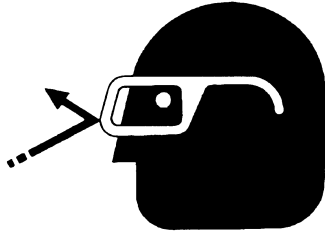




**SECTION I**

**GENERAL INFORMATION**

 **WARNING**

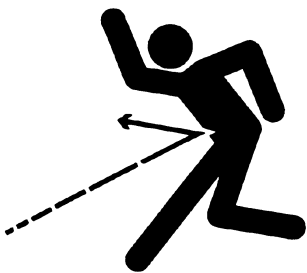


PARTICLES FROM HAMMER MAY STRIKE EYES.

PROTECTIVE GOGGLES MUST BE WORN WHEN OPERATING ATTACHMENT.

FAILURE TO HEED WILL RESULT IN DEATH OR SERIOUS INJURY.

 **DANGER**



AN OBJECT FROM THE UNIT OR WORK MAY STRIKE OPERATOR OR BYSTANDERS.

DO NOT OPERATE UNIT WHEN BYSTANDERS ARE IN WORK AREA.

FAILURE TO HEED WILL RESULT IN DEATH OR SERIOUS INJURY.

 **CAUTION**

TO PREVENT INTERNAL DAMAGE TO THE HAMMER FROM DIRT, THE HAMMER PRESSURE HOSE AND RETURN HOSE QUICK DISCONNECTS MUST BE CONNECTED TOGETHER WHEN REMOVING HAMMERS FROM EQUIPMENT.



**CAUTION  
MANDATORY  
DAILY CHECK LIST**

The fronthead must be lubricated every 2-3 hours. This will reduce wear of the working steel, retainer pins and front head bushing.

Check for loose or missing bolts on side plates, top or side mounting bracket, valve, and accumulator.

Check for missing rubber plugs and snap rings.

Check hydraulic fittings for loose connections or oil leakage.

Inspect backhead, cylinder, accumulator and valve housing for signs of abnormal oil leakage.

Always check the working steel for galling or fatigue cracks. Eventual breakage may occur with continued use.

Always apply thrust in line with the working steel. Any side force resulting from improper breaking angles may damage the point and possibly the piston.

Never use the working steel for prying or repositioning the carrier.

Never use the breaker to move large rock.


Avoid "blank firing" or "free running." This occurs when the tool is not in proper contact with the work, either sliding off or breaking through thin concrete or rock.

Avoid excessive boom down pressure. Damage to front head and side plates may result from sudden break through.



## **SAFETY PRECAUTIONS**

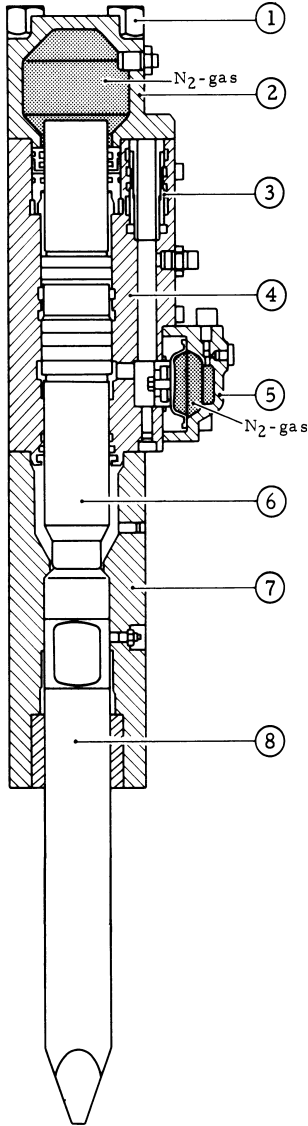
Before installation or operation of the hydraulic breaker, the operator and maintenance personnel should read and understand the following safety precautions:

- **The safety alert symbol  means ATTENTION! Your safety is involved!!**
- In accordance with the general construction safety standards, no bystanders are allowed in the vicinity of the breaker while it is in use.
- Stay clear of the breaker while it is in operation. Flying objects can cause severe injuries, or even death.
- Always wear safety glasses and ear protection when operating the breaker.
- Always wear safety glasses during installation, service or any activities associated with the breaker.
- Before operating the breaker, read and follow the safety decals located on the breaker. The opposite page shows these decals.
- Operate the breaker only when the operator is seated in the cabin with full control of the machine.
- Use the breaker for its intended purpose only.
- Be sure all decals, name plates, serial number tags and the mandatory daily check list are clearly visible. Clean and replace as necessary.
- When installing or removing the breaker, keep hands and fingers clear of the mounting pin holes and linkage.
- Make frequent inspections of the breaker and base machine as described in the "Daily Inspection" section of this manual.
- Never use the breaker as a lifting device.
- Do not make any alterations to the breaker without the authorization of Kent's Product Support Department.
- Anytime service is performed on the breaker, hydraulic pressure in the line must first be released. Then disconnect the hydraulic lines themselves.
- Never disassemble the breaker without first releasing the gas charges. Failure to comply can result in serious injuries or death.
- Use only Kent replacement parts.
- **Never use hands to search for hydraulic fluid leaks, use a piece of paper or cardboard. Escaping fluid under pressure can be invisible and can penetrate the skin and cause a serious injury. If any fluid is injected into your skin, see a doctor immediately. Injected fluid MUST be surgically removed by a doctor familiar with this type of injury or gangrene may result.**





## **GENERAL CONSTRUCTION OF "G" SERIES BREAKERS, KHB1G TO KHB8G**



### 1. THROUGH BOLTS

The three (3) major parts of the breaker, the front head, cylinder and the backhead, are secured by four (4) through bolts.

### 2. BACKHEAD

The hydraulic ports (pressure and return) along with the nitrogen ( $N_2$ ) gas chamber are built into the backhead.

### 3. VALVE

The cylindrical valve is built into the valve housing and controls the piston reciprocation.

### 4. CYLINDER

The hydraulic circuit for reciprocating the piston is built into the cylinder. The cylinder is the heart of the breaker.

### 5. ACCUMULATOR

The accumulator stores hydraulic fluid for use during the hammering cycle. It also absorbs any pulsations seen by the hydraulic circuit.

### 6. PISTON

The kinetic energy of the piston during the operation of the breaker, is converted into impact energy when it is transmitted to the working steel.

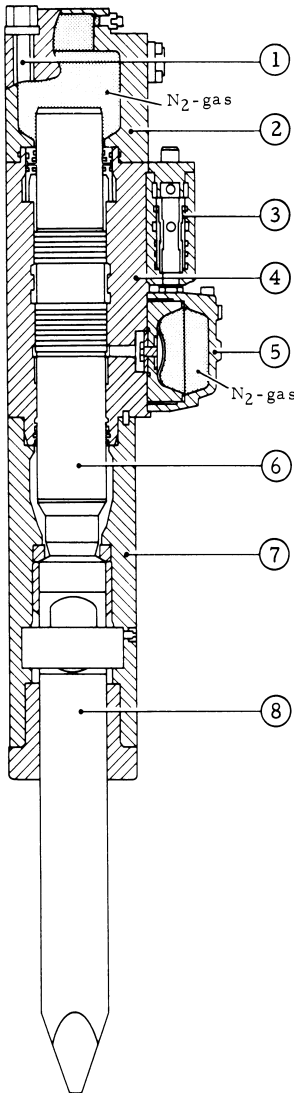
### 7. FRONTHEAD

The fronthead supports the entire breaker. Due to the shock transmitted by the working steel, the thrust ring and thrust bushing are built-in.

### 8. WORKING STEEL

Refer to the "Working Steel" section of this manual.

## **GENERAL CONSTRUCTION OF "G" SERIES BREAKERS, KHB10G TO KHB50G**



### 1. THROUGH BOLTS

The three (3) major parts of the breaker, the front head, cylinder and the backhead, are secured by four (4) through bolts.

### 2. BACKHEAD

The hydraulic ports (pressure and return) along with the nitrogen (N<sub>2</sub>) gas chamber are built into the backhead.

### 3. VALVE

The cylindrical valve is built into the valve housing and controls the piston reciprocation.

### 4. CYLINDER

The hydraulic circuit for reciprocating the piston is built into the cylinder. The cylinder is the heart of the breaker.

### 5. ACCUMULATOR

The accumulator stores hydraulic fluid for use during the hammering cycle. It also absorbs any pulsations seen by the hydraulic circuit.

### 6. PISTON

The kinetic energy of the piston during the operation of the breaker, is converted into impact energy when it is transmitted to the working steel.

### 7. FRONTHEAD

The fronthead supports the entire breaker. Due to the shock transmitted by the working steel, the thrust ring and thrust bushing are built-in.

### 8. WORKING STEEL

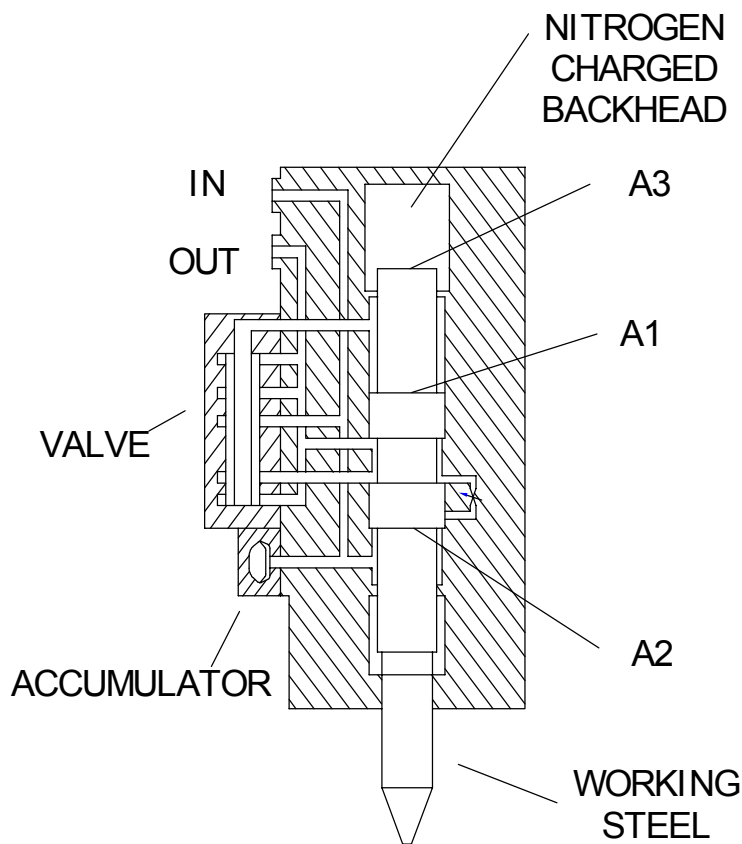
Refer to the "Working Steel" section of this manual.



## **PRINCIPLE OF OPERATION**

The impact energy of Kent's "G" series hydraulic breaker, is a product of the piston and the length of its stroke. The piston is powered by a combination of the hydraulic oil pressure and the nitrogen gas pressure in the backhead of the breaker.

The following illustration is a simplified sketch of the hydraulic oil porting of the breaker. Area (A1) of the piston is larger than area (A2) of the piston. Area (A1) is alternately connected to the pressure (IN) or the return (OUT) lines of the breaker by the valve. Area (A2) is always connected to the pressure (IN) line. Area (A3) is the area of the piston effected by the pressure of the nitrogen gas.



The piston rises when area (A1) is connected to the return (OUT) line. The oil pressure on area (A2) is greater than the nitrogen pressure. Thus, the piston is driven upward, compressing the nitrogen gas.

At the end of the return stroke, the valve shifts, diverting the oil to area (A1) of the piston. The oil pressure combined with the compressed nitrogen in the backhead, drive the piston downward striking the working steel. The kinetic energy of the piston at this point is transferred to the working steel. The working steel is then driven into the material to be broken. At this point, the valve shifts back to its original position, causing the cycle to repeat.

Kent's "G" series hydraulic breakers are equipped with a blow frequency adjuster, which changes the stroke of the piston. For additional information on this feature, refer to the "Blow Frequency Adjuster" section of this manual.

To maintain continuous oil flow during the valve shift, a bladder-type accumulator is utilized. This reduces the pulsations in the hydraulic system.

