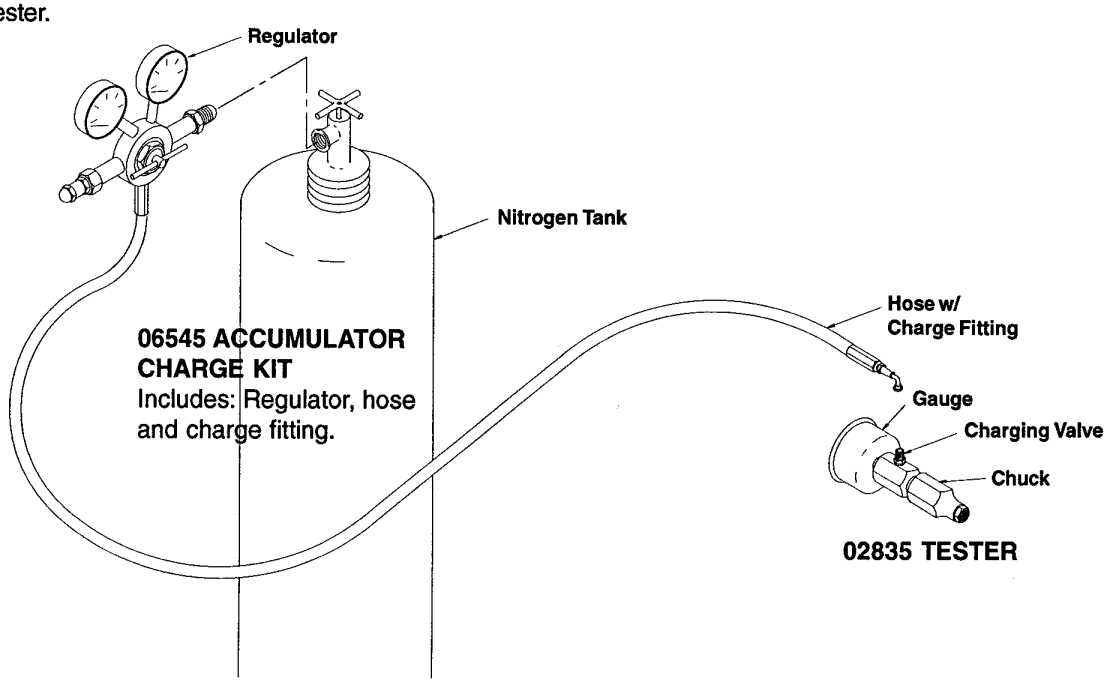
9.On charge valves containing 5/8 inch hex locking nuts, tighten the locking nut.

TESTING THE ACCUMULATOR PRESSURE

1. Follow instructions 1 through 4 under "CHARGING THE ACCUMULATOR".

2. Read the pressure on the gauge (pressure should be between 500 & 600 psi/35 & 42 bar.

3. If the pressure is low, recharge the tool.



TROUBLESHOOTING

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem.

When diagnosing faults in operation of the spike driver, always check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the spike driver as listed in the table. Use a flowmeter known to be accurate. Check the flow with the hydraulic oil temperature at least 80°F/27°C.

Spike driver does not run.	Power unit not functioning.	Check power unit for proper flow and pressure (7-10 gpm / 26-38 lpm, 2000 psi / 140 bar).
	Couplers or hoses blocked.	Remove restriction.
	Presssure and return line hoses reversed at ports.	Be sure hoses are connected to their proper ports.
	Mechanical failure of piston or automatic valve.	Have inspected and repaired by authorized dealer.
Spike driver does not hit effectively.	Power unit not functioning.	Check power unit for proper flow and pressure (7-10 gpm / 26-38 lpm, 2000 psi / 140 bar).
	Couplers or hose blocked.	Remove restriction,
	Low accumulator charge (pressure hose will pulse more than normal).	Have recharged by authorized dealer.
	Fluid too hot (above 140° F / 60° C).	Provide cooler to maintain proper fluid temperature.
	Ram is not sliding freely in the spike driver foot.	Remove, clean and replace as required.
Spike driver operates slow.	Low oil flow from power unit.	Check power source for proper flow.
	High backpressure.	Check hydraulic system for excessive backpressure and correct as required.

SPECIFICATIONS

Capacity (Spike Head)	1.9 in. ida / 4.8 cm dia
Pressure Range	2000 psi/140 bar
Blows Per Minute	1300 to 1800
Maximum Back Pressure	250 psi/17 bar
Flow Range	5-10 gpm/20-38 lpm
Porting	-8 SAE O-ring
Couplers	HTMA/EHTMA Flush Face Type Male & Female
Connect Size and Type	3/8 in. Male Pipe Adapter
Hose Whips	Yes

Weight

Standard Handle Model	65 lbs / 30 kg
Standard Handle w/Extended Foot Model	68 lbs / 31 kg
Anti-Vibration Handle Model	71 lbs / 32 kg
Anti-Vibration Handle w/Extended Foot Model	74 lbs / 33.6 kg
Overall Length - Standard Foot	25.25 in. / 64 cm
Overall Length - Extended Foot	28.75 in. / 73 cm
Overall Width - Standard Handle	18 in. / 45.75 cm
Overall Width - Anti-Vibration Handle	16 in. / 40.6 cm
Maximum Fluid Temperature	140° F/60° C

EHTMA Category ..... "C" (20 lpm @ 138 bar) or "D" (30 lpm @ 138 bar)

Noise Level ..... Lwa 106

Vibration Level ..... 20.0 m/s^2

ACCESSORIES

DESCRIPTION	PART NUMBER
Dome Head Spike Cup	25525
Hairpin Cup	23345
Cutspike Cup	23344

SPECIAL TOOLS

DESCRIPTION	PART NUMBER	USAGE
O-ring Tool Kit	04337	General Service of Seals
Spil Ring (Auto Valve Removal	04908	Auto Valve Removal - Requires 04910
Spacer	04909	Flow Sleeve Installation
Flow Sleeve Removal Tube	04910	Used with 04908 & 05508
Bearing Puller Kit	05064	General Bearing Pulling
Accumulator Disassembly Tool	05508	For Standard Handle Models Only
Accumulator Cylinder Puller	05640	For Standard Handle Models Only
Accumulator Plug Wrench	29135	For Anti-Vibration Models Only
Sleeve	30939	Removal of Auto Valve Body from Handle - Anti-Vibration Models Only
Collet, 7/8 inch	30956	Removal of Spacer from Handle - Anti-Vibration Models Only (Part of 05064 Bearing Puller Kit)

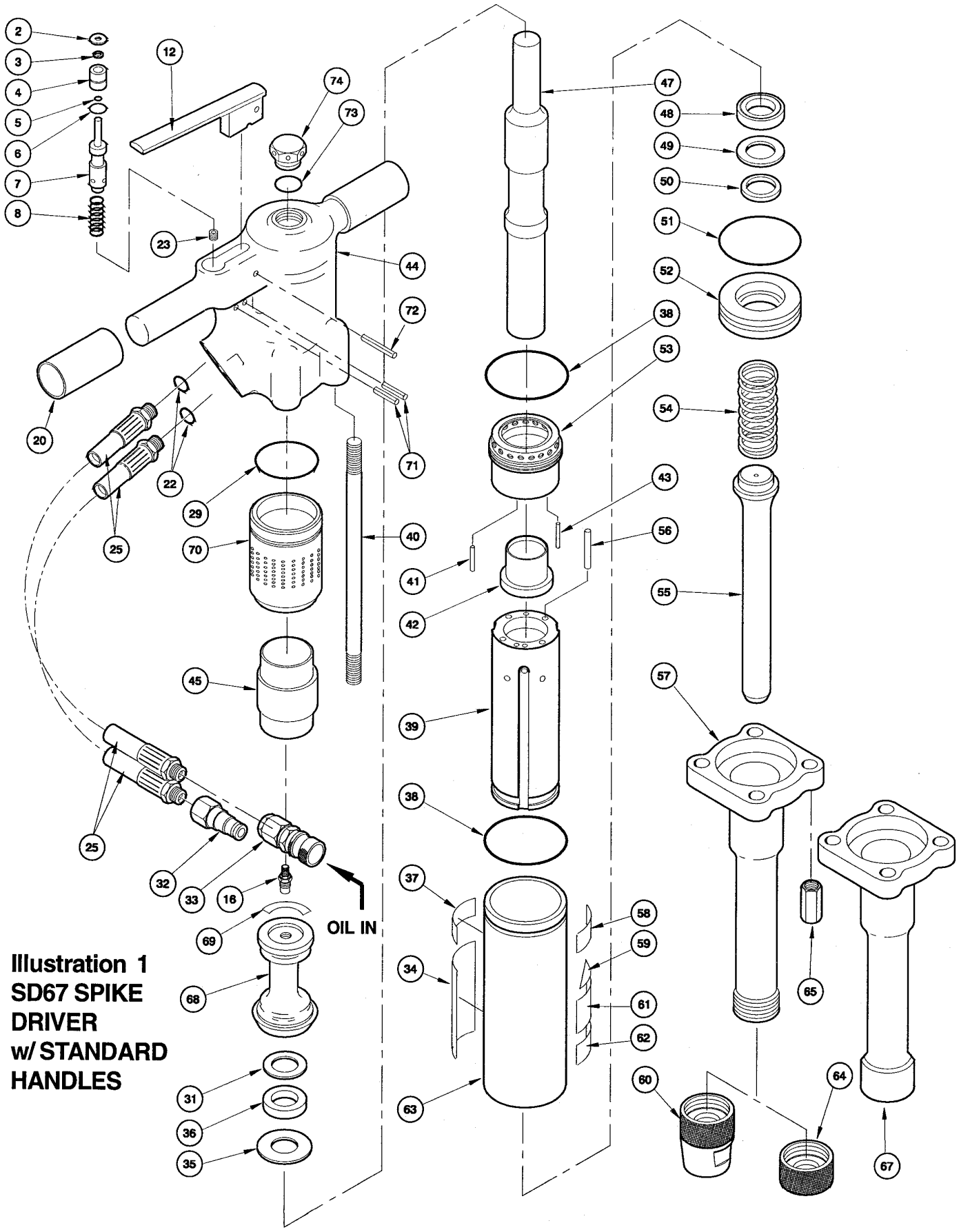
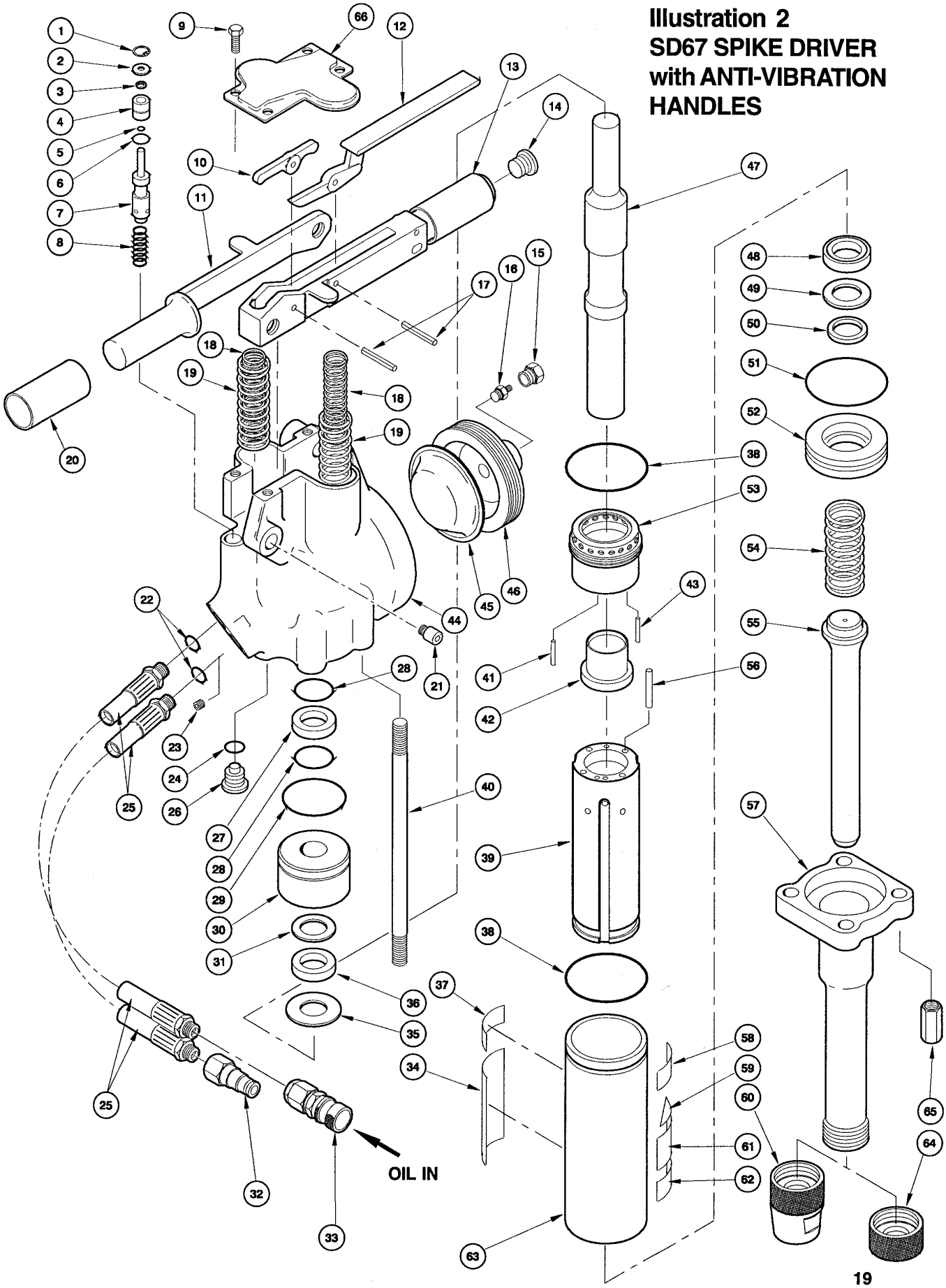


Illustration 1
SD67 SPIKE DRIVER w/ STANDARD HANDLES

Illustration 2
SD67 SPIKE DRIVER with ANTI-VIBRATION HANDLES



SD67 PARTS LIST

Item No	Standard Handle Part No	Anti-Vibration Handles Part No	Qty	Description
1	N/A	24067	1	Retaining Ring
2	04055	04055	1	Washer
3	04056	04056	1	Rod Wiper •
4	26451	26451	1	Bushing
5	01362	01362	1	O-ring, 5/16 x 7/16 x 1/16 •
6	00293	00293	1	O-ring, 11/16 x 7/8 x 3/32 •
7	20515	20515	1	Valve Spool
8	04058	04058	1	Spring
9	N/A	07628	4	Capscrew
10	N/A	20511	1	Lever
11	N/A	28369	1	Handle
12	04053	20502	1	Trigger
13	N/A	29045	1	Trigger Handle
14	N/A	16607	1	SAE Plug
15	N/A	20510	1	Plug
16	04051	20499	1	Charge Valve
17	N/A	20500	2	Spirol Pin
18	N/A	20541	2	Spring
19	N/A	20498	2	Spring
20	02494	02494	2	Handle Grip
21	N/A	20508	2	Pivot Screw
22	01605	01605	2	O-ring, 3-908-R17 •
23	04350	12832	1	Orifice Plug
24	N/A	06891	1	O-ring •
25	09546	09546	2	Hose Assy
26	N/A	31067	1	Plug
27	N/A	26452	1	Sintered Filter
28	N/A	04795	2	O-ring, 2-218-70D •
29	04054	16732	1	O-ring, 2-230-90D •
30	N/A	26448	1	Spacer
31	04062	04062	1	Backup Washer
32	03973	03973	1	Male Coupler Nose
33	03972	03972	1	Female Coupler Body
34	15431	15431	1	Name Tag Sticker
35	04064	04064	1	Washer
36	04063	04063	1	Cup Seal •
37	25610	25610	1	Railroad Help Desk Sticker (USA Models Only)
38	04054	04054	2	O-ring, 2-7/8 x 3-1/8 x 1/8 90D •
39	04069	04069	1	Flow Sleeve
40	04071	04071	4	Side Rod
41	07890	07890	1	Roll Pin
42	04065	04065	1	Automatic Valve
43	04571	04571	2	Push Pin
44	N/A	26596	1	Accumulator Valve Block
	04049	N/A	1	Handle
45	04059	26574	1	Accumulator Diaphragm
46	N/A	26449	1	Accumulator Plug
47	04070	04070	1	Piston
48	04072	04072	1	Cup Seal •
49	13837	13837	1	Seal Washer
50	04074	04074	1	Rod Wiper •
51	04073	04073	1	O-ring, 2-5/8 x 2-7/8 x 1/8 90D •
52	15419	15419	1	Seal Carrier
53	04066	04066	1	Automatic Valve Body
54	15418	15418	1	Spring
55	15420	15420	1	Ram (Standard)
	28207	28207	1	Ram (Extended Foot)
56	04067	04067	4	Push Pin
57	23342	23342	1	Foot (Standard - Changeable Cups)
	28206	28206	1	Foot (Extended - Changeable Cups)
58	28322	28322	1	CE Label
59	11209	11209	1	Circuit "D" Sticker
60	23345	23345	1	Hair Pin Spike Cup
61	28409	28409	1	Composite Sticker
62	11211	11211	1	Sound Level Sticker
63	04068	04068	1	Flow Sleeve Tube
64	23344	23344	1	Headed Spike Cup
65	04075	04075	4	Side Rod Nut
66	N/A	26450	1	Top Plate
67	15421	N/A	1	Foot (Standard - No Cups)
68	04061	N/A	1	Accumulator Chamber
69	10180	N/A	1	Caution Sticker
70	04060	N/A	1	Accumulator Cylinder
71	22891	N/A	2	Spirol Pin
72	00844	N/A	1	Spirol Pin
73	04052	N/A	1	O-ring, 1.047 x 1.279 x .116 •
74	04050	N/A	1	Valve Cap

• Parts in 04596 Seal Kit

NOTE: Use Part Number and Part Name when ordering.

MODEL DESCRIPTIONS

SD67100 - Standard Handle and Standard Foot without Changeable Cups

SD67120 - Standard Handle and Standard Foot with Changeable Cups

SD67130 - Standard Handle and Extended Foot with Changeable Cups

SD67121 - Anti-Vibration Handles and Standard Foot with Changeable Cups

SD67131 - Anti-Vibration Handles and Extended Foot with Changeable Cups

WARRANTY

Stanley Hydraulic Tools (hereinafter called "Stanley"), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley's factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

EXCEPTIONS FROM WARRANTY

FREIGHT COSTS: Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

SEALS & DIAPHRAGMS: Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

CUTTING ACCESSORIES: Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

ITEMS PRODUCED BY OTHER MANUFACTURERS: Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers.

ALTERATIONS & MODIFICATIONS: Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

NORMAL WEAR: any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

INCIDENTAL/CONSEQUENTIAL DAMAGES: To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

FREIGHT DAMAGE: Damage caused by improper storage or freight handling.

LOSS TIME: Loss of operating time to the user while the tool(s) is out of service.

IMPROPER OPERATION: Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool's operation and maintenance manual.

MAINTENANCE: Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

HYDRAULIC PRESSURE & FLOW: Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, or excess hydraulic flow.

REPAIRS OR ALTERATIONS: Any failure or performance deficiency attributable to repairs by anyone which in Stanley's sole judgement caused or contributed to the failure or deficiency.

MIS-APPLICATION: Any failure or performance deficiency attributable to mis-application. "Mis-application" is defined as usage of products for which they were not originally intended or usage of products in such a matter which exposes them to abuse or accident, without first obtaining the written consent of Stanley.

WARRANTY REGISTRATION: STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools' first date of usage. The term "DOCUMENTATION" as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS "DOCUMENTATION".

NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.

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