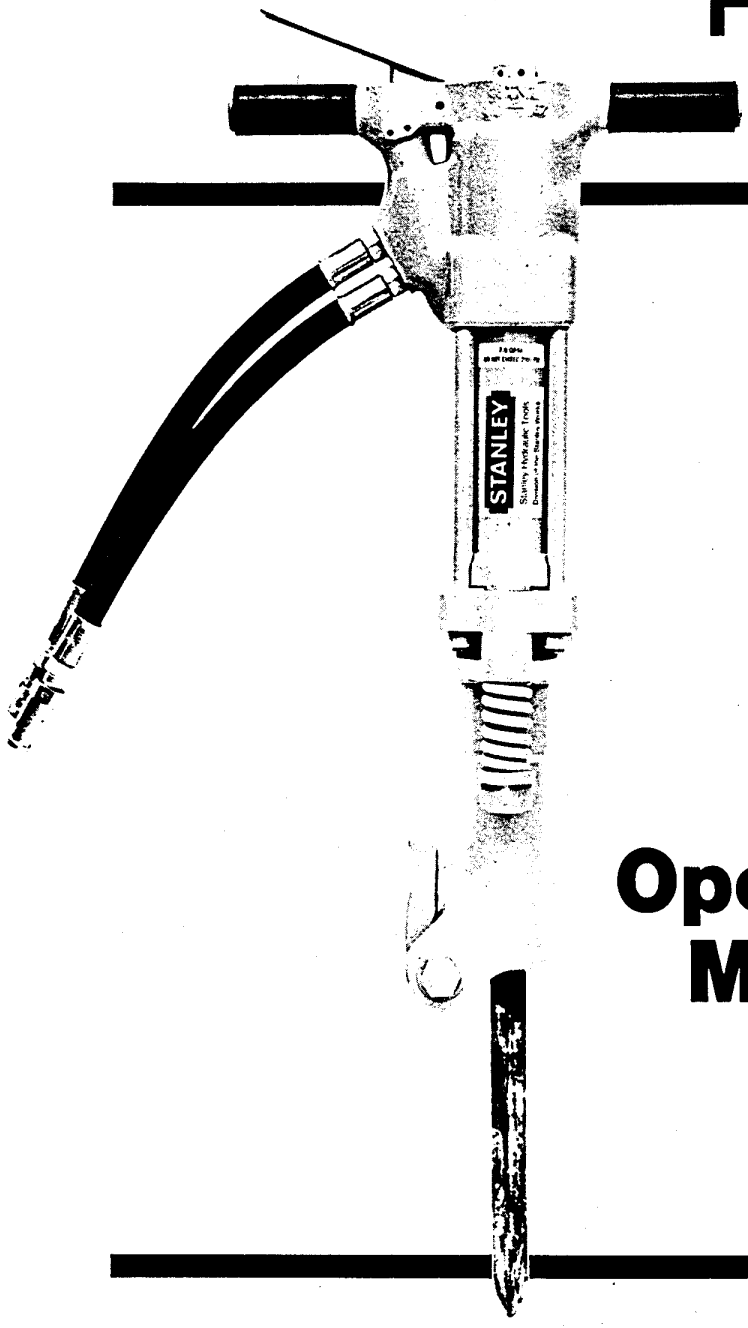
BR89
HYDRAULIC BREAKER



Safety, Operation and Maintenance Manual

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17248 11/93R

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.

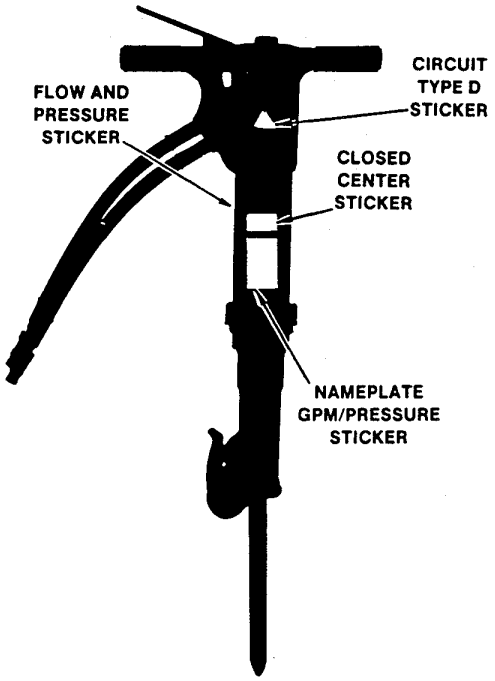
Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 4.

GENERAL SAFETY PRECAUTIONS

The BR89 Hydraulic Breaker 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 breaker and hose before operation. Failure to do so could result in personal injury or equipment damage.

- Operators must start in a work area without bystanders. Flying debris can cause serious injury.
- Establish a training program for all operators to ensure safe operation.
- The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- 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 breaker.
- Never use tools near energized transmission lines. Know the location of buried or covered services before starting your work.
- Never wear loose clothing that can get entangled in the working parts of the tool.
- 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 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 weld, cut with an acetylene torch, or hardface the tool bit.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Always return hydraulic circuit control valve to "OFF" position before charging or disconnecting tool.

TOOL NAMEPLATE AND TAGS



DO NOT EXCEED
34 LITRES/MIN·138 BARS

FLOW AND PRESSURE STICKER

CLOSED CENTER
FOR USE ON CLOSED CENTER HYDRAULIC SYSTEM

CLOSED CENTER STICKER

D
30LPM at 138Bar
BHMA CATEGORY

CIRCUIT TYPE D STICKER

BR89 BREAKER
SERIAL No.:
FLOW: 7-9 GPM/26-34 LPM
PRESS: 1500-2000/
105-140 BAR
ACCUMULATOR CHG.:
800 P.S.I./55 BAR
NITROGEN

STANLEY
Stanley Hydraulic Tools
Division of the Stanley Works

NAMEPLATE GPM/PRESSURE STICKER

The nameplate sticker shown is attached to the breaker in the location shown. The pressure and flow rates specified must never be exceeded.

A flow and pressure sticker is attached to the breaker at the location shown. Never exceed the flow and pressure levels on this sticker.

A breaker configured for use on a closed center hydraulic system will have an additional sticker attached to the breaker at the location shown. Never use a closed center breaker on an open center circuit and vise versa.

The information listed on all stickers must be legible at all times. Always replace stickers that have become worn or damaged. They are available from your local Stanley distributor.

The safety tag at right is attached to the breaker when shipped from the factory. Read and understand the safety instruction listed on this tag before removal. We suggest you retain this tag and attach it to the breaker 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 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.

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

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 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

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.

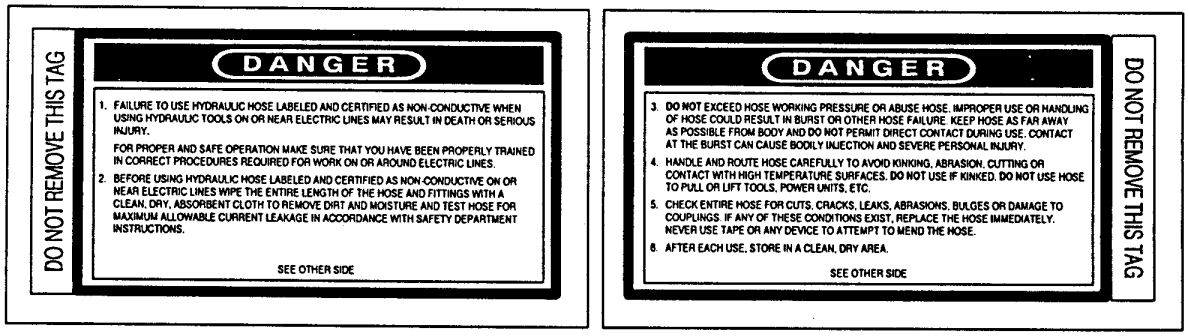
Hoses 2 and 3 listed above are **conductive** and **must never** be used near electrical conductors.

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.

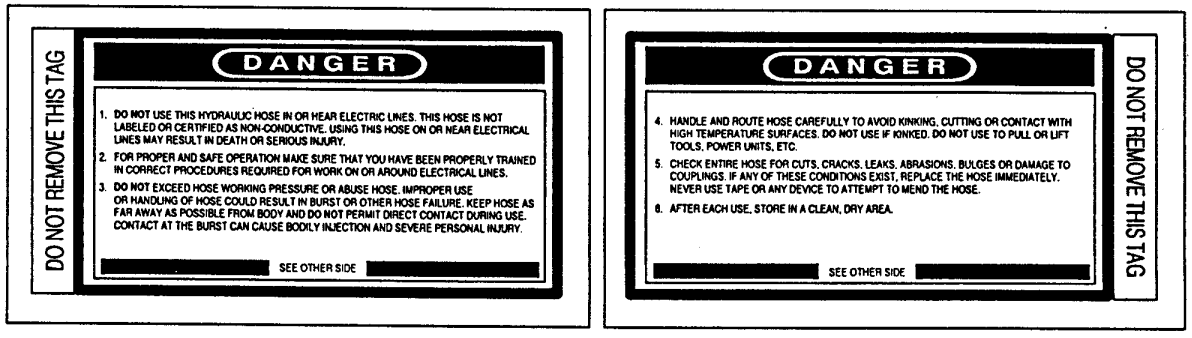
1 CERTIFIED NON-CONDUCTIVE HOSE

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



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

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

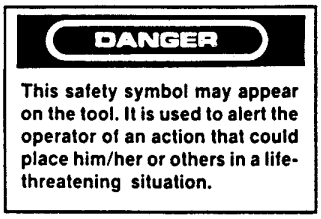


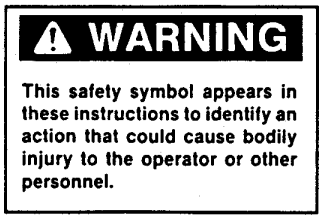
HOSE PRESSURE RATING

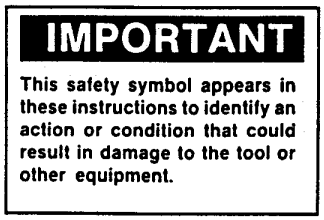
The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting of the hydraulic system used to power the breaker.

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.

OPERATION

IMPORTANT

In addition to the Safety Precautions on pages 1 thru 4 of this manual, observe the following for equipment protection and care.

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

- Do not force a small breaker to do the job of a large breaker.

- Keep tool bit sharp for maximum breaker performance. Make sure that tool bits are not chipped or rounded on the striking end.

- Never operate a breaker without a tool bit or without holding it against the work surface. This puts excessive strain on the breaker foot.

- Always keep critical tool markings, such as labels 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. All hoses must have an oil resistant inner surface and an abrasive resistant outer surface.

- 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 may result in damage to the quick couplers and cause overheating of the hydraulic system.

- Do not use the tool for applications for which it was not designed.

- Make certain that the recommended relief valves are installed in the pressure side of the system.

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/105-140 bar. Recommended relief valve settings are 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 sufficient 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. 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. 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.

OPERATING 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 equipped with a relief valve set to open at 2100-2250 psi/145-155 bar.

INSTALL TOOL BIT

1. Rotate the latch on the breaker foot downward (pointing away from the foot).

2. Insert the tool bit into the foot and pull the latch up to lock the tool bit in place.

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 tool fittings or 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 within the hoses may make them difficult to connect. When possible, connect the free ends of the hoses together.

TOOL OPERATION

1. Observe all safety precautions.

2. Install the appropriate tool bit for the job.

3. Place the bit firmly on the surface to be broken.

4. Squeeze the trigger to start the breaker. Adequate down pressure is very important. When the tool bit breaks through the obstruction, or becomes bound, release the trigger and reposition the tool bit.

Note: Partially depressing the trigger allows the tool to run at a slow speed, making it easier to start the tool bit into the work surface.

5. To start, break an opening (hole) in the center of the surface. Once the hole is started, crack portions of the material into the opening. The breaking should be done in a spiral pattern around the original hole, for best productivity.

The bite or width of the broken material will vary with the strength and thickness of the material and the amount of reinforcement wire or rebar.

Harder material and more reinforcing wire or rebar will require smaller bites. To determine the most effective bite, start with 2-inch/50 mm or smaller bites.

The bite can then be gradually increased until the broken piece becomes too large requiring increased time to break off the piece.

Sticking of the tool bit occurs when too large a bite is taken allowing the tool bit to drill into the material without fracturing it. This causes the tool bit to become trapped by surrounding material.

COLD WEATHER OPERATION

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

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

SERVICE INSTRUCTIONS

Note: For orientation of parts identified in the following procedures, refer to the parts location diagram.

PRIOR TO DISASSEMBLY

- Clean exterior of tool.
- Obtain Seal Kit (Part Number 14830) so you can replace all seals exposed during disassembly. Note orientation of seals before removing them. Install new seals in same way.

BREAKER DISASSEMBLY

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

2. Remove the nuts securing the foot springs to allow removal of the foot assembly, springs, foot bolt and anvil.

IMPORTANT

The anvil is spring loaded and will push on the foot as the side springs are removed.

3. The latch, detent and spring are accessible when the latch bolt is removed.

4. To replace the hex bushing, first note the orientation of the hex flats with the latch bolt centerline so that the replacement bushing can be installed with the same orientation.

5. Once the latch has been removed, a 1-3/8 to 1-1/2 inch/35 to 38 mm diameter steel rod 10 inches/25 cm long and a 25 to 50 ton press is required to remove the hex bushing. Locate the foot across supports in the press frame and push the bushing out towards the latch end using the steel rod.

6. To install the replacement bushing, orient the hex flats to the latch pivot bolt and press into the foot bore O.D. tapered end first.

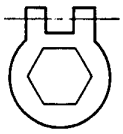


Figure 1. Hex Alignment with Latch Bolt

7. Remove the pigtail hose assemblies.

Note: The breaker is full of oil and will drip from the ports when the hoses are removed.

8. Remove the valve cap assembly (1-3/8 inch hex) 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.

9. Remove the four side nuts.

10. Remove the adapter block by tapping on the flange area with a soft-faced (plastic or rubber) hammer.

11. Remove the rod wiper, washer and cup seal from the adapter block using proper o-ring tools from O-Ring Tool Kit (Part Number 04337) to avoid damage to the seal groove surfaces.

12. Using a plastic or rubber hammer, tap piston toward handle until it stops.

Note: When moving piston, oil will come out of "IN" and "OUT" ports and flow sleeve.

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

14. If the automatic valve body remains in the handle assembly when the flow sleeve tube assembly is removed, proceed to step 15. If it remains in the flow sleeve tube assembly, remove it as follows:

a. Remove piston and washer.

b. Place Split Rings (Part Number 04908) between the automatic valve body and 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 disc or Accumulator Cylinder Puller (Part Number 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 mm x 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 17.

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

16. Remove the automatic valve and two 3/16 x 1-1/4 inch/5 mm x 32 mm push pins from the automatic valve body by turning the handle assembly on end.

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

a. Place Split Ring, (Part Number 04908), on top of Flow Sleeve Removal Tube (Part Number 04910).

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

c. Using 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 flow sleeve when it drops out.

18. Remove the accumulator assembly and automatic valve body from the handle by placing a 3/4-inch hex deep socket with a 6 inch/15 cm extension over the charging valve 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 handle.

To remove the cylinder use the Accumulator Cylinder Puller (Part Number 05640) which will seat on the inside lower contour of the accumulator cylinder, and 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.

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

20. Ensure that the accumulator assembly is discharged completely prior to disassembly.

21. To remove the accumulator chamber and diaphragm from the accumulator cylinder, place the assembly on Accumulator Disassem bly Tool (Part Number 05508) and Flow Sleeve Removal Tube (Part Number 04910). Use a rag in the bottom of removal tube to protect the accumulator chamber.

Drive 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.

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

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

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

IMPORTANT

Avoid damage to the contours of the chamber.

25. Remove trigger from handle by driving out 1/4 inch/6.4 mm diameter Spirol Pin.

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

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

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

PRIOR TO ASSEMBLY

Thoroughly clean all parts in clean solvent prior to inspection. Inspect parts in a clean, well-lighted area.

⚠ WARNING

Use cleaning solvent in well-ventilated areas. Avoid prolonged inhalation of vapors and prolonged or repeated contact with skin. Keep away from heat or open flame.

1. Check all parts for evidence of excessive wear, scoring, or obvious damage. Pay particular attention to seal and other running surfaces, looking for scratches or other signs of oil contamination caused defects. Dirty or water contaminated oil can cause scratches on running component surfaces.

2. Examine all exposed seals and o-rings for worn spots or damage caused by overheating or ingestion of contaminants. Although all exposed o-rings and seals must be replaced during assembly of the unit, this inspection should be performed to help identify related faulty components and the cause of an experienced or potential malfunction.

3. All components exhibiting excessive wear or deep scratches must be replaced at assembly. Minor scratches can usually be touched-up using an emery cloth. Thoroughly clean all parts before reassembly and blow dry.

BREAKER ASSEMBLY

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

2. Replace (in this order) the spring, valve spool, bushing (with wiper ring toward stem end of valve spool) and washer in valve spool bore. Secure by driving the two 3/16 x 1-3/8 inch/5 mm x 35 mm roll pins through the handle on top of the washer.

Note: Properly installed roll pins will be centered in the handle and their split lines aligned as shown in Figure 2.

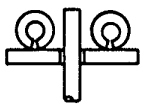


Figure 2.

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

4. Screw charging valve into accumulator chamber.

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

6. Use grease or rubber lubricant on the inside of accumulator cylinder and O.D. of 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 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.

7. Test charge accumulator assembly as follows:

a. Place assembly in a vise with soft jaws clamping on ends of the accumulator chamber.

IMPORTANT

Do not overtighten and distort accumulator cylinder.

b. Loosen 5/8-inch hex charging valve lock nut 1-1/2 turns.

c. Charge accumulator with nitrogen to 800 psi/55 bar. (It may be necessary to charge 50-75 psi/3.4-5 bar high to overcome the pressure drop through charging system.)

d. Check for leaks.

e. Discharge accumulator.

8. Verify that the CAUTION sticker shown in Figure 3 is attached to the accumulator chamber. This sticker must be in good physical condition and its contents legible. Replace if worn or damaged.

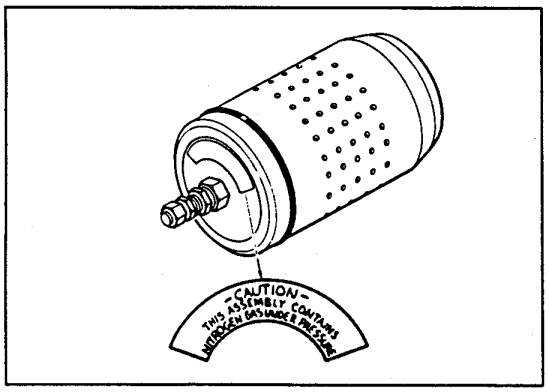


Figure 3.

9. Replace the back-up washer and cup seal (lips facing out) in the accumulator chamber counterbore.

10. Install the accumulator assembly into the handle, charging valve end first, using an arbor press with an aluminum disc or Accumulator Cylinder Puller, (Part Number 05640), to protect parts.

11. 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.

12. The flow sleeve has a wide groove around the outside of one end. Install this end first. Press the flow sleeve into the flow sleeve tube, using an aluminum disc or Accumulator Cylinder Puller, (Part Number 05640), to protect the part, until the sleeve is **flush** with the tube. Do not seat flow sleeve on spacer at this time.

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

14. 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 body.

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

15. 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.

16. Use an aluminum disc or Accumulator Cylinder Puller, (Part Number 05640), to protect parts and push the automatic valve body into the flow sleeve tube until the flow sleeve stops on the installation spacer. The bottom of the two side holes in the automatic valve body will be tangent to the top edge of the flow sleeve tube when properly seated.

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

18. Using a large amount of grease, install the washer small end first in the shallow counterbore on top of the automatic valve body. Be sure the washer is fully seated in the automatic valve body.

19. Place the handle assembly, side rods up, in the arbor press. Holding the piston by its lower end so it does not drop out, place flow sleeve assembly in the handle assembly. A light press will be required.

IMPORTANT

Press on the flow sleeve tube only. Press evenly all around so that the tube assembly is straight when seated. Installation spacer may be required to keep flow sleeve from moving.

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

20. Clamp flow sleeve tube between side rods with "IN" and "OUT" ports up. Soft vice jaws are recommended.

21. Install new seals in the adapter block. The rod wiper lip faces the foot end and is followed by the aluminum back-up washer and the cup seal lips facing the handle end.

22. Slide the adapter block over the piston and drive in place into the flow sleeve tube, using a soft-faced hammer. Orient the foot bolt holes at right angles to the handle.

23. Replace the four side rod nuts. Tighten in 25 ft lb/34 Nm increments to 125 ft lb/170 Nm in the pattern shown in Figure 4.

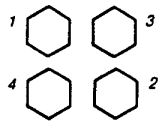


Figure 4.

24. Insert the anvil, tapered end first, into the foot assembly.

Note: Apply antisieze compound to the anvil and anvil bore before installing.

25. Place the anvil spring on the step of the anvil and insert the anvil/foot assembly into adapter block.

Note: The latch should be directly under the on-off valve.

26. Install the two foot bolts through the adapter block and foot assembly and slide the foot springs over them. Install the nuts and tighten until flush with the end of the foot bolts.

27. Charge the accumulator with nitrogen as described below.

28. Install the valve cap assembly.

29. Install pigtail hose assemblies.

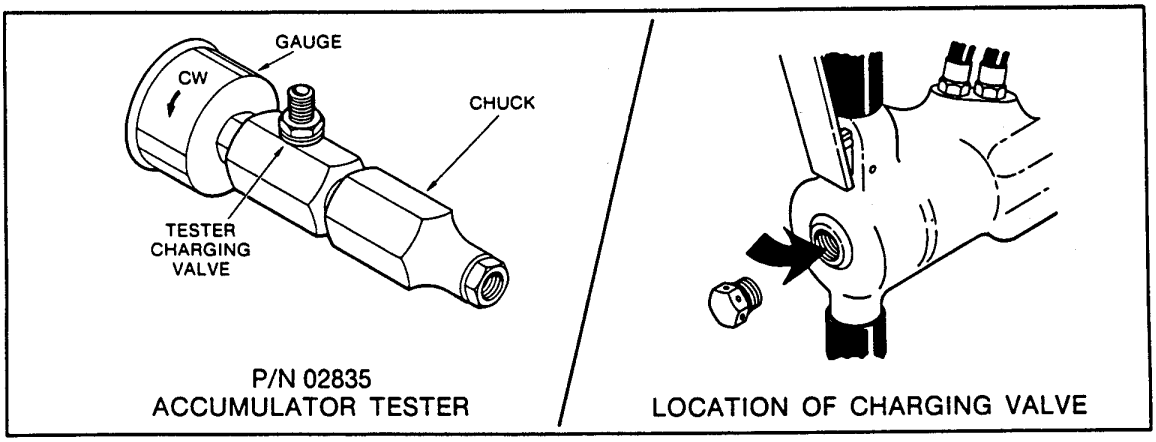


Figure 5.

CHARGING THE ACCUMULATOR

ACCUMULATOR TESTING PROCEDURE (See Figure 5)

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 fittings).
- NITROGEN bottle with a 1000 psi/70 bar minimum charge.

1. Remove the valve cap assembly from the breaker.

2. Remove the protective cap and loosen the 5/8-inch hex locking nut on the charging valve 1-1/2 turns.

3. Holding the chuck end of Stanley tester, (Part Number 02835), turn the gauge fully counterclockwise to ensure that the stem inside the chuck is completely retracted.

4. 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, hand tighten only.

5. Advance the valve stem by turning the gauge-end clockwise until a pressure is indicated on the gauge (charging pressure should be 700-900 psi/48-62 bar).

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

7. Tighten the 5/8-inch hex locking nut on the tool charging valve. Be careful not to overtighten. Install the protective cap and valve cap assembly.

ACCUMULATOR CHARGING PROCEDURE

1. Perform steps 1 through 5 of the accumulator testing procedure above.

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

3. Adjust the regulator to the charging pressure of 800 psi/55 bar.

Note: It may be necessary to set the regulator at 850-900 psi/59-62 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 tool 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. Tighten the 5/8-inch hex locking nut on the tool charging valve and replace the protective cap.

8. Replace the valve cap assembly.

GENERAL SERVICE NOTES

1. If the breaker is repainted after servicing, be sure to mask off the vent in the valve cap assembly. Do not allow paint to enter the "IN" and "OUT" ports or the bore of the foot assembly.

2. If the handle grips need to be replaced.

a. Remove the old grips and clean the handle.

b. Wash the new grips with solvent and follow with soap and water wash.

c. With the grips and the handle clean and dry, simply push or drive the grips on. DO NOT lubricate the parts. The grips will not be secure on the handle if any grease or oil is used.

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 oil temperature at least 80°F/27°C.

PROBLEM	CAUSE	REMEDY
Breaker does not run.	Power unit not functioning.	Check power source 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.
Breaker 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 diaphragm if charge loss continues.
	Oil too hot (above 150°F /65.5°C).	Provide cooler to maintain proper oil temperature (130°F/54.4°C maximum).
	The anvil is not sliding freely in the foot bore.	Remove, clean, lubricate, and replace as required.
Breaker 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.
	Orifice plug blocked.	Remove restriction.

PROBLEM	CAUSE	REMEDY
Breaker operates slow. (Cont.)	Oil too hot (above 140° F/60° C) or too cold (below 60° F/16° C).	Check power unit for proper oil temperature. Bypass cooler to warm oil up or provide cooler to maintain proper temperature.
	Relief valve set too low.	Adjust relief valve to 2100-2250 psi/145-155 bar.
Breaker gets hot.	Hot oil going through tool.	Check power unit. Be sure flow rate is not too high causing part of the oil to go through the relief valve. Provide cooler to maintain proper oil temperature (140° F/60° C max).
		Check relief valve setting.
		Eliminate flow control devices.
Oil leakage on gad.	Lower piston seal failure.	Replace seal.
Oil leakage through charge valve cap.	Upper piston seal failure or accumulator o-ring failure or accumulator charge loss or failure.	Replace seals, recharge or replace accumulator diaphragm.
Oil leakage around trigger.	Valve spool seal failure.	Replace seals.

SPECIFICATIONS

Weight	80 lbs/36 kg
Pressure Range	1500-2000 psi/105-140 bar
Flow Range	7-9 gpm/26-34 lpm
Optimum Flow	8 gpm/30 lpm
Connect Size	3/8 in. Male Pipe Hose Ends
Length	29 in./73.5 cm
Width	16 in./40 cm
System Type	o.c. or c.c.
	EHTMA CIRCUIT TYPE D/HTMA TYPE 2
Port Size	SAE-8 o-ring
Hose Whips	Yes

NOTE

Weights, dimensions and operating specifications listed are subject to change without notice. Where specifications are critical to your application, please consult the factory.

ACCESSORIES

PART NUMBER	DESCRIPTION
	TOOLS
1-1/8 inch Hex X 6-inch Shank	
02331	Clay Spade, 5-1/2 inch14 cm Blade
02332	Asphalt Cutter, 5 inch/14 cm Blade — 11 inches/28 cm long UC
02333	Moil Point — 14 inches/36 cm long UC
02334	3 inch/76 mm Chisel — 14 inches/36 cm long UC
03990	Chisel Point — 14 inches/36 cm long UC
04176	Ground Rod Driver, 1 inch/25 mm Rod
08106	Asphalt Wedge
08107	Keen Kut
14121	Sign Post Driver Attachment
1-1/4 inch Hex X 6-inch Shank	
02335	Asphalt Cutter, 5 inch/13 cm Blade — 11 inches/28 cm long UC
02336	Moil Point — 14 inches/36 cm long UC
02337	3-inch Chisel — 14 inches/36 cm long UC
02338	1-inch Chisel, Heavy Duty — 14 inches/36 cm long UC
04367	Ground Rod Driver, 1 inch/25 mm Rod
04404	Moil Point, Heavy Duty — 18 inches/146 cm long UC
04405	Clay Spade, 8 inch/20 cm Blade
08118	Brick Wedge
08119	Asphalt Wedge
09262	Clay Spade, 5 1/2 inch/14 cm Blade
15059	Sign Post Driver Attachment
	TEST EQUIPMENT
02835	Accumulator Tester
03189	20 gpm/75 lpm Flowmeter
04182	Flow and Pressure Tester
06545	Accumulator Charge Kit

U/C Denotes the under collar dimension measured from bottom tip of tool to bottom surface of collar.

SERVICE TOOLS

PART NUMBER	DESCRIPTION
	TOOLS
04337	O-Ring Tool Kit
04908	Split Rings
04909	Flow Sleeve Installation Spacer
04910	Flow Sleeve Removal Tube
14830	Seal Kit
05508	Accumulator Disassembly Tool
05640	Accumulator Cylinder Puller

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.

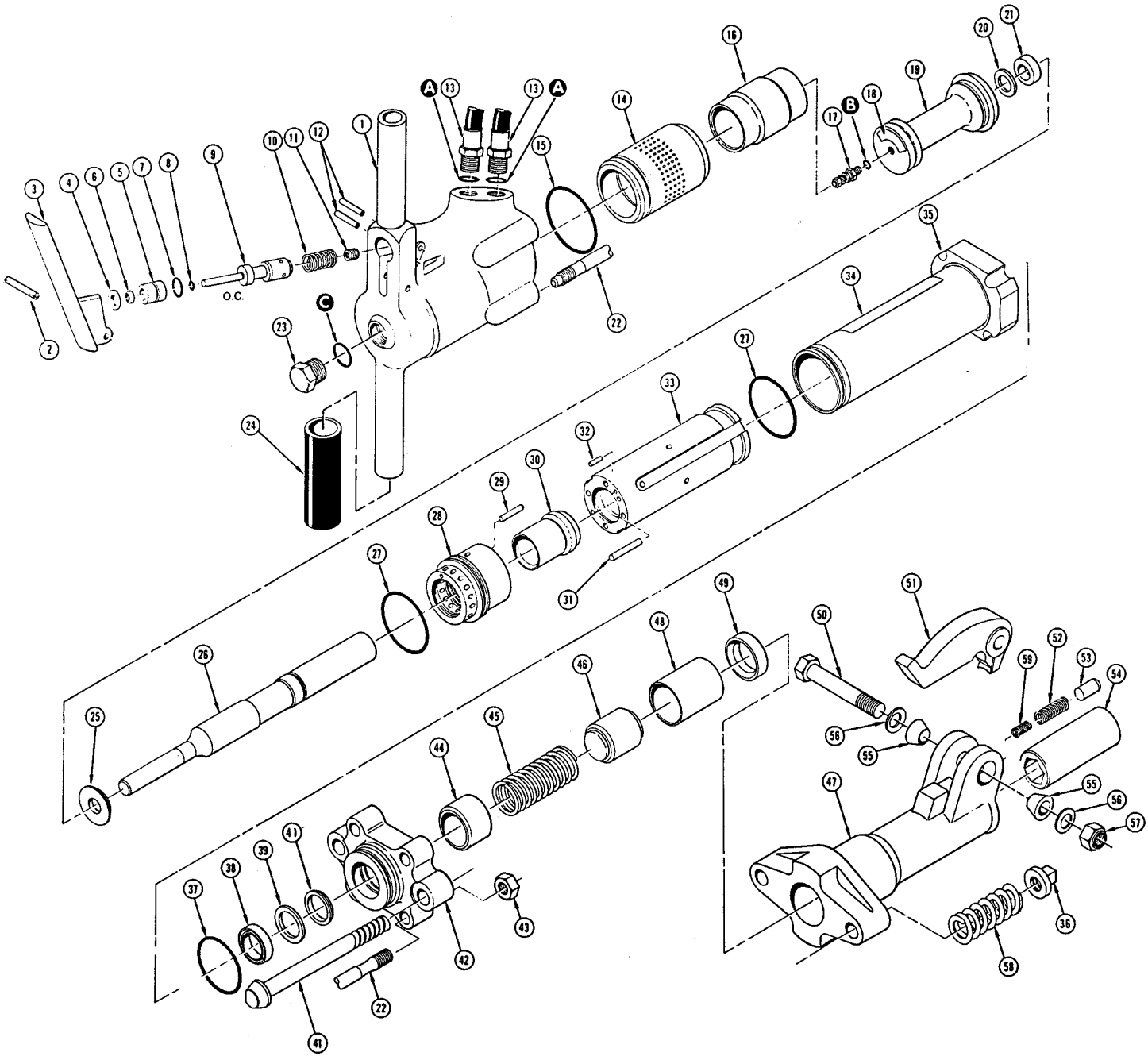
Stanley reserves the right to replace or repair only those parts which under our examination prove to have been defective at the time of purchase.

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


O.C.

SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 14830		
00293	1	O-Ring
00678	1	O-Ring
01362	1	O-Ring
01605	2	O-Ring Ⓐ
04052	1	O-Ring Ⓒ
04054	1	O-Ring
04056	1	Rod Wiper
04072	1	Cup Seal
04074	1	Rod Wiper
05307	1	Cup Seal
13854	1	O-Ring
13855	2	O-Ring

PARTS LIST

Item No.	Part No.	Qty.	Description
	07973	1	**Breaker Handle Assy** (Consists of Items 1 thru 12)
1	04049	1	Breaker Handle
2	00844	1	Roll Pin
3	04053	1	Trigger
4	04055	1	Washer
	07699	1	**Bushing Assy** (Consists of Items 5 thru 8)
5	04057	1	Bushing
6	04056	1	Rod Wiper ⊙
7	00293	1	O-Ring, 11/16 x 7/8 x 3/32 ⊙
8	01362	1	O-Ring, 5/16 x 7/16 x 1/16 ⊙
9	04077	1	Valve Spool O.C.
10	04058	1	Spring
11	05465	1	Orifice Plug
12	22891	2	Roll Pin, 3/16 x 1-5/8
13	09546	2	Hose Assy Ⓐ
	06889	1	**Accumulator Assy** (Consists of Items 14 thru 21)
14	04060	1	Accumulator Cylinder
15	04054	1	O-Ring, 2-7/8 x 3-1/8 x 1/8 ⊙
16	04059	1	Accumulator Diaphragm
17	04051	1	Charging Valve Ⓑ
18	10180	1	Sticker — Caution
19	05309	1	Accumulator Chamber
20	05301	1	Back-Up Washer
21	05307	1	Cup Seal ⊙
22	13823	4	Side Rod
23	04050	1	Valve Cap Assy Ⓒ
24	02494	2	Handle Grip
25	04064	1	Washer
26	22164	1	Piston
27	13855	2	O-Ring, 2-7/8 x 3-1/8 x 1/8 ⊙
28	04066	1	Automatic Valve Body
29	04571	2	Push Pin, 3/16 x 1-1/4
30	04065	1	Automatic Valve
31	04067	4	Push Pin, 5/16 x 2
32	07890	1	Roll Pin, 3/16 x 1-1/2
33	22165	1	Flow Sleeve
34	13842	1	Sticker — Nameplate
35	13824	1	**Flow Sleeve Tube Assy**
36	02027	2	Nut, Hex
37	13854	1	O-Ring, 2-5/8 x 2-7/8 x 1/8 ⊙
38	04072	1	Cup Seal ⊙
39	13837	1	Washer
40	04074	1	Rod Wiper ⊙
41	13819	2	Foot Bolt
42	13831	1	Adapter Block
43	04374	4	Locknut, 5/8 x 18
44	12143	1	Upper Anvil Stop
45	13816	1	Compression Coil Spring
46	12141	1	Anvil
	13836	1	**Breaker Foot Assy** Model BR89120 (Consists of Items 47 thru 57 & 59)
	14837	1	**Breaker Foot Assy** Model BR89130 (Consists of Items 47 thru 57 & 59)
47	13835	1	Breaker Foot
48	13821	1	Sleeve
49	13820	1	Impact Ring
50	04983	1	Foot Latch Bolt
51	01837	1	Latch
52	01744	1	Spring
53	08411	1	Detent
54	13825	1	Hex Bushing, 1-1/8 x 4 Model BR89120
	14836	1	Hex Bushing, 1-1/4 x 4 Model BR89130
55	01269	2	Rubber Sleeve
56	04985	2	Spring Washer
57	04984	1	Stop Nut
58	13817	2	Compression Coil Spring
59	18903	2	Compression Coil Spring

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