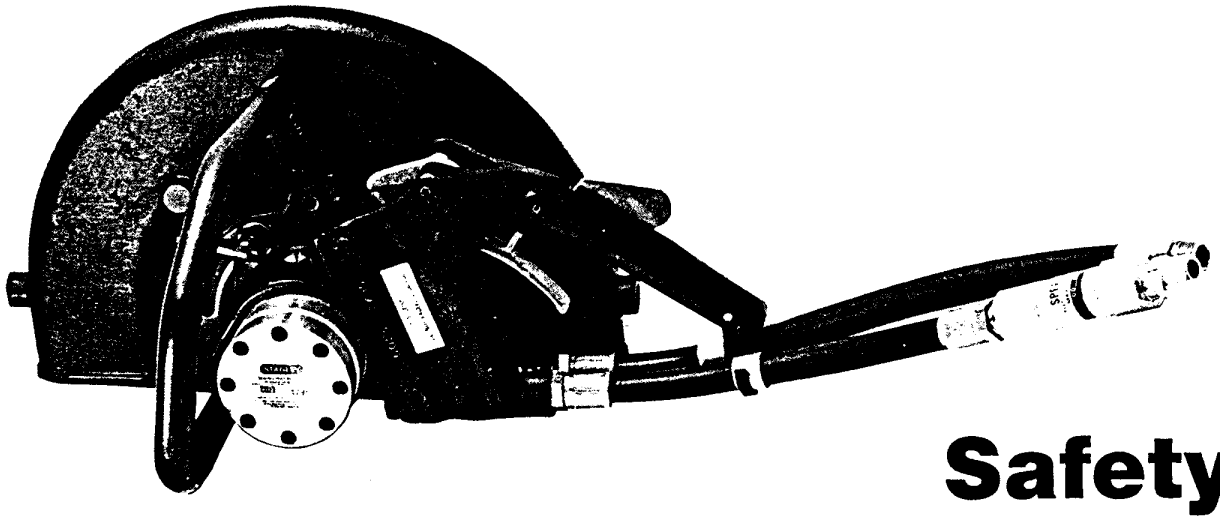
CO23
HYDRAULIC CUTOFF SAW



Safety, Operation and Maintenance Manual

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05420 1/94R

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 6.

GENERAL SAFETY PRECAUTIONS

The C023 Cutoff Saw 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. Failure to do so can 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 supervision of an instructor.
- Always wear safety equipment such as goggles, ear and head protection, and safety shoes at all times when operating the tool.
- 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.
- Always de-energize hydraulic power source before disconnecting couplers.
- 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 comfort
- Always hold the tool with both hands when the unit is running. Use a firm grip.
- Keep all parts of your body away from a rotating cutoff wheel.
- Keep the wheel off all surfaces when starting the saw.
- Always carry the tool with the wheel stopped.
- Make sure the wheel has stopped before setting the tool down.
- Keep the handles dry, clean and free of oil at all times.
- Operate the tool in well-ventilated areas only.

- Always inspect wheels for possible damage before operating the tool.
- Never transport or store the tool with the wheel mounted on the saw.
- Do not operate the tool if it is damaged, improperly adjusted or not completely and correctly assembled.
- Inspect wheel guard and collars for damage after any wheel breakage on the tool.
- Never cock, jam or wedge the wheel during the cut.
- Do not operate the tool in the vicinity of flammable materials.
- Do not operate the tool with the wheel guard removed.
- Do not start cutting until you have a clear work area and secure footing.
- Do not allow other persons near the tool when starting or cutting.
- Never operate the tool when you are tired or fatigued.
- Do not use a wheel that is cracked or otherwise damaged.
- Do not operate the tool if the wheel does not stop when the throttle trigger is released.
- Do not use the side of the wheel as the cutting surface.
- Never exceed the maximum operating speed marked on the wheel.
- Always use cutoff wheels that conform to the specifications given in the OPERATION section of this manual.
- Use only full throttle when cutting.
- Do not remove the speed limiter supplied with the tool.
- Do not operate the tool with the speed limiter removed.
- Do not reverse direction of wheel rotation by changing oil flow direction. Use a saw designed for the wheel direction suitable for the job.
- 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 the hydraulic circuit control valve to the "OFF" position before changing or disconnecting the tool.

TOOL STICKERS AND TAGS

The safety stickers attached to the saw prior to shipment from the factory are shown here.

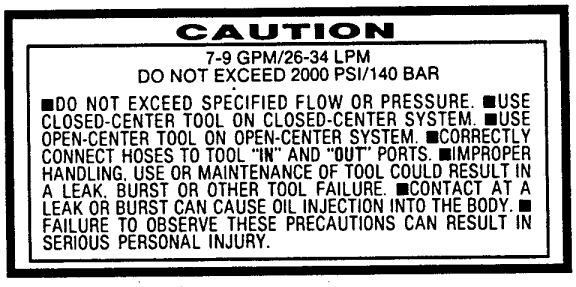
The pressure and flow rates specified must never be exceeded. All stickers must be read and understood prior to operation of the tool.

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

CLOSED CENTER STICKER

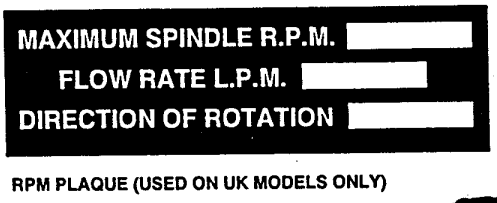
EYE PROTECTION CAUTION STICKER

CIRCUIT TYPE D STICKER (Used on UK Models only)

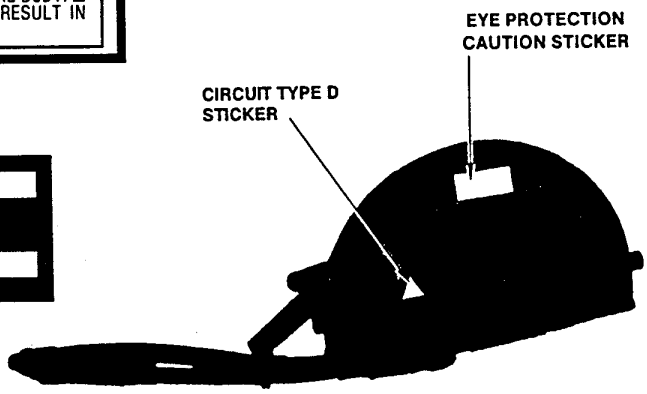


GPM/PRESSURE STICKER

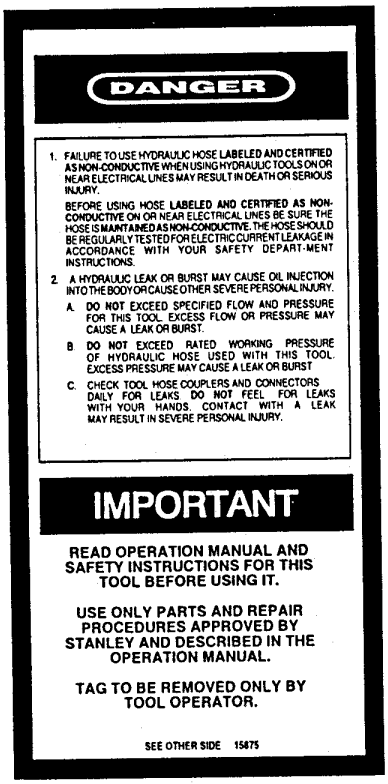
SPEED LIMITER STICKER

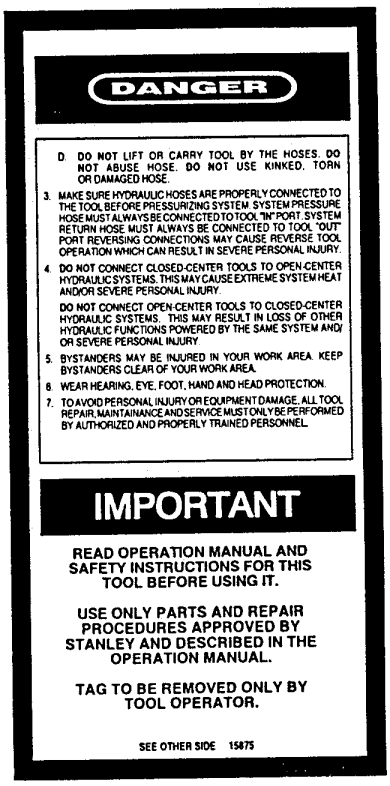


RPM PLAQUE (USED ON UK MODELS ONLY)



The safety tag at the right is attached to the saw 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 saw when not in use.





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.

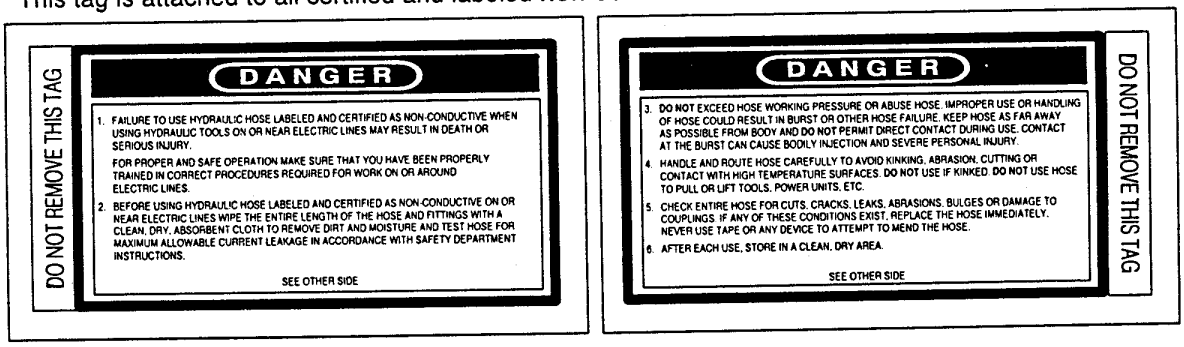
Hoses 2 and 3 listed above are conductive and must never be used near electrical conductors.

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.

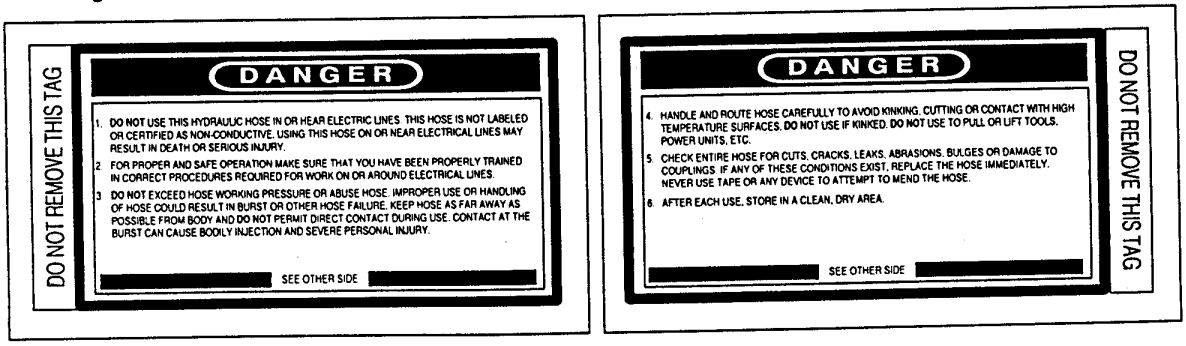
1 CERTIFIED NON-CONDUCTIVE HOSE

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) 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 of the hydraulic system used to power the saw.

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.

OPERATION

IMPORTANT

In addition to the Safety Precautions on pages 1 thru 6 of this manual, observe the following for equipment protection and care.

- Always store an idle saw in a clean, dry space, safe from damage or pilferage.
- For maximum tool performance, replace the cutoff wheel if worn. Make sure that the wheel is not chipped or damaged.
- 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 abrasion resistant outer surface. Whenever near electrical conductors, use **clean** labled and certified nonconductive hose.
- Use only cutoff wheels that meet the requirements of ANSI B7.5. Wheels should be no larger than 14 inches/35.5cm indiameter,5/32 inch/4 mm thick with a 1 inch or 22 mm arbor hole. Rated speed must be 5000 rpm minimum.
- 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 1000-2000 psi/70-140 bar. Recommended relief valve setting is 2100-2250 psi/ 145-155 bar.
- The system should have no more than 250 psi/17 bar backpressure, measured at the tool end of the operating hoses. The system conditions for measurement are at maximum fluid viscosity of 400 ssu/82 centistokes (minimum operating temperatures).
- The hydraulic system should have 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 long.

PREOPERATION CHECKOUT PROCEDURES

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 1000-2000 psi/70-140 bar.
2. Make certain that the power source is equipped with a relief valve set for 2100-2250 psi/145-155 bar maximum.
3. Check that all operating controls and indicators are easily accessible.

CUTOFF SAW TRIGGER AND SAFETY CATCH

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

2. Check that the trigger is set to disengage the cutoff saw when released.

3. Check that the safety catch on the handle assembly is operating properly. It should prevent engagement of the trigger unless the catch is fully pressed down into the handle slot.

HANDLE

- Check that the handle bar is securely fastened to the motor housing and handle bar strut. Remove any oil from the handle bar.

WHEEL GUARD

1. Inspect the wheel guard for cracks and other structural damage.

2. Rotate the guard to ensure that it moves freely on the wheel-arbor centerline.

3. Check that the locking mechanism operates properly to hold the guard in a set position.

THRUST COLLAR ARBOR AND COLLARS

1. Inspect the thrust collar hole and flanges prior to installation. Check for burrs. Check that the bearing surfaces are flat and run true when mounted on the motor shaft and thrust collar.

2. Check that the threads on the clamping setscrew are not damaged.

REDUCING BUSHINGS

1. When a reducing bushing is used in the cutoff wheel mounting hole, check that it does not exceed the thickness of the wheel.

2. Make sure that the reducing bushing does not protrude beyond the surface of the wheel on both sides. Bushings that are too thick will not allow the collars to fit properly against the wheel

3. Check that reducing bushings are tight in the cutoff wheel mounting hole. Never use bushings that do not fit tightly in the mounting hole. Never use shim stock.

WHEEL CONDITION

1. Before installing abrasive wheels, "sound" the wheel for possible damage by hanging the wheel vertically by the arbor hole and rapping lightly with a screwdriver handle or similar instrument. Thin, organic bond wheels will produce a low drumming tone if it is physically sound. If the wheel produces a "dead" or "flat" sound, it may be cracked. Cracked or damaged wheels must never be used.

2. Check that the surfaces of the wheel that come in contact with blotters and flanges are free of dirt and other foreign particles.

3. Check that the correct wheel is used for the job.

4. Check that the wheel conforms to the physical requirements listed in the SPECIFICATION section of this manual. The cutoff wheel shall fit freely under all cutting conditions. A controlled clearence between the arbor hole and the cutoff saw arbor is essential to avoid excessive pressure from the installation and/or arbor expansion.

5. Check diamond wheels to ensure all segments are intact.

DRIVESHAFT SPEED CHECK

The speed of the motor output shaft should be checked at least every 100 hours of operation by trained and experienced personnel. A record of the speed checks should be maintained. The maximum rated speed of the C023 Cutoff Saw is 4600 rpm. This speed must be equal to or less than the rated speed of the cutting wheel. Tests should be conducted while operating the normal power supply used with the cutoff saw.

Excessive speed may be caused by excessive oil flow to the tool.

OPERATING INSTRUCTIONS

CUTOFF WHEEL INSTALLATION

IMPORTANT

Make sure the wheel has been thoroughly inspected prior to installation.

Note: When mounting the wheel, use blotters at the collars. The blotters should be made from highly compressible material and should not be more than .025 inch thick.

1. Install the inside collar on the thrust collar. See the parts list illustration on page 19.

2. Install the wheel on the thrust collar. Refer to the SPECIFICATIONS section of this manual for wheel requirements.

3. Install the outside collar.

4. Install and tighten the wheel nut. Tighten the nut only tight enough to prevent slippage of the wheel.

5. Position the wheel guard as required, then tighten the swingover nut.

CONNECTING HOSES

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

2. Connect the hoses from the power supply to the tool hoses. It is a good practice to connect return hoses first and disconnect 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 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 with in the hose may result in making them difficult to connect. When possible, connect the free ends of operating hoses together.

TOOL OPERATION

Note: At the beginning of each shift or when a new cutoff wheel has been installed, run the cutoff saw at operating speed for at least one minute before starting work. Keep all bystanders from standing in front of or in line with the wheel.

General Procedures

1. Whenever possible, the work should be held down and securely supported on both sides of the cut.

2. Press down the safety catch, then slowly squeeze the trigger. Start the cut with the wheel rotating. Start the work gently, do not "bump" the work.

3. Feed the wheel through the material as fast as possible without allowing the wheel to reduce it's speed. Cutting through the material too slowly allows heat expansion and can cause wheel "pinching" in the material. "Pinching" the wheel from heat expansion is one of the most common causes of wheel breakaqe.

Wet Cutting

When shutting down a wet-cutting operation, shut off the water and allow the wheel to "spin-off" the excess water.

Make sure the cutting wheel is suitable for wet cutting.

Saw Cart Applications

⚠ WARNING

When operating a cutoff saw that is mounted on a cart with the trigger clamped in the ON position, never use a cylinder-type valve to turn the saw ON and OFF. Always use a "motor" type valve with all ports connected to the tank when in neutral or a direct line from the tool outlet to the tank must be used. Failure to observe these procedures may cause motor damage or wheel spinoff.

CARE OF ABRASIVE CUTOFF WHEELS

All abrasive cutting-off wheels are breakable and, therefore, care must be exercised during handling and storage to prevent damage.

STORAGE

Thin, organic bonded wheels such as cutting off wheels should be laid flat on a flat surface of steel or similar rigid material away from excessive heat or moisture. Wheels should not be stored where they will be exposed to high humidity, water, other liquids or freezing temperatures. Temperatures low enough to cause condensation on the wheels when moving them from storage to an area of higher temperature should be avoided. Wheels used on cutoff saws carried on emergency vehicles should be removed after use and discarded or carefully

stored as described in this section. If wheels are supplied with blotters, attached, suitable separators should be used to preserve flatness.

INVESTIGATION OF WHEEL BREAKAGE

Wheels designed for use with hand-held portable saws are specifically manufactured for this application. They are manufactured to be extremely tough and are difficult to break under normal use.

If a wheel breaks during use, a careful investigation should be conducted by the user to determine the cause of the breakage. The cause must then be corrected as soon as possible.

If the user is unable to determine the cause of breakage, the wheel manufacturer should be consulted.

COLD WEATHER OPERATION

If the saw is to be used during cold weather, preheat the hydraulic oil at low engine speed prior to use. 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 saw can result from use with oil that is too viscous or thick.

SERVICE INSTRUCTIONS

Good maintenance practice keeps your tool on the job and increases its service life.

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

Follow the procedure contained in the HYDRAULIC SYSTEM REQUIRMENTS section of this manual to ensure peak performance from the tool.

Never disassemble the tool unless proper troublshooting procedures have isolated the problem to an internal part. Disassemble it only to the extent necessary to replace the defect part. KEEP CONTAMINANTS SUCH AS DIRT AND GRIT AWAY FROM INTERNAL PARTS AT ALL TIMES.

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

PRIOR TO DISASSEMBLY

- Clean exterior of the tool.
- Obtain repair kit Part Number 03330. The kit contains a seal kit that includes seals which must be replaced if exposed during disassembly.

ON-OFF VALVE REMOVAL AND INSTALLATION

1. Remove the 5/8-11 nut inside collar, outside collar and thrust collar. See parts list illustration on page 19.

2. Remove the beveled retaining ring and swingover nut assembly securing the guard.

3. Remove the guard.

4. Drive the 1/4 x 2-1/2 inch/6.4 mm x 64 mm roll pin out of handle assembly using a 1/4 inch/6.4 mm diameter punch. Remove trigger and spacer.

5. Remove the on-off valve cap and port plug from the bottom of the valve handle. Withdraw the valve spool and spring.

Note: Open-and closed-center, clockwise and counterclockwise valves are interchangeable.

6. To install the valve:

A. Push the valve cap onto the valve stem, then thread the assembly into the top of the valve handle assembly.

B. Install the spring through the bottom of the valve handle assembly, then install the port Plug.

C. Line up the trigger and spacer using a 1/4 inch/6 mm diameter punch. Drive the roll pin into place.

7. To install the guard:

A. Insert the guard clamp carriage bolt through the guard clamp and install a washer on the bolt.

B. Align the carriage bolt with the corresponding hole in the motor housing. Slide the guard on the motor pilot dia. and secure with the beveled retaining ring. Make sure the beveled edge of the retaining ring is facing outward.

C. Install the remaining washer and the swingover nut on the carriage bolt.

D. Install the thrust collar, drive key, inside collar, outside collar and nut. Tighten the thrust collar setscrew.

MOTOR REMOVAL AND INSTALLATION

1. Remove the guard as specified in steps 1 through 3 of ON-OFF VALVE REMOVAL AND INSTALLATION PROCEDURES. See parts list illustration on page 19.

2. Remove the four 5/16-18 x 3/4inch/19mm long capscrews securing valve handle assembly to motor housing. Separate the two assemblies.

3. Use a hooked instrument to remove the two oil tubes, taking care not to damage the sealing surfaces of the tubes and housing.

4. Remove the two 5/16 x 3/4 inch/19 mm oval head machine screws securing the motor to the motor housing. Push the motor out of the housing.

5. To install the motor:

A. Insert the oil tubes into the valve handle assembly.

B. Push the motor into the motor housing and secure in place using the two oval head machine screws.

C. Line up the oil tubes, then press the motor housing assembly onto the handle assembly. Secure in place using the four 5/16-18 x 34 capscrews.

D. Install the guard as specified in step 7 of ON-OFF VALVE REMOVAL AND INSTALLATION PROCEDURES.

MOTOR DISASSEMBLY

Note: The cutoff saw can have either a two-piece or three-piece motor. Identify the motor used on your saw. See the parts list illustration on page 19.

1. Remove or loosen the setscrew securing the thrust collar to the motor shaft.

2. Remove the thrust collar and key from the motor shaft.

3. On three-piece motors, scribe assembly marks across the bearing retainers and the gear housing. Make sure that the marks will be visible during reassembly.

4. Remove the eight capscrews securing the bearing retainers and the gear housing.

5. Pry the rear bearing retainers or gear housing away from the mating part. Be careful to lift the retainer or housing straight off. Use the inside groove provided at the split between parts to prevent scratches on the surfaces between the parts.

6. On three-piece motors, pry the gear housing assembly away from the front bearing housing in the same manner as described in step 5.

7. Remove the two gears, motor shaft key (or roller) and the idler shaft.

8. Remove the large face seal o-ring(s), being careful not to damage the o-ring grooves or surrounding surfaces.

9. To remove the motor shaft from the front bearing retainer or bearing housing, remove the large retaining ring securing the ball bearing(s). Place the retainer or housing on a flat surface with clearance for bearing removal. Push on the small end of the motor shaft until the shaft and bearing(s) slide free. Be careful not to bend the motor shaft.

10. The ball bearing(s) should be removed from the motor shaft only if they must be replaced, since damage can occur during removal. To remove the bearings from the motor shaft, press on the threaded end of the motor shaft while supporting the outer race of the bearing(s). Discard the bearings.

11. Remove the retaining ring at the bottom of the ball bearing bore to service the motor shaft seal (s).

12. To remove the seal liner and associated parts on current two or earlier three-piece motor assemblies, insert the small end of the motor shaft through the seal liner. Place a rag across the gear face of the front bearing retainer and blow air through the small diameter motor shaft bearing using a shop air nozzle to force the seal liner onto the motor shaft for removal.

13. To remove the shaft seal from former two-piece motor assemblies, use appropriate o-ring service tools to pry it out of its bore. Take care to avoid damaging the seal surfaces. Note seal orientation.

14. To remove the needle bearings on three-piece motors, use collet Part Number 05871 and actuator pin Part Number 05872 along with slide hammer Part Number 11931. These tools are available in bearing puller kit Part Number 05064.

To remove the bushings on two-piece motors, use collet Part Number 11930 and actuator pin Part Number 05067 along with slide hammer Part Number 11931.

MOTOR INSPECTION AND CLEANING

Inspect and clean all parts as follows:

Small Diameter Bearings/Bushings

- On three-piece motors equipped with needle bearings, check to make sure all rollers are in place and not nicked or seized. If shaft wear is present the bearing and shaft must be replaced.

- On two-piece motors equipped with bushings, the inside of the bushing should be gray with some bronze showing through. If a significant amount of yellow-bronze shows, bushing replacement is required. Inspect motor shaft for corresponding wear and replace as required.

Gear Chamber

- The chamber bores and end faces around the bearing bores should be polished but not rough or grooved. The flat surfaces around the chamber and bolt holes should be flat and free of nicks or burrs that could cause misalignment or leaks.

Gears

- Both gears should have straight tips with out nicks, square tooth ends and a smooth, even polish on the teeth and end faces. Check for cracks between the drive gear keyway and gear tooth root. Discard the gear if cracks are present.

Motor End Housings/Retainers

- The gear face running surface should show two interconnecting polished circles with out a step and should not be rough or grooved.

- The shaft seal bore should be smooth and free from nicks or scratches.

Shafts

- The shaft diameter at the bearing and seal locations must be smooth. Grooves, roughness or a reduced diameter indicate fluid contamination or damaged needle bearings. Grit particles may have imbedded in the bushings, grinding into the hardened shaft. If abnormal shaft wear as above occurs (in excess of normal polishing) both the shaft and associated bearings/ bushings must be replaced.

PRIOR TO ASSEMBLY

Clean all parts with a degreasing solvent.

Obtain seal kit P/N 03329 so all seals exposed during disassembly can be replaced during assembly.

Ensure that all seals exposed during disassembly are replaced with new ones.

Apply clean grease or o-ring lubricant to all parts during reassembly.

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

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 fluid contamination caused defects. Dirty or water contaminated fluid 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 malfuction.

3. All components exhibiting excessive wear or deep scratches can usually be touched up using an emery cloth. Thoroughly clean all parts before assembly.

4. Apply clean grease or o-ring lubricant to all close fitting parts and seals during assembly.

MOTOR REASSEMBLY

1. On current two or former three-piece motors, assemble the seal liner assembly by installing the outside diameter o-ring, quad ring (and seal washer on former 3 piece motors) as illustrated in the parts list on page 19. Place the idler shaft through the seal liner, then loosely position the assembly in the seal bore of the front bearing retainer (quad-ring side down). Place the seal liner washer over the shaft on former 3 piece motors. then carefully push the seal liner into place. Install the retaining ring. Remove the idler shaft.

IMPORTANT

The graphite seal liner must not be forced, pried or pushed on directly because it can be easily damaged.

2. On former two-piece motors, carefully install the shaft seal with the lips facing the gear side. Replace the backup washer and retaining ring.

3. To install the ball bearing(s) on the motor shaft, support the ball bearing inner race and press the motor shaft through the bearing inner race.

4. To install the needle bearings on three-piece motors, use bearing pusher Part Number 11916.

To install the bushings on two-piece motors, use bearing pusher Part Number 11918.

5. Place the front bearing retainer/front bearing housing assembly on a smooth clean arbor press surface (protected from damage), with the large bearing bore facing up. Position the piece so that a clearance hole exists for the insertion of the motor shaft.

6. Apply grease to the motor shaft and keyway then insert it through the shaft seal. Using bearing pusher Part Number 00850 or a sleeve/ socket with a diameter slightly smaller than the outside

diameter of the ball bearing, press the bearing/shaft assembly into place. Press only on the bearing outer race. Install the ball bearing retaining ring.

7. Install the key (or roller) in the keyway of the motor shaft. Use a small amount of grease to keep the key or roller in place. Slide the drive gear over the key and shaft. Install the idler shaft and gear.

8. Apply grease to the face seal o-ring groove(s) then install the o-ring(s).

9. On three-piece motors, note the scribe marks made during disassembly, then carefully slide the gear chamber and rear bearing retainer into place.

Note: Make sure dowel pins and shafts are aligned during installation.

IMPORTANT

Do not force parts together.

On two-piece motors, note the screw hole pattern on both housings. They will only assemble one way. With all parts aligned, carefully slide the gear housing assembly over the gears until it contacts the front bearing housing assembly.

IMPORTANT

Do not force parts together.

10. Turn the motor shaft manually to check for free rotation: Install the capscrews, then recheck rotation.

11. When new parts are installed, it may be necessary to "break-in" the motor. After the saw has been reassembled without the guard, the motor may be broken-in as follows:

A. Connect the cutoff saw to a hydraulic supply. Start the saw and check for smooth operation.

B. If "break-in" is required, rotate the shaft with a wrench, with and against pressure until the motor starts and runs freely. The ON-OFF valve must be held in the ON position.

⚠ WARNING

Maintain a firm grip on the wrench during "break-in".

SAFETY CATCH REMOVAL AND INSTALLATION

REMOVAL

1. The safety catch can be removed by driving out the roll pin using a 3/16 inch/4 mm diameter punch.

INSTALLATION

1. Place the torsion spring on the boss of the safety catch with the spring tab on top of and facing the back of the catch as shown in the parts list illustration.

2. Place the safety catch in the valve handle and align the holes using a 3/16 inch/4 mm diameter punch.

3. Install the 3/16 x 1-3/8 inch/5 mm x 35 mm roll pin.

4. Push down on the spring tab until it snaps in place under the safety catch.

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 cutoff saw, always make sure the hydraulic power source is supplying the correct hydraulic flow and pressure to the tool as listed in the table. Use a flowmeter known to be accurate. Check the flow with the hydraulic fluid temperature at least 80° F/ 27° C.

PROBLEM	CAUSE	REMEDY
Tool does not run.	Power unit not functioning.	Check power unit for proper flow and pressure (7-9 gpm/26-34 lpm at 1000-2000 psi/70-140 bar).
	Coupler or hoses blocked.	Remove obstruction.
	Mechanical and return reversed.	Disassemble tool and inspect for damage.
Tool runs backwards.	Pressure and return reversed.	Correct hose connection or flow direction. Motor shafts with right hand threads rotate counterclockwise, motor shafts with left hand threads rotate clockwise.
Oil leakage between motor housing and on-off valve block or motor.	Oil tube o-ring failure. Motor face seal failure.	Replace as required.
On-off trigger is hard to press.	Back pressure too high.	Should not exceed 250 psi/17 bar at 8 gpm/30 lpm.
	Pressure and return reversed.	Correct for proper flow direction.
Saw cuts too slow.	Insufficient oil flow or low relief valve setting.	Adjust oil flow to proper gpm. For optimum performance adjust relief valve to 2100-2250 psi/145-155 bar.
	Wrong wheel for material being cut.	Use correct wheel.

SPECIFICATIONS

Weight	19 lbs/8.6 Kg
Length	20 in/51 cm
Width	12 in/30.5 cm
Pressure Range	1000-2000 psi/70-140 bar
Flow Range	7-9 gpm/26-34 lpm
Optimum Flow	8 gpm/30 lpm
System Type	EHTMA CATAGORY D o.c or c.c HTMA TYPE 2
Porting	SAE 8 o-ring
Connect Size	3/8 inch NPT hose ends
Cutting Wheel	ANSI B7.5, 14 in/35 cm diameter, 5/32 in/4 mm thick, 1 in or 22 mm arbor hole 5000 RPM minimum rated speed

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 NO.	DESCRIPTION
02691	14-inch diameter Abrasive Wheel for Metal 1-inch Arbor
02692	14-inch diameter Abrasive Wheel for Masonry 1-inch Arbor
03575	Water Attachment CO23
21624	Saw Cart

SERVICE TOOLS

PART NO.	DESCRIPTION
05044	Bearing Installation Tool
05064	Bearing Puller 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, except for 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.

WATER ATTACHMENT

Part Number 03575

Part No.	Description
3571	Water Hose Swivel
3578	Hex Bushing, 1/4 - 1/2 NPT
3579	Drain Cock
3580	Threaded Body
3581	Strainer
3582	Nozzle
3847	Hose Washer
3848	Hose

TWO-PIECE MOTOR ASSEMBLY

Clockwise Rotation - Part Number 21441
Counterclockwise Rotation - Part Number 21442

Item No.	Part No.	Qty.	Description
1	00120	8	Capscrew, Hex Soc., 1/4-20 x 2 1/4
2	06866	1	Gear Housing Assembly
3	06316	4	Bushing
4	06853	1	Drive Gear
5	06855	1	Idler Gear
6	00178	1	O-Ring ⊙
7	06854	1	Idler Shaft
8	00713	2	Pin
9	21438	1	Front Bearing Housing Assembly, Counterclockwise
	21439	1	Front Bearing Housing Assembly, Clockwise
10	19884	1	Bronze Seal Liner
11	00669	1	Quad Ring ⊙
12	00171	1	O-Ring ⊙
13	00170	1	Retaining Ring
14	06881	1	Needle Roller
15	07343	1	Motor Shaft, Counterclockwise
	07344	1	Motor Shaft, Clockwise
16	00148	1	Bearing •
17	00166	1	Retaining Ring

NOTE: Use Part Number and Part Name when ordering.
⊙ Denotes Parts in Seal Kit
• Denotes Part in Repair Kit

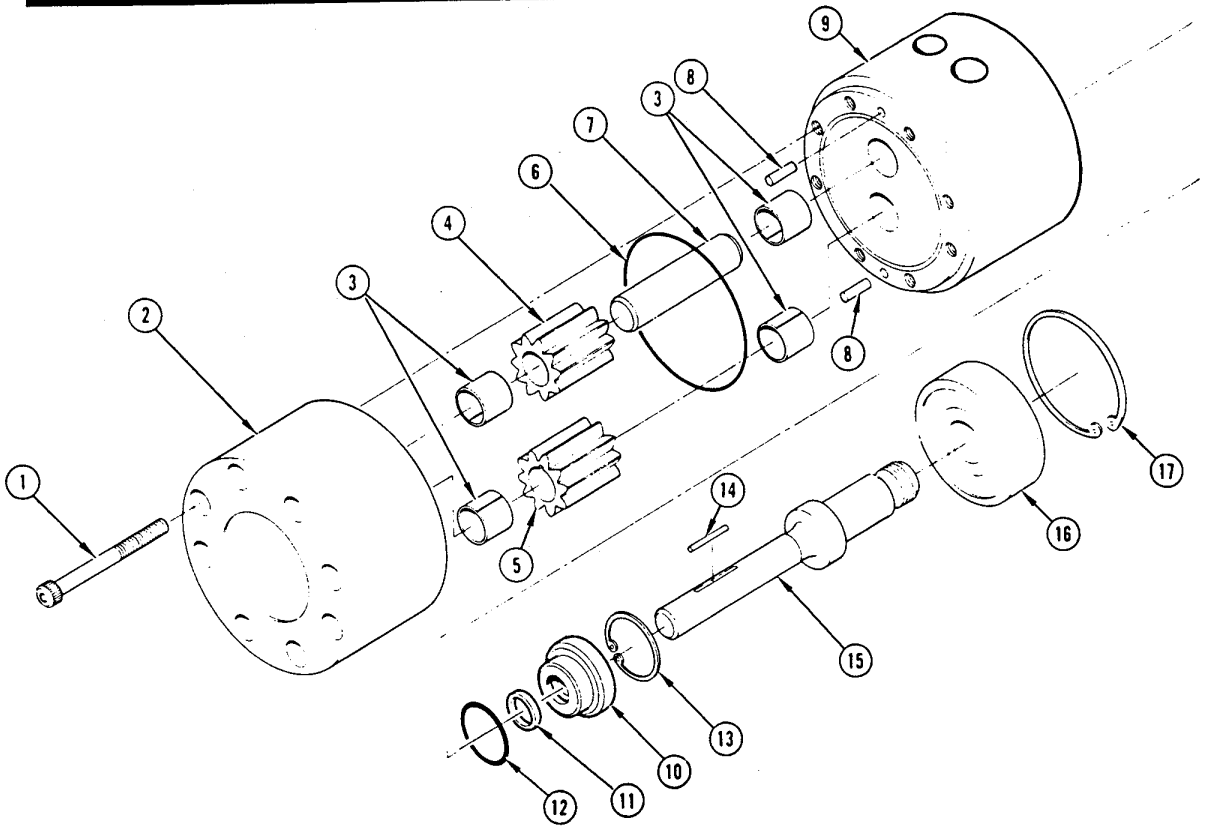
**THREE-PIECE MOTOR ASSEMBLY

Clockwise Rotation - Part Number 03995
Counterclockwise Rotation - Part Number 03046

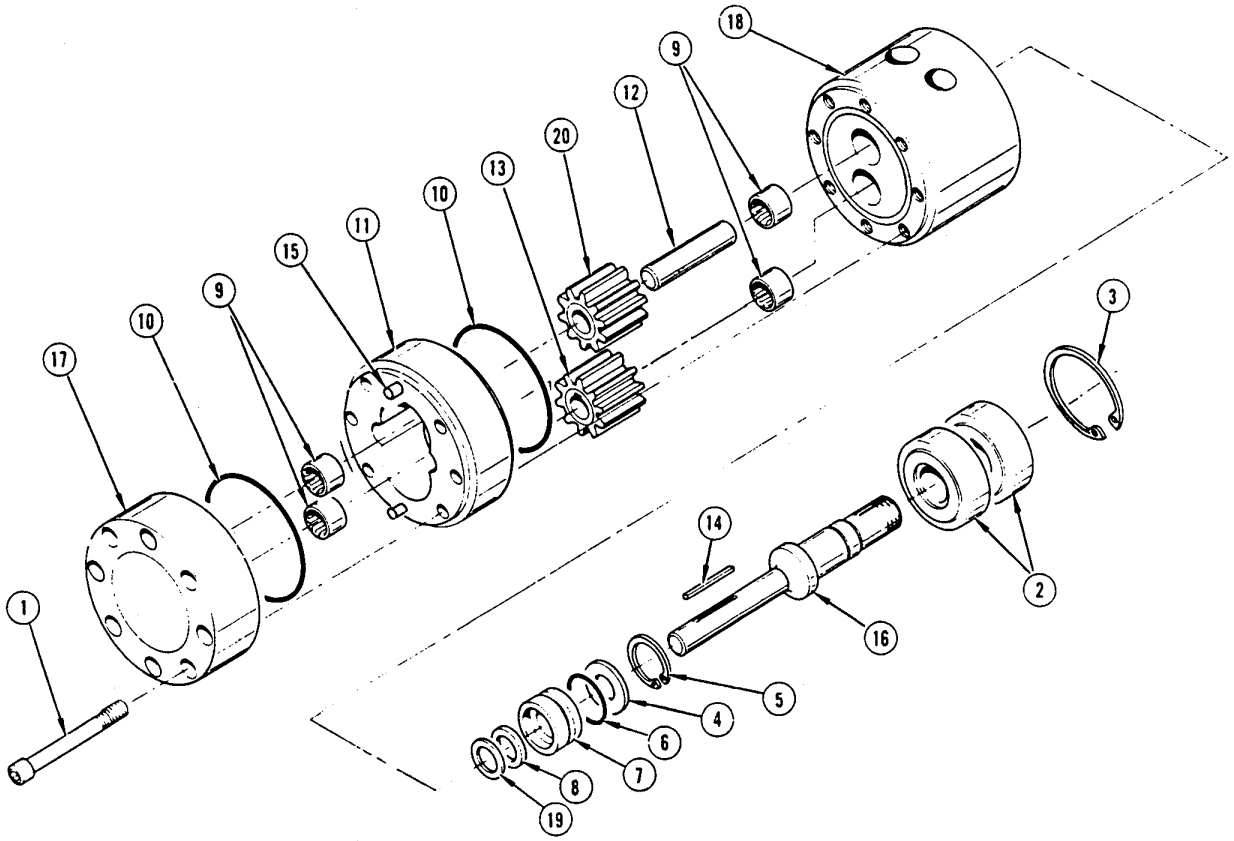
Item No.	Part No.	Qty.	Description
1	00494	8	Capscrew, Hex Soc., 1/4-20 x 2
2	00148	2	Bearing •
3	00166	1	Retainer Ring
4	00169	1	Washer, Seal Liner
5	00170	1	Retainer Ring
6	00171	1	O-Ring, 11/16 x 13/16 x 1/16 ⊙
7	00172	1	Seal Liner ⊙
8	00173	1	Quad Ring, 3/8 x 1/2 x 1/16 ⊙
9	54507	4	Bearing
10	00178	2	O-Ring, 2 1/8 x 2 1/4 x 1/16 ⊙
11	00605	1	Gear Housing
12	00606	1	Idler Shaft
13	00608	1	Gear w/Keyway
14	00609	1	Key
15	00611	2	Dowel Pin
16	02930	1	Motor Shaft, Counterclockwise
	03993		Motor Shaft, Clockwise
17	03405	1	Rear Bearing Retainer
18	03435	1	Front Bearing Retainer, Counterclockwise
	03994		Front Bearing Retainer, Clockwise
19	01203	1	Seal Washer
20	00607	1	Gear

NOTE: Use Part Number and Part Name when ordering.
⊙ Denotes Parts in Seal Kit
• Denotes Part in Repair Kit
** Used on earlier production models only.

TWO-PIECE HYDRAULIC MOTOR ASSEMBLY



THREE-PIECE HYDRAULIC MOTOR ASSEMBLY



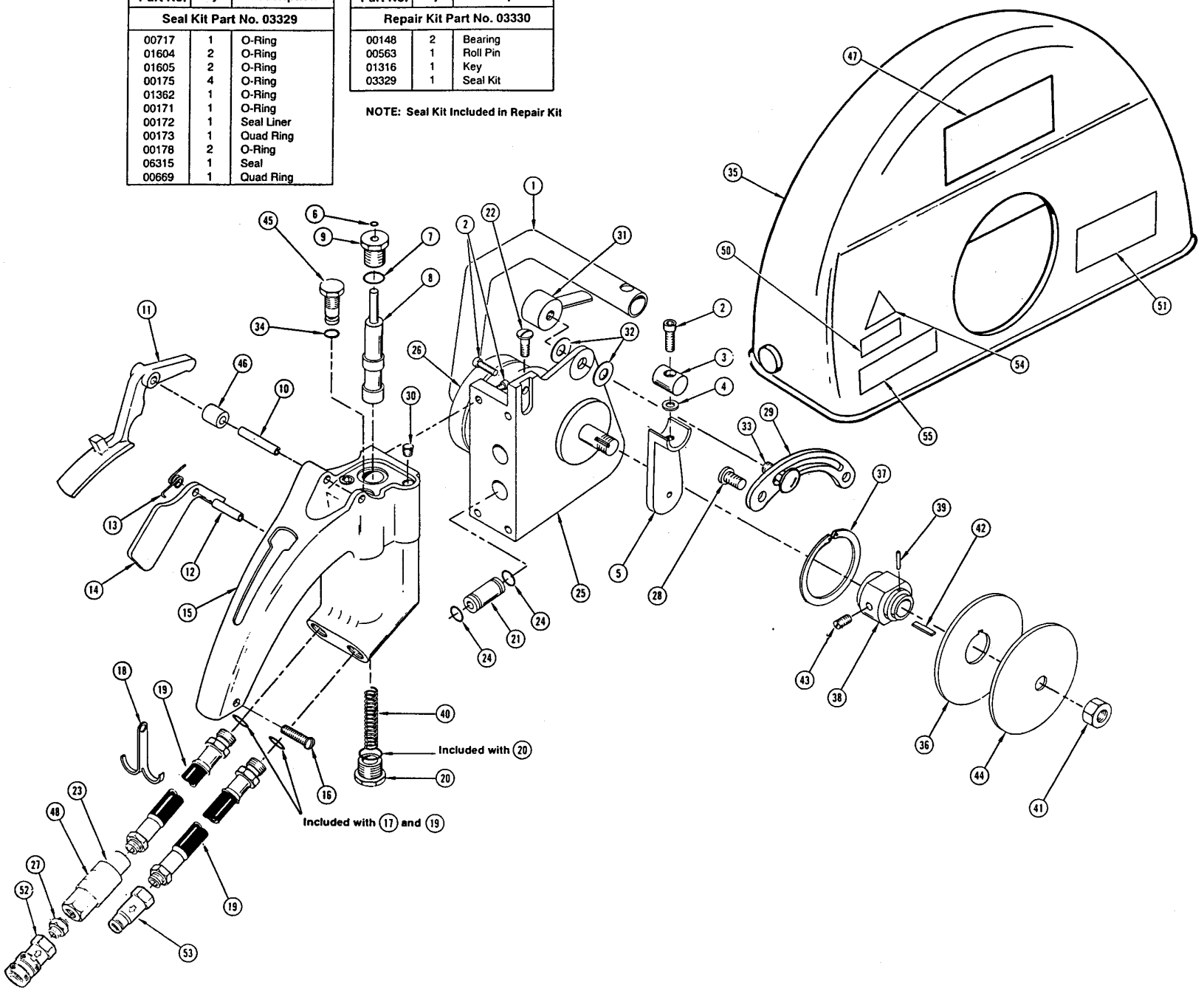
SERVICE AND REPAIR NOTES

REPAIR AND SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 03329		
00717	1	O-Ring
01604	2	O-Ring
01605	2	O-Ring
00175	4	O-Ring
01362	1	O-Ring
00171	1	O-Ring
00172	1	Seal Liner
00173	1	Quad Ring
00178	2	O-Ring
06315	1	Seal
00669	1	Quad Ring

Part No.	Qty.	Description
Repair Kit Part No. 03330		
00148	2	Bearing
00563	1	Roll Pin
01316	1	Key
03329	1	Seal Kit

NOTE: Seal Kit Included in Repair Kit



PARTS LIST

Item No.	Part No.	Qty.	Description
1	02654	1	Handle Bar
2	02688	8	Capscrew, 5/16-18 x 1/16
3	02649	3	Handle Bar Retainer
4	02643	3	Neoprene Washer
5	02650	1	Handle Strut Assembly
6	00717	1	O-Ring, 1/4 x 3/8 x 1/16
7	01604	1	O-Ring, .097 x .755 (90 Duro)
8	02925	1	Valve Spool o.c., Clockwise
	02926	1	Valve Spool o.c.,Counterclockwise
	02927	1	Valve Spool c.c., Clockwise
	02927	1	Valve Spool c.c., Counterclockwise
9	02931	1	On-Off Valve Cap
10	03008	1	Roll Pin, 1/4 x 2-1/2
11	02941	1	Trigger
12	03009	1	Roll Pin, 3/8 x 1-3/8
13	02915	1	Torsion Spring
14	02943	1	Safety Latch
15	02945	1	Valve Handle Assembly
16	00165	1	Machine Screw, 1/4-20 x 1 Oval Hd.
17	07226	1	Hose Assembly, 3/8 NPT
18	02911	1	Hose Clip
19	05638	1	Hose Assembly
20	03010	1	Plug, 5/8 Tube SAE
21	02912	2	Oil Tube
22	03006	2	Machine Screw, 5/16-18 x 3/4 Oval Hd.
23	04722	1	Flow Control 9 GPM
24	00175	4	O-Ring, 1/2 x 5/8 x 1/16 ⊙
25	02950	1	Motor Housing
26	21442	1	Motor Assembly, Counterclockwise
	21441	1	Motor Assembly, Clockwise
27	03044	1	Hex Nipple 3/8 NPT
28	05071	3	Machine Screw, 1/4-20 x 3/4 Flat Hd.
29	02918	1	Guard Clamp
30	00955	1	Pipe Plug, 1/8-27 NPT
31	03050	1	Swingover Nut Assembly
32	01594	2	Washer, 5/16
33	03025	1	Bolt, 5/16 x 1 Round Hd. Sq. Neck
34	01362	1	O-Ring, 5/16 x 7/16 x 1/16 ⊙
35	05292	1	Grinding Wheel Guard
36	04876	1	Inside Collar
	12058	1	Inside Collar
37	03013	1	Retaining Ring, 2-5/16 Bev. Ext.
38	04673	1	Thrust Collar, 1-inch Arbor
	04674	1	Thrust Collar, 22 mm Arbor
39	00563	1	Roll Pin, 3/16 x 3/8 •
40	02916	1	Coil Spring
41	03012	1	Nut, 5/8-11, Clockwise, L.H. THD
	01714	1	Nut, 5/8-11, Counterclockwise, R.H. THD
42	01316	1	Key
43	00720	1	Set Screw, 1/4-20 x 3/8 Hex Soc. Hd.
44	04877	1	Outside Collar
	12057	1	Outside Collar
45	02917	1	Oiler Plug
46	02920	1	Spacer
47	05868	1	Caution Sticker
48	06693	1	Speed Limiter Sticker
49	02751	1	Nameplate Sticker (Not Shown)
50	03786	1	GPM Sticker
51	05152	1	Stanley Sticker
52	03972	1	Female Coupler Body ✻
53	03973	1	Male Coupler Body ✻
54	11207	1	Circuit Type D Sticker ✻
55	11205	1	RPM Plaque ✻

NOTE: Use Part Number and Part Name when ordering.
Order Part No. 03575 for Water Attachment Accessory.

⊙ Denotes Parts in Seal Kit

• Denotes Part in Repair Kit

✻ UK Models Only

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helps you do things right

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