STANLEY®

HG80

HYDRAULIC GRINDER

⚠ WARNING

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

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

SAFETY, OPERATION AND MAINTENANCE
SERVICE MANUAL

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OPS/SVCE USA
29122 12/2003 Ver 2

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SERVICING THE STANLEY GRINDER: This manual contains safety, operation, and routine maintenance instructions. Stanley Hydraulic Tools 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 authorized and certified dealer, call Stanley Hydraulic Tools at one of the numbers listed on the back of this manual 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.

⚠ DANGER — **This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

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

⚠ CAUTION — **This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

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

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

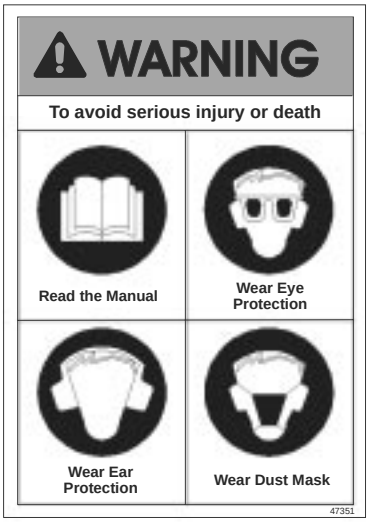
IMPORTANT — **This signal word indicates a situation which, if not avoided, may result in damage to the equipment.**

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.

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 general 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.

The model HG80 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 grinder and hose before operation. Failure to do so could result in personal injury or equipment damage.

• The operator must start in a work area without bystanders. Flying debris can cause serious injury.

• Do not operate the tool unless thoroughly trained or under the supervision of an instructor. Establish a training program for all operators to ensure safe operation.

• Always wear safety equipment such as goggles, ear and head protection, and safety shoes at all times when operating the tool. Use gloves and aprons when necessary.

• The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.

• Do not inspect, clean or replace the grinding wheel while the hydraulic power source is connected. 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 and are in good condition.

• Do not operate the tool at oil temperatures above 140°F/60°C. Operation at higher temperatures can cause higher than normal temperatures at the tool which can result in operator discomfort.

• Do not operate the tool with the wheel guard removed.

• Do not operate a damaged, improperly adjusted, or incompletely assembled grinder.

• 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.

• Keep the wheel off all surfaces when starting the grinder.

• Do not use a wheel that is cracked, chipped or otherwise damaged. Always inspect wheels for possible damage before installation or use.

• Always use wheels that conform to the specifications given in the OPERATION section of this manual.

• Do not reverse grinding wheel rotation direction by changing fluid flow direction.

• Do not move the tool until the wheel has stopped rotating. Release the trigger if the power supply has been interrupted.

SAFETY PRECAUTIONS

• To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

• If the material being ground creates an emission of dust and fumes, use personal protective devices.

• Never cock, jam or wedge the grinding wheel during operation.

• Never cause sparks in the vicinity of flamable materials.

• Eye injury, and cutting or severing of body parts is possible if proper procedures are not followed.

GRINDING WHEEL SAFETY

• Ensure that the grinding wheel is correctly mounted and tightened before use.

• Operate the grinder at “no load” for 30 seconds in a safe position and ensure there is no vibration or other defects detected. If considerable vibration or other defects are detected, stop operation of the tool immediately and determine the cause. Do not use the tool until the defect is corrected.

• If the grinder is dropped with an abrasive wheel installed, the abrasive wheel swhould be examined thoroughly before use.

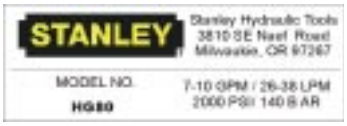
• Only use abrasive wheels that comply with ANSI B7.1/ISO 525, 603.

• Check that the maximum rpm operating speed of the abrasive wheel is equal to or greater than the rated shaft speed of the grinder.

• Ensure that the grinding wheel dimensions are compatible with the grinder and that the grinding wheel fits the shaft.

• Ensure that the thread type and size of the grinding wheel exactly matches the thread type and size of the shaft.

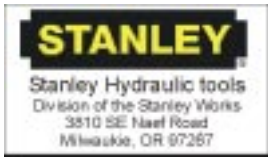
TOOL STICKERS & TAGS



25413

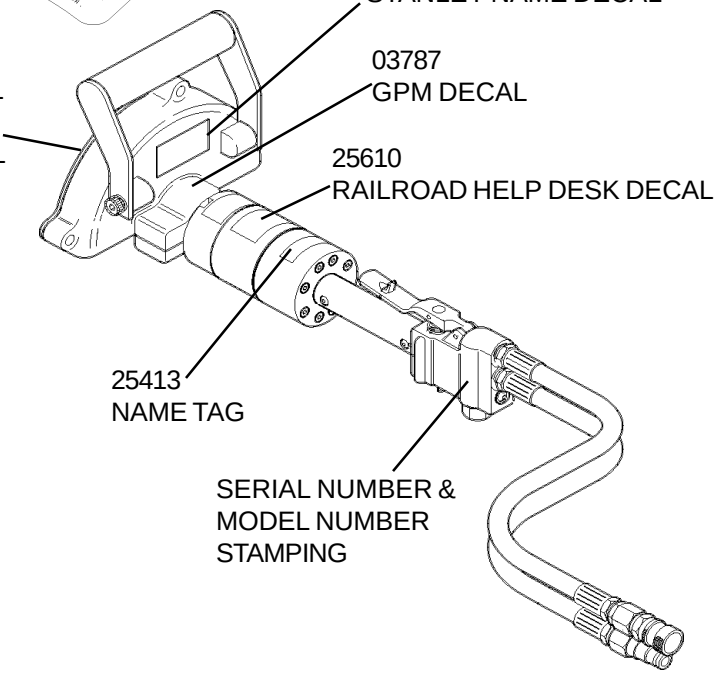
25610

03787



05153

25414
HG80110 CAUTION DECAL
25556
HG80120 CAUTION DECAL



05153
STANLEY NAME DECAL

03787
GPM DECAL

25610
RAILROAD HELP DESK DECAL

25413
NAME TAG

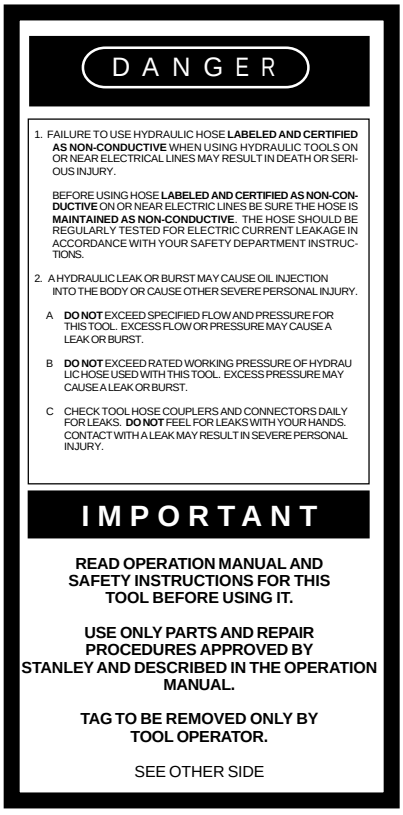
SERIAL NUMBER &
MODEL NUMBER
STAMPING

NOTE

THE INFORMATION LISTED ON THE STICKERS SHOWN, MUST BE LEGIBLE AT ALL TIMES.

REPLACE DECALS IF THEY BECOME WORN OR DAMAGED. REPLACEMENTS ARE AVAILABLE FROM YOUR LOCAL STANLEY DISTRIBUTOR.

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.



DANGER

1. FAILURE TO USE HYDRAULIC HOSE **LABELED AND CERTIFIED AS NON-CONDUCTIVE** WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.

   BEFORE USING HOSE **LABELED AND CERTIFIED AS NON-CONDUCTIVE** ON OR NEAR ELECTRIC LINES BE SURE THE HOSE IS **MAINTAINED AS NON-CONDUCTIVE**. THE HOSE SHOULD BE REGULARLY TESTED FOR ELECTRIC CURRENT LEAKAGE IN ACCORDANCE WITH YOUR SAFETY DEPARTMENT INSTRUCTIONS.

2. A HYDRAULIC LEAK OR BURST MAY CAUSE OIL INJECTION INTO THE BODY OR CAUSE OTHER SEVERE PERSONAL INJURY.

   A **DO NOT** EXCEED SPECIFIED FLOW AND PRESSURE FOR THIS TOOL. EXCESS FLOW OR PRESSURE MAY CAUSE A LEAK OR BURST.

   B **DO NOT** EXCEED RATED WORKING PRESSURE OF HYDRAULIC HOSE USED WITH THIS TOOL. EXCESS PRESSURE MAY CAUSE A LEAK OR BURST.

   C CHECK TOOL HOSE COUPLERS AND CONNECTORS DAILY FOR LEAKS. **DO NOT** FEEL FOR LEAKS WITH YOUR HANDS. CONTACT WITH A LEAK MAY RESULT IN SEVERE PERSONAL INJURY.

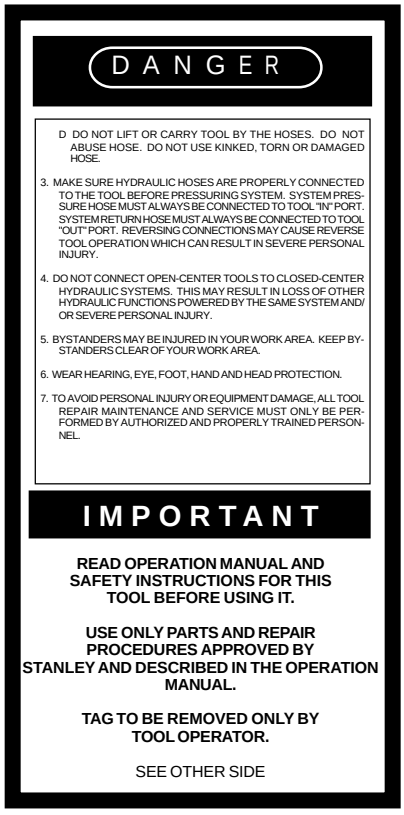
IMPORTANT

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

SEE OTHER SIDE



DANGER

D DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE.

3. MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURING SYSTEM. SYSTEM PRESSURE HOSE MUST ALWAYS BE CONNECTED TO TOOL "IN" PORT. SYSTEM RETURN HOSE MUST ALWAYS BE CONNECTED TO TOOL "OUT" PORT. REVERSING CONNECTIONS MAY CAUSE REVERSE TOOL OPERATION WHICH CAN RESULT IN SEVERE PERSONAL INJURY.

4. DO NOT CONNECT OPEN-CENTER TOOLS TO CLOSED-CENTER HYDRAULIC SYSTEMS. THIS MAY RESULT IN LOSS OF OTHER HYDRAULIC FUNCTIONS POWERED BY THE SAME SYSTEM AND/OR SEVERE PERSONAL INJURY.

5. BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BYSTANDERS CLEAR OF YOUR WORK AREA.

6. WEAR HEARING, EYE, FOOT, HAND AND HEAD PROTECTION.

7. TO AVOID PERSONAL INJURY OR EQUIPMENT DAMAGE, ALL TOOL REPAIR MAINTENANCE AND SERVICE MUST ONLY BE PERFORMED BY AUTHORIZED AND PROPERLY TRAINED PERSONNEL.

IMPORTANT

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

SEE OTHER SIDE

SAFETY TAG P/N 15875 (shown smaller then actual size)

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

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

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

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

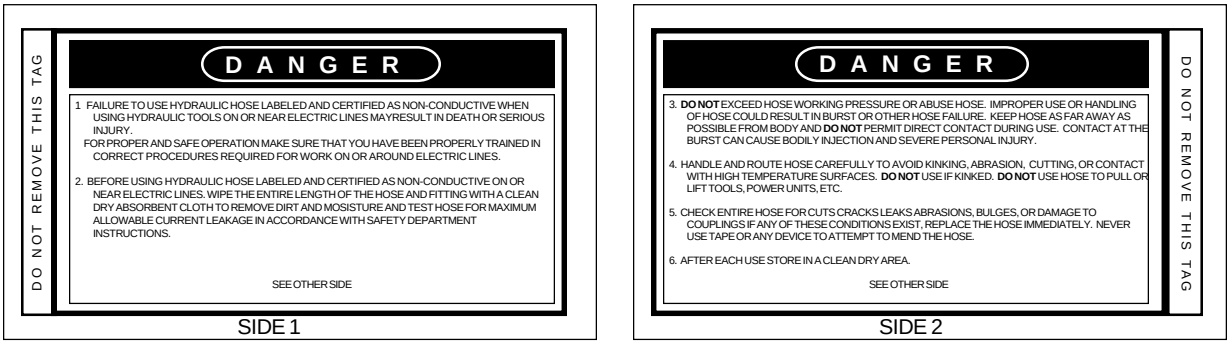
Hoses 2 and 3 listed above are **conductive** and **must never** be used near electrical conductors.

HOSE SAFETY TAGS

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

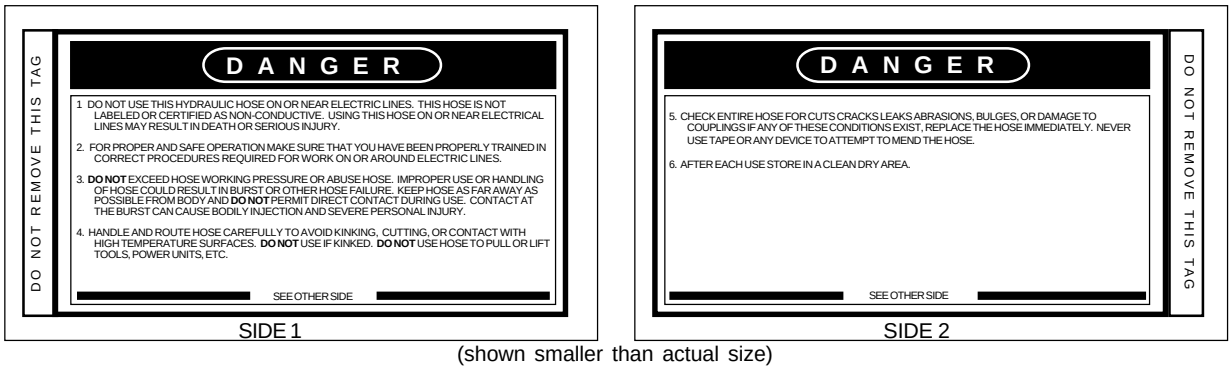
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley Distributor.

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.



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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.

HTMA REQUIREMENTS

HYDRAULIC SYSTEM REQUIREMENTS	TOOL CATEGORY  TYPE 1	 TYPEII	TYPEIII	TYPE RR
FLOW RATE	4-6 gpm (15-23 lpm)	7-9 gpm (26-34 lpm)	11-13 gpm (42-49 lpm)	9-10.5 gpm (34-40 lpm)
TOOL OPERATING PRESSURE (at the power supply outlet)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)
SYSTEM RELIEF VALVE SETTING (at the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2300 psi (152-159 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 min. 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 max. fluid temperature to: (at max. expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Min. 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)	7 hp (4.47 kW) 40° F (22° C)	6 hp (5.22 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 Min. full-flow filtration Sized for flow of at least: (For cold temp. startup and max. dirt-holding capacity)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)
HYDRAULIC FLUID Petroleum based (premium grade, anti-wear, non-conductive) VISCOSITY (at min. and max. operating temps)	100-400 ssu*	100-400 ssu* (20-82 centistokes)	100-400 ssu*	100-400 ssu*
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

NOTE:

These are general hydraulic system requirements. See tool Specification page for tool specific requirements.

OPERATION

PREOPERATION PROCEDURES

PREPARATION FOR INITIAL USE

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 flowmeter 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 PREOPERATION PROCEDURES BEFORE USING THIS PRODUCT.

NOTE:
Use 8 inch by 1 inch thick (Type 1) grinding wheels with a 5/8 arbor hole. Only use grinding wheels which comply with ANSI B7.1/ISO 525, 603.

1. Loosen 3 capscrews and lockwashers (64 & 63) and remove the guard front plate (62) and set aside.

2. Depress the push lock (45) to lock the spindle. Unscrew the jam nut (61). Remove the outside flange (60).

3. Make sure blotters or labels remain on the grinding wheel. Install the grinding wheel onto the spindle (33) and reinstall the outside flange and jam nut.

4. Depress the push lock and tighten the jam nut. Only tighten sufficiently to prevent slippage of the wheel between the flanges.

5. Reinstall the guard front plate, capscrews and lockwashers.

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 or cone away from the work surface.

3. Move the hydraulic circuit control valve to the "ON" position.

4. Squeeze 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.

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.

EQUIPMENT PROTECTION & CARE

NOTICE

In addition to the Safety Precautions 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 couples 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 Hydraulic Tools. Supply hoses must have a minimum working pressure rating of 2500 psi/172 bar.
- Do not exceed the rated flow (see Specifications) 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.

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.

Griner 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 blocked.	Locate and remove restriction.
	Hydraulic motor failure.	Inspect and repair.
	Hydraulic lines not connected.	Connect lines.
Grinder operates too slow.	Hydraulic motor speed to slow.	Check power unit for proper flow (7-10 gpm/26-38 lpm).
	High back-pressure.	Check hydraulic system for excessive back-pressure (over 250 psi/17 bar).
	Couplers or hoses blocked.	Locate and remove restriction.
	Oil 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 relief valve to 2100-2250 psi/145-155 bar.
	Hydraulic motor worn.	Inspect, repair or replace.
	Flow control malfunctioning.	Have flow control serviced at an authorized Stanley service center.
Grinder operates too fast.	Flow control malfunctioning.	Have flow control and valve body serviced at an authorized Stanley service center.

SPECIFICATIONS

Wheel Capacity	8 in. dia. x 1 in. thk x 5/8 arbor (type 1)
Pressure Range	1000-2000 psi/70-140 bar
Maximum Back Pressure	250 psi/17 bar
Flow Range	7-10 gpm/26-38 lpm
Optimum Flow	10 gpm / 38 lpm
Porting	-8 SAE O-ring
Couplers	HTMA/EHTMA Flush Face Type Male & Female
Hose Whips	Yes
Weight (with whip hoses & couplers)	14.1 lb / 6.40 kg
Overall Length	23 inches / 58.4 cm
Overall Width	10 inches / 25.4 cm
Overall Height	10.5 inches / 26.7 cm
RPM	4500 Max
Maximum Fluid Temperature	140° F/60° C

ACCESSORIES

28598	Grinding Wheel - Norton Norzon IV (8 inch dia. x 1 inch wide x 5/8 arbor)
26847	Assist Handle (Straight)

SERVICE

GRINDER DISASSEMBLY

SPINDLE & SPINDLE HOUSING DISASSEMBLY

1. Loosen 3 capscrews and lockwashers (64 & 63) and remove the guard front plate (62) and set aside.

2. Depress the push lock (45) to lock the spindle. Remove the jam nut (61), outside flange (60), grinding wheel if one is present, the drive flange (59) and the key (32).

3. Unscrew the capscrew (56) and slide the inner guard assy (58) off of the spindle housing (49).

4. Remove 3 capscrews (51) and lift the spindle housing (49) off of the motor front bearing housing (13). Pick out the coupling (37) and set it aside.

5. Press the spindle (33), bearing (34) and bearing spacer (36) out of the spindle housing by using an arbor press and pressing on the spindle from the threaded end. This procedure will also remove the v-ring seal (54) from the spindle. Discard the v-ring seal.

6. Remove the retaining ring (35) from the spindle.

7. Remove the bearing (34) from the spindle by placing the spindle in an arbor press and pressing on the coupling end.

8. Remove the bearing race (48) from the spindle by placing the spindle in an arbor press and pressing on the threaded end of the spindle.

6. Pry the seal (53) out of the spindle housing and discard it.

7. Remove the needle roller bearing (52) from the spindle housing by using a bearing puller tool.

8. The push lock (45) may be removed from the spindle housing by first removing the retaining ring (44). Pull the push lock out of the spindle housing. Pick out the spring (47). Pry the o-ring (46) off of the push lock and discard it.

MOTOR DISASSEMBLY

1. Complete steps 1 through 4 of the Spindle and Spindle Housing Disassembly.

3. Remove 8 capscrews (8) and using a flat-blade screwdriver or similar tool, gently pry the front (13) and rear (16) bearing housings apart. Lift the front bearing housing straight up. **Do Not** tilt the housing or pry on the flat surface inside of the surrounding groove. For prying, only use the groove provided at the split between the parts to prevent scratches on the inner mating surfaces.

4. Remove the two gears (5 & 15), needle roller key (14), and the idler shaft (4).

5. Remove the large face seal o-ring (3) while being careful not to damage the o-ring groove or surrounding surface.

6. While protecting the motor surface of the shaft housing from damage, hold the front bearing housing on its side and tap lightly on the small diameter end (gear side) of the motor shaft (39) to remove it and the bearing (38) from the front of the housing.

7. To remove the bearing (38) from the shaft (39), press on the spindle end of the motor shaft while supporting the outer race of the bearing. Discard the old bearing.

8. Remove the retaining ring (40) at the bottom of the ball bearing bore to service the shaft seal. Remove the seal gland (41) using the appropriate o-ring service tools to pry it out of its bore. Take care to avoid damaging the seal surfaces. Note seal orientation. Remove the o-ring (43) from the outside of the seal gland. Remove the quad ring (42) from the inside of the seal gland.

9. Remove the four bushings (2) from the shaft housing and gear chamber using p/n 11930 collet from p/n 05064 bearing puller kit.

INSPECTION AND CLEANING

Inspect and clean all parts as follows:

Cleaning

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

Gear Chamber

The chamber bores and bottoms around the shaft bushings should be polished and not rough or grooved. If the bushing bores are yellow-bronze, replace them and investigate the cause of wear.

The flat surfaces around the chamber and bolt holes should

be flat and free of nicks or burrs that could cause misalign-ment or leaks.

Bushings

The inside of the bushings should be gray with some bronze showing through. If significant yellow-bronze shows, replace the bushings. Inspect motor shaft for corresponding wear and replace as required.

The drive and idler gears should have straight tips without nicks; square tooth ends and a smooth even polish on the teeth and end faces. Check for cracks between the drive gear keyway and gear tooth root. Replace the gear if cracks are present.

Shaft Housing Assembly

The surface near the gears should show two interconnecting polished circles without a step. The bottom of the o-ring groove should be smooth as should the rest of the flat surface.

The bore for the shaft seal (inside of the seal gland) should be smooth or oil leakage may occur. The bore in which the seal liner fits should also be smooth.

Shake the shaft housing and the two seal check balls (not shown) should rattle. Unless there are leaks at the Allen type plugs which retain the check balls (not shown), or the check balls have jammed because of fluid contaminants, it is not necessary to remove the plugs or check balls. If these are removed, be sure the check seats (the bottom of the holes into which the balls are placed around the small oil holes) are smooth. If not, the seat can usually be fixed by cleaning and then placing the ball in the hole and tapping on the ball with an aluminum or bronze rod.

Reassemble ball and plug with the inner end of the plug just starting to show in the hole as viewed through the oil slot on the gear face of the housing. You can also use a wire through this hole to feel when the plug is deep enough. Note: Use sealant/adhesive such as Loctite^{tm} PST on plug to seal threads.

Shafts

The shaft diameter at the bearing and seal loca-tions must be smooth. Grooves, roughness or a reduced diameter indicate fluid contamination or damaged bushings. Grit particles may have been imbedded in the bushings, grinding into the hard-ened shaft. If abnormal shaft wear as above occurs (more than normal polishing), replace both the shaft and associated bushings.
Also check the hydraulic system for excess con-tamination in the fluid and for filter condition. Operating conditions may require changing from a 25-micron filter to an oversized 10-micron filter.

REASSEMBLY

1. Grease and carefully install the quad ring into the groove on the inside of the seal gland. Care-fully install the o-ring into the groove on the outside diameter of the seal gland and install the seal gland into the bore of the shaft housing. Replace the retaining ring.

2. To replace the bearing on the motor shaft, support the bearing inner race and press the motor shaft through the bearing inner race.

3. If the bushings were removed, install new bushings using a p/n 11918 bearing pusher.

4. Apply grease to the motor shaft, keyway and bushing then insert it through the shaft seal. Using a sleeve/socket with a diameter equal to the bearing O.D., press the bearing assembly into place. Press only on the outer race.

5. Install the needle roller in the keyway of the motor shaft. Use grease to keep the roller in place. Slide the drive gear over the roller and shaft. Install the idler shaft and gear.

6. Apply grease to the face seal o-ring groove; then install the o-ring.

7. Note the screw hole pattern on both housings. They will only assemble one way. With all parts aligned, carefully slide the gear housing assembly over the gears until it contacts the bearing housing assembly. **Do not force parts together**.

8. Turn the motor shaft manually to check for free rotation. Install the eight capscrews and then recheck rotation.

VALVE HANDLE DISASSEMBLY

1. Remove the 2 capscrews (11) which fasten the valve body (24) to the dipped tube (10).

2. Remove the valve body and related parts from the dipped tube by wiggling the valve body and pulling at the same time.

3. Remove the oil tubes (9) from the valve body. If one or both oil tubes remained in the dipped tube, remove the eight capscrews (8) which fasten the dipped tube to the motor assembly and then remove the dipped tube and the oil tubes.

4. Knock out the roll pin (20) which holds the valve spool (31)

to the trigger (21) and remove the valve spool assembly and spring (22).

5. Knock out the roll pin (20) which holds the trigger to the valve body and remove the trigger.

6. The flow regulator cartridge (30) may be removed by placing a wrench on the hex flats and unscrewing the cartridge assembly. The flow regulator cartridge is preset and is not field ser-viceable.

7. Pry out the 2 o-rings (23), the 2 o-rings (12) and discard them.

GRINDER REASSEMBLY

VALVE HANDLE REASSEMBLY

1. Apply grease and install 2 o-rings (23). Grease and install 2 o-rings (12).

2. Install the flow regulator cartridge (30).

3. Apply grease to the outer surface of the valve spool assembly and install it into the valve body as shown in the parts drawing.

4. Place the spring (22) and trigger (21) over the valve spool. Align the roll pin hole in the valve spool with the roll pin hole in the trigger and install the roll pin (20).

5. Align the roll pin hole in the trigger with the roll pin hole in the valve body and install the roll pin (20).

OIL TUBES AND DIPPED TUBE REASSEMBLY

1. Apply grease to 2 o-rings (12) and install them into the oil ports of the rear bearing retainer (16) of the motor.

2. Apply grease to the end of each oil tube (9) and insert one end of each tube into an oil port in the rear bearing retainer of the motor.

3. Slide the dipped tube (10) over the two oil tubes and align the fastener holes with those in the motor. Apply 242 Loctitetm and install the 8 capscrews (8). Tighten to 68-75 in. Ibs.

4. Place the valve handle (24) over the other end of the oil tubes making sure the tubes are not twisted and are aligned with the correct ports (directly in line with ports in the valve handle and motor). Push the valve handle onto the oil tubes and into the dipped tube until the valve handle is up against the end of the dipped tube. Some wiggling of the handle may be required to success-fully perform this procedure. Apply 242 Loctitetm and install the 2 capscrews (11). Tighten to 68-75 in. Ibs.

5. If removed, reinstall the hoses and couplers (female coupler to the “IN” port, male coupler to the “OUT” port).

SPINDLE & SPINDLE HOUSING REASSEMBLY

1. Lubricate the needle roller bearing (52) thor-oughly with lithium based grease for extreme pressure applications and containing an NLGI rating of 2. Install the bearing into the spindle housing (49) using an arbor press.

2. Apply grease and install the seal (53) into the spindle housing, on top of the needle roller bear-ing, with lips facing down.

3. Lubricate the bearing (34) thoroughly with lithium based grease for extreme pressure applica-tions and containing an NLGI rating of 2. Install the bearing onto the motor end of the spindle (33) using an arbor press. Secure the bearing in place with the retaining ring (35).

4. Install the bearing race (48) onto the spindle using an arbor press. Lubricate the outer surface of the race with the lithium grease used for the needle roller bearing.

5. Install the spindle (threaded end first) into the motor end of the spindle housing. Using an arbor press, press the spindle into the spindle housing until the bearing butts against the bottom of the bearing bore.

6. Install the bearing spacer (36) into the spindle housing.

7. Apply grease and install the v-ring seal (50) onto the spindle with the beveled side facing toward the threads of the spindle.

8. Lubricate the coupling (37) and coupling ends of the spindle and motor shaft with the extreme pressure lithium grease. Install the coupling onto the spindle and then install the completed spindle and spindle housing assembly to the motor being careful to assure the coupling is aligned with the motor shaft and spindle. Secure the assembly in place with the 3 capscrews (51).

9. Apply grease and install a new o-ring (46) onto the push lock (45).

10. Apply grease and install the spring (47) into the bore in the spindle housing. Apply grease to the push lock and install it on top of the spring being careful to assure the push lock slides inside of the spring. Push down on the push lock and install the retaining ring (44).

9. Do not install the wheel guard, flanges (59 & 60) or the grinding wheel until after testing the grinder for operation and performance.

TESTING FOR OPERATION & PERFORMANCE

1. Connect the grinder to a hydraulic power source and check for smooth running. Observe for leaks.

Note: Make sure the hydraulic power source is running at the lowest gpm/lpm rate it can while still producing full pressure.

2. Motors will sometimes be tight and require “break-in”.

⚠ WARNING

During this break-in procedure, maintain grip on wrench while hydraulic power is applied to motor. Loosing grip may result in injury.

break-in is accomplished by turning the shaft while applying hydraulic pressure. On the HG80 Grinders this procedure can be accomplished by obtain-ing a 5/8-11 nut and enough thick washers to permit the nut to be tightened against the washers on the spindle shaft.

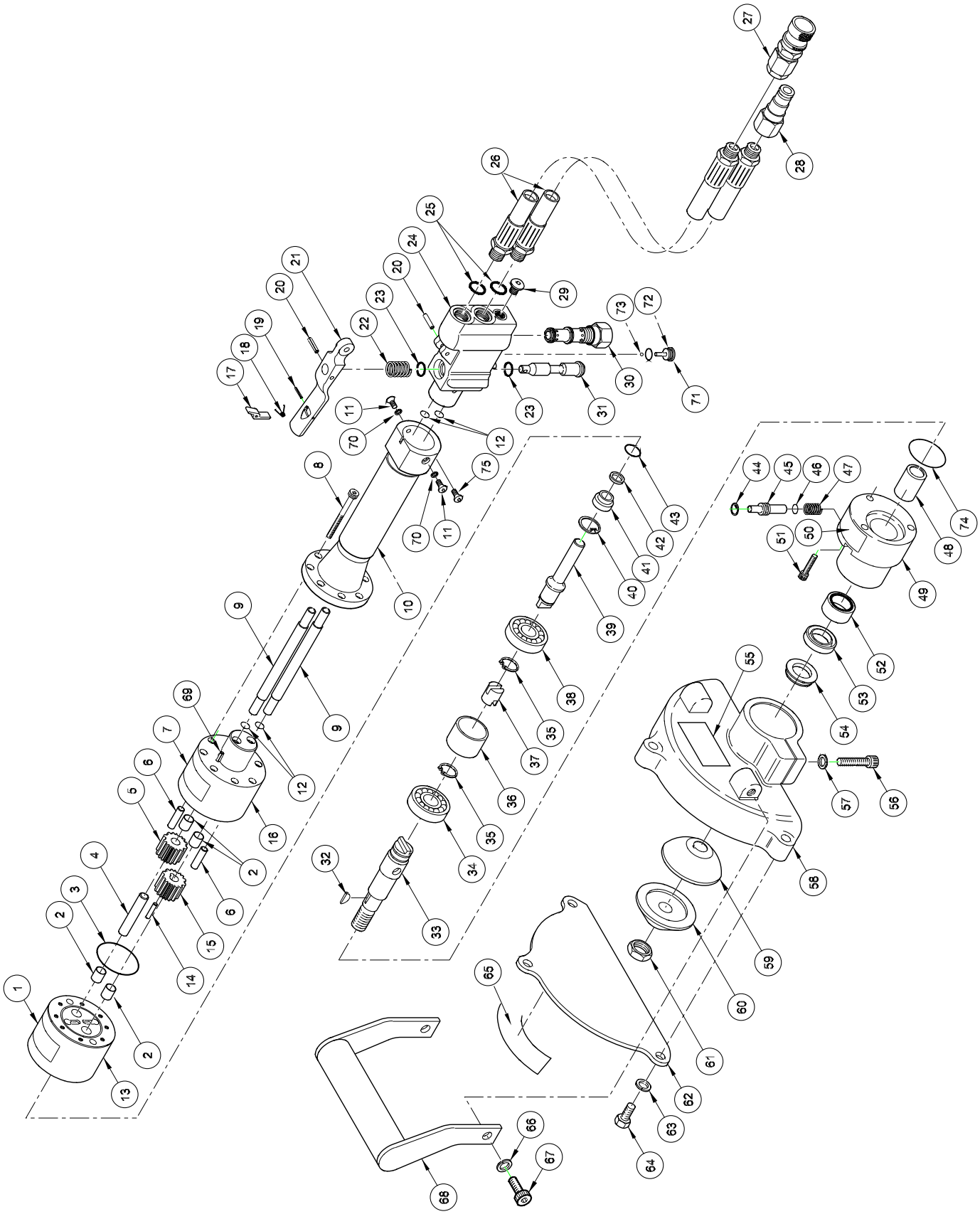
Using a wrench, turn the shaft while applying hydraulic power. Turn the shaft both with and against the hydraulic pressure until the motor starts and runs freely.

3. Install the inner guard assy (49) onto the spindle housing. Position it so that the handle on top of the housing is in line with the trigger on the valve handle and then tighten the capscrew (56).

4. Install the key (32) and drive flange (59). Install the grinding wheel, the outer flange (60) and the jam nut (61). Depress the push lock and tighten the jam nut sufficiently to prevent the grinding wheel from slipping between the flanges. DO NOT OVER TIGHTEN! SEE INSTALLATION OF GRINDING WHEELS UNDER THE SECTION MARKED “OPERATION”.

5. Install the guard front plate (62) with the 3 capscrews (64) and lockwashers (63).

HG80 PARTS ILLUSTRATION



HG80 PARTS LIST

Item No.	Part Number HG80110B	Part Number HG80120B	Qty	Description
1	25610	25610	1	Railroad Help Desk Sticker
2	06316	06316	4	Bushing
3	00178	00178	1	O-ring, 2-1/8 x 2-1/4 x 1/16 -034 70D*
4	06305	06305	1	Idler Shaft
5	25667	25667	1	Idler Gear
6	04031	04031	2	Dowel Pin
7	25413	25413	1	Name Tag (US & CE models)
8	03249	03249	8	Capscrew
9	27667	27667	2	Oil Tube
10	30008	30243	1	Dipped Tube
11	30366	30366	2	Capscrew, 10-24 x 3/8
12	00018	00018	4	O-ring, 7/16 x 9/16 x 1/16 -013 90D*
13	21430	25553	1	Front Bearing Hsg
	21437	25554	1	Front Brg Hsg Assy (incl item 2)
14	03227	03227	1	Needle Roller
15	25666	25666	1	Drive Gear
16	29775	29776	1	Rear Bearing Housing
	28566	28565	1	Rear Bearing Housing Assy (incl items 2 & 14)
17	27441	27441	1	Thumb Latch
18	27445	27445	1	Torsion Spring
19	01851	01851	1	Roll Pin
20	00114	00114	2	Roll Pin
21	27442	27442	1	Thumb Trigger
22	04097	04097	1	Coil Spring
23	01211	01211	2	O-ring, 5/8 x 3/4 x 1/16 -013 90D*
24	27608	27608	1	Dipped Valve Body
25	01605	01605	2	O-ring, .644 x .818 x .087 -908* (incl. w/ 26)
26	58630	58630	2	Hose Assy
27	24058	24058	1	Female Coupler Body
28	24059	24059	1	Male Coupler Body
29	350041	350041	1	-4 SAE Plug
30	25635	25635	1	Flow Regulator Cartridge (pre-set)
31	04480	04480	1	Valve Spool
32	02447	02447	1	Key
33	30230	30271	1	Spindle
34	00148	00148	1	Ball Bearing
35	00708	00708	2	Retaining Ring
36	30231	30231	1	Bearing Spacer
37	25360	25360	1	Coupling
38	00148	00148	1	Ball Bearing
39	06303	06303	1	Motor Shaft
40	00170	00170	1	Retaining Ring
41	30333	30333	1	Seal Gland
42	00214	00214	1	Quad Ring, 1/2 x 5/8 x 1/16 Q-4014*
43	350771	350771	1	O-ring, 11/16 x 13/16 xz 1/16 -017 90D*
44	25918	25918	1	Retaining Ring
45	25689	25689	1	Push Lock
46	00106	00106	1	O-ring, 3/8 x 1/2 x 1/16 -012*
47	25788	25788	1	Coil Spring
48	06299	06299	1	Bearing Race
49	30229	30229	1	Spindle Housing
50	03787	03787	1	GPM Sticker
51	00120	00120	3	Capscrew, 1/4-20 x 2-1/4
52	06313	06313	1	Needle Roller Bearing
53	06312	06312	1	Seal*
54	06311	06311	1	V-ring Seal*
55	05153	05153	1	Stanley Sticker
56	01458	01458	1	Capscrew, 3/8-16 x 3/4
57	01459	01459	2	Lockwasher
58	25908	25908	1	Inner Guard Assy
59	25355	25355	1	Drive Flange
60	25354	25354	1	Outside Flange
61	01714	03012	1	Nut
62	25906	25906	1	Guard Front Plate

Item No.	Part Number HG80110	Part Number HG80120	Qty	Description
63	01298	01298	3	Lockwasher
64	25907	25907	3	Modified Capscrew
65	25414	25556	1	Caution Sticker
66	01459	01459	3	Lockwasher
67	01525	01525	2	Capscrew, 3/8-16 x 3/4
68	25914	25914	1	Assist Handle Assy
69	20939	20939	1	Roll Pin
70	00032	00032	2	Lockwasher
71	01411	01411	1	O-ring
72	24289	24289	1	Plug
73	20145	20145	1	Steel Ball
74	01647	01647	1	O-ring
75	01521	01521	1	Capscrew, 1/4-20 x 1

Seal Kit Part No. 29139

Item No.	Part No.	Qty	Description
3	00178	1	O-ring
12	00018	4	O-ring
23	01211	2	O-ring
25	01605	2	O-ring
42	00214	1	Quad Ring
43	350771	1	O-ring
46	00106	1	O-ring
53	06312	1	Seal
54	06311	1	V-ring Seal

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.

STANLEY®

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