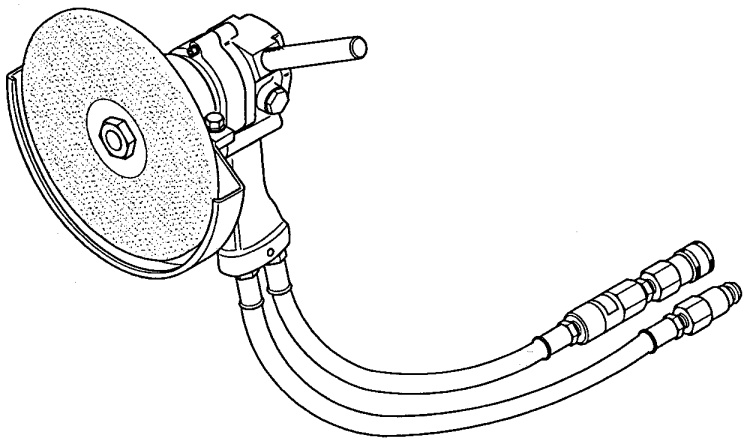
GR31

Hydraulic Grinder



Safety, Operation, and Maintenance

Service Manual

OPS/MAINT USA & CE VERSION
34957 06/98 Ver 1

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CONTENTS

7. SERVICE

1. INTRODUCTION

This manual contains instructions for the safe and proper operation and maintenance of the Stanley GR31 Hydraulic Grinder. To prevent personal injury or damage to the equipment, it is important to know the correct operating procedures and all the safety requirements before initial startup.

⚠ WARNING

Improper operation or maintenance of this tool can cause severe personal injury, death, or equipment damage.

Read the safety guidelines and instructions in this manual before operating or performing any maintenance tasks on the tool.

Except for routine maintenance, hydraulic tool repair and servicing should be performed by an authorized and certified Stanley distributor.

⚠ **Read sections 1 through 5 of this manual before using the tool for the first time.**

The GR31 Hydraulic Grinder has been designed and manufactured with high-quality materials and workmanship. It will provide efficient and reliable service when used as directed.

Continuing product development may result in changes that are not reflected in this manual. If you have any questions regarding the operation or maintenance of the equipment, contact your Stanley distributor for the most current information.

For the nearest authorized and certified distributor, call Stanley Hydraulic Tools, (503) 659-5660, and ask for a Customer Service representative.

Features

The GR31 Hydraulic Grinder has a built-in flow control to limit the speed, and an integral motor. This tool is for land use only. Contact your authorized Stanley distributor for information about the GR29 underwater model.

Specifications

The weights, dimensions, and operating specifications listed in Table 1–1 are subject to change without notice. Where specifications are critical to your application, contact your authorized Stanley distributor.

Table 1–1. GR31 specifications.

Item	English Units	Metric Units
Hydraulic power input*		
Flow range	7–9 gpm	26–34 lpm
Optimum flow	8 gpm	30 lpm
Pressure	1000–2000 psi	70–140 bar
RPM	5800 at 8 gpm	5800 at 30 lpm
Porting size	#8 SAE	
Weight (with wheel guard)	10 lb	4.5 kg
Dimensions		
Length	8 in.	20.3 cm
Width	10 in.	25.4 cm
Noise level	114.3 LWA	
Vibration level	5.1 m/s^2	

*Refer to Section 3, Table 3–1, for detailed hydraulic system requirements.

The grinding wheels used on the GR31 grinder must meet the requirements of ANSI B7.5 and ISO 525, 603. Wheel specifications are listed in Table 1–2.

Table 1–2. GR31 grinding wheel specifications.

Item	English Units	Metric Units
Dimensions		
Diameter (maximum)	9 in.	229 mm
Thickness	5/32 in.	4 mm
Arbor hole:	5/8-11 THD	5/8-11 THD
Rated speed (minimum)	6500 rpm	

Replacement Parts

Always replace hoses, couplings, and other parts with replacement parts recommended by Stanley Hydraulic Tools. Refer to the parts list at the end of this manual for part numbers.

Warranty

Stanley Hydraulic Tools (hereinafter called "Stanley"), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley's factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

EXCEPTIONS FROM WARRANTY

NEW PARTS: New parts which are obtained individually are warranted, subject to the exceptions herein, to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage. Seals and diaphragms are warranted to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage or 2 years after the date of delivery, whichever period expires first. Warranty for new parts is limited to replacement of defective parts only. Labor is not covered.

FREIGHT COSTS: Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

SEALS & DIAPHRAGMS: Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

CUTTING ACCESSORIES: Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

ITEMS PRODUCED BY OTHER MANUFACTURERS: Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers.

ALTERATIONS & MODIFICATIONS: Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

NORMAL WEAR: any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

INCIDENTAL/CONSEQUENTIAL DAMAGES: To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

FREIGHT DAMAGE: Damage caused by improper storage or freight handling.

LOSS TIME: Loss of operating time to the user while the tool(s) is out of service.

IMPROPER OPERATION: Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool's operation and maintenance manual.

MAINTENANCE: Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

HYDRAULIC PRESSURE & FLOW, HEAT, TYPE OF FLUID: Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, excess hydraulic flow, excessive heat, or incorrect hydraulic fluid.

REPAIRS OR ALTERATIONS: Any failure or performance deficiency attributable to repairs by anyone which in Stanley's sole judgement caused or contributed to the failure or deficiency.

MIS-APPLICATION: Any failure or performance deficiency attributable to mis-application. "Mis-application" is defined as usage of products for which they were not originally intended or usage of products in such a matter which exposes them to abuse or accident, without first obtaining the written consent of Stanley. PERMISSION TO APPLY ANY PRODUCT FOR WHICH IT WAS NOT ORIGINALLY INTENDED CAN ONLY BE OBTAINED FROM STANLEY ENGINEERING.

WARRANTY REGISTRATION: STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools' first date of usage. The term "DOCUMENTATION" as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS "DOCUMENTATION".

NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.

2 SAFETY

This section includes the following safety topics:

- hazard alert definitions
- general safety
- safety labels and tags

Operators and maintenance personnel **MUST** comply with the safety guidelines given in this manual and printed on the labels and tags attached to the equipment and hoses.

These safety rules are for your safety. Review them carefully before operating the tool or performing any maintenance or repairs.

Supervising personnel may specify additional rules for your work area to comply with your company policies and local safety regulations. Enter any added precautions in the space provided on the last page of this section.

Hazard Alerts

The following terms are used in this manual and on the labels and tags on the tool.

⚠ DANGER Indicates the presence of a hazard that *will* cause severe personal injury, death, or substantial property damage if the warning is ignored.

⚠ WARNING Indicates the presence of a hazard that *can* cause severe personal injury, death, or substantial property damage if the warning is ignored.

⚠ CAUTION Indicates the presence of a hazard that will or can cause minor personal injury or property damage if the warning is ignored.

IMPORTANT Calls attention to operation or maintenance information that is important for the safety, efficiency, and useful life of the equipment, but is not hazard-related.

General Safety Precautions

The Stanley GR31 Hydraulic Grinder will provide safe, dependable service if operated in accordance with the instructions given in this manual.

- 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 nonconductive 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 grinding.
- 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.

Safety Labels and Tags

The safety labels and tags shown below are attached to the grinding tool at the factory. Read and understand each one before operating the equipment.

If the information on a label or tag is hard to read because of wear or damage, replace it immediately. A new label or tag may be obtained from your authorized Stanley distributor.

Grinding Wheel Safety Label

The grinding wheel safety label is affixed to the wheel guard on the tool. It reminds the user to wear safety goggles and provides important wheel safety and speed information.

If the label is missing, damaged or otherwise hard to read, replace it with P/N 08688.

Figure 2–1. Warning label.

Warning Label

The warning label (Figure 2–1) is affixed to the guard on the tool. It warns the operator to tighten the jam nut on the grinding wheel before use.

If the label is missing, damaged, or otherwise hard to read, replace it with P/N 10396.

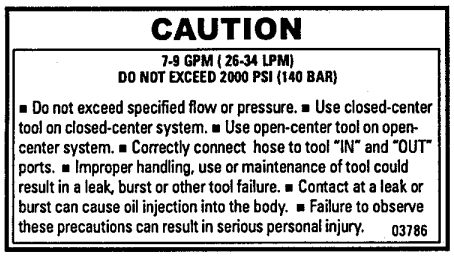


Figure 2–2. Gpm /pressure label.

GPM/Pressure Label

The gpm/pressure label (Figure 2–2) is affixed to the wheel guard on the tool. It describes the hydraulic system requirements. *Never exceed the specified pressure or flow rate.*

If the label is missing, damaged, or otherwise hard to read, replace it with P/N 03786.

Figure 2–3. Flow control label.

Flow Control Label

The flow control label (Figure 2–3) is affixed to the flow control valve on the hose assembly. It warns the operator that the tool-speed safety device must not be removed.

If the label is missing, damaged or otherwise hard to read, replace it with P/N 06693.

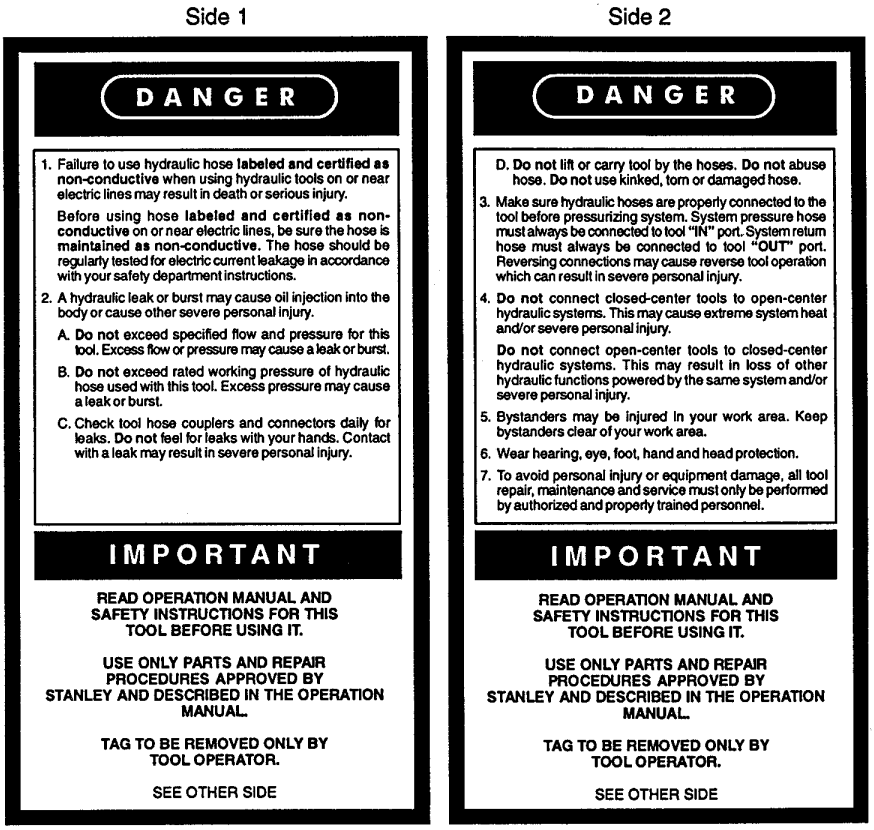
Figure 2–4 Flow control label.

Circuit "D" Label

The circuit "D" label (Figure 2-4) is affixed to the wheel guard. It is used on the GR3110101 model only. It describes the hydraulic requirements. *Never exceed the specified pressure or flow rate.*

Tool Operator's Warning Tag

The tool operator's warning tag (Figure 2–4) is attached to the grinding tool at the factory. Read and understand the safety instructions on the tag. If you remove the tag for any reason, retain it and attach it to the tool when not in use.



If the tag is missing, damaged, or otherwise hard to read, replace it with P/N 15875.

Figure 2–5. Hydraulic safety tag (Tool operator's warning tag).

Local Safety Regulations

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

3. HYDRAULIC SYSTEM REQUIREMENTS

This section includes the following hydraulic system topics:

- system requirements
- hose requirements
- installation requirements

The hydraulic system has special installation and operational requirements. Compliance with the information in this section is required for the safe operation of the tool.

IMPORTANT—Do not exceed the rated limits or use the tool for applications beyond its design capacity.

Connect the hydraulic power source to the tool just before the equipment is used. Be sure to follow the instructions in Section 4, Preparation for Use. Disconnect the power source when the task is complete or stopped for an extended period of time.

The return hose must be connected to the **OUT** port on the tool. The supply hose must be connected to the **IN** port. Reversing connections or direction of flow can cause severe personal injury.

System Requirements

The hydraulic system requirements listed in Table 3–1 are critical for the proper operation of the GR31 Hydraulic Grinder. In addition, the hydraulic system used with the grinder must comply with the following:

- The grinder return hose must connect directly to the circuit return line and go straight through the fluid filter, thermal valve, and fluid 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 personnel safety gained through the use of nonconductive hoses.
- 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.

Table 3–1. Hydraulic system requirements.

Hydraulic System Requirement	English Units	Metric Units
Flow rate	7–9 gpm	26–34 lpm
Tool operating pressure	1000–2000 psi	70–140 bar
System relief valve setting	2100–2250 psi	145–155 bar
Maximum back pressure (at tool end of operating hose)	250 psi	17 bar
Measured at a maximum fluid viscosity of: (at minimum operating temperature)	400 SSU*	82 cs**
Temperature		
Sufficient heat rejection capacity to limit maximum fluid temperature to (at maximum expected ambient temperature)	140°F	60°C
Minimum cooling capacity at a temperature difference of between ambient and fluid temperature	5 hp 40°F	3.73 kW 22°C
Note: do not operate the tool at oil temperatures above 140°F (60°C). Operation at higher temperatures can cause operator discomfort at the tool.		
Filter		
Minimum full-flow filtration	25 μm***	
Sized for flow of at least (for cold-temperature startup and maximum dirt-holding capacity)	30 gpm	114 lpm
Hydraulic fluid		
Petroleum based (premium grade, anti-wear, nonconductive)		
Viscosity (at minimum and maximum operating temps)	100–400 SSU	20–82 cs
Note: when choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.		

*SSU = Saybolt Seconds Universal

**cs = centistokes

***μm = micron

Hose Requirements

The hydraulic hoses must have a minimum working-pressure rating of 2500 psi (175 bar). All hoses must have an inner surface that is resistant to hydraulic fluid and an outer surface resistant to abrasion.

The recommended hose size depends on the length of hose required for your application, as shown in Table 3–2.

Table 3–2. Recommended hose size (inside diameter).

Length	Hose Size (ID)	
	English	Metric
Up to 50 ft (15 m)	0.500 in.	12 mm
Up to 100 ft (30 m)	0.625 in.	16 mm

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

- **Labeled and Certified Nonconductive**—the only hose authorized for use near electrical conductors.
- **Fabric Braided**—**not** certified or labeled nonconductive; must be considered conductive and **must never be used** near electrical conductors.
- **Wire Braided**—conductive and **must never be used** near electrical conductors.

To help ensure your safety, a **DANGER** tag is attached to every hose purchased from Stanley Hydraulic Tools. *Do not remove these tags.*

Read and understand the safety information on the tags attached to your hoses. It is better to read the actual tags than the figures shown in this section.

If the information on a tag is hard to read because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley distributor.

Certified Nonconductive Hose. The following tag is attached to all certified nonconductive hoses. The tag is shown smaller than the actual size.

Side 1

DO NOT REMOVE THIS TAG

DANGER

1. Failure to use hydraulic hose labeled and certified as nonconductive when using hydraulic tools on or near electric lines may result in death or serious injury.

   For proper and safe operation, make sure that you have been properly trained in correct procedures required for work on or around electric lines.
2. Before using hydraulic hose labeled and certified as nonconductive on or near electric lines, wipe the entire length of the hose and fitting with a clean dry absorbent cloth to remove dirt and moisture. Test hose for maximum allowable current leakage in accordance with safety department instructions.

See other side

Side 2

DANGER

3. **Do not** exceed hose working pressure or abuse hose. Improper use or handling of hose could result in burst or other hose failure. Keep hose as far away as possible from body and **do not** permit direct contact during use. Contact at the burst can cause bodily injection and severe personal injury.
4. Handle and route hose carefully to avoid kinking, abrasion, cutting, or contact with high-temperature surfaces. **Do not** use if kinked. **Do not** use hose to pull or lift tools, power units, etc.
5. Check entire hose for cuts, cracks, leaks, abrasions, bulges, or damage to couplings. If any of these conditions exist, replace the hose immediately. Never use tape or any device to attempt to mend the hose.
6. After each use, store in a clean, dry area.

See other side

DO NOT REMOVE THIS TAG

Fabric Braided and Wire-Braided Hose. The following tag (P/N 29144) is attached to all conductive hose, or hose not certified or labeled nonconductive. The tag is shown smaller than the actual size.

Side 1

DO NOT REMOVE THIS TAG

DANGER

1. **Do not** use this hydraulic hose in or near electric lines. The hose is not labeled or certified as nonconductive. Using this hose on or near electrical lines may result in death or serious injury.
2. For proper and safe operation, make sure that you have been properly trained in correct procedures required for work on or around electric lines.
3. **Do not** exceed hose working pressure or abuse hose. Improper use or handling of hose could result in burst or other hose failure. Keep hose as far away as possible from body and **do not** permit direct contact during use. Contact at the burst can cause bodily injection and severe personal injury.
4. Handle and route hose carefully to avoid kinking, cutting, or contact with high-temperature surfaces. **Do not** use if kinked. **Do not** use hose to pull or lift tools, power units, etc.

See other side

Side 2

DANGER

5. Check entire hose for cuts, cracks, leaks, abrasions, bulges, or damage to couplings. If any of these conditions exist, replace the hose immediately. Never use tape or any device to attempt to mend the hose.
6. After each use, store in a clean dry area.

See other side

DO NOT REMOVE THIS TAG

Installation Requirements

Proper installation of the hydraulic hoses is extremely important for safe, reliable operation of the tool. Refer to Section 4, Setup and Test, for detailed instructions. Make sure the hoses are securely attached to the tool before turning on the hydraulic power.

- Quick-disconnect couplings must conform to NFPA T3.20.15/HTMA specifications.
- Keep the hydraulic fluid clean at all times. Contaminated fluid causes rapid wear and early failure of internal parts.
- Always replace hoses, couplings, and other parts with replacement parts recommended by Stanley Hydraulic Tools.

4. PREPARATION FOR USE

This section includes the following topics:

- grinding wheel replacement
- hydraulic hose connection

The GR31 Hydraulic Grinder requires minimum setup for operation. When the installation and operation instructions are carefully followed, the tool will provide years of efficient and reliable service.

IMPORTANT—This tool is for use with an open-center hydraulic system only. Do not connect to a closed-center system.

Grinding Wheel Replacement

Always disconnect the hydraulic power source from the grinder before replacing the grinding wheel.

Tools, Parts, and Materials

- open-end or spanner wrenches (two sizes 5/8" and 1")
- grinding wheel (refer to Section 1, Table 1–2 for specifications)
- depressed-center wheel adapter, if required (refer to Parts List)

⚠ WARNING

Inspecting the tool or installing parts with the hydraulic hoses connected can result in severe personal injury or equipment damage.

To prevent accidental statup, disconnect the hydraulic power before beginning any inspection or installation task.

1. If the hydraulic hoses are connected to the tool:
   - Turn the hydraulic system control valve **OFF**.
   - Disconnect first the hydraulic input (supply) hose, then the output (return) hose.
2. Remove the old grinding wheel, if any:

For Model GR31101:

- Place a 5/8-inch open-end wrench on the flats of the output shaft.
- Remove the jam nut from the output shaft.

- Unscrew the old grinding wheel.

For Model GR3110101:

- Remove the hub nut using a spanner wrench and a open-end wrench. Place the open-end wrench on the flats of the drive flange. Insert the spanner wrench into the holes on the hub nut.
- Lift off the grinding wheel.

3. Clean the surfaces of the tool to remove any dirt or grease.

IMPORTANT—Never use a chipped, damaged, or worn grinding wheel.

4. Check the grinding wheel:
   - Make sure the correct wheel is selected for the job. The wheel must conform to the specifications listed in Section 1, Table 1–2.
   - Make sure the wheel is free of dirt and other foreign particles—especially the surfaces that contact the tool and jam nut.
   - Check the wheel for damage or wear.
5. If the wheel does not include an integral thread, use a depressed-center wheel adapter in the hole on the wheel.

IMPORTANT—Never overtighten 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.

6. Install the grinding wheel:

For Model GR31101:

- Thread the grinding wheel or adapter on the shaft and tighten using appropriate wrenches.
- Screw the jam nut on the output shaft.
- Tighten the nut securely using two open-end wrenches. Place one wrench on the flats of the output shaft and the other on the jam nut.

For Model GR3110101:

- Place the grinding wheel onto the drive flange.
- Install the hub nut and tighten securely using an open-end wrench and a spanner wrench.

Hydraulic Hose Connection

Proper installation of the hydraulic hoses is extremely important for safe, reliable operation of the tool. Make sure the hoses are securely attached to the tool before turning on the hydraulic power.

Note: If possible, connect the free ends of the hoses together when not in use. The pressure increase in uncoupled hoses left in the sun may make them difficult to connect.

⚠ WARNING

Connecting hydraulic hoses to the tool while the hydraulic power source is ON can cause personal injury or damage to the equipment.

Make sure the hydraulic power source is OFF before connecting or disconnecting the hydraulic hoses.

1. Make sure the hydraulic system control valve is in the **OFF** position when coupling or uncoupling the hoses. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
2. Before installing the hoses, wipe the fittings with a clean, dry lint-free cloth to remove any dirt or moisture. Dirty connections can contaminate the hydraulic fluid, causing rapid wear and early failure of internal parts.

⚠ WARNING

Reversing the direction of hydraulic flow to the tool can cause severe personal injury or damage to the equipment.

Make sure the input and output hoses are connected to the correct port on the tool.

3. If hose couplers are used, check the flow indicators (arrows) stamped on the couplers to ensure oil flows in the proper direction. The female coupler on the tool is the inlet coupler.
4. It is a good practice to connect the output (return) hose first and disconnect it last to minimize or avoid trapped pressure within the tool.
   - Connect the output hose to the **OUT** port on the tool.
   - Connect the input hose to the **IN** port.
5. Be sure all hose connections are tight.

Test

Test the grinder to verify the hoses are connected correctly.

1. Move the hydraulic system control valve to **ON**.
2. Squeeze the grinder trigger momentarily. If the tool operates properly, move the hydraulic system control valve to **OFF**.

5. OPERATION

This section includes the following topics:

- pre-operation checkout
- cold weather operation
- tool operation
- storage

Pre-operation Checkout

Careful inspection of the tool and hydraulic system before startup is important for safe, reliable operation of the tool.

Daily Inspection

The following items should be checked daily at the start and the end of each work shift.

⚠ WARNING

Maintaining or repairing the tool with the hydraulic hoses connected can result in severe personal injury or equipment damage.

To prevent accidental startup while maintaining or servicing the tool, disconnect the hydraulic power before beginning the task.

Make sure the hydraulic system control valve is in the **OFF** position and the hoses are disconnected before inspecting the grinder.

1. Inspect the grinding wheel and guard:
   - Make sure the correct grinding wheel is installed for the job. If not, follow the instructions in Section 4, Grinding Wheel Replacement. Refer to Section 1, Specifications, for the grinding wheel requirements.
   - Inspect the wheel for chips, cracks, or other damage. For maximum tool performance, replace the wheel if it is worn or defective.
   - Inspect the wheel guard for cracks or other structural damage.
   - If necessary, adjust the position of the wheel guard by loosening the clamp.
   - Check the capscrew(s) on the wheel guard for tightness.

2. Inspect the cross handle:
   - Make sure the cross handle is screwed tightly into the main body housing.
   - Clean any oil from the cross handle to ensure a firm grip.
3. Check the trigger mechanism:
   - Make sure the trigger operates smoothly and is free to travel between the ON and OFF positions.
   - Make sure the grinder stops when the trigger is released.
4. The tool should be clean, with all fittings and fasteners tight.
5. Check the tool for oil leaks. If leaks are observed, do not use the tool; have the equipment serviced before use.

IMPORTANT—Check the speed of the motor output shaft after every 100 hours of operation. Follow the instructions in Section 7.

Hydraulic Power Source Check

IMPORTANT—This tool is for use with an open-center hydraulic system only. Do not connect to a closed-center system.

1. Connect the hydraulic hoses in accordance with the instructions in Section 4, Hydraulic Hose Connection. Wipe all hose couplers with a clean, lint-free cloth before making connections. Dirty couplers can contaminate the hydraulic circuit and prevent a good seal at the connection.
2. Using a calibrated flowmeter and pressure gauge, check the hydraulic power source at the tool's input port. Make sure the system provides the following flow requirements:
   - operating flow of 7–9 gpm (26–34 lpm)
   - at 2000 psi (140 bar) pressure

   The hydraulic fluid temperature should be at least 80°F (27°C) for this test. Refer to Section 3, Hydraulic System Requirements for more information.
3. Make sure the hydraulic power source has a relief valve set at a minimum of 2100 psi (145 bar).
4. Check the tool and hydraulic system for proper operation and performance. If the equipment does not appear to operate properly, have it serviced before use.

Cold Weather Operation

IMPORTANT—Use an oil with the recommended specifications listed in Table 3–1. Using oil that is too viscous (thick) can damage the hydraulic system or tool.

Before using the tool in cold weather, preheat the hydraulic fluid by operating the power unit at a low speed. The oil should be at or above 50°F (10°C) with a viscosity of 400 SSU (82 cs) before operating the tool.

Tool Operation

⚠ WARNING

Improper operation of this tool can cause severe personal injury, death, or equipment damage.

Read the safety guidelines and instructions in this manual before operating the tool.

Observe all safety precautions when operating the tool. Read Section 2, Safety, and Section 3, Hydraulic System Requirements, before operating the tool for the first time. Failure to do so can result in severe eye injury or injury to other parts of the body.

Startup

At the beginning of each shift, or after a new wheel is installed, run the grinder at operating speed for at least one minute before starting work.

- Move the hydraulic system control valve to the ON position.
- Slowly squeeze the trigger.
- Run the grinder at least one minute.
- Release the trigger.

If excessive vibration or any other defect is detected, stop the tool immediately and determine the cause. Do not use the tool until the problem is corrected.

General Procedure

1. Grip the tool with both hands at all times during startup and operation.
2. Always start the grinder with the wheel away from the work surface.
3. Make sure you have full balance before starting the grinder rotation. Always keep your body away from the grinder's plane of rotation.

Shutdown

1. Move the hydraulic system control valve to the OFF position.
2. Disconnect the hydraulic hoses from the tool—first the input (supply) hose, then the output (return) hose.
3. Place dust plugs on the couplers, as applicable.
4. Wipe the tool thoroughly with a clean dry cloth.
5. Clean any foreign matter from the grinding wheel surfaces.

Care and Storage

Clean and inspect the wheel and tool before storing.

Grinding Wheels

All grinding wheels are breakable. Exercise care in handling and storage to prevent damage.

1. Clean used wheels to remove any dirt, debris, or grease.
2. Inspect the wheel for chips, cracks, or other damage. For maximum tool performance, replace the wheel if it is worn or defective.

Tool

1. Clean the tool to remove any dirt, debris, or grease. Dry with compressed air or clean dry cloths.
2. Replace any damaged or missing safety labels and tags before storing the tool. Otherwise, the tool might be improperly used by someone who is not familiar with the safety requirements.
3. Store the tool in a clean, dry, safe place.

6. TROUBLESHOOTING

This section describes how to find and resolve problems you may experience. If a situation occurs that is not covered, call your Stanley distributor for assistance. They will help you get your equipment back on line as quickly as possible.

⚠ WARNING

Inspecting the tool or installing parts with the hydraulic hoses connected can result in severe personal injury or equipment damage.

To prevent accidental statup, disconnect the hydraulic power before beginning any inspection or installation task.

⚠ Some troubleshooting tasks require work or inspection in the grinding wheel area of the tool. Disconnect the hydraulic hoses from the tool before beginning any troubleshooting tasks. *Turning the hydraulic control valve to OFF is not sufficient.*

Troubleshooting Guide

If symptoms of poor performance develop, use Table 6–1 as a guide to help determine the cause of the problem. Many of these fault modes require that a trained Stanley Service technician correct the problem. Except for routine maintenance, hydraulic tool repair and servicing should be performed by an authorized Stanley distributor.

Table 6–1. Potential tool problems, causes, and corrective action.

Problem	Cause	Corrective Action
Tool does not operate	Hydraulic control valve OFF	Turn the hydraulic system control valve ON
	Hydraulic hoses not connected properly	Make sure the hoses are connected and the couplers are tight
	Hydraulic system not functioning	Check hydraulic power source for correct flow and pressure*
	Couplers or hoses blocked	Remove obstruction
	Mechanical failure	Disassemble tool and inspect for damage

continued

*Refer to Section 3, Hydraulic Requirements
Flow rate: 7–9 gpm (26–34 lpm)
Operating pressure: 1000–2000 psi (70–140 bar)

Table 6–1 (continued).

Tool operates in reverse**	Hoses connected to wrong ports on tool	Connect input (supply) line to **IN** port Connect output (return) line to **OUT** port
Low performance	Incorrect hydraulic flow	Check hydraulic power source for correct flow and pressure*
	Defective quick disconnects	Check quick disconnects
Fluid leak at motor cap face replace	Capscrews loose	Contact an authorized Stanley distributor to seal and tighten to recommended torque value
	Face O-ring worn or missing	Replace as required
	Motor cap or main body assemblies damaged	Replace as required
Fluid leaks at porting spool	Damaged O-rings	Contact your authorized Stanley distributor
	Wrong hydraulic fluid. Circuit too hot.	See Section 3, Table 3–1 for hydraulic fluid specifications
	Hoses connected to wrong ports on tool	Connect input (supply) line to **IN** port Connect output (return) line to **OUT** port
Trigger difficult to operate	Hoses connected to wrong ports on tool	Connect input (supply) line to **IN** port Connect output (return) line to **OUT** port
	Excessive back pressure	If back pressure is greater than 250 psi (17 bar), correct the return line obstruction or restriction
Fluid gets hot, power unit working hard	Open-center tool on a closed-center circuit	Tool designed for open-center hydraulic system
	Too much fluid going through tool	Adjust flow for 9 gpm (34 lpm) maximum
	Circuit generating high heat with flow controls, open relief valve, etc.	Use pump and rpm for producing needed flow only.
	Circuit contaminants caused pump and valve wear, and high heat generation	Contact your authorized Stanley distributor for pump and valve replacement. Install large clean filter and keep circuit fluid clean.
Grinding wheel comes to abrupt stop after release of trigger	Porting spool incorrectly installed	Contact your authorized Stanley distributor
	Mechanical failure	Contact your authorized Stanley distributor

*Refer to Section 3, Hydraulic Requirements
Flow rate: 7–9 gpm (26–34 lpm)
Operating pressure: 1000–2000 psi (70–140 bar)

**Grinding wheel should rotate CCW when viewed from the shaft end

7. SERVICE

This section includes the following topics:

- general service requirements
- periodic maintenance
- disassembly
- assembly
- parts list

The tool must be serviced only by a trained, authorized technician.

⚠ WARNING

Improper operation or servicing of this tool can cause severe personal injury, death, or equipment damage.

Read the safety guidelines and instructions in this manual before operating or performing any repair or maintenance tasks on the tool.

Before servicing or repairing the tool, read and understand the manual and any labels or tags attached to the tool and hoses. Failure to do so can cause serious personal injury, death, or damage to the equipment.

IMPORTANT—Always replace hoses, couplings, and other parts with replacement parts recommended by Stanley Hydraulic Tools. Refer to the parts list at the end of this section for part numbers.

General Service Requirements

Do not disassemble the tool unless an internal problem has been identified—the tool may not be the cause of the malfunction. Use the problem isolation procedure in Section 6, Troubleshooting, as a guide. Disassemble the tool only to the extent necessary to replace a defective part.

Do not put the tool back in service until the source of the problem has been identified and repaired. If not corrected, the original problem may cause excessive wear or tool failure.

When servicing the tool, keep your work surface clean. Do not allow dirt or grit to contaminate internal parts of the tool.

Tools, Parts, and Materials

- basic tools such as screwdrivers and soft-faced hammer
- open-end wrenches
- hex wrenches (1/4" and 5/32")
- punch for driving out 3/16" (4 mm) roll pins
- seal kit (see Parts List)
- grease, waterproof EP-1 or equivalent
- degreasing solvent
- clean, dry lint-free cloths

Hydraulic System Connections

⚠ WARNING

Maintaining or repairing the tool with the hydraulic hoses connected can result in severe personal injury or equipment damage.

To prevent accidental startup while maintaining or servicing the tool, disconnect the hydraulic power before beginning the task.

If the hydraulic hoses are connected to the tool:

- Turn the hydraulic system control valve **OFF**.
- Disconnect first the hydraulic input (supply) hose, then the output (return) hose.
- Insert dust plugs in each hose, coupling, or port to prevent contamination of the hydraulic circuit and interior of the tool.

Cleaning

Clean any dirt, debris, or grease from the tool before removing any parts. Keep the work surface clean to avoid contaminating the interior of the tool.

⚠ WARNING

Improper use of cleaning solvents can cause severe personal injury, death, or fire hazard.

Use cleaning solvents only in well-ventialted areas. Avoid prolonged inhalation of vapor and prolonged or repeated contact with the skin.

Keep away from heat or open flame.

1. Before disassembly, clean the exterior of the tool.
2. After the tool is disassembled, remove and discard any exposed seals and O-rings. Note the orientation of the seals before removal.
3. Clean all parts with degreasing solvent. Make sure the area is well ventilated. Do not install any parts in the tool until they have been cleaned.
4. Blow the parts dry with compressed air or wipe with clean, lint-free cloths.

Periodic Maintenance

For maximum performance and reliability of the tool, periodically check the following components.

Drive-Shaft Speed Check

Check the speed of the motor shaft at least every 100 hours of operation. The test should be performed only by a trained, experienced technician.

- Maintain a record of the speed checks.
- The maximum rated speed of the GR31 Hydraulic Grinder is 6500 rpm.
- The rated speed of the grinding wheel must be equal to, or greater than, that of the tool to ensure the integrity of the wheel at maximum tool speed.
- Use the hydraulic power supply normally used with the grinder when conducting this test.
- Excessive speed may be caused by excessive hydraulic fluid flow to the tool.

Bearing Check

Periodically inspect the bearings and associated parts for proper operation. A worn or damaged bearing can lead to further part damage.

Periodically repack the bearing with grease.

Disassembly

Remove only the parts required for access to the problem area. Table 7–1 indicates the level of disassembly required for access to parts that must be inspected, repaired, or replaced.

The topics in this section are presented in the same order as in the table. When the fault has been corrected, skip to the corresponding section in Assembly to complete the service task.

Refer to the parts diagram at the end of this section for the location of parts.

Table 7–1. Level of disassembly required for access to parts.

To Access Defective Part	Remove Grinding Wheel	Remove Wheel Guard	Remove Nose Housing	Remove Motor Cap	Disassemble Motor
Flow control valve					
Cross handle					
Trigger					
Grinding wheel					
Wheel guard					
Output shaft	✓	✓	✓		
Bearing	✓	✓	✓		
Motor cap seal	*	*	*	✓	
ON/OFF valve spool	*	*			
Gears	*	*	✓	✓	✓

*Removal recommended. Although the defective part can be accessed without removing the indicated parts, it may be easier to do the repair task if they are not installed on the tool.

Flow Control

The tamper-proof flow control valve on the end of the hose assembly is preset at the factory and is not field serviceable. If the drive-shaft speed exceeds the 6500 rpm maximum limit, replace the flow control. Refer to the Periodic Maintenance procedure earlier in this section for the drive-shaft speed test.

Cross Handle Removal

To remove the cross handle, unscrew it from the main body. The cross handle may be installed on either side of the tool for right- or left-handed use.

Trigger Removal

The trigger can be removed without disturbing the rest of the tool.

1. Drive the 3/16-in. (4-mm) spirol pin out of the nose housing using a punch.
2. Remove the trigger.

Grinding Wheel Removal

To remove the grinding wheel:

For Model GR31101:

- Remove the jam nut (2) from the output shaft (13) using two open-end wrenches. Place one wrench on the flats on the output shaft and the other on the jam nut.
- Unthread the old grinding wheel.

For Model GR3110101:

- Remove the hub nut (62) using a spanner wrench and a open-end wrench. Place the open-end wrench on the flats of the drive flange. Insert the spanner wrench into the holes on the hub nut.
- Lift off the grinding wheel.

Wheel Guard Removal

The wheel guard can be removed without disturbing the rest of the tool.

1. For model GR31101, loosen 2 capscrews on the wheel guard clamp. For model GR3110101, loosen the thumb screw.
2. Remove the guard.

Nose Housing Disassembly

Prerequisite: remove the wheel and guard. On model GR3110101, the drive flange (3) must also be removed by first loosening the set screw (11) and then lifting off the drive flange.

1. Remove 2 hex-socket capscrews (12) and lockwashers (6) from the lower face of the nose housing (7) below the output shaft, using a 5/32-inch hex wrench.
2. Remove 3 hex-socket capscrews (5) and lockwashers (6) from around the face of the nose housing.
3. Carefully separate the nose housing from the main body assembly. *Do not pry or use excessive force when removing the nose housing.*
4. Push the output shaft (13) assembly out of the nose housing.
5. Remove the seal (4) from the bore of the nose housing.
6. Remove the retaining ring (8) securing the bearing (9) to the output shaft.

IMPORTANT—Do not remove the bearing from the shaft unless it must be replaced. It may be damaged during removal.

8. To remove a damaged bearing from the output shaft:
   - Support the bearing's outer race with an appropriate tube or pipe.
   - Press the threaded end of the output shaft out of the bearing. Be careful not to bend the shaft.
   - Discard the bearing.

Motor Cap Removal

Recommendation: remove the wheel guard and nose housing.

1. Remove 6 hex-socket capscrews (28) and lockwashers (27) securing the motor cap to the main body (22) using a ¼-inch hex wrench.
2. Carefully separate the motor cap (29) from the main body.
3. Remove and discard the O-ring (31) from the motor cap inter-face.

If you are just replacing the motor cap seal, leave the motor components assembled as much as possible and skip to Assembly, Motor Cap Replacement.

Main Body Disassembly

Prerequisite: remove the wheel guard, nose housing, and motor cap.

1. Disassemble the motor components:
   - Remove the idler gear (32) and idler shaft (34) assemblies (including the O-ring (21) at the bottom of the shaft bore.

- Carefully separate the main shaft (25) from the output shaft.
- Remove the key (24) from the main shaft. Note: save the key for later reassembly.
- Remove the bushings (20 & 23) from the main-shaft bore in the main body, as required.

2. Remove the check valve housing (36) :
   - Remove a hex-head plug (41) from each side of the main body housing.
   - Carefully slide the check valve housing out of the main body. Note the orientation.
3. Remove the valve spool assembly (42):
   - Remove the spring cap (45), spring (43), and valve spool (42) from the bore in the main body.
   - Remove the small O-ring (21) from the exterior nose of the valve spool cartridge next to the trigger.
4. Remove the seal assembly from the main body including the:
   - internal retaining ring (14)
   - seal backup washer (15)
   - backup ring (16)
   - O-ring (17)

Prepare Parts for Assembly

Before the tool can be reassembled, all parts must be cleaned, inspected, and repaired or replaced as needed. Remove and discard all seals and O-rings.

Cleaning

⚠ WARNING

Improper use of cleaning solvents can cause severe personal injury, death, or fire hazard.

Use cleaning solvents only in well-ventialted areas. Avoid prolonged inhalation of vapor and prolonged or repeated contact with the skin.

Keep away from heat or open flame.

1. Clean all parts with degreasing solvent. Make sure the area is well ventilated.

2. Blow the parts dry with compressed air to thoroughly clean oil passage ways, or wipe with clean, lint-free cloths.

Inspection

Inspect all parts for wear or damage; replace as needed. The following parts have special inspection requirements.

IMPORTANT—The tool parts are carefully machined at the factory to critical tolerances. Do not attempt to refurbish the parts.

Motor Cap (Gear Chamber). Inspect the bores and interfacing surfaces on the motor cap:

- The gear chamber bores and end faces around the bores should be polished. If they are rough or grooved, replace the motor cap.
- The flat surfaces around the chamber and bolt holes should be flat and free of nicks or burrs that could cause misalignment or leaks. If the surfaces are damaged enough to affect tool performance, replace the motor cap.

Main Body Housing. Inspect the bores and interfacing surfaces on the main body housing:

The gear running surfaces should show two interconnecting polished circles without a step or roughness. If a step or roughness is evident, affecting tool performance, replace the housing.

IMPORTANT—If abnormal wear occurs in the main body housing in excess of normal polishing:

- replace the main shaft and bushing,
- thoroughly flush the hydraulic system, and
- replace the filter.

Bushing. Inspect the bushing for wear or discoloration:

- The inside of the bushing should be gray with some bronze showing through. If a significant amount of yellow-bronze shows, replace the bushing.
- Inspect the output, main, and idler shafts for corresponding wear. Replace as required.

Output and Main Shafts. The surface of the shafts where the bushing is mounted must be smooth.

- Grooves, roughness, or a reduced diameter indicate fluid contamination or a damaged bushing. Abrasive particles can become imbedded in the bushing and grind into the hardened shaft.
- If abnormal shaft wear occurs (in excess of normal polishing) both the shaft and bushing must be replaced.
- Check the hydraulic system filter and hydraulic fluid for contamination.

Gears. Check the gears for wear or damage:

Both gears should have square tooth ends, straight tips without nicks, and a smooth, even polish on the teeth and end faces. Replace both gears if either one is worn or damaged enough to affect tool performance.

Assembly

Always replace any seals or O-rings that are disturbed during disassembly. When installing the new seals, lubricate them and make sure they seat all the way around the groove in the part. All the required seals are in the seal kit (see Parts List).

Main Body Assembly

1. Install the valve spool assembly:
   - Lubricate and install an o-ring (21) into the nose of the valve spool cartridge.
   - Carefully insert the spool (42) into the valve spool cartridge in the main body (22).
   - Insert the spring (43) into the rear end of the valve spool.
   - Install the spring cap (45) and tighten securely.
2. Install the check valve housing (36) into the main body:

   After the check valve housing is installed, its central small-diameter hole must align with the assembly of the tip of the idler shaft (34). The hex plug (39) end of the spool is located on the right as you face the gear side of the main body. Refer to the parts diagram at the end of this section for the correct placement.
3. Install the motor components in the main body:

   Main shaft assembly (25)

- Install the bushings (20 & 23) in the main shaft bore, if they were removed during disassembly. Orient the split lines so that they face the center of the tool.
- Slide the main shaft into the bore and through the bushings until the gear contacts the main body interface.

Idler shaft assembly

- Lubricate and install an o-ring (21) in the idler shaft bore in the main body.
- Install the small end of the idler shaft (34) in the hole in the check valve housing. This keys the check valve housing to keep it from rotating.
- Install the idler gear (32) onto the idler shaft, carefully meshing it with the teeth on the main drive gear.

Motor Cap Installation

1. Install the o-ring (31) into the groove in the motor cap (29):
   - Fill the o-ring groove with grease.
   - Lubricate and install the o-ring in the groove. If the o-ring does not stay in the groove, stretch it slightly to make it more flexible, then reinstall. If the o-ring is too large, briefly refridgerate it to shrink it.

IMPORTANT—Do not force, wobble, or use impact when installing the motor cap on the main body and motor components.

2. Align the bores in the motor cap with the gears.
3. Carefully slide the motor cap over the gears until it mates with the main body.
4. Lubricate the threads on 6 hex-socket capscrews (28). Install the capscrews and lockwashers (27) through the motor cap and into the main body. Tighten the capscrews hand tight.
5. Turn the main shaft to make sure the gears move freely. If any components are damaged or assembled incorrectly, movement of the shaft and gears will be restricted or rough. If this occurs, remove the motor cap and correct the problem.
6. When the gears move freely, torque the capscrews in the motor cap to 16 ft-lb (22 N•m) using a standard crisscross torque pattern.
7. Install the seal assembly on the main shaft and main body:

- Lubricate and install an o-ring (17) and backup ring (16) over the end of the main shaft and slide them into place.
- Install the seal backup washer (15) and internal retaining ring (14) into the main body.

Nose Housing Assembly

1. Thoroughly lubricate the output shaft (13) with grease.
2. Install the bearing (9) (if removed) onto the output shaft. Secure in place with the retaining ring (8).
3. Lubricate and press the seal (4) into the wheel guard end of the nose housing (7) (lips facing out).
4. Slide the output shaft into the nose housing, followed by the thrust support (10).
5. Place the key (24) into the lengthwise groove in the main shaft.
6. Install the nose housing onto the main body, carefully engaging the output shaft with the main shaft and key.
7. Install 3 hex-socket capscrews (5) and lockwashers (6) into the nose housing to secure it to the main body.
8. Install 2 hex-socket capscrews (12) and lockwashers (6) into the lower face of the nose housing, below the output shaft.

Wheel Guard Installation

For Model GR31101:

1. Place the wheel guard (1) in position over the output shaft and orient it so it is between the operator and the working part of the wheel.
2. Tighten the 2 capscrews in the wheel guard clamp securely.

For Model GR3110101:

1. Place the wheel guard (52) in position over the output shaft and orient it so it is between the operator and the working part of the wheel.
2. Tighten the thumb screw securely.

Trigger Installation

1. Place the trigger (18) in position in the bottom of the nose housing and align the holes.
2. Drive a 3/16-inch (4-mm) spirol pin (19) through the holes until the pin is approximately flush with both sides of the nose housing.

Grinding Wheel Installation

IMPORTANT—Never use a chipped, damaged, or worn grinding wheel.

1. Check the grinding wheel:
   - Make sure the correct wheel is selected for the job. The wheel must conform to the specifications listed in Section 1, Table 1–2.
   - Make sure the wheel is free of dirt and other foreign particles—especially the surfaces that contact the tool and jam nut.
   - Check the wheel for damage or wear.
2. If the wheel does not include an integral thread, use a depressed-center wheel adapter in the hole on the wheel.

IMPORTANT—Never overtighten 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.

3. Install the grinding wheel as described in Section 4, "Preparation For Use".

Cross Handle Installation

Screw the cross handle into the main body. The cross handle may be installed on either side of the tool for right- or left-handed use.

Accessories

Part No.	Description	
	Grinding wheels	
02587	for metal	9-in. dia x 5/8-11 THD arbor
02588	for masonry	9-in. dia x 5/8-11 THD arbor
03691	general	7-in. dia x 5/8-11 THD arbor
02816	Wire brush	6 in. dia
05194	Wheel adapter, depressed center	

Parts List

IMPORTANT—Always replace hoses, couplings, and other parts with replacement parts recommended by Stanley Hydraulic Tools.

ITEM	P/N	QTY	DESCRIPTION
1	08322	1	Wheel Guard (Model GR31101 Only)
2	08319	1	Jam Nut (Model GR31101 Only)
3	16494	1	Drive Flange (Model GR3110101 Only)
4	08177	1	Seal
5	00753	3	Capscrew
6	00032	5	Washer
7	24410	1	Nose Housing
8	08176	1	Retaining Ring
9	08175	1	Ball Bearing
10	08321	1	Thrust Support
11	00720	1	Set Screw (Model GR3110101 Only)
12	00111	2	Capscrew
13	08323	1	Output Shaft
14	06635	1	Retaining Ring
15	20767	1	Seal Back-up Washer
16	13995	1	Back-up Ring
17	00354	1	O-ring
18	24411	1	Trigger
19	07970	1	Roll Pin
20	20758	1	Bushing
21	00026	2	O-ring
22	24387	1	Main Body Assy(Incld Item 20, 21, & 23)
23	05207	2	Bushing
24	08326	1	Key
25	24386	1	Main Shaft
26	10396	1	Sticker, Warning (Model GR31101 Only)
27	00145	6	Lockwasher
28	00146	6	Capscrew
29	20770	1	Motor Cap Assy (Incld Items 23 & 30)
30	00713	2	Dowel Pin
31	01262	1	O-ring
32	20769	1	Idler Gear Assy (Incld Item 33)
33	20760	1	Bushing
34	20782	1	Idler Shaft
35	06693	1	Flow Control Label
36	24384	1	Check Valve Hsg
37	02436	1	Steel Ball
38	350770	1	O-ring
39	24385	1	Check Valve Plug
40		2	O-ring
41	16607	2	Plug (Incl Item 40)
42	24161	1	ON/OFF Spool
43	06617	1	Spring
44		1	O-ring
45	20781	1	Spring Cap
46	08130	1	Cross Handle
47	07226	1	Hose Assy
48	05638	1	Hose Assy
49	26542	1	Flow Control

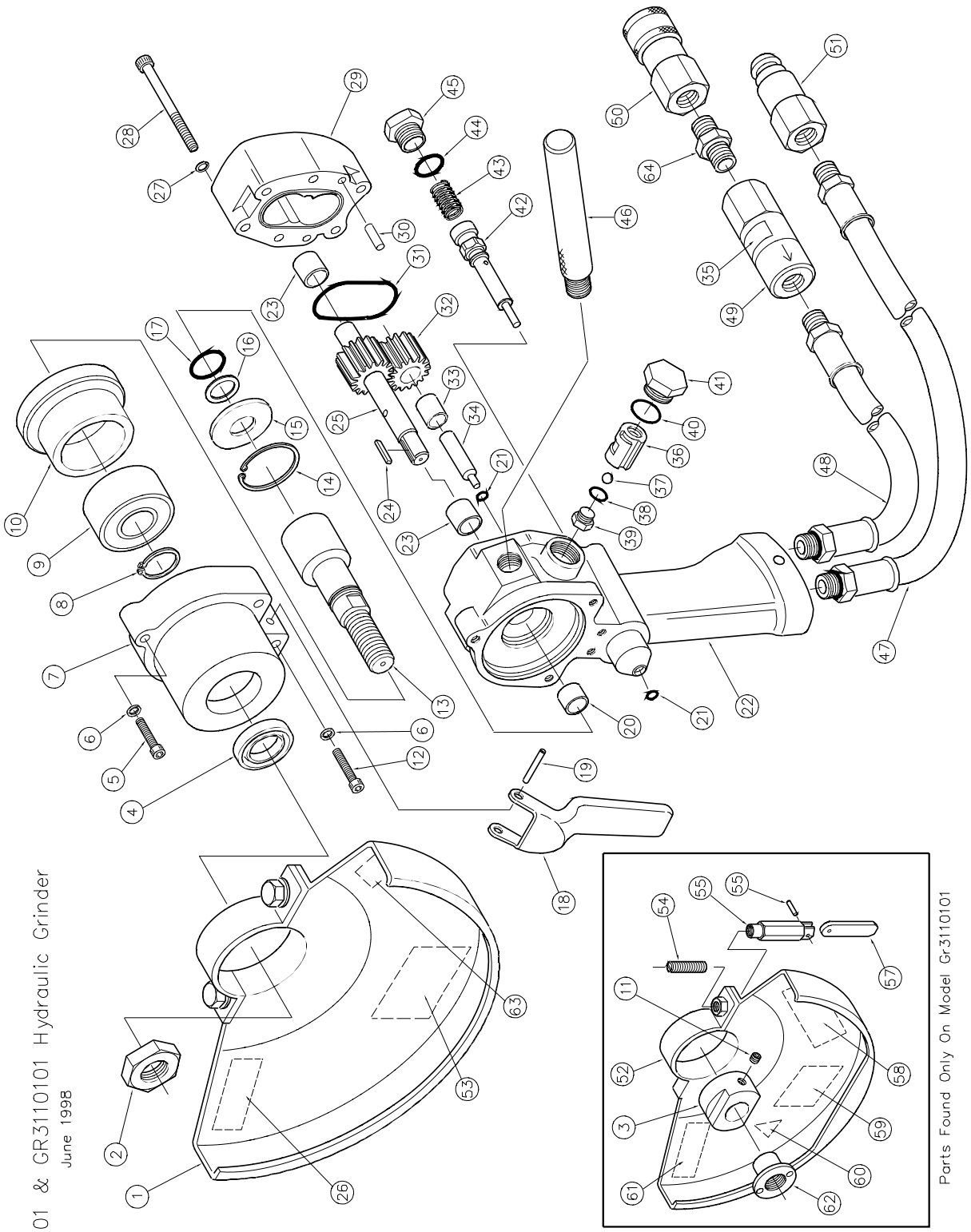
ITEM	P/N	QTY	DESCRIPTION
50	03972	1	Female Coupler Body (Model GR3110101 Only)
51	03973	1	Male Coupler Body (Model GR3110101 Only)
52	12427	1	Wheel Guard Assy (Incld Items 54 thru 57)(Model GR3110101 Only)
53	08688	1	Sticker, Safety Label (Model GR31101 Only)
54	12786	1	Stud (Model GR3110101 Only)
55	12290	1	Clamp Screw (Model GR3110101 Only)
56	00285	1	Roll Pin (Model GR3110101 Only)
57	12291	1	Thumb Plate (Model GR3110101 Only)
58	28811	1	Information Plaque (Model GR3110101 Only)
59	28409	1	Sticker, Composite (Model GR3110101 Only)
60	11207	1	Sticker, Circuit "D" (Model GR3110101 Only)
61	28322	1	Sticker, CE (Model GR3110101 Only)
62	16495	1	Hub Nut (Model GR3110101 Only)
63	03786	1	Sticker, GPM (Model GR31101 Only)

SEAL KIT **P/N 10592**

Model Designations

GR31101 — **Standard Unit, O.C. Hydraulic System, 9 in. Wheel, 5/8 in.-11 Threaded Arbor**

GR3110101 — **European (CE) Unit, O.C. Hydraulic System, 23 cm Dia. Wheel, 22 mm Arbor.**


Model GR31101 & GR3110101 Hydraulic Grinder
June 1998
Parts Found Only On Model Gr3110101

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Stanley Hydraulic Tools

Stanley Hydraulic Tools manufactures quality hydraulic equipment used worldwide by utilities, municipalities, contractors, rental companies, railroads, underwater contractors, and tree trimmers. Our line of over 120 hydraulic tools include:

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- Hammer drills
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