GD47
GROUND ROD DRIVER

Safety, Operation and Maintenance Manual

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18946 4/93

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 maintenance or repairs.

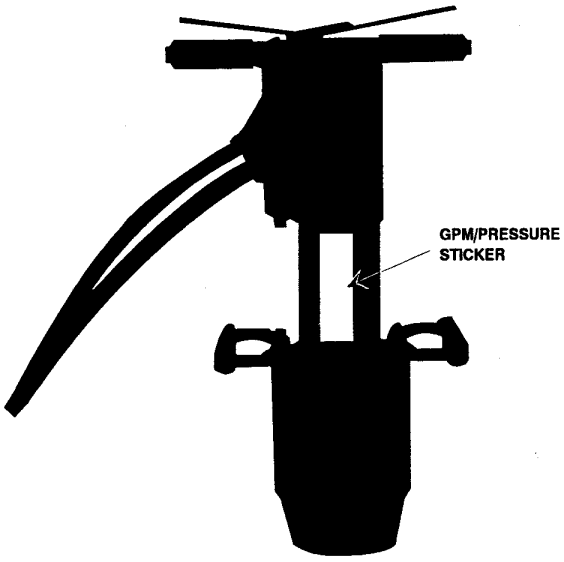
Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 3.

GENERAL SAFETY PRECAUTIONS

The GD47 Ground Rod 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 hose before operation. Failure to do so can result in personal injury or equipment damage.

- Operators must be familiar with all prohibited work areas.
- 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.
- When working near electrical conductors, always assume that all conductors are energized and the insulation, clothing and hoses can conduct electricity. Use hose labeled and certified as non-conductive when using tool on or near electric lines.
- Do not overreach. Maintain proper footing and balance at all times.
- 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 fluid 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 the tool if it is damaged, improperly adjusted or not completely and correctly assembled.
- Always hold the tool with both hands when the unit is running. Use a firm grip.
- Keep the handles clean and free of oil at all times.
- Always check for underground utility service lines and overhead obstructions befor operation.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

TOOL STICKERS AND TAGS



The stickers and tags attached to the tool prior to shipment from the factory are shown below. The pressures and flow rates specified must never be exceeded. All stickers and tags must be read and understood prior to operation.

The information listed on this nameplate must be legible at all times. Replace the nameplate if it becomes worn or damaged. It is available from your local Stanley distributor.

CAUTION

7-9 GPM/26-34 LPM
DO NOT EXCEED 2000 PSI/ 140 BAR

■ DO NOT EXCEED SPECIFIED FLOW OR PRESSURE. ■ USE CLOSED-CENTER TOOL ON CLOSED-CENTER SYSTEM. ■ USE OPEN-CENTER TOOL ON OPEN-CENTER SYSTEM. ■ CORRECTLY CONNECT HOSE TO TOOL "IN "AND "OUT" PORTS. IMPROPER HANDLING, USE OR MAINTENANCE OF TOOL COULD RESULT IN A LEAK, BURST OR OTHER TOOL FAILURE. ■ CONTACT AT A LEAK OR BURST CAN CAUSE OIL INJECTIONS INTO THE BODY. ■ FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS PERSONAL INJURY. 03788

GPM/PRESSURE STICKER

DANGER

LOCATE UNDERGROUND SERVICES BEFORE USING THIS TOOL. PERSONAL INJURY OR DEATH MAY RESULT FROM CONTACT WITH OR DAMAGE TO UNDERGROUND SERVICES SUCH AS ELECTRICAL, GAS, OR FLAMMABLE LIQUID LINES.

BE AWARE OF OVERHEAD HAZARDS. CONTACT WITH ENERGIZED LINES MAY CAUSE SEVERE PERSONAL INJURY OR DEATH. CONTACT WITH OBSTRUCTIONS MAY MAKE HANDLING OF THE TOOL DIFFICULT AND LOSS OF CONTROL MAY CAUSE INJURY.

DANGER STICKER

The safety tag 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 breaker when not in use.

Hydraulic tools and hoses are capable of conducting electrical current of sufficient magnitude to cause serious personal injury or death. These tools are visibly marked with a danger sticker simular to the one shown below. DO NOT REMOVE OR COVER UP. Replacement stickers may be obtained from your local Stanley distributor.

DANGER

ELECTROCUTION HAZARD

Use of hydraulic tool on or near energized conductors requires CERTIFIED NON-CONDUCTIVE HOSE to connect to system.

Failure to use hoses labeled as CERTIFIED NON-CONDUCTIVE HOSE will result in death or serious injury on contact with energized conductors.

(ELECTRICAL) DANGER STICKER

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 ELECTRICAL 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 DEPART-MENT 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.
   D. **DO NOT** LIFT OR CARRY TOOL BY THE HOSES. DO

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 SIDE15875

DANGER

NOT ABUSE HOSE. **DO NOT** USE KINKED, TORN OR DAMAGED HOSE.

3. MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURIZING 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 CLOSED-CENTER TOOLS TO OPEN-CENTER HYDRAULIC SYSTEMS. THIS MAY CAUSE EXTREME SYSTEM HEAT AND/OR SEVERE PERSONAL INJURY.

   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, MAINTAINANCE 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 SIDE15875

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

This safety symbol appears in these instructions to identify an action or condition that could result in damage to the tool or other 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.

EQUIPMENT PROTECTION AND CARE

IMPORTANT

In addition to the Safety Precautions on pages 1 thru 3 of this manual, observe the following for equipment protection and care.

- Tool repair should be performed by experienced personnel only.
- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling hydraulic tools. Failure to do so can result in damage to the quick couplers and caise overheating of the hydraulic system.
- Always store the tool in a clean, dry space, safe from damage or pilferage.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the IN port, farthest from the trigger. The circuit RETURN hose (with female quick disconnect) is connected to the OUT port, closest to the trigger. Do not reverse circuit flow. This can cause damage to internal seals.
- 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/172 bar.
- Do not exceed 9 gpm/34 lpm flow rate. Rapid failure of the internal parts may result.
- Always keep critical tool markings, such as lables and warning stickers legible.

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

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

1. Labeled and certified non-conductive
2. Wire braided (conductive)
3. Fabric braided (not certified or labeled non-conductive)

Hose 1 listed above is the only hose authorized for use near electrical conductors.

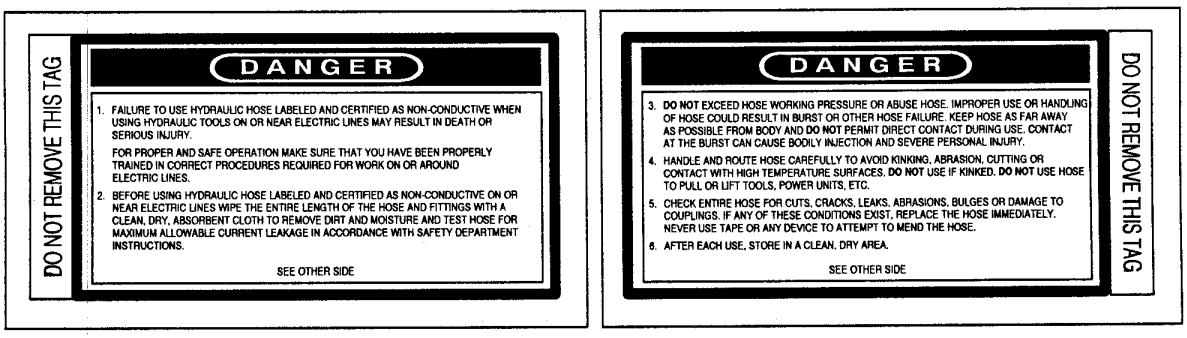
Hoses 2 and 3 listed above are conductive and must never be used near electrical conductors.

To help ensure your safety, the following DANGER tags are attached to all hoses 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 can be obtained at no charge from your Stanley distributor.

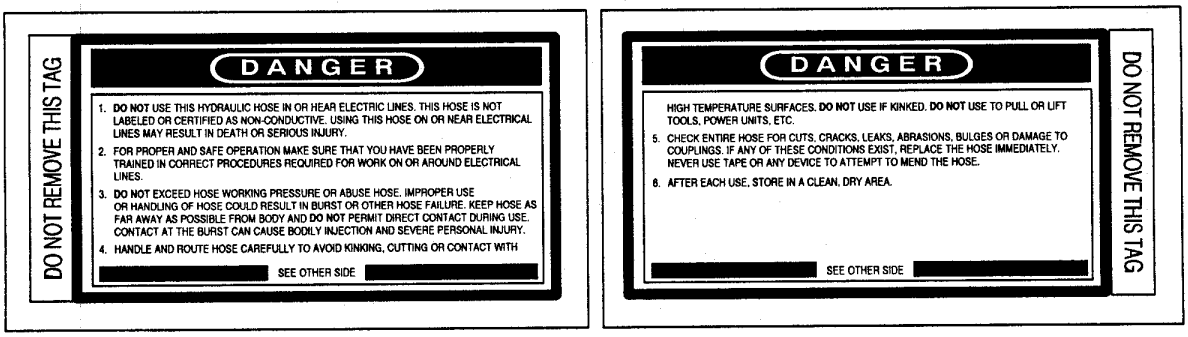
1 CERTIFIED NON-CONDUCTIVE HOSE

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



2 AND 3 WIRE- AND FABRIC-BRAIDED (NOT CERTIFIED OR LABELED NON-CONDUCTIVE)

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



HOSE PRESSURE RATING

The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting of the hydraulic system used to power the ground rod driver.

HYDRAULIC SYSTEM REQUIREMENTS

- The hydraulic system should provide a flow of 7-9 gpm/26-34 lpm at an operating pressure of 1500-2000 psi/100-140 bar. Recommended relief valve setting is 2100-2250 psi/145-155 bar.
- The system should not have more than 250 psi/17 bar backpressure measured at the tool end of the operating hoses. The system con-ditions for measurement are at maximum fluid viscosity of 400 ssu/82 centistokes (minimum operating temperatures).
- The hydraulic system should have sufficent heat rejection capacity to limit the maximum fluid 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 fluid temperature.
- The hydraulic system should have a mini-mum of 25 micron filtration. It is recommended that filter elements be 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. Hydraulic fluids of petroleum base with antiwear and nonconductive properties and viscosity indexes 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. to 50 ft/15m long and .625 inch/16 mm I.D. minimum up to 100 ft/30 m long.
- The tool return hose must connect directly to the circuit return line and go straight through the fluid filter, thermal valve, and fluid cooler to the reservoir. To prevent trapped or reversed pressure, fluid should not be returned through a blocking or reversing valve.
- Do not use emulsifying hydraulic fluids. Keep the recommended fluids drained of settled moisture. Water in the fluid can cause pump cavitation and reduces or negates personnel safety gained through the use of non-conductive hoses.

OPERATION

PREOPERATION INSTRUCTIONS

CHECK POWER SOURCE

1. Using a calibrated flowmeter and pressure gauge, check that the hydraulic power source develops a flow of 7-9 gpm/26-34 lpm at 1500-2000 psi/105-140 bar.

2. Make certain the hydraulic power source is equippedwithareliefvalvesettoopenat2100-2250 Psi/ 145-155 bar.

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 quick disconnects. It is a good practice to connect return hoses first and disconnect them last to minimize or avoid trapped pressure within the tool.

3. If hose couplers are used, observe the arrow on the coupler to ensure that the flow is in the proper direction. The female coupler on the tool hose is the inlet (pressure) coupler.

4. Move the hydraulic circuit control valve to the "ON" position to operate the tool.

Note: If uncoupled hoses are left in the sun, pressure increase inside the hoses may make them difficult to connect. When possible, connect the free ends of operating hoses together.

GROUND ROD REQUIREMENTS

Clean galvanized or copper clad steel ground can be used. All accumulated dirt or grease must be wiped from the rod before use. The tool will accomodate 1/2, 5/8, or 3/4-inch rods by changing chuck jaws. Perform the following procedures to ensure adequate clearance when removing and installing jaws.

1. Connect the Ground Rod Driver to a hydraulic power system. Activate the system and depress the release trigger of the Ground Rod Driver to fully extend the release mechanism.

Note: The hydraulic system relief valve will be activated in the fully extended position.

2. While maintaining the release trigger in the release position, deactivate the hydraulic system and immediately disconnect the Ground Rod Driver from the system.

3. Secure the Ground Rod Driver in a bench vise, "IN" and "OUT" ports facing up, clamping on the flow sleeve tube between the tie rods. Soft vise jaws are recommended.

4. Loosen and remove the rod guide nut from the bottom of the cylinder.

5. With a blunt tool or screw driver, reach through the access hole to depress two of the jaws against the upper anvil and spring. While holding the jaws in the depressed position, remove the third jaw with a magnet, needle nosed pliers, or other suitable tool. Follow the above procedure, depressing only the jaw, to remove the second jaw. The last jaw will slide out without interference.

6. Apply a light coating of WD40 or similar lubricant to the chuck jaw bores.

7. Install one of the new jaws into the chuck, rotating as necessary, aligning the locating groove with the internal detent.

Note: The end of the jaw with the size identification (the thin end with the widest "V" groove) faces out.

8. While depressing the first jaw with a screw driver or similar tool, insert the second jaw, rotating as required.

9. Depress and hold both jaws in while installing the third jaw.

10. Replace the rod guide nut and tighten to 200 ft lb/270 Nm. The use of antisieze compond on the threads is recommended.

TOOL OPERATION

1. Observe all safety precautions.

2. Depress the jaw RELEASE trigger to open the clamping jaws.

3. Slide the ground rod through the tool until 18- to 30-inches/45 to 75 cm projects beyond the working end of the tool.

4. Release the trigger. The ground rod will be gripped by the clamping jaws.

Note:

- Under normal soil conditions, the jaw grip should automatically tighten as you start the impacting mode. If you are driving rods through particularly hard soil or hit an obstruc-tion, it may be necessary to momentarily depress the IMPACT trigger several times to allow single hammer blows to tighten the jaw grip before starting to drive the rod.

- Hard soil conditions may require frequent release of the jaws and or short lifts of the tool (12-inches/30 cm or less). Impacting at one clamped position for long periods of time may make release difficult.

- Lubricate the jaws through the nut on the bottom of the tool, as required to avoid difficult jaw release. Use WD40 or similar spray lubricant sparingly. Excess lubrication will cause the jaws to slip on the rod.

5. When the jaws grip tight, depress and hold the IMPACT trigger.

⚠ WARNING

When the driver has been lifted into driving position, use care not to accidentally depress the release trigger. Doing so will release the clamping jaws and the driver will drop suddenly.

Note: Avoid running the impact function when a rod is not in place.

6. When the tool is close to ground level, press the RELEASE trigger and lift the tool to the desired level for the next impact drive.

IMPORTANT

If the clamping jaws clamp on the threads of a ground rod, the threads will be damaged. To avoid thread damage, at least 10-inches of rod must remain in the tool during the last driving sequence.

7. Release the trigger and repeat the driving cycle.

Note: Ground rods with couplings will not pass through the tool.

8. With the preceeding rod driven close to ground level, release the jaws and remove the ground rod driver from the rod. Thread or drive a coupling onto the installed rod. Place the driver onto the coupling locating in the socket in the nose of the tool. Depress the jaw release lever to slide a new rod into place, threading it into the coupling. Lift the driver to the desired level and continue driving.

Keep dirt, mud, and other contamination out of the working parts of the tool.

COLD WEATHER OPERATION

If the 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.

Damage to the hydraulic system or driver can result from use with fluid that is too viscous or thick.

SERVICE INSTRUCTIONS

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

The most important maintenance practice is to keep the hydraulic fluid clean at all times. Contaminated hydraulic fluid will cause rapid wear and/or failure of internal Parts.

Follow the procedures contained in the "HYDRAULIC SYSTEMS REQUIREMENTS" section of this manual to ensure peak per-formance from the tool.

Never disassemble the tool unless proper trouble-shooting procedures have isolated the problem to an internal part. Then, only disassemble the tool to the extent necessary to replace the defective part. KEEP CONTAMI-NANTS SUCH AS DIRT AND GRIT AWAY FROM INTERNAL PARTS AT ALL TIMES.

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

PRIOR TO DISASSEMBLY

- Clean exterior of tool.
- Obtain seal kit (Part Number 22732) so you can replace all seals exposed during disassem-bly. Note orientation of seals before removing them. Install new seals in the same way.

Note: For orientation of parts identified in the following procedures, see the parts list exploded view illustration at the back of this manual.

DRIVER DISASSEMBLY

1. Secure driver in a bench vise, "in" and "out" ports up, clamping on the flow sleeve tube between the tie rods. Soft vise jaws are recommended.

2. Remove the pigtail hose assemblies.

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

3. Remove the o-ring plug on the handle and fully discharge the accumulator.

4. Tap out the roll pin securing the trigger to the handle. Remove the trigger.

5. Loosen the rod guide nut on the bottom of the cylinder.

6. Loosen the eight capscrews retaining the adapter to the cylinder.

⚠ WARNING

Discharge Accumulator before performing step 7.

7. Unscrew and remove the four tie rods from the adapter.

8. Lift the handle assembly away from the on/off valve block to expose the top of the accumulator and the on/off valve spool.

9. Place a small tool in the side hole of the seal insert and pry upwards and away from the on/off valve block

10. When the seal insert is free, withdraw the on/off valve spool assembly from the top of the on/off valve block.

11. To disassemble the on/off valve spool assembly, compress the spring and remove the retaining ring. The seal insert, spring washers, spring, and associated o-rings and back-up washer can then be removed from the valve spool .

12. Remove the clamping end (adapter and cylinder) of the tool by tapping the adapter flange with a plastic or rubber hammer.

13. To separate the clamping end, proceed as follows:

A. Back out the eight capscrews approximatly 1/2-inch.

B. Remove four capscrews at alternate locations.

C. Support the adapter and tap on the head of each remaining capscrew to separate the cylinder from the adapter.

D. Remove the remaining four capscrews from the adapter.

14. To disassemble the cylinder, proceed as follows:

A. Remove the anvil.

B. Withdraw the three chuck jaws.

C. Remove the rod guide nut.

D. Place a rod through the cylinder bottom access hole so it rests against the chuck.

E. Support the cylinder on an elevated surface to allow the piston to drop out when pressed.

F. Push on the rod to force the chuck and the piston from the cylinder.

G. Disassemble the remaining adapter and cylinder components as required.

15. Remove the on/off valve block from the flow sleeve tube by tapping on alternate sides with a plastic or rubber hammer while supporting the on/off valve block.

16. If the automatic valve body remains in the on/off valve block when the flow sleeve tube assembly is removed, proceed to step 17. If it remains in the flow sleeve tube assembly, it must be removed as follows:

A. Remove the piston and seal retainer washer.

B. Place split rings (Part Number 19512) between the automatic valve body and the flow sleeve tube.

C. Place flow sleeve assembly (with split rings in place) on the flow sleeve removal tube (Part Number 04910) with the automatic valve body down.

D. Using an arbor press, and an aluminum discor accumulator cylinder puller (Part Num ber 05640) to protect the flow sleeve, push on the flow sleeve 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, four 5/16 x 2 inch/8 mmx 51 mm push pins from the flow sleeve and two 3/16 x 1-1/4 inch/5 mm x 32 mm push pins from the automatic valve body will come out.

F. Proceed to step 19.

17. Remove the piston and automatic valve from the flow sleeve. Remove four 5/16 x 2 inch/8 mm x 51 mm push pins by turning the flow sleeve on end.

18. Remove two 3/16 x 1-1/4 inch/5 mm x 32 mm push pins from the automatic valve body by turninq the on/off valve block on end.

19. Remove the flow sleeve from the flow sleeve tube as follows:

A. Place split ring (Part Number 19512) on top of flow sleeve removal tube (Part Number 04910).

B. Place f low sleeve tu be assembly on top of split rings.

C. With an arbor press, and an aluminum disc or accumulator cylinder puller (Part Number 05640) to protect the flow sleeve, push flow sleeve out of the tube.

IMPORTANT

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

20. Remove the accumulator assembly and automatic valve body from the on/off valve block by placing a 1-inch hex deep socket with a 6-inch/15 cm extension over the center hole and tapping the extension with a plastic or rubber hammer.

Note: Make sure the thin washer between the automatic valve body and the accumulator.

chamber is properly located in its counterbore before driving the automatic valve body and accumulator out of the handle.

Note: The accumulator cylinder may remain in the on/off valve block. To remove the cylinder use the Accumulator Cylinder Puller (Part Number 05640) which will seat on the inside contour of the accumulator cylinder, and a rod extending through the handle end of the on/off valve block. Tap on the rod to remove the cylinder. Alternatively, use a slide hammer attached to the 1/2"/12 mm hole through the cylinder puller.

21. Remove washer from end of automatic valve body counterbore.

22. To remove the accumulator chamber and diaphragm from the accumulator cylinder, place the assembly on (Part Number 05508 and 04910) disassembly tools. Use a rag in the bottom of (04910) tube to protect accumulator chamber.

Drive chamber and diaphragm out by tapping or pushing with an arbor press on the charge port end.

23. Squeeze the accumulator diaphragm and slide it off the charge port end of the accumulator chamber.

24. Remove cup seal and back-up washer from accumulator chamber.

IMPORTANT

Avoid damage to the contours of the chamber.

PRIOR TO ASSEMBLY

⚠ WARNING

Use degreasing solvent in a well ventilated area. Avoid prolonged inhalation of vapors and prolonged or rrepeated contact with skin. Keep away from heat or open flame.

- 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 seal kit (Part Number 22732) so all seals exposed during disassembly can be replaced .

Note: For orientation of parts identified in the following procedures, see the parts list exploded view illustration at the back of this manual .

DRIVER ASSEMBLY

1. Apply a light coating of WD-40 to accumulator chamber and slide accumulator diaphragm on from charging port end.

2. Use grease or rubber lubricant on the inside of accumulator cylinder and O.D. of diaphragm. Push the accumulator chamber and diaphragm, charging port end first, half-way 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 may be 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.

3. Replace the rod wiper, back-up washer, and rod seal (lip facing out) in the accumulator chamber counterbore.

4. Using an arbor press with an aluminum disc or accumulator cylinder puller (Part Number 05640) to protect parts, install the accumulator assembly into the on/off valve block charging port end first.

5. Place the flow sleeve installation spacer (Part Number 04909) on the base of an arbor press. Lubricate the entire bore of the flow sleeve tube and position it over the spacer with the O.D. o-ring groove up.

6. Using an aluminum disc or accumulator cylinder puller (Part Number 05640) to protect the part, press the flow sleeve, small bore end first, into the flow sleeve tube until it is flush with the tube. Do not seat flow sleeve on the spacer at this time.

7. Install four 5/16 x 2 inch/8 mm x 51 mm push pins, tapered end up in the flow sleeve.

8. Install two 3/16 x 1-1/4 inch/5 mm x 32 mm push pins, tapered end up in the automatic valve body. Install the automatic valve, small diameter first. into the automatic valve bodv.

Note: The push pins must be installed such that the flat, ground faces bear on the flange of the automatic valve.

9. Align dowel pin and place the automatic valve body, with the side holes up, on top of the flow sleeve and allow the automatic valve to drop and pilot into the bore of the flow sleeve.

10. Using an aluminum disc or accumulator cylinder puller (Part Number 05640) to protect parts, push the automatic valve body into the flow sleeve tube until the flow sleeve stops on the installation spacer.

11. Install piston, large end first, in flow sleeve assembly from automatic valve body end.

12. Using a large amount of grease, install the seal retainer washer over the stem of the piston. Be sure the washer is properly located in the counter bore of the automatic valve body.

13. Place the fiovv sleeve tube assembly, handle end up, in the arbor press so the piston drops through the arbor press gap with the flow sleeve installation spacer (Part Number 04909) in place.

14. With an aluminum bar across the on/off valve block for protection, place the on/off valve block on the flow sleeve tube assembly and press on. A light press will be required.

IMPORTANT

Press on the on/off valve block only. Press evenly all around so that the tube assembly is straight when seated.

Optional Assembly: Place the flow sleeve assembly horizontally in a vise and slide the on/off valve block assembly in place, driving home with a rubber or plastic hammer.

15. Using aspannerwrench, rotatetheaccumu-lator chamber so the charge port and locating pin hole are properly aligned with the handle.

16. Assemble the on/off valve spool assembly as follows:

A. Install seal insert, o-ring and back-up ring on the valve spool.

B. Place the spring washers, with the spring between them, on the valve spool and secure with the retaining ring.

C. Place the o-ring and back-up washer in the counterbore between the spool and the seal insert. Replace the lower spool o-ring.

D. Lubricate the o-rings and slide the valve spool assembly into the on/off valve block.

E. Rotate the cross hole in the spool for alignment with the trigger ball joint stud.

17. With the charge port properly aligned (using the spanner holes in the accumulator chamber), place the handle on the on/off valve block.

18. Assemble the clamping end as follows:

A. Loosely install the rod guide nut in the bottom of the cylinder.

B. Install the T-seal in the cylinder.

C. Install the piston ring on the piston.

D. Install two 1/4-inch steel balls in each of the radial holes in the chuck. Install the wear rings on the anvil and chuck.

E. Apply a very small amount of WD40 lubricant to the chuck jaw bores.

IMPORTANT

If too much lubricant is applied, the chuck jaws will not adequately clamp the rod. If the jaws are not lubricated, they will not release properly.

F. Insert the chuck (flanged end last) in the piston counterbored end and install the chuck jaws in the chuck (large end first).

G. Install the anvil in the opposite end of the piston with the spring pilot diameter facing out.

H. Install and lubricate the o-rings and T-seal on the adapter.

1. Place the adapter on the arbor press, large diameter up.

J. Place the small spring in the counter-bore of the adapter.

K. Place the piston assembly with anvil and chuck in the adapter.

L. Place the large spring and spring washer over the chuck.

M. Locate the split in the piston ring so that it does not correspond to the side holes in the cylinder. Place the cylinder over the assembly and press onto the adapter so all attachment holes are aligned.

IMPORTANT

Ensure that the piston and cylinder are perpendicular with each other during the pressing process.

N. Loosely install the eight capscrews, assist handles and spacers.

19. Place the on/off valve block and flow sleeve assembly in a vise with the "in" and "out" ports up, clamping on the flow sleeve tube.

20. Install the clamp end (adapter and cylinder) assembly using a plastic or rubber hammer. Align the locating pin with the flow sleeve. Rotate handle end as required to align with tie rod holes.

21. Install the four tie rods and tighten to 75 ft lb/ 100 Nm in 25 ft lb/33 Nm increments.

22. Tighten eight capscrews to 50 ft lb/168 Nm.

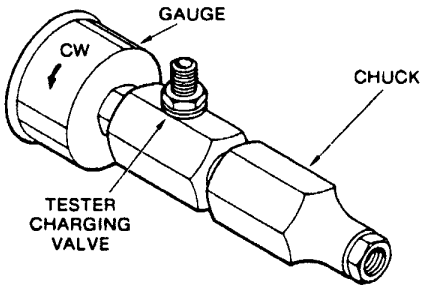
23. Tighten rod guide nut to 200 ft lb/270 Nm.

24. Install the trigger on the handle.

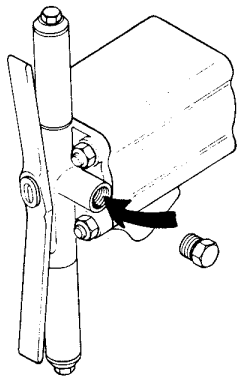
CHARGING THE ACCUMULATOR

ACCUMULATOR TESTING PROCEDURE (See Figure 1)

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



ACCUMULATOR TESTER



LOCATION OF CHARGING VALVE

- Accumulator Tester (Part Number 02835).
- Charging Assembly (Part Number 06545) (includes a regulator, hose and fittings).
- NITROGEN bottle with an 800 psi/56 bar minimum charge.

1. Remove the charging valve cap (or plug) from the driver.

2. Holding the chuck end of the Accumulator Tester (Part Number 02835), turn the gauge fully counterclockwise to ensure the stem inside the chuck is completely retracted.

3. Thread the tester onto the accumulator charging valve (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 of the tester by turning the gauge-end clockwise until a pressure is read on the gauge (charge pressure should be 500-700 Psi/34-48 bar).

5. If pressure is OK, unscrew the gauge-end from the chuck to retract the stem, then unscrew the entire tester assembly from the accumulator charging valve. If pressure is low, charge the accumulator as described in the following section.

6 Install the charging valve cap (or plug).

ACCUMULATOR CHARGING PROCEDURE

1. Perform steps 1 through 4 of the accumulator testing procedure above.

2. Connect the chuck of the charging assem-bly to the charging valve on the accumulator tester or, if preferred, remove the tester from the charging valve and connect the charging assembly chuck directly to the charging valve.

3. Adjust the regulator to the charging pressure of 600 psi/42 bar.

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

4. Open the valve on the charging assembly hose.

5. When the accumulator is fully charged close the valve on the charging assembly hose and remove the charging assembly chuck from the accumulator tester or charging valve.

6. If the accumulator tester has been used, be sure to turn the gauge-end fully counterclockwise before removing the tester from the charging valve of the tool.

7. Replace the valve cap (or plug).

GENERAL SERVICE NOTES

1. If the driver is repainted after servicing, do not allow paint to enter the "IN" and "OUT" Ports or the bore of the rod guide nut.

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 breaker, always check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the breaker as listed in the table. Use a flow meter known to be accurate. Check the flow with the hydraulic fluid temperature at least 80°F/27°C.

PROBLEM	CAUSE	REMEDY
Driver does not run.	Power unit not functioning.	Check power unit for proper flow and pressure (7-9 gpm/26-34 lpm, 1500-2000 psi/105-140 bar).
	Couplers or hoses blocked.	Remove restriction.
	Pressure and return line hoses reversed at ports.	Be sure hoses are connected to their proper ports.
	Mechanical failure of piston or automatic valve.	Disassemble breaker and inspect for damaged parts.
Driver does not hit effectively.	Power unit not functioning.	Check power unit for proper flow and pressure (7-9 gpm/ 26-34 lpm, 1500-2000 psi/105-140 bar).
	Couplers or hoses blocked.	Remove restriction.
	Low accumulator charge (pressure hose will pulse more than normal).	Recharge accumulator. Replace diaphram if charge loss continues.
	Fluid too hot (above 140°F/ 60°C).	Provide cooler to maintain proper fluid temperature (140°F/60°C maximum).
Driver operates slow.	Low gpm supply from power unit.	Check power unit for proper flow (7-9 gpm/26-34 lpm).
	High backpressure.	Check hydraulic system for excessive backpressure (over 250 psi/17 bar).
	Couplers or hoses blocked.	Remove restriction.
	Fluid too hot (above 140°F/60°C) or too cold (below 60°F/16°C).	Check power unit for proper fluid temperature. Bypass cooler to warm fluid up or provide cooler to maintain proper temperature.
	Relief valve set too low.	Adjust relief valve to 2100-2250 psi/148-158 bar.

PROBLEM	CAUSE	REMEDY
Driver gets too hot.	Hot fluid going through tool.	Check power unit. Be sure flow rate is not too high causing part of the fluid to go through the relief valve. Provide cooler to maintain proper fluid temperature (140°F/60°C max).
		Check relief valve setting.
		Eliminate flow control devices.
Fluid leakage.	Piston seal failure.	Replace seal.
Fluid leakage around trigger	Valve spool seal failure.	Replace seal.
Chuck jaws do not release.	Low system pressure.	Adjust relief setting.
	Chuck jaws dry.	Spray a small amount of light oil (such as WD40) through rod guide nut to lubricate the jaws.
		While holding trigger in release position, hammer on the ground rod end opposite the trigger to release the jaws.
		In hard soil conditions, use shorter lift cycles to reduce the hammering time at each clamping position.
Chuck jaws slip on rod.	Excess lubricant on chuck jaws.	Continue running until excess lubricant is purged.
		If rods are continually wet from leaking hydraulic fluid, replace seals as required.
		Momentarily depress the drive side of the trigger to allow single hammer impacts to set the jaws before starting a driving cycle.

SPECIFICATIONS

Capacity	5/8 in. ground rod (1/2 and 3/4 in. optional)
Weight	110 lb./50 kg
Length	29-1/4 in./74.3 cm
Width	16.5 in./42 cm
Height	7 in./18 cm
Pressure	2000 psi/140 bar
Flow Range	7-9 gpm/26-34 lpm
Porting	SAE 8 o-ring
Connect Size	3/8 Male Pipe Hose Ends
Accumulator Charge (dry nitrogen)	600 psi/41 bar
Minimum Filteration	Open Center
System Type	Open Center
	HTMA Type 2/EHTMA Category D

SERVICE TOOLS

PART NO.	DESCRIPTION
04337	O-Ring Tool Kit
04909	Flow Sleeve Installation Spacer
04910	Flow Sleeve Removal Tube
05508	Accumulator Disassembly Tool
05640	Accumulator Cylinder Puller
19513	Seal Kit
19512	Split Rings

WARRANTY

Hand held tools and their parts are warranted against defects in materials and workmanship for a period of 12 months from the date of purchase. Exceptions are cutting parts, steels, and other parts not manufactured by Stanley (such as impact mechanisms, alternators, regulators, and hoses), and parts subject to normal wear and tear (such as o-rings, saw blades, and other parts that become worn through normal use of the tool).

The Warranty Registration Card packed with the tool must be filled out and returned to Stanley upon receipt of the tool.

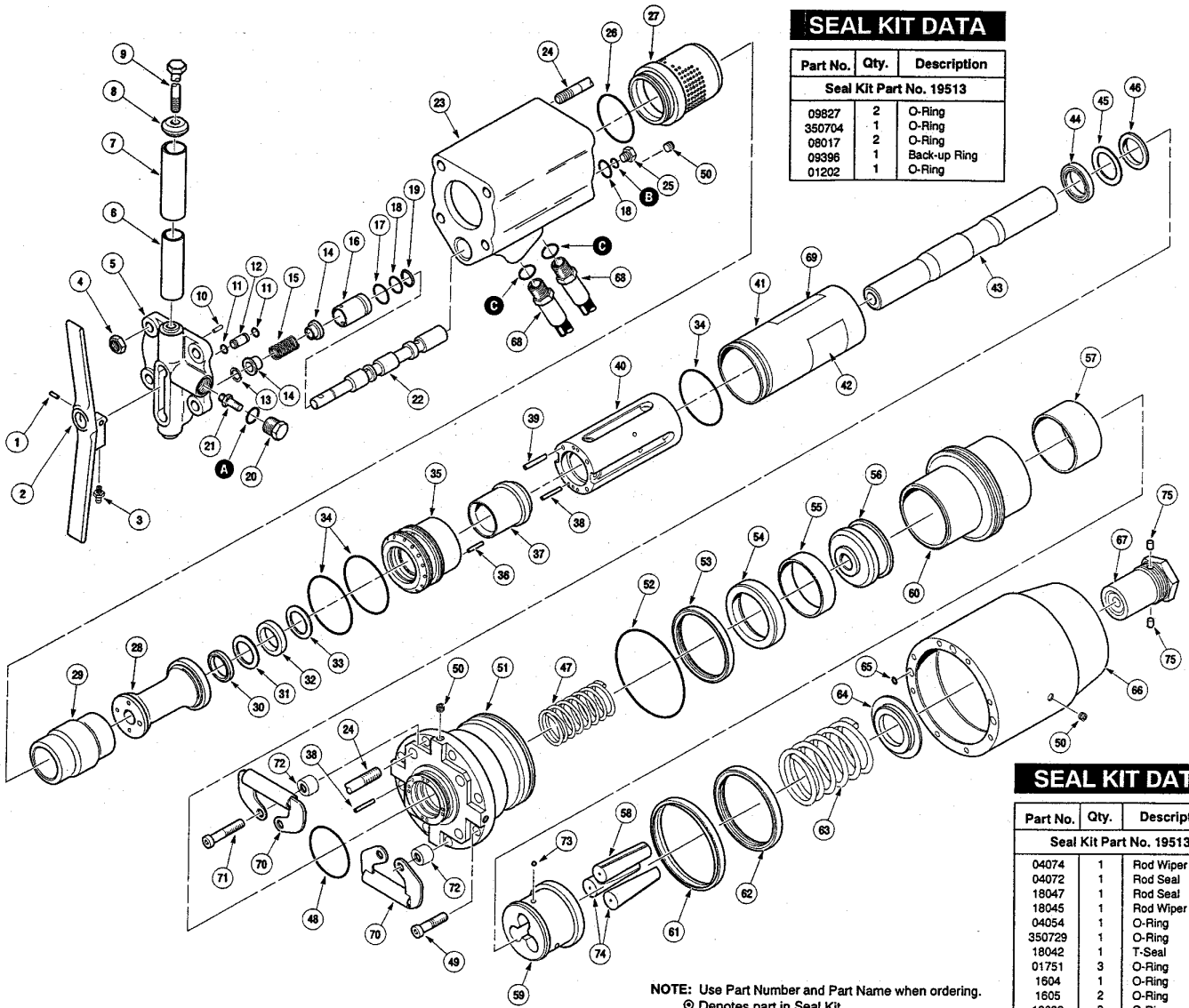
Stanley reserves the right to replace or repair only those parts which under our examination prove to have been defective at the time of purchase.

Shipping charges are prepaid by the customer unless otherwise authorized by Stanley.

The warranty is void if maximum flow and pressure ratings are exceeded.

There is no other warranty expressed or implied.

SERVICE AND REPAIR NOTES



SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 19513		
09827	2	O-Ring
350704	1	O-Ring
08017	2	O-Ring
09396	1	Back-up Ring
01202	1	O-Ring

SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 19513		
04074	1	Rod Wiper
04072	1	Rod Seal
18047	1	Rod Seal
18045	1	Rod Wiper
04054	1	O-Ring
350729	1	O-Ring
18042	1	T-Seal
01751	3	O-Ring
1604	1	O-Ring
1605	2	O-Ring
18039	3	O-Ring
18041	1	T-Seal
18046	1	Piston Ring
350770	1	O-Ring

NOTE: Use Part Number and Part Name when ordering.

⊙ Denotes part in Seal Kit

Ⓐ Supplied with Item (20)

Ⓑ Supplied with Item (25)

Ⓒ Supplied with Item (68)

PARTS LIST

Item No.	Part No.	Qty.	Description
1	07492	1	Roll Pin, 3/8 x 3/4
2	17992	1	Trigger
3	18037	1	Ball Joint Stud - Superior #GK3003
4	04374	4	Locknut, 5/8 - 18 UNC
5	18022	1	Handle
6	18017	2	Handle Tube
7	18018	2	Handle Grip
8	18016	2	Handle Plug
9	07855	2	Capscrew, 1/2 - 13 x 5 Hex Hd
10	07624	1	Roll Pin, 3/16 x 1
11	09827	2	O-Ring, 7/32 x 11/32 x 1/16 ⊙
12	18015	1	Tube Coupling
13	18038	1	Retaining Ring, Spirolox # RSN-62
14	18008	2	Spring Washer
15	18007	1	Spring
16	17995	1	Seal Insert
17	350704	1	O-Ring, 1 1/16 x 1 1/4 x 3/32 ⊙
18	08017	2	O-Ring, 7/8 x 1 1/16 x 3/32 ⊙
19	09396	1	Back-Up Washer ⊙
20	07493	1	O-Ring Plug
21	01650	1	Charge Valve
22	18002	1	On/Off Valve Spool
23	17990	1	Accumulator On/Off Valve Block
24	17994	4	Tie Rod
25	01874	1	1/4 S.A.E. O-Ring Plug
26	01202	1	O-Ring, 2 13/16 x 3 x 3/32 ⊙
27	18004	1	Accumulator Cylinder
28	18003	1	Accumulator Chamber
29	04059	1	Accumulator Diaphragm
30	04074	1	Rod Wiper - Disogrin # 005-021 ⊙
31	18006	1	Back-Up Washer ⊙
32	04072	1	Rod Seal - Disogrin # 501151000A ⊙
33	18005	1	Seal Retainer Washer
34	18039	3	O-Ring, 3 1/4 x 3 7/16 x 3/32
35	17983	1	Automatic Valve Body
36	04571	2	Push Pin
37	18001	1	Automatic Valve
38	07890	2	Roll Pin 3/16 x 1 1/2
39	04067	4	Push Pin
40	17984	1	Flow Sleeve
41	17993	1	Flow Sleeve Tube
42	18591	1	Name Tag - GD47
43	18000	1	Piston
44	18047	1	Rod Seal - Disogrin # 001-122 ⊙
45	18010	1	Seal Washer ⊙
46	18045	1	Rod Wiper - Disogrin # 006-023 ⊙
47	18011	1	Spring
48	04054	1	O-Ring, 2 7/8 x 3 1/8 x 1/8 ⊙
49	16386	4	Capscrew, 7/16 - 14 x 1 1/2
50	00955	9	Pipe Plug, 1/8 - 27 HSH
51	22143	1	Adaptor
52	24171	1	O-Ring, 5 3/4 x 6 x 1/8 -256 ⊙
53	18042	1	T Seal - Parker # B001-TR043-4015 ⊙
54	17998	1	Anvil Stop
55	18043	1	Wear Ring - Hydro Comp. T 30304-1952
56	17999	1	Anvil
57	18044	1	Wear Ring - Hydro Comp. T 30652-1952
58	22295	1	Master Chuck Jaw, 1/2-in.
	22151	1	Master Chuck Jaw, 5/8-in.
	22297	1	Master Chuck Jaw, 3/4-in.
59	17997	1	Chuck
60	22152	1	Chuck Piston
61	22153	1	Piston Ring - Hydro Comp. ⊙
62	18041	1	T Seal - Parker # B001-TR047-4015 ⊙
63	18009	1	Spring
64	17996	1	Spring Guide Washer
65	01751	3	O-Ring, 3/8 x 9/16 x 3/32 ⊙
66	22144	1	Cylinder
67	19516	1	Rod Guide Nut, 1/2-in.
	24284	1	Rod Guide Nut, 5/8-in.
	24285	1	Rod Guide Nut, 3/4-in.
68	09546	2	Hose Assy
69	19693	1	Danger Sticker
70	22150	2	Assist Handle Weldment
71	22141	4	Capscrew, 7/16 - 14 x 2 1/4 HSH
72	22148	4	Spacer
73	20145	6	Steel Ball - 1/4 Dia. 500 Grade
74	22296	2	Chuck Jaw, 1/2-in.
	22145	2	Chuck Jaw, 5/8-in.
	22298	2	Chuck Jaw, 3/4-in.
75	00721	2	Lock

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