

STANLEY®

GR60 HYDRAULIC GRINDER



USER MANUAL Safety, Operation and Maintenance



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Milwaukie, OR 97267
U.S.A.
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IMPORTANT

To fill out a product warranty validation form, and for information on your warranty, visit www.stanleyinfrastructure.com and select the Company tab > Warranty.

Note: The warranty validation record must be submitted to validate the warranty.

SERVICING: This manual contains safety, operation and routine maintenance instructions. STANLEY recommends that servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

For the nearest certified dealer, call STANLEY at (503) 659-5660 and ask for a Customer Service Representative.

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, 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.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



This safety alert and signal word indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



This safety alert and signal word indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.



This safety alert and signal word indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.



This signal word indicates a situation which, if not avoided, will result in damage to the equipment.



This signal word indicates a situation which, if not avoided, may result in damage to the 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.

[illegible]

SAFETY PRECAUTIONS

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

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

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. Place the added precautions in the space provided.

The GR60 Hydraulic Grinder will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the tool and hoses before operation. Failure to do so could result in personal injury or equipment damage.



- Operators must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operation.
- **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead-based paints,
 - crystalline silica from bricks and cement and other masonry products, and
 - arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Protect yourself and those around you. Research and understand the materials you are cutting. Follow correct safety procedures and comply with all applicable national, state or provisional health and safety regulations relating to them, including, if appropriate arranging for the safe disposal of the

materials by a qualified person.

- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear and head protection at all times when operating the tool.
- Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Always connect hoses to the tool hose couplers before energizing the hydraulic power source. Be sure all hose connections are tight.
- Do not operate the tool at oil temperatures above 140°F/60°C. High temperatures can cause operator discomfort.
- Do not operate a damaged, improperly adjusted or incompletely assembled tool.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Always replace parts with replacement parts recommended by STANLEY.
- Do not operate the tool with the wheel guard removed.
- Never wear loose clothing that can get entangled in the working parts of the tool.
- Keep all parts of your body away from the rotating wheel. Long hair or loose clothing can become drawn into rotating components.
- Do not overreach. Maintain proper footing and balance at all times.
- Keep the wheel off all surfaces when starting the grinder.
- 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.

TOOL STICKERS & TAGS



P/N-74821
Name Tag



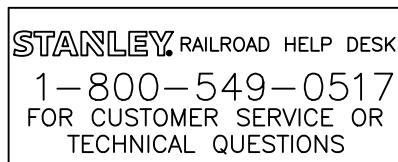
P/N-25790
Caution Sticker



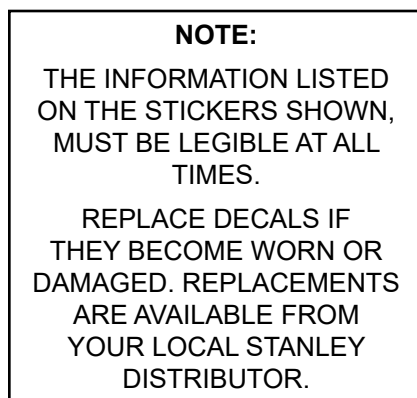
P/N-74820
Stanley Logo Sticker



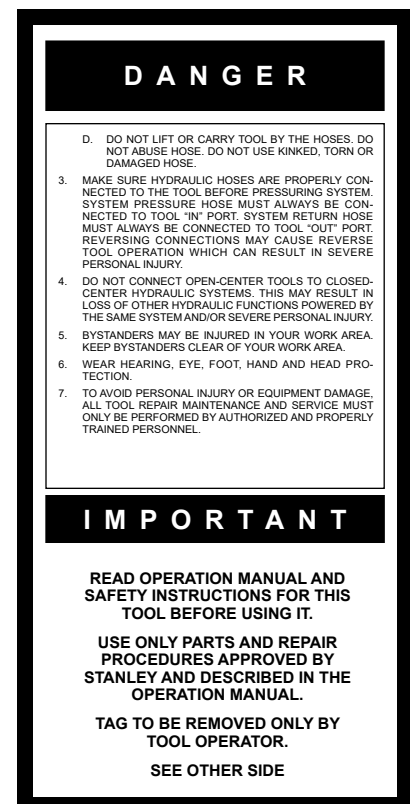
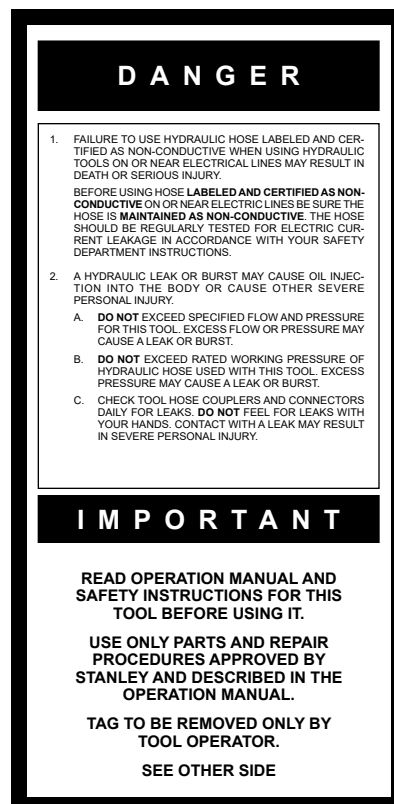
P/N-03787
GPM Sticker



P/N-73680
Railroad Help Desk Sticker



The safety tag (P/N 15875) at right is attached to the tool 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 tool when not in use.



SAFETY TAG P/N 15875 (Shown smaller than actual size)

HOSE TYPES

The rated working pressure of the hydraulic hose must be equal to or higher than the relief valve setting on the hydraulic system. There are three types of hydraulic hose that meet this requirement and are authorized for use with STANLEY hydraulic tools. They are:

Certified non-conductive — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *Hose labeled **certified non-conductive** is the only hose authorized for use near electrical conductors.*

Wire-braided (conductive) — constructed of synthetic rubber inner tube, single or double wire braid reinforcement, and weather resistant synthetic rubber cover. *This hose is **conductive** and must never be used near electrical conductors.*

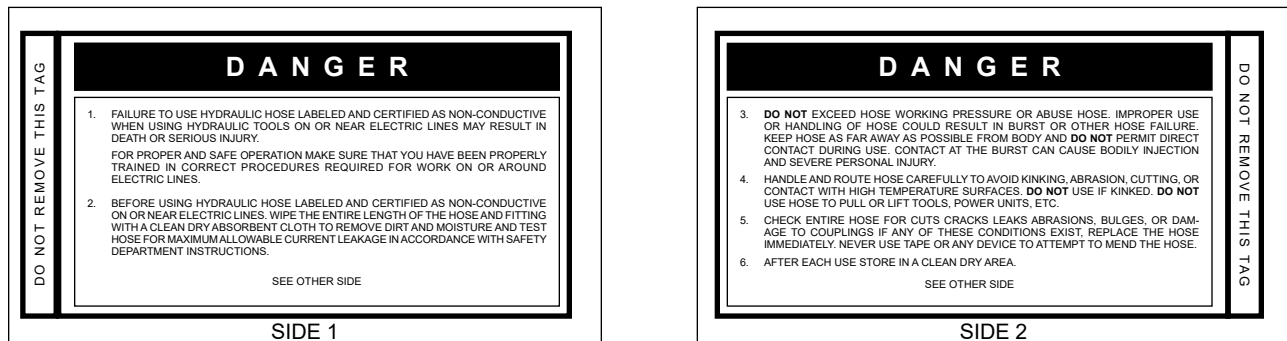
Fabric-braided (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical conductors.*

HOSE SAFETY TAGS

To help ensure your safety, the following DANGER tags are attached to all hose purchased from STANLEY. DO NOT REMOVE THESE TAGS.

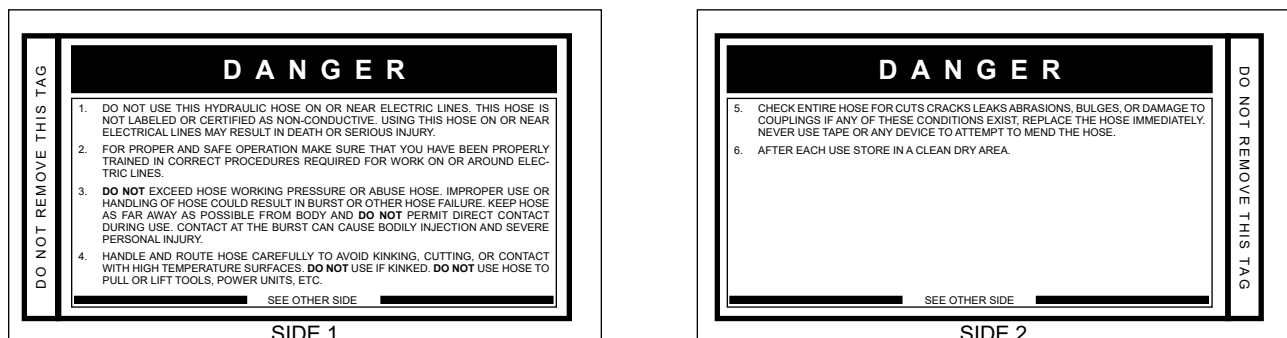
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your STANLEY Distributor.

THE TAG SHOWN BELOW IS ATTACHED TO “CERTIFIED NON-CONDUCTIVE” HOSE



(Shown smaller than actual size)

THE TAG SHOWN BELOW IS ATTACHED TO “CONDUCTIVE” HOSE.



(Shown smaller than actual size)

HOSE RECOMMENDATIONS

Tool to Hydraulic Circuit Hose Recommendations

The chart to the right shows recommended minimum hose diameters for various hose lengths based on gallons per minute (GPM)/liters per minute (LPM). These recommendations are intended to keep return line pressure (back pressure) to a minimum acceptable level to ensure maximum tool performance.

This chart is intended to be used for hydraulic tool applications only based on STANLEY tool operating requirements and should not be used for any other applications.

All hydraulic hose must have at least a rated minimum working pressure equal to the maximum hydraulic system relief valve setting.

All hydraulic hose must meet or exceed specifications as set forth by SAE J517.

Oil Flow		Hose Lengths		Inside Diameter		USE (Press/Return)	Min. Working Pressure	
GPM	LPM	FEET	METERS	INCH	MM		PSI	BAR
Certified Non-Conductive Hose - Fiber Braid - for Utility Bucket Trucks								
4-9	15-34	up to 10	up to 3	3/8	10	Both	2250	155
Conductive Hose - Wire Braid or Fiber Braid - DO NOT USE NEAR ELECTRICAL CONDUCTORS								
4-6	15-23	up to 25	up to 7.5	3/8	10	Both	2500	175
4-6	15-23	26-100	7.5-30	1/2	13	Both	2500	175
5-10.5	19-40	up to 50	up to 15	1/2	13	Both	2500	175
5-10.5	19-40	51-100	15-30	5/8	16	Both	2500	175
5-10.5	19-40	100-300	30-90	5/8	16	Pressure	2500	175
10-13	38-49	up to 50	up to 15	3/4	19	Return	2500	175
10-13	38-49	51-100	15-30	5/8	16	Both	2500	175
10-13	38-49	100-200	30-60	5/8	16	Pressure	2500	175
13-16	49-60	up to 25	up to 8	3/4	19	Return	2500	175
13-16	49-60	26-100	8-30	3/4	19	Pressure	2500	175
13-16	49-60	100-200	30-60	1	25.4	Return	2500	175
13-16	49-60	26-100	8-30	5/8	16	Pressure	2500	175
13-16	49-60	100-200	30-60	3/4	19	Return	2500	175
13-16	49-60	26-100	8-30	3/4	19	Pressure	2500	175
13-16	49-60	100-200	30-60	1	25.4	Return	2500	175

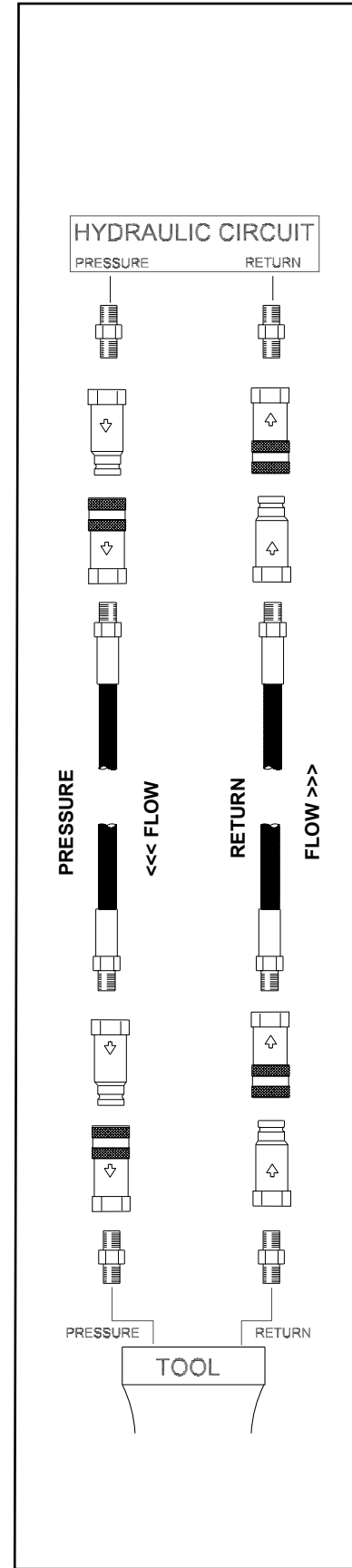


Figure 1. Typical Hose Connections

HTMA / EHTMA REQUIREMENTS

HTMA / EHTMA REQUIREMENTS

TOOL TYPE

HTMA HYDRAULIC SYSTEM REQUIREMENTS	TYPE I	TYPE II	TYPE RR	TYPE III
Flow range	4-6 GPM (15-23 LPM)	7-9 GPM (26-34 LPM)	9-10.5 GPM (34-40 LPM)	11-13 GPM (42-49 LPM)
Nominal operating pressure (At the power supply outlet)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)
System relief valve setting (At the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2300 psi (152-159 bar)	2100-2250 psi (145-155 bar)
Maximum back pressure (At tool end of the return hose)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)
Measured at a max fluid viscosity of: (At minimum operating temperature)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)
Temperature: Sufficient heat rejection capacity to limit maximum fluid temperature to: (At maximum expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Minimum cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW) 40° F (22° C)	5 hp (3.73 kW) 40° F (22° C)	6 hp (5.22 kW) 40° F (22° C)	7 hp (4.47 kW) 40° F (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 microns	25 microns	25 microns	25 microns
Sized for flow of at least: (For cold temp startup and maximum dirt-holding capacity)	30 GPM (114 LPM)	30 GPM (114 LPM)	30 GPM (114 LPM)	30 GPM (114 LPM)
Hydraulic fluid, petroleum based (premium grade, anti- wear, non-conductive) Viscosity (at minimum and maximum operating temps)	100-400 ssu (20-82 centistokes)	100-400 ssu (20-82 centistokes)	100-400 ssu (20-82 centistokes)	100-400 ssu (20-82 centistokes)
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				

CLASSIFICATION

EHTMA HYDRAULIC SYSTEM REQUIREMENTS					
Flow range	3.5-4.3 GPM (13.5-16.5 LPM)	4.7-5.8 GPM (18-22 LPM)	7.1-8.7 GPM (27-33 LPM)	9.5-11.6 GPM (36-44 LPM)	11.8-14.5 GPM (45-55 LPM)
Nominal operating pressure (At the power supply outlet)	1870 psi (129 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)
System relief valve setting (At the power supply outlet)	2495 psi (172 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)

Note: These are general hydraulic system requirements. See tool specification page for tool specific requirements.

OPERATION

PREPARATION PROCEDURES

Each unit, as shipped, has no special unpacking or assembly requirements prior to usage. Inspection to assure the unit was not damaged in shipping and does not contain packing debris is all that is required. After installation of a grinding wheel a unit may be put to use.

CHECK HYDRAULIC POWER SOURCE

1. Using a calibrated flow meter and pressure gauge, check that the hydraulic power source develops a flow of 7-10 GPM/26-38 LPM at 1500-2000 psi/105-140 bar.
2. Make certain 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.

CHECK GUARD ASSEMBLY

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

INSTALLING AND REMOVING GRINDING WHEELS

Read and become familiar with the sections in this manual on safety precautions, tool stickers and tags, hydraulic hose requirements, hydraulic requirements, and pre-operation procedures before using this product.

IMPORTANT

Never over-tighten the grinding wheel by impacting the wrench with a mallet or hammer. Sufficient torque is attained by hand-tightening the wheel with a strap wrench or for wheels secured with capscrews, hand tightening with a socket wrench while depressing the push lock.

Note: Use 6-inch diameter up to 3-inch thick (Type 6 for USA/Type 36 for CE) grinding wheels with a 5/8-11 threaded arbor hole. Only use grinding wheels which comply with ANSI B7.5/ISO 525, 603.

2. Depress the push lock (6) and screw the grinding wheel onto the main shaft (13) and tighten using a strap wrench.
3. Adjust guard to desired height.

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 hose couplers on the grinder. It is a good practice to connect the return hose first and disconnect it last to minimize or avoid trapped pressure within the grinder motor.
3. Observe flow indicators stamped on hose couplers to be sure that oil will flow in the proper direction. The female coupler is the inlet coupler.

Note: The pressure increase in uncoupled hoses left in the sun may result in making them difficult to connect. When possible, connect the free ends of operating hoses together.

OPERATING PROCEDURES

1. Observe all safety precautions.
2. Always start the grinder with the grinding wheel away from the work surface.
3. Move the hydraulic circuit control valve to the "ON" position.
4. Disengage the safety thumb latch (42) and squeeze

OPERATION

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

5. Start the grinder and move the grinding wheel or cone to the work surface.
6. Grind a small amount of material at a time.
7. As the grinding stone wears, adjust guard height by depressing the guard latch (26) and rotate the guard to lower or raise height.

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.

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 pressure to the grinder as listed in the table. Use a flowmeter known to be accurate. Check the flow with the hydraulic oil temperature at least 80°F/27°C.

Problem	Cause	Remedy
Grinder does not run	Hydraulic power source not functioning.	Check power source for proper flow and pressure (7-10 GPM/ 26-38 LPM @1500-2000 psi/ 105-140 bar)
	Couplers or hoses are blocked	Locate and remove restriction
	Hydraulic motor failure	Inspect and repair
	Hydraulic lines are not connected.	Connect lines
Grinder operates too slowly.	Hydraulic motor speed is too low.	Check power unit for proper flow (7-10 GPM/ 36-38 LPM).
	Hydraulic back pressure	Check hydraulic system for excessive back pressure (over 250 psi/ 17 bar).
	Couplers or hoses are blocked.	Locate and remove restriction.
	Oil is too hot (above 140° F/ 60° C) or too cold (below 60° F/ 16° C).	Check hydraulic power source for proper oil temperature. Bypass cooler to warm oil or provide cooler to maintain proper temperature.
	Relief valve set too low.	Adjust the relief valve to 2100-2250 psi/ 145-155 bar.
	Hydraulic motor is worn.	Inspect, repair or replace.
	Flow control is malfunctioning.	Have the flow control and valve body serviced at an authorized STANLEY service center.
Grinder operates too fast.	Flow control is malfunctioning.	Have flow control and valve body serviced at an authorized STANLEY service center.

TOOL PROTECTION & CARE

NOTICE

In addition to the safety precautions found in this manual, observe the following for equipment protection and care.

- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling hydraulic tools. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
- Always store the tool in a clean dry space, safe from damage or pilferage.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the “IN” port. The circuit RETURN hose (with female quick disconnect) is connected to the opposite port. Do not reverse circuit flow. This can cause damage to internal seals.
- Always replace hoses, couplings and other parts with replacement parts recommended by STANLEY. Supply hoses must have a minimum working pressure rating of 2500 psi/172 bar.
- Do not exceed the rated flow (see “SPECIFICATIONS” on page 14) in this manual for correct flow rate and model number. Rapid failure of the internal seals may result.
- Always keep critical tool markings, such as warning stickers and tags, legible.
- Tool repair should be performed by experienced personnel only.
- Make certain that the recommended relief valves are installed in the pressure side of the system.
- Do not use the tool for applications for which it was not intended.

SPECIFICATIONS

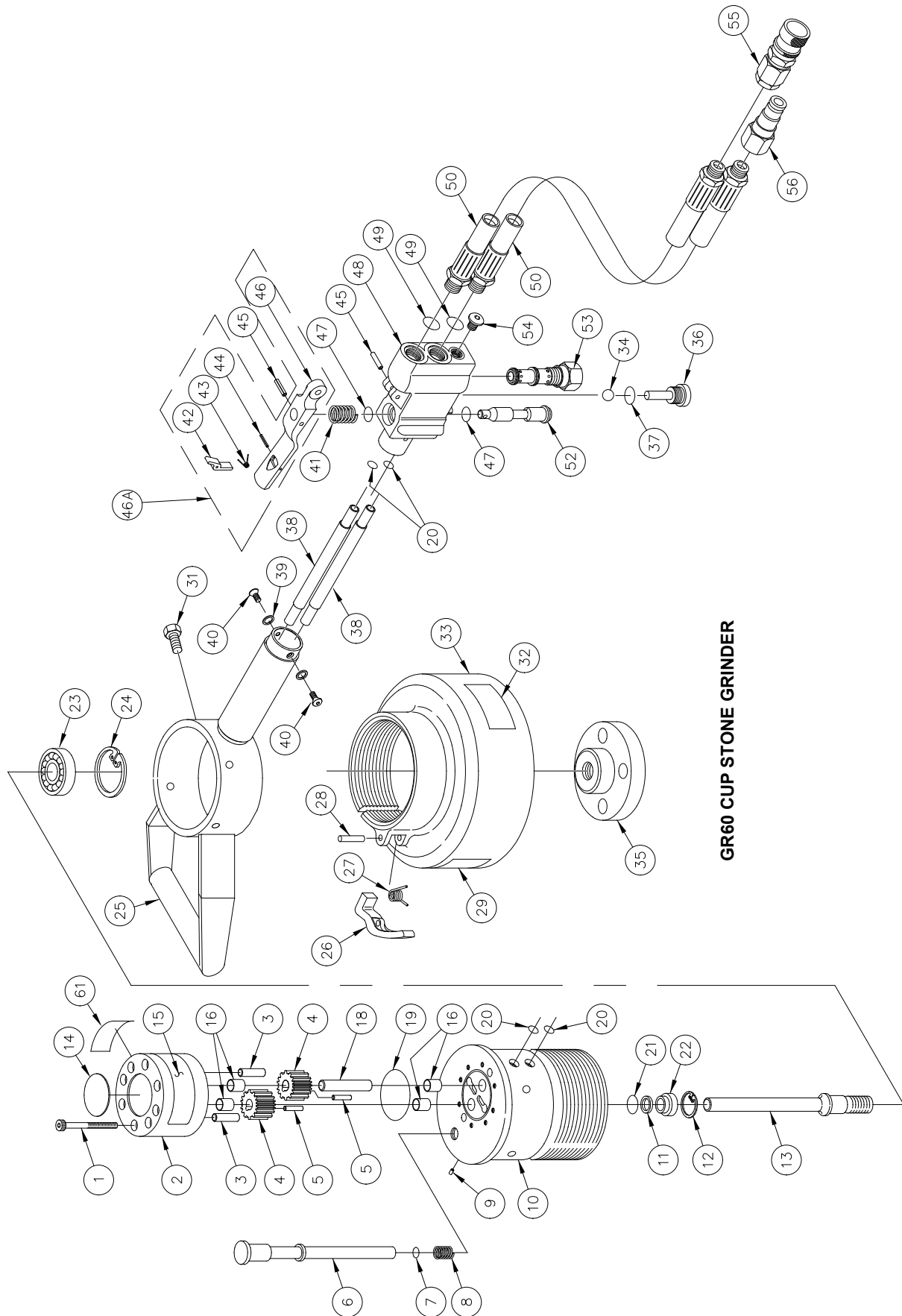
SPECIFICATIONS

Wheel Capacity	6 inch dia. x 3 inch thick x 5/8-11 threaded arbor (Type 6) USA
.....	150 mm x 60 mm x 5/8-11 threaded arbor (Type 36) CE
Pressure Range.....	1000-2000 psi / 70-140 bar
Maximum Back Pressure.....	250 psi / 17 bar
Flow Range	7-10 GPM / 26-38 LPM
Porting	-8 SAE O-Ring
Couplers	EHTMA / HTMA Flush Face Type Male & Female
Connect Size & Type.....	3/8 inch Male Pipe Adapter
Hose Whips	Yes
Overall Length (w/o Hose Whips).....	18 inches / 45.7 cm
Overall Width	10.5 inches / 26.7 cm
Weight (w/couplers).....	20.3 lbs / 9.2 kg
Maximum Fluid Temperature	140° F / 60° C
RPM.....	4000 Max

ACCESSORIES

Cup Stone Grinding Wheel (6 inch x 3 inch x 5/8-11 Norton Norzon IV).....	28597
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GR60 PARTS ILLUSTRATION



GR60 CUP STONE GRINDER

GR60 PARTS LIST

ITEM NO.	PART NO.	QTY	DESCRIPTION
1	00120	8	CAPSCREW
2	25188	1	GEAR CHAMBER ASSY
3	0713	2	DOWEL PIN
4	25718	2	DRIVE GEAR
5	06881	2	NEEDLE ROLLER
6	25612	1	PUSH LOCK
7	00354	1	O-RING
8	25788	1	COIL SPRING
9	02837	1	SET SCREW
10	25792	1	SHAFT HOUSING ASSY
11	00214	1	QUAD RING
12	00170	1	RETAINING RING
13	28127	1	MAIN SHAFT
14	74821	1	NAME TAG
15	03787	1	GPM STICKER
16	06316	4	BUSHING
18	73309	1	IDLER SHAFT KEYED
19	00178	1	O-RING
20	00018	4	O-RING
21	350771	1	O-RING
22	30333	1	SEAL GLAND
23	25947	1	BEARING
24	00633	1	RETAINING RING
25	31822	1	ASSIST HANDLE ASSY
26	25121	1	GUARD LATCH
27	25464	1	SPRING
28	17668	1	ROLL PIN
29	74820	1	STANLEY STICKER
30	----	--	NO ITEM
31	02525	4	CAPSCREW
32	73680	1	RAILROAD HELP DESK DECAL
33	25783	1	GUARD ASSY (INCLUDES ITEMS 26, 27 & 28)
34	20145	1	STEEL BALL
35	25784	1	DRIVE FLANGE
36	24289	1	PLUG
37	01411	1	O-RING
38	25215	2	OIL TUBE
39	00032	2	LOCK WASHER
40	30366	2	CAPSCREW

ITEM NO.	PART NO.	QTY	DESCRIPTION
41	04097	1	SPRING
42	27441	1	THUMB LATCH
43	27445	1	SPRING
44	01851	1	ROLL PIN
45	00114	2	ROLL PIN
46	74061	1	TRIGGER
46A	27594	1	TRIGGER ASSY (INCL. 42-44, 46)
47	01211	2	O-RING
48	28595	1	VALVE BODY ASSY (INCL 34, 36-37)
49	01605	1	O-RING
50	25618	2	HOSE ASSY (GR601215C)
	58630	2	HOSE ASSY (GR60212S)
	66728	2	HOSE ASSY (GR60121B)
51	----	--	NO ITEM
52	04098	1	VALVE SPOOL ASSY
53	28914	1	FLOW REGULATOR CARTRIDGE (PRE-SET)
54	350041	1	PLUG
55	03972	1	FEMALE COUPLER BODY (GR601215, GR601215C)
	81158	1	FEMALE COUPLER BODY (GR60121B)
	-----	1	FEMALE COUPLER BODY (GR60121S) (COUPLER SET #88685)
56	03973	1	MALE COUPLER BODY (GR601215, GR601215C)
	81159	1	MALE COUPLER BODY (GR60121B)
	-----	1	MALE COUPLER BODY (GR60121S) (COUPLER SET #88685)
61	25790	1	CAUTION STICKER
	28967	1	SEAL KIT (INCL. 7, 11, 19-21, 47, 49)

COUPLER SET P/N-03971 (ONE EACH OF ITEM # 55 & 56) USED ON MODEL GR601215, GR601215C.

COUPLER SET P/N-81160 (ONE EACH OF ITEM # 55 & 56) USED ON MODEL GR60121B.

COUPLER SET P/N-88685 (ONE EACH OF ITEM # 55 & 56) USED ON MODEL GR60121S.

STANLEY®

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