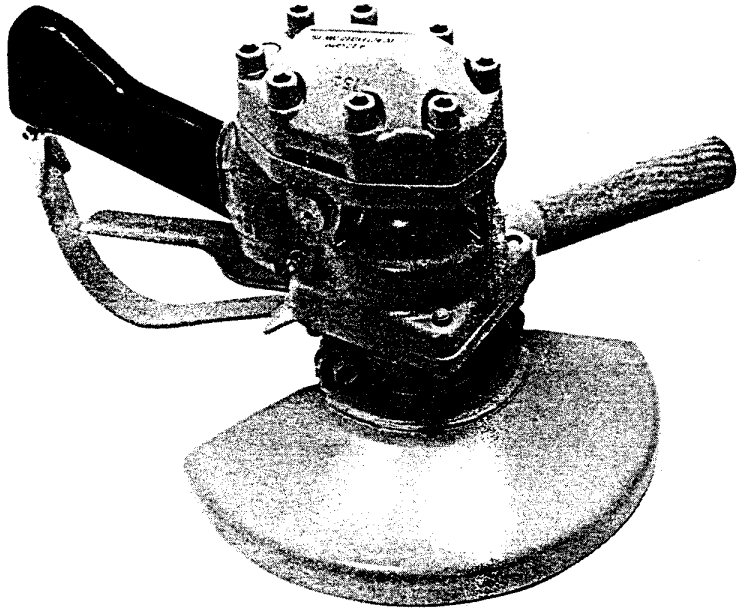
GR29

UNDERWATER

HYDRAULIC GRINDER



Safety, Operation and Maintenance Manual

Focused on performance ™

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SAFETY PRECAUTIONS

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

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

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

GENERAL SAFETY PRECAUTIONS

The GR29 Grinder provides safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand the safety precautions given in 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.

- Do not tighten or loosen the wheel nut by impact. Hold the shaft with a second wrench on the flats behind the wheel and tighten securely.
- Operators must start in a work area without bystanders. The operator must also be familiar with all prohibited work areas.
- 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. Make 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 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 when using the tool on or near electric lines.
- 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 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 the rotating wheel.
- Keep the wheel off all surfaces when starting the grinder.
- Always carry the tool with the wheel stopped.
- Make sure the wheel has stopped before setting down the tool.

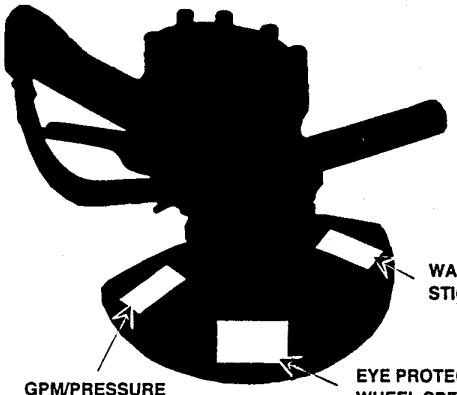
- Keep the handles clean and free of fluid at all times.
- All services must be performed by experienced service personnel only.
- Always inspect wheels for possible damage before installation.
- Never transport or store the tool with the wheel mounted on the grinder.
- Never cock, jam or wedge the wheel during operation.
- Never cause sparks in the vicinity of flammable materials.
- Do not operate the tool with the wheel guard removed.
- Do not start grinding 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.
- Always use wheels that conform to the specifications given in the OPERATION section of this manual.
- Always wear safety equipment such as eye and ear protection at all times when operating the tool.
- Do not reverse wheel rotation direction by changing fluid flow direction.
- Do not operate the grinder unless the speed limiter is installed in the hose assembly at the "IN" port of the tool.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

TOOL STICKERS AND TAGS

WARNING

GRINDING WHEEL AND JAM NUT MUST BE TIGHTENED WITH A WRENCH BEFORE USE

WARNING STICKER



CAUTION

4-12 GPM/15-45 LPM
DO NOT EXCEED 2000 PSI/140 BAR

■ DO NOT EXCEED SPECIFIED FLOW OR PRESSURE. ■ USE CLOSED-CENTER TOOL ON CLOSED-CENTER SYSTEM. ■ USE OPEN-CENTER TOOL ON OPEN-CENTER SYSTEM. ■ CORRECTLY CONNECT HOSES TO TOOL "IN" AND "OUT" PORTS. ■ IMPROPER HANDLING, USE OR MAINTENANCE OF TOOL COULD RESULT IN A LEAK, BURST OR OTHER TOOL FAILURE. ■ CONTACT AT A LEAK OR BURST CAN CAUSE OIL INJECTION INTO THE BODY. ■ FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS PERSONAL INJURY.

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GPM/PRESSURE STICKER

The stickers and tags attached to the grinder 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 priior 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.

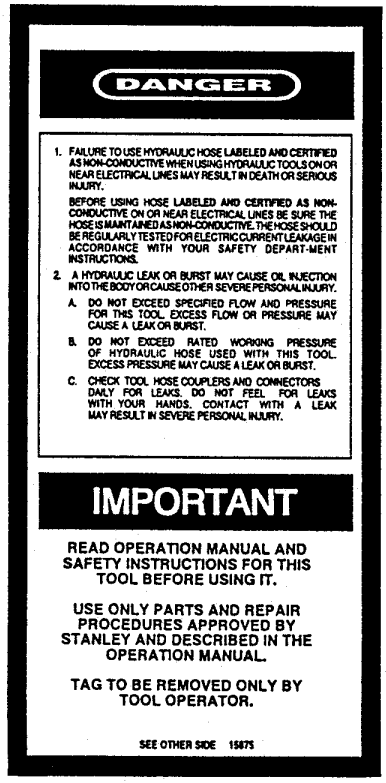
CAUTION

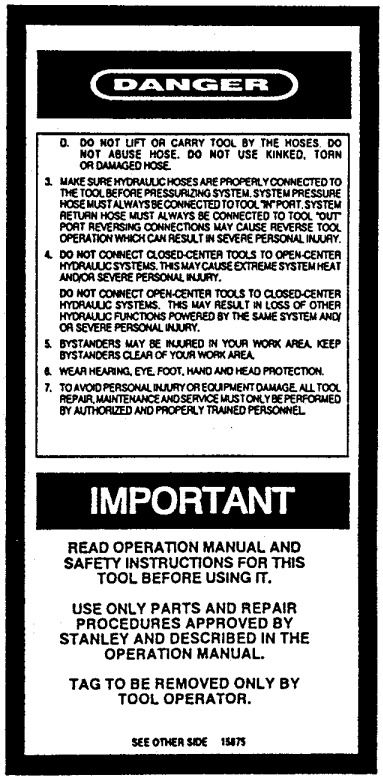
PROTECT YOUR EYES
WEAR SAFETY GOGGLES

DO NOT USE DAMAGED WHEELS USE FULL THROTTLE ONLY WHILE GRINDING.
USE ONLY REINFORCED RESINOID WHEELS RATED FOR 6500 RPM MINIMUM 9 INCH DIA. BY · INCH THICK MAXIMUM. INSPECT WHEEL GUARD FOR SIGNS OF DAMAGE AFTER ANY WHEEL FAILURE.

EYE PROTECTION AND WHEEL SPECIFICATION CAUTION STICKER

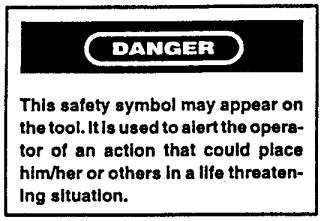
The safety tag at right is attached to the grinder when shipped from the factory. Read and understand the safety instructions listed on this tag before removal. We suggest you retain this tag and attach it to the grinder when not in use.

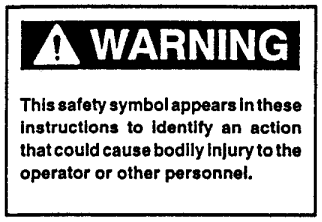


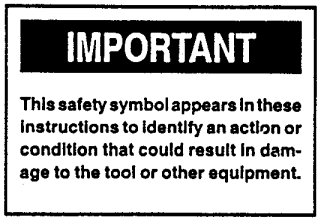


SAFETY SYMBOLS

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 4 of this manual, observe the following for equipment protection and care.

- 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.
- Always store the tool in a clean, dry space, safe from damage or pilferage.
- Always use a closed-center (CC) grinder on closed-center circuits and open-center (OC) grinders on open-center circuits.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the port farthest from the trigger. The circuit RETURN hose (with female quick disconnect) is connected to the port closest to the trigger.
- **Do not** reverse circuit flow. Operation with circuit flow reversed could cause rapid spin off of the grinding wheel resulting in serious personnal injury.

  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 a fluid resistant inner surface and an abrasive resistant outer surface. Whenever near electrical conductors, use **clean** hose labeled and certified non-conductive. Supply hoses must have a minimum working pressure rating of 2500 psi/175 bar.
- Do not exceed 9 gpm/34 lpm flow rate. Rapid failure of the grinding wheels and the tools internal seals might result.
- Replace the grinding wheel if worn for maximum tool performance. Make sure the wheel is not chipped or damaged.
- Only use wheels that meet the requirements of ANSI B7.5. Wheels should be no larger than 9-inches/ 23 cm in diameter, 5/32-inch/4 mm thick with a 5/8-inch/16 mm arbor hole. Rated speed must be 5000 rpm minimum.

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

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

❶ Labeled and certified non-conductive

❷ Wire braided (conductive)

❸ Fabric braided (not certified or labeled non-conductive)

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

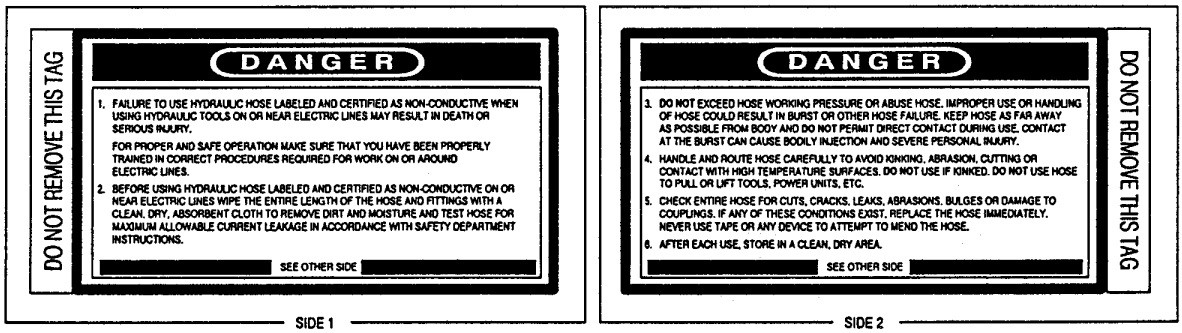
Hoses ❷ and ❸ listed above are **conductive** and **must never** be used near electrical conductors.

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.

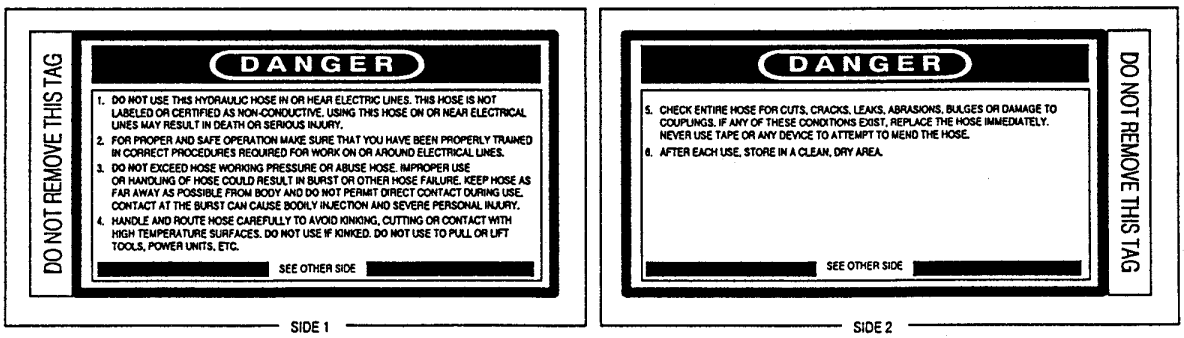
❶ CERTIFIED NON-CONDUCTIVE

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



❷ AND ❸ 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 grinder.

HYDRAULIC SYSTEM REQUIREMENTS

- The hydraulic system should provide a flow of 4-12 gpm/15-45 lpm at an operating pressure of 750-2000 psi/53-140 bar. Recommended relief valve setting is 2100 psi/145 bar.

- The hydraulic 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 of 400 ssu/82 centistokes (minimum operating temperatures).

- The hydraulic system should have sufficient heat rejection capacity to limit the maximum fluid 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 fluid 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 20 to 30 gpm/75 to 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 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 .625 inch/16 mm I.D. to 50 ft /15 m long and .750 inch/20 mm I.D. minimum up to 100 ft /30 m long. For flows exceeding 9 gpm/34 lpm .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 for flows to 9 gpm/34 lpm.

- The grinder 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 and reduces or negates personnal safety gained through the use of non-conductive hoses.

OPERATION

PREOPERATION PROCEDURES

CHECK POWER SOURCE

1. Using a calibrated flowmeter and pressure gauge, check that the hydraulic power source develops a flow of 4-12 gpm/15-45 lpm at 950-2000 psi/67-140 bar.

2. Make certain that the hydraulic power source is equipped with a relief valve set to open at 2100-2250 psi/145-155 bar, minimum.

3. Check that the hydraulic circuit matches the tool for open-center (OC) or closed-center (CC) operation.

CHECK TOOL

1. Make sure all tool accessories are correctly installed. Failure to install tool accessories properly can result in damage to the tool or personal injury.

2. There should be no signs of leaks.

3. The tool should be clean, with all fittings and fasteners tight.

CHECK TRIGGER MECHANISM

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 grinder when released.

CHECK HANDLE

Check that the cross handle is securely screwed into the handle bracket. Remove any oil from the handle.

CHECK AND ADJUST WHEEL GUARD

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

2. If necessary, adjust the position of the wheel guard by loosening the two capscrews on the guard clamp. Make sure the capscrews are tightened securely after adjustment.

INSTALLING AND REMOVING GRINDING WHEEL

1. Remove and set aside the jam nut from the output shaft.

2. Position the grinding wheel over the shaft.

3. Screw the jam nut down onto the spindle shaft. Tighten the nut securely by using two open-end wrenches; one wrench on the flats of the spindle shaft, the other wrench on the jam nut.

4. Remove the grinding wheel by loosening the jam nut as in step 3.

IMPORTANT

Never over-tighten the grinding wheel jam nut by impacting either wrench with a mallet or hammer. Sufficient torque is attained by hand-tightening the nut with two open-end wrenches.

USE OF DEPRESSED-CENTER WHEEL ADAPTER

The Depressed-Center Wheel Adapter (Part Number 05194) must be used with wheels having a cupped or depressed center.

CONNECT HOSES

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

2. Connect the hoses from the hydraulic power source to the tool fittings or quick disconnects. It is good practice to connect the return hose first and disconnect it last to minimize or eliminate trapped pressure within the grinder.

3. Observe the flow indicators on the hose couplers to ensure the flow is in the proper direction. The female coupler on the tool is the inlet (pressure) coupler.

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

5. Squeeze the grinder trigger momentarily. If the grinder does not operate, the hoses might be reversed. Verify correct connection of the hoses before continuing.

Note: If coupled hoses are left in the sun, pressure increase within the hoses can make them difficult to connect. Whenever possible, connect the free ends of hoses together.

TOOL OPERATION

For best results, use only Stanley approved accessories. They have been designed and selected to get the most from the tool.

Review the SAFETY PRECAUTIONS given at the front of this manual before operating the tool.

Remember to grip the tool with both hands at all times during startup and operation and be sure you have full balance before starting grinder rotation. Always keep your body away from the "plane of rotation" of the grinding wheel.

Always start the grinder with the wheel away from the work surface. Start hydraulic flow at one gpm and slowly increase flow to a level that produces desired efficiency, but allows the operator to maintain full balance and control.

⚠ WARNING

Starting the hydraulic grinder on the work with full hydraulic flow can push the operator off balance, creating a condition that can cause severe personal injury.

Refer to the TROUBLESHOOTING table in this manual to isolate other possible conditions that can lower tool efficiency.

COLD WEATHER OPERATION

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

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

SERVICE INSTRUCTIONS

Good maintenance practice keeps the grinder 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 procedures contained in the HYDRAULIC SYSTEM REQUIREMENTS section of this manual to ensure peak performance from the tool.

Never disassemble the tool unless proper troubleshooting procedures have isolated the problem to an internal part. Disassemble the tool only to the extent necessary to replace the defective 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.

SCHEDULED LUBRICATION

The grinder should be lubricated yearly. Use waterproof EP-1 grease or equal. Grease the unit through the grease fitting on the bearing carrier.

When applying grease, hold the grinder so that the bearing carrier face up. Apply grease until air bubbles and water no longer leak through the seal in the bearing carrier.

PRIOR TO DISASSEMBLY

- Clean the exterior of the tool.
- Obtain waterproof EP-1 grease or equal.
- Obtain Seal Kit (Part Number 10592) so all seals exposed during disassembly can be replaced during assembly. Note the orientation of seals before removal. Install new seals in the same position as the original seals.

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

DISASSEMBLY

DISASSEMBLY OF MOTOR SECTION

The motor section consists of the drive gear, idler gear assembly, idler shaft, motor cap assembly, associated bushings, o-rings and spindle shaft.

1. Remove the four 3/8-16 x 1-3/4-inch/44 mm sockethead capscrews (with lockwashers) securing the motor cap assembly to the main housing. Carefully remove the motor cap.

IMPORTANT

DO NOT pry or in any way excessively force the motor cap assembly off the main housing. If necessary, loosen the motor cap by tapping lightly with a non-metallic mallet.

2. Remove the large o-ring from the motor cap. Discard the o-ring. Use the new o-ring provided in the seal kit.

3. Remove the idler gear and idler shaft. Slide the drive gear off the spindle shaft.

4. Inspect the motor parts as described in this section prior to assembly. Replace any defective parts.

REMOVAL OF BEARING CARRIER AND DRIVE SHAFT

1. Remove the wheel guard by loosening the two capscrews on the wheel guard clamp.

2. Remove the trigger guard by removing the ESNA #10 nut and 10-24 x 3/4-inch/19 mm capscrew.

3. Remove the four 5/16-18 x 1-inch/25.4 mm capscrews securing the bearing carrier to the main housing. Remove the dead handle bracket weldment along with the handle.

4. Carefully separate the bearing carrier from the main housing. The spindle shaft, seal, o-ring, bearing and two retainer rings remain with the carrier.

DO NOT pry or use excessive force when removing the bearing carrier.

IMPORTANT

When pulling the assembled bearing carrier away from the main housing, the woodruff key on the end of the spindle shaft must be removed. Remove the motor cap to remove the woodruff key first as instructed in "Disassembly of motor section".

5. To remove the spindle shaft and bearing from the bearing carrier, remove the large internal retaining ring. Remove the bearing from the spindle shaft by removing the small external retaining ring.

6. Remove the 3 1/4-inch/83 mm o-ring, then press the shaft seal out of the bearing carrier.

DISASSEMBLY OF MAIN HOUSING

1. Remove the 1/4-20 x 1/4-inch/6.4 mm setscrew securing the valve keeper to the reversing spool. Remove the keeper.

2. Remove the retaining ring at the opposite end of the spool.

3. Push on the retaining ring end of the reversing spool and slide the spool out of the housing. Remove the two backup rings and o-rings from the spool.

4. Remove the trigger by removing the 10-24 x 1 3/4-inch/44 mm capscrew and ENSA #10 nut.

5. Unscrew and remove the spool cap. Remove the two o-rings,wiper and push pin from the cap.

6. Remove the valve spool assembly.

Note: The valve sleeve remains in the main housing. It is not removable in the field. If the sleeve is damaged, return the main housing to your Stanley dealer.

Note: There is a visible difference between the valve spool used for O.C. or C.C. grinders. DO NOT confuse them when assembling the wrench. An O.C. spool has outer ring widths of less than 0.6-inches/14 mm while C.C. spools have outer ring widths of over 1-inch/20.4 mm.

7. Remove the retaining ring at the bearing carrier end of the main housing. Remove the back-up washer and o-ring. The o-ring is subject to severe service and should be replaced whenever the main shaft is serviced.

MOTOR SECTION CLEANING AND INSPECTION

Cleaning

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

Inspection of Bushings (Main Housing and Motor Cap)

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

Inspection of 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.

Inspection of Gears

The main shaft and idler gears should have flat, straight tips without nicks. They should have smooth even polish on the teeth and end faces. Replace the gears if cracks are present.

Inspection of Main Body Assembly

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

IMPORTANT

If abnormal wear occurs in excess of normal polishing, the main shaft and main body assembly bushing must be replaced. The hydraulic system should be thoroughly flushed and the filter replaced before further operation of the grinder.

Inspection of Spindle Shaft

The main shaft diameter at the bushing location must be smooth. Grooves, roughness or a reduced diameter indicates fluid contamination and damaged bushings.

PRIOR TO ASSEMBLY

- Clean all parts with a degreasing solvent.
- Apply clean grease or o-ring lubricant to all parts during assembly.
- Obtain seal kit (Part Number 16969) so all seals exposed during disassembly can be replaced during assembly.

Note: For orientation of parts identified in the following procedures, see the parts location diagram at the back of this manual.

ASSEMBLY PROCEDURES

ASSEMBLY OF MAIN HOUSING

1. Lubricate and install the spring and spool assembly in the main housing. There is a hex plug in one end of the spool to retain the steel check ball and strut. This end of the spool must be installed first.
2. Lubicate and install the two o-rings and wiper in the spool cap.
3. Lubicate and install the push pin, then screw the cap into the main housing. Tighten securely.
4. Install the trigger using the 10-24 x 1 3/4-inch/44 mm capscrew and ESNA #10 nut.
5. Grease one reversing spool o-ring and positiion it onto the small diameter end of the reversing spool. Position the back-up ring, toward the end.
6. Insert the end of the reversing spool without the o-ring and back-up ring into the reversing spool bore in the main housing. From left side, looking from behind the tool, push the spool just far enough through the bore to expose the empty o-ring groove. Be sure the orientation of the small diameter end of the reversing spool matches that illustrated in the parts location diagram at the back of this manual.
7. Grease the second reversing spool o-ring and position it in the exposed o-ring groove in the reversing spool. Position the back-up ring. Push the spool back to the neutral position.
8. Install the retaining ring on the large diameter end of the reversing spool. Rotate the spool so the small hole (in its small diameter end) faces the rear of the tool.
9. Position the valve keeper on the opposite end of the reversing spool and secure it with the set screw into the spool hole.
10. Lubricate and install the spindle shaft o-ring in the main housing. Install the back-up washer and secure in place using the internal retaining ring.

ASSEMBLY AND INSTALLATION OF BEARING CARRIER

1. Lubricate and install the o-ring in the bearing carrier.
2. Install the ball bearing on the spindle shaft and secure in place using the small external retaining ring.
3. Lubricate and install the shaft seal in the bearing carrier. Make sure the seal lip faces out.
4. Position the bearing carrier onto the shaft far enough to install the internal retaining ring.
5. Make sure the spindle shaft is well lubricated with thick grease and that the woodruff key is removed. Carefully position the essembled bearing carrier against the main housing, making sure the shaft does not damage the o-ring seal in the main housing.
6. Secure the bearing carrier in place using the four 5/16-18 x 1-inch/25.4 mm capscrews. Be sure to install the dead handle bracket weldment on the lower, right-hand capscrew (see parts list illustration). The trigger guard is fastened by two lower capscrews as shown in the illustration.
7. Connect the lower section of the trigger guard to the main housing using the ESNA #10 nut and 10-24 x 3/4-inch/19 mm capscrew.
8. Install the wheel guard. Securely tighten the two capscrews on the wheel guard clamp.

ASSEMBLY OF MOTOR SECTION

1. Grip the grinder main housing in a vise with the handle in the vertical position.
2. Inspect the motor cap gear chamber, gears and bushings as specified in this section.
3. The spindle shaft remains with with the bearing carrier during disassembly. If the carrier has been removed, it must be assembled and installed on the main housing before the motor cap can be installed.
4. With the bearing carrier installed on the main housing, install the woodruff key on the spindle shaft.
5. Lubricate and install the drive gear on the spindle shaft.
6. Install the idler shaft in the main housing and install the idler gear.
7. Install the large o-ring in the motor cap with thick grease and carefully slide the cap over the gears, aligning with the dowel pins until contacting the main housing.
8. Lubricate and install the eight 3/8-16 x 1 3/4 - inch/44 mm sockethead capscrews and washers. Tighten to a torque of 22-25 ft lb/29.8-33.9 Nm.

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 grinder, always check that the hydraulic power source is supplying the correct hydraulic flow and a 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
Low performance	Incorrect hydraulic flow.	Check that power source is producing 4-12 gpm/15-45 lpm at 1000-2000 psi/70-140 bar.
	Defective quick disconnects.	Check quick disconnect.
Fluid leak at motor cap assembly face.	Fasteners loose.	Tighten to recommended torque value.
	Face o-ring worn or missing.	Replace as required.
	Motor cap assembly/main housing damaged.	Replace as required.
Fluid leaks at reversing spool.	Damaged o-rings.	Replace as required. Refer to assembly instructions to prevent cutting the o-rings.
	Wrong hydraulic fluid. Circuit too hot.	See HYDRAULIC SYSTEM REQUIREMENTS for correct fluid/circuit specifications.
	Hydraulic pressure and return reversed.	Correct hose connections.
Fluid gets hot, power unit working hard.	Open-center tool on a closed-center circuit and vice versa.	Use tool to match circuit.
	Too much fluid going through tool.	Adjust flow for 12 gpm/34 lpm maximum.
	Circuit is generating high heat with flow controls, open relief valve, etc.	Use pump size and rpm for producing needed flow only. Eliminate circuit heating cause.
	Circuit has contaminants that have caused pump and valve wear and high heat generation.	Replace worn pump and valves. Install a large clean filter and keep circuit fluid clean.

PROBLEM	CAUSE	REMEDY
Tool doesn't run.	Power unit not functioning.	Check power unit for output of 4-12 gpm/15-45 lpm at 1000-2000 psi/70-140 bar.
	Coupler or hoses blocked.	Remove obstruction.
	Mechanical failure.	Disassemble tool and inspect for damage.
Tool runs backwards.	Pressure and return hoses reversed.	Correct for proper flow direction. Grinding wheel should rotate counterclockwise when viewed from shaft end.
	Flow direction reversed.	
Grinding wheel comes to abrupt stop after release of trigger.	Porting spool incorrectly assembled.	Refer to SERVICE INSTRUCTIONS.
	Check valve in trigger spool not functioning correctly.	Replace trigger spool assembly. Check valve not serviceable.
	Mechanical failure.	Disassemble tool and inspect for damage.

SPECIFICATIONS

Capacity	9 in./23 cm Wheel on 5/8 in. -11 THD Arbor
Weight (With Wheel Guard)	15 lbs/6.8 kg
Length	9 in./23 cm
Width (Without Wheel Guard)	4-1/2 in. /11.5 cm
Pressure	1000-2500 psi/70-175 bar
Flow Range	4-12 gpm/15-45 lpm
Optimum Flow	2700 rpm at 10 gpm/38 lpm
Porting	-8 SAE o-ring
Connect Size and Type	(2) 3/8 in. NPT Adapters
Hose Whips	No
Motor	Integral

ACCESSORIES

PART NUMBER	DESCRIPTION
02587	Grinding Wheel for Metal 9 in. Diameter x 5/8 in. -11 THD Arbor
02588	Grinding Wheel for Masonary 9 in. Diameter x 5/8 in. -11 THD Arbor
02816	Wire Brush 6 in. Diameter
03691	Grinding wheel 7 in. Diameter x 5/8 in. -11 THD Arbor
05194	Depressed — Center Wheel Adapter

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).

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 pre-paid by the customer unless otherwise autherized by Stanely.

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

There is no other warranty expressed or implied.

PARTS LIST

Item No.	Part No.	Qty.	Description
1	08322	1	Wheel Guard
2	10396	1	Warning Sticker
3	08688	1	Safety Sticker
4	03788	1	GPM Sticker
5	00234	1	Cross Handle
6	13815	4	Capscrew, 5/16-18 x 1 HSH
7	13796	2	Dead Handle Bracket Weldment
8	12285	1	Trigger Guard
9	07724	2	Nut, ESNA #10
10	12470	1	Capscrew, 10-24 x 1 in. Hex Hd
11	13779	1	Jam Nut
12	13812	1	Shaft Seal ⊙
13	13790	1	Bearing Carrier
14	01220	1	Grease Fitting w/cap-1/8 NPT
15	09275	2	Retaining Ring, .750 External
16	13813	1	Ball Bearing
17	00166	2	Retaining Ring, 1.85 Internal
18	00149	1	O-Ring, 3-1/4 x 3-3/8 x 1/16 ⊙
19	13791	1	Spindle Shaft
20	13828	1	Woodruff Key, #404
21	07987	1	Back-Up Washer
22	08017	1	O-Ring, 7/8 x 1-1/16 x 3/32 ⊙
23	00231	2	Lockwasher
24	12286	1	**Main Housing Assy** (Includes Item 25)
25	08014	2	Bushing
26	13783	1	Drive Gear
27	08013	1	Dowel Pin, 5/16 Dia x 1.000
28	08006	1	**Motor Cap Assy** (Includes Items 25, 27, 28, 32 and 33)
29	00812	8	Lockwasher, 3/8
30	01870	8	Capscrew, 3/8-16 x 1-3/4
31	13778	1	Name Tag - GR29 U/W
32	23678	1	Headed Push Pin
33	22063	1	Spool Cap
34	08023	1	O-Ring, Parker #5-812 ⊙
	07989	1	**Idler Gear Assy** (Includes Items 35 and 36)
35	07978	1	Idler Gear Bushing
36	07983	1	Idler Gear
37	07991	1	Idler Shaft
38	08015	2	Back-Up Ring ⊙
39	01211	2	O-Ring, 5/8 x 3/4 x 1/16 ⊙
40	08002	1	Reversing Spool
41	00580	1	Set Screw 1/4-20 x 1/4
42	17061	1	Valve Keeper
43	00936	2	Adapter Fitting
44	00786	1	Capscrew, 10-24 x 1-3/4, Soc Hd
45	12283	1	Trigger
46	06345	2	Plastic Plug
47	07988	1	Spring
48	13781	1	Spool Assy O.C.
	13784	1	Spool Assy C.C.
49	06533	1	O-Ring, 1.171 x 1.403 x .116 ⊙
50	00026	1	O-Ring
51	22064	1	Rod Wiper

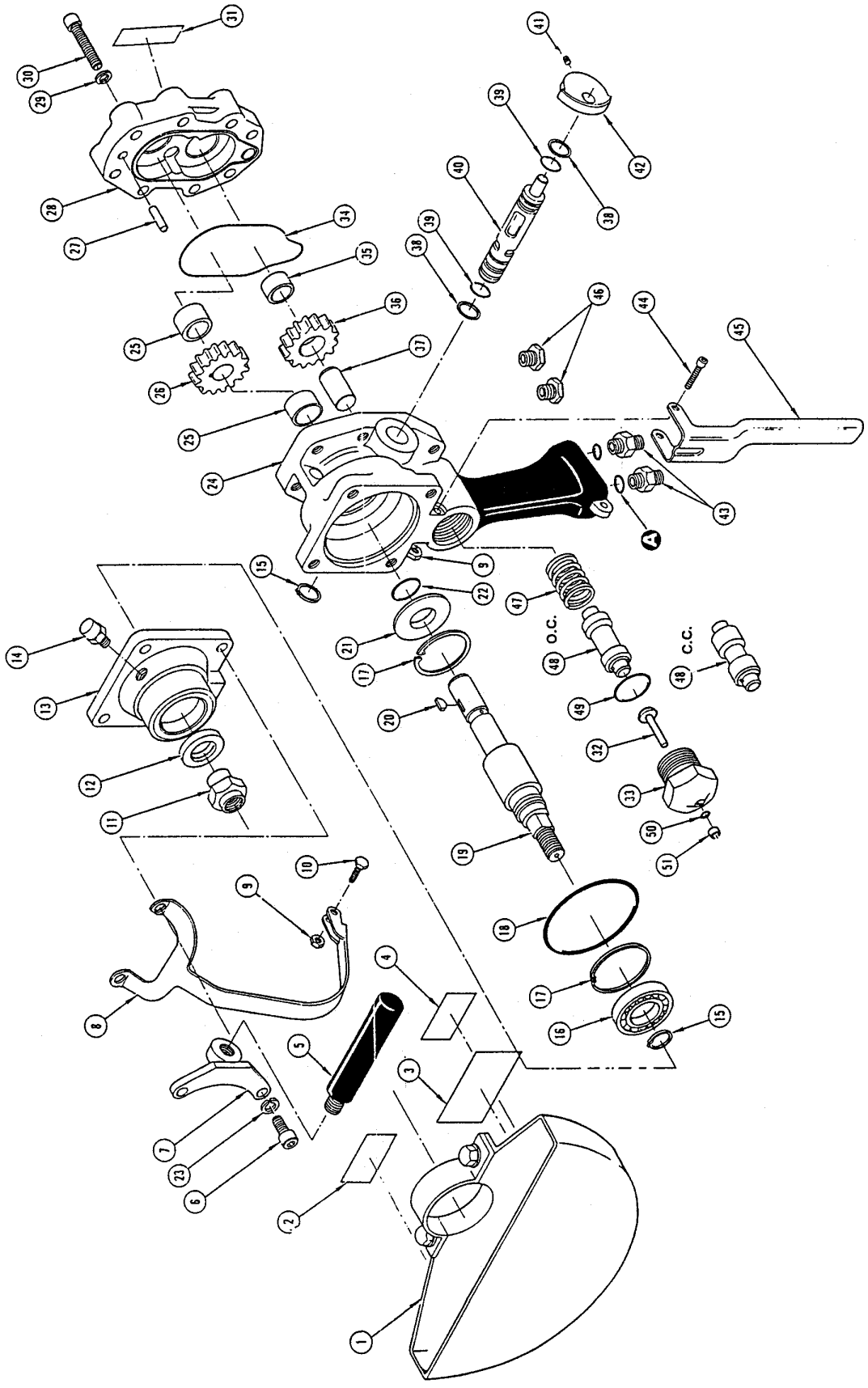
NOTE: Use Part Number and Part Name when ordering.

⊙ Denotes Part in Seal Kit.

Ⓐ Supplied as Part of Item (43)

SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 16969		
00026	1	O-Ring
00149	1	O-Ring
01211	2	O-Ring
01605	2	O-Ring Ⓐ
06533	1	O-Ring
08015	2	Spirol Back-Up Ring
08017	1	O-Ring
08023	1	O-Ring
13812	1	Rotary Shaft Seal
22064	1	Rod Wiper


O.C.
C.C.