



HB70E HYDRABREAKER INSTRUCTIONS

REIMANN & GEORGER CORPORATION
CONSTRUCTION PRODUCTS
P/N 6122108

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1 SAFETY

1.1 INTRODUCTION

Your Reimann & Georger Corporation HB70 HydraBreaker has been engineered to provide breaking performance, long term economics and safety advantages that no other type can match. However, even a well-designed and well-built breaker 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 breaker 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 BREAKER SAFETY RULES

1. Only trained personnel shall operate the breaker 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 breaker in an explosive atmosphere and/or near combustible material that could be ignited by a spark.
4. Provide adequate ventilation or approved NIOSH or MSHA respirators in closed areas to avoid breathing dust during breaking.
5. The outside surface of the breaker can be more than 30°C (86°F) warmer than the air temperature. Always wear protective clothing including gloves.
6. Keep clothing and all parts of the body away from moving parts of this breaker when connected to a hydraulic power source or when being used.
7. Safety goggles must be worn by operator and all bystanders to prevent injury to eyes.
8. Safety shoes **must** provide good footing to prevent slipping or falling down.
9. Hearing protection must be worn to prevent permanent hearing damage.
10. Use only properly sized tool steels for which the breaker was designed.
11. Avoid “free blows.” Free blows result when the tool is operating, but is not contacting the material being broken.
12. Do not lean against the breaker to prevent losing foothold. The tool steel could accidentally break or suddenly penetrate the material being broken.
13. Never operate the breaker under the influence of drugs, alcohol, or medication.

14. Do not use the breaker when you are tired or fatigued.
15. Do not use a breaker that shows any signs of damage.
16. Keep the breaker handles dry, clean, and free of oil or fuel.
17. Always hold the breaker with both hands during operation.
18. Do NOT attempt to adjust the breaker during operation.
19. Always shut off the hydraulic power source before disconnecting the hoses, or servicing the breaker.
20. Always shut off the hydraulic power source when not using the equipment.

2 SPECIFICATIONS

2.1 INTRODUCTION

Your Reimann & Georger Corporation hydraulic breaker is a heavy duty breaker with a high performance to weight ratio. This breaker can be used for vertical breaking of the hardest concretes and asphalts. 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

	ENGLISH	METRIC
Weight with hose whips and without tool steel	68 lbs.	(31 kg.)
Hydraulic Power Source Relief Valve Setting	2250 psi	(155 bar)
Maximum back pressure in return line	200 psi	(14 bar)
Steel size (hex)		
Standard	1-1/4 x 6 in.	(32 X 152 mm)
Optional	1-1/8 x 6 in.	(28 X 152 mm)
Accumulator charge pressure (nitrogen)	725 psi	(50 bar)
Required cooling capacity	7500 BTU/hr.	(2.2 kw)
Energy per impact	81 ft.-lb.	(110 joules)
Blow frequency (blows/minute)	1140 @ 5 gpm, 1860 @ 8 gpm	(19-31 Hz)
Sound level (decibels)		108
Couplings		1/2" HTMA flush face
Oil flow (see nameplate for flow of tool)		
Standard	5 gpm	(18-22 lpm)
Optional	8 gpm	(27-30 lpm)

2.3 RECOMMENDED HYDRAULIC OIL

Viscosity	100-200 SUS at 100°F	(20-40 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 oil.

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

2.4 NAMEPLATE AND SERIAL NUMBER TAG

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

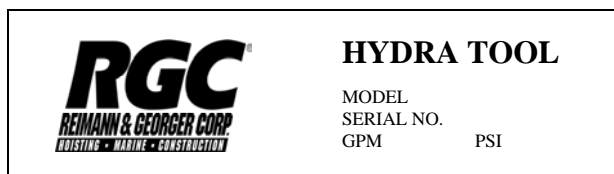


Figure 2-1.
Typical Breaker Product Nameplate

MODEL _____ **HB70E** _____

SERIAL NUMBER _____

3 OPERATION

3.1 BEFORE OPERATING THE BREAKER

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 breaking without first checking for live electrical wiring near the breaking site, or imbedded in the breaking 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 breaker 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 breaker is designed for an oil flow of 5-8 gpm at 1525-1800 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 breaker from excessively high pressure, the pressure relief valve of the hydraulic power source must be set at 2250 psi (155 bar). If this is not possible, connection can be made by installing a separate pressure relief valve set at 2250 psi (155 bar). If in doubt, contact your dealer.
7. The back pressure (return line pressure) of the breaker should be as low as possible and must not exceed 200 psi (14 bar) measured at the breaker. If this pressure is exceeded, the breaker will not reciprocate.
8. The hydraulic power source must be fitted with a return line oil filter with a filter rating of 10 microns.

3.5 BREAKING PROCEDURE

1. Check that the tool steel is in good order and is pressed fully home in the nose part.
2. Check that the latch is locked so that the tool steel does not fall out.
3. Clean the quick-release couplings if needed and connect the hose whips to the extension hoses from the power source.
4. When lifting the breaker to start the procedure, observe the following precautions:
 - a. Be sure of your footing.
 - b. Keep hands off trigger to avoid accidental operation.
 - c. Bend your knees and lift with your legs.
 - d. Hold breaker close to your body when lifting.
5. **Note:** A safety trigger is standard on HB70E breaker. Place the breaker at a right angle to the material to be broken. Make sure some feed force is being applied to the tool steel. Release safety trigger and then activate the trigger lever. Activating the trigger partially when starting provides a slow start for improved control.
6. To insure breaking in 10-20 seconds, do not try to break too big a piece of material at once. Use just enough feed force to have the breaker run regularly.

3.6 PREPARING BREAKER FOR SHUTDOWN

1. Stop the breaker by releasing the trigger lever.
2. Stop the hydraulic power source following the procedure in the respective instruction manual.
3. Disconnect the hoses from the breaker.



WARNING:

NEVER DISCONNECT ANY HYDRAULICALLY OPERATED PART OF THE BREAKER 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 DEATH OR SERIOUS INJURY. HOT LIQUID CAN CAUSE SERIOUS PERSONAL BURNS. IF AN INJURY OCCURS, GET IMMEDIATE MEDICAL ATTENTION.

4. Secure the breaker and hydraulic power source to prevent unauthorized use.
5. Store the breaker 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 breaker 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 BREAKING. THIS CAN CAUSE SERIOUS PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

4.2 DAILY MAINTENANCE

1. Remove the tool steel. With a clean object, push the piston down, remove the object and put about 1 ounce of 10W oil into the nose assembly to lubricate.
2. Clean off any accumulation of particles from beneath the trigger area. Spray with a light oil and wipe off excess.
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.
4. Check that all hardware on the breaker 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.
7. Insure the tool steel is sharp to give maximum breaking power and operator comfort.

4.3 ANNUAL MAINTENANCE

1. Check that the chisel bushing, latch, and roll pins are in good working order. If the shaft of a new chisel can be turned more than 20° in the chisel bushing, or if the chisel collar is cracked, the chisel bushing must be replaced. A worn chisel bushing causes increased breaker noise and, in the long run, damage to the striking piston of the breaker.
2. Check the function and performance of the breaker.
3. It is recommended that the breaker be serviced at an authorized RGC service center where:

- a. the accumulator is inspected and recharged.
- b. moving parts, chisel 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 chisel placed upside down through the chisel bushing.

5 TROUBLESHOOTING

The following chart is intended to assist with troubleshooting the HydraBreaker. 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
<p>Breaker does not strike—pressure does not build up when trigger is activated.</p>	<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>
<p>Breaker does not strike—pressure is built up when trigger is activated.</p>	<p>Back pressure too high—make direct tank connection. Maximum back pressure is 215 psi (15 bar) measured at the breaker. 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 breaker hard against the chisel.</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/reversing spool or auxiliary spools stick—dismount and check that all parts move easily. Polish slightly if necessary.</p> <p>Seals defect—dismount, check, and replace.</p>
<p>Breaker runs weakly or erratically.</p>	<p>Insufficient flow—check flow and pressure.</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. <p>Incorrect tool steel length—refer to Section 2.2.</p> <p>Check trigger lever for full actuation travel. If trigger lever is bent or damaged, tool will not run at full striking power.</p>
<p>Hoses pulsate.</p>	<p>Accumulator defect—replace accumulator diaphragm and charge with nitrogen.</p>

Oil leaking from breaker.	Defective seals—replace seals.
Chisel falls out.	Worn latch—replace latch and roll pins. Worn chisel bushing or chisel—replace bushing or chisel. Incorrect tool steel in use (wrong hex size or collar diameter)—refer to Section 2.2.

6 PARTS LISTS

The following parts lists apply to the HB70 HydraBreaker 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 IMPACT ASSEMBLY

Refer to Figure 6-1.

Item Number	Part Number	Quantity	Description
1	1820101	1	ACCUMULATOR BODY
2	1820088	1	VALVE HOUSING
3	1820065	1	CYLINDER
4	1820211	1	STRIKING PISTON
5	1814102	1	ACCUMULATOR COVER
6	1814052	1	DIAPHRAGM
8	1813103	1	CHARGING SCREW
9	1817720	4	SCREW
10	1814723	4	SCREW
11	1814709	1	SEAL RING
12	1820269	1	SPOOL
15	1820266	1	GUIDE SOCKET
16	1820267	1	SPOOL SOCKET
17	1813710	1	PROTECTIVE CAP
18	1820702	1	O-RING
19	1820703	4	O-RING
20	1820704	1	O-RING
21	1820705	1	O-RING
22	1820762	1	O-RING
24	1820740	1	LOCKING RING
25	1820176	1	SEAL
26	1820708	1	SEAL
27	5605714	2	SEAL RING
28	1815135	1	ADAPTOR Pressure connection
	1818019	1	ADAPTOR Tank connection (5 GPM)
	1814732	2	SPRING RING
30	1820700	1	SHIM
31	1820108	1	TRIGGER SPOOL
32	1820136	1	TRIGGER ROD
33	1814120	1	PACKING GLAND
34	1820137	1	SPRING
35	1814700	1	O-RING
36	1814702	1	O-RING
37	1805503	1	SEAL
38	1814701	1	BACK UP RING
39	1814712	1	SPRING RING
40	1814733	6	FITTING
41	1813141	3	FITTING
44	1817757	2	O-RING
49	6100084	1	O-RING
50	1815735	4	BACK UP WASHER
51	1820115	1	CHECK VALVE SCREW
52	1820717	1	CHECK VALVE BALL
53	1820718	1	SEAL RING
54	1820725	1	O-RING
55	1820726	1	O-RING
56	1814749	1	O-RING
58	1820167	1	BACK UP WASHER
59	1820727	1	LOCKING RING
60	1820089	1	SEAL KIT
61	1820053	1	TRIGGER VALVE ASSEMBLY
62	1820050	1	ACCUMULATOR ASSEMBLY

We recommend the oscillator upper and lower sleeves, and spool be replaced as a set, to ensure optimum breaker performance.

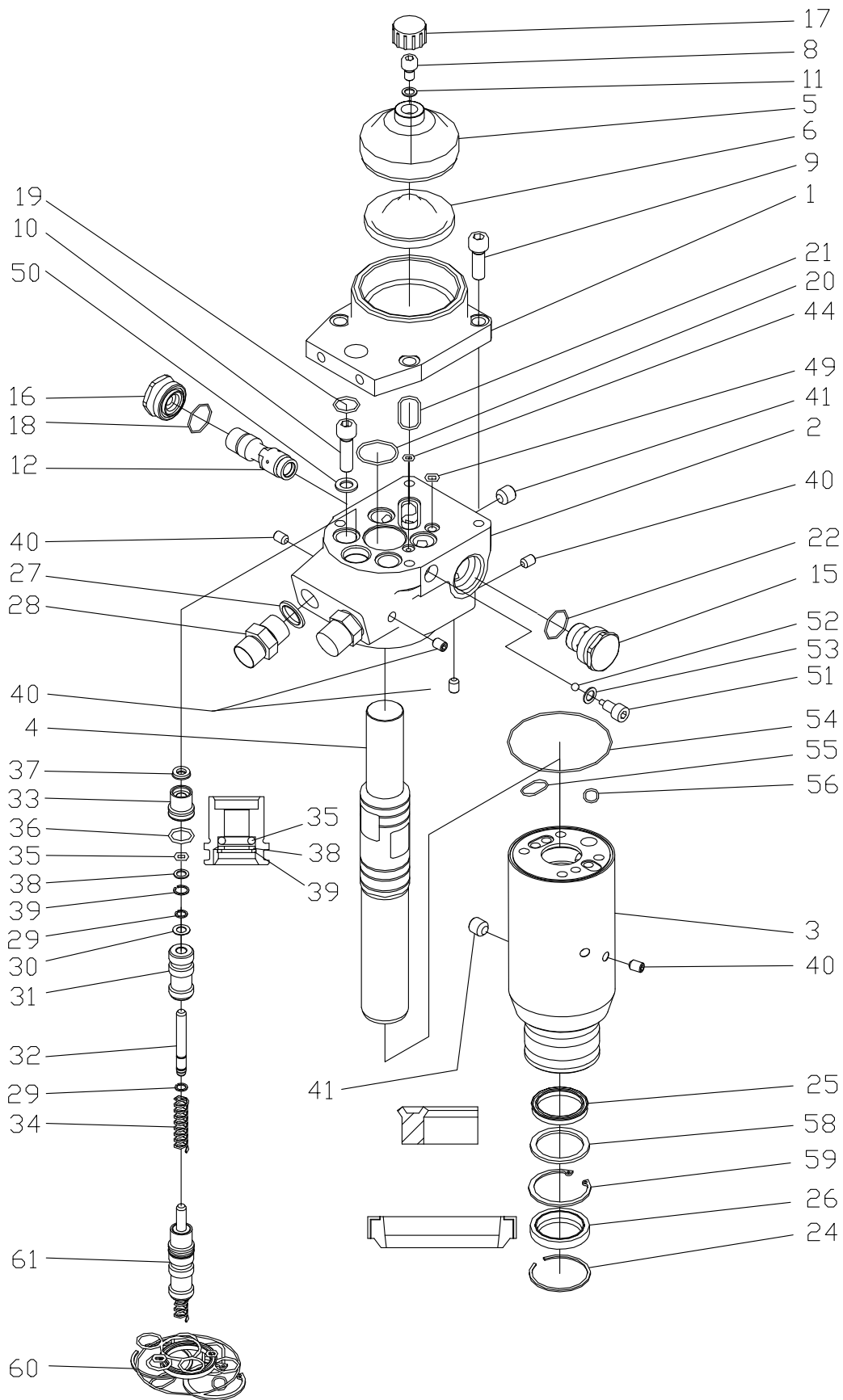


Figure 6-1.
Breaker Impact Assembly

6.2 NOSE ASSEMBLY

6.2.1 NOSE PART ASSEMBLY 1-1/4" x 6" (32 x 152) – STANDARD SIZE

Refer to Figure 6-2.

Item Number	Part Number	Quantity	Description
	1821047		NOSE PART 1-1/4" X6"(32 X 152)COMPLETE
80	1820195	1	NOSE PART HEX 28/32
81	1820212	1	BUSHING HEX 32X152
82	1820192	1	CHISEL BELLOWS HEX 32
83	1820145	1	LATCH
84	1802075	1	SPRING
85	1802073	1	LOCK PIN
86	1814724	2	SCREW
87	1815730	1	ROLL PIN
88	1815731	1	ROLL PIN
89	1820737	1	LOCKING RING

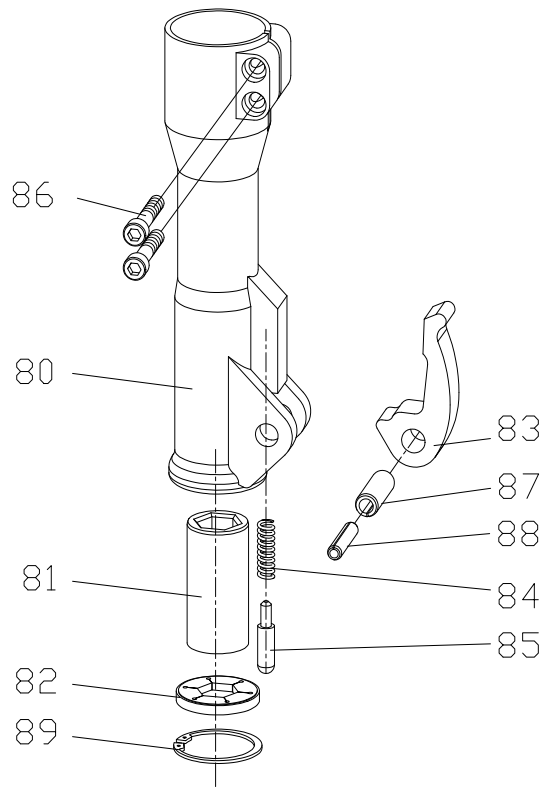


Figure 6-2.
Nose Assembly

6.2.2 NOSE PART ASSEMBLY 1-1/8" x 6" (28 x 152) – OPTIONAL SIZE

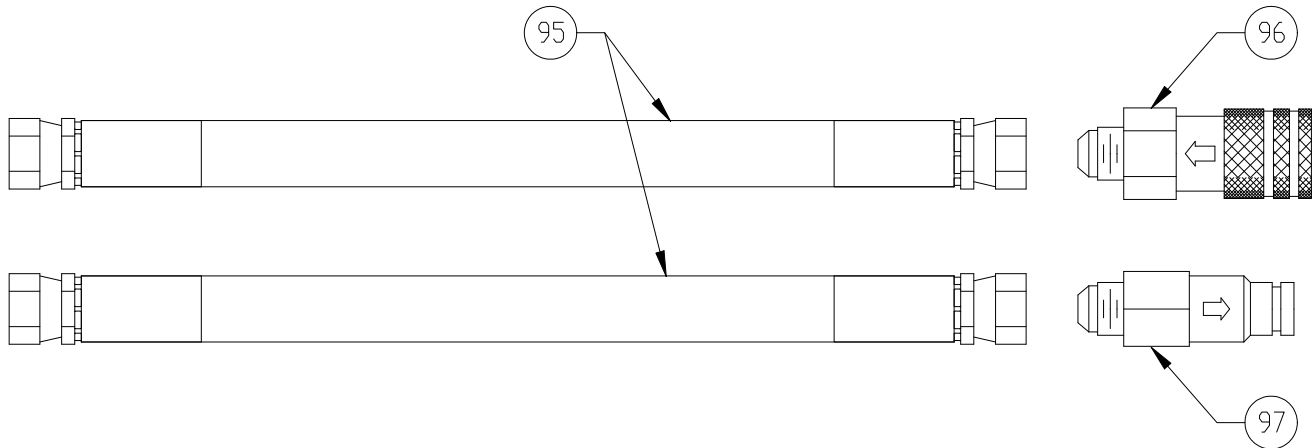
Refer to Figure 6-2.

Item Number	Part Number	Quantity	Description
	1821046		NOSE PART 1-1/8" x 6" (28 x 152) COMPLETE
80	1820195	1	NOSE PART HEX 28/32
81	1820217	1	BUSHING HEX 28x 152
82	1820219	1	CHISEL BELLOWS HEX 28
83	1820145	1	LATCH
84	1802075	1	SPRING
85	1802073	1	LOCK PIN
86	1814724	2	SCREW
87	1815730	1	ROLL PIN
88	1815731	1	ROLL PIN
89	1820737	1	LOCKING RING

6.3 HOSE ASSEMBLY

Refer to Figure 6-3.

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 6-3.
Hose Assembly**

6.4 ERGONOMIC HANDLE ASSEMBLY

Refer to Figure 6-4.

Item Number	Part Number	Quantity	Description
100	1820072	1	FRAME WITH DAMPING ELEMENT
102	1820057	1	TRIGGER LEVER
103	1820131	1	TRIGGER PAWL
104	1820135	1	RUBBER HANDLE (TRIGGER SIDE)
105	1820134	1	RUBBER HANDLE
106	1820147	1	RIGHT PIN LATCH
107	1820148	1	LEFT PIN LATCH
108	1820711	1	PAWL PIN
109	1820712	1	ROLL PIN
110	1820059	1	TOP COVER
111	1815722	4	COVER SCREW
112	1815131	2	NAB
113	1815113	4	HANDLE SPACER
114	1820066	1	THRUST PAD SCREW
116	1820722	1	NUT
117	1820735	1	BLACK CAP NUT

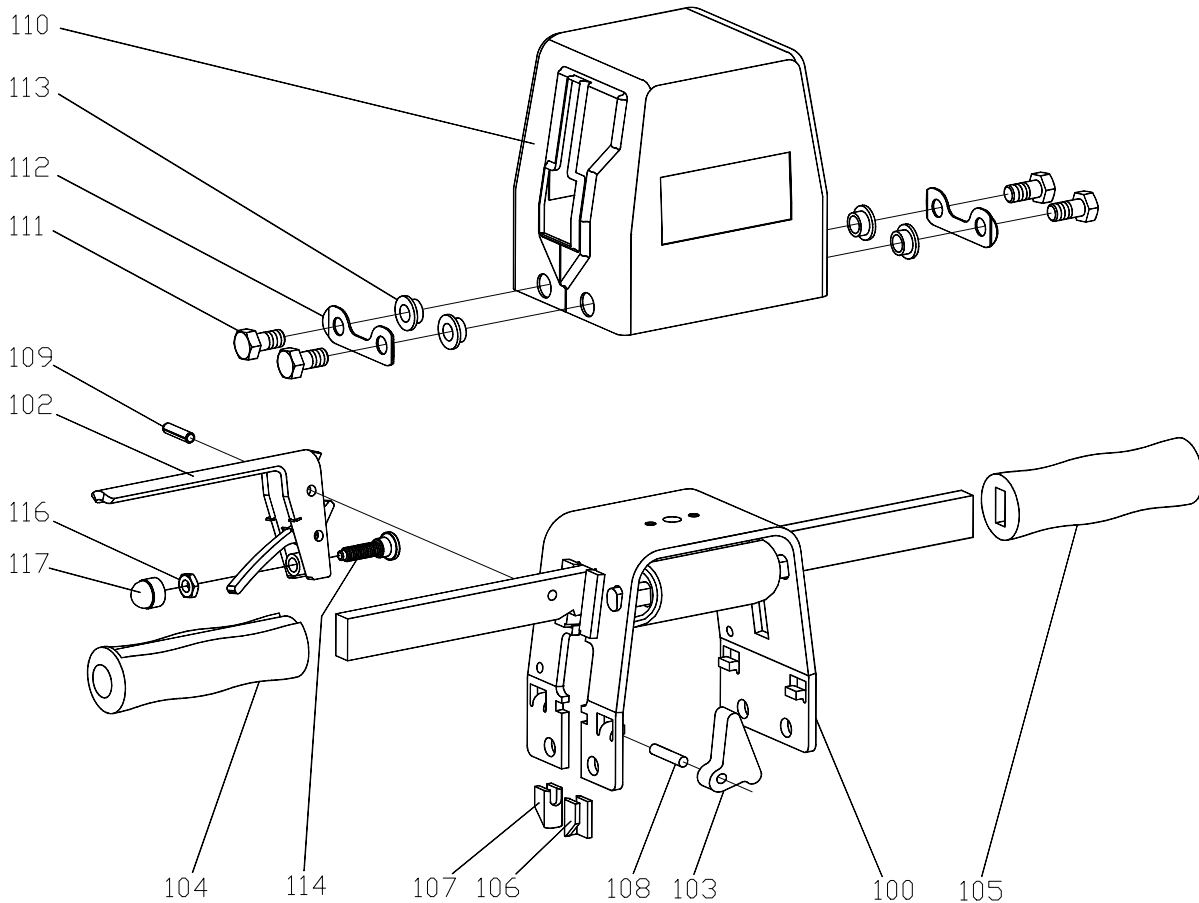


Figure 6-4.
Breaker Ergonomic Handle Assembly

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.