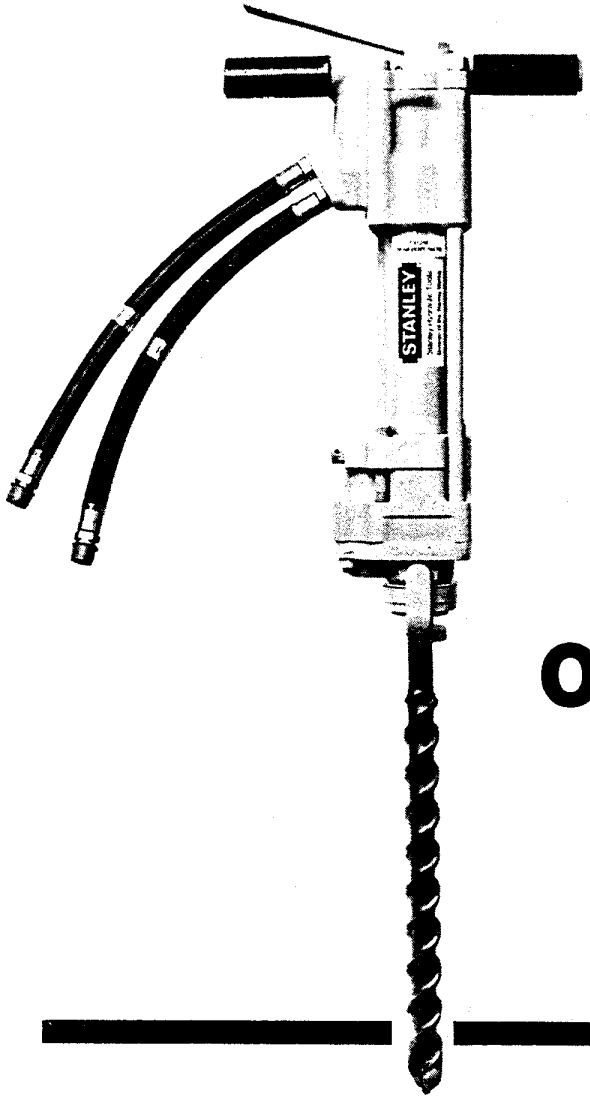
HD45
HYDRAULIC HAMMER DRILL



Safety, Operation and Maintenance Manual

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05436 U.S.A. 11/88R

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.

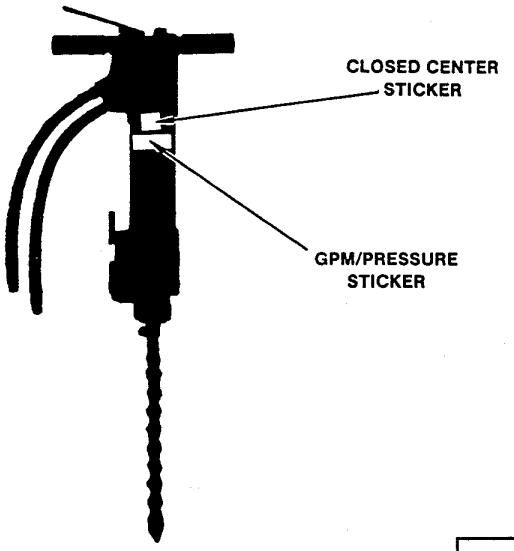
Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 4.

GENERAL SAFETY PRECAUTIONS

The HD45 Hydraulic Drill 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 drill 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 (with metatarsal guards or metal shoe caps) when operating the drill.
- 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.
- Never rest the tool on your foot.
- Never allow your face to come close to the tool.
- Never point the hammer drill at anyone.
- Never start the tool while it is laying on the ground.
- Do not "RIDE" the hammer drill with one leg over the handle. Operator injury may result.

TOOL STICKERS AND TAGS



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

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

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 HOSES 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 INJECTION INTO THE BODY. ■ FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS PERSONAL INJURY.

GPM/PRESSURE STICKER

CLOSED CENTER

FOR USE ON CLOSED CENTER HYDRAULIC SYSTEM

CLOSED CENTER STICKER

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

The safety tag at right is attached to the drill 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 drill 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 A CAUSE 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

0 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

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

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.

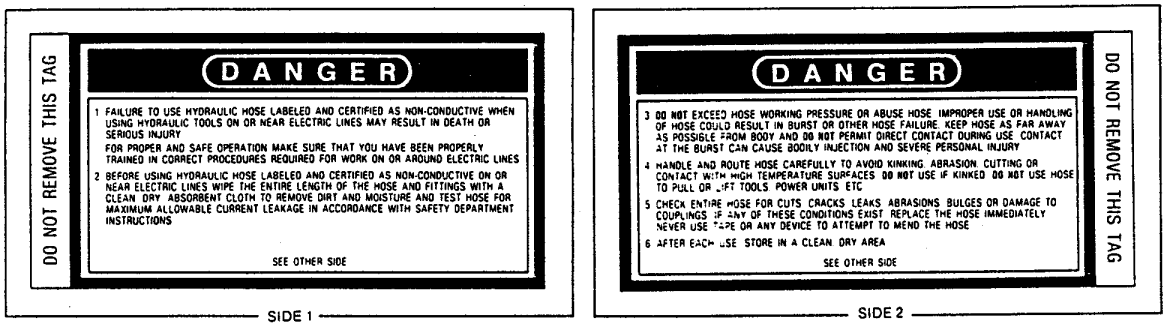
Hoses 2 and 3 listed above are **conductive** and **must never** be used near electrical conductors.

To help ensure your safety, the following DANGER tags are attached to all 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.

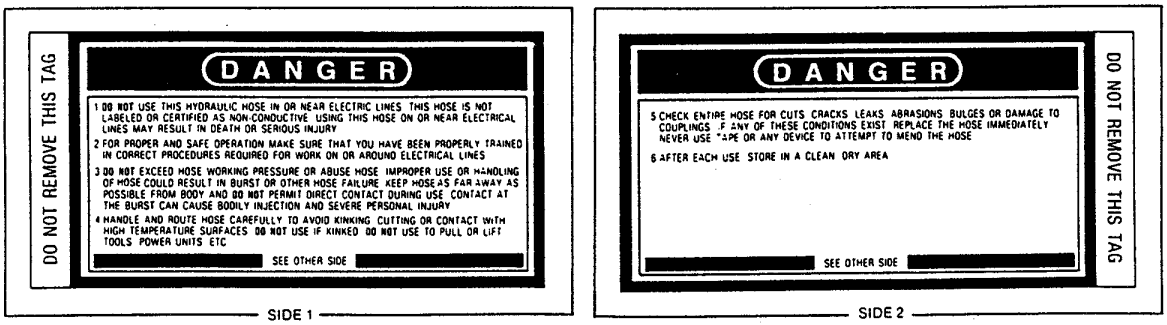
1 CERTIFIED NON-CONDUCTIVE HOSE

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



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

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

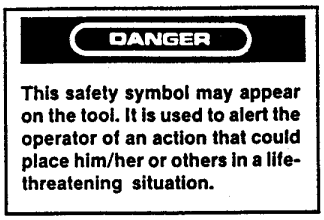


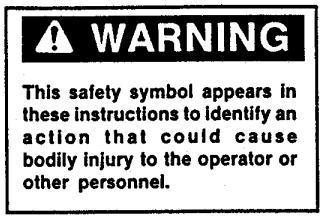
HOSE PRESSURE RATING

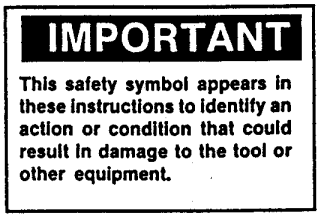
The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting on the hydraulic system used to power the hammer drill.

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.

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 hammer drill in a clean, dry space, safe from damage or pilferage.

- Do not use the hammer drill for jobs larger than the design features of the tool. Operate the tool within its rated capacity.

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

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

- Never operate a hammer drill without a drill bit or without holding it against the work surface. To do so places excessive strain on the hammer drill.

- Always keep critical tool markings, such as labels and 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.

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 ssu/28 centistokes will meet the recommended requirements over a wide range of operating temperatures.

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

PREOPERATION PROCEDURES

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 that the hydraulic power source is equipped with a relief valve set to open at 2250 psi/155 bar maximum.

INSTALL DRILL BIT

Note: The hammer drill is designed for use with 1-inch to 2-inch diameter bits manufactured for Model 736 Skill Hammer Drills.

1. Pull the latch at the foot of the tool so that the drill can be inserted into the drive hex.

⚠ WARNING

Do not allow your fingers to come between the latch and drill steel when closing the latch.

2. Push the latch back into the "latched" (vertical) position to lock the 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 the return hose first and disconnect it last to minimize or avoid trapped pressure within the tool.

3. Observe the arrow on hose couplers 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 operating hoses together.

DRILL OPERATION

1. Observe all safety precautions.

2. Install the appropriate drill bit for the job.

Note: The rotation of the drill bit is reversible. Drill bit speed is variable in each direction. This is accomplished by rotating the lever on the lower section of the tool. The tool is in neutral when the lever is in the vertical "up" position. The lever can be rotated 90 degrees to the "horizontal" position in each direction. (The direction that the bit rotates.) The distance that the lever is rotated determines the speed of the bit. The horizontal position in either direction is the maximum speed setting.

3. Select the speed of the bit best suited for the material being drilled. Most drilling is best accomplished with the lever halfway between fully "ON" (horizontal) and the vertical "up" position. Refer to the above note. The drill is not suitable for drilling steel or wood.

4. Squeeze the trigger to start the drill. Adequate down pressure is very important.

Note: If the trigger is partially depressed, the piston will cycle at a low rate and permit easier starting of the drill bit into the work surface.

5. Periodically pull the drill out of the hole while the bit is still rotating. This will clear the hole and allow more efficient penetration.

6. If the bit binds in the hole, reverse direction of bit rotation to assist in "backing out" the drill.

7. Keep the drill bit centered in the hole.

Note: Underwater models require daily preventive maintenance. See the General Service Notes section of this manual for these maintenance procedures.

COLD WEATHER OPERATION

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

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

SERVICE INSTRUCTIONS

Note: For parts orientation during the following procedures, refer to the PARTS LIST section of this manual.

PRIOR TO DISASSEMBLY

- Clean exterior of tool.
- Obtain Seal Kit, part number 05839, so you can replace all seals exposed during disassembly. Note orientation of seals before removing them. Install new seals in the same way.

HAMMER DRILL DISASSEMBLY

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

2. Remove the pigtail hose assemblies.

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

3. Remove the charge valve cap from the top of handle.

⚠ WARNING

Discharge accumulator.

4. Remove the two capscrews (3/8 hex socket) and two side rods. Remove handle assembly to expose on-off valve spool and accumulator diaphragm. Remove the motor assembly by tapping the top of the motor flange with a plastic or rubber hammer.

5. Remove the accumulator valve block by tapping on its underside with a plastic or rubber hammer. Tap on alternate sides to ensure that valve block comes off straight without binding.

6. Remove piston from flow sleeve assembly.

7. Remove the accumulator diaphragm and on-off valve from accumulator valve block; taking care not to damage the valve stem. The valve, bushing and associated seals will come out as an assembly; turn valve block upside down to remove valve spring.

8. Clamp the accumulator valve body in a bench vise with "in" and "out" ports facing up.

IMPORTANT

Do not overtighten the vise and distort the block.

9. Remove the porting block with 3/8-16 thread slide hammer or Tamper Sleeve Tool, part number 01120.

FLOW SLEEVE DISASSEMBLY

1. Remove the piston if not previously removed.

2. Place the flow sleeve assembly, automatic valve body down, on Flow Sleeve Removal Tool, part number 04919, which in turn is placed on Flow Sleeve Removal Tube, part number 04910.

3. With an arbor press and using an aluminum disc 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.

4. The automatic valve, four 1/4 x 1 1/2-inch push pins from the flow sleeve and two 3/16 x 1 1/4-inch push pins from the automatic valve body will come out.

5. To remove the flow sleeve from the flow sleeve tube, remove the automatic valve body

and associated parts from within the flow sleeve removal tube, and continue pushing on the flow sleeve until it drops out.

IMPORTANT

Use a rag in the bottom of the removal tube to protect the flow sleeve.

DRIVE MOTOR DISASSEMBLY

1. Place an aluminum plate or Bridge Plate, part number 05047, in an arbor press. The Bridge Plate is supplied in Bearing Puller Kit, part number 05064.

2. Place the motor assembly (consisting of the drive motor control block assembly, motor chamber, motor plate and associated parts) on the plate with the latch facing upward. Rotate the latch to the open position and use Latch Removal Tool, part number 05045, to press down on the spring back-up to allow removal of the wire retaining ring.

3. Remove the latch, latch washers, springs, and spring back-up.

4. Place the motor assembly in a bench vise (do not overtighten), then remove the two 3/8-16 x 1 3/4-inch capscrews and two 1/2-13 x 4 1/2-inch capscrews.

5. Separate the three parts of the motor housing and remove the idler gear, drive gear and key; allowing the drive hex to be pushed out through the drive motor control block end of the drive motor chamber.

IMPORTANT

Do not pry between motor parts with screwdrivers or other tools since this may damage seal surfaces. Do not attempt to remove the drive hex before the drive gear and key have been removed.

6. Remove the bearings as required using Bearing Puller Kit, part number 05064.

7. To remove the motor control valve assembly, loosen the set screw in the lever and remove lever. Remove the retaining ring and reattach the lever to pull the valve assembly out.

PRIOR TO REASSEMBLY

- Clean all parts with a degreasing solvent.
- Ensure that all seals that were exposed have been replaced with new parts.
- Apply clean grease or o-ring lubricant to all parts during reassembly.

HAMMER DRILL REASSEMBLY

DRIVE MOTOR REASSEMBLY

1. Support the four corners of motor plate (making sure it is level) in an arbor press.

2. Press bearings in place using Bearing Installation Tools, part numbers 05044 and 05061, with the bearing split lines facing each other.

IMPORTANT

Make sure bearings are pushed in straight.

3. Place the motor plate on an aluminum plate or Bridge Plate, part number 05067, latch end up, in arbor press.

4. Install latch parts with Latch Installation Tools, part numbers 05062 and 05879, in the following order; latch (in open position), latch washer, four wave springs, latch washer, four additional wave springs, spring back-up, assembly guide and wire retaining ring. Place pusher over the guide and press with arbor press until wire retaining ring snaps in place.

5. Install the bearings in the motor chamber in the same manner used for the motor plate (step 3). (Separate support at four corners is not necessary.)

6. To assemble motor components, start by sliding the drive hex through the motor chamber from control valve side.

7. Place the key in the drive hex and slide the drive gear in place over the drive hex and key.

8. Install the idler gear in the bearing/counter bore of the motor chamber.

9. Place an o-ring in the irregular groove of the motor chamber and apply grease to retain it in place.

10. Install a white back-up ring followed by a quad ring through the bearing and into the seal groove of the motor plate.

11. Slide the motor plate over the drive hex. Align the dowel pins and idler gear, then press together until the motor chamber and motor plate come together.

12. Secure the two sections together using the two 3/8-16 x 1 3/4-inch capscrews; tighten to 25 ft lb/34 Nm.

13. Place the thrust washer over exposed end of the drive hex on the control valve side of the motor chamber (grey or brass side down). Install the thrust back-up washer with its small diameter outward.

14. Place the gasket on the motor chamber with a light film of grease or oil for retention. Align with the dowel pin and o-ring counter bores. Install the two o-rings in the small counter bores of the motor chamber.

15. Install a white back-up ring and a quad ring seal in the seal counter bore of the motor control block.

16. Push the motor control block over the drive hex. Align the roll pins and push squarely using an arbor press until mated with the motor chamber. Install two 1/2-13 x 4 1/2-inch capscrews and tighten to 60 ft lb/81 Nm.

17. Replace the control valve in its bore followed by the tapered washer (large diameter of taper facing up), and retaining ring. Make sure the retaining ring is properly seated in its groove (tapping on the ring with a small punch may be required). When replacing the lever, make sure the setscrew enters the hole in the valve stem.

18. Install the small piston cup seal in the motor control valve block with the lips down. Install the seal washer and larger cup seal with the lips facing outward.

FLOW SLEEVE AND ACCUMULATOR REASSEMBLY

1. Using an arbor press and an aluminum disc or Accumulator Cylinder Puller, part number 05640, to protect the flow sleeve, push the flow sleeve (with the eight holes on its end facing up) into the flow sleeve tube (o-ring groove up) until it is flush with the tube. Be sure to lubricate the entire bore of the flow sleeve tube prior to assembly.

2. Install the four 1/4 x 1 1/2-inch push pins (tapered end up) in the flow sleeve.

3. Install the two 3/16 x 1 1/4-inch push pins (tapered end up) in the automatic valve body. Install the automatic valve (small diameter first) into the automatic valve body.

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

4. Align the roll pin and place the automatic valve body (with the side holes up) on top of the flow sleeve. Allow the automatic valve to drop and pilot into the bore of the flow sleeve.

5. Using an aluminum disc or Accumulator Cylinder Puller, part number 05640, to protect the parts, push the automatic valve body into the flow sleeve tube until the shoulder of the automatic valve body stops on top of the flow sleeve tube.

6. Install the piston (small end first) into the flow sleeve assembly from the automatic valve body end.

7. Install the porting block into the end of the automatic valve body with proper roll pin alignment.

8. Place the flow sleeve assembly in a bench vise, being careful not to overtighten or distort the tube, and install the accumulator valve block. Rotate the flow sleeve so that the motor roll pin alignment hole will locate the motor control valve lever under the handle on the valve lever side.

9. Slide the motor assembly over the piston. Align the roll pin in the motor control block with the corresponding hole in the flow sleeve (the hole opposite the notch in the end of the flow sleeve). Tap on the end of the motor assembly until it fully engages with the flow sleeve tube.

10. Install the spring, valve spool and bushing (with its wiper ring facing outward) in the bore of the accumulator valve block. The bushing should project from the accumulator valve block approximately 0.200-inch/5 mm.

11. Apply a light coating of WD40 lubricant to the accumulator diaphragm and install in the accumulator bore.

12. Install the handle assembly.

13. Install the two side rods and two 1/2-13 x 5 1/2-inch capscrews.

14. Tighten alternate side rods in 15 ft lb/20 Nm increments to 100 ft lb/135 Nm. Tighten alternate capscrews in 15 ft lb/20 Nm increments to 75 ft lb/100 Nm.

15. Charge the accumulator with nitrogen to 600 psi/41 bar. It may be necessary to charge 50-75 psi/3-5 bar high to overcome the pressure drop through the charging valve. Refer to the Charging Instructions given in this manual.

16. Install the charge valve cap.

17. Install the pigtail hose assemblies.

CHARGING THE ACCUMULATOR

ACCUMULATOR TESTING

(See Figure 1)

To check or change 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 an 800 psi/56 bar minimum charge.

1. Remove the charging valve cap if not accomplished during disassembly.

2. Holding the chuck end of Accumulator Tester, part number 02835, turn the gauge fully counterclockwise to ensure that the stem inside the chuck is completely retracted.

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

4. Advance the valve stem by turning the gauge-end clockwise until a pressure is indicated on the gauge (charge pressure should be 500-700 psi/34-48 bar.

5. If pressure is okay, 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 procedure.

6. Install the charge valve cap.

ACCUMULATOR CHARGING

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

2. Connect the chuck of the charging assembly to the charging valve on the accumulator

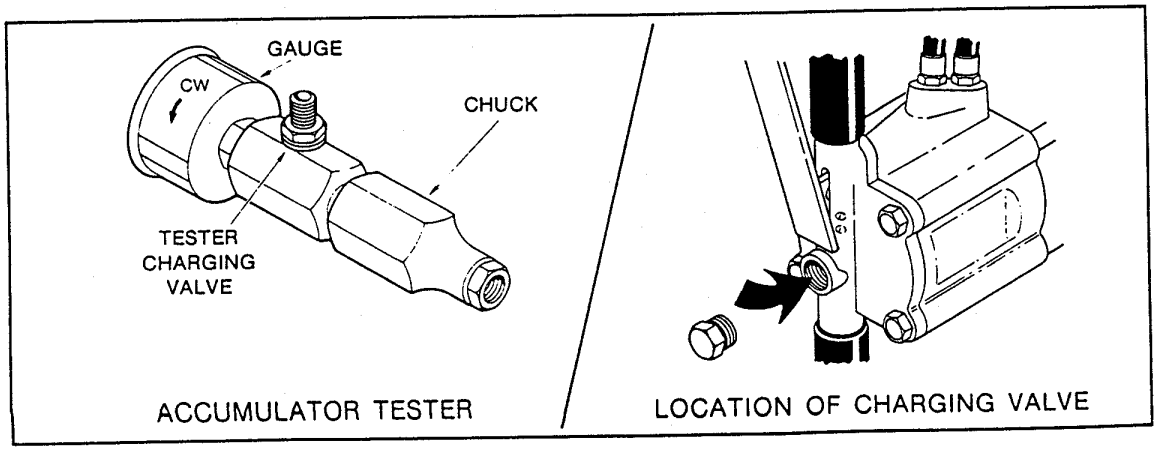


Figure 1.

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 600 psi/42 bar.

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

4. Open the valve on the charging assembly hose.

IMPORTANT

If the underwater model is to be used at depths greater than 300 ft/ 91 m, increase the accumulator charge 40 psi/3 bar for each 100 ft/30 m of depth to offset water pressure.

5. When the accumulator is fully charged, close the valve on the charging assembly hose and remove the 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. Replace the charge valve cap.

8. Install pigtail hose assemblies if removed during disassembly.

GENERAL SERVICE NOTES

1. If the drill is repainted after servicing, do not allow paint to enter the "in" and "out" ports or the bore of the motor assembly.

2. If the handle grips need to be replaced:

a. Remove old grips and clean the handle.

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

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

UNDERWATER MODEL PREVENTIVE MAINTENANCE

After each use, the movable portions of the tool that were exposed to water should be flushed with a water displacing oil such as WD40. Remove any remaining water and debris as follows:

1. Turn the tool upside down (without the tool bit) and spray oil through the drive hex and side holes in the drive motor control block to displace any remaining water in the lower piston cavity.

2. Spray oil into the on-off valve/trigger slot area.

3. Dip or spray the entire tool.

4. Cycle the tool hydraulically several times before storing away.

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 hammer drill, always check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the drill 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.

PROBLEM	CAUSE	REMEDY
Drill 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.
	Flow direction reversed/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 drill and inspect for damaged parts.
Drill does not drill 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°C).	Provide cooler to maintain proper oil temperature (130°F/35°C maximum).
Drill operates slow.	Low flow 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 or internal passage blocked.	Remove restriction.

PROBLEM	CAUSE	REMEDY
Drill operates slow.	Oil too hot (above 150° F/65° 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.
Drill gets hot.	Hot oil going through tool.	Check power unit. Be sure flow rate is not tool high causing part of the oil to go through the relief vavle. Provide cooler to maintain proper oil tempera ture (150° F/65° C max).
		Check relief valve setting.
Oil leakage on drill bit.	Lower piston or drive hex seal failure.	Replace seals.
Oil leakage around trigger.	Valve spool seal failure.	Replace seals.
Low rotation torque.	Motor not completely broken in.	Continued operation or break in with motor break-in block will correct.
	Damage to motor clearences.	Repair as required.
	Mechanical binding during drilling.	Take care to guide drill straight.

SPECIFICATIONS

Operating Pressure	1500-2000 psi/105-140 bar
Flow Range	7-9 gpm/26-34 lpm
Optimum Flow	8 gpm/30 lpm
Capacity	1- to 2-inch/25-50 mm Diameter No. 736 Skil Carbide Tipped Drill Bits
Porting	8 SAE O-Ring
Connect Size and Type	3/8-inch Male Pipe Hose End
System	Open Center or Closed Center, HTMA Type II/BTMA Category D
Rotating Speed	0-300 RPM (Forward or Reverse)
Hose Whips	Yes
Weight	45 lb/20.4 kg
Length	22-1/2 inch/57 cm
Width	14 inch/35.6 cm
Motor	Integral

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
02281	Carbide Bit 1-in. x 24-in. long (Drills a 14-7/8 in. deep hole)
02282	Carbide Bit 1-1/4 in. x 24-in. long (Drills a 14-7/8 in. deep hole)
02283	Carbide Bit 2-in. x 24-in. long (Drills a 14-3/4 in. deep hole)
04668	Carbide Bit 1-in. x 18-in. long (Drills a 8-7/8 in. deep hole)
04896	Carbide Bit 1-1/4 in. x 36-in. long (Drills a 29-in. deep hole)
05167	Carbide Bit 1-1/2 in. x 24-in. long (Drills a 14-3/4 in. deep hole)

SERVICE TOOLS

PART NUMBER	DESCRIPTION
01120	Tamper Sleeve Tool
02835	Accumulator Tester
03189	20 gpm/75 lpm Flowmeter
04182	Flow and Pressure Tester
04337	O-Ring Tool Kit
04910	Flow Sleeve Removal Tube
04919	Flow Sleeve Removal Tool
05044	Bearing Installation Tool
05045	Latch Removal Tool
05061	Bearing Installation Tool
05062	Latch Installation Tool
05064	Bearing Puller Kit
05640	Accumulator Cylinder Puller
05839	Seal Kit
05879	Latch Installation Tool
06545	Accumulator Charge Kit

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.

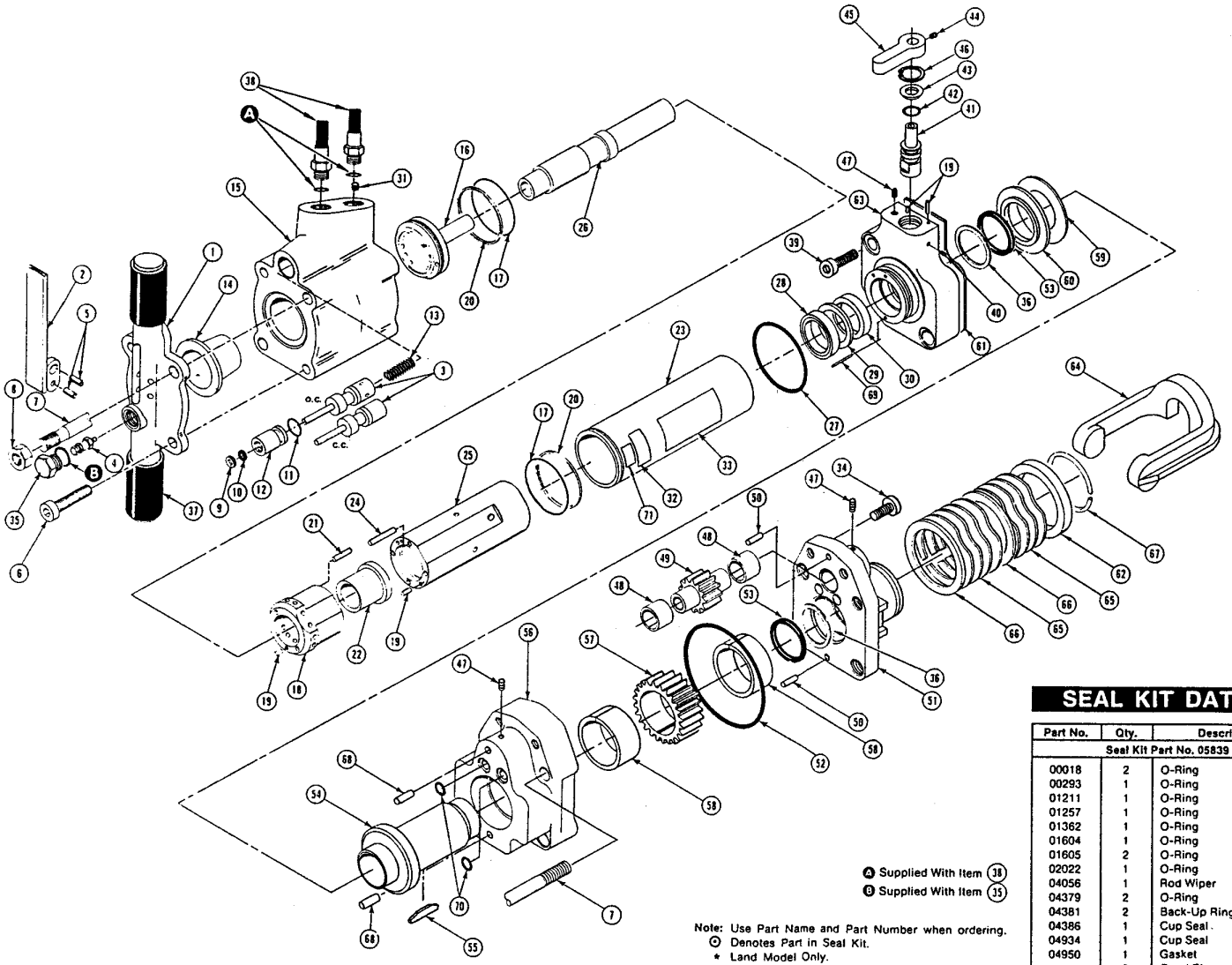
Stanley reserves the right to replace or repair only those parts which under our examination prove to have been defective at the time of purchase.

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



Ⓐ Supplied With Item (38)
Ⓑ Supplied With Item (35)

Note: Use Part Name and Part Number when ordering.
⊙ Denotes Part in Seal Kit.
* Land Model Only.
** Underwater Model Only.

SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 05839		
00018	2	O-Ring
00293	1	O-Ring
01211	1	O-Ring
01257	1	O-Ring
01362	1	O-Ring
01604	1	O-Ring
01605	2	O-Ring
02022	1	O-Ring
04056	1	Rod Wiper
04379	2	O-Ring
04381	2	Back-Up Ring
04386	1	Cup Seal
04934	1	Cup Seal
04950	1	Gasket
11196	2	Quad Ring
11197	2	Back-Up Ring

PARTS LIST

Item No.	Part No.	Qty.	Description
1	04369	1	Handle
2	04371	1	Trigger
3	04077	1	Valve Spool, o.c.
	04593	1	Valve Spool, c.c.
4	01650	1	Charging Valve
5	00844	2	Spirol Pin, 1/4 x 1/2
6	04372	2	Capscrew, 1/2-13 x 5 1/2 Hex Soc Hd
7	04932	2	Side Rod
8	04374	2	Locknut, 5/8-18
9	04056	1	Rod Wiper⊙
10	01362	1	O-Ring, 5/16 x 7/16 x 1/16⊙
11	00293	1	O-Ring, 11/16 x 7/8 x 3/32⊙
12	04057	1	Bushing
13	04058	1	Spring
14	07479	1	Accumulator Diaphragm
15	05988	1	Accumulator - Valve Block Assy
16	04378	1	Porting Block
17	04379	2	O-Ring, 2 9/16 x 2 3/4 x 3/32⊙
18	04380	1	Automatic Valve Body
19	02900	4	Roll Pin, 1/8 x 1/2
20	04381	2	Back-Up Ring, 2.581 x 2.753 x .053⊙
21	04571	2	Push Pin, 3/16 x 1 1/4
22	04382	1	Automatic Valve
23	04383	1	Flow Sleeve Tube
24	04605	4	Push Pin, 1/4 x 1 1/2
25	04384	1	Flow Sleeve
26	04954	1	Piston
27	02022	1	O-Ring, 2 1/4 x 2 1/2 x 1/8⊙
28	04386	1	Cup Seal⊙
29	04780	1	Washer
30	04934	1	Cup Seal⊙
31	05243	1	Orifice Plug
32	03786	1	GPM Sticker
33	05152	1	Stanley Sticker
34	00682	2	Capscrew, 3/8-16 x 1 3/4 Hex Soc Hd
35	07493	1	Charge Valve Cap
36	11197	2	Back-Up Ring⊙
37	02494	2	Handle Grip
38	01652	2	Hose Assembly
39	04936	2	Capscrew, 1/2-13 x 4 1/2 Hex Soc Hd
40	00842	1	Set Screw, 10-24 x 5/16
41	04937	1	Motor Control Valve
42	01211	1	O-Ring, 5/8 x 3/4 x 1/16⊙
43	04938	1	Washer
44	01607	1	Set Screw, 1/4-20 x 1/4
45	04939	1	Lever
46	04940	1	Retaining Ring, 13/16 Int.
47	00783	3	Pipe Plug, 1/16-27 NPT
48	03826	2	Bearing, 13 DU 12
49	04033	1	Idler Gear
50	00713	2	Dowel Pin, 1/4 x 1
51	04942	1	Motor Plate
52	01257	1	O-Ring, 3 1/2 x 3 5/8 x 1/16⊙
53	11196	2	Quad Ring⊙
54	04944	1	Drive Hex *
	06678	1	Drive Hex **
55	04787	1	Key
56	05976	1	Motor Chamber
57	05975	1	Drive Gear
58	04947	2	Bearing, 28 DU 16
59	04948	1	Thrust Washer
60	04949	1	Thrust Back-Up Washer
61	04950	1	Gasket
62	04759	1	Spring Back-Up
63	04951	1	Drive Motor Control Block *
	06680	1	Drive Motor Control Block **
64	04952	1	Latch
65	07063	8	Wave Spring
66	04756	2	Latch Washer
67	04761	1	Retaining Ring
68	01749	2	Roll Pin, 5/32 x 1/2
69	00114	1	Roll Pin, 5/32 x 1
70	00018	2	O-Ring, 7/16 x 9/16 x 1/16 ⊙
71	03693	1	Closed Center Sticker (CC Model)

STANLEY®

helps you do things right

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