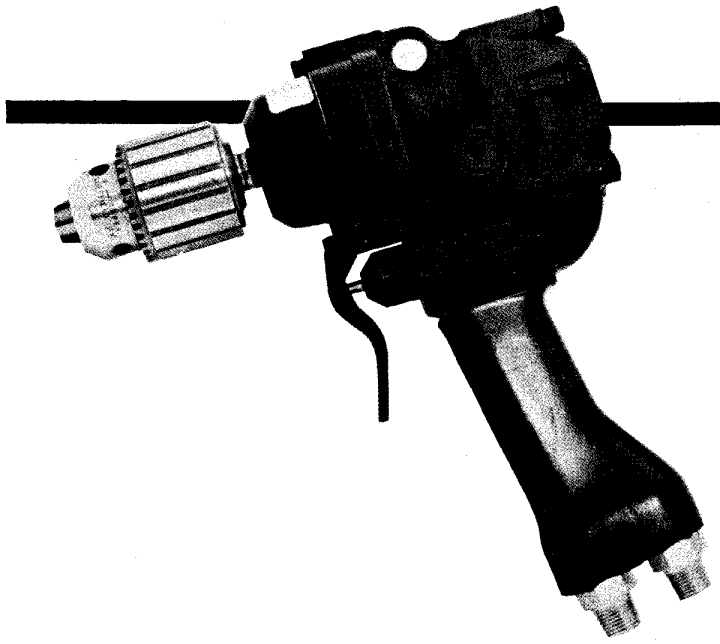
DL08
HYDRAULIC DRILL



Safety, Operation and Maintenance Manual

STANLEY®

helps you do things right

10343 U.S.A. 12/90

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing maintenance or repairs.

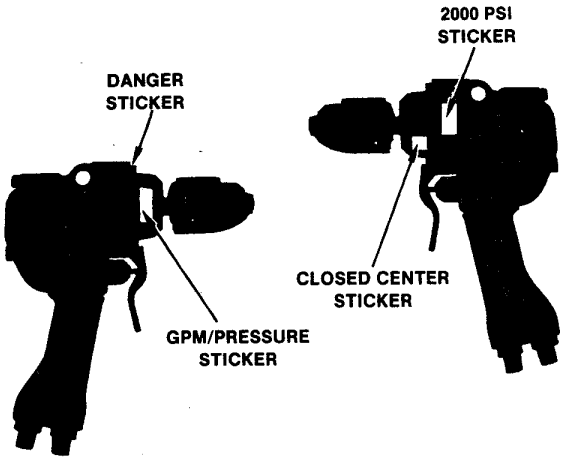
Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 3.

GENERAL SAFETY PRECAUTIONS

The DL08 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 tool and hose before operation. Failure to do so can result in personal injury or equipment damage.

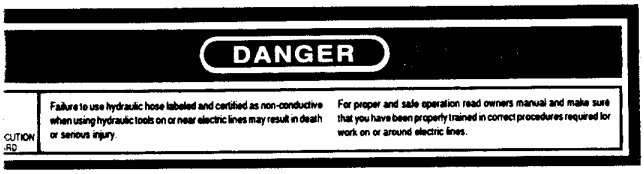
- Operators must start in a work area without bystanders. Flying debris can cause serious injury.
- The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Always wear safety equipment such as goggles, ear and head protection, and safety shoes when operating the tool.
- Do not operate the tool if it is damaged, improperly adjusted or not completely and correctly assembled.
- 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.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- When working near electrical conductors, always assume that all conductors are energized and that insulation, clothing and hoses can conduct electricity. Use hose labeled and certified as non-conductive.
- Do not operate the tool at oil temperatures above 140° F/60° C. Operation at higher temperatures can cause higer than normal temperatures at the tool, which can result in operator discomfort.
- To avoid personal injury or equipment damage, all tool repair, maintenance service must only be performed by authorized and properly trained personnel.

TOOL STICKERS AND TAGS

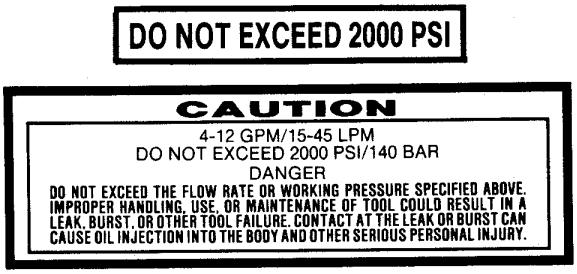


The stickers and tags attached to the drill prior to shipment from the factory are shown below. The pressures and flow rates specified must never be exceeded. All stickers and tags must be read and understood prior to operation of the tool.

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



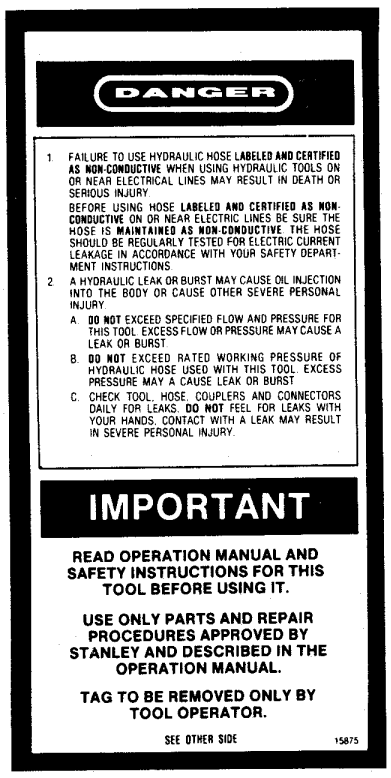
RICAL DANGER STICKER

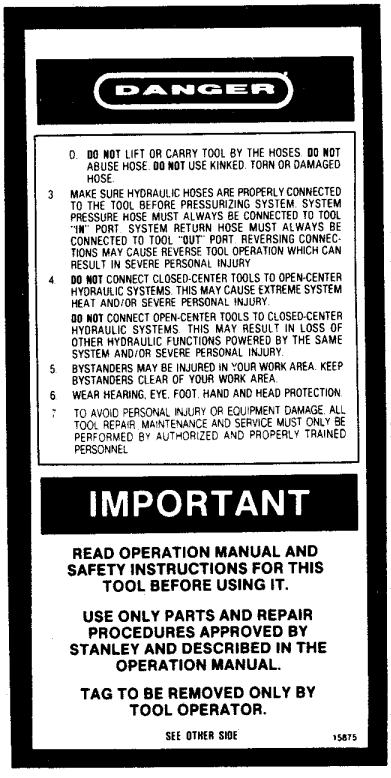


GPM/PRESSURE STICKER

CLOSED CENTER
STICKER

SAFETY TAG

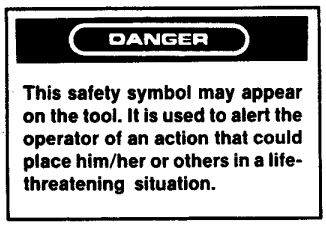


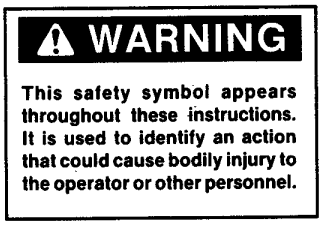


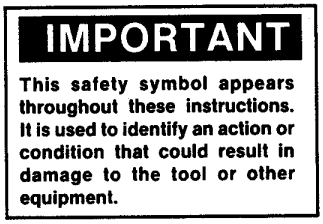
This safety tag is attached to the drill when shipped from the factory. Read and understand the safety instructions listed on both tags before removal. We suggest you retain the tags and attach them to the drill when not in use.

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.

EQUIPMENT PROTECTION AND CARE

IMPORTANT

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

- Always store the tool (with bit removed) in a clean, dry space, safe from damage or pilferage.
- 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.
- Always use hoses that have an oil resistant inner surface and an abrasive resistant outer surface. Whenever near electrical conductors, use **clean** hose labeled and certified non-conductive.
- Tool repair should be performed by experienced personnel only.
- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling hydraulic tools. Failure to do so can result in damage to the quick couplers and cause overheating of the hydraulic system.
- Do not exceed 12 gpm/45 lpm flow rate. Rapid failure of the impact mechanism can result.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the port at the front of the drill handle. The circuit RETURN hose (with female quick disconnect) is connected to the port at the back of the drill handle.
- **Do not** reverse circuit flow. The reversing valve that is part of the tool provides for reverse operation of the drill. Operation with circuit flow reversed causes rapid failure of the motor shaft seal and other internal parts. ALWAYS USE THE REVERSING VALVE BUILT INTO THE DRILL FOR REVERSE OPERATION.
- Always use a closed-center (CC) drill on closed-center circuits and an open-center (OC) model on open-center circuits. If the drill is the dual-spool version with an OC/CC selector, make certain that the selector is positioned correctly for the circuit application before using.

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

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

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

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

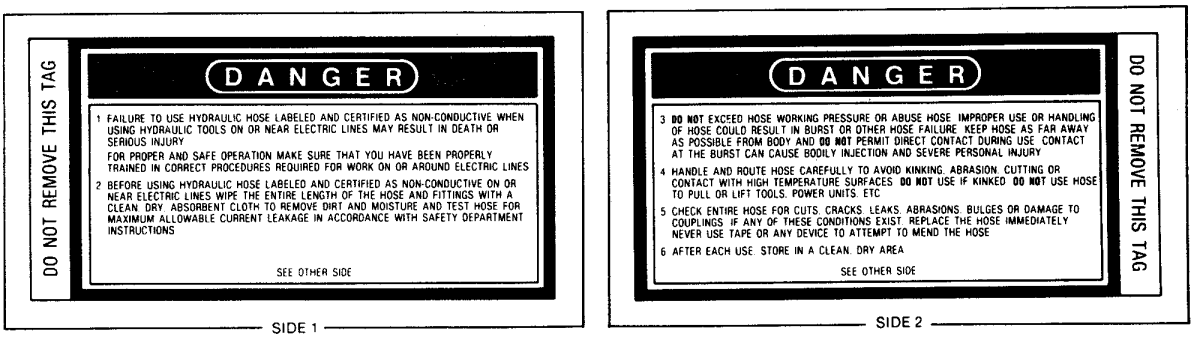
Hoses 2 and 3 listed above are **conductive** and **must never** be used near electrical conductors.

To help ensure your safety, the following DANGER tags are attached to all hoses purchased from Stanley Hydraulic Tools. DO NOT REMOVE THESE TAGS.

If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag can be obtained at no charge from your Stanley distributor.

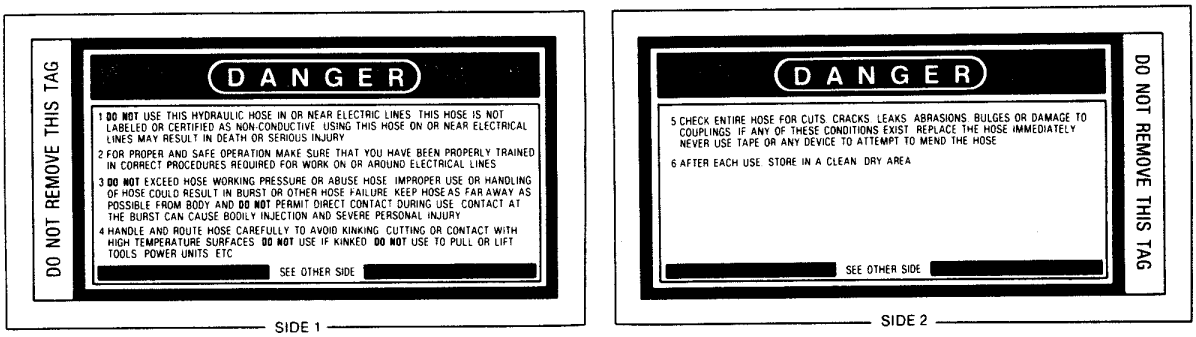
1 CERTIFIED NON-CONDUCTIVE HOSE

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



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

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



HOSE PRESSURE RATING

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

HYDRAULIC SYSTEM REQUIREMENTS

- The hydraulic system should provide a flow of 4-12 gpm/15-45 lpm at an operating pressure of 1000-2000 psi/70-140 bar. (Drill speed and torque are directly proportional to flow and pressure rates.) Recommended relief valve setting is 2100 psi/145 bar.

- The system should not have 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 5 hp/3.73 kW at a 40°F/4°C difference between ambient temperature and oil temperature.

- The hydraulic system should have a minimum of 25 micron full-flow filtration. It is recommended that filter elements be sized for a flow of at least 30 gpm/114 lpm for cold temperature startup and maximum dirt holding capacity.

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

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

- The drill return hose must connect directly to the circuit return line and go straight through the oil filter, thermal valve, and oil cooler to the reservoir. To prevent trapped or reversed pressure, fluid should not be returned through a blocking or reversing valve.

- Do not use emulsifying hydraulic fluids and keep the recommended fluids drained of settled moisture. Water in the fluid can cause pump cavitation.

- The drill must not be operated with the hydraulic flow reversed. Supply (IN) and return (OUT) hoses must be connected as marked on the tool. Forward and reverse op-eration of the tool is selected with the reversing spool located on the side of the wrench.

- Operate open-center tools from open-center hydraulic circuits only. Operate closed-center tools from closed-center hydraulic circuits only. Optional open-center/closed-center drills can be operated from either type.

DL08 DRILL TORQUE AND SPEED

MODEL	TORQUE: Proportional to Oil Pressure psi/bar		RPM: Proportional to Oil Flow gal/min; ltr/min	
	U.S.A.	METRIC	HYDRAULIC FLOW	DRILL SPEED
DL08	500 psi/4 ft lb 1000 psi/9 ft lb 1500 psi/14 ft lb 2000 psi/19 ft lb	35 bar/0.5 kgm 70 bar/1.2 kgm 105 bar/1.9 kgm 140 bar/2.6 kgm	3 gpm/11.3 lpm 4 gpm/15.1 lpm 6 gpm/22.7 lpm 8 gpm/30.2 lpm 10 gpm/38 lpm	350 rpm 475 rpm 750 rpm 1000 rpm 1250 rpm

DRILL PERFORMANCE INFORMATION

Given that the recommended hydraulic fluid and hoses are being used, a typical drill can be expected to operate at a speed (RPM) and torque that is directly proportional to the flow rate and pressure supplied from the circuit power source.

SPEED

Circuit flow determines drill speed:

GPM/LPM	RPM
3/11	350
4/15	475
6/22	740
8/30	1000
10/37	1250

TORQUE

Foot pounds/Newton meters of torque are determined by the circuit pressure:

GPM/LPM	RPM
500/35	4/5.4
1000/70	9/12.2
1500/105	14/19.0
2000/140	19/25.8

An adjustable relief valve can be inserted between the supply hose and the return hose to limit the torque to a desired value.

PREOPERATION PROCEDURES

INSTALL CHUCK

- Taper-mounted chucks should be secured to the output shaft by sharply twisting and lightly tapping on the end. Make certain the shaft is free of dirt and oil.
- On threaded-shaft models, make certain that the chuck is secure to the output shaft (Tightened to 30 ft lb/41 Nm of torque, lubricated).

IMPORTANT

Use the flats on the shaft to hold the shaft during tightening or loosening of the chuck.

DETERMINE CIRCUIT TYPE

Determine your drill model. It is either an OC/CC model or Dual spool model. Dual spool models have an adjustable spool end socket at the front of the trigger. OC/CC models do not.

On dual spool models, select open center or close center to match your hydraulic system by turning the end socket witha flat-bladed screw driver.

On OC/CC models, make sure your drill is fitted with the correct valve spool to match your hydraulic system. The spools are shown in the parts list illustration at the back of this manual.

CHECK POWER SOURCE

1. Using a calibrated flowmeter and pressure gauge, check that the hydraulic power source develops a flow of 4-12 gpm/15-45lpm at 1000-2000 psi/70-140 bar.

2. Make certain that the hydraulic power source is equipped with a relief valve set to open at 2100 psi/145 bar maximum.

3. UNDERWATER MODEL. Make certain the gear housing is full of hydraulic fluid or water-resistant (EP-2) grease.

CONNECT HOSES

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

2. Connect hoses from the hydraulic power supply to the tool 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 drill.

3. Observe the arrow on hose couplers to ensure that the flow is in the proper direction. The male coupler on the tool hose end is the supply (pressure) coupler.

4. Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the port **furthest** from the trigger. The circuit RETURN hose (with female quick disconnect) is connected to the port **closest** to the trigger.

5. Move the hydraulic circuit control valve to the "ON" position to direct hydraulic flow to the drill.

Note: If uncoupled hoses are left in the sun, pressure increase inside the hose may result in making them difficult to connect. Whenever possible, connect the free ends of the hoses together.

DRILL OPERATION

1. Observe all safety precautions.

IMPORTANT

Make certain that the chuck has been securely mounted.

2 Place the selected drill bit fully into the chuck. Center the bit and tighten the chuck using the key provided. Remove the key and store away from the drill.

3. Momentarily press the trigger to ensure that the drill bit rotates clockwise and runs true.

4. Select a work position that affords secure footing and balance while operating the drill.

5. Press the drill against the work and squeeze the trigger.

The drilling method used is determined by the material being drilled and the size and depth requirements of the hole.

Brittle material such as rock, brick or concrete can be drilled efficiently when the bit is caused to strike (hammer) the hole bottom to break up the material. Without hammering, the rotating bit will only grind down and become dull. The Stanley HD08 should be used for this application.

Ductile material such as metal or wood is drilled efficiently when a steady down force is applied to the drill center to cause the bit to slice chips of the material from the hole bottom. When drilling in metal use a cutting lubricant to prolong bit life and reduce the amount of force required to drill effectively.

Large drill holes are more productively created from small drill holes. Drill bits are incrementally selected to enlarge the hole until the desired hole size is obtained. Each bit selected must always be too large to thread and jam into the existing hole; otherwise the bit may break and endanger the operator.

COLD WEATHER OPERATION

If the drill is to be used during cold weather, preheat the hydraulic fluid at low engine speed. When using the normally recommended fluids, fluid 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

DRILL IDENTIFICATION

Five drill models are available. Three models are for use on land and two models are for use underwater. The primary difference between models is in the method used to adapt the drill to closed and open circuit systems and the use of corrosion resistant materials in the underwater models. The drill models are:

Model	Use	Circuit Type	Trigger Guard
DL08150	land	o.c.	
DL08250	land	c.c.	
DL08350	uwtr	o.c.	
DL08450	uwtr	c.c.	
DL08550	land	o.c./c.c. dual spool	

The underwater models are distinctively finished in yellow. Most models listed have a thread mounted 1/2-inch/1.3 cm diameter chuck and include a seal nut between the chuck and gear housing.

Early land model open and closed center drills have a taper mounted 1/2-inch/1.3 cm diameter chuck and do not include a seal nut between the chuck and gear housing. Early underwater model drills do not have a trigger guard.

UNDERWATER MODEL GREASE REQUIREMENTS

Keep the gear housing packed with EP-2 underwater grease at all times.

PRIOR TO DISASSEMBLY

- Clean exterior of tool.
- Obtain Seal Kit, part number 11227 for threaded shaft models and part number 11226 for taper shaft models, so all seals exposed during disassembly can be replaced during reassembly. Note orientation of seals before removing them. Install new seals in the same way.

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

TOOL DISASSEMBLY

GEAR HOUSING

Note: Whenever possible, the gear housing and included parts should be removed and replaced as a complete assembly. The gear housing need not be disassembled or the chuck removed if the trouble is in the main housing assembly or with the main shaft seal.

1. Remove the chuck from the output shaft.
   a. A threaded chuck is removed by holding the seal nut with an open-end wrench and turning the chuck counter-clockwise.
   b. A taper-mounted chuck is removed by using a prying action between the chuck back and the shoulder of the shaft while lightly tapping with a hammer to break it loose.
2. Remove the five capscrews and lock-washers securing the gear housing to the main housing assembly and pull it free of the main housing.
3. Remove the ring gear and gasket.
4. On threaded shaft models, remove the retaining ring near the planet shafts; then remove the planet shafts. Remove the seal nut (use the planet shaft holes to keep the output shaft from turning). Pull the output shaft, with attaching parts, from the gear housing.
5. On tapered shaft models, place the gear housing on supports outside the ring gear bore and press on the tapered end of the shaft to remove it with attaching parts. Remove the retaining ring near the ball bearing.

6. Remove the Spirolox retaining ring, planet shafts (if not previously removed), and planet gears. Inspect shafts, gears, and gear bore bushings (see MOTOR CLEANING AND INSPECTION procedure).

7. Spin the ball bearing on the output shaft. The bearing should turn smoothly. To replace the bearing, support the outer race and press down on the output shaft from the chuck end.

Note: Do not reuse the ball bearing once it has been removed from the output shaft.

8. Remove the main shaft seal by pressing it from the gear housing bore.

9. Check the end faces of the seal nut and the output shaft for nicks and wear (see MOTOR CLEANING AND INSPECTION procedure).

MAIN HOUSING & MOTOR CAP ASSEMBLIES

Note: Do not remove or tighten reverse spool stop screws unless the idler gear shaft has been removed.

1. Remove the five capscrews and lockwashers securing the gear housing to the main housing assembly and pull it free of the main housing.

2. Remove the six capscrews and lockwashers securing the motor cap assembly to the main housing assembly.

3. Tap on the small gear end of the main shaft and press the motor cap assembly and gears out of the main housing. DO NOT pry or in any way force the motor cap assembly off of the main housing assembly.

4. Remove o-ring from motor cap assembly.

5. Remove the idler gear, idler shaft and main shaft.

6. Remove the spring and (if Dual-Spool) the selector seat.

7. Remove the two flathead capscrews and stopwashers from the ends of the reversing spool.

8. Carefully slide the reversing spool out of the main housing just far enough to remove one of the o-rings. Carefully press the reversing spool out of the opposite side of the main housing.

9. Remove the retaining ring holding the back-up washer and shaft seal at the gear housing end of the main housing. Remove the o-ring and back-up washer. (The o-ring is subject to severe service and should be replaced whenever the main shaft is serviced.)

MOTOR CLEANING AND INSPECTION (all models)

Cleaning

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

Bushings (Main Housing and Motor Cap)

The inside of the bushings should be gray in color. If a significant amount of yellow bronze is evident, bushing replacement is required. Inspect shafts for corresponding wear and replace as required.

Gear Chamber (Motor Cap)

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

Idler Gear

The idler gear should have flat, straight tips without nicks. It should have a smooth even polish on the teeth and end faces. Discard the gear if cracks are present.

Main Housing Assembly

The gear running surfaces should show two interconnecting polished circles without a step or roughness.

Shafts

Main and idler shaft diameter at the associated bushings must be smooth. Grooves, roughness or a reduced diameter indicates fluid contamination and damaged bushings. If abnormally worn (in excess of normal polishing), both shafts and associated bushings must be replaced. The hydraulic system

should be thoroughly flushed and the filter replaced before further operation of the hydraulic system.

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.

TOOL REASSEMBLY

MAIN HOUSING & MOTOR CAP ASSEMBLIES

1. See figure 1. The reversing spool must have the horizontal slot toward the idler shaft Holding the spool in this position, install a greased o-ring in the **right groove**

2. Slide the reversing spool (the end with no o-ring) into the main housing from the right side as the drill is shown in figure 1. Slide the spool only far enough in so the o-ring on the opposite end of the reversing spool can be installed.

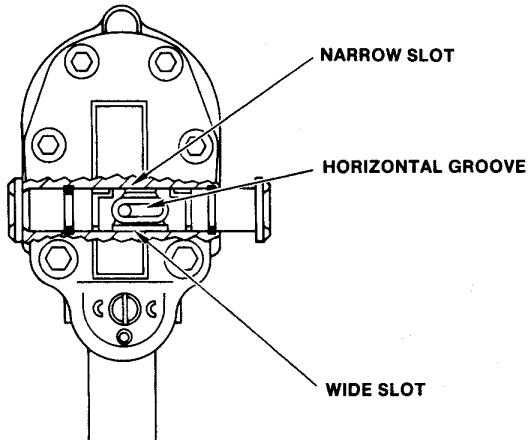


Figure 1.

3. Grease and install the second o-ring and center the reversing spool.

4. Install the stopwashers and two 5/16-18 x 1/2-inch/12.7 mm internal hex capscrews with Loctite 242 on screw threads. Tighten to 16 ft lb/22 Nm before installing the idler shaft.

Note: Do not use idler shaft to hold reversing spool when tightening stop screws. Use the opposing stop screw to secure the spool.

5. Locate or turn the reversing spool so the small machined oval will be facing straight back (towards the motor cap end). Install idler shaft with the small end into the horizontal slot of the reversing spool. This will prevent it from turning.

6. Lubricate and install the small o-ring in the bore of the main housing through which the trigger spool assembly needle roller passes.

7. Lubricate and press the o-ring on the needle roller and install in the trigger spool bore. Install the trigger spool into the main housing assembly.

8. On early Rear Select, Dual-Spool model, lubricate and install small o-ring in the selector seat bore of the motor cap.

9. Install the main shaft, idler gear, spring and (if early Dual-Spool) the selector seat in the motor cap.

10. Lubricate and install o-ring in the groove of the motor cap. (The o-ring will stay in the groove better if it is limbered-up by slight stretching and filling the groove with stiff grease.)

Note: Do not force, wobble, or hammer the parts to assemble them.

11. For early Dual-Spool models, align the notches of the trigger spool and the selector seat. Carefully slide the main housing over the main shaft until it seats securely against the motor cap.

Note: Be sure that slot in the reversing spool is aligned with the small diameter end of the idler shaft.

12. Lubricate and install the four 5/16 x 1 1/2-inch/38 mm and the two 3/8-16 x 1 1/2-inch/38 mm socket head capscrews and lockwashers securing the motor cap assembly to the main housing. Make sure there is no gap between the main housing and the water cap and that the shaft turns freely. Tighten the four 5/16 screws to 18 ft

lb/24 Nm, lubricated. Tighten the two 3/8 screws to 28 ft lb/38 Nm, lubricated. Check that the shaft turns freely after tightening.

13. Lubricate and install the o-ring and split back-up ring on the main shaft. Install the back-up washer and the retaining ring. Make sure the bevel on the washer is against the back-up ring.

14. Check that the spools move freely. Turn the main shaft to make certain that it is not jammed. If damaged or assembled incorrectly, movement of these parts will result in a rough feeling. If this occurs, disassemble and inspect.

GEAR HOUSING

Note: Use the proper grease. Only waterproof grease is used for underwater models. The gear housing should be packed as full as possible with EP-2 underwater grease when the assembled shaft is installed.

1. Lubricate and assemble the shaft and bearing keepers on the output shaft.

2. Grease the ball bearing and push it onto the output shaft. Press on the inner race only.

3. Lubricate and assemble the planet shafts and gears, and the Spirolox retaining ring on the output shaft.

4. Lubricate and install the roll pin, ring gear, and shaft seal into the gear housing.

5. On underwater models, make sure the gear housing and planet gears are filled with EP-2 underwater grease.

6. Push the assembled output shaft into the gear housing. Lubricate the output shaft threads and o-ring with grease while holding the planet frame end in a soft jaw vise. Screw the seal nut onto the output shaft and tighten to 12 ft lb/16 Nm of torque.

7. Place lubricated o-ring around the ring gear. Align the gear housing to the main housing assembly and secure with three 10-24 x 1 1/4-inch/32 mm hex socket head capscrews and lockwashers. Tighten capscrews to 40 in. lb/4.5 Nm of torque.

8. For threaded chuck models, lubricate chuck threads with grease and screw chuck onto the output shaft while holding the seal nut secure with an open-end wrench. Tighten the chuck to 30 ft lb/41 Nm of torque.

9. For taper-mounted chucks, press the chuck onto the output shaft and lightly tap with a mallet until the chuck seats.

10. If prevoiously removed, install the trigger and secure with the Spriol pin.

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 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 will not start.	Power not being supplied.	Check to make certain that both hoses are connected.
		Turn hydraulic circuit control valve "ON".
	Defective quick disconnects.	Check each quick disconnect separately. Replace as necessary.
	Jammed motor and/or parts.	Disassemble and inspect. See SERVICE INSTRUCTIONS. Do not force parts together.
Low drilling torque.	Relief valve setting too low.	Set relief valve at 2100 psi/145 bar.
	Fluid restriction in hose or valve. Excess flow and pressure loss.	Locate and remove restriction.
		Use correct fluid.
		Fluid not warmed-up. Preheat system.
		Hoses too long for hose I.D. Use shorter hose.
		Hose I.D. too small for hose length. Use larger I.D. hose.
	Reversing spool upside down.	Reassemble per SERVICE INSTRUCTIONS.
Low drill speed.	Fluid flow rate too low.	Check circuit flow rate.
Drill speed too high.	Fluid flow rate is excessive.	Check circuit flow rate; add a proper flow control valve or reduce the pump RPM.
Oil leaks around gear housing.	Main shaft seal o-ring leaking.	Replace seal; check seal contact surfaces.
	Hydraulic pressure and return hoses reversed.	Correct hose connections. Pressure should be to the handle port away from the trigger, return is near the trigger; then replace the main shaft oil seal.

PROBLEM	CAUSE	REMEDY
Oil gets hot, power unit working hard.	Open center tool on a close center circuit and vice versa.	Use tools to match circuit.
	Circuit relief set too low.	Adjust relief valve to 2100 psi/ 145 bar.
	Too much oil going through tool.	Adjust flow for 12 gpm/45 lpm maximum, or less.
Oil leaks at reversing spool.	Damaged o-rings.	Replace as required.
	Wrong hydraulic fluid. Circuit too hot.	See OPERATING INSTRUCTIONS for correct fluid/circuit specifications.
Oil leak at motor cap face.	Fasteners loose.	Tighten to recommended torque. See SERVICE INSTRUCTIONS.
	Face o-ring worn or missing.	Replace as required.
	Motor cap/main housing damaged.	Replace as required.

SPECIFICATIONS

Drive Size	1/2-inch/1.3 cm 3-Jaw Adjustable 5/8-16 THD Chuck
Weight	6 lb/2.7 kg
Overall Length	9-inches/23 cm
Width	3.5-inches/9 cm
Pressure Range	1000-2000 psi/70-140 bar
Flow Range	4-12 gpm/15-45 lpm
Optimum Flow	8 gpm/30 lpm
System Type	open or closed center, HTMA TYPE I-III
Porting	-8 SAE O-ring
Connect Size and Type	3/8-inch NPT Male Adapter
Motor	Integral
Drill Torque	20 ft lb/27 Nm at 2000 psi/140 bar
Drill Speed	1000 RPM at 8 gpm/30 lpm
RPM Range	350-1500

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.

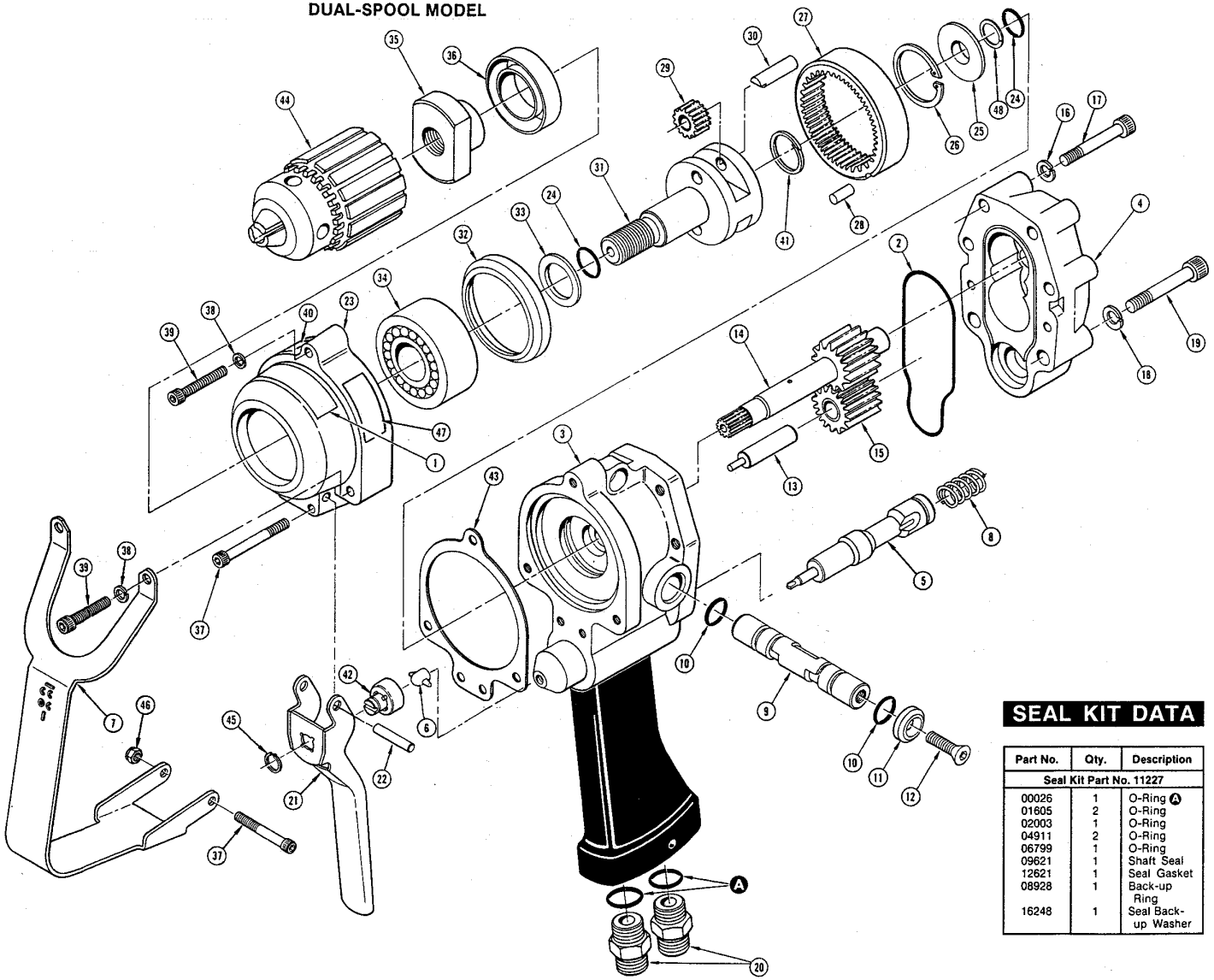
Shipping charges are prepaid by the customer unless otherwise authorized by Stanley.

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

There is no other warranty expressed or implied.

SERVICE AND REPAIR NOTES

DUAL-SPOOL MODEL



SEAL KIT DATA

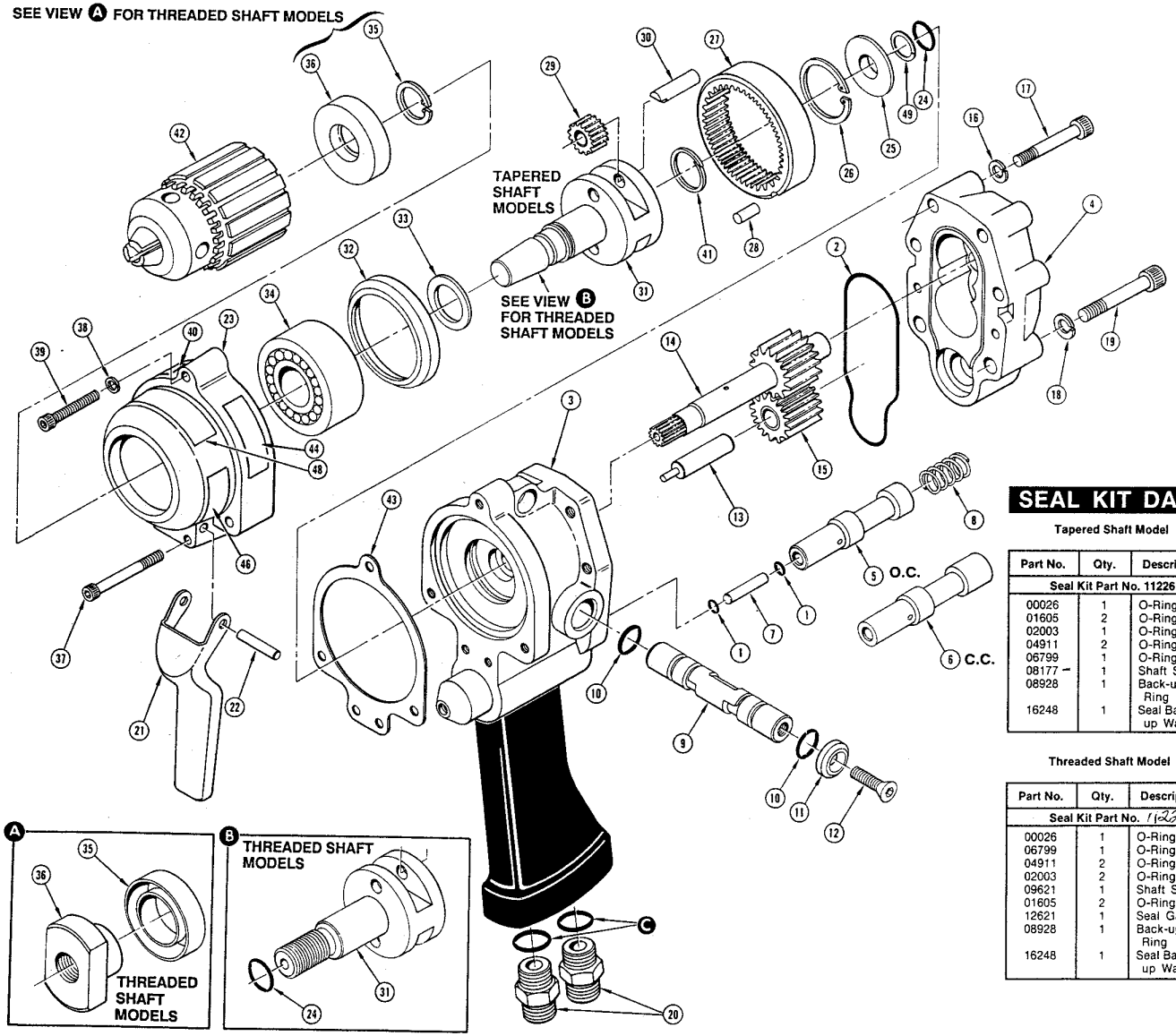
Part No.	Qty.	Description
Seal Kit Part No. 11227		
00026	1	O-Ring Ⓐ
01605	2	O-Ring
02003	1	O-Ring
04911	2	O-Ring
06799	1	O-Ring
09621	1	Shaft Seal
12621	1	Seal Gasket
08928	1	Back-up Ring
16248	1	Seal Back-up Washer

PARTS LIST

Item No.	Part No.	Qty.	Description
1	15211	1	Danger Sticker
2	06799	1	O-Ring 2-3/4 x 2-7/8 x 1/16 ⊙
3	06620	1	Main Housing Assembly
4	07023	1	Motor Cap Assembly
5	14632	1	Trigger Spool, OC/CC Select
6	81919	1	Pin to Socket Adapter
7	14022	1	Trigger Guard
8	06617	1	Spring
9	06607	1	Reversing Spool
10	04911	2	O-Ring 1/2 x 5/8 x 1/16 ⊙
11	07227	2	Stopwasher
12	03475	2	Capscrew 5/16-18 x 1/2 HSFH
13	09601	1	Idler Shaft Assembly
14	08169	1	Main Shaft
15	07021	1	Idler Gear Assembly
16	03031	4	Lockwasher 5/16 "
17	06638	4	Capscrew 5/16-18 x 1-1/2 HSH
18	01459	2	Lockwasher 3/8
19	01458	2	Capscrew 3/8-16 x 1-1/2 HSH
20	00936	2	Adapter -8 SAE to 3/8 NPT MALE
21	14024	1	Trigger
22	07970	1	Spirol Pin 3/16 x 1-3/8 LDP
23	14754	1	Gear Housing
24	02003	1	O-Ring 9/16 x 3/4 x 3/32 ⊙
25	16248	1	Seal Back-up Washer ⊙
26	06635	1	Retaining Ring
27	08166	1	Ring Gear
28	00563	1	Roll Pin 3/16 x 3/8
29	08165	2	Planet Gear Assembly
30	08161	2	Planet Shaft
31	09779	1	Output Shaft
32	08163	1	Bearing Keeper
33	08162	1	Shaft keeper
34	08175	1	Ball Bearing
35	09778	1	Seal Nut
36	09621	1	Shaft Seal ⊙
	09687	3	Capscrew 10-24 x 1-1/2 HSH STNLS
38	04420	3	Lockwasher #10
39	00753	3	Capscrew 10-24 x 1-1/4 HSH
40	15210	1	GPM Sticker
41	08440	1	Spirolox Retaining Ring
42	14019	1	Spool End Socket
43	12621	1	Seal Gasket ⊙
44	09624	1	Chuck - 3-Jaw Adjustable 5/8-16 THD
45	14028	1	Retaining Ring
46	06971	1	ESNA Locknut
47	15209	1	2000 PSI Sticker
48	08928	1	Split Back-up Ring ⊙
	06345	2	Plastic Plug (NOT SHOWN)
	08178	1	Name Tag (NOT SHOWN)

NOTE: Use Part Number and Part Name when ordering.
⊙ Denotes part in seal kit.
Ⓐ Supplied as part of Item 20.

O.C. & C.C. MODELS



SEAL KIT DATA

Tapered Shaft Model

Part No.	Qty.	Description
Seal Kit Part No. 11226		
00026	1	O-Ring Ⓒ
01605	2	O-Ring
02003	1	O-Ring
04911	2	O-Ring
06799	1	O-Ring
08177	1	Shaft Seal
08928	1	Back-up Ring
16248	1	Seal Back-up Washer

Threaded Shaft Model

Part No.	Qty.	Description
Seal Kit Part No. 11227		
00026	1	O-Ring Ⓒ
06799	1	O-Ring
04911	2	O-Ring
02003	2	O-Ring
09621	1	Shaft Seal
01605	2	O-Ring
12621	1	Seal Gasket
08928	1	Back-up Ring
16248	1	Seal Back-up Washer

PARTS LIST

Item No.	Part No.	Qty.	Description
1	00026	2	O-Ring 3/16 x 5/16 x 1/16⊙
2	06799	1	O-Ring 2-3/4 x 2-7/8 x 1/16⊙
3	06620	1	Main Housing Assembly
	14116	1	Main Housing Assembly*
4	07023	1	Motor Cap Assembly
5	08167	1	Valve Spool, Open Center
6	08168	1	Valve Spool, Closed Center
7	06634	1	Needle Roller - 3/16 x 1
8	06617	1	Spring
9	06607	1	Reversing Spool
10	04911	2	O-Ring 1/2 x 5/8 x 1/16⊙
11	07227	2	Stopwasher
12	03475	2	Capscrew 5/16-18 x 1/2 HSFH
13	06615	1	Idler Shaft - Tapered Shaft
	09601	1	Idler Shaft - Threaded Shaft
14	08169	1	Main Shaft
15	07021	1	Idler Gear Assembly
16	03031	4	Lockwasher 5/16
	00283	4	Lockwasher 5/16 STNLS*
17	06638	4	Capscrew 5/16-18 x 1-1/2 HSH
	09625	4	Capscrew 5/16-18 x 1-1/2 HSH STNLS*
18	01459	2	Lockwasher 3/8
	01214	2	Lockwasher 3/8 STNLS*
19	01458	2	Capscrew 3/8-16 x 1-1/2 HSH
	03600	2	Capscrew 3/8-16 x 1-1/2 HSH STNLS*
20	00936	2	Adapter -8 SAE to 3/8 NPT MALE
21	06981	1	Trigger
22	07970	1	Spirol Pin 3/16 x 1-3/8 LDP
23	08171	1	Gear Housing - Tapered Shaft
	09780	1	Gear Housing - Threaded Shaft
24	02003	2	O-Ring 9/16 x 3/4 x 3/32⊙
25	16248	1	Seal Back-up Washer⊙
26	06635	1	Retaining Ring
27	08166	1	Ring Gear
28	00563	1	Roll Pin 3/16 x 3/8
	09620	1	Roll Pin 3/16 x 3/8 STNLS*
29	08165	2	Planet Gear Assembly
30	08161	2	Planet Shaft
31	09779	1	Output Shaft
32	08163	1	Bearing Keeper
33	08162	1	Shaft Keeper
34	08175	1	Ball Bearing
35	08176	1	Retaining Ring - Tapered Shaft
	09621	1	Shaft Seal - Threaded Shaft⊙
36	08177	1	Shaft Seal - Tapered Shaft⊙
	09778	1	Seal Nut - Threaded
37	00111	2	Capscrew 10-24 x 1-1/2 HSH
	04045	2	Capscrew 10-24 x 1-1/2 HSH STNLS*
38	00032	3	Lockwasher #10
	09623	3	Lockwasher #10 STNLS*
39	00753	3	Capscrew 10-24 x 1-1/4 HSH
	09622	3	Capscrew 10-24 x 1-1/4 HSH STNLS*
40	15210	1	GPM Sticker
41	08440	1	Spirolox Retaining Ring
42	08247	1	Chuck - 3-Jaw Adjustable 6JT Taper - Tapered Shaft
	09624	1	Chuck - 3-Jaw Adjustable 5/8-16 THD - Threaded Shaft
43	12621	1	Seal Gasket⊙
44	15209	1	2000 PSI Sticker
45	08178	1	Name Tag (NOT SHOWN)
46	03693	1	Closed Center Sticker
47	06345	2	Plastic Plug (NOT SHOWN)
48	15211	1	Danger Sticker
	12412	1	Danger Sticker
49	08928	1	Split Back-up Ring⊙

NOTE: Use Part Number and Part Name when ordering.
⊙ Denotes part in seal kit.
* Denotes part in underwater model only.
Ⓒ Supplied as Part of Item 20.

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