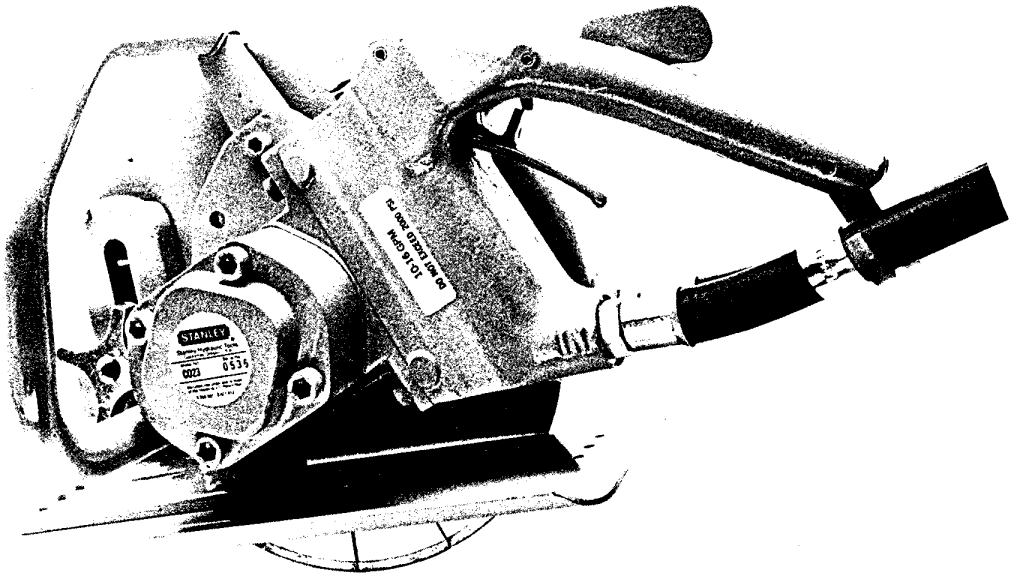
CO23

UNDERWATER

HYDRAULIC CUTOFF SAW



Operation and Maintenance Manual

STANLEY®

helps you do things right

05421 U.S.A. 9/87R

SAFETY PRECAUTIONS

Operators and maintenance personnel must always comply with the following safety precautions. These precautions are given here for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs on the tool.

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

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 throughout these instructions. It is used to identify an action that could cause bodily injury to the operator or other personnel.

IMPORTANT

This safety symbol appears throughout these instructions. It is used 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.

SAFETY PRECAUTIONS

- The cutoff saw is designed to provide safe and dependable service if operated according to instructions. Read and understand this manual and any decals attached to the saw before operating. Failure to do so could result in personal injury or equipment damage.
- New operators must start in a work area without bystanders. He/she must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- When using tools around energized transmission lines, be sure to use only hoses labeled and certified nonconductive and follow all safety practices.
- Know the location of buried or covered services before starting your work.
- Do not inspect or clean the tool with the power source operating or with operating pressure at the tool. Accidental engagement of the tool can cause serious injury.
- Never wear loose clothing that can get entangled in the working end of the tool.
- Do not overreach. Maintain proper footing and balance at all times.
- Always connect hoses to the tool hose couplers before energizing the power source. Be sure that 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.

- 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 down the tool.
- Keep the handles clean and free of oil at all times.
- All service must be performed by experienced service personnel only.
- Always inspect wheels for possible damage before installation.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained.
- 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.
- Never cock, jam or wedge the wheel during the cut.
- Never cause sparks in the vacinity 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.
- Always wear safety equipment such as goggles, ear protection, safety shoes, and head protection at all times when operating the tool.
- Do not reverse wheel rotation direction by changing oil flow direction. Obtain a saw designed for the wheel direction that you desire.
- Whenever working near electrical conductors, always assume that all conductors are energized and that insulating devices and clothing and hydraulic hoses may conduct electricity. Always use nonmetallic braided hoses and ensure that the hydraulic oil is free of moisture.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

OPERATION

IMPORTANT

Observe the following for equipment protection and care.

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

- Replace the cutoff wheel if worn for maximum tool performance. 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 2000 psi/140 bar.

- All hoses must have an oil resistant inner surface and an abrasive resistant outer surface. Hoses that conform to SAE100R1A are recommended for most tool applications.

- Use only cutoff wheels that meet requirements of ANSI B7.5. Wheels should be no larger than 10-inches/25.4 cm in diameter, 5/32-inch/4 mm thick with a 1-inch/25.4 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 10-15 gpm/38-57 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 or 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 7 hp/5.22 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/113 lpm for cold temperature startup and maximum dirt holding capacity.

- The hydraulic fluid used should have a viscosity between 100 and 400 ssu/20 and 82 centistokes at the maximum and minimum expected operating temperatures. Hydraulic fluids of petroleum base with antiwear properties and viscosity indexes over 140 will meet the recommended requirements over a wide range of operating temperatures.

- The recommended hose size is .625 in/16 mm I.D. up to 50 ft/15 m long and .750 in/20 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 10-15 gpm/38-57 lpm at 1500-2000 psi/105-140 bar.

2. Make certain that the power source is equipped with a relief valve set to open at 2250 psi/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" and "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.

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 (also listed on page 4). The cutoff wheel shall fit freely on the drive flange and remain free under all cutting conditions. A controlled clearance between the arbor hole and the cutoff saw drive flange is essential to avoid excessive pressure from installation and/or arbor expansion.

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

ARBOR AND COLLARS

1. Inspect the drive flange and outer flange prior to installation. Check for burrs. Check that the bearing sufaces are flat and run true when mounted on the drive shaft.

2. Inspect the drive shaft threads.

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.

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 cutoff saw is 3600 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 hydraulic power supply used with the cutoff saw.

Note: 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 ot 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 0.025-inch/.6 mm thick.

1. Install the wheel on the drive flange. Refer to the SPECIFICATIONS and PARTS LIST sections of this manual for wheel requirements and parts orientation, respectively.

2. Install the outer flange. (Use the Spirol drive pin on diamond wheels only.)

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

4. Adjust the sole plate assembly for proper depth of cut.

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 within the hose may make 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 saw at operating speed for at least one minute before starting work. Keep personnel from 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 its 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 breakage.

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 horizontally 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 temperatures shoud be avoided.

When used on cutoff saws carried on emergency vehicles, wheels 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. 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

PRIOR TO DISASSEMBLY

- Clean exterior of the tool.
- Obtain Seal Kit, part number 04120, so you can replace all seals exposed during disassembly. Note orientation of seals before removing them. Install new seals in the same way.

ON-OFF VALVE REMOVAL AND INSTALLATION

REMOVAL

1. Drive the trigger pivot roll pin out of handle assembly using a 1/4-inch/6 mm diameter punch. Remove the trigger and spacer.

2. 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.

INSTALLATION

1. Push the valve cap onto the valve stem; then thread the assembly into the top of the valve handle assembly.

2. Install the spring through the bottom of the valve handle assembly; then install the port plug.

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

MOTOR DISASSEMBLY

1. Remove the arbor nut, outer flange, drive flange and the woodruff key.

2. Remove the three capscrews securing the guard to the motor housing and remove the guard assembly.

3. Push the seal carrier and seal carrier washer out of the guard from the wheel side.

4. Remove the four capscrews securing the motor cap to the motor housing and pull the cap off.

5. Remove the spacer washer and shaft seal from the wheel side of the motor housing bearing bore.

6. To remove the bearing from the motor shaft, support the bearing by the outer race in an arbor press and push the shaft out from the threaded end. (Discard bearing if removed.)

7. To remove the motor bearings, use Bearing Puller Kit, part number 05064.

8. Separate the motor housing from the valve handle assembly by removing the four capscrews.

9. Remove the oil tubes to service the o-rings.

MOTOR INSPECTION AND CLEANING

Inspect and clean all parts as follows:

Cleaning

Clean all parts with a degreasing solvent. Blow dry with compressed air and wipe clean. Use only lint-free cloths.

Small Diameter Bearings/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 the motor shaft for corresponding wear and replace as required.

Motor Housing Cap

The chamber bores and end faces around the bearing bores should be polished, but not

rough or grooved. The falt surfaces around the chamber and bolt holes should be flat and free of nicks or burrs that could cause misalignment or leaks.

Gears and Shaft

Both gears should have straight tips without nicks, square tooth ends and a smooth, even polish on the teeth and end faces. Discard the gear if cracks are present.

The shaft diameter at the bearing location must be smooth. Grooves, roughness or a reduced diameter indicate fluid contamination. 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 bushings must be replaced.

Motor Housings

The gear face running surface should show two interconnecting polished circles without a step and should not be rough or grooved.

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

PRIOR TO ASSEMBLY

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

MOTOR REASSEMBLY

1. Push the motor bearings in place using Bearing Installation Tool, part number 05044, (split lines facing each other) with an arbor press.

2. Replace the motor shaft seal in the motor housing, lips facing the gear side, taking care not to damage the seal.

3. Place the spacer washer in the bearing bore, counterbore facing out.

4. Install the retaining ring, support washer and bearing on the motor shaft from the threaded end. (Push bearing on inner race with an arbor press.)

5. Place the outer shaft seal in the seal gland of the seal carrier with the lips facing the bottom of the gland.

6. Replace o-ring on the O.D. step of the seal carrier, place the flat side of the seal carrier washer against the o-ring and push the assembly into the counterbore of the guard, seal carrier first.

7. Apply grease to the motor shaft and the I.D. of the shaftseal and carefully push the motor shaft assembly through the motor shaft seal into the motor housing.

8. Place an o-ring around the O.D. of the bearing and an o-ring on the motor shaft adjacent to the bearing.

9. Fill the bearing with oil while supporting the motor housing with the shaft in a verticle position.

10. Slide the guard over the shaft and bearing and secure with three 5/16-18 x 3/4-inch/19 mm long capscrews tightened to 11 ft lb/15 Nm.

11. Add additional oil to the bearing cavity and slide the seal race over the shaft, chamfered end first, and replace the woodruff key, drive flange, outer flange, and nut.

12. Replace the idler and drive gear.

13. Retain o-ring in the motor housing cap with grease; then slide the cap over the motor gears and align with dowel pins. (**Note:** It will only go in one way.)

14. Secure the cap with four 3/8-16 x 2 1/2-inch/64 mm long capscrews. Tighten in even increments, in a cross pattern, to 25 ft lb/ 34 Nm.

15. Align the oil tubes and assemble the motor housing to the valve housing; secure with four 5/16-18 x 3/4-inch/19 mm long capscrews. Tighten to 11 ft lb/15 Nm.

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 the 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/35 mm long 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 check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the cutoff saw 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
Tool does not run.	Power not functioning.	Check power unit for proper flow and pressure (15 gpm at 2000 psi/56 lpm at 140 bar).
	Coupler or hoses blocked.	Remove obstruction.
	Mechanical failure.	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 block or motor.	Oil tube o-ring failure.	Replace as required.
	Motor face seal failure.	Replace as required.
On-off trigger is hard to press.	Backpressure too high.	Should not exceed 250 psi at 15 gpm/17 bar at 57 lpm measured at the end of the tool operating hoses.
	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 2250 psi/155 bar.
	Wrong wheel for material being cut.	Use correct wheel.
Saw gets hot.	Hot oil or excessive oil flow.	Check power unit for adequate cooling; should maintain fluid at or below 140° F/60° C. Power unit may be producing more flow than the saw will accept under the existing cutting conditions. Reduce flow until saw performance starts to drop off.

SPECIFICATIONS

Weight	23 lb/10.4 kg
Length	19 1/2 inch/50 cm
Width	11 inch/28 cm
Pressure Range	1500-2000 psi/105-140 bar
Flow Range	10-15 gpm/38-57 lpm
Optimum Flow	15 gpm/57 lpm
System Type	o.c. or c.c., HTMA TYPE III
Porting	SAE 8 O-ring
Connect Size	1/2-inch male pipe hose end
Cutting Wheel	ANSI B7.5., 10 inch/25.4 cm diameter
	5/32-inch/4 mm thick, 1-inch/25.4 or 22 mm arbor hole
	5000 RPM minimum rated speed

ACCESSORIES

PART NUMBER	DESCRIPTION
03694	10-inch diameter Diamond Wheel for Masonry 1-inch Arbor
04115	8-inch diameter Abrasive Wheel for Metal 1-inch Arbor
04116	10-inch diameter Abrasive Wheel for Metal 1-inch Arbor Fast Cutting
04894	8-inch diameter Abrasive Wheel for Masonry 1-inch Arbor
04117	10-inch diameter Abrasive Wheel for Metal 1-inch Arbor-Long Wear

SERVICE TOOLS

PART NUMBER	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. Exceptions are cutting parts, steels, and other parts not manufactured by Stanley (such as impact mechanisms, alternators, regulators, and hoses), and parts subject to normal wear and tear (such as o-rings, saw blades, and other parts that become worn through normal use of the tool).

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

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

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

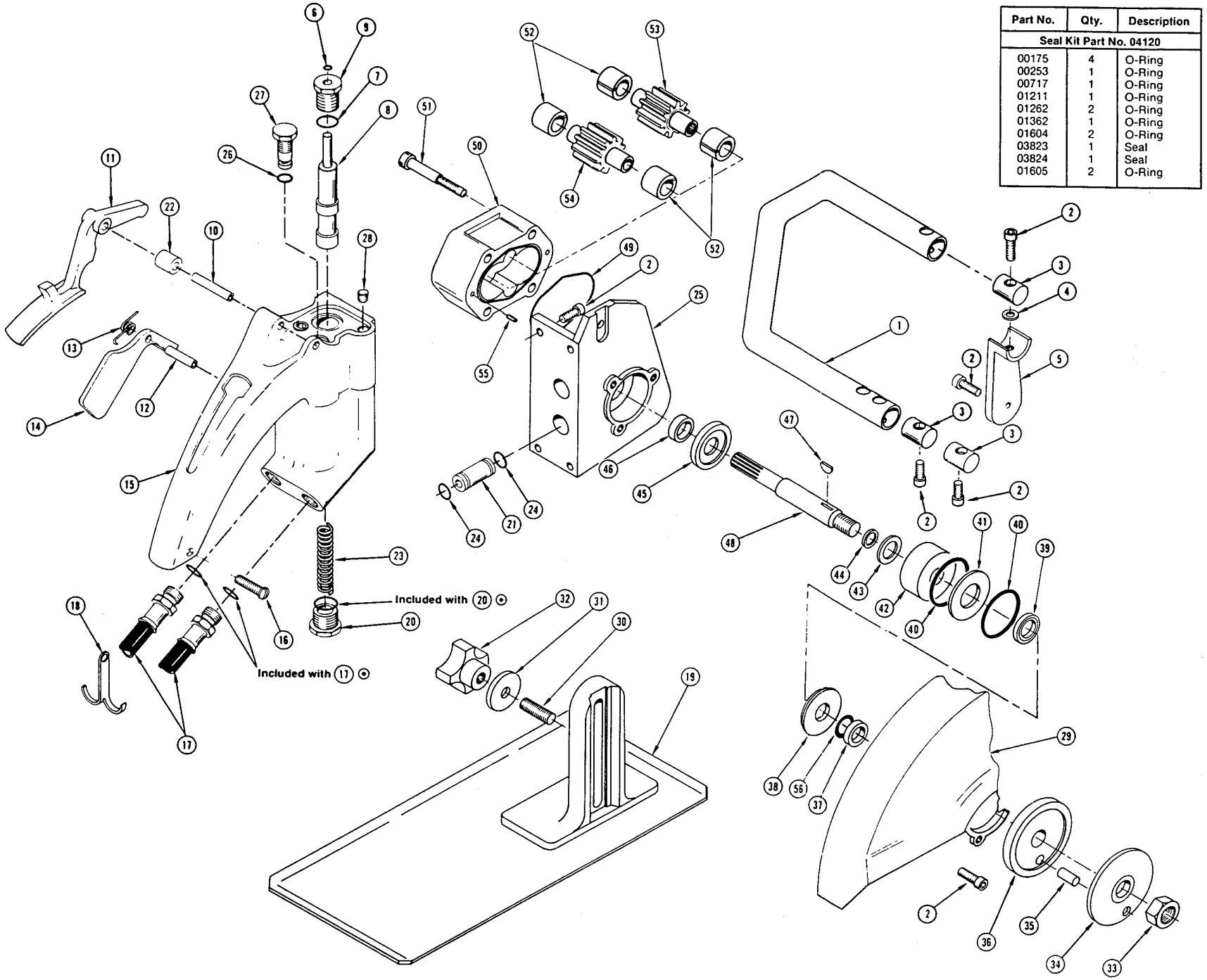
The warranty is void if maximum flow and pressure ratings are exceeded.

There is no other warranty expressed or implied.

SERVICE AND REPAIR NOTES

SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 04120		
00175	4	O-Ring
00253	1	O-Ring
00717	1	O-Ring
01211	1	O-Ring
01262	2	O-Ring
01362	1	O-Ring
01604	2	O-Ring
03823	1	Seal
03824	1	Seal
01605	2	O-Ring



PARTS LIST

Item No.	Part No.	Qty.	Description
1	02654	1	Handle Bar
2	02764	11	Capscrew, 5/16-18 x 3/4 Hex Soc Hd
3	02649	3	Handle Bar Retainer
4	02643	1	Neoprene Washer
5	02650	1	Handle Strut Assembly
6	00717	1	O-Ring, 1/4 x 3/8 x 1/6 ⊙
7	01604	1	O-Ring, .097 x .755 (90 DURO) ⊙
8	02926	1	Valve Spool - Open Center CCW
	02925	1	Valve Spool - Open Center CW
	02928	1	Valve Spool - Closed Center CCW
	02927	1	Valve Spool - Closed Center CW
9	02931	1	On-Off Valve Cap
10	03279	1	Roll Pin, 1/4 x 2 1/2
11	02941	1	Trigger
12	03278	1	Roll Pin, 3/16 x 1 3/8
13	02915	1	Torsion Spring
14	02943	1	Safety Catch
15	02945	1	Valve Handle Assembly
16	00094	1	Machine Screw, 1/4-20 x 1 Fl. Hd.
17	06830	2	Hose Assembly
18	02911	1	Hose Clip
19	03806	1	Sole Plate Assembly
20	03010	1	Port Plug, 5/8 Tube SAE
21	00174	2	Oil Tube
22	02920	1	Spacer
23	02916	1	Spring
24	00175	4	O-Ring, 1/2 x 5/8 x 1/6 ⊙
25	03814	1	Motor Housing CCW
	04633	1	Motor Housing CW
26	01362	1	O-Ring, 5/16 x 7/16 x 1/16 ⊙
27	02917	1	Oiler Plug
28	00955	1	Pipe Plug, 1/8-27 NPT
29	04046	1	Grinding Wheel Guard Assembly
30	03821	1	Stud
31	03827	1	Washer, 1/2
32	03819	1	Knob
33	01714	1	Hex Nut, 5/8-11 CCW
	03273	1	Hex Nut, 5/8-11 CW
34	03802	1	Outer Flange
35	03969	1	Spirol Pin
36	03803	1	Drive Flange 1 in.
	04636	1	Drive Flange 22 mm
37	03810	1	Seal Race
38	03811	1	Seal Carrier
39	03823	1	Seal ⊙
40	01262	2	O-Ring, 1 3/4 x 1 7/8 x 1/16 ⊙
41	03822	1	Seal Carrier Washer
42	03109	1	Bearing
43	03825	1	Support Washer
44	00708	1	Retainging Ring
45	03812	1	Spacer Washer
46	03824	1	Spacer ⊙
47	00600	1	Key
48	03813	1	Motor Shaft CCW
	04634	1	Motor Shaft CW
49	00253	1	O-Ring, 2 1/2 x 2 5/8 x 1/16 ⊙
50	03816	1	Motor Housing Cap
51	01217	4	Capscrew, 3/8-16 x 2 1/2 Hex Soc Hd
52	03826	4	Bearing
53	03818	1	Gear
54	04033	1	Idler Gear
55	00713	2	Dowel Pin, 1/4 x 1
56	01211	1	O-Ring, 5/8 x 3/4 x 1/16 ⊙
	03970	1	GPM Sticker, 10-15 GPM, 2000 PSI (NOT SHOWN)

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

STANLEY

helps you do things right

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