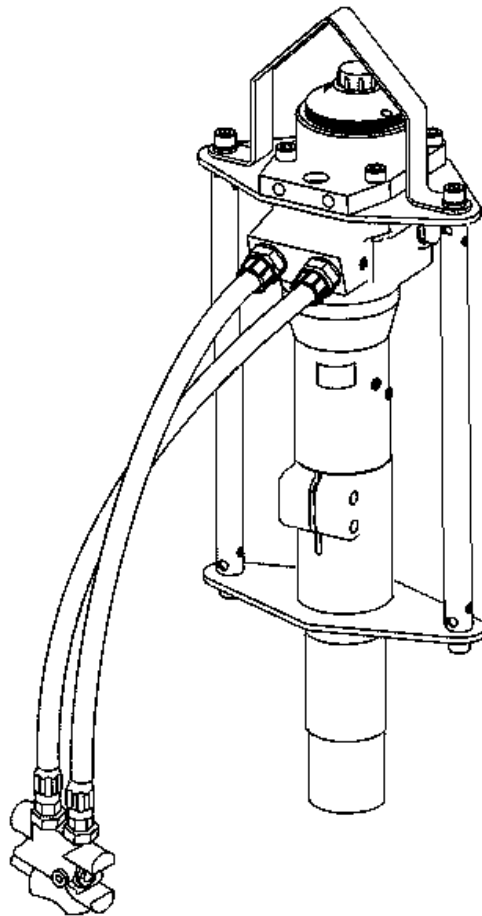




GROUND ROD DRIVER 5/8" & 1" INSTRUCTIONS



RGC CONSTRUCTION PRODUCTS
P/N 612235

BUFFALO, NY
07/29/08

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
1	SAFETY	1
1.1	Introduction	1
1.2	Safety Definitions	1
1.3	Post Pounder Safety Rules.....	1
2	SPECIFICATIONS	3
2.1	Introduction	3
2.2	Technical Data.....	3
2.3	Recommended Hydraulic Oil.....	3
2.4	Nameplate and Serial Number Tag.....	3
3	OPERATION.....	4
3.1	Before Operating The Post Pounder	4
3.2	Low Ambient And Oil Temperature Startup (<32°F)	4
3.3	High Ambient And Oil Temperature Startup (>100°F).....	4
3.4	Connection to Hydraulic Power Source	5
3.5	Pounding Procedure	6
3.6	Preparing For Shutdown.....	6
4	INSPECTION AND MAINTENANCE.....	7
4.1	General Maintenance Rules.....	7
4.2	Daily Maintenance.....	7
4.3	Annual Maintenance.....	8
4.4	Long-Term Storage	8
5	TROUBLESHOOTING.....	9
6	PARTS LISTS.....	10
6.1	Post Pounder Assembly.....	12
6.2	Hose Assembly.....	13
	LIMITED WARRANTY	14

LIST OF FIGURES

FIGURE	DESCRIPTION	PAGE
2-1	Typical Product Nameplate	3
6-1	Post Pounder Assembly.....	12
6-2	Hose Assembly.....	13

1 SAFETY

1.1 INTRODUCTION

Your Reimann & Georger Corp., Ground Rod Driver has been engineered to provide driving performance, long term economics and safety advantages that no other type can match. However, even a well-designed and well-built pounder can malfunction or become hazardous in the hands of an inexperienced and/or untrained user. Therefore, read this manual and related equipment manuals thoroughly before operating your post pounder to provide maximum safety for all operating personnel, and to get the maximum benefit from your equipment.

1.2 SAFETY DEFINITIONS

A safety message alerts you to potential hazards, which could injure you or others or cause property damage. The safety messages or signal words for product safety signs are **DANGER**, **WARNING**, and **CAUTION**. Each safety message is preceded by a safety alert symbol and is defined as follows:

DANGER: Indicates an imminently hazardous situation which, if not avoided, **will** cause death or serious injury. This safety message is limited to the most extreme situations.

WARNING: Indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury. It may also be used to alert against unsafe practices that may result in property-damage-only accidents.

1.3 POST POUNDER SAFETY RULES

1. Only trained personnel shall operate the post pounder or do repairs. A trained person is one who has read and thoroughly understands this instruction manual and related equipment manuals and, through training and experience, has shown knowledge regarding the safe operational procedures.
2. Construction area is to be kept clear of unauthorized personnel at all times. Place barricades or secure the area in such a manner that no personnel would be injured by flying debris.
3. Never use the post pounder in an explosive atmosphere and/or near combustible material that could be ignited by a spark.
4. The outside surface of the post pounder can be more than 30°C (86°F) warmer than the air temperature. Always wear protective clothing including gloves.
5. Keep clothing and all parts of the body away from moving parts of this post pounder when connected to a hydraulic power source or when being used.
6. Safety goggles must be worn by operator and all bystanders to prevent injury to eyes.
7. Safety shoes **must** provide good footing to prevent slipping or falling down.
8. Hearing protection must be worn to prevent permanent hearing damage.
9. Use only properly sized adapters for which the post pounder was designed.
10. Avoid “free blows.” Free blows result when the tool is operating, but is not contacting the material being driven.
11. Never operate the post pounder under the influence of drugs, alcohol, or medication.
12. Do not use the post pounder when you are tired or fatigued.
13. Do not use a breaker that shows any signs of damage.

14. Keep the post pounder handles dry, clean, and free of oil or fuel.
15. Always hold the post pounder with both hands during operation.
16. Do NOT attempt to adjust the post pounder during operation.
17. Always shut off the hydraulic power source before disconnecting the hoses, or servicing the post pounder.
18. Always shut off the hydraulic power source when not using the equipment.

2 SPECIFICATIONS

2.1 INTRODUCTION

Your Reimann & Georger Corp. Ground Rod Driver is a heavy duty hydraulic powered rod driver designed for the ramming of 5/8" or 1" diameter ground rods into the ground. As with most hydraulic tools, the hydraulic system requirements detailed in the following section must be met but not exceeded to support tool performance and longevity of equipment.

2.2 TECHNICAL DATA

The following specifications apply to the Ground Rod Driver.

Type of Hydraulic System Open Center or Closed Center

	ENGLISH	METRIC
Weight with hose whips and tool steel	53 lbs.	(24 kg.)
Working pressure	1500 to 1800 psi	(105 to 125 bar)
Maximum back pressure in return line	200 psi	(15 bar)
Ground Rod Driver 5/8"	Up to .625" in. Diameter	(16 mm)
Ground Rod Driver 1"	Up to 1.00" in. Diameter	(25 mm)
Oil Flow	8gpm	(30 lpm)
Accumulator charge pressure (nitrogen)	725 psi	(50 bar)
Required cooling capacity	6825 BTU/hr.	(2 kw)
Blow frequency (blows/minute)		1740 (29HZ) @ 8 gpm
Couplings		1/2" HTMA flush face

2.3 RECOMMENDED HYDRAULIC OIL

Viscosity	160-230 SUS at 100°F	(32-46 cSt at 40°C)
Viscosity index		Minimum 100

Many types of compatible hydraulic oil are available through your local dealer/distributor. As an original equipment manufacturer, RGC supplies a Grade ISO VG 32 hydraulic turbine oil.

When the tool works continuously, the oil temperature will steady at a certain level called the oil working temperature. Depending on the nature of the job and the cooling capacity of the system, the oil working temperature will be 20 degrees C to 40 degrees C (68 degrees F to 104 degrees F) above the air temperature. At the working temperature, the oil viscosity must be within the ideal area. The tool may not be operated if the viscosity is not within the allowable area or if the temperature is not within -20 degrees C to 70 degrees C (-4 degrees F to 158 degrees F).

Hydraulic oil types are too numerous a partial list is in this manual. If you have any question concerning the type of oil suitable for operation, please consult your local supplier or Reimann & Georger Corp. for details.

Applicable Oil Types

TYPE OF OIL	(-4 °F)	(14 °F)	(32 °F)	(50 °F)	(68 °F)	(86 °F)	(104 °F)	(122 °F)	(140 °F)	(158 °F)	Viscosity at 40 °C (104 °F)
	-20 °C	-10 °C	0 °C	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C	
BP Biohyd 32	Permitted						Recommended				36.0 cSt
BP Biohyd 46	Permitted						Recommended				44.0 cSt
BP Biohyd SE 46	Permitted						Recommended				46.0 cSt
BP Biohyd SE 68	Permitted			Recommended						72.2 cSt	
CASTROL Biotech HTG 32	Permitted						Recommended				36.8 cSt
MOBIL EAL 224 H	Permitted			Recommended						36.0 cSt	
Q8 Holbein 46	Permitted						Recommended				48.4 cSt
SHELL Naturelle HF	Permitted						Recommended				35.0 cSt
STATOIL M 32-68	Permitted						Recommended				47.4 cSt
SHELL Tellus oil T46	Permitted						Recommended				46.0 cSt
ESSO Unavis N46	Permitted			Recommended						45.7 cSt	
TEXACO Rando oil HDZ46	Permitted						Recommended				51.0 cSt
MOBIL DTE 15	Permitted						Recommended				44.9 cSt



Permitted oil temperature



Recommended oil temperature

2.4 NAMEPLATE AND SERIAL NUMBER TAG

It is important to identify your Ground Rod Driver completely and accurately whenever ordering spare parts or requesting assistance in service. The post pounder has a product nameplate that states the model and serial numbers. The post pounder label should appear as the sample nameplate shown in Figure 2-1. Record the model and serial number for future reference.



Figure 2-1.
Typical Ground Rod Driver Product Nameplate

MODEL _____

SERIAL NUMBER _____

3 OPERATION

3.1 BEFORE OPERATING THE GROUND ROD DRIVER

1. Read and fully understand the operating manual for the hydraulic power source being used.
2. Every tool has a maximum operating flow and pressure which, if exceeded, is a potential cause of damage to the tool or hydraulic power source. Check the power supply's flow and pressure output against the tool's requirements.
3. Use caution when refueling a gasoline driven hydraulic power source. Make sure the gas caps on the hydraulic power source and fuel can are properly tightened. Move the hydraulic power source at least 10 feet from the fueling point before starting the engine.
4. Do not start ground rod driving without first checking for live electrical wiring near the work site, or imbedded in the medium.

3.2 LOW AMBIENT AND OIL TEMPERATURE STARTUP (<32°F)

Oil temperatures can affect both power supply and tool performance. For ambient operating temperatures between 0-32°F, RGC recommends a warm-up period relative to outside temperatures to insure proper performance levels.

An oil becomes more viscous or thick as the ambient temperature lowers, which slows down the system. It is necessary to pre-heat the hydraulic oil in the power supply before use by proceeding as follows:

1. Leave the equipment inside a heated facility before use if practical, but this is not always possible.
2. At the job site, start the power supply and let the engine warm up for 5 minutes WITHOUT tool or hoses connected.
3. Adjust throttle speed to full engine rpm, then SLOWLY turn flow valve to ON position. Allow unit to run for 5-7 minutes, then turn flow valve to OFF position. Return engine RPM to slow idle; then turn off engine. Connect tool and hydraulic hoses as described in section 3.4. This procedure will labor the engine and generate the required heat in the power supply oil.
4. Taking the time to pre-heat the oil far exceeds the length of time it takes to get the system up to speed without pre-heating, but this will provide the level of designed performance.

3.3 HIGH AMBIENT AND OIL TEMPERATURE STARTUP (>100°F)

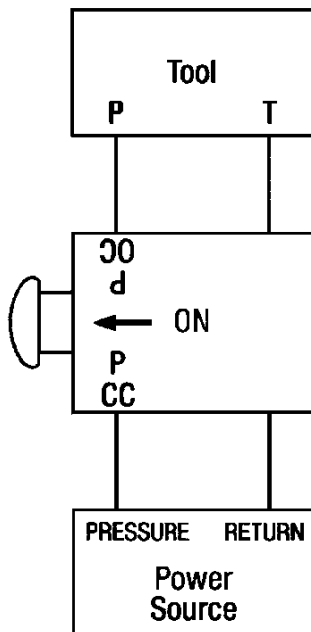
An oil becomes less viscous or thinner as ambient temperature increases which causes the hydraulic oil to operate at an elevated temperature. For ambient operating temperatures above 100°F (38°C), RGC recommends the following:

1. Insure that the hydraulic fluid level is up in the power supply reservoir.
2. Operate the tool at a reduced cycle time—10 minutes on, then 10 minutes off.

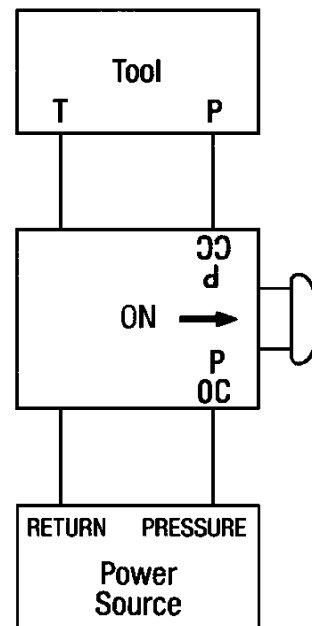
3.4 CONNECTION TO HYDRAULIC POWER SOURCE

1. Before making any hydraulic connections, inspect all hoses for leaks and risks of rupture as follows:
 - a. Inspect each hose for breaks, cracks, worn spots, bulges, chemical attack, kinks or any other damage. Never stop any detected leak with your hand or fingers. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic oil.
 - b. Replace a damaged hose immediately. Never repair the hose.
2. For connection, use a high pressure hose (inside diameter 1/2") which, as a minimum, is designed for a working pressure of 2500 psi. The breaker socket "P" is the oil inlet (pressure), and the socket "T" is the oil outlet (tank).
3. The ground rod driver uses flush-face quick-release couplings which are durable and very easy to clean. They are always fitted such that the male part gives oil and the female part receives oil.
4. The ground rod driver is designed for an oil flow of 8 gpm at 2250 psi. Do NOT exceed this flow or pressure.
5. If the oil flow cannot be adjusted by lowering the rpm, a flow divider must be installed. This will insure the breaker receives the correct oil flow and return excess oil back to the tank.
6. To protect the ground rod driver from excessively high pressure, the pressure relief valve of the hydraulic power source must be set at 2300 psi (160 bar). If this is not possible, connection can be made by installing a separate pressure relief valve set at 2300 psi (160 bar). If in doubt, contact your dealer.
7. The back pressure (return line pressure) of the ground rod driver should be as low as possible and must not exceed 200 psi (15 bar) measured at the post pounder. If this pressure is exceeded, the ground rod driver will not reciprocate.
8. The hydraulic power source must be fitted with a return line oil filter with a filter rating of 10-25 microns.

Connecting Hoses on a Closed-Center Hydraulic System



Connecting Hoses on an Open-Center Hydraulic System



3.5 GROUND ROD DRIVING PROCEDURE

1. Clean the quick-release couplings if needed and connect the hose whips to the extension hoses from the power source.
2. When lifting the ground rod driver to start the procedure, observe the following precautions:
 - a. Be sure of your footing.
 - b. Keep hands off remote hand valve to avoid accidental operation.
 - c. Bend your knees and lift with your legs.
 - d. Hold ground rod driver close to your body when lifting.
5. Slide the ground rod into the ground rod driver.
6. Lift the ground rod and driver to a vertical position. For long and heavy ground rods, two people should be used.
7. To start the tool, activate the control spool on the remote control valve to the ON position. To stop the tool, move the control valve spool on the remote control valve to the OFF position.



CAUTION:

AVOID “FREE BLOWS” WHERE THE PISTON DOES NOT HIT THE TOOL STEEL. THIS WILL CAUSE UNNECESSARY HEATING OF THE OIL AND, IN TIME, DAMAGE BOTH THE SEALS AND THE BREAKER.

3.6 PREPARING FOR SHUTDOWN

8. To stop the tool, move the control valve spool on the remote control valve to the OFF position.
1. Stop the hydraulic power source following the procedure in the respective instruction manual.
2. Lift the ground rod driver off the ground rod.
3. Disconnect the hoses from the ground rod driver.



WARNING:

NEVER DISCONNECT ANY HYDRAULICALLY OPERATED PART OF THE POST POUNDER OR REMOVE HYDRAULIC COMPONENTS, LINES, OR FITTINGS WHILE THE POWER SOURCE IS RUNNING OR WHENEVER THE HYDRAULIC FLUID IS HOT.

LIQUID UNDER HIGH PRESSURE CAN PIERCE THE SKIN, CAUSING SERIOUS INJURY OR DEATH. HOT LIQUID CAN CAUSE SERIOUS PERSONAL BURNS. IF AN INJURY OCCURS, GET IMMEDIATE MEDICAL ATTENTION.

4. Secure the ground rod driver and hydraulic power source to prevent unauthorized use.
5. Store the ground rod driver away from excessive heat or moisture. Store in a clean, dry area away from exposure to high humidity, liquids, or freezing temperatures.

4 INSPECTION AND MAINTENANCE

4.1 GENERAL MAINTENANCE RULES

Hydraulic fluid can become contaminated after extended periods of use which can cause restrictions in the system. Check to see that the fluid is clean, and change at recommended intervals to extend tool's life. Refer to the respective manual for maintenance information on the hydraulic power source.

1. Proper maintenance of the post pounder and related equipment requires timely adhering to all the guidelines given in this chapter. Proper maintenance is required to maintain the system in good condition and free of defects.
2. Review and follow all the safety rules given in Chapter 1 before attempting any maintenance.
3. Only authorized personnel should be allowed in the maintenance area. Authorized personnel are the trained people as defined below and their supervision.
4. Repairs must be made only by trained personnel. A trained person is one who has read and thoroughly understands this instruction manual and related equipment manuals and, through training and experience, has shown knowledge regarding the safe operational procedures.



CAUTION:

BEFORE STARTING ANY MAINTENANCE, DISCONNECT FROM HYDRAULIC POWER SOURCE TO PREVENT ACCIDENTAL STARTUP.



WARNING:

DURING ANY MAINTENANCE OR REPAIR PROCEDURES, DO NOT ATTEMPT ANY POUNDING. THIS CAN CAUSE EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY

4.2 DAILY MAINTENANCE

1. Wipe all tool surfaces clean.
2. Inspect the hydraulic hoses and fittings for signs of leaks, cracks, wear, or damage. Replace if necessary.
3. Disconnect hydraulic hoses and wipe couplings clean, especially before a connection is made. This is the single most common point of entry for foreign particles which can cause premature wear of hydraulic components in the system. Install dust caps over the hydraulic ports or couplings when the tool is disconnected.
4. Check that all hardware on the ground rod driver is tight.
5. Check the hoses before each use for damage. Replace a damaged hose immediately. Never repair the hose.
6. Before each use, insure that all broken, worn or defective parts are repaired or replaced.

4.3 ANNUAL MAINTENANCE

1. Check the function and performance of the ground rod driver.
2. It is recommended that the ground rod driver be serviced at an authorized RGC service center where:
 - a. the accumulator is inspected and recharged.
 - b. moving parts, bushing, and bolts for example, are inspected and, if required, replaced.
 - c. all seals are replaced.

4.4 LONG-TERM STORAGE

During long-term storage, the striking piston must be protected against corrosion. Connect the quick-release couplings together and press the striking piston to its upper position with a clean tool or wood dowel placed inside the bushing.

5 TROUBLESHOOTING

The following chart is intended to assist with troubleshooting the Ground Rod Driver. While not all inclusive, the chart outlines the most common causes of a problem and the recommended course of action.

The troubleshooting guide for the associated power supply is in the instruction manual specifically for this unit.

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Tool does not strike—pressure does not build up when trigger is activated.	<p>No or incorrect flow or pressure—check flow and pressure as described in Section 3.4.</p> <p>“P” and “T” hoses interchanged—check connection. Standard connection has oil flowing from male quick release coupling into female quick release coupling. The tail-hose of the breaker P connection is fitted with female coupling.</p> <p>Insufficient activation of trigger valve—replace defective parts.</p>
Tool does not strike—pressure is built up when trigger is activated.	<p>Back pressure too high—make direct tank connection. Maximum back pressure is 200 psi (15 bar) measured at the post pounder. See Section 3.4.</p> <p>Quick release coupling in return line defect—locate and replace defective coupling.</p> <p>Striking piston sticks—push the tool hard against the ground rod.</p> <p>Striking piston sticks possibly due to thickening of cylinder:</p> <ol style="list-style-type: none"> 1. Chamfer/polish slightly the edge at the cylinder dashpot where the cylinder bore changes size. 2. Check oil viscosity. Thin oil increases the risk of cylinder thickening. <p>Spool sticks—dismount and check that all parts move easily. Polish slightly if necessary.</p> <p>Seals defect—dismount, check, and replace.</p>
Tool runs weakly or erratically.	<p>Insufficient flow—check flow and pressure.</p> <p>Hydraulic fluid cold.</p> <p>Seals defect—replace seals.</p> <p>Wear, internal leakage:</p> <ol style="list-style-type: none"> 1. Dismantle, check and replace defective or worn parts. 2. Check purity of oil and oil viscosity at working temperature. Thin oil can cause increased internal leakage.
Hoses pulsate.	Accumulator defect—replace accumulator diaphragm and charge with nitrogen.
Oil leaking from tool.	Defective seals—replace seals.

6 PARTS LISTS

The following parts lists apply to the Post Pounder only. The parts list for the hydraulic power source is in the separate manual supplied for this item. Each item number on the following parts lists can be matched with the item number shown on the corresponding assembly drawings as described in the following sections.

6.1 GROUND ROD DRIVER 5/8" & 1"

Refer to Figure 6-1.

Item Number	Part Number	Quantity	Description
1	2422083	1	ACCUMULATOR BODY
2	2422130	1	VALVE HOUSING
3	2422148	1	CYLINDER
4	2428871	1	STRIKING PISTON
5	2422164	1	ACCUMULATOR COVER
6	2422172	1	DIAPHRAGM
8	2422180	1	CHARGING SCREW
9	2422202	4	SCREW M10 X 35
10	2422202	4	SCREW M10 X 35
11*	2422210	1	SEAL RING 8 DIA/12 DIA X 1
12	2424710	1	SPOOL
15	2422253	1	GUIDE SOCKET
16	2422261	1	SPOOL SOCKET
17*	2422270	1	PROTECTIVE CAP M24 X 1.5
18*	2422288	1	O-RING 24 X 1.5
19*	2422296	4	O-RING 18 X 2
20*	2422300	1	O-RING 30 X 2
21*	2422318	1	O-RING 32 X 2
22*	2422326	1	O-RING 25 X 1.5
24*	2422334	1	LOCKING RING
25*	2422342	1	SEAL 32 / 40 X 6
26*	2422350	1	SEAL 32 / 45 X 7 / 10
27*	2422369	2	SEAL RING 1/2
28	2428767	2	ADAPTOR JIC
31	2428820	1	TRIGGER CARTRIDGE
36*	2422512	1	O-RING 16.3 X 2.4
40	2422555	6	FITTING 02 KRG
41	2422563	3	FITTING 04 KRG
44	2422768	1	O-RING 6 X 2
49	2422784	1	O-RING 8 X 2
50	2422814	4	BACK-UP WASHER
51	2422822	1	SCREW
52	2422830	1	CHECK VALVE BALL
53*	2422849	1	SEAL RING 9 / 14 X 1
54*	2422857	1	O-RING 82 X 1.5
55*	2422881	1	O-RING 16 X 1.5
56*	2422890	2	O-RING 13 X 1.5
57	2428880	1	TOP PLATE

Item Number	Part Number	Quantity	Description
58*	2422962	1	BACK UP WASHER 32.7 / 45 X 2.5
59*	2423063	1	LOCKING RING
SEAL KITS	2428782	1	SEAL KIT (includes items marked with an asterisk *)
81	6204036	1	TAG MODEL RGC HYDR TOOL
82	6205652	1	DECAL "8 GPM"
83			

HANDLES, HOSES, and REMOTE CONTROL VALVE

Refer to Figure 6-2.

Item Number	Part Number	Quantity	Description
100	2428944	2	HANDLE
101	2428960	1	BOTTOM PLATE
102	2431082	4	SCREW 10 X 20
103	2428758	4	WASHER 10
104	2428979	1	LIFTING BRACKET
106	2428732	2	HOSE WHIP 70"
107	5604554	1	ADAPTER 3/4" SAE M X 3/4 JIC M
108	5604680	1	ADAPTER 9/16" SAE M X 3/4 JIC M
	24111952		CONTROL VALVE, COMPLETE includes the following:
110	24111953K	1	VALVE BODY
111	24F21673	2	PIPI PLUG, 1/16"
112	24F015257	2	O-RING .437 X .562 X .062-68
113	24113418	1	SPOOL
114	24106576	2	BUTTON
115	24F018627	2	SCREW, CAP, #10-24 X 1/2 FLAT HEAD

NOSE PART, GROUND ROD DRIVER 1"

Refer to Figure 6-3.

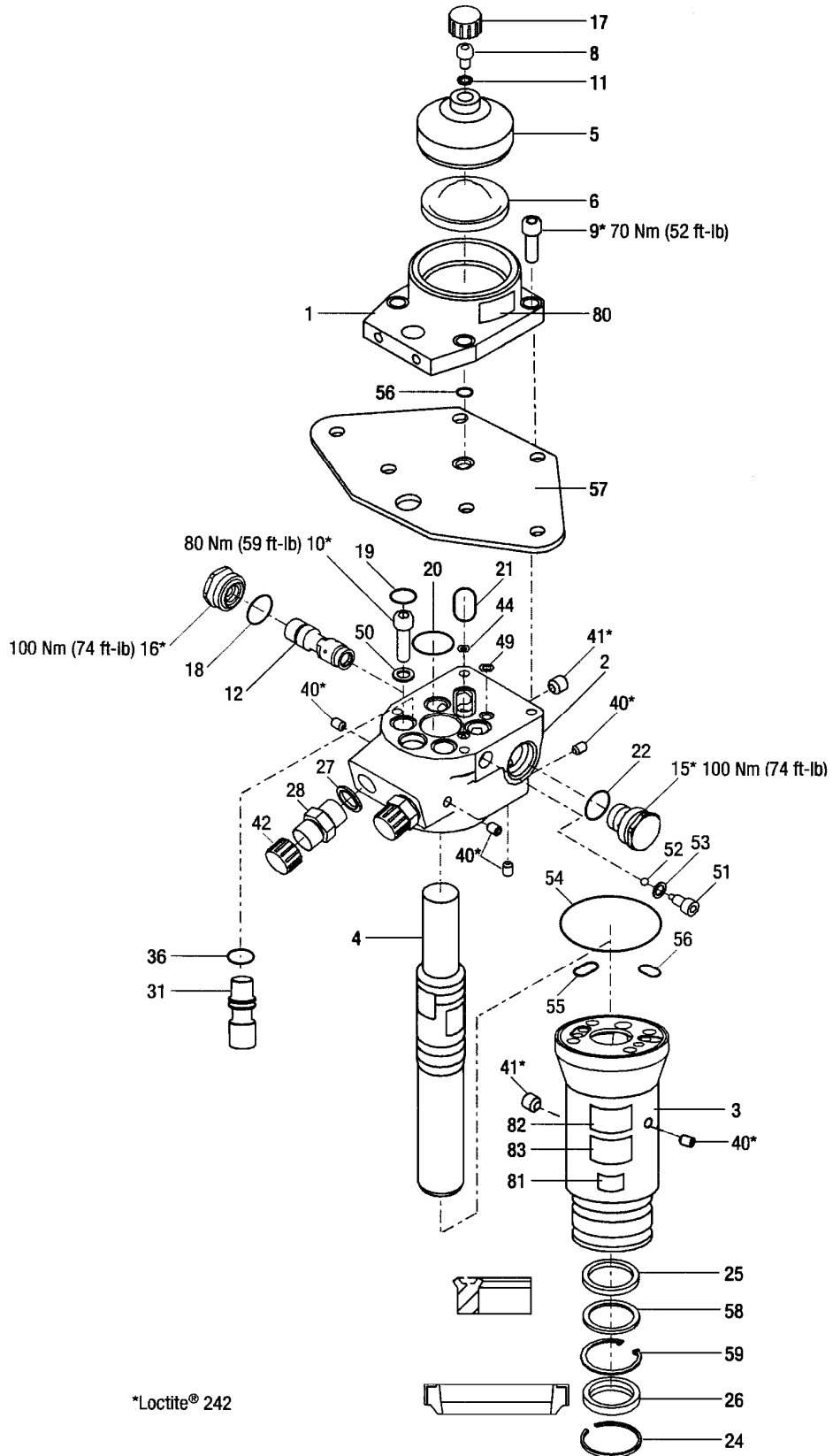
Item Number	Part Number	Quantity	Description
	2428790		NOSE PART, 1", COMPLETE includes the following:
120	2428898	1	NOSE PART
121	2428901	1	ANVIL BUSHING
122	2428910	1	ANVIL, 25MM (1")
123	2426861	1	SPACER
124	2422622	1	SPRING
125	2423756	2	SCREW, M10 X 55

NOSE PART, GROUND ROD DRIVER 5/8"

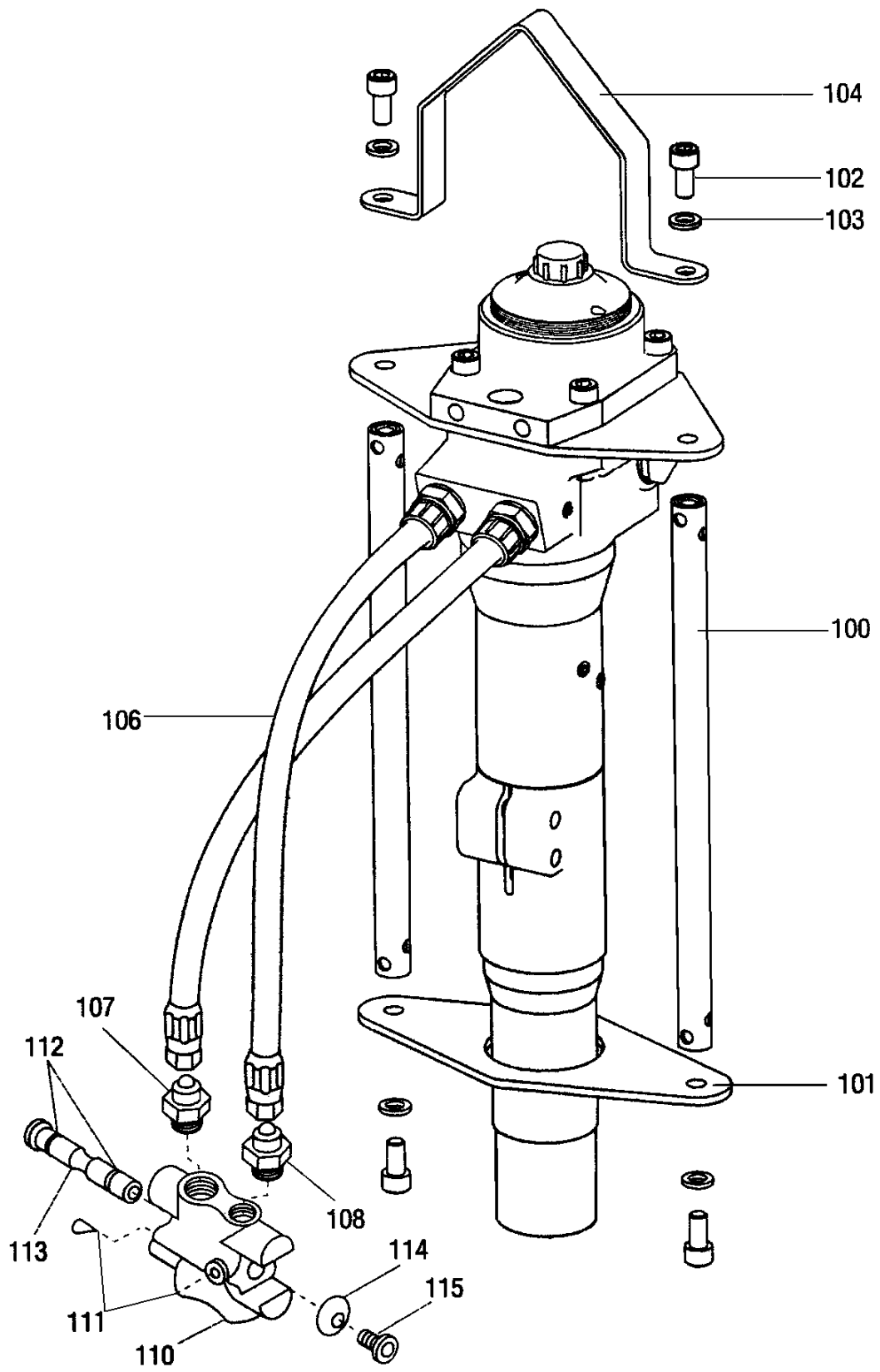
Refer to Figure 6-3.

Item Number	Part Number	Quantity	Description
	2428804		NOSE PART, 5/8", COMPLETE includes the following:
120	2428898	1	NOSE PART
121	2428901	1	ANVIL BUSHING
122	2428936	1	ANVIL, 16MM (5/8")
123	2426861	1	SPACER
124	2422622	1	SPRING
125	2423756	2	SCREW, M10 X 55

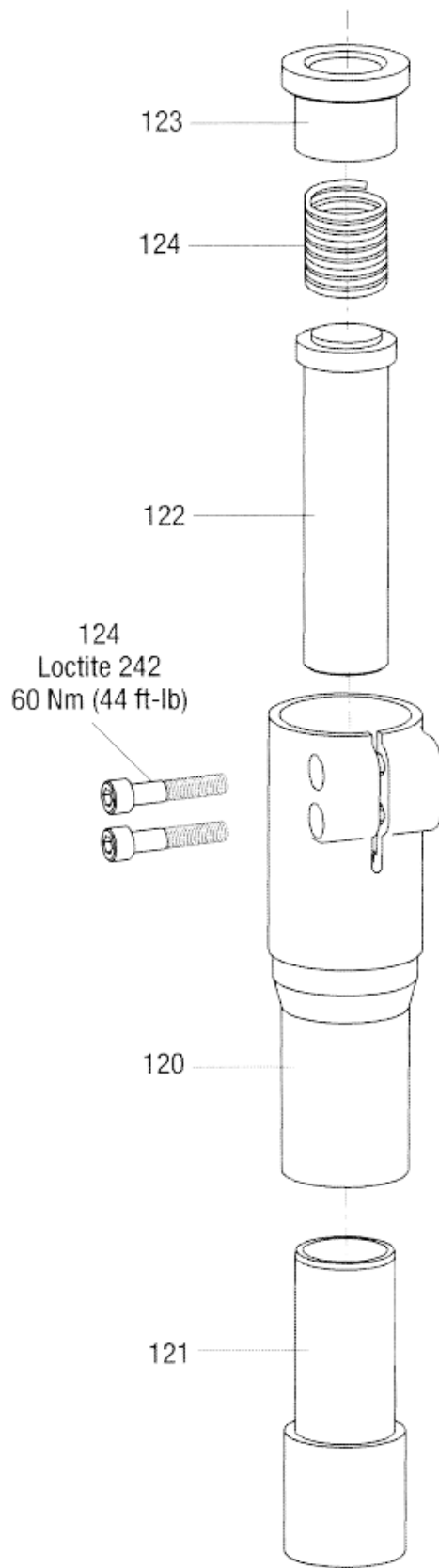
Illustration – Main



Ground Rod Driver
Main Assembly
Figure 6-1.



Ground Rod Driver
Handles, Hoses, and Remote Control Valve Assembly
Figure 6-2.



**Ground Rod Driver
Nose Part Assembly
Figure 6-3.**

6.2 HOSE ASSEMBLY

Refer to Figure 6-4.

Item Number	Part Number	Quantity	Description
95	1697502	2	HOSE WHIP 12"
96	6001886	1	COUPLING 1/2" FEMALE
97	6001885	1	COUPLING 1/2" MALE

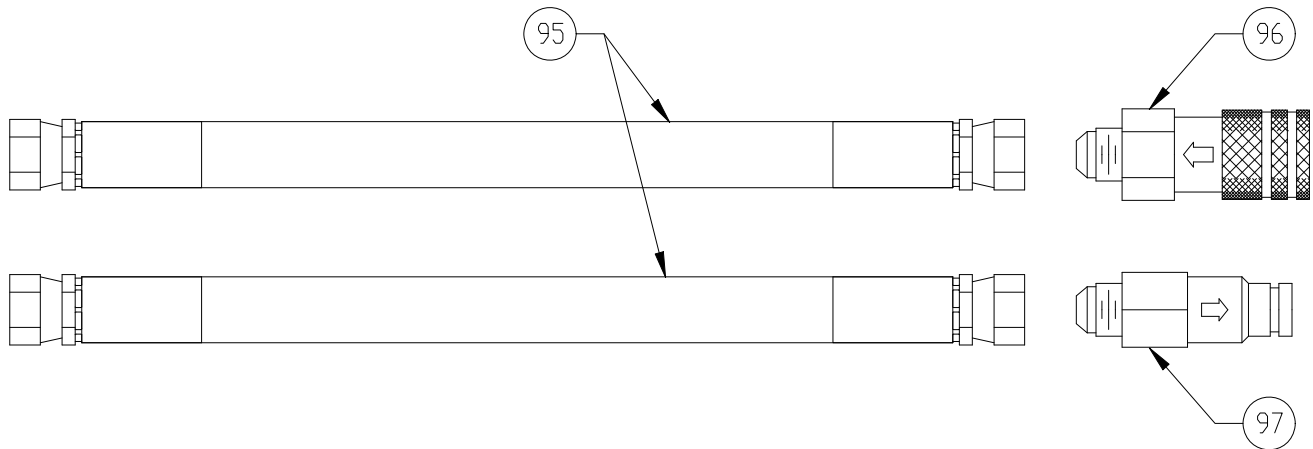


Figure 6-4.
Hose Assembly

LIMITED PRODUCT WARRANTY

**Reimann & Georger Corporation
Hoisting and Construction Products**

A. LIMITED WARRANTY

Reimann & Georger Corporation (the "Manufacturer") warrants to the original purchaser (the "Buyer") that all Reimann & Georger Hoisting and Construction products shall be free of defects in material and workmanship for a period of one (1) year from date of original purchase.

B. MANUFACTURER'S OBLIGATIONS

The Manufacturer's sole obligation under this Limited Warranty is the repair or, at the Manufacturer's discretion, the replacement of parts found to be defective. Parts and equipment must have authorization from the Manufacturer prior to return to the Manufacturer or repair by an authorized service person. Costs of transportation and other expenses connected with replacing or repairing parts are not covered under this Limited Warranty.

C. PARTS MANUFACTURED BY OTHERS

This Limited Warranty does not cover any parts manufactured by others. Such parts are subject to the warranty, if any, of their respective manufacturers, and are to be repaired only by a respective authorized service person for such parts. The Manufacturer shall have no obligation to undertake repairs of parts manufactured by others.

D. NO SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES

IN NO EVENT SHALL THE MANUFACTURER BE LIABLE TO THE BUYER OR ANY OTHER PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL LOSSES OR DAMAGES CONNECTED WITH THE USE OF THE PRODUCT UNDER THIS LIMITED WARRANTY. SUCH DAMAGES FOR WHICH THE MANUFACTURER SHALL NOT BE RESPONSIBLE INCLUDE, BUT ARE NOT LIMITED TO, LOST TIME AND CONVENIENCE, LOSS OF USE OF THE PRODUCT, THE COST OF A PRODUCT RENTAL, COSTS OF GASOLINE, TELEPHONE, TRAVEL, OR LODGING, THE LOSS OF PERSONAL OR COMMERCIAL PROPERTY, AND THE LOSS OF REVENUE.

E. NO LIABILITY IN EXCESS OF PURCHASE PRICE

IN NO EVENT SHALL THE MANUFACTURER'S OBLIGATIONS UNDER THIS LIMITED WARRANTY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

F. NO EXTENSION OF STATUTE OF LIMITATIONS

ANY REPAIRS PERFORMED UNDER THIS WARRANTY SHALL NOT IN ANY WAY EXTEND THE STATUTES OF LIMITATIONS FOR CLAIMS UNDER THIS LIMITED WARRANTY.

G. WAIVER OF OTHER WARRANTIES

THE EXPRESS WARRANTIES SET FORTH IN THIS LIMITED WARRANTY ARE IN LIEU OF AND EXCLUDE ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

H. PROCEDURE FOR WARRANTY PERFORMANCE

If the product fails to perform to the Manufacturer's specifications, the Buyer must provide the Manufacturer with the applicable model and serial numbers, the date of purchase, and the nature of the problem.

I. ADDITIONAL EXCLUSIONS FROM THIS LIMITED WARRANTY. THIS LIMITED WARRANTY DOES NOT COVER ANY OF THE FOLLOWING:

1. Equipment which has been abused, damaged, used beyond rated capacity, or repaired by persons other than authorized service personnel.
2. Damage caused by acts of God which include, but are not limited to, hailstorms, windstorms, tornadoes, sandstorms, lightning, floods, and earthquakes.
3. Damage under conditions caused by fire or accident, by abuse or by negligence of the user or any other person other than the Manufacturer, by improper installation, by misuse, by incorrect operation, by "normal wear and tear", by improper adjustment or alteration, by alterations not completed by authorized service personnel, or by failure of product parts from such alterations.
4. Costs of repairing damage caused by poor or improper maintenance, costs of normally scheduled maintenance, or the cost of replacing any parts unless done as the result of an authorized repair covered by the one (1) year Limited Warranty.
5. Costs of modifying the product in any way once delivered to the Buyer, even if such modifications were added as a production change on other products made after the Buyer's product was built.

J. NO AUTHORITY TO ALTER THIS LIMITED WARRANTY

No agent, representative, or distributor of the Manufacturer has any authority to alter the terms of this Limited Warranty in any way.