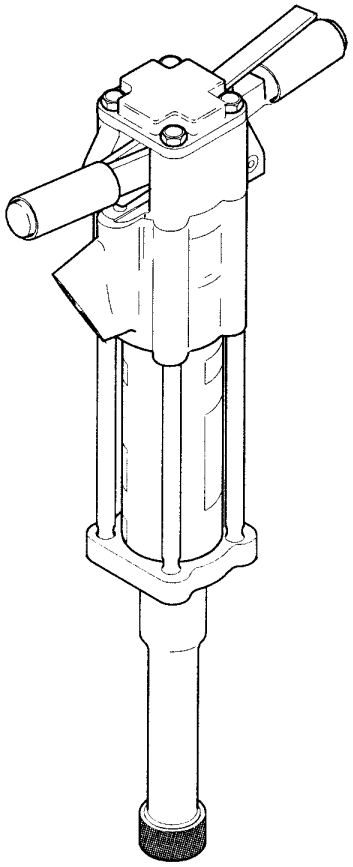
STANLEY®

SD45

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.

Stanley Hydraulic Tools • 3810 SE Naef Road • Milwaukie, Oregon 97267-5698
Ph 1-800-549-0517 • Fax 503-652-1780

OPS/MAINT USA & CE VERSION
Printed in U.S.A.
31205 Ver 1, 06/96

CE

INDEX

SERVICING SD45 SPIKE DRIVERS: This manual contains safety, operation, and service 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.

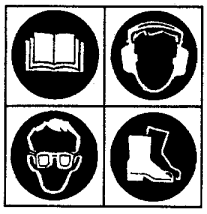
⚠ DANGER

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.

A list of Stanley Hydraulic Tools Distribution Centers can be found on the last page of this manual.

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 in this manual.

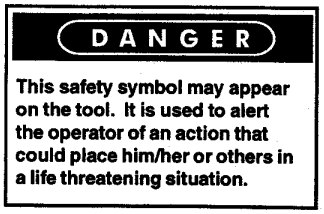
GENERAL SAFETY PRECAUTIONS

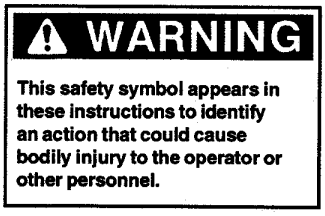
The SD45 Hydraulic Spike Driver will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the tool and hoses before operation. Failure to do so could result in personal injury or equipment damage.

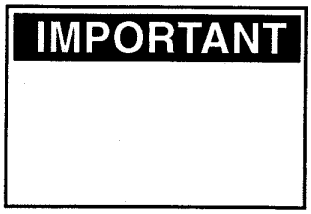
- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained 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 ram or foot.
- 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.





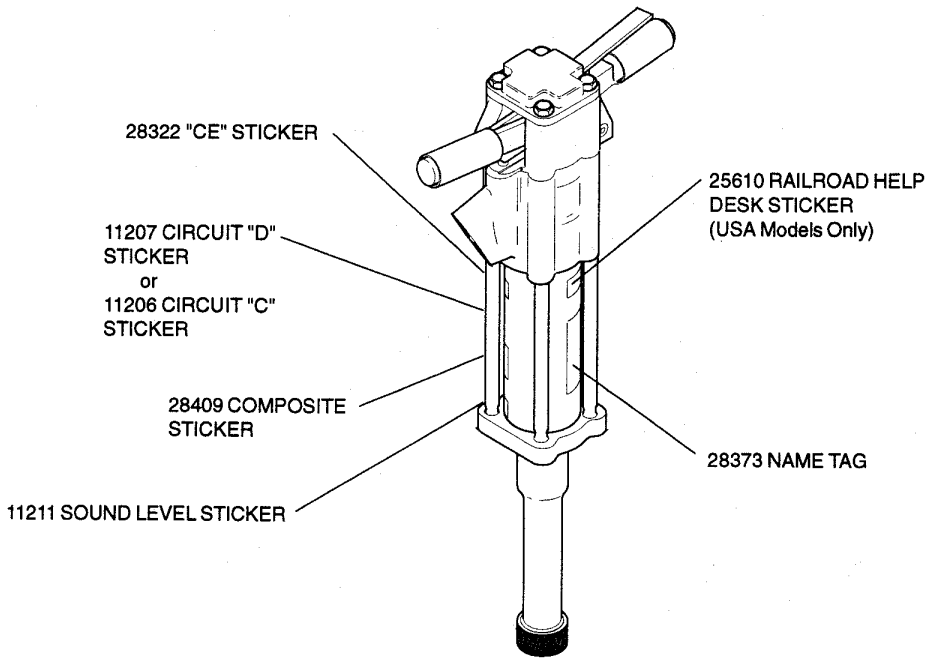


Always observe safety symbols. They are included for your safety and for the protection of the tool.

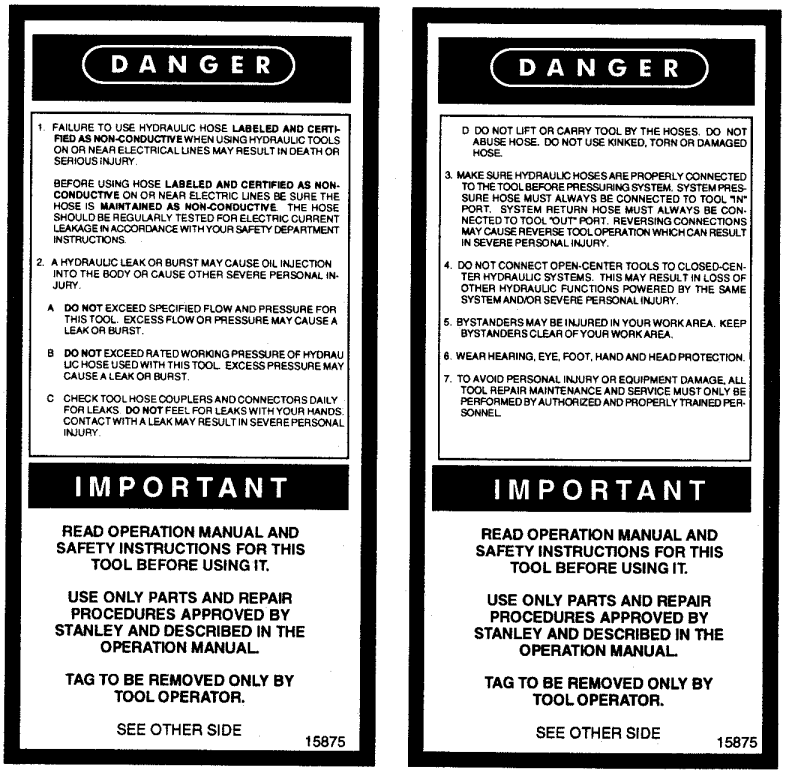
LOCAL SAFETY REGULATIONS

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.



DANGER

1. FAILURE TO USE HYDRAULIC HOSE **LABELED AND CERTIFIED AS NON-CONDUCTIVE** WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.

   BEFORE USING HOSE **LABELED AND CERTIFIED AS NON-CONDUCTIVE** ON OR NEAR ELECTRIC LINES BE SURE THE HOSE IS **MAINTAINED AS NON-CONDUCTIVE**. THE HOSE SHOULD BE REGULARLY TESTED FOR ELECTRIC CURRENT LEAKAGE IN ACCORDANCE WITH YOUR SAFETY DEPARTMENT INSTRUCTIONS.

2. A HYDRAULIC LEAK OR BURST MAY CAUSE OIL INJECTION INTO THE BODY OR CAUSE OTHER SEVERE PERSONAL INJURY.

   A **DO NOT** EXCEED SPECIFIED FLOW AND PRESSURE FOR THIS TOOL. EXCESS FLOW OR PRESSURE MAY CAUSE A LEAK OR BURST.

   B **DO NOT** EXCEED RATED WORKING PRESSURE OF HYDRAULIC HOSE USED WITH THIS TOOL. EXCESS PRESSURE MAY CAUSE A LEAK OR BURST.

   C CHECK TOOL HOSE COUPLERS AND CONNECTORS DAILY FOR LEAKS. **DO NOT** FEEL FOR LEAKS WITH YOUR HANDS. CONTACT WITH A LEAK MAY RESULT IN SEVERE PERSONAL INJURY.

IMPORTANT

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

SEE OTHER SIDE

15875

DANGER

D DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE.

3. MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURING SYSTEM. SYSTEM PRESSURE HOSE MUST ALWAYS BE CONNECTED TO TOOL "IN" PORT. SYSTEM RETURN HOSE MUST ALWAYS BE CONNECTED TO TOOL "OUT" PORT. REVERSING CONNECTIONS MAY CAUSE REVERSE TOOL OPERATION WHICH CAN RESULT IN SEVERE PERSONAL INJURY.

4. DO NOT CONNECT OPEN-CENTER TOOLS TO CLOSED-CENTER HYDRAULIC SYSTEMS. THIS MAY RESULT IN LOSS OF OTHER HYDRAULIC FUNCTIONS POWERED BY THE SAME SYSTEM AND/OR SEVERE PERSONAL INJURY.

5. BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BYSTANDERS CLEAR OF YOUR WORK AREA.

6. WEAR HEARING, EYE, FOOT, HAND AND HEAD PROTECTION.

7. TO AVOID PERSONAL INJURY OR EQUIPMENT DAMAGE, ALL TOOL REPAIR MAINTENANCE AND SERVICE MUST ONLY BE PERFORMED BY AUTHORIZED AND PROPERLY TRAINED PERSONNEL.

IMPORTANT

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

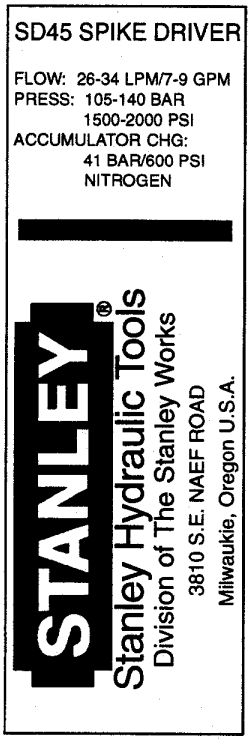
TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

SEE OTHER SIDE

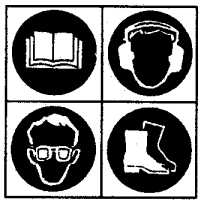
15875

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

TOOL STICKERS & TAGS CONT.



NAME TAG STICKER p/n 28373
(shown smaller than actual size)



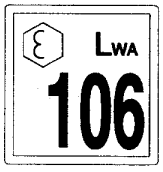
COMPOSITE STICKER
p/n 28409
(shown smaller than actual size)

CIRCUIT "C" STICKER
p/n 11206
(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
(shown smaller than actual size)

CIRCUIT "D" STICKER
p/n 11207
(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.

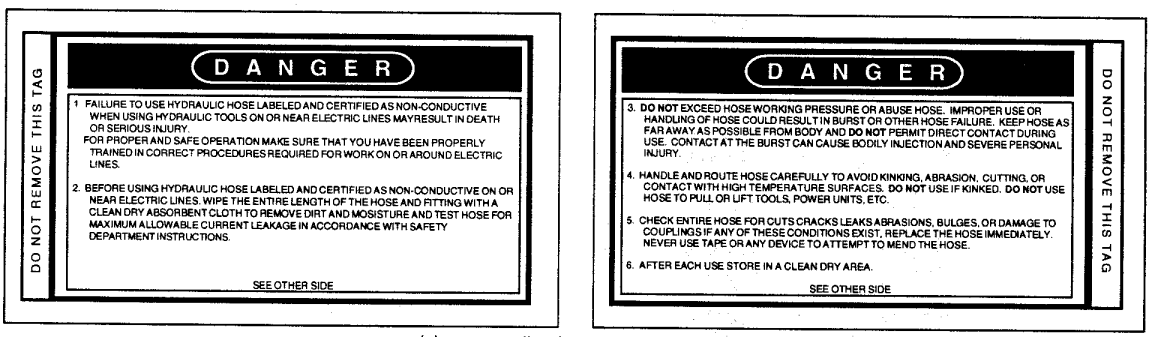
Hoses ❷ and ❸ listed above are **conductive** and **must never** be used near electrical conductors.

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

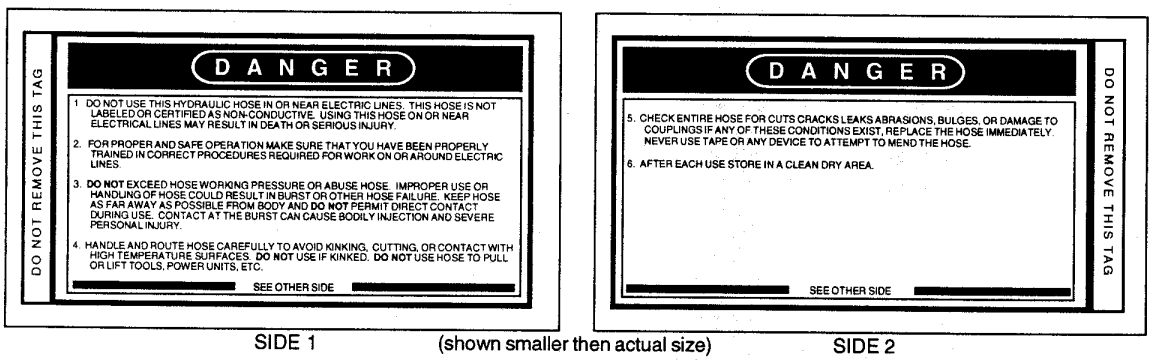
This tag is attached to all certified **non-conductive** hose.



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 tool. 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 for HTMA type II/EHTMA category D tools or 5 gpm/20 lpm at an operating pressure of 2000 psi/140 bar for HTMA type I/EHTMA category C tools. 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 fluids with antiwear properties and a viscosity index over 140 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/HTMA 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 for HTMA type II tools/EHTMA category D or 5 gpm/20 lpm for HTMA type I/EHTMA category C tools at 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. Move the hydraulic circuit control valve to the "ON" position.

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

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.

DISCHARGING THE ACCUMULATOR

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 which will drip from the ports when the hoses are removed.

3. Remove the plug (13) from the side of the pivot block (24). Discharge the accumulator by depressing the plunger in the charge valve.

4. Remove the four lock nuts (20) and lift off the top plate (19).

HANDLE PIVOT BLOCK, HANDLES, ACCUMULATOR DIAPHRAGM & VALVE SPOOL

5. Lift off the handle pivot block (24), handle (16), trigger handle (22) and springs (23) as an assembly.

6. Lift out the accumulator diaphragm (26).

7. Pull on the stem of the valve spool (8) to remove the bushing (9) and seals (10, 11 & 12). Lift out the spring (7).

FOOT ASSEMBLY

8. Remove the spike driver foot assembly (46) by tapping the top of the flange with a plastic or rubber hammer to drive it from the seal carrier (50). Remove the cup seal, seal washer and rod wiper (54, 53 & 52) from the seal carrier using the proper o-ring tools to avoid damage to grooved surfaces.

9. Remove the compression coil spring (49) and the ram (48) from the spike driver foot.

10. Remove the accumulator valve block (28) from the flow sleeve assembly (45) by tapping on the lower edge of the accumulator valve block with a plastic or rubber hammer.

PISTON, AUTOMATIC VALVE BODY & FLOW SLEEVE

11. Remove the piston (27) from the flow sleeve (30) and automatic valve body (35).

12. To disassemble the flow sleeve assembly, proceed as follows:

A. Place the flow sleeve removal tool (p/n 04919) on top of the flow sleeve removal tube (p/n 04910). Place the flow sleeve assembly (automatic valve body down) on the flow sleeve removal tool.

IMPORTANT

Use a rag in the bottom of the removal tube to protect the parts when they drop out.

B. Using an arbor press and an aluminum disc to protect the flow sleeve, push on the flow sleeve to remove the automatic valve body from the

flow sleeve tube. The automatic valve (40), push pins (39) and push pins (29) will come out. Set these parts aside before continuing.

C. Continue pressing on the flow sleeve until it drops out of the flow sleeve tube.

PORTING BLOCK

13. Clamp the accumulator valve block (28) in a vise with soft jaws. Use a 3/8-16 thread slide hammer or tamper sleeve tool (p/n 01120) to remove the porting block (33) from the accumulator valve block.

IMPORTANT

Do not over-tighten the vise and distort the block.

ASSEMBLY

PRIOR TO ASSEMBLY

- Clean all parts with a degreasing solvent.

- 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.

ASSEMBLY FIXTURE

The best way to assemble the flow sleeve (30), automatic valve body (35), piston (27) and porting block (33) is by using an assembly fixture such as that shown in figure 1. The fixture permits the parts to be stacked vertically during the assembly process. After the parts are stacked, the accumulator valve block (28) can then be placed on top of the stacked parts and tapped into place.

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

The instructions in this section require the use of the assembly fixture shown in figure 1. If a fixture cannot be acquired, use an assembled foot assembly and clamp it into a vice.

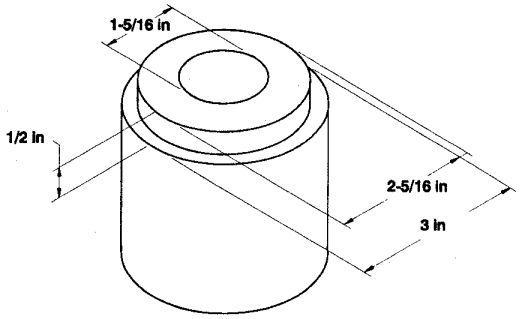


Figure 1.

INSTALLING THE FLOW SLEEVE

1. Lubricate the entire bore of the flow sleeve tube (45) with hydraulic fluid and place it onto the assembly fixture (o-ring groove up). Position the flow sleeve with the push pin holes facing up and place it into the tube with the o-ring groove on the tube also facing up. Push the flow sleeve (30) into the tube until it is flush with the top of the tube (45). Use an arbor press and an aluminum disc to protect the parts if necessary.

2. Lubricate and install four push pins (29) into the holes in the flow sleeve. 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.

AUTOMATIC VALVE BODY & AUTOMATIC VALVE

3. Tap a roll pin (3) into the hole on the automatic valve side of the automatic valve body (35).

4. Lubricate and install 2 push pins (39) 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.

5. Lubricate the automatic valve (40) and install it

into the valve body. The automatic valve must slide freely 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 lightly polish 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.

6. 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.

7. Push the automatic valve body assembly into the flow sleeve tube until it stops. Use an arbor press, and an aluminum disc to protect the parts if necessary.

PISTON & PORTING BLOCK

8. Lubricate and install the piston (27) into the top of the automatic valve body. The hole in the end of the piston must be facing up.

9. Install a roll pin into the porting block (33). Lubricate and install the o-ring (32) and backup ring (31) onto the porting block. Install the porting block onto the automatic valve body being careful to properly align the roll pin.

10. Lubricate the porting block bore of the accumulator valve block (28) and then install the accumulator valve block onto the automatic valve body and flow sleeve assembly and tap it into place.

11. Place the complete assembly in a vise with soft jaws and clamp on the flow sleeve tube.

FOOT ASSEMBLY

12. Coat the ram (48) with Kopr-Kote antiseize compound and install it into the foot (46).

13. Lubricate and install new seals (51, 52 & 54) and the washer (53) onto the seal carrier (50). The lip on the rod seal faces toward the foot. The lips on the cup seal face toward the flow sleeve. The washer is placed between the two seals. Install the seal carrier into the flow sleeve tube with the cup seal (54) lips facing toward the flow sleeve.

14. Coat the spring (49) with Kopr-Kote antiseize compound and place the spring on top of the ram in the foot and then position the foot so that the tie rods can slide through the holes in the accumulator valve block.

15. Place the spring (7) into the valve spool bore in the accumulator valve block. Lubricate the valve spool (8) and install it on top of the spring. Lubricate new seals (10, 11 & 12) and install them onto the bushing (9) and then install the bushing onto the valve spool stem and push it down.

ACCUMULATOR DIAPRAGM

16. Thoroughly lubricate the accumulator diaphragm with WD40 (inside and out) and install it into the accumulator valve block.

HANDLE PIVOT BLOCK

17. If the handle and trigger parts (16, 17, 18, 21, 22, 23 and 25) were disassembled, reassemble them to the handle pivot block. Coat the wear surfaces of the handles, pivot block and pivot screws (25) with Kopr-Kote antiseize compound. Place the completed assembly over the valve spool stem.

18. Install the top plate (19) followed by the side rods.

19. In a cross pattern, tighten the side rod assemblies in 15 lb. ft./20 Nm increments to 60 lb. ft./82 Nm.

SPIKE CUP

20. Install the appropriate spike cup using 242 Loctite.

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

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. 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.

2. 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 by hand tightening only.

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

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

5. 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/41-48 bar to overcome any pressure drop through the charging system.

6. Open the valve on the charging assembly hose. When the tester gauge reads 600-700 psi41-48 bar, close the valve on the charging assembly hose and remove the charging assembly.

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

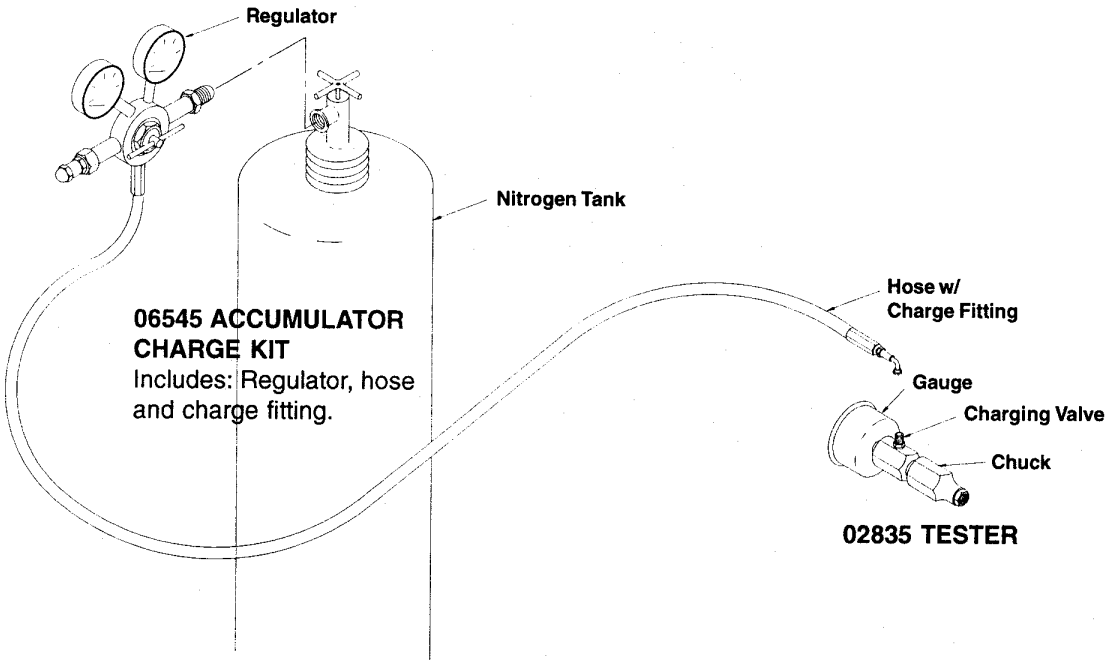
8. Replace the valve cap.

TESTING THE ACCUMULATOR PRESSURE

1. Follow instructions 1 through 3 under "CHARGING THE ACCUMULATOR".

2. Read the pressure on the gauge. It should be between 500-700 psi/35-48 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.

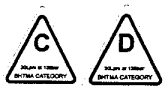
Spike driver does not run.	Power unit not functioning.	Check power unit for proper flow and pressure (7-10 gpm / 26-38 lpm, 2000 psi / 140 bar).
	Couplers or hoses blocked.	Remove restriction.
	Presssure and return line hoses reversed at ports.	Be sure hoses are connected to their proper ports.
	Mechanical 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 recharge 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)
- Cutspike
- Dome Head Spikes (using dome head spike cup)
- Hairpin Spikes (using hairpin spike cup)

Pressure Range ..... 1500-2000 psi/103-140 bar
Maximum Back Pressure ..... 250 psi/17 bar
Flow Range ..... 5 gpm/20 lpm or 7-10 gpm/26-38 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 ..... Model SD45121 50 lbs / 22.6 kg Model SD45131 54 lbs / 25 kg
Overall Length ..... Model SD45121 25.25 in. / 64 cm Model SD45131 28.75 in. / 73 cm
Overall Width ..... 17 in. / 43 cm
Maximum Fluid Temperature ..... 140° F/60° C



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

Noise Level Lwa106
Vibration Level ..... 10.1 m/s²

ACCESSORIES

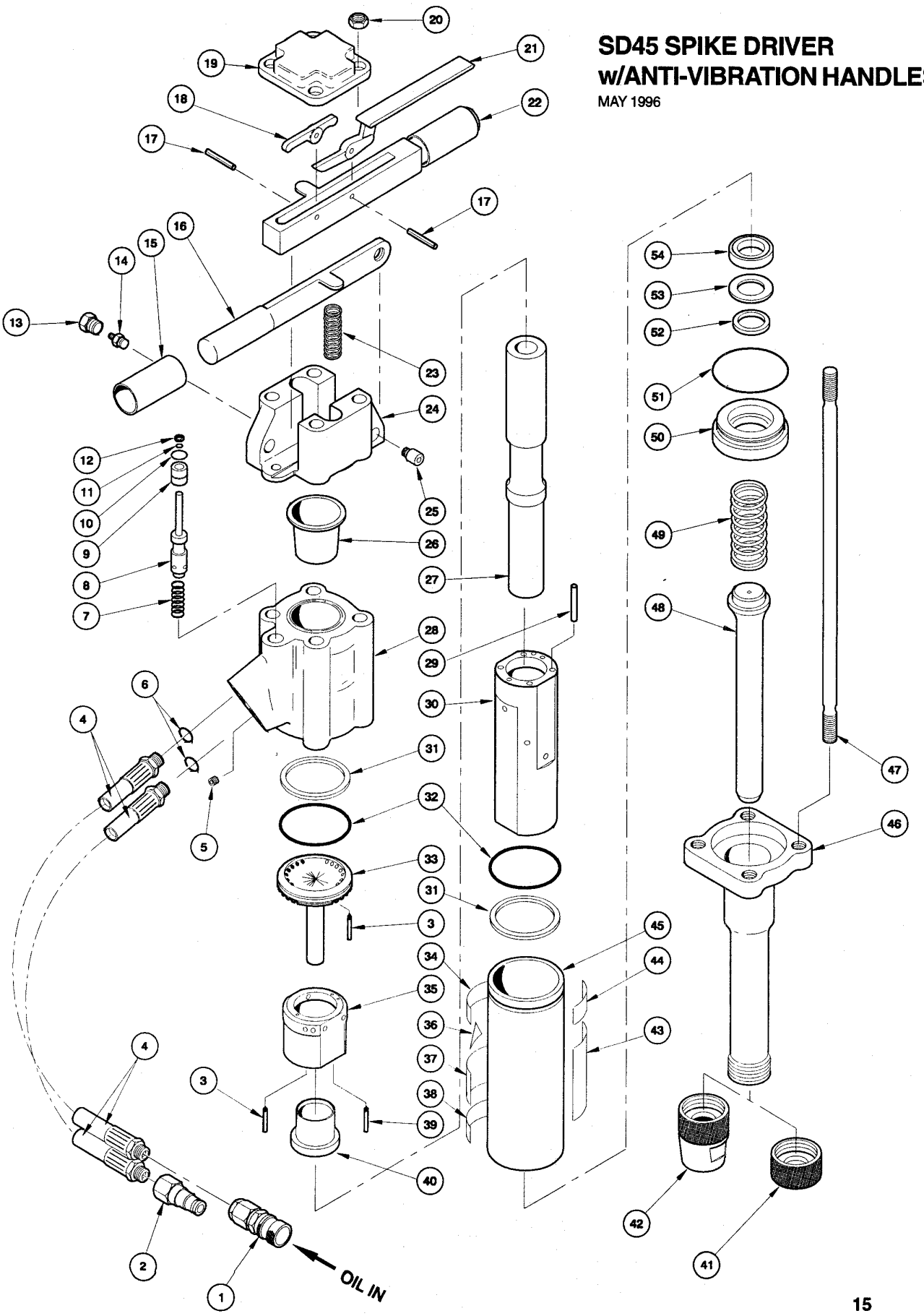
DESCRIPTION	PART NUMBER
Dome Head Spike Cup	25525
Hairpin Cup	23345
Cutspike Cup	23344

SPECIAL TOOLS

DESCRIPTION	PART NUMBER	USAGE
O-ring Tool Kit	04337	General Service of Seals
Split Rings	04908	Used with 04910
Flow Sleeve Removal Tool	04919	Flow Sleeve Removal
Flow Sleeve Removal Tube	04910	Used with 04908 & 05508
Bearing Puller Kit	05064	General Bearing Pulling
Accumulator Disassembly Tool	05508	Used with 04910
Tamper Sleeve Tool	01120	Used to Pull Porting Block from Valve Block
Accumulator Cylinder Puller	05640	An Aluminum Disk (handy for protecting parts when using an arbor press

SD45 SPIKE DRIVER w/ANTI-VIBRATION HANDLES

MAY 1996



SD45 PARTS LIST

Item	Part No.	Qty	Description
1	24058	1	Female Coupler Body
2	24059	1	Male Coupler Body
3	02900	2	Roll Pin
4	09546	2	Hose Assy
5	11587	1	Orifice Plug (Low GPM/LPM models only)
6	01605	2	O-ring (incld with item 4) •
7	04058	1	Spring
8	20515	1	Valve Spool
9	04057	1	Bushing
10	01362	1	O-ring, 5/16 x 7/16 x 1/16 70D •
11	00293	1	O-ring, 11/16 x 7/8 x 3/32 90D •
12	04056	1	Rod Wiper •
13	20510	1	Plug
14	20499	1	Charge Valve
15	02494	2	Handle Grip
16	20507	1	Handle
17	20500	2	Spirol Pin
18	20511	1	Lever
19	20509	1	Top Plate
20	04374	4	Lock Nut
21	20502	1	Trigger
22	20513	1	Trigger Handle
23	20498	2	Spring
24	20505	1	Handle Pivot Block
25	20508	2	Pivot Screw
26	07479	1	Accumulator Diaphragm
27	07481	1	Piston
28	07484	1	Accumulator Valve Block
29	04605	4	Push Pin
30	07485	1	Flow Sleeve
31	04381	2	Backup Ring •
32	04379	2	O-ring, 2-9/16 x 2-3/4 x 3/32 •
33	04378	1	Porting Block
34	28322	1	"CE" Sticker
35	07480	1	Automatic Valve Body
36	11207	1	Circuit "D" Sticker
	11206	1	Circuit "C" Sticker (Low GPM/LPM models only)
37	28409	1	Composite Sticker
38	11211	1	Sound Level Sticker
39	04571	2	Push Pin
40	04382	1	Automatic Valve
41	23344	1	Headed Spike Cup
42	23345	1	Hairpin Spike Cup
43	28373	1	Name Tag
44	25610	1	Railroad Help Desk Sticker (USA models only)
45	04383	1	Flow Sleeve Tube
46	30321	1	Foot (model SD45121)
	28887	1	Extended Foot (model SD45131)
47	20517	4	Side Rod
48	15420	1	Ram (model SD45121)
	28207	1	Ram, extended (model SD45131)
49	15418	1	Spring
50	28185	1	Seal Carrier
51	02022	1	O-ring, 2-1/4 x 2-1/2 x 1/8 •
52	04387	1	Rod Wiper •
53	04780	1	Washer •
54	04386	1	Cup Seal •

• Denotes Part in 04595 Seal Kit

NOTE: Use Part Number and Part Name when ordering.

MODEL DESCRIPTIONS

SD45121 - Anti-Vibration Handles and Foot with Changeable Cups

SD45131 - 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.

SALES & SERVICE DIRECTORY

CORPORATE HEADQUARTERS

Stanley Hydraulic Tools
3810 S.E. Naef Road
Milwaukie, Oregon U.S.A. 97267-5698
Tel: 503 659 5660
Fax: 503 652 1780

EUROPEAN HEADQUARTERS

Stanley Hydraulic Tools
West Quay Road
Sunderland Enterprise Park
Sunderland, England SR5 2TE
Tel: 44 (0) 191 501 1000
Fax: 44 (0) 191 501 1005

CENTRAL EUROPE

Stanley Hydraulic Tools
West Quay Road
Sunderland Enterprise Park
Sunderland, England SR5 2TE
Tel: 44 (0) 191 501 1000
Fax: 44 (0) 191 501 1005

NORTHERN EUROPE

Stanley Svenska Ab
Box 1054
Datavagen 51
S436 22 Askim, Sweden
Tel: 46 31 289775
Fax: 46 31 288099

SOUTHERN EUROPE

Stanley Tools S.p.A.
Via Trieste 1
22060 Figino Serenza (Co.)
Italy
Tel: 39 31 785111
Fax: 39 31 781766 / 781094

STANLEY®

Stanley Hydraulic Tools • 3810 SE Naef Road • Milwaukie, Oregon 97267-5698
Ph 1-800-549-0517 • Fax 503-652-1780