

# HDI-GR9M

9" HYDRAULIC GRINDER

3200 RPM - 15 lbs

Operators' Guide



CE

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HDI

# SAFETY PRECAUTIONS

## INTRODUCTION

READ THESE INSTRUCTIONS COMPLETELY BEFORE USING THIS TOOL.

The operator **MUST** read and understand these instructions and precautions before using or conducting any maintenance and/or repairs with the tool. Failure to do so may result in injury to the operator and/or damage to the grinder.

Users insufficiently informed on safe usage put themselves and others at risk.

The safety precautions noted in this manual and on any stickers, tags, or labels attached to the tool are for the safety of the operator and maintenance personnel. They must be complied with at all times.

Operators should heed any and all safety measures relating to local regulations and the particular work area. Please list any applicable measures in the area provided on page 6.

## SAFETY RULES

- 1.** DO NOT use the tool if unfamiliar with the safe operation and handling of the tool
- 2.** DO NOT use the tool while under the influence of alcohol, drugs, medication, or other substances that may impair concentration, vision, or dexterity.
- 3.** The tool is engineered to provide safe and reliable service when operated as recommended in this manual.
- 4.** DO NOT use the tool unless experienced in the use of hydraulic grinders. First time users should be thoroughly trained and guided under the supervision of an experienced and responsible user. It is strongly recommended that a proper training program be implemented for all first-time users.
- 5.** DO NOT use the tool unless the working site is clear of other personnel. Anyone in the vicinity or approaching the working site must wear proper safety equipment. Flying parts may cause serious injury or death.
- 7.** PROPER SAFETY EQUIPMENT is essential at all times when using the tool. This includes, but is not limited to, safety goggles, ear and head protection, safety shoes or boots with steel toes and non-skid soles, gloves and aprons.
- 8.** DO NOT use the tool in restricted or prohibited work areas, including extreme grades or unstable ground. The user must maintain proper balance and stability at all times.
- 9.** BE SURE to firmly grip the grinder with both hands during use. DO NOT attempt to over-reach while using the grinder.

- 10.** DO NOT clean or inspect the tool unless the hydraulic power source is disconnected. Serious injury can occur with accidental activation.
- 11.** BEFORE ACTIVATING the hydraulic power source, be certain all hoses are connected to the tool hose couplers. Also be certain every hose connection is secure and in proper condition.
- 12.** DO NOT use the tool if it is damaged, improperly adjusted, improperly maintained, or improperly assembled.
- 13.** DO NOT use the tool if oil temperatures exceed 140 degrees Fahrenheit/60 degrees Celsius. Activating the tool at temperatures exceeding these limits can cause user discomfort.
- 14.** DO NOT allow loose clothing or long hair near the tool. They can become tangled with parts rotating at high velocity and cause serious injury. BE SURE to keep body parts clear of the rotating wheel.
- 15.** ONLY use parts and accessories that conform to the standards of the tool as specified in these instructions.
- 16.** IMPORTANT: If the power supply is interrupted, immediately release the trigger.
- 17.** DO NOT change the fluid flow direction to reverse the rotation of the tool.
- 18.** USE EXTREME CAUTION when working near electrical conductors. Under all circumstances assume that conductors are live and that insulation, clothing, and hoses can transmit electricity. Only use certified hoses bearing a label stating that they are non-conductive.
- 19.** NEVER carry or set the grinder down while the wheel is rotating.
- 20.** ALWAYS examine wheels for any damage before installing on the grinder. NEVER use a wheel damaged in any way.
- 21.** NEVER move from location to location with the wheel installed on the grinder.
- 22.** NEVER store with the wheel installed on the grinder.
- 23.** NEVER tilt, jam, or wedge the grinder wheel while it is rotating.
- 24.** NEVER create sparks near combustible material.
- 25.** NEVER operate the grinder without the wheel guard securely in place.

ONLY AUTHORIZED AND TRAINED PERSONNEL MAY REPAIR, MAINTAIN, OR SERVICE THE TOOL. PERSONAL INJURY OR EQUIPMENT DAMAGE MAY OCCUR OTHERWISE.

# OPERATION

## BEFORE OPERATION

### *CHECK POWER SOURCE*

1. Make certain the hydraulic power source is equipped with a relief valve set to 2000 psi.
2. Check the hydraulic power source with a calibrated flow meter and pressure gauge.
3. Confirm that the hydraulic circuit matches the tool for open-center (oc) operation.

### *TEST THE TOOL*

1. Make sure that tool accessories are properly installed. Failure to do so may damage the tool and/or cause serious injury.
2. Be sure that all fittings are tightened, and that the grinder is clean and free of leakage

### *TEST THE TRIGGER*

1. Make sure the trigger moves easily between the "ON" and "OFF" positions.
2. Check that when the trigger is released it is set to disengage the grinder.

### *TEST THE HANDLE*

1. Make sure that the cross handle is firmly screwed into the handle bracket and wipe any oil from the handle for a secure grip.

### *TEST THE WHEEL GUARD*

1. Check the wheel guard for cracks, splits, chips, or any other damage.
2. If the wheel guard needs adjustment, loosen the two capscrews on the guard clamp to make necessary changes. Tighten after adjustment.

## INSTALLATION AND REMOVAL OF THE GRINDING WHEEL

1. Unscrew the jam nut from the spindle shaft. Set aside.
2. Place the grinding wheel over the spindle shaft.
3. Replace the jam nut on the spindle shaft. Tightly fasten using two open-end wrenches. Use one wrench to hold the flats of the spindle shaft and the other wrench on the jam nut.
4. To remove the grinding wheel, loosen the jam nut by reversing the process in step 3.

IMPORTANT: Only hand-tighten the jam nut with the wrenches. DO NOT over-tighten the grinding wheel by using a hammer or similar force.

### *CONNECT HOSES*

1. Always use a clean, lint-free cloth to clean the couplers before making a connection.
2. Connect hoses to the hydraulic power source first, then to the tool's fittings or quick disconnects. Connecting the return hose first and disconnecting it last will reduce trapped pressure within the tool.



3. Be sure that the flow is going in the proper direction by inspecting the flow indicators on the body of the wrench and the hose couplers. The inlet coupler is the female couple on the "IN" port.

## **OPERATION**

1. **IMPORTANT:** Observe all Safety Precautions.
2. **ONLY** use parts and accessories that conform to the standards of the tool as specified in these instructions.
3. **NEVER** start the tool with the wheel close to or touching the work surface. When starting, begin hydraulic flow at a lower gpm and steadily build to the desired rate. Never increase flow at a rate that jeopardizes balance or control of the grinder. If the tool is started with full hydraulic flow, the operator may lose balance, causing serious injury.

### *COLD WEATHER USE*

Be sure to preheat the hydraulic fluid in cold weather at low engine speed. Fluids should be at or above 50° Fahrenheit/10° Celsius (400 ssu/82 centistokes) before operating the tool. Hydraulic fluid that is too viscous or thick can damage the tool and/or hydraulic system.

## **CARE AND PROTECTION**

1. Keep all warning labels, stickers and tags clearly visible.
2. Wipe clean all couplers before any connections are made.
3. The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling hydraulic tools. Damage to the quick couplers may occur.
4. Store the tool in a clean dry space.
5. Make sure that all ports are properly connected. The circuit pressure hose must always be connected to the "IN" port. The circuit return hose must always be connected to the opposite port. Reversing circuit flow can cause failure of internal seals.
6. Always maintain the correct flow rate. Exceeding it can result in failure of internal seals.
7. Make sure that all recommended pressure relief valves are connected.
7. Always check back pressure at tool return port. Maximum back pressure is 250 PSI. Exceeding 250 PSI will cause premature shaft seal failure.

ONLY TRAINED AND EXPERIENCED PERSONNEL SHOULD PERFORM ANY NECESSARY MAINTENANCE AND/OR REPAIR.

# GR9M

## 9" HYDRAULIC GRINDER

3200 RPM - 15 lbs

The GR9M is a quiet, powerful, and reliable angle grinder used for top, face and side grinding, cutting and cleaning in all underwater applications



### GR9M 9" HYDRAULIC GRINDER SPECIFICATIONS

Drive	5/8-11 Spindle	
Output Speed	3200 rpm@ 12 gpm	
System	Open Center	
Hydraulic Flow Range	4-12 gpm	15-45 lpm
Weight	15 lb	6.8 kg
Length	11 in	280 mm
Width	10 in	390 mm
Maximum Pressure	2000 psi	138 bar
Maximum Back Pressure	250 psi	17 bar
Porting	-8 SAE O-ring	

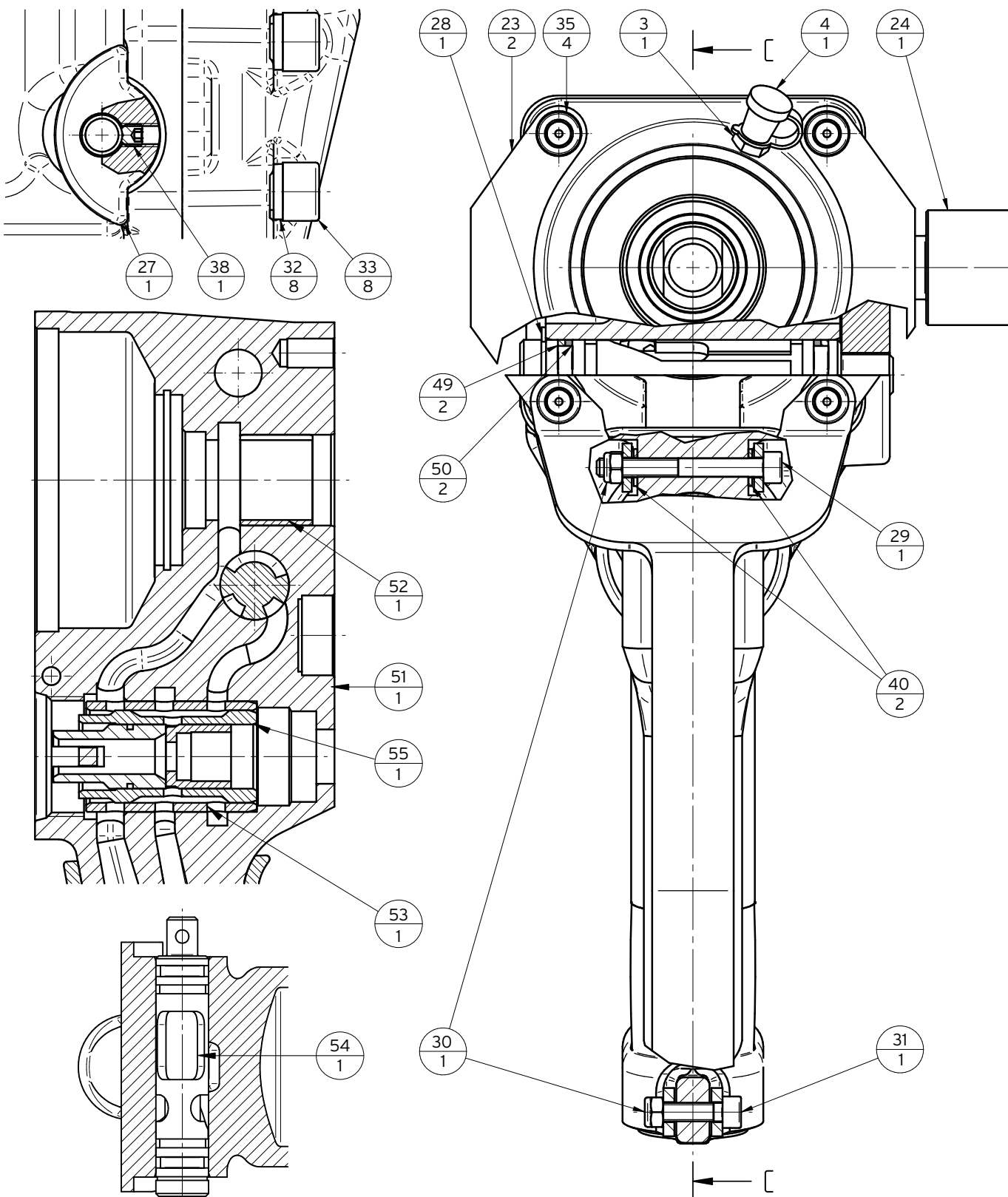
## PART NUMBERS AND REPAIR KITS

ONLY TRAINED AND EXPERIENCED PERSONNEL SHOULD PERFORM ANY NECESSARY MAINTENANCE AND/OR REPAIR.

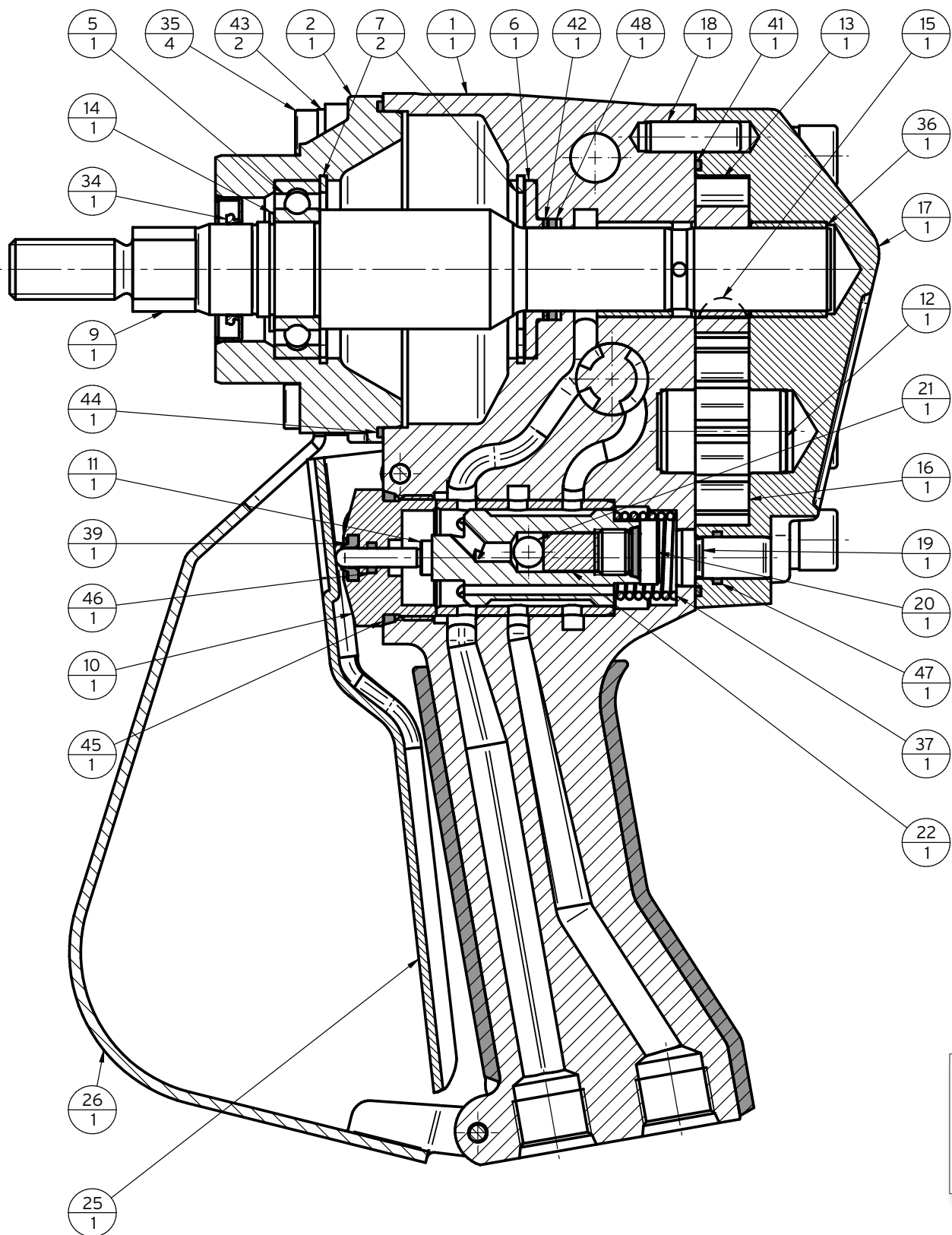
Item #	Description	Qty	P/N			
1	Full Body Handle Assembly	1	1898011			
2	Bearing Cover	1	1891049			
3	Grease Nipple	1	4830040			
4	Cap	1	1161337			
5	Bearing 6005	1	1891055			***
6	Cover Shaft Seal	1	1891023		**	***
7	Retaining Ring 47	2	4550430			
9	Shaft	1	1891048			
10	Nut Valve	1	1891017	*		
11	Trigger Pin	1	1891018	*		
12	Stud Driven Gear	1	1891024			
13	Driving Wheel	1	1891045			
14	Retaining Ring 25	1	4540200			
15	Woorruff Key 3 X 5 -013	1	1164480			
16	Full Driven Gear	1	1898008			
17	Cover	1	1891015			***
18	Pin	1	1891022			
19	Centering Pin	1	1891046			
20	Plug M12 X 1.5 OR	1	1891051			
21	Ball 7.938 X 40	1	4640100			
22	Bumper	1	1891047			
23	Handle Bracket	2	1891005			
24	Assist Handle	1	1891004			
25	Trigger	1	1891002			
26	Trigger Guard	1	1891003			
27	Reveres Lock Out	1	0009044			
28	Retaining Ring 19	1	1891035			
29	Screw M5 X 45	1	1891041			
30	Nut M5	2	1891043			
31	Screw M5 X 20	1	1891052			
32	Washer 10	8	1891040			

Item #	Description	Qty	P/N			
33	Screw M10 X 40	8	1891039			
34	Shaft Seal CR24-38-7CRW1V	1	1891050		**	***
35	Screw 5/16-18 X 1-1/4	4	1891053			
36	Bushing 2220 DU	1	1891006			***
37	Spring	1	1891000			
38	Screw 1/4-20 X 1/4	1	1891038			
39	Wiper PW5/S	1	1891032	*	**	
40	Washer 5.3	2	1891042			
41	O-Ring 86 X 2	1	1891030		**	***
42	Back Up Ring 22,68 X 2.18 X 1.4	1	1891029		**	***
43	Washer	2	1891054			
44	O-Ring 80 X 2	1	4670350		**	***
45	O-Ring 29.6 X 2.9	1	1891033	*	**	
46	O-Ring 4.5 X 1.8	1	1891034	*	**	
47	O-Ring 11 X 1.8	1	1891031		**	***
48	O-Ring 22 X 2.5	1	1891028		**	***
49	Back Up Ring 16 X 19 X 1.4	2	1891037		**	***
50	O-Ring 15 X 2	2	1891036		**	***
51	Pistol Grip Handle Dipped	1	1898005			
52	BUSHING 2213,5DU	1	1891006			***
53	Valve Sleeve	1	1891006			
54	Reverse Spool	1	1891008			
55	Assymetric Spool	1	1891044			
	9" Guard	1	9075			
	Flushed Faced Couplers	1	9076			
	5/8 - 11 Jamb Nut	1	9077			
REPAIR KITS						
	Rebuild Kit		1238			***
	Seal Kit		1239		**	
	Trigger Nut Kit		1240	*		***

# PART NUMBERS







**GR9M  
UNDERWATER  
HYDRAULIC  
GRINDER**

# WARRANTY

## LIMITED PRODUCT WARRANTY

Manufacturer warrants to the original purchaser that all products shall be free of defects in material and workmanship for a period of one year from the original date of sale. In no event shall the manufacturer be liable to the buyer or any other person or interest for any indirect, incidental or consequential damage or losses connected with the use or transportation of this product. Warranty is strictly limited to replacement or repair of the product only and is always at the sole discretion of the manufacturer.

## MANUFACTURER'S OBLIGATIONS

The manufacturer's sale obligation under this limited warranty is to repair and or replace parts deemed to be defective by the manufacturer. Parts and equipment cannot be returned without a returned goods authorization from the manufacturer. Shipping costs are not part of the warranty policy as most all warranty issues can be settled via electronic communications not limited to but including detailed photos.

## PARTS MANUFACTURED BY OTHERS

This warranty does not cover components manufactured by others. These parts are subject to the warranty of the specific manufacturer.

## WARRANTY EXCEPTIONS

The limited warranty does not include the following:

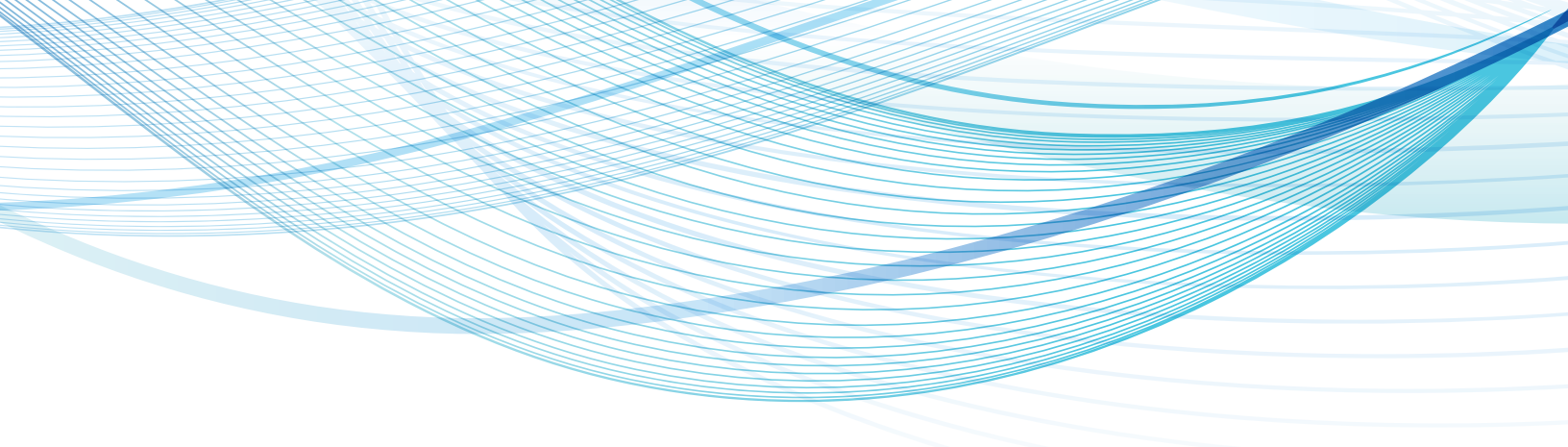
1. Equipment which has been abused, damaged, or used beyond its rated capacity or previously repaired by persons other than authorized service personnel.
2. Lost time or any other costs related directly or indirectly to the pumps performance or failure.
3. Any failure or performance deficiency attributed to misuse. Misuse is defined as any use of the product outside of its designed intent.
4. Costs of repairing damage caused by poor or improper maintenance.
5. Warranty of product that has been modified.
6. Transportation costs.
7. Any costs that exceed the value of a complete tool replacement.

# TROUBLESHOOTING

## TROUBLESHOOTING TIPS AND FIELD SOLUTIONS

If a performance problem occurs, consult the chart below for diagnoses and possible solutions. Before consulting the chart, ensure the tool is receiving the proper pressure and flow. Measure back pressure in hydraulic return line at power source during maximum recommended flow.

PROBLEM	CAUSE	SOLUTION
Low performance	Incorrect hydraulic flow.	Check that the power source is producing 4-12 gpm/15-45 lpm at 1000-2000 psi/70-140 bar.
	Defective quick disconnects.	Check each quick disconnect.
Fluid leaks at motor cap assembly face.	Fasteners loose.	Tighten to recommended torque value.
	Face O-ring worn or missing.	Replace as required.
	Motor cap assem/main housing damaged.	Replace as required.
	Damaged O-rings.	Replace as required. Refer to assembly instructions to prevent cutting the O-rings.
Fluid leaks at reversing spool.	Wrong hydraulic fluid. Circuit too hot.	See Hydraulic System Requirements for correct fluid/circuit specifications.
	Hydraulic pressure and return reversed.	Correct hose connections.
Fluid gets hot, power unit working hard.	Open-center tool on a closed-center circuit and vice versa.	Use tool to match circuit.
	Too much fluid going through tool.	Adjust flow for 12 gpm/34 lpm maximum.
	Circuit is generating high heat with flow controls, open relief valve, etc.	Use pump size/rpm for producing needed flow only. Eliminate circuit heating cause.
	Circuit has contaminants that have caused pump and valve wear and high heat generation.	Replace worn pump and valves. Install a large clean filter and keep circuit fluid clean.
Tool doesn't run.	Power unit not functioning.	Check that the power source is producing 4-12 gpm/15-45 lpm at 1000-2000 psi/70-140 bar.
	Coupler or hoses blocked.	Remove obstruction.
	Mechanical failure.	Disassemble tool and inspect for damage.
Tool runs backwards.	Pressure and return hoses reversed.	Correct for proper flow direction. Grinding wheel should rotate counter-clockwise when viewed from the shaft end.
Oil leaks at reversing spool.	Porting spool incorrectly assembled.	Refer to Service Instructions.
	Check valve in trigger spool not functioning correctly.	Replace trigger spool assembly. Check valve not serviceable.
	Mechanical failure.	Disassemble tool and inspect for damage.



Assembled and Tested in USA using Global Materials

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