MONTABERT HYDRAULIC BREAKERS

DO'S & DONT'S

for operators and maintenance personnel

MONTABERT®

Dealer Forward

Montabert hydraulic breakers are designed for performance and long life in a variety of applications. As with any piece of equipment, they must be operated and cared for properly to achieve a full, productive life.

Hydraulic breakers are mounted on a variety of carriers including excavators, backhoe loaders, wheel loaders, skid-steer loaders, stationary booms, forklifts, and specialized mining and manufacturing equipment used for scaling and striping. This manual will focus on excavators as they are the primary carrier when major production is required. The principles of operation, however, are similar for other types of carriers as well.

The Montabert commitment is to provide the very best in design, material, and workmanship. With decades of innovation, leadership, and experience, Montabert is committed to providing a complete attachment product offering for any size and make of carrier.

This manual is meant to complement and not replace the owner's/operator's manual that came with your attachment. Before operating any attachment, thoroughly read and understand both the attachment manual and the carrier manual. Contact your local dealer if you have any questions or concerns.

Contact your dealer for more information:

Practice Safety First

- ✓ Use breaker attachments only for their intended purposes and never as a lifting device.
- ✓ Stay clear of working attachments. Flying debris can cause severe injuries or even death.
- ✓ Keep safety decals clean and clearly legible.
- ✓ Do not make any alterations to the attachment or its hydraulic circuit without proper authorization.
- ✓ Use safety precautions when handling heavy objects.
- ✓ When installing or removing attachments, keep hands and fingers clear of mounting pin holes and linkage.
- ✓ Only activate attachments from the operator's seat in order to have full control of the machine.
- ✓ Have only one person signal to the operator and have only the operator touch the controls after signaled to do so. Be cautious of flying metal particles when striking hardened surfaces. Wear safety glasses during such activities. Wear ear protection per OSHA regulations.
- ✓ Use a windshield or wire screen for operator protection. Only use original equipment manufacturer's (OEM) parts and components to maintain attachment integrity.

Proper Breaker Positioning

The breaker must always be positioned perpendicular to the material. This may be vertical, horizontal, or anywhere in between as long as the tool is perpendicular to the surface.

It is especially important to follow this rule when using the Montabert V-Series (variable impact / frequency) breaker so that it can correctly test the hardness of the material. In a micro-second, the V-Series breaker will complete its test and react with the proper combination of impact and frequency. If improperly aligned, the breaker could respond as though it were working in light material and remain in a high-frequency, low-impact mode.

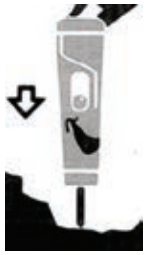
When the V-Series breaker is properly aligned, it selects the best frequency / impact combination for maximum performance with that material at that particular time. Maximum performance never varies; only the impact and frequency change.

As impact increases, the frequency decreases. The operator can hear this change taking place and is able to increase productivity by adjusting alignment and position to the sound of the increasing and decreasing frequency. If the frequency is fast, the impact is low. If the frequency is slow, the impact is high.

To Review

1. Always position the breaker perpendicular to the material.
2. Maximum performance never varies; only the impact and frequency change.
3. If the frequency is fast, the impact is low. If the frequency is slow, the impact is high.

Applied Pressure



Applied pressure is continuously adjusted by the operator using a combination of the boom, dipper, and attachment controls so that the breaker follows the tool. All breakers must have sufficient pressure against the tool to allow the transmission of energy, or the shock wave, to flow through the tool to the material being broken. By creating the perfect adaptation of stroke and strike frequency, the system prevents excessive energy from destroying the breaker and maintains the power and production at the highest levels.

When an excavator boom travels downward, it follows a curved path that will change the original position of the breaker. Keep adjusting the excavator controls so the breaker remains perpendicular to the working surface. The tool must move freely in

the bushing. Do not allow the tool to side-load or bind in the bushing. This will lead to premature failure of the tool and bushing, as well as reduce performance.

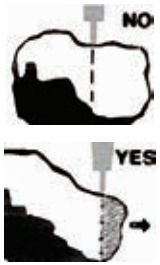
Applied pressure should not lift the carrier off the ground. As the attachment breaks through material, the excavator will transmit harmful shocks to the tool, breaker, and excavator. If applied pressure is insufficient, the tool will dance around on the material and can cause abnormal structural fatigue. If the breaker is too heavy for the carrier, it will be difficult to control and operate efficiently.

To Review

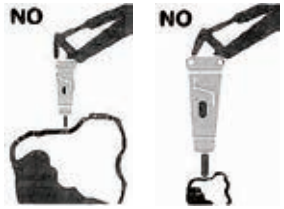
1. The working tool must always move freely in the bushing.
2. Applied pressure must be perpendicular to the material and follow the tool.
3. Applied pressure should not lift the carrier.

Boulder and Surface Rock Demolition

(Short Bursts = Production = Long Tool Life)



When breaking large rocks, do not attempt to break them from the center. Breaking is more efficient when working from the edges. Take small bites and do not work on one spot for more than 15 seconds. This method will increase your productivity and cause less wear and tear on your equipment.



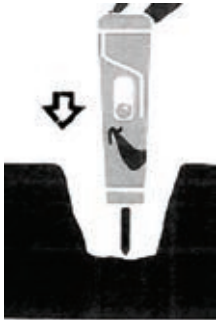
There is a direct relationship between the size of the boulders and the size of the breaker. It is inefficient to break large rocks with small breakers and small rocks with large breakers. Remember, for maximum efficiency, size the breaker to the job and do not break rocks into pieces smaller than necessary.

In surface rock demolition, use the breaker as if it were a hand-held paving breaker. The difference between hand-held tools and mounted breakers is the size of the rocks and the speed in which they are broken, but the technique is similar. You must adjust its position properly according to the work to be done, and take small bites at a time.

When using mounted breakers, don't try to break too much at one time. It is wiser to start from the edge and work toward the center. By using this technique, there will be less resistance, thereby increasing production and life of the tool.

Boulder and Surface Rock Demolition

A moil point or chisel can be used in trenching and excavating operations. Taper the walls so they do not interfere with the cradle and chuck housing. To reduce the opportunity to side-load the tool against the trench wall, open the trench to its full width first, then work toward the bottom.



Breaking embedded rock is a very tough application. The rock is confined and difficult to break apart due to the surrounding material. Usually, this type of work requires larger equipment.

To Review

1. Break from the edge and work toward the center.
2. Keep trench walls tapered so that they don't interfere with the breaker's chuck housing and cradle.

Caution!
Stop Immediately When:

✓ *The hydraulic hoses jerk violently*. Abnormal surging means the nitrogen energy chamber is empty. Stop the breaker immediately and repair the energy chamber.

✓ *The tool does not drop.* If the visible length of the tool does not change, it usually means the tool has seized in the bushing. Remove the tool and check the bushing. If obvious signs of seizing are present, remove the marks from the tool and bushings or replace as necessary. Clean and lubricate the shank before reinstalling the tool.

✓ *A hydraulic oil leak develops.* Stop the unit and make appropriate repairs. Oil leaks can be a result of excessively worn bushing or an indication of a defective side rod.

✓ *A gap develops between a back head and a suspension.* A gap in this area indicates the suspension requires service. Refer to the owner's manual or call your local dealer for service.

Rules to Remember

1. Avoid blank-firing at all times. You can tell when a breaker blank fires by the distinctive metallic ringing. Blank-firing happens while the breaker is operating and the tool is not preloaded against the piston or extended out of the chuck housing, such as when the tool slips off or breaks through the material and the operator does not stop the breaker. The piston will strike the tool shank with full impact, forcing the tool against the retainers and causing premature wear and failure to the tool, tool retainers, piston, chuck housing, tie rods, and the breaker itself.

Since there is no material to absorb the energy in blank-firing, the shock waves will bounce back up the tool, meeting other waves traveling down the tool in violent collisions. These collisions create a disorganized mass of energy, causing extensive wear and tear to the tool and other breaker components.

To prevent blank-firing, stop the breaker before the material separates. This term is called "anticipating the break." You will soon learn to recognize the signals that both the material and breaker are sending, allowing you to stop at the most opportune time. Practice anticipating the break, and keep blank-firing to a minimum.

2. *Use a breaker only for activities for which it was designed.* Not all breakers are designed to maneuver rocks. Ensure your breaker features this capacity by checking with the manufacturer. Breakers with this capacity are normally fitted with a rock hook or some type of protective structure around the chuck housing.

3. *Do not use the tool or breaker as a lifting device.* Not only is this dangerous, but lifting can cause damage to the breaker, tool, and bushings.

Rules to Remember

4. Do not use the breaker to pry materials under any circumstances. Prying is one of the most common causes of tool breakage. Prying also causes damage to other breaker components, and reduces productivity. Prying inhibits the transmission of the shock wave through the tool and creates heat buildup in the bushing area.

5. Do not allow cylinders to reach the end of their stroke. They will not tolerate the breaker vibrations in this position.

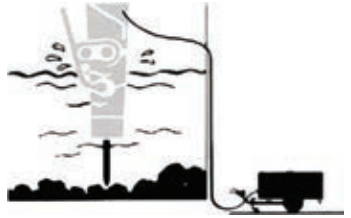
6. In cold weather, always warm up your equipment properly before operating. After the carrier is warmed up and running at idle, activate the breaker control to circulate warm oil through the breaker. The breaker may fire at a low frequency; if so, function the control in an on/off manner. The breaker should be ready to operate in 5 to 10 minutes. During extremely low temperatures, store the tool inside.

7. Move the tool to new positions often. A powder can build up under the tool and dampen the shock wave traveling into the material. Move the tool often to avoid this effect.

Rules to Remember

8. Never let the breaker strike on the same spot more than 15 seconds. (Even 15 seconds can be too long for large breakers.) Working in one spot too long causes heat buildup in the tool, resulting in loss of tool strength and wear resistance.

9. Do not immerse the breaker into water or mud to a depth at which the tool is not visible. Contact your dealer for underwater requirements so that your breaker can be equipped with an air pressurization kit. Air pressure must equal 22 psi, plus the water pressure. Water pressure equals 14.5 pounds for every 30 feet of depth. Through the first 30 feet, 36.5 psi of air pressure is required.



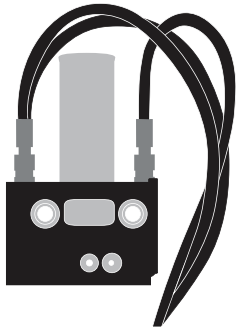
To Review

1. Avoid blank-firing.
2. Use breaker only for intended activities.
3. Do not use the tool to lift.
4. Do not use the tool to pry.
5. Do not allow cylinders to reach the end of their stroke.
6. Properly warm up your equipment.
7. Move the tool to new positions often.
8. Never strike the same spot for more than 15 seconds.
9. Do not immerse in water or mud to a depth at which the tool is not visible.

Proper Lubrication of the Breaker

Grease the tool and bushings whenever needed with 5 to 20 pumps of good quality, high-temperature grease. Place the tool against the piston while lubing or grease will fill the cavity between them. Keep a close check on the bushing / tool area. If it becomes dry, apply grease.

Cradle Mounted Greasing System



The pump assembly is bolted to the breaker outer case and can be fitted to any model breaker that accepts an auto lube system. This system incorporates common practices familiar to North American operators making it a cost effective solution to greasing needs of breakers in any business method. The device is a simple pump that is activated when the breaker is in use via high pressure hydraulic oil. This is accomplished by high pressure oil which is directed and utilized to operate the grease pump to supply a metered amount of grease from the onboard reservoir. A return line is plumbed from the greaser to the breaker oil return line and sent back to the main carrier hydraulic system. The grease is then delivered to the breaker bushing area via a 7mm nonadjustable pump nozzle. The greaser has a pop up indicator when the grease cartridge is empty and requires service or replacement. This indicator faces the carrier operator and provides a clear optical indication of grease reservoir quantity. The unit can be serviced by either replacing the cartridges after they become empty or by a bulk fill grease fitting.

Electrically Activated Auto-lube System

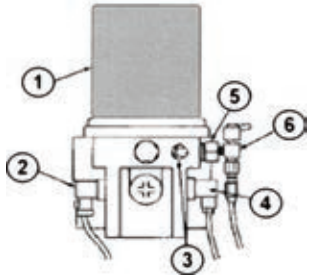
The electrically activated auto-lube system pump consists of a pump-housing, electric gear motor, and plastic reservoir with stirring paddle. The high operating pressure allows the pump to supply lubricant up to #2 lithium-based grease with 3% molybdenum and 525° F flash point.

Fill reservoir (1) through the grease fitting (3) located at the base using a hand- operated grease pump, or fill by hand from the top. Refill reservoir when grease reaches “MIN” mark. Fill up to the “MAX” mark located on the reservoir. Air pockets will also develop if the reservoir is allowed to go empty. When air pockets develop, they must be purged from the system.

To purge the system, disconnect the grease hose from the pressure relief valve assembly (6). With the engine at low idle, turn the breaker on and off until grease appears at the pressure relief valve assembly. Remove the tool from the breaker. Install a grease fitting into the end of the disconnected grease hose.

Using a hand grease pump, pump into the grease line until a steady stream of grease (without air) appears inside the hammer’s upper and lower bushing lube holes. Remove the installed grease fitting and reattach the grease hose to the pressure relief valve assembly.

1. Reservoir
2. Black Power Cord
3. Filler Grease Fitting
4. Optional Manual Lube Cord
5. Pump Element Assembly
6. Pressure Relief Valve Assembly

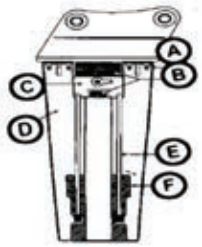


Routine Maintenance

Perform maintenance checks at the beginning and end of each shift. *(Refer to owner's manual for specific procedures.)*

✓ *Visual inspection.* Check welds for possible cracks on the bracket cap, cradle, tool, and boom (do not weld on the cradle without checking with your dealer).

✓ *Check for loose nuts and bolts:*
A. In the bracket cap
B. In the suspension
C. In the accumulator
D. In the side plates
E. On the tie rods
F. In the wear plates



✓ *The suspension system.* All models have a spring or rubber suspension. The breaker body must freely move inside the cradle on this type of breaker. A gap or space between the shock absorber and back head indicates loose bolts or a worn shock absorber. See the owner's manual.

✓ *The tool retainer(s).* When replacing tool retainer(s), always replace them in sets and rotate them equally. (Service hint: Mark the ends of the retainers to keep track of the rotation order.)

✓ *Hydraulic system.* Hydraulic ball valves and quick couplers may be a source of erratic performance and/or cause a rise in hydraulic temperature. Ensure they are 100% open, in good condition, and not leaking oil. Continuously check for oil leaks and any rise in the oil temperature.

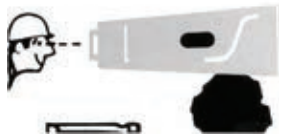
✓ *Excessive oil leakage down the tool.* This is an indication of worn or damaged seals that need to be replaced.

Periodic Maintenance

Perform these checks every 100 hours — more often in severe conditions. *Remove the tool and all grease from the chuck housing.*

✓ *Do not use a pressure washer, steam, or solvents as they damage the seals.*

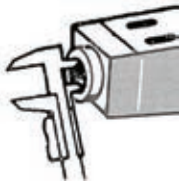
✓ Check for chips or cracks inside the housing and on bushing surfaces.



✓ *Cracks and chips could indicate that:*
- Lubrication is insufficient
- Grease type is not appropriate
- Blank-firing and side-loading is occurring
- The breaker is being operated improperly

✓ *Check for wear on tool retainers.* Examine the shoulders and side surfaces. If they are worn or deformed, rotate or replace as required.

✓ *Check wear on bushing.* Replace the tool, bushing, or both when the combined wear exceeds 4 mm or 3/16". Some bushings are grooved to provide even grease distribution; light range breakers come with a wear gauge. Replace the bushings when the grooves are worn through. Excessive bushing wear causes tool misalignment to the piston, causing premature breaker failure.



✓ *Replace damaged or worn parts.* Wipe all components clean, including the lubrication port. Hand-grease the tool shank and inside the chuck bushings before placing it back into the breaker.

The Life of Your Breaker Depends on These Factors:

The type of work

Breaking reinforced concrete, for instance, is more detrimental to a chisel than concrete without rebar. The twisting action caused by the flat edge of the chisel against the steel stresses the tool, bushings, and retainers.

The type of rock

A particularly abrasive rock will wear the tool faster than less abrasive material. Certain types of rock turn to powder under the tool, which cushions the impact. This could cause the tool to overheat and mushroom.

Blank-firing

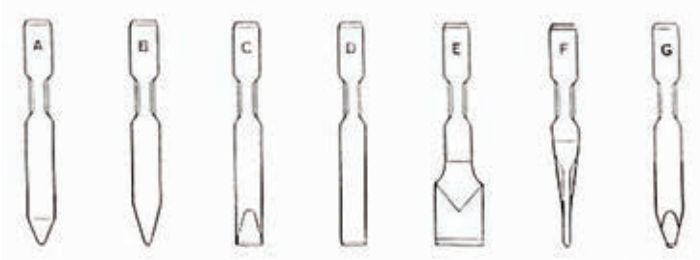
Blank-firing will chip the tool on the top and in the retainer area. These chips accelerate wear and tear on the tool, retainers, bushings, and the piston.

Proper lubrication at all times

Lack of lubrication will increase the temperature in the bushings and tool shank, which ultimately causes deterioration of these components.

Tool Selection and Care

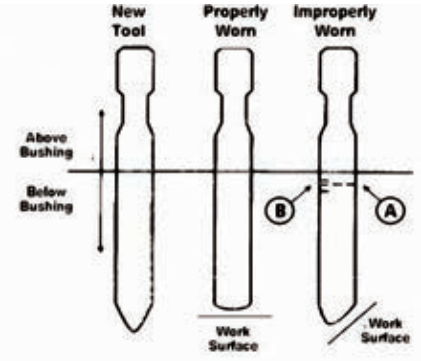
Tool Selection	Applications
A Moil Point	Multiple Purpose
B Cross Cut Chisel	Trenching, Asphalt, Concrete
C Straight Cut Chisel	Trenching, Asphalt, Concrete
D Blunt Tool	Boulders, Concrete
E Spade	Pavement, Soft Rock, Hard Clay
F Asphalt Cutter	Asphalt and Concrete
G Easy Bust	Multiple Purpose



Improperly Worn Tools

If you operate a hammer and the tool is worn at an angle such as this, *you will break the tool*. The tool will break along the dotted line (A). You may also see marks on the tool where the edge of the bushing actually scores the metal of the tool (B).

The tool may also show blue heat marks. This method of operation is called side-loading. When the tool breaks, it will do so toward or away from the carrier, depending on the direction of side-loading.



Tool Selection and Care

Common Tool Abuse

- Side-loading
- Blank-firing
- Prying
- Drilling
- Tool deflection
- Machine movement
- Improper warm-up
- Untrained operator
- Excessive wear on bushings and retainers
- Heat buildup from working in one spot
- Rapid cooling by submersing in water

Breaker Storage

Put the appropriate plugs on the breaker and excavator couplings to avoid any oil leaks or dust and moisture contamination in the breaker or hydraulic system.

Grease the visible part of the piston and the entire tool to avoid oxidation. Oxidation weakens the surface of the tool.

Cover the breaker and store in a clean, dry area in a standing position. An alternative would be laying the breaker down with the chuck housing lower than the back head. In this position, moisture will drain away from the piston.

Any Carrier. Any Job.
Your Attachment Connection.

With decades of innovation, leadership, and experience, Montabert is dedicated to providing a complete attachment product offering for any size and make of carrier.

Montabert has the know-how and accessories to interface with your attachment and carrier, as well as all the parts and tools it takes to keep you running. Our global reach ensures that we bring the best products and support wherever the job takes you.

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