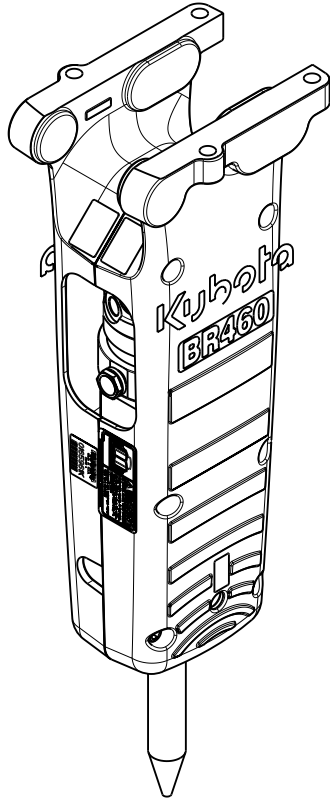


Hydraulic Breakers

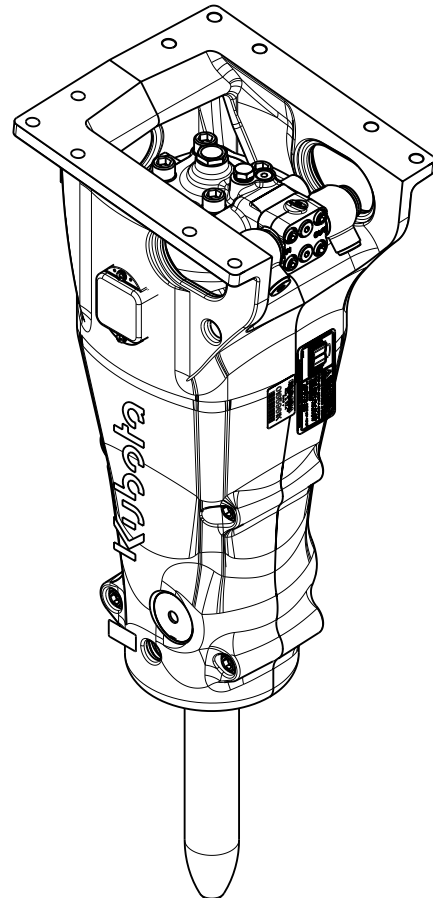
AP-BR310, AP-BR360, AP-BR460, AP-BR510, AP-BR560, & AP-BR860

72332



BR310, BR360, & BR460

72333



BR510, BR560, & BR860

317-382MK
Operator's Manual

Kubota®



Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Cover photo may show optional equipment not supplied with standard unit.

For an Operator's Manual and Decal Kit in French Language, please see your Kubota dealer.

Machine Identification

Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

If you, or the dealer, have added Options not originally ordered with the machine, or removed Options that were originally ordered, the weights and measurements are no longer accurate for your machine. Update the record by adding the machine weight and measurements provided in the Specifications & Capacities Section of this manual with the Option(s) weight and measurements.

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Delivery Date	
First Operation	
Accessories	

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

California Proposition 65  WARNING: Handling passenger or off-highway motor vehicle parts can expose you to chemicals such as phthalates and lead, which can cause cancer and reproductive harm. To minimize exposure, service the vehicle in a well-ventilated area, wear gloves, and wash your hands. For more information see www.P65Warnings.ca.gov/motor-vehicle-parts.
--

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Printed in the United States of America.

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Parts Manual QR Locator

The QR (Quick Reference) code on the left will take you to the Parts Manual for this equipment. Download the appropriate app on your smart phone. Scan the QR code and take a picture.



Dealer QR Locator

The QR code to the left will link you to available dealers for Kubota products. Refer to Parts Manual QR Locator on this page for detailed instructions.

Listed below are common practices that may or may not be applicable to the products described in this manual.

Safety at All Times

Careful operation is your best assurance against an accident.

All operators, no matter how much experience they may have, should carefully read this manual and other related manuals before operating the power machine and this attachment.

- ▲ Thoroughly read and understand the "Safety Label" section. Read all instructions noted on them.
- ▲ Do not operate the equipment while under the influence of drugs or alcohol, as they impair your ability to safely and properly operate the equipment.
- ▲ Operator should be familiar with all functions of the power machine and attachment and be able to handle emergencies quickly.
- ▲ Make sure all guards and shields appropriate for the operation are in place and secured before operating the attachment.
- ▲ Keep all bystanders away from equipment and work area.
- ▲ Start power machine from the driver's seat with steering levers and hydraulic controls in neutral.
- ▲ Operate power machine and controls from the driver's seat only.
- ▲ Never dismount from a moving power machine or leave power machine unattended with engine running.
- ▲ Do not allow anyone to stand between the attachment and power machine while connecting to the attachment.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- ▲ While transporting and operating equipment, watch out for objects overhead and along the sides such as fences, trees, buildings, wires, etc.
- ▲ Store attachment in a safe and secure area where children normally do not play. When needed, secure attachment against falling with support blocks.
- ▲ Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.



Look for the Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety and extra precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. Hazard control, and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.

Be Aware of Signal Words

A signal word designates a degree or level of hazard seriousness. They are:

- ▲ **DANGER:** Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
- ▲ **WARNING:** Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
- ▲ **CAUTION:** Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

Be Aware of Special Notices

Special notices are intended to point out important and helpful information that should be followed. They are usually placed inside a box. They are:

- IMPORTANT:** Indicates that equipment or property damage could result if instructions are not followed.
- NOTE:** Indicates supplementary explanations that will be helpful when using the equipment.

Safety Precautions for Children

Tragedy can occur if the operator is not alert to the presence of children. Children generally are attracted to attachments and their work.

- ▲ Never assume children will remain where you last saw them.
- ▲ Keep children out of the work area and under the watchful eye of a responsible adult.
- ▲ Be alert and shut the attachment and power machine down if children enter the work area.
- ▲ Never carry children on the power machine or attachment. There is not a safe place for them to ride. They may fall off and be run over or interfere with the control of the power machine.
- ▲ Never allow children to operate the power machine, even under adult supervision.
- ▲ Never allow children to play on the power machine or attachment.
- ▲ Use extra caution when backing up. Before the power machine starts to move, look down and behind to make sure the area is clear.

Listed below are common practices that may or may not be applicable to the products described in this manual.

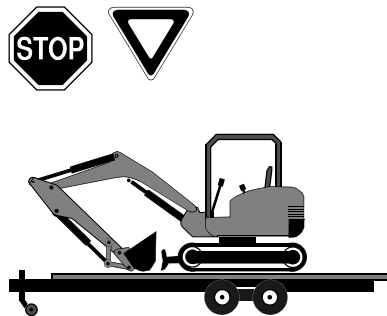
Dig Safe - Avoid Underground Utilities

- ▲ USA: Call 811
CAN:
<http://www.clickbeforeyoudig.com>
- ▲ Always contact your local utility companies (electrical, telephone, gas, water, sewer, and others) before digging so that they may mark the location of any underground services in the area.
- ▲ Be sure to ask how close you can work to the marks they positioned.



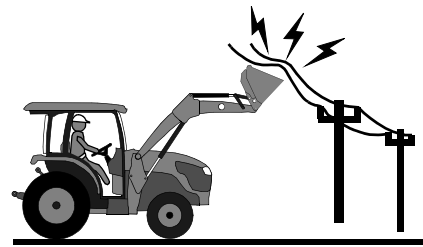
Towing Safely

- ▲ Comply with federal, state, and local laws.
- ▲ Use towing vehicle and trailer of adequate size and capacity. Secure equipment towed on a trailer with chocks, tie downs, and chains.
- ▲ **IMPORTANT:** Do not tow a load that is more than double the weight of the vehicle towing the load.
- ▲ Sudden braking can cause a towed trailer to swerve unexpectedly. Reduce speed if trailer is not equipped with brakes.



Transport Safely

- ▲ Comply with federal, state, and local laws.
- ▲ Avoid contact with any overhead utility lines or electrically charged conductors.
- ▲ Always drive with attachment on the end of the excavator/loader arm(s) low to the ground.
- ▲ Follow recommendations in the power machine Operator's Manual when driving uphill or downhill and when parking on an incline.
- ▲ Never travel at a speed which does not allow adequate control of the load, steering, and stopping. Some rough terrains require a slower speed.



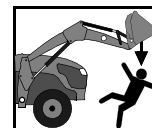
Tire Safety

- ▲ Tire changing can be dangerous and must be performed by trained personnel using the correct tools and equipment.
- ▲ Always properly match the wheel size to the properly sized tire.
- ▲ Always maintain correct tire pressure. Do not inflate tires above recommended pressures shown in the Operator's Manual.
- ▲ When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- ▲ Securely support the attachment when changing a wheel.
- ▲ When removing and installing wheels, use wheel handling equipment adequate for the weight involved.
- ▲ Make sure wheel bolts have been tightened to the specified torque.



Practice Safe Maintenance

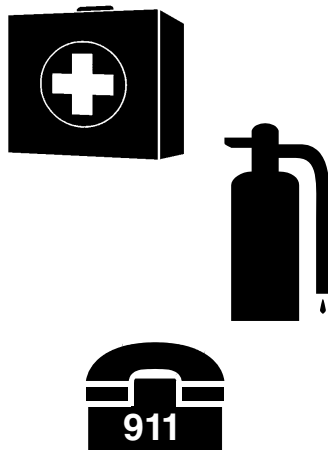
- ▲ Understand procedure before doing work. Refer to the Operator's Manual for additional information.
- ▲ Work on a level surface in a clean, dry area that is well-lit.
- ▲ Lower attachment to the ground and follow all shutdown procedures before leaving the operator's seat to perform maintenance.
- ▲ Do not work under any hydraulically supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- ▲ Use properly grounded electrical outlets and tools.
- ▲ Use correct tools and equipment for the job that are in good condition.
- ▲ Allow equipment to cool before working on it.
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on equipment.
- ▲ Inspect all parts. Make certain that parts are in good condition & installed properly.
- ▲ Replace parts on this attachment with genuine Kubota parts only. Do not alter this attachment in a way which will adversely affect its performance.
- ▲ Do not grease or oil attachment while it is in operation.
- ▲ Remove buildup of grease, oil, or debris.
- ▲ Always make sure any material and waste products from the repair and maintenance of the attachment are properly collected and disposed of.
- ▲ Remove all tools and unused parts from equipment before operation.



Listed below are common practices that may or may not be applicable to the products described in this manual.

Prepare for Emergencies

- ▲ Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital, and fire department near phone.



Wear Personal Protective Equipment (PPE)

- ▲ Wear protective clothing and equipment appropriate for the job such as safety shoes, safety glasses, hard hat, dust mask, and ear plugs.
- ▲ Clothing should fit snug without fringes and pull strings to avoid entanglement with moving parts.
- ▲ Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- ▲ Operating a machine safely requires the operator's full attention. Avoid wearing headphones while operating equipment.



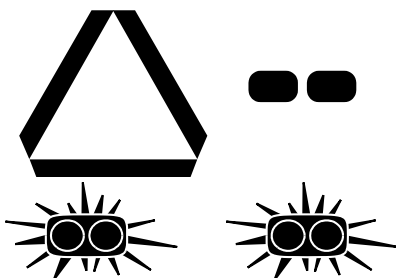
Avoid High Pressure Fluids

- ▲ Escaping fluid under pressure will penetrate the skin or eyes causing serious injury.
- ▲ Relieve all residual pressure before disconnecting hydraulic lines or performing work on the hydraulic system.
- ▲ Make sure all hydraulic fluid connections are properly tightened/torqued and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ **DO NOT DELAY.** If an accident occurs, seek immediate emergency medical care or gangrene may result.



Use Safety Lights and Devices

- ▲ A slow moving power machine can create a hazard when driven on public roads. They are difficult to see, especially at night.
- ▲ Flashing warning lights and turn signals are recommended whenever driving on public roads.
- ▲ For tractors and other agriculture equipment, a Slow Moving Vehicle (SMV) sign is required when traveling on public roads.



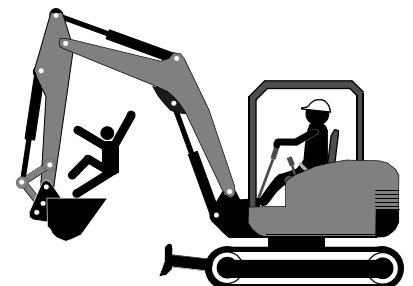
Use Seat Belt and ROPS

- ▲ Kubota recommends the use of a CAB or roll-over-protective-structures (ROPS) and seat belt in almost all power machines. Combination of a CAB or ROPS and seat belt will reduce the risk of serious injury or death if the power machine should be upset.
- ▲ If ROPS is in the locked-up position, fasten seat belt snugly and securely to help protect the operator against serious injury or death from falling and/or machine overturn.



Keep Riders Off Machinery

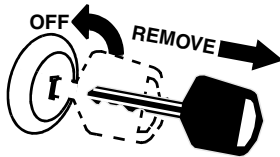
- ▲ Never carry riders on the power machine or attachments.
- ▲ Riders obstruct operator's view and interfere with the control of the power machine.
- ▲ Riders can be struck by objects or thrown from the equipment.
- ▲ Never use power machine or attachment to lift or transport riders.



Listed below are common practices that may or may not be applicable to the products described in this manual.

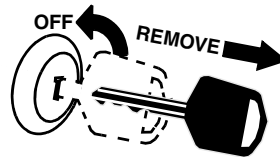
Excavator Shutdown

- ▲ If engaged, disengage hydraulics to the attachment.
- ▲ Park on solid, level ground.
- ▲ Lower attachment and dozer blade until they are on the ground.
- ▲ Idle engine and turn ignition key to 'STOP' position to shutoff engine.
- ▲ Move lever lock(s) down to the lock position.
- ▲ Turn ignition key to "RUN" and relieve hydraulic pressure to the hydraulic system by operating hydraulic levers. Refer to Excavator Operator's Manual.
- ▲ Turn ignition key to "STOP" and remove to prevent unauthorized starting.
- ▲ Face excavator while using approved steps, grab-handles and anti-slip surfaces when stepping on and off the excavator.



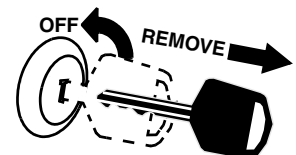
Skid Steer / Track Loader Shutdown And Storage

- ▲ Reduce engine speed and shut-off all power to the attachment.
- ▲ Park on solid, level ground and lower attachment until it is flat on the ground or on non-concrete support blocks.
- ▲ Turn-off engine using the power-off switch or turn ignition key to stop. Do not remove key at this time.
- ▲ Relieve all hydraulic pressures.
 - If using a power-off switch, follow your machine Operator's Manual for instructions on how to release hydraulic pressure in the lines.
 - If using an ignition key, turn key to "RUN" and move joysticks to release hydraulic pressure in the lines. Finish by turning ignition key to off and removing it to prevent unauthorized starting.
- ▲ If included, raise seat bar and move controls until both lock.
- ▲ Wait for all components to stop before leaving operator's seat.
- ▲ Use steps, grab-handles and anti-slip surfaces when stepping on and off the skid steer or track loader.



Tractor Shutdown & Storage

- ▲ Reduce engine speed and shut-off all power to the attachment.
- ▲ Park on solid, level ground and lower attachment until it is flat on the ground or on non-concrete support blocks.
- ▲ Put tractor in park or set park brake.
- ▲ Turn off engine and remove ignition key to prevent unauthorized starting.
- ▲ Relieve all hydraulic pressures.
- ▲ Wait for all components to stop before leaving operator's seat.
- ▲ Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.



Listed below are common practices that may or may not be applicable to the products described in this manual.

Avoid crystalline Silica (quartz) Dust

Because crystalline silica is a basic component of sand and granite, many activities at construction sites produce dust containing crystalline silica. Trenching, sawing, and boring of material containing crystalline silica can produce dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis).

There are guidelines which should be followed if crystalline silica (quartz) is present in the dust.



- ▲ Be aware of and follow OSHA (or other local, State, or Federal) guidelines for exposure to airborne crystalline silica.
- ▲ Know the work operations where exposure to crystalline silica may occur.
- ▲ Participate in air monitoring or training programs offered by the employer.
- ▲ Be aware of and use optional equipment controls such as water sprays, local exhaust ventilation, and enclosed cabs with positive pressure air conditioning if the machine has such equipment. Otherwise respirators shall be worn.
- ▲ Where respirators are required, wear a respirator approved for protection against crystalline silica containing dust. Do not alter respirator in any way. Workers who use tight-fitting respirators can not have beards/mustaches which interfere with the respirator seal to the face.
- ▲ If possible, change into disposable or washable work clothes at the work site; shower and change into clean clothing before leaving the work site.
- ▲ Do not eat, drink, use tobacco products, or apply cosmetics in areas where there is dust containing crystalline silica.
- ▲ Store food, drink, and personal belongings away from the work area.
- ▲ Wash hands and face before eating, drinking, smoking, or applying cosmetics after leaving the exposure area.

Handle Chemicals Properly

- ▲ Protective clothing should be worn.
- ▲ Handle all chemicals with care.
- ▲ Follow instructions on container label.
- ▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil, and property.
- ▲ Inhaling smoke from any type of chemical fire can be a serious health hazard.
- ▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.



Safety Labels

Your Hydraulic Breaker comes equipped with all safety labels in place. They are designed to help you safely operate your attachment. Read and follow their directions.

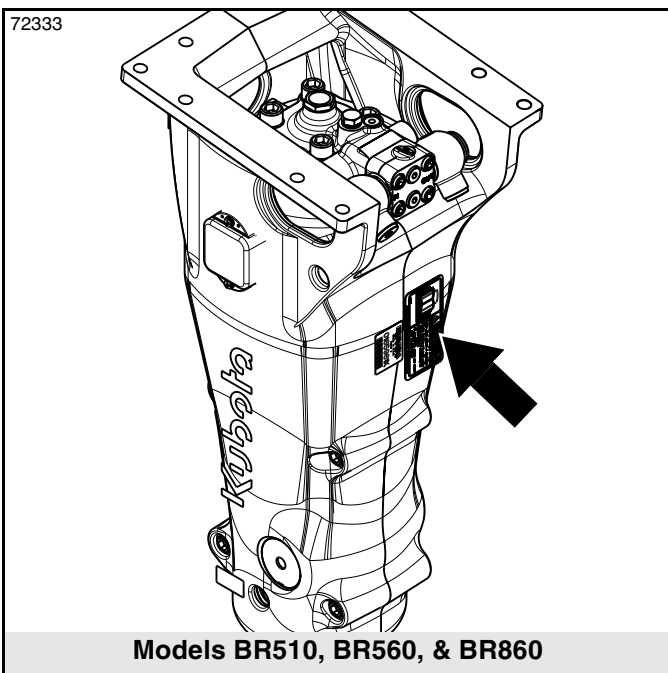
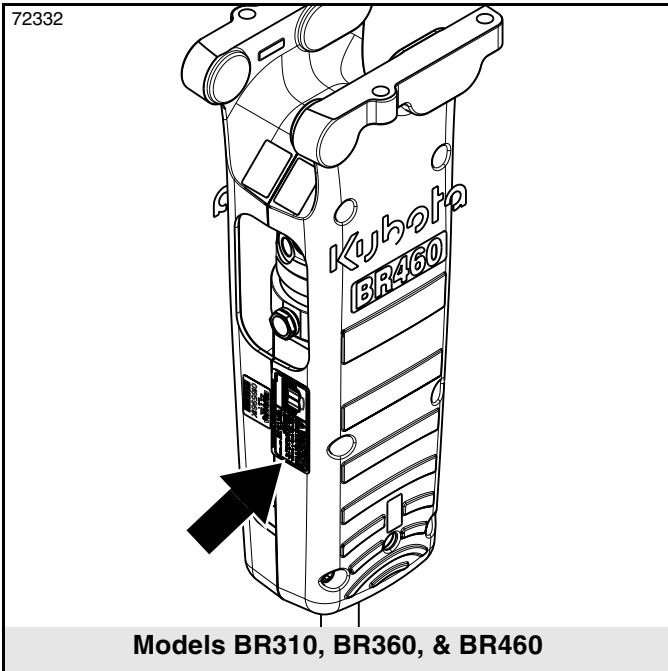
1. Keep all safety labels clean and legible.
2. Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest Kubota dealer. To find your nearest dealer, visit our dealer locator at www.landpride.com.
3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by Kubota. When ordering new components make

sure the correct safety labels are included in the request.

4. Refer to this section for proper label placement.

To install new labels:

- a. Clean surface area where label is to be placed.
- b. Spray soapy water onto the cleaned area.
- c. Peel backing from label and press label firmly onto the surface.
- d. Squeeze out air bubbles with edge of a credit card or a similar type of straight edge.

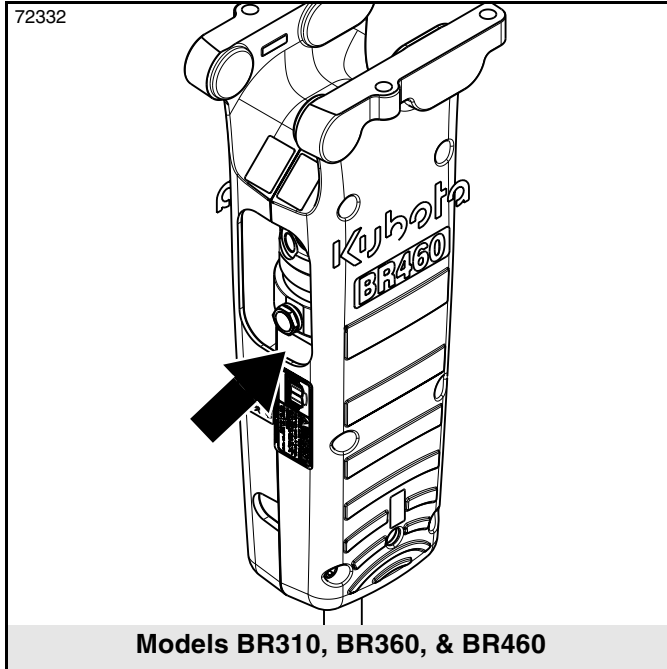


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Warning: Read Operator's Manual

1 Place: Models BR310, BR360, & BR460

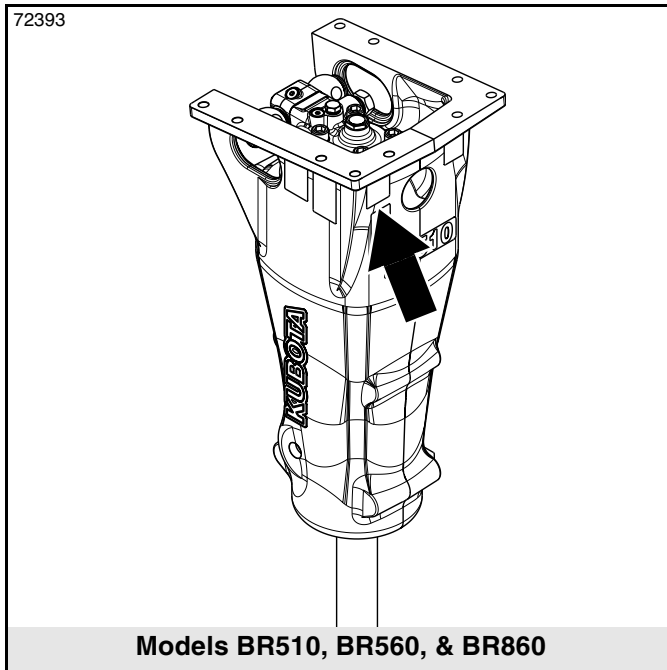
1-Place: Models BR510, BR560, & BR860



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Danger: High Pressure Hazard

1 Place: Models BR310, BR360, & BR460

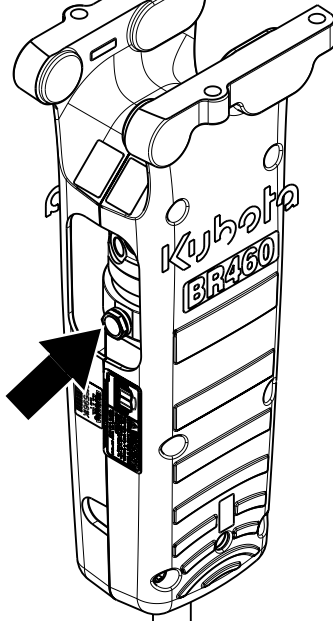


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Danger: High Pressure Hazard

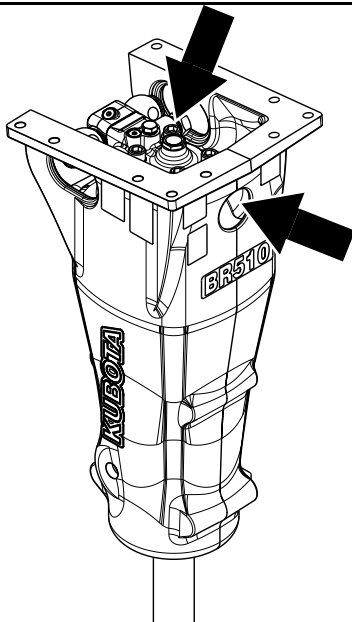
1 Place: Models BR510, BR560, & BR860

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Models BR310, BR360, & BR460

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Models BR510, BR560, & BR860



72399

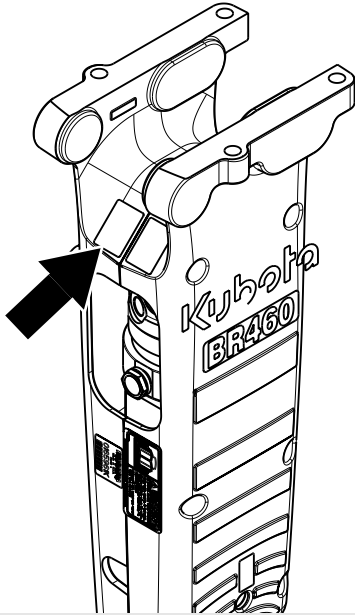
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Explosion Hazard

1 Place: Models BR310, BR360, & BR460

2 Places: Models BR510, BR560, & BR860

72332



Models BR310, BR360, & BR460



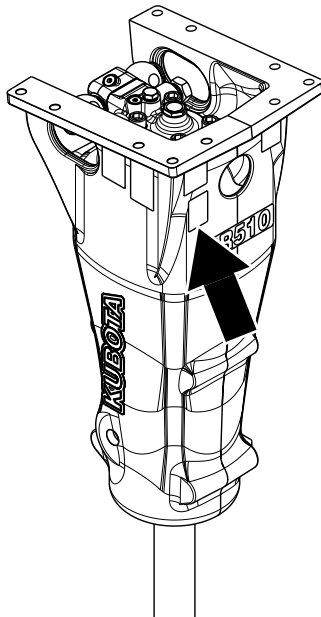
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170500_ENG-1

Warning: Dust Hazard

1 Place: Models BR510, BR560, & BR860

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Models BR510, BR560, & BR860



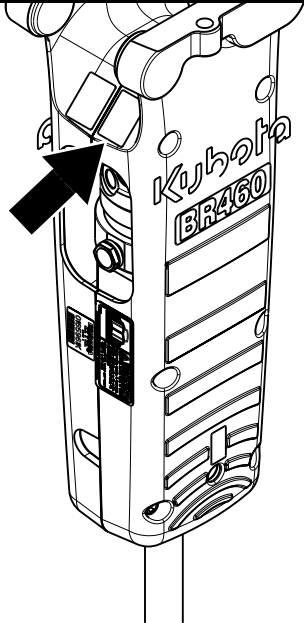
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170500_ENG-3

Warning: Dust Hazard

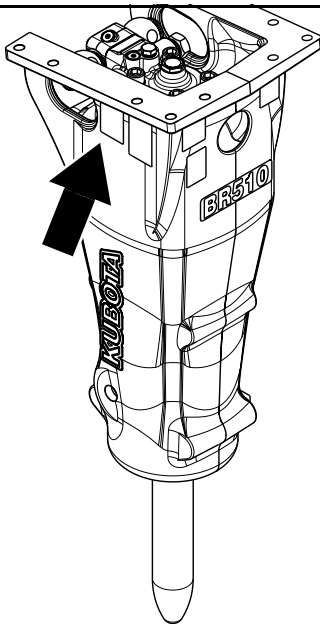
1 Place: Models BR510, BR560, & BR860

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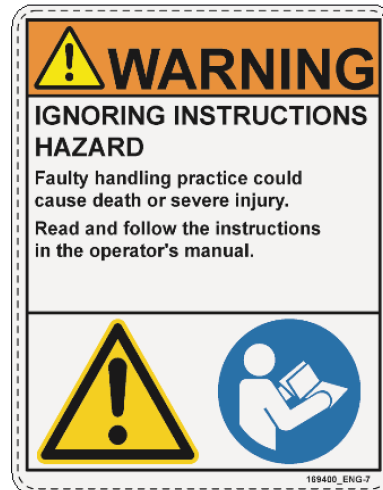
Models BR310, BR360, & BR460

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Models BR510, BR560, & BR860

72394



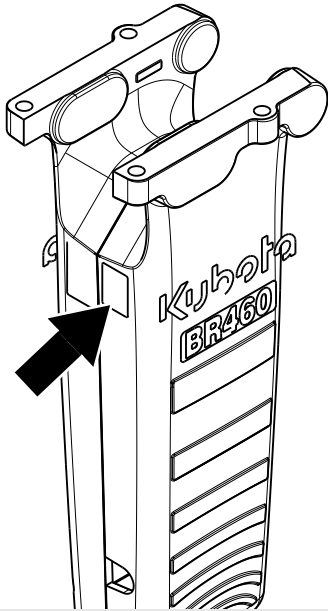
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Warning: Read Operator's Manual

1 Place: Models BR310, BR360, & BR460

1-Place: Models BR510, BR560, & BR860

72414



Models BR310, BR360, & BR460



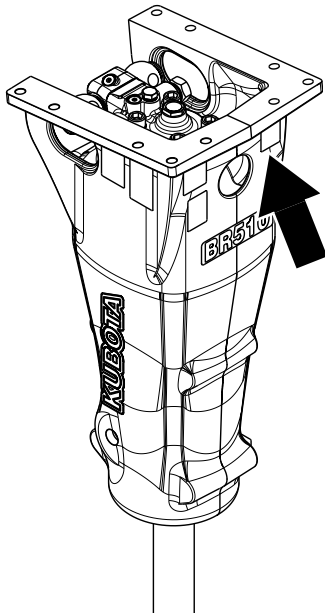
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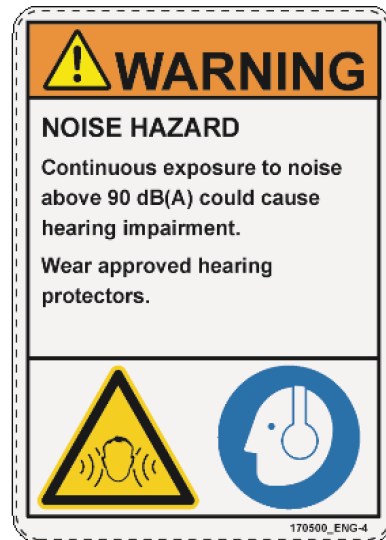
Warning: Noise Hazard

1 Place: Models BR510, BR560, & BR860

72393



Models BR510, BR560, & BR860



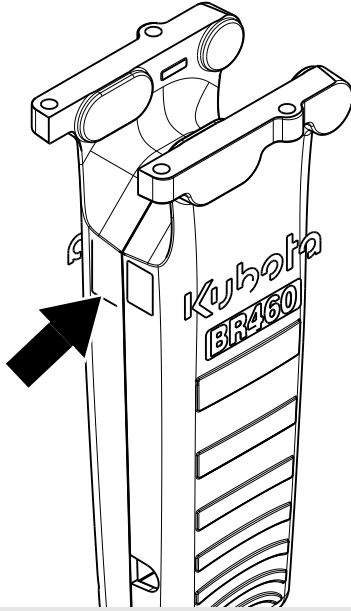
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Warning: Noise Hazard

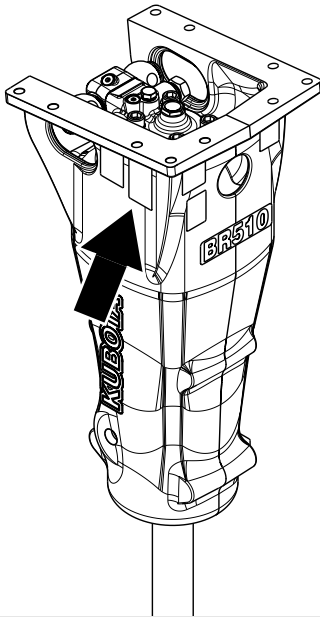
1 Place: Models BR510, BR560, & BR860

72414



Models BR310, BR360, & BR460

72393



Models BR510, BR560, & BR860

72395

**169400_ENG-6**

Warning: Flying Object Hazard

1 Place: Models BR310, BR360, & BR460

1-Place: Models BR510, BR560, & BR860

Kubota welcomes you to the growing family of new product owners. This Hydraulic Breaker has been designed with care and built by skilled workers using quality materials. Proper assembly, maintenance, and safe operating practices will help you get years of satisfactory use from this product.

Application

Kubota's BR Series Hydraulic Breakers (hammers) are designed to demolish rock, concrete, asphalt, and other construction materials. These hydraulic breakers are useful tools on construction sites, in rental fleets, and other demolition-type applications. They fit Kubota Excavators, Skid Steers, Track Loaders, certain TLBs and Kubota's Stand-on Compact Loader. Operators of these power units will find that crushing rock and breaking apart concrete can be accomplished with ease.

See "**Specifications & Capacities**" on page 60 and "**Features & Benefits**" on page 64 for additional information and performance enhancing options.

Using This Manual

- This Operator's Manual is designed to help familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Some parts may change slightly to assure you of the best performance.
- To order a new Operator's or Parts Manual, contact your authorized dealer. Manuals can also be downloaded, free-of-charge, from our website at www.landpride.com

Terminology

"Right" or "Left" as used in this manual is determined by the direction the operator faces while sitting in the operator's seat looking forward unless otherwise stated.

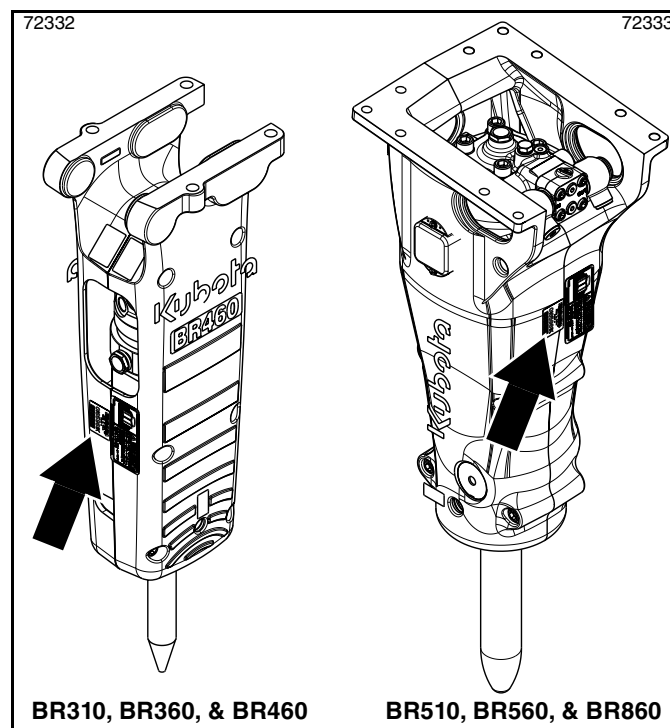
Owner Assistance

The dealer should complete the Online Warranty Registration at the time of purchase. This information is necessary to provide you with quality customer service.

The parts on your Hydraulic Breaker have been specially designed by Kubota/Land Pride and should only be replaced with genuine Kubota parts. Contact a Kubota dealer if customer service or repair parts are required. Your Kubota dealer has trained personnel, repair parts, and equipment needed to service this implement.

Serial Number

For quick reference and prompt service, record model and serial number on the inside cover page and again on the warranty page. Always provide model number and serial number when ordering parts and in all correspondence with your Kubota dealer. For location of your serial number plate, see Figure 1.



BR Serial Number Plate
Figure 1

Further Assistance

Your dealer wants you to be satisfied with your new Hydraulic Breaker. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

1. If you have any issues or questions with your new attachment, please contact the service department at your local dealership to address your concerns.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the question/problem, and request assistance.
3. For further assistance write to:

Kubota by Land Pride Service Department

1525 East North Street
P.O. Box 5060
Salina, Ks. 67402-5060

E-mail address
lpSERVICE@landpride.com

Power Machine Requirements

The Hydraulic Breaker is designed to attach to excavators, B26 backhoe, skid steers, track loaders and compact utility loaders with the following requirements:

Skid Steers & Track Loaders

Maximum horsepower 100 hp (74.6 kW)
Hitch type Skid steer quick attach, ISO 24410
Skid steer weight See warning to the right
Rear-view mirror Recommended

Compact Utility Loaders

Hitch type 1 *CII (Quick-Attach)
Hitch type 2 2-lever hitch
Compact loader weight See warning to the right
*CII (Common Industry Interface)

Backhoe Hitch Type

BR310 Mechanical quick coupler
BR460 Mechanical quick coupler

Excavators Hitch Type

BR310 Pin-on coupler
All other Models Mechanical quick coupler

Skid Steers, Track Loaders, Compact Utility Loaders, Excavators, & Back Hoe

Hydraulic connections 1 - Auxiliary circuit
Hydraulic pressure 1,500-3,500 psi (10.3-24.1 mPa)
Hydraulic flow rate¹
BR310 3.9-8.7 gpm (14.8-32.9 lpm)
BR360 5.3-12.7 gpm (20.1-48.1 lpm)
BR460 7.9-16.6 gpm (29.9-62.8 lpm)
BR510 9.2-23.8 gpm (34.8-90.1 lpm)
BR560 10.5-31.7 gpm (39.7-120 lpm)
BR860 13.2-39.6 gpm (50-149.9 lpm)

Guarding

Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.

SVL Models with factory closed cab

Require Kubota's Special Application
Door Kit #S6698.

SVL Models with factory ROPS

Require Kubota's Special Application
Door Kit #S6698.

SSV Models with factory Closed Cab

Require Kubota's Front Demolition
Door Kit #V1311-96821

SSV Models with factory ROPS

Require Kubota's
Door Completion Kit #V1311-96811 and
Front Demolition Door Kit #V1311-96821



WARNING

To avoid serious injury or death:

- Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.
- Consult your power machine Operator's Manual for operating capacity, lifting capacity, and operating specifications. Exceeding rated capacities and specifications can result in loss of control, roll-over or other serious hazard.
- Allow only persons to operate this attachment who have fully read and comprehended this manual, and who have been properly trained in the safe operation of this attachment. Serious injury or death can result from the inability to read, understand, and follow instructions provided in this manual.
- Lightweight power machines may need weight added to the rear to maintain steering control and prevent forward and/or side tipping. Consult your power machine Operator's Manual to determine proper weight requirements and maximum limitations.

Match Hydraulic Breaker Model Number to Kubota's Power Machines¹

Model No.	SVL / SSV	SCL 1000	B26	M62	K008	U17	KX018	U25 U27	U35	KX71	KX033	KX040	KX057	U55	KX080
BR310			X		X										
BR360		X				X	X								
BR460		X		X				X	X	X	X	X			
BR510	X											X	X	X	
BR560	X												X	X	X ²
BR860															X

1. Hydraulic flow rates must match power machine's hydraulic flow rates. Refer to table above for match-up of hammer and Kubota's power machine.
2. BR560 matched to KX080 to be released soon.

Torque Requirements

Refer to “**Torque Values Chart**” on page 67 to determine correct torque values when tightening hardware.

Dealer Preparations

This Hydraulic Breaker has been mostly assembled at the factory. Some additional preparations will be necessary to finish assembling the attachment and to attach it to the customer’s power machine. Make sure the intended power machine conforms to “**Power Machine Requirements**” on page 14.

An understanding of how this attachment works will aid in final assembly and setup. Read and understand the Operator’s Manual. Go through the “**Pre-Assembly Checklist**” on page 15. To speed up the assembly task and make the job safer, have all needed parts and equipment readily at hand.

Pre-Assembly Checklist

✓	Check	Reference
☐	Have a fork lift or loader with properly sized chains or straps and safety stands capable of lifting and supporting the equipment on hand.	
☐	Have a minimum of two people available during assembly.	
☐	Make sure all major components and loose parts are shipped with the attachment.	Operator’s Manual
☐	Double check to make sure all parts, fasteners and pins are installed in the correct location to lessen the chance of using a bolt incorrectly. Refer to the Parts Manual if unsure. NOTE: All assembled hardware from the factory has been installed in the correct location. Remember location of a part or fastener if removed. Keep parts separated.	Operator’s Manual 317-382MK Parts Manual 317-382PK
☐	Make sure working parts move freely, bolts are tight & cotter pins are spread.	Operator’s Manual
☐	Make sure all grease fittings are in place and lubricated.	Page 57
☐	Make sure all safety labels are correctly located and legible. Replace if damaged.	Page 6

Shutdown Procedures

Tractor Shutdown Procedure

The following are basic tractor shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your tractor Operator’s Manual before leaving the operator’s seat.

1. Reduce engine speed and shut-off all power to the attachment.
2. Park tractor and attachment on solid, level ground.
3. Lower attachment until it is flat on the ground or on non-concrete support blocks.
4. Put tractor in park or set park brake, turn off engine, and remove ignition key to prevent unauthorized starting.
5. Relieve all hydraulic pressure to auxiliary hydraulic lines.
6. Wait for all components to come to a complete stop before leaving the operator’s seat.
7. Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.

Excavator Shutdown Procedure

The following are basic excavator shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your excavator Operator’s Manual before dismounting the excavator.

1. If engaged, disengage hydraulics to the attachment.
2. Park on solid, level ground.
3. Lower attachment and dozer blade until they are on the ground.
4. Reduce engine speed to an idle and turn ignition key to “STOP” position to shut engine off.
5. Turn ignition key to “RUN” position.
6. Move lever lock(s) down to the lock position.
7. Relieve hydraulic pressure to the hydraulic system by operating the control levers. Refer to your excavator Operator’s Manual for detailed instructions.
8. Turn ignition key to “STOP” and remove to prevent unauthorized starting.
9. Face excavator while using approved steps, grab-handles and anti-slip surfaces while stepping on and off the excavator.

Skid Steer Shutdown Procedure

The following are basic skid steer shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your skid steer Operator's Manual before leaving the operator's seat.

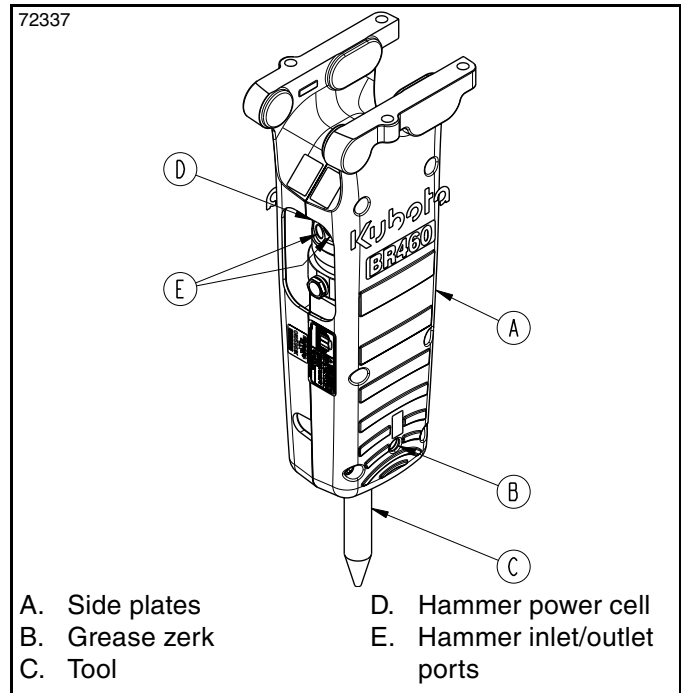
1. Reduce engine speed and shut-off all power to the attachment.
2. Park on solid, level ground and lower attachment until it is flat on the ground or on non-concrete support blocks.
3. Turn off engine. Do not remove ignition key at this time.
4. Turn ignition key to the "RUN" position and relieve all hydraulic pressure by moving both joysticks.
5. Turn ignition key off and remove to prevent unauthorized starting.
6. If included, raise seat bar and move controls until both lock.
7. Wait for all components to come to a complete stop before leaving the operator's seat.
8. Use steps, grab-handles and anti-slip surfaces when stepping on and off the skid steer or attachment.

Compact Loader Shutdown Procedure

The following are basic compact loader shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your compact loader Operator's Manual before leaving the operator platform.

1. Park compact utility loader with attachment on solid, level ground.
2. Reduce engine speed.
3. Shut-off auxiliary power to the attachment.
4. Lower the loader arms until they are fully down or until the attachment is resting flat on the ground or on non-concrete support blocks.
5. Turn off the compact loader engine. Refer to the compact utility loader Operator's Manual for engine shutdown procedures.
6. If the compact loader is equipped with a hydraulic pressure relief lever, move lever back and forth to relieve all hydraulic pressure to the attachment. See your compact utility loader Operator's Manual for additional instructions on how to release the hydraulic pressures.
7. Wait for all components to come to a complete stop before leaving the operator's platform.
8. Use grab-handles and anti-slip surfaces when getting on and off the compact loader.

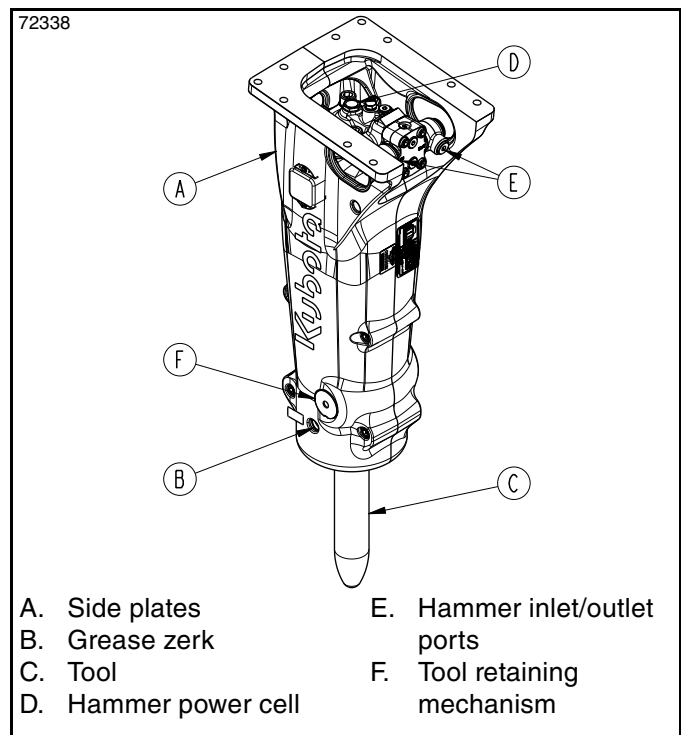
NOTE: Let engine idle at low throttle for 1-2 minutes before shutting engine off. This helps cool engine before shutting it off. In the case of an emergency, you can shutdown the engine immediately by turning the power switch to the off position.



BR310, BR360, & BR460 Product Introduction
Figure 1-1

Main Components (310, 360, 460)

Refer to Figure 1-1:



BR510, BR560, & BR860 Product Introduction
Figure 1-2

Main Components (510, 560, 860)

Refer to Figure 1-2:

Section 1: Common Assembly & Set-up

Lift Safety

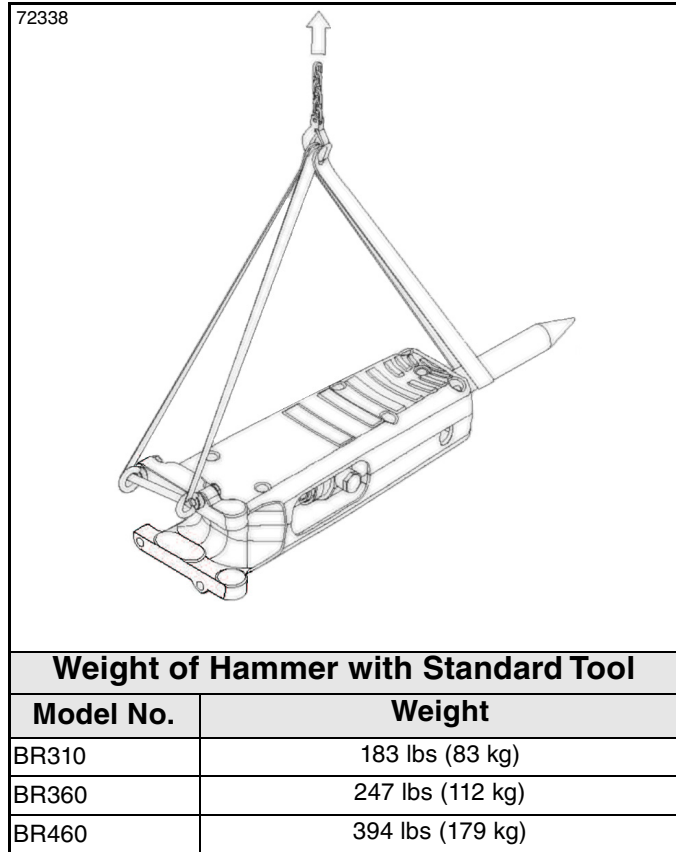
Below are some common safety instructions concerning lifting operations. The national standards for machines and lifting-tackles must always be strictly observed. Please note that the list below is not all inclusive, you must always ensure the procedure you choose is safe for you and others. Do not lift load over people. No one shall be under the hoisted load.

- Be aware of pinch points such as components coming against one another or passing by one another. Keep body extremities away from pinch points.
- Be aware of possible crushing hazards while working with heavy equipment. Use a hoist or other lifting device to lift heavy equipment. Keep bystanders and yourself out from under heavy equipment.
- Do not lift people and never allow anyone, including yourself, to ride the hoisted load.
- Keep all persons away from the load while lowering and raising the unit. A person can be hit, pinched, or crushed by the unit.
- Keep people clear from the lift area.
- Avoid side pull on the load. Make sure you take up the slack slowly. Start and stop carefully.
- Lift load a few inches/centimeters and verify it is secured and well balanced before proceeding. Check for any loose items.
- Never leave a suspended load unattended. Maintain control of the load at all times.
- Never lift a load that exceeds the rated capacity of the equipment used to lift the load. See **"Section 9: Specifications & Capacities"** on page 60.
- Inspect all lifting equipment before using it. Do not use twisted or damaged equipment. Protect the equipment lifting the load from sharp corners.
- Obey all local safety instructions.

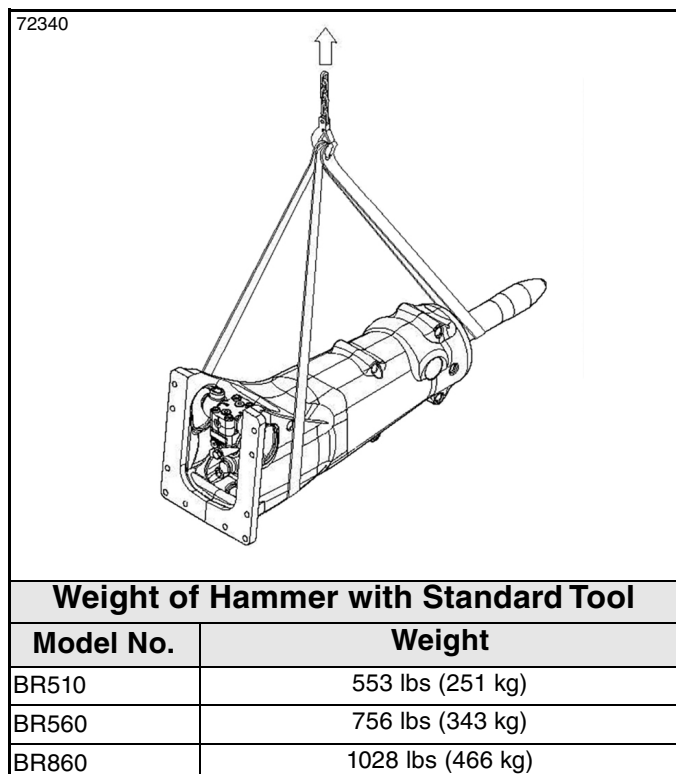
Lift Instructions

Refer to **Figure 1-3 & Figure 1-4:**

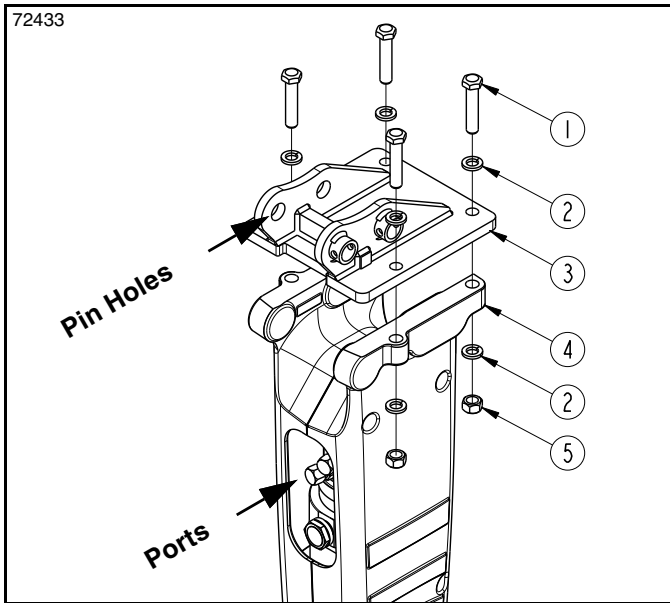
1. Faulty lifting methods are always a risk to yourself and your surrounding. Use a hoist when lifting components which weigh 50 lb (23 kg) or more, to avoid injury.
2. Make sure all chains, hooks, slings etc., are in good condition and of correct capacity. Be sure hooks are positioned correctly. Do not use the hammer's tools to lift other objects.
3. **BR510, BR560, & BR860 hammers only:**
Do not side load lifting eyes during a lifting operation.
4. Lifting devices must safely carry the working weight of the product. Place chains or slings, as shown by the illustrations, to lift the product. Contact your Kubota dealer to find out how to lift with your excavator.



BR310, BR360, & BR460 Lifting Method
Figure 1-3



BR510, BR560, & BR860 Lifting Method
Figure 1-4



BR310 Hydraulic Breaker
Figure 1-5

Pin-on Quick Coupler Mount

Refer to Figure 1-5:

The following are instructions for attaching the pin-on mount to the BR310 Hydraulic Breaker.

NOTE: Hardware for attaching the pin-on mount is supplied with the hammer.

1. Attach Pin-on hitch mount (#3) to hammer (#4) as shown by inserting existing bolts (#1), through top lock washers (#2), pin-on mount (#3), hammer (#4), and bottom lock washers (#2).
2. Secure bolts (#1) with existing nuts (#5). Tighten nuts to the correct torque.

Quick Coupler Mount

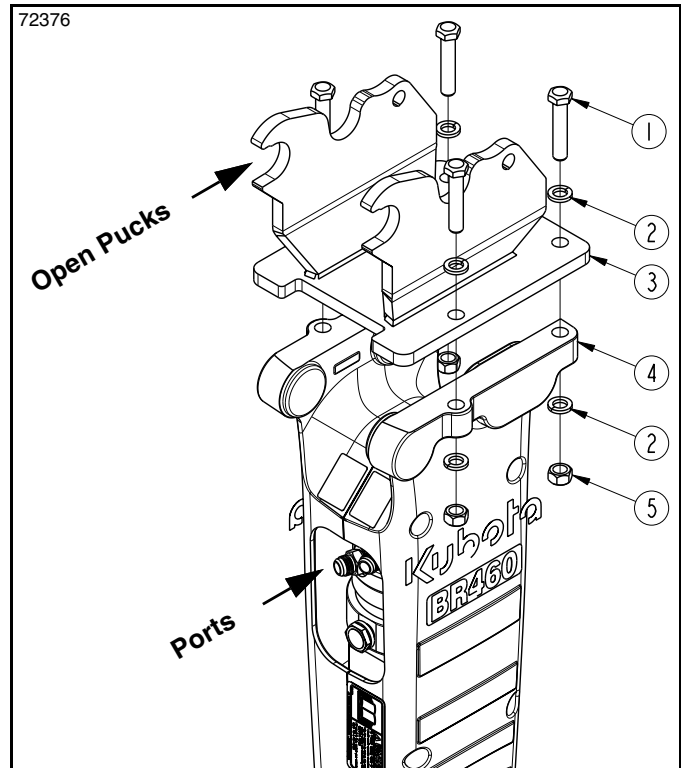
Refer to Figure 1-6 or Figure 1-7:

The following are instructions for attaching a quick coupler mount to a Hydraulic Breaker.

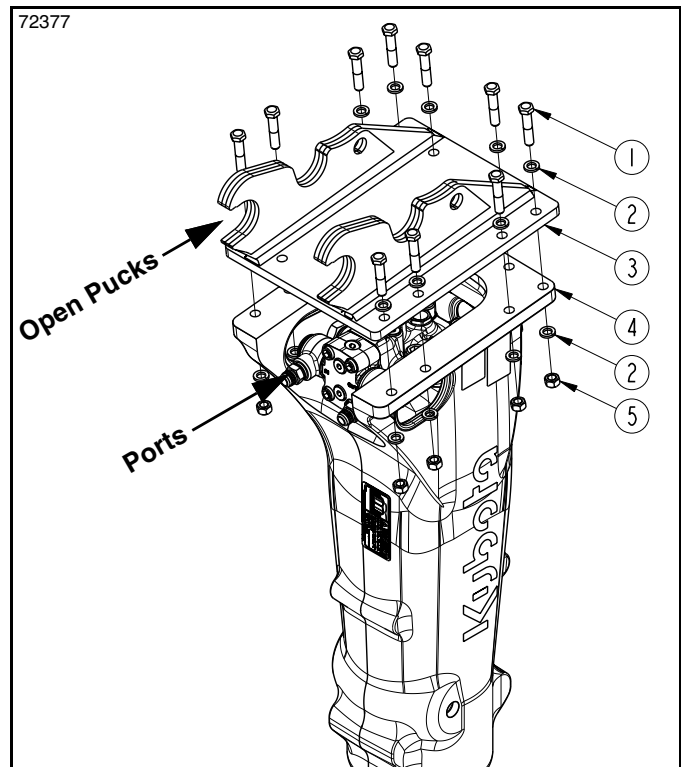
NOTE: Bolts (#1) may be inserted from the top or bottom. Hardware for attaching the quick coupler mount is supplied with the hammer.

- BR310, BR360, & BR460 require 4 bolts.
- BR510 & BR560 require 10 bolts.
- BR860 requires 12 bolts.

1. Attach quick coupler mount (#3) to hammer (#4) as shown with supplied bolts (#1), lock washers (#2), and nuts (#5).
2. Tighten nuts (#5) to the correct torque.



BR310, BR360, & BR460 Hydraulic Breakers
Figure 1-6



BR510, BR560, & BR860 Hydraulic Breakers
Figure 1-7

Pin Grabber Mount

Refer to Figure 1-8:

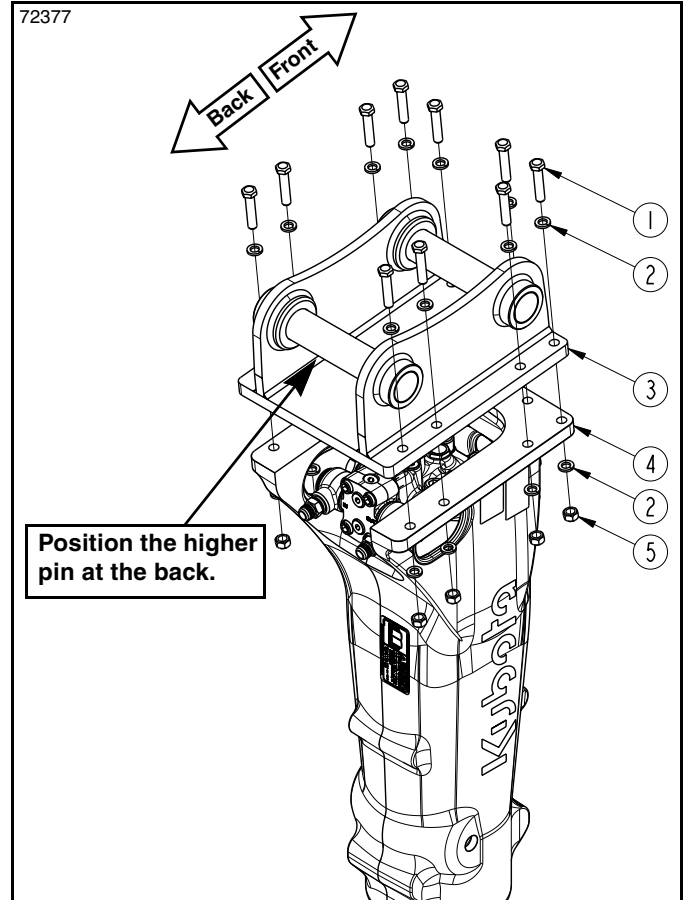
The following are instructions for attaching a pin grabber mount to the BR510, BR560, and BR860 Hydraulic Breakers.

NOTE: Bolts (#1) may be inserted from the top or bottom. Hardware for attaching the quick coupler mount is supplied with the hammer.

- RB510 & BR560 require 10 bolts.
- BR860 requires 12 bolts.

NOTE: Always attach the pin grabber to the breaker with its higher pin at the back. This arrangement is a better fit for the pin grabber coupler.

1. Attach pin grabber mount (#3) to hammer (#4) as shown with hammer supplied bolts (#1), lock washers (#2), and nuts (#5).
2. Tighten nuts (#5) to the correct torque.



BR560, & BR860 Hydraulic Breakers

Figure 1-8

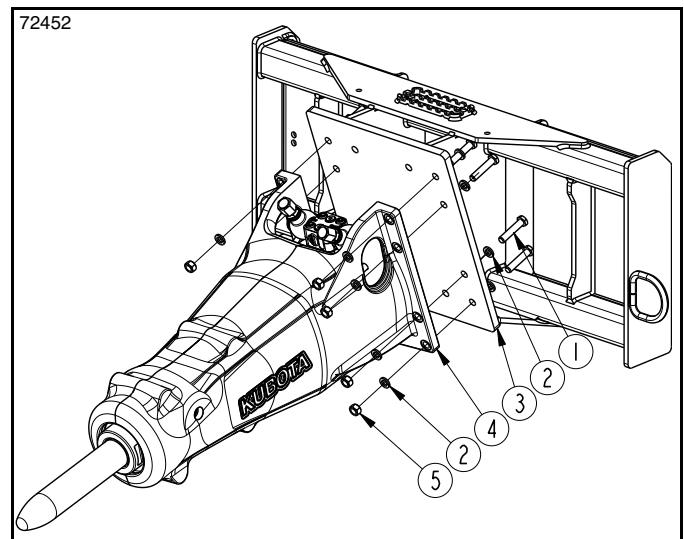
Skid Steer Mount with 510/560 Mount

Refer to Figure 1-9:

The following are instructions for attaching the skid steer with BR510/560 mount to the BR510 or BR560 Hydraulic Breaker.

NOTE: Bolts (#1) may be inserted from the top or bottom. Hardware for attaching the pin-on mount is supplied with the hammer.

1. Attach skid steer mount (#3) to hammer (#4) as shown with existing bolts (#1), lock washers (#2), and nuts (#5).
2. Tighten nuts (#5) to the correct torque.



BR510 & BR560 Hydraulic Breakers

Figure 1-9

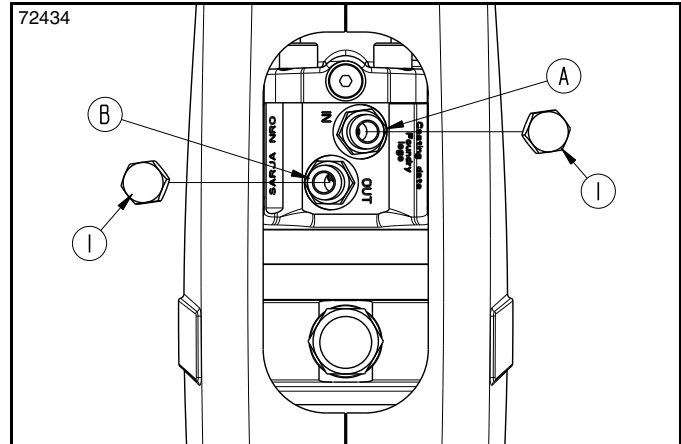
Port Identification

Refer to Figure 1-10 & Figure 1-11:

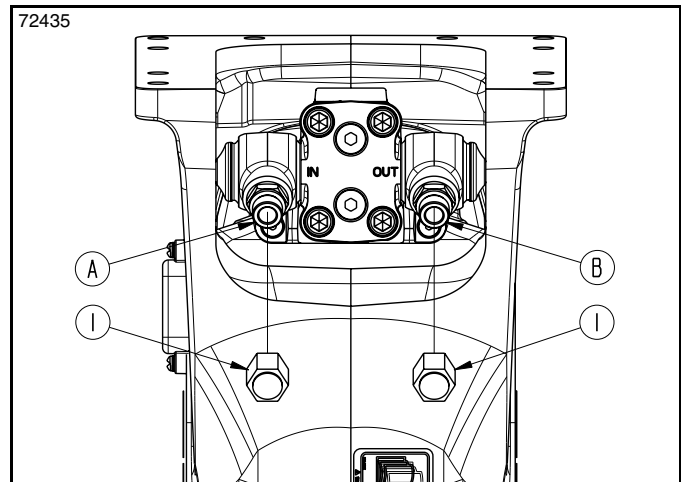
It is important to be able to identify the **IN** port (A) and **OUT** port (B) for the Hydraulic Hammer to operate properly. The two ports are usually labeled **IN** and **OUT**. If they are not, the **IN** port will be painted blue and the **OUT** port will be painted red.

Connect the pressurized hydraulic line on your power machine to the **IN** port and the return hydraulic line to the **OUT** port. The letter (A) is used throughout this manual to represent the **IN** port adapter and (B) represents the **OUT** port adapter. See your power machine Operator's Manual to determine which line is the pressurized line and which is the return line.

The Hydraulic Breakers are shipped with straight adapters (A & B) tightened to the ports and capped with cap nuts (#1) to keep dirt out. Do not loosen straight adapters during standard service. It is very important to keep dirt out of the hydraulic system. Remove cap nuts (#1) only when attaching the hydraulic hoses to the straight adapters.



BR310, BR360, & BR460 Hydraulic Breakers
Figure 1-10



BR510, BR560, & BR860 Hydraulic Breakers
Figure 1-11

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This section provides instructions for attaching the Hydraulic Breaker to a Kubota excavator or Kubota B26 backhoe. If attaching the Hydraulic Breaker to a skid steer, see “**Section 3: Skid Steer Assembly & Set-up**” on page 28. If attaching the Hydraulic Breaker to a Compact Utility Loader, see “**Section 4: CUL Assembly & Set-up**” on page 32.

Install BR310/BR360 Hose Kit

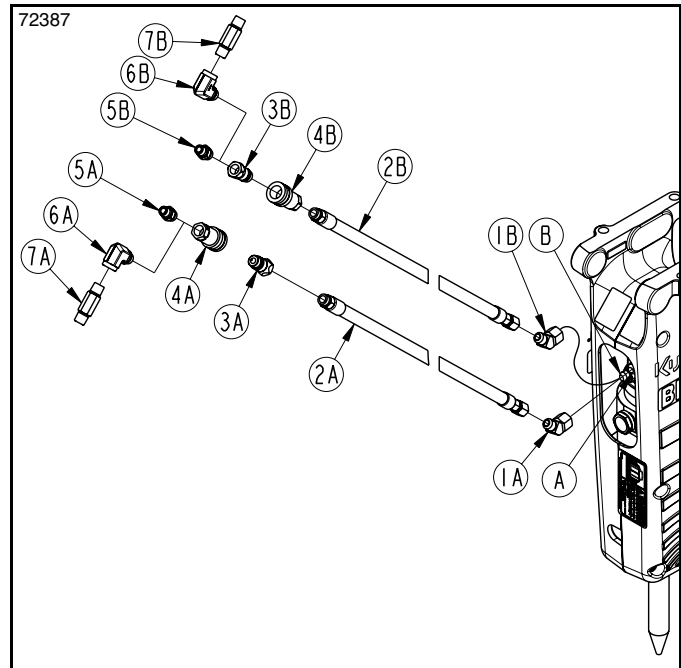
Refer to Figure 2-1:

Straight adapters (A & B) are shipped secured to the ports labeled “IN” and “OUT.” Do not remove adapters (A or B) during standard service. The power machine’s pressure line must be connected to the “IN” port with adapter (A).

1. Attach elbows (#1A & #1B) to straight adapters (A & B) as shown. Rotate elbows to point up and tighten.
2. Attach hydraulic hoses (#2A & #2B) to elbows (#1A & #1B) as shown and tighten.
3. Attach male coupler (#3A) to hose (#2A) and tighten.
4. Attach female coupler (#4B) to hose (#2B) and tighten.
5. Continue with one of three bullets for attaching hose fittings to your power machine:
 - See “**B26 Backhoe Fittings**” on this page.
 - See “**K008 Excavator Fittings**” on this page.
 - See “**U17 & KX018 Excavator Fittings**” on this page.

B26 Backhoe Fittings

1. Discard 90° elbows (#6A & #6B) and pipe nipples (#7A & #7B).
2. Consult your backhoe manual to determine which line is the pressure line and which is the return line.
3. Wrap teflon tape around pipe threads on adapters (#5A & #5B).
4. Attach adapter (#5A) to the backhoe’s pressure line and (#5B) to the return line. Tighten both adapters.
5. Attach female coupler (#4A) to adapter (#5A) and tighten.
6. Attach male coupler (#3B) to adapter (#5B) and tighten.



BR310 BR360 Hydraulic Hose Kit installation
Figure 2-1

K008 Excavator Fittings

1. Discard adapters (#5A & #5B).
2. Consult your excavator manual to determine which line is the pressure line and which is the return line.
3. Wrap teflon tape around pipe threads on both ends of pipe nipples (#7A & #7B).
4. Attach pipe nipple (#7A) to the excavator’s pressure line and pipe nipple (#7B) to the return line. Tighten both pipe nipples.
5. Attach elbows (#6A & #6B) to pipe nipples (#7A & #7B) and tighten.
6. Attach female coupler (#4A) to elbow (#6A) and tighten.
7. Attach male coupler (#3B) to elbow (#6B) and tighten.

U17 & KX018 Excavator Fittings

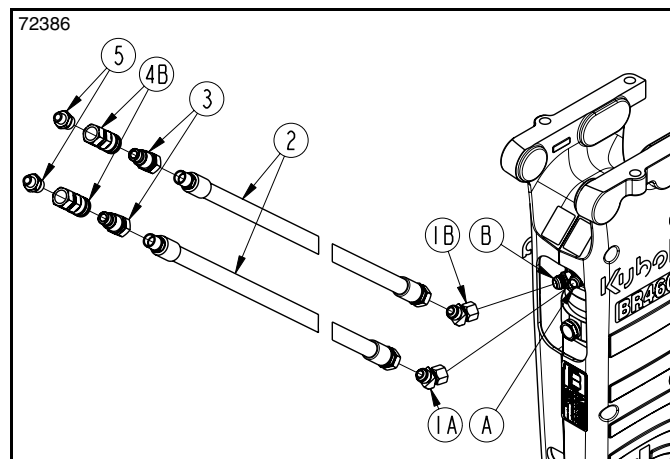
1. Pipe nipples (#7A & #7B) and elbows (#6A & #6B) are not included with this optional hose kit.
2. Consult your excavator manual to determine which line is the pressure line and which is the return line.
3. Wrap Teflon tape around pipe threads on adapters (#5A & #5B). Attach adapter (#5A) to the excavator pressure line and (#5B) to the return line. Tighten both adapters.
4. Attach female coupler (#4A) to adapter (#5A) and tighten.
5. Attach male coupler (#3B) to adapter (#5B) and tighten.

Install BR460 Hose Kit

Refer to Figure 2-2:

Straight adapters (A & B) are shipped tightened to the “IN” and “OUT” ports. Do not remove adapters (A or B) during standard service. The power machine’s pressure line must be connected to the “IN” port with adapter (A).

1. Attach elbows (#1A & #1B) to straight adapters (A & B). Rotate elbows to point up and tighten.
2. Attach hoses (#2) to elbows (#1A & #1B) and tighten.
3. Attach male couplers (#3) to hoses (#2) and tighten.
4. Wrap teflon tape around pipe threads on adapters (#5). Attach adapters (#5) to the excavator pressure line and return line, and tighten.
5. Attach female couplers (#4) to adapters (#5) and tighten.



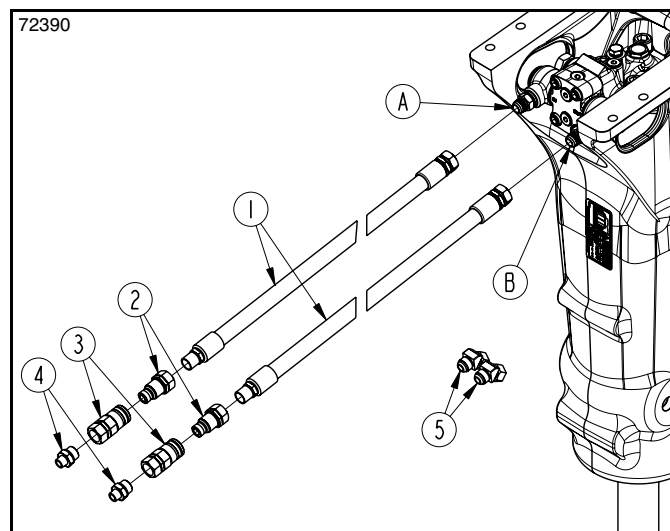
BR460 Hydraulic Hose Kit Installation
Figure 2-2

Install BR510/560 Hose Kit

Refer to Figure 2-3:

Straight adapters (A & B) are shipped tightened and glued to the “IN” and “OUT” ports. Do not remove adapters (A or B) during standard service. The power machine’s pressure line must be connected to the “IN” port with adapter (A).

1. Discard 45° elbows (#5).
2. Attach hoses (#1) to adapters (A & B) and tighten.
3. Attach male couplers (#2) to hoses (#1) and tighten.
4. Wrap Teflon tape around pipe threads on adapters (#4). Attach adapters to the excavator pressure line and return line and tighten.
5. Attach female couplers (#3) to adapters (#4) and tighten.



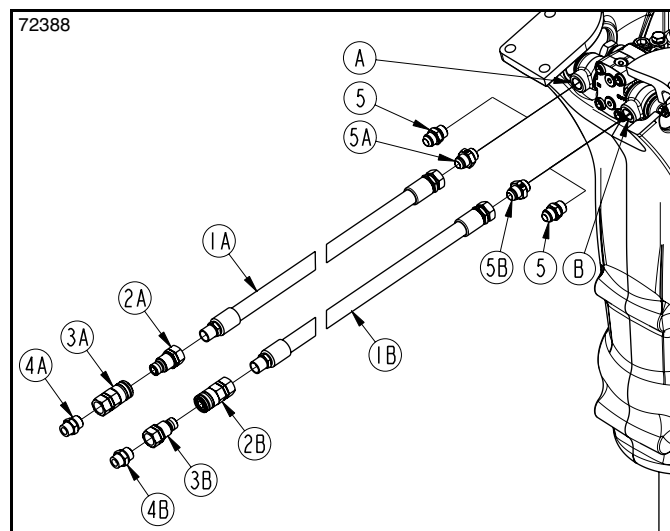
BR510 & BR560 Hydraulic Hose Kit Installation
Figure 2-3

Install BR860 Hose Kit

Refer to Figure 2-4:

Pressure line (#1A) must be connected to “IN” port (A).

1. Consult your excavator manual to determine which line is the pressure line and which is the return line.
2. Adapters (#4A & #4B) have O-rings. Wrap teflon tape around their pipe threads. Screw adapter (#4A) to the power machine’s pressure line and adapter (#4B) to its return line until they are tight.
3. Screw female coupler (#3A) to adapter (#4A) and male coupler (#3B) to adapter (#4B) until tight.
4. Remove adapters (#5) from hammer ports (A & B).
5. Adapters (#5A & #5B) are without O-rings. Wrap teflon tape around their pipe threads. Screw these two adapters to ports (A & B) until they are tight.
6. Attach hoses (#1A & #1B) to adapters (#5A & #5B) and tighten.
7. Screw male coupler (#2A) to hose (#1A) and female coupler (#3B) to hose (#1B) until they are tight.



BR860 Hydraulic Hose Kit Installation
Figure 2-4

Hook-up Excavators & Backhoe to the Hammer

General Safety

DANGER

To avoid serious injury or death:

A crushing hazard exists while connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate controls including lift, extend, and swing while someone is near the power machine and/or attachment.

WARNING

To avoid serious injury or death:

- Make sure the attachment is properly connected to the coupler on the dipper arm. The coupler must be secured to the attachment with lock pin fully inserted and secured in place with the linchpin. An improperly connected attachment can come loose and fall or being thrown.
- Make sure the coupler housings are free of obstructions such as mud, excess dirt, rocks and ice. Coupler engagement and disengagement may be impeded and could potentially create an unsafe connection for the attachment.
- Never stand beneath or position any body part beneath an attachment that is being removed or installed.
- Never attempt to reposition the attachment on the excavator's arm with the attachment off the ground. A crushing and/or pinch point hazard exists between coupler and attachment. Keep hands and fingers clear.
- Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.

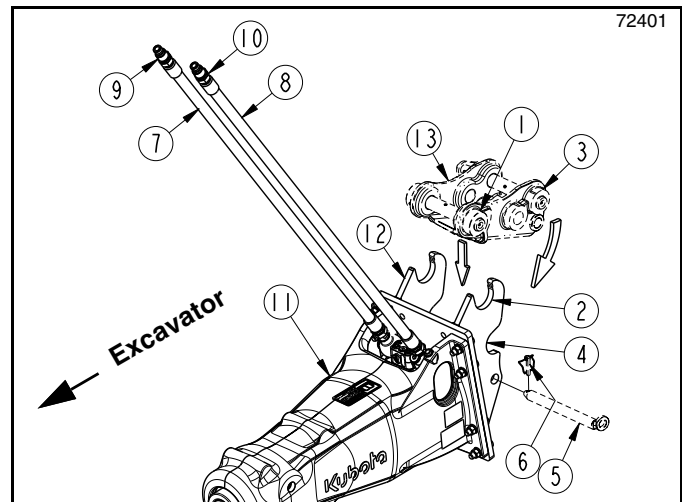
Match Hammer to Excavators & Backhoe

Kubota combinations are outlined in the table below. Any specific recommendations made by your Kubota dealer must be followed.

Match Hammer with Kubota Power Machine	
Backhoe and Excavators	Hammer
B26 Backhoe	BR310
K008 Excavator	BR310
U17 & KX018 Excavators	BR360
U25, U27 Excavators	BR460
U35, KX71, KX033, & M62 Excavators	BR460
KX040 Excavator	BR460 & BR510
KX057 & U55 Excavator	BR510 & BR560
KX080 Excavator	BR860

Notes:

- If the combined weight of hammer and mounting gear is too heavy, excavator stability will be at risk.
- If the distance between 'bucket' pins is too small, there is risk of contact between hammer and dipper stick in cylinder end position. This may cause costly damage to cylinder or dipper stick.
- Please contact your local Kubota dealer for additional questions.



Hook-up Hydraulic Breaker

Figure 2-5

Excavators With Quick Attach Couplers

Hook-up Hammer

Refer to Figure 2-5:

NOTE: Customer to supply quick attach coupler (#13) lock pin (#5) and linchpin (#6).

1. Check for and remove all debris in the interior of coupler housing (#13) and mount (#12).
2. Remove linchpin (#6) and pull lock pin (#5) from coupler (#13).
3. Start excavator or backhoe and place dipper arm in line with attachment. Fully retract curl cylinder.
4. Drive slowly forward while maneuvering dipper arm to align and seat rear coupler pucks (#1) with slots (#2).
5. Extend curl cylinder to roll coupler (#13) down until pucks (#3) are fully seated in slots (#4).
6. Raise mount (#12) with hammer (#11) slightly off the ground and curl coupler (#13) to the most vertical position safely allowed by the hammer.
7. Without lowering the hammer, shut excavator or backhoe down before dismounting. Refer to "Excavator Shutdown Procedure" or "Tractor Shutdown Procedure" on page 15.
8. Insert coupler lock pin (#5) and secure with linchpin (#6).

Hook-up Hydraulic Hoses

Refer to Figure 2-5 on page 24:



WARNING

To avoid serious injury or death:

- Shutdown power machine and release all hydraulic pressure to the equipment before connecting or disconnecting hydraulic hoses to or from the power machine.
 - Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulics. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. DO NOT DELAY.
 - Make sure hydraulic hoses are properly routed without twists to prevent them from becoming stretched, pinched, or kinked. A damaged hydraulic hose can burst and leak hydraulic fluid.
1. Consult your excavator or backhoe manual to determine which line on the dipper arm is the pressure line and which line is the return line.
 2. Clean quick connect couplers (#9 & #10) of dirt.
 3. Attach male coupler (#9) to the pressure line.
 4. Attach remaining coupler (#10) to the return line.
 5. Return to the power machine. Curl coupler (#13) horizontal while raising hammer (#11) off the ground until hammer tool is hanging straight down.
 6. Fully extend and retract curl cylinder to ensure coupler (#13) is fully engaged with mount (#12).

Unhook Hammer



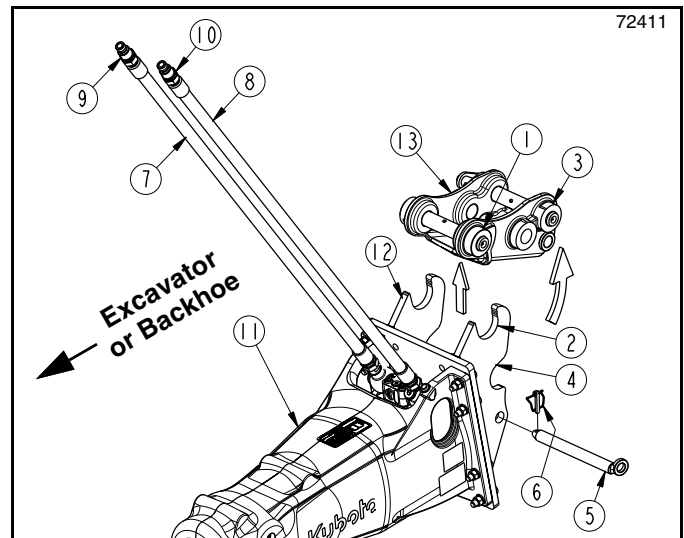
WARNING

To avoid serious injury or death:

- A crushing hazard exists while connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate controls including lift, extend, and swing while someone is near the power machine and/or attachment.
- Never stand beneath or position any body part beneath an attachment that is being removed or installed.
- Never attempt to reposition the attachment on the excavator's arm with the attachment off the ground. A crushing and/or pinch point hazard exists between coupler and attachment. Keep hands and fingers clear.

IMPORTANT: Make sure the hammer does not come against the excavator's dozer blade when laying the hammer down to unhook.

NOTE: Refer to Figure 2-6: Customer to supply QA coupler (#13), lock pin (#5) and linchpin (#6).



Unhook Hydraulic Breaker
Figure 2-6

Refer to Figure 2-6:

1. See “Long-Term Storage” on page 56 when storing the hammer for long periods.
2. Curl coupler (#13) to the most vertical position safely allowed by the attachment.
3. Lower hammer (#11) with boom and arm cylinder until hammer and mount (#12) are slightly above ground level.
4. Shut excavator down before dismounting. Refer to “Excavator Shutdown Procedure” on page 15.
5. Disconnect couplers (#9 & #10) from the dipper arm. Coil and store hoses on the hammer with couplers (#9 & #10) out of the dirt.
6. Remove linchpin (#6) and lock pin (#5) from mount (#12). If necessary, use a hammer to tap out lock pin.
7. Return to the excavator/backhoe to finish disconnecting the hammer.
8. Start excavator/backhoe and retract boom cylinder to lower hammer (#11) and mount (#12) until they are resting on the ground.
9. With hammer (#11) and mount (#12) on the ground, retract curl cylinder to roll coupler pucks (#3) out of slots (#4).
10. Extend boom cylinder to lift coupler pucks (#1) out of slots (#2).
11. Carefully maneuver coupler (#13) out of the way of hammer (#11) and mount (#12).
12. Continue on next page.
13. Shut excavator or tractor down before dismounting. Refer to “Shutdown Procedures” on page 15.
14. The hammer must be stored in the vertical position in a clean, dry place.
15. Make sure the hammer is secured from falling.

Excavators With Pin Grabber Couplers

Hook-up/Unhook Hammer

The three optional pin grabber mounts are designed to be used with Kubota's excavator KX057 with pin grabber coupler #K6131; and excavator KX080 with pin grabber coupler #6141. If your Kubota excavator does not have the required coupler, one can be purchased from your nearest Kubota dealer. Follow hook-up and unhook instructions included with your coupler's manual.

When purchasing a Kubota pin grabber mount, make sure it matches your hammer. Refer to **"Excavator Pin Grabber Mounts"** on page 45 for a Kubota match.

B26 Backhoe With Pin Connections

Hook-up Hammer

Refer to **Figure 2-7 on page 27:**

The following instructions are for hooking-up the BR310 hammer to the B26 backhoe. The right and left sides of the dipper stick and hammer are defined by the operator's position as he sits in the cab.



WARNING

To avoid serious injury or death:

- A crushing hazard exists while connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate controls including lift, extend, and swing while someone is near the power machine and/or attachment.
 - Make sure the attachment is properly hooked to the backhoe. The pin-on mount must be secured to the dipper stick and bucket pins must be fully inserted and secured.
 - Never stand beneath or position any body part beneath an attachment that is being removed or installed.
 - Never attempt to reposition the attachment on the excavator's arm with the attachment off the ground. A crushing and/or pinch point hazard exists between coupler and attachment. Keep hands and fingers clear.
 - Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.
1. Remove bucket or other attachment presently mounted to the dipper stick. Pay special attention not to misplace any small parts such as dust seals etc.
 2. The hammer (#9) is mounted in much the same way as a bucket (see illustration). Bucket pins (#1) are inserted through hole (#3) in the dipper stick and through hole (#4) in the bucket link. Bushings (#2) and o-rings (8) are installed where required.
 3. For hose hook-up instructions, see **"Hook-up Hydraulic Hoses"** on page 25.

Unhook Hammer

Refer to **Figure 2-7 on page 27:**



WARNING

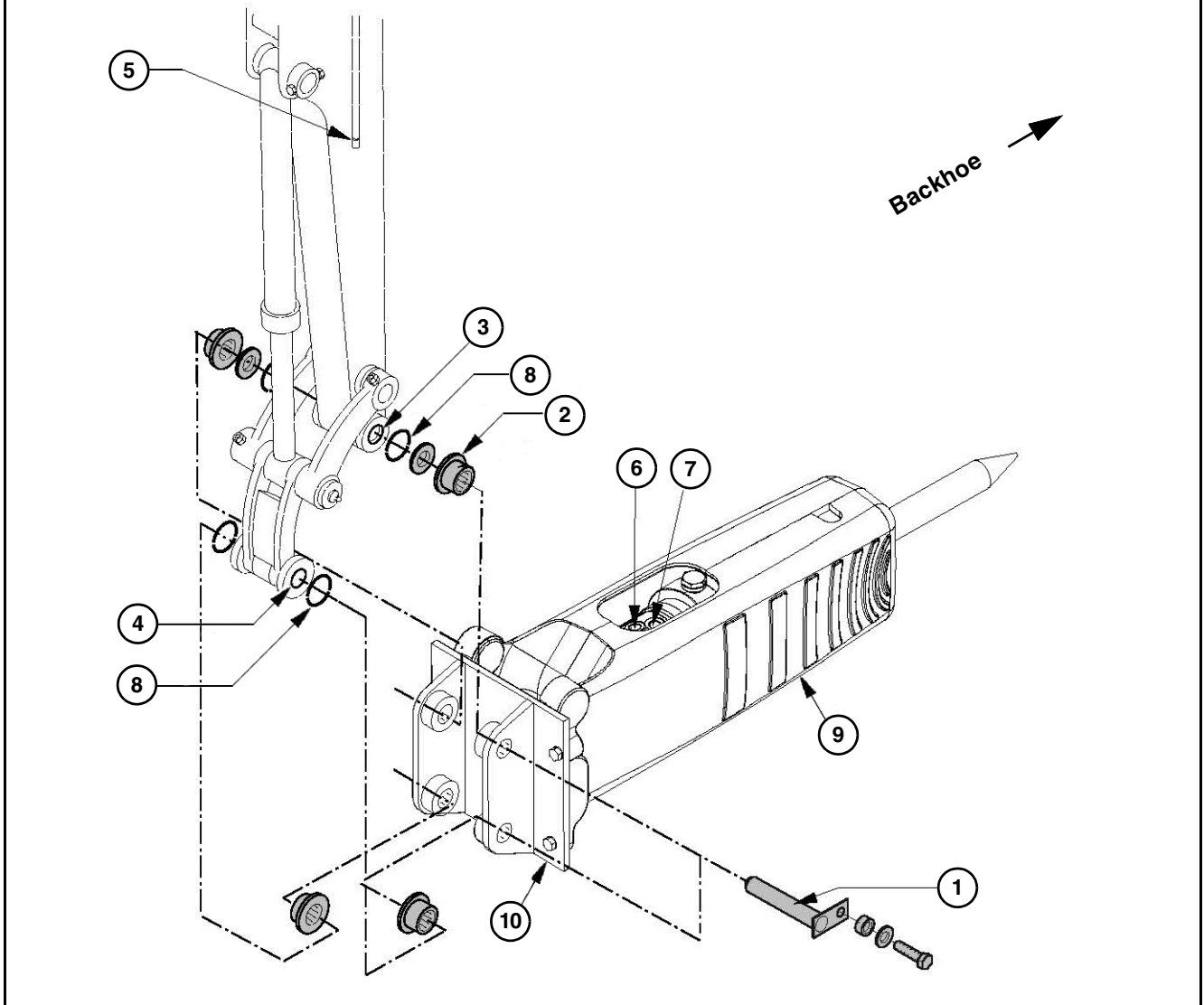
To avoid serious injury or death:

- A crushing hazard exists while connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate controls including lift, extend, and swing while someone is near the power machine and/or attachment.
- Never stand beneath or position any body part beneath an attachment that is being removed or installed.
- Never attempt to reposition the attachment on the excavator's arm with the attachment off the ground. A crushing and/or pinch point hazard exists between coupler and attachment. Keep hands and fingers clear.

IMPORTANT: Make sure the hammer does not come against the backhoe when laying the hammer down to unhook.

1. See **"Long-Term Storage"** on page 56 when storing the hammer for long periods.
2. Curl pin-on mount to the most vertical position safely allowed by the attachment.
3. Lower hammer with boom and arm cylinder until hammer and mount are resting on the ground.
4. Shut tractor down before dismounting. Refer to **"Tractor Shutdown Procedure"** on page 15.
5. Disconnect hydraulic hose couplers from the dipper arm fittings (#5). Coil and store hoses on the hammer with hydraulic hose couplers out of the dirt.
6. Remove pins (#1) from pin-on mount (#10). If necessary, use a hammer to tap out pins. Pay special attention not to misplace any small parts such as dust seals, etc.
7. Return to the tractor to finish disconnecting the hammer (#9).
8. With hammer (#9) and pin-on mount (#10) on the ground, retract curl cylinder and arm cylinder to lift dipper stick out of mount (#10).
9. Carefully maneuver dipstick and bucket link out of the way of hammer (#9) and pin-on mount (#10).
10. Shut tractor down before dismounting. Refer to **"Shutdown Procedures"** on page 15.
11. The backhoe is ready for hooking up to another attachment.
12. The hammer (#9) must be stored in the vertical position in a clean, dry place.
13. Make sure the hammer is secured from falling.

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Hook-up BR310 Hydraulic Breaker to Kubota's B26 Backhoe
Figure 2-7

This section provides instructions for attaching the BR510 Hydraulic Breaker to a Kubota skid steer or track loader. If assembling and attaching the Hydraulic Breaker to an excavator or B26 backhoe, see “**Section 2: Excavator Assembly & Set-up**” on page 22. If attaching the Hydraulic Breaker to a Compact Utility Loader, see “**Section 4: CUL Assembly & Set-up**” on page 32.

Install BR510 / BR560 Hose Kit

Refer to Figure 3-1:

Straight adapters (A & B) are shipped tightened and glued to the “IN” and “OUT” ports. Do not unscrew them. The power machine’s pressure line must be connected to the “IN” port with adapter (A).

1. Attach hydraulic hoses (#1A & #1B) to straight adapters (A & B) as shown and tighten.
2. Attach 90° elbows (#2A & #2B) to hydraulic hoses (#1A & #1B) and tighten as shown.
3. Consult your skid steer manual to determine which line is the pressure line and which is the return line.
4. Attach female coupler (#3) or male coupler (#4) that mates with the skid steer high pressure coupler to elbow (#2A). Tighten coupler to the hose.
5. Attach remaining coupler (#3 or #4) to elbow (#2B) and tighten.

Hook-up Skid Steer to QA Mount

Genera Safety



DANGER

To avoid serious injury or death:

A crushing hazard exists when connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate hydraulic controls while someone is near the power machine and/or attachment.

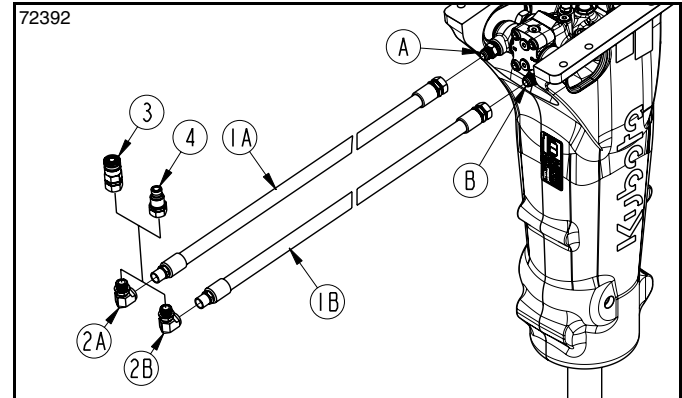


WARNING

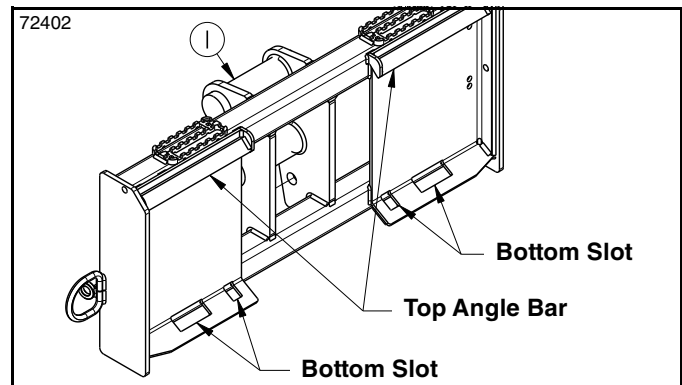
To avoid serious injury or death:

- Check hitch fit-up frequently. An improper fit-up can result in the attachment falling from the loader hitch plate.
- Use steps, grab-handles, and anti-slip surfaces on the power machine and attachment to get on and off the power machine. Using unapproved stepping surfaces and/or handholds can result in a falling hazard.
- Make sure the coupler housings are free of obstructions such as mud, excess dirt, rocks and ice. Coupler engagement and disengagement may be impeded and could potentially create an unsafe connection for the attachment.
- Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.

- Never stand beneath or position any body part beneath an attachment that is being removed or installed.



Install BR510/560 Hydraulic Hose Kit
Figure 3-1



Hook-up Skid Steer QA Mount
Figure 3-2

Hook-up Skid Steer QA Mount

Refer to Figure 3-2:

1. Check loader hitch plate and skid steer quick attach mount (#1) before hooking-up. Make sure all hitch components are in good working condition:
 - a. Check for and remove any debris in the loader hitch plate and mount (#1).
 - b. Check loader hitch plate and mount (#1) for structural cracks and bent or broken pieces. They can weaken the structure and prevent full and complete hook-up. Repair or replace damaged components before putting the loader hitch plate or skid steer mount (#1) into service.
 - c. Check operation of lock pins in the loader hitch plate. Lock pins must move freely and extend fully into the bottom slots in the skid steer mount (#1).
2. If lock mechanism is mechanical, raise lock handles on the loader hitch plate fully up to raise lock pins.
3. Start skid steer.
4. If lock mechanism is hydraulic, use auxiliary hydraulic controls to raise lock pins fully up.

Section 3: Skid Steer Assembly & Set-up

5. Drive slowly to the skid steer mount (#1) while making sure the loader hitch is parallel with the top angle bar on skid steer mount (#1).
6. Tilt top of loader hitch plate slightly forward.
7. Place top of loader hitch plate under the top angled bars and slowly raise loader arms up until loader hitch plate is seated under the top angle bars.
8. Tilt top of loader hitch plate back until skid steer mount (#1) makes full contact with loader hitch plate and the skid steer QA mount is slightly off the ground.
9. Engage lock mechanism:

Hydraulic Lock Mechanism:

 - a. Engage quick hitch lock mechanism hydraulically.

Mechanical Lock Mechanism:

 - a. Shut skid steer down before dismounting. Refer to “**Skid Steer Shutdown Procedure**” on page 16.
 - b. Push lock handles down to drive lock pins through bottom slots in the skid steer mount (#1). Make sure handles are locked down.
 - c. Return to skid steer and start.
10. Raise loader arms enough to visually ensure lock pins are through the bottom slots in skid steer mount (#1).
11. Shut skid steer down before dismounting. Refer to “**Skid Steer Shutdown Procedure**” on page 16.

Hook-up BR510 Hydraulic Breaker

General Safety



DANGER

To avoid serious injury or death:

A crushing hazard exists when connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate hydraulic controls while someone is near the power machine and/or attachment.

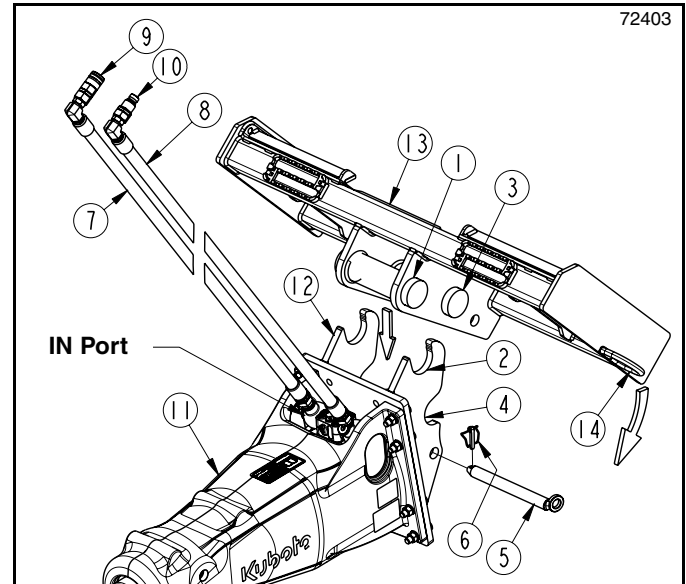


WARNING

To avoid serious injury or death:

- Check hitch fit-up frequently. An improper fit-up can result in the attachment falling from the loader hitch plate.
- Use steps, grab-handles, and anti-slip surfaces on the power machine and attachment to get on and off the power machine. Using unapproved stepping surfaces and/or handholds can result in a falling hazard.
- Make sure the coupler housings are free of obstructions such as mud, excess dirt, rocks and ice. Coupler engagement and disengagement may be impeded and could potentially create an unsafe connection for the attachment.
- Never stand beneath or position any body part beneath an attachment that is being removed or installed.

- Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.



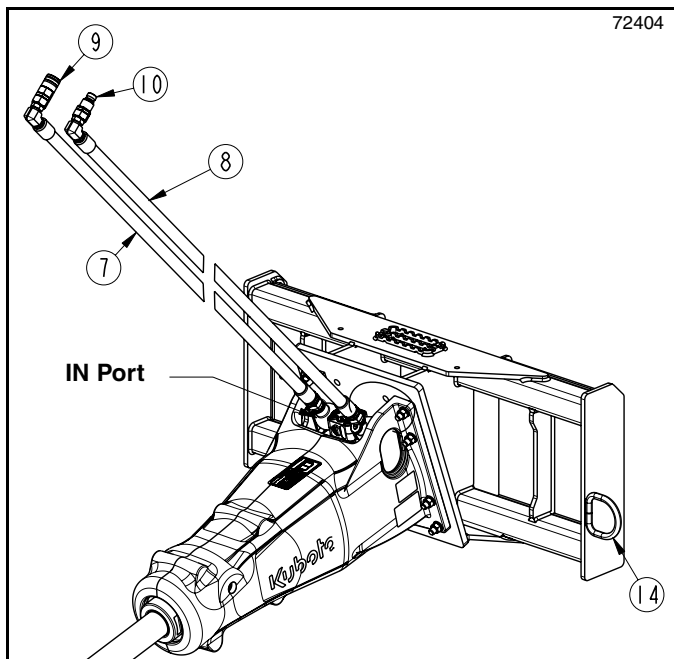
Hook-up BR510 Hydraulic Breaker

Figure 3-3

Hook-up SS QA Mount to BR510 Breaker

Refer to Figure 3-3:

1. Check for and remove all debris in the interior of skid steer mount (#13) and quick coupler mount (#12).
2. Remove customer supplied linchpin (#6) and pull lock pin (#5) from quick coupler mount (#12).
3. Start skid steer and place loader hitch plate in line with attachment to be engaged.
4. Tilt top of loader hitch plate forward until hitch plate is approximately 45° to the ground.
5. Drive slowly forward while maneuvering the loader hitch plate to align its front pucks (#1) with mounting slots (#2).
6. Lower loader lift arms until pucks (#1) are fully seated in mounting slots (#2).
7. Tilt top of loader hitch plate back until pucks (#3) are fully seated into slots (#4).
8. Raise quick coupler mount (#12) and hammer (#11) slightly off the ground and continue to tilt top of loader hitch plate back to the most vertical position safely allowed by the attachment.
9. Lower loader arms down until skid steer mount (#13) is fully down and Hydraulic Breaker (#11) is held off the ground.
10. Shut skid steer down before dismounting. Refer to “**Skid Steer Shutdown Procedure**” on page 16.
11. Install lock pin (#5) and secure with linchpin (#6).



Hook-up Hydraulic Hose
Figure 3-4

Hook-up BR510 Hydraulic Hoses

Refer to Figure 3-4:

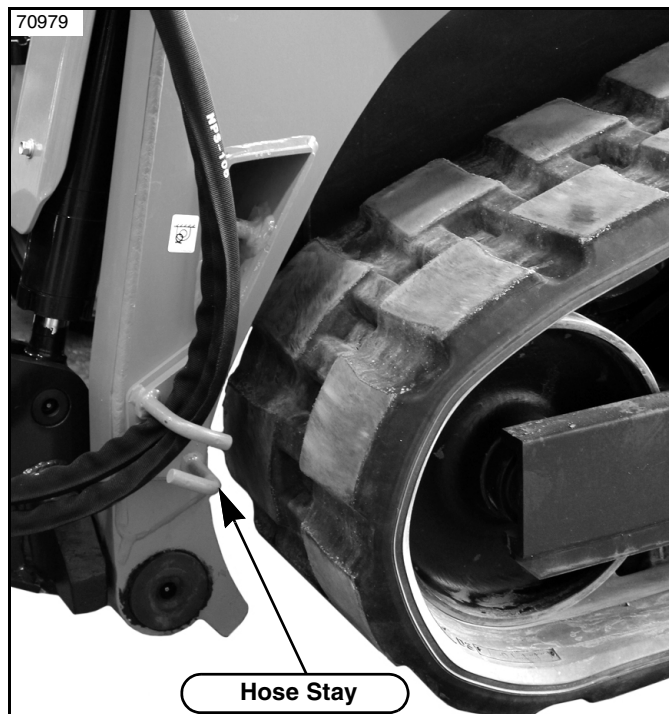
WARNING

To avoid serious injury or death:

- Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulics. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. **DO NOT DELAY.**
- Shutdown power machine and release all hydraulic pressure to the equipment before connecting or disconnecting hydraulic hoses to or from the power machine.
- Make sure hydraulic hoses are properly routed without twists to prevent them from becoming stretched, pinched, or kinked. A damaged hydraulic hose can burst and leak hydraulic fluid.

IMPORTANT: All hoses should be free of kinks, cuts, or abrasions for safe operation. Do not operate if hoses are worn or damaged.

IMPORTANT: Make sure coupler fittings are clean before making connections. Dirt can quickly damage the hydraulic system. Inspect couplers for corrosion, cracks and excessive wear. Replace couplers if any of these conditions exist.

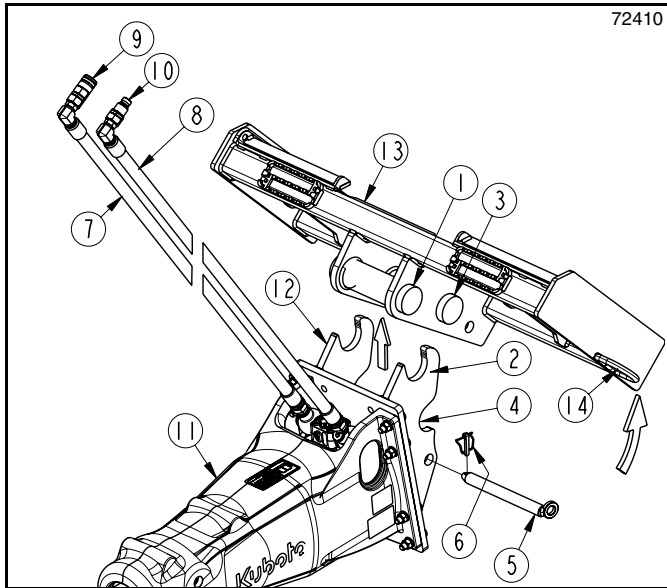


NOTE: If attaching to a Kubota skid steer or track loader, route hydraulic hoses through Kubota's Hose Stay as shown in Figure 3-5. Purchase **Hose Stay #S6763** through your nearest Kubota dealer. Refer to your power machine Operator's Manual for more instructions.

Kubota Hose Stay
Figure 3-5

Refer to Figure 3-4:

- Thread hydraulic hoses (#7 & #9) through hose holder (#14).
- See note in Figure 3-5 if attaching the Hydraulic Breaker to a Kubota skid steer.
- Consult your skid steer manual to determine which line on the loader arm is the pressure line.
- Clean quick connect couplers (#9 & #10) of dirt.
- Connect hydraulic hose (#7) to the skid steer high pressure outlet. If needed, switch couplers (#9 & #10) on hoses (#7 & #8) to complete the hook-up.
- Make sure quick connect couplers have fully engaged. If they have not, check the following:
 - Couplers are same size and type.
 - Auxiliary hydraulic pressure to the loader couplers has been released.
- For additional help, refer to "Hydraulic Hook-up" in your skid steer Operator's Manual.

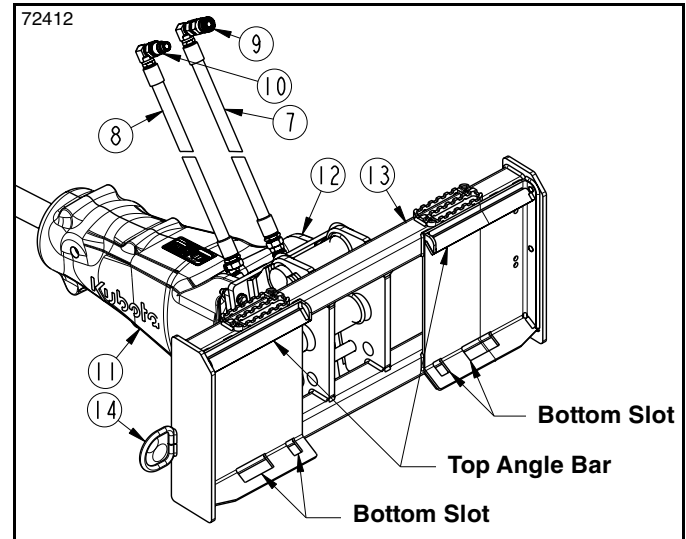


Unhook Hammer QA Mount
Figure 3-6

Unhook BR510 Breaker

Refer to Figure 3-6:

1. Stop skid steer on flat level ground that is free of personnel and obstructions.
2. Lower loader arms until skid steer mount (#13) is resting on the ground.
3. Tilt top of loader hitch plate back to raise hammer off the ground.
4. Shut skid steer down before dismounting. Follow **“Skid Steer Shutdown Procedure”** on page 16.
5. Disconnect hydraulic couplers (#9 & #10).
6. Remove hydraulic hoses (#7 & #8) from hose holder (#14). Coil and store hoses on the hammer with couplers (#9 & #10) out of the dirt.
7. Flip wire retainer up and remove linchpin (#6).
8. Remove lock pin (#5). If necessary, use a hammer to tap out lock pin.
9. Restart skid steer and tilt top of loader hitch plate forward until attachment is resting fully on the ground.
10. Slowly tilt top of loader hitch plate forward to rotate pucks (#3) out of slots (#4).
11. Carefully raise loader arms to lift pucks (#1) out of slots (#2).
12. Back away from the hammer and shut skid steer down before dismounting. Follow **“Skid Steer Shutdown Procedure”** on page 16.
13. Replace lock pin (#5) in quick coupler mount (#12) or skid steer mount (#13) and secure in place with linchpin (#6).
14. Follow **“Long-Term Storage”** guidelines on page 56 when storing the hammer.



Unhook Skid Steer QA Mount
Figure 3-7

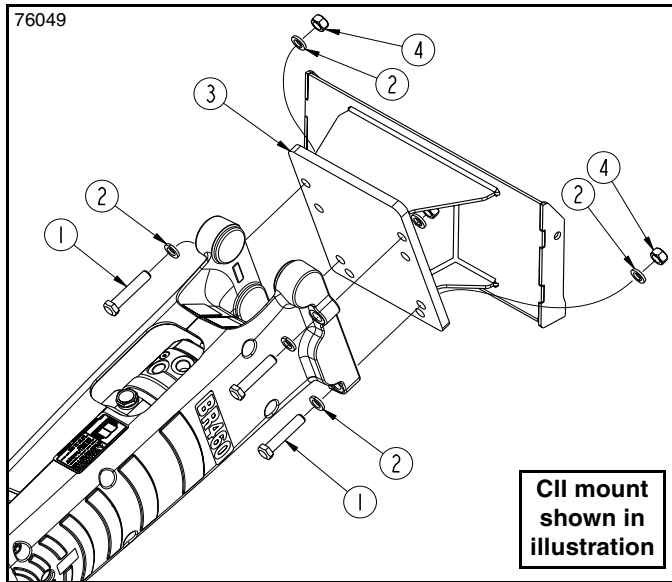
Unhook Skid Steer QA Mount

Refer to Figure 3-7:

1. Stop skid steer on flat, level ground that is free of personnel and obstructions.
2. Lower loader arms until skid steer mount (#13) is resting on the ground.
3. Shut skid steer down before dismounting. Follow **“Skid Steer Shutdown Procedure”** on page 16.
4. Disconnect hydraulic hose couplers (#9 & #10).
5. Coil and store hydraulic hoses (#7 & #8) on the hammer with couplers (#9 & #10) out of the dirt. Make sure hydraulic hoses do not interfere with the loader hitch plate.
6. If lock handles are mechanical, pull lock handles up on loader hitch plate to remove lock pins from the bottom slots in the skid steer mount (#13).
7. Return to the skid steer seat and fasten seat belt. Start skid steer.
8. If lock handles are hydraulic, raise lock pins hydraulically to remove lock pins from the bottom slots in skid steer mount (#13).
9. Tilt top of loader hitch plate slightly forward until bottom of loader hitch plate has separated from the bottom of skid steer mount (#13).
10. Slowly lower loader arms until loader hitch plate is below the attachment's top angle bars.
11. Back skid steer slowly away from the Hydraulic Breaker making sure the skid steer does not interfere with skid steer mount (#13) and/or hydraulic hoses (#7 & #8).
12. Shut skid steer down before dismounting. Follow **“Skid Steer Shutdown Procedure”** on page 16.
13. Follow **“Long-Term Storage”** guidelines on page 56 when storing the hammer.

Compact Utility Loader

This section provides instructions for attaching the BR360 and BR460 Hydraulic Breakers to the Kubota SCL1000 machine. If assembling and attaching the Hydraulic Breaker to an excavator or B26 backhoe, see **“Section 2: Excavator Assembly & Set-up”** on page 22. If attaching the Hydraulic Breaker to a skid steer or track loader, see **“Section 3: Skid Steer Assembly & Set-up”** on page 28.



BR360/BR460 CII Mount & 2-Lever Mount Installation
Figure 4-1

Install BR360 / BR460 CII Mount & 2-Lever Mount

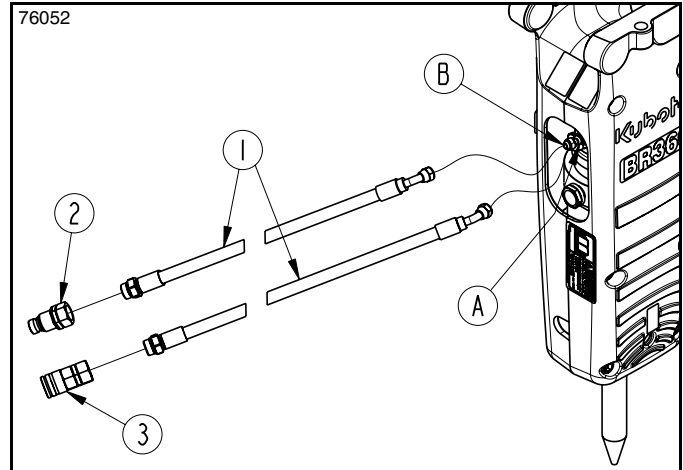
Refer to Figure 4-1:

The following instructions are for attaching the BR360/BR460 CII (Common Industry Interface) mount and 2-lever mount to a BR360 or BR460 Hydraulic Breaker.

While each mount is its own product, they both utilize the same mounting plate, therefore the installation instructions below can be applied to both mounts.

NOTE: Hardware for attaching mount is supplied with the hammer. Be sure to install hardware as shown in Figure 4-1, with bolt (#1) being inserted from the hydraulic breaker side.

1. Orient and align the mount (#3) to the Hydraulic Breaker so the holes on the mount align with holes on the breaker.
2. Install four bolts (#1) and lock washers (#2) through mounting holes on breaker and mount (#3).
3. Secure mount (#3) to breaker by installing lock washers (#2) and hex nuts (#4) onto the bolts (#1).
4. Tighten hex nuts (#4) to the correct torque for a 3/4-10 GR5 bolt. Refer to **“Section 12: Torque Values Chart”** on page 67.



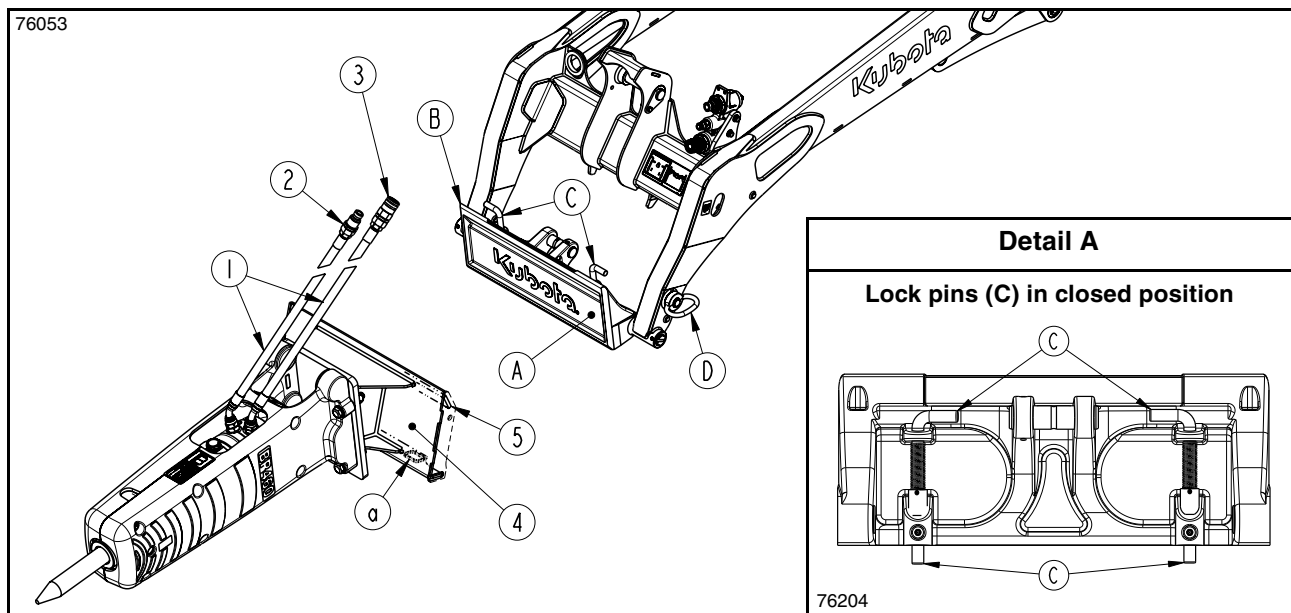
BR360 & BR460 Hydraulic Hose Kit Installation
Figure 4-2

Install BR360 & BR460 Hose Kit

Refer to Figure 4-2:

Straight adapters (A & B) are shipped secured to the “IN” and “OUT” ports. Do not remove adapters (A or B) during standard service. The power machine’s pressure line must be connected to the “IN” port with adapter (A).

1. Attach elbow end of each hydraulic hose (#1) to fittings (A & B) secured to the “IN” and “OUT” ports on the breaker.
2. Attach and tighten female quick coupler to hydraulic hose (#1) connected to fitting (A) on the “IN” port.
3. Attach and tighten male quick coupler to hydraulic hose (#1) connected to fitting (B) on the “OUT” port.



Hook-up BR360 / BR460 CII (Common Industry Interface) Mount

Figure 4-3

Hook-up BR360 / BR460 CII Mount



! DANGER

To avoid serious injury or death:

- A crushing hazard exists when connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate hydraulic controls while someone is near the power machine and/or attachment.



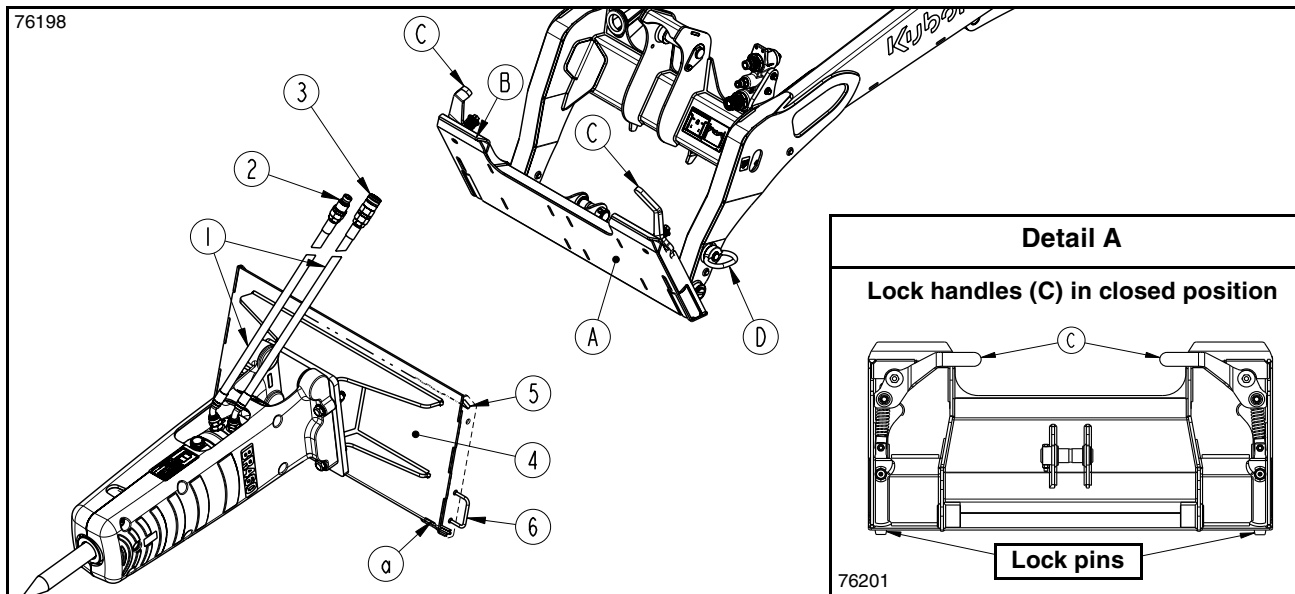
! WARNING

To avoid serious injury or death:

- Check hitch fit-up frequently. An improper fit-up can result in the attachment falling from the loader hitch plate.

Refer to Figure 4-3:

1. Check loader and CII mount hitch plates (#4 & A) before hooking-up the breaker mount. Make sure all components are in good working condition before putting them into service:
 - a. Check for and remove any debris in the loader and CII mount hitch plates.
 - b. Check for structural cracks in both hitch plates. Repair or replace hitch plates as needed.
 - c. Check hitch components frequently. Repair or replace any part that is excessively worn, bent, broken, or missing.
 - d. Lubricate lock pins (C) at the interval prescribed in your compact loader Operator's Manual.
 - e. Check operation of lock pins (C). Lock pins must move freely and extend fully into the hitch plate bottom slots (a).
2. Raise lock pins (C) by rotating the handles 180° until they point out as shown in Figure 4-3.
3. Be sure hydraulic hoses are out of the way, and will not interfere or become damaged when hooking-up.
4. Return to position of standing on the operator platform, then start the compact loader.
5. Drive slowly to the Hydraulic Breaker mount (#4) while making sure the loader's hitch plate top (B) is parallel with the top angle bar (#5) on breaker mount.
6. Tilt hitch plate top (B) slightly forward.
7. Place loader's hitch plate top (B) under the mount's top angle bar (#5) and slowly raise loader hitch plate (A) up until the loader hitch plate top is seated under the top angle bar.
8. Tilt loader's hitch plate top (B) back until the mount hitch plate (#4) makes full contact with the face of the loader hitch plate (A).
9. Shutdown compact loader before dismounting. Follow "**Compact Loader Shutdown Procedure**" on page 16.
10. Lower lock pins (C) by rotating the handles 180° until they point inward as shown in Detail A of Figure 4-3. If needed, tap on lock pins to drive them down and through bottom slots (a).
11. Check hitch hook-up to verify it is locked properly.
 - a. Make sure loader hitch plate top (B), is fully seated under top angle bar (#5).
 - b. Make sure face of loader hitch plate (A) is seated against mount hitch plate (#4).
 - c. Make sure lock pins (C) are fully inserted through bottom slots (a).



Hook-up BR360 / BR460 2-Lever Mount

Figure 4-4

Hook-up BR360 / BR460 2-Lever Mount

DANGER

To avoid serious injury or death:

- A crushing hazard exists when connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate hydraulic controls while someone is near the power machine and/or attachment.

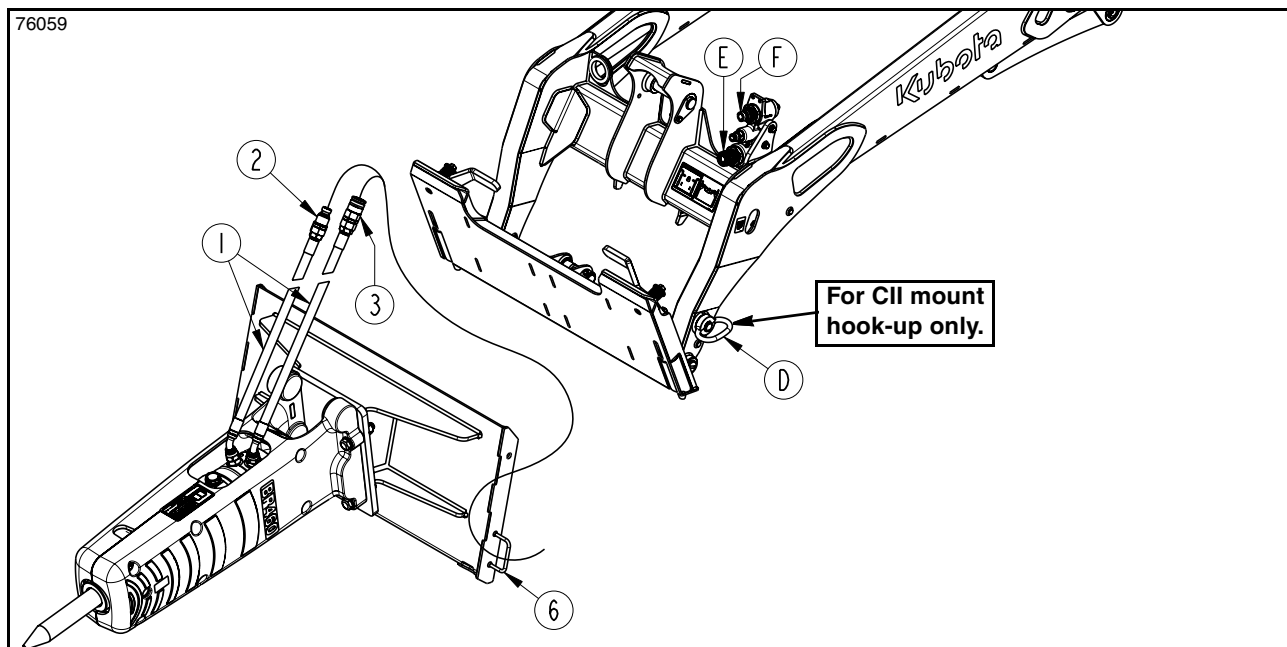
WARNING

To avoid serious injury or death:

- Check hitch fit-up frequently. An improper fit-up can result in the attachment falling from the loader hitch plate.

Refer to Figure 4-4:

1. Check loader and 2-lever mount hitch plates (#4 & A) before hooking-up the breaker mount. Make sure all components are in good working condition before putting them into service:
 - a. Check for and remove any debris in the loader and 2-lever mount hitch plates.
 - b. Check for structural cracks in both hitch plates. Repair or replace hitch plates as needed.
 - c. Check hitch components frequently. Repair or replace any part that is excessively worn, bent, broken, or missing.
 - d. Lubricate hitch lock pins at the interval prescribed in your compact loader Operator's Manual.
 - e. Check operation of lock handles (C) and lock pins. Lock pins must move freely and extend fully into the hitch plate bottom slots (a).
2. Raise lock pins by pulling on lock handles (C) until they are in the open position shown in Figure 4-4.
3. Be sure hydraulic hoses are out of the way, and will not interfere or become damaged when hooking-up.
4. Return to position of standing on the operator platform, then start the compact loader.
5. Drive slowly to the Hydraulic Breaker mount (#4) while making sure the loader's hitch plate top (B) is parallel with the top angle bar (#5) on breaker mount.
6. Tilt hitch plate top (B) slightly forward.
7. Place loader's hitch plate top (B) under the mount's top angle bar (#5) and slowly raise loader hitch plate (A) up until the loader hitch plate top is seated under the top angle bar.
8. Tilt loader's hitch plate top (B) back until the mount hitch plate (#4) makes full contact with the face of the loader hitch plate (A).
9. Shutdown compact loader before dismounting. Follow "**Compact Loader Shutdown Procedure**" on page 16.
10. Lower lock handles (C) by pushing them down until they are in the closed position as shown in Detail A of Figure 4-4. If needed, tap on lock pins to drive them down and through bottom slots (a).
11. Check hitch hook-up to verify it is locked properly.
 - a. Make sure loader hitch plate top (B), is fully seated under top angle bar (#5).
 - b. Make sure face of loader hitch plate (A) is seated against mount hitch plate (#4).
 - c. Make sure lock pins are fully inserted through bottom slots (a).



Hook-up Hydraulic Hose (Shown with 2-Lever Mount)

Figure 4-5

Hook-up Hydraulic Hose



WARNING

To avoid serious injury or death:

- Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulics. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. **DO NOT DELAY.**
- Shutdown power machine and release all hydraulic pressure to the equipment before connecting or disconnecting hydraulic hoses to or from the power machine.
- Make sure hydraulic hoses are properly routed without twists to prevent them from becoming stretched, pinched, or kinked. A damaged hydraulic hose can burst and leak hydraulic fluid.
- Hydraulic fluid can become hot as it flows through components such as hydraulic couplers, hoses, lines, fittings, motors, etc. Wear gloves when working with hydraulic components including while connecting and disconnecting couplers. It is best to allow hydraulic components to cool before touching them.

IMPORTANT: Hose routing is the responsibility of the owner/operator. Pinched and/or stretched hoses are not covered under the warranty. Check breaker and hydraulic hose routing clearances by carefully going through the loader's full range of motion before putting the equipment into operation.

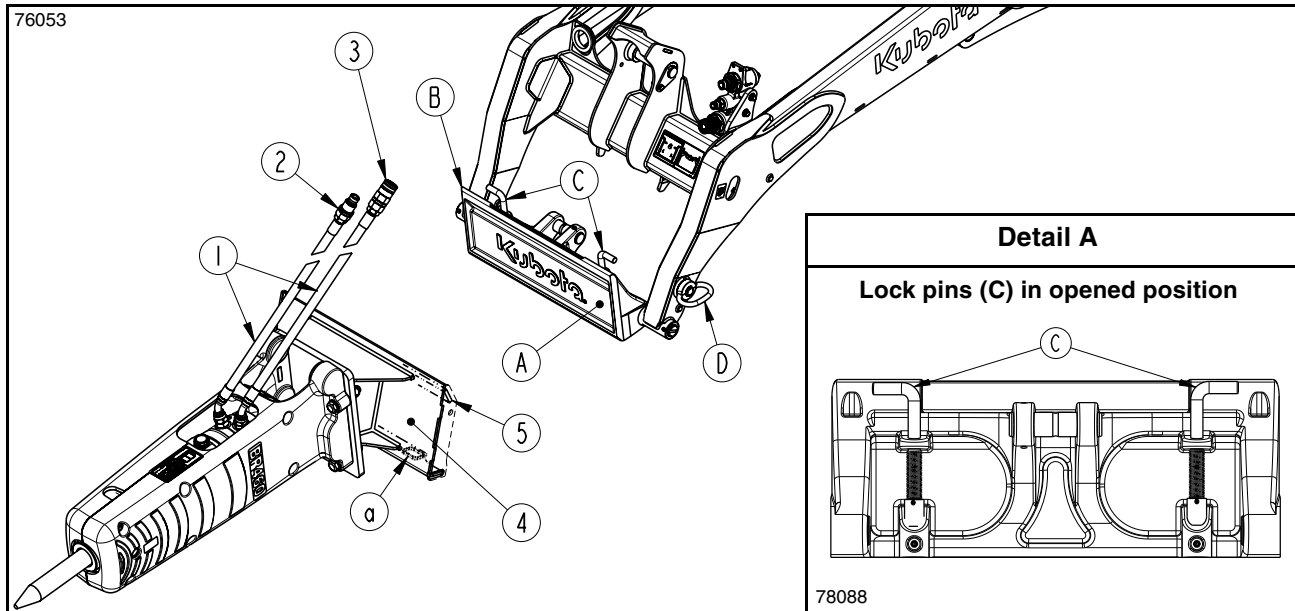
Refer to Figure 4-5:

- Complete proper procedure for mount hook-up before hooking-up hydraulic hoses.
 - For CII mount hook-up, see **page 33**.
 - For 2-lever mount hook-up, see **page 34**.
- Relieve all hydraulic pressure to the power machine's auxiliary lines.
- Route both hydraulic hoses (#1) through hose stay (#6) on left side 2-lever mount.

IMPORTANT: When hooked-up to a hydraulic breaker equipped with a CII mount, route hydraulic hoses through hose stay (D) on the compact loader power machine.

- Clean quick disconnect couplers (#2 & #3) and auxiliary high pressure outlet ports (E & F). Connect couplers to the high pressure outlet ports. Make sure they are fully engaged. If not, check the following:
 - Mating couplers are matched in size and type.
 - Auxiliary hydraulic pressure to the high pressure outlet ports (E & F) has been released.
- Position hydraulic hoses (#1) where they will not become stretched, kinked, or pinched. If needed, add zip ties to protect them from possible damage.
- Check equipment and hydraulic hose routing clearances by carefully going through the loader's full range of motion.

IMPORTANT: Make sure there are no bystanders standing under or close to the loader arms when going through the loader's full range of motion.



Unhook BR360 / BR460 CII (Common Industry Interface) Mount

Figure 4-6

Unhook BR360 / BR460 CII Mount

DANGER

To avoid serious injury or death:

- A crushing hazard exists when connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate hydraulic controls while someone is near the power machine and/or attachment.

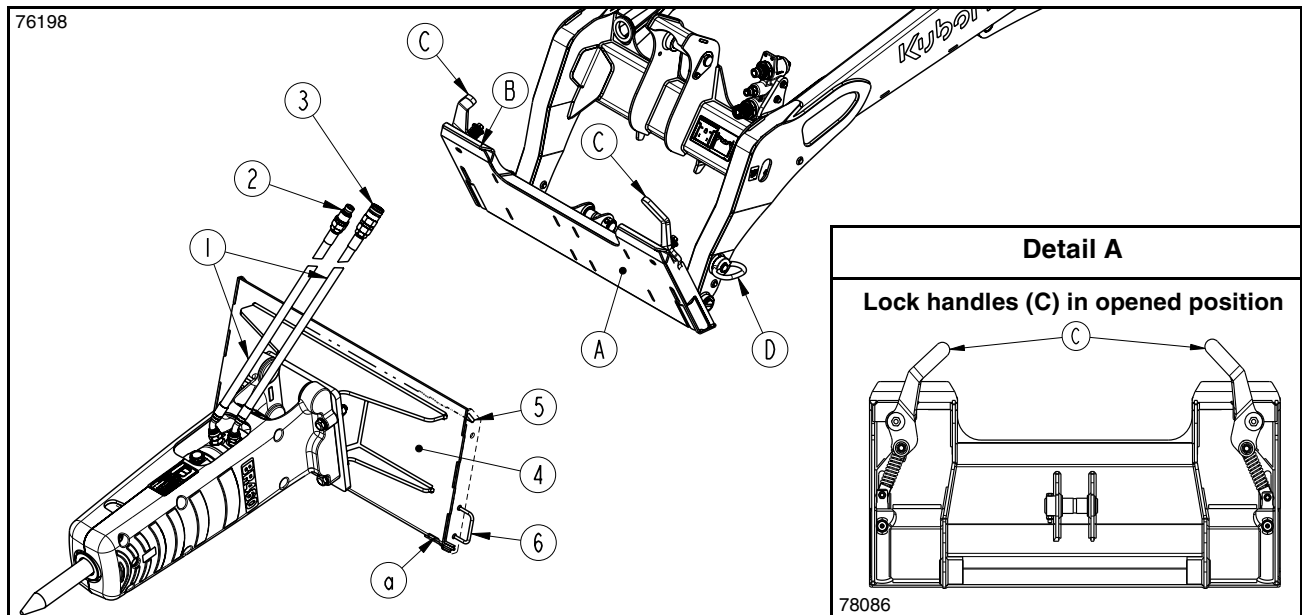
WARNING

To avoid serious injury or death:

- Hydraulic fluid can become hot as it flows through components such as hydraulic couplers, hoses, lines, fittings, motors, etc. Wear gloves when working with hydraulic components including while connecting and disconnecting couplers. It is best to allow hydraulic components to cool before touching them.

Refer to Figure 4-6:

1. Stop compact loader on flat level ground that is clear of bystanders and obstructions.
2. Lower loader arms until compact loader mount is resting on the ground.
3. Shutdown compact loader before dismounting. Follow “**Compact Loader Shutdown Procedure**” on page 16.
4. Release the compact loader’s hydraulic pressure, then disconnect hydraulic hose couplers (#2 & #3).
5. Remove both hydraulic hoses (#1) from hose stay (D)
6. Coil and store both hydraulic hoses (#1) on the breaker with couplers (#2 & #3) out of the dirt. Make sure hydraulic hoses do not interfere with the loader hitch plate.
7. Raise lock pins from bottom slots (a).
8. Return to position of standing on the operator platform, then start the compact loader.
9. Tilt top of loader hitch plate (A) slightly forward until bottom of loader hitch plate has separated from the bottom of the mount hitch plate (#4).
10. Slowly lower loader arms until loader hitch plate (A) is clear of the mount’s top angle bar (#5).
11. Back compact loader slowly away from the Hydraulic Breaker, making sure the compact loader does not interfere with Hydraulic Breaker mount (#4), and/or hydraulic hoses (#1).
12. Shutdown the compact loader before dismounting. Follow “**Compact Loader Shutdown Procedure**” on page 16.
13. Follow “**Long-Term Storage**” on page 56 when storing the Hydraulic Breaker.



Unhook BR360 / BR460 2-Lever Mount

Figure 4-7

Unhook BR360 / BR460 2-Lever Mount



DANGER

To avoid serious injury or death:

- A crushing hazard exists when connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate hydraulic controls while someone is near the power machine and/or attachment.



CAUTION

To avoid minor or moderate injury:

- Hydraulic fluid can become hot as it flows through components such as hydraulic couplers, hoses, lines, fittings, motors, etc. Wear gloves when working with hydraulic components including while connecting and disconnecting couplers. It is best to allow hydraulic components to cool before touching them.

Refer to Figure 4-7:

1. Stop compact loader on flat level ground that is clear of bystanders and obstructions.
2. Lower loader arms until compact loader mount is resting on the ground.
3. Shutdown compact loader before dismounting. Follow “**Compact Loader Shutdown Procedure**” on page 16.
4. Release the compact loader’s hydraulic pressure, then disconnect hydraulic hose couplers (#2 & #3).
5. Coil and store both hydraulic hoses (#1) on the breaker with couplers (#2 & #3) out of the dirt. Make sure hydraulic hoses do not interfere with the loader hitch plate.
6. Raise lock handles (C) to raise lock pins from bottom slots (a).
7. Return to position of standing on the operator platform, then start the compact loader.
8. Tilt top of loader hitch plate (A) slightly forward until bottom of loader hitch plate has separated from the bottom of the mount hitch plate (#4).
9. Slowly lower loader arms until loader hitch plate (A) is clear of the mount’s top angle bar (#5).
10. Back compact loader slowly away from the Hydraulic Breaker, making sure the compact loader does not interfere with Hydraulic Breaker mount (#4), and/or hydraulic hoses (#1).
11. Shutdown the compact loader before dismounting. Follow “**Compact Loader Shutdown Procedure**” on page 16.
12. Follow “**Long-Term Storage**” on page 56 when storing the Hydraulic Breaker.

Safety Information

WARNING

To avoid serious injury or death:

- The hydraulic pressure inside the hammer must always be released before removing any plugs or valve covers. Read the instructions on releasing the hydraulic pressure from the hammer. See “Release Hydraulic Oil Pressure” on page 51.
- Wait at least 10 minutes after releasing the hydraulic pressure before opening any of the plugs or valve covers.
- Releasing hydraulic pressure does not release gas pressure from the accumulator! Do not disassemble the hammer before releasing the gas pressure. Please contact your Kubota dealer for further instructions before disassembling the hammer.

BR510/560/860 Swivel Couplings

Refer to Figure 5-1:

The hammer's swivel coupler arrangement is assembled left handed when leaving the factory. The arrangement may be set-up to be right-handed by turning manifold (#1) with attached couplings 180 degrees. The swivels (#2) are factory equipped with suitable adapters (#3). These adapters are glued to the swivels and are not to be removed during standard service.

Please contact your Kubota dealer for further instructions.

Operating Hydraulic Pressure

Operating hydraulic pressure for Kubota Hydraulic Breakers are factory checked to match Kubota machines. The hammer may require adjusting to match Non-Kubota machines. For additional information, see below “BR310/360/460 Pressure Adjustment” or “BR510/560/860 Pressure Adjustment”.

BR310/360/460 Pressure Adjustment

Refer to Figure 5-2:

The BR310, BR360, and BR460 pressure adjustment is done with a nozzle located inside the OUT-port of the hammer valve body.

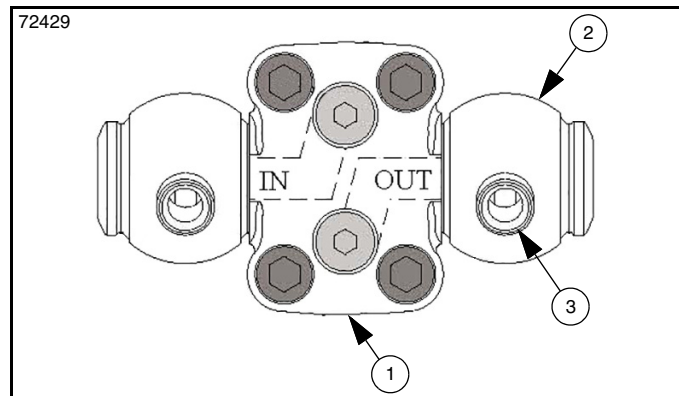
If the nozzle is not suitable for the power machine, the hammer power may be low or the oil will have a tendency to overheat. In either case please contact your Kubota dealer for further instructions.

BR510/560/860 Pressure Adjustment

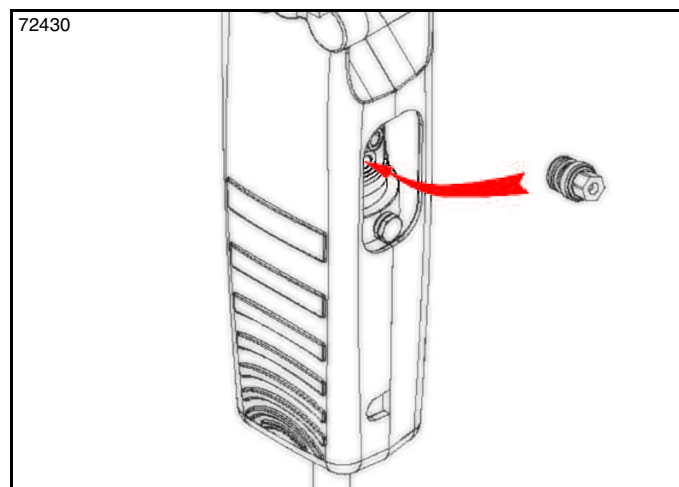
Refer to Figure 5-3:

the BR510, BR560, and BR860 pressure adjustment is done with a pressure adjusting valve (PVA) located inside the valve body behind inlet and outlet ports.

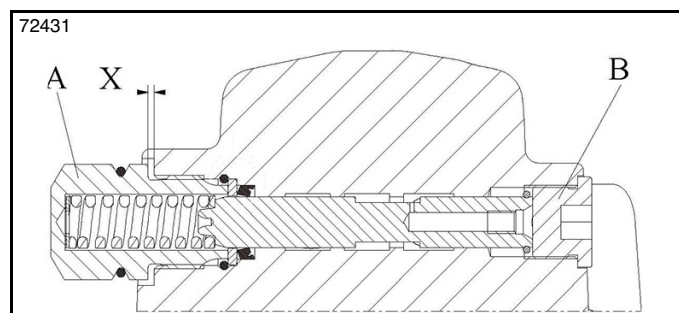
If the valve adjustment is not suitable for the power machine, the hammer power may be low or the oil will have a tendency to overheat. In either case please contact your Kubota dealer for further instructions.



BR510/560/860 Swivel Couplings (Left Hand Set-up)
Figure 5-1



BR310/360/460 Pressure Adjustment Nozzle
Figure 5-2



BR510/560/860 Pressure Adjusting Valve
Figure 5-3

Section 6: Operating Instructions

Operating Checklist

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, storage, and maintenance of the Hydraulic Breaker. Therefore, it is absolutely essential that no one operates the hammer without first having read, fully understood, and become totally familiar with the Operator's Manual. Make sure the operator has paid particular attention to:

- **Important Safety Information**, page 1
- **Sections 1-3: Assembly & Set-up**, pages 14-31
- **Section 5: Adjustments**, page 38
- **Section 6: Operating Instructions**, page 39
- **Section 8: Maintenance & Lubrication**, page 51

Make the following inspections after attaching the Hydraulic Breaker to the power machine.

1. Make sure the operator has read this manual and understands how to operate the Hydraulic Breaker before operating the unit.
2. Inspect safety equipment on the power machine to make sure it is in good working condition.
3. Inspect hydraulic hoses for pinch points. Reposition hoses if needed.
4. Inspect hydraulic hoses for wear, damage and hydraulic leaks. See "**Avoid High Pressure Fluids Hazard**" on page 3. Replace damaged and worn hoses and fittings with genuine Kubota parts.
5. Make sure all required maintenance has been completed before operating the Hydraulic Breaker. Refer to "**Section 8: Maintenance & Lubrication**" on page 51.
6. Check initially and periodically for loose bolts and pins. Refer to "**Torque Values Chart**" on page 67.

General Safety Information



DANGER

To avoid serious injury or death:

- Always protect yourself and bystanders against flying chips of rock. Do not operate hammer or power machine if someone is near the hammer.
- Do not allow bystanders or animals to be near the attachment, loader arms, or power machine during operation. Stop operation if bystanders are too close. They can be hit by thrown or falling objects, become entangled, crushed, ran over, etc.
- Never make contact with overhead electrical power lines. Place an orange warning sign under overhead power lines indicating type of danger above.



WARNING

To avoid serious injury or death:

- Make sure safety labels are installed in their proper location and are in good condition before operating the attachment. Read and obey all instructions on the labels.
- Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulics. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. **DO NOT DELAY.**
- Avoid exposure to dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis). Because crystalline silica is a basic component of sand and granite, many activities at construction sites produce dust containing crystalline silica. Trenching, sawing, and boring of material containing crystalline silica can produce dust containing crystalline silica.
- Never make contact with utilities such as power lines, gas lines, or other hazards, above or below ground. Always call dig safe 811 (USA) before digging so utility companies can mark the location of underground services in the area. Refer to "Dig Safe" on page 2.
- Always follow local laws and regulations for airborne pollutants in the working environment. Obey all work-site guidelines concerning dust particles.
- Breathing or inhaling dust particles could cause death or severe injury. The smallest particles of dust are the most harmful. They may be so fine that you cannot see them. Remember, you must protect yourself from the hazard of breathing or inhaling dust particles.
- Always work with a respirator approved by the respirator manufacturer for the job you are doing. It is essential that the respirator you use protects you from the tiny dust particles that can cause silicosis or other serious lung diseases.
- Do not use the equipment until you are sure your respirator is working properly. This means the respirator must be checked to make sure it is clean, its filter has been changed, and to otherwise make sure the respirator will protect you in the way it was designed.
- Always make sure dust has been cleaned off your boots and clothes when you leave your shift.
- Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.
- Never carry riders on the attachment or power machine. Riders can obstruct the operator's view, interfere with controls, be pinched by moving components, become entangled in rotating components, struck by objects, thrown about, fall off and be run over, etc.

Section 6: Operating Instructions

- Do not disassemble the hammer before releasing oil pressure from the hammer and gas pressures from the accumulators.
- Do not remove pressure adjusting valve before releasing pressure from the pressure measuring ports and hammer inlet fittings.
- Before connecting or disconnecting hydraulic hoses, stop the carrier engine and operate controls to release pressure trapped inside the hydraulic lines and hoses. Wait at least 10 minutes to ensure all pressure has been relieved from the system before disconnecting any hydraulic hoses, pipes or other components.
- Do not transport a breaker by air with gas pressure in the accumulators. Accumulators under pressure may explode at high altitudes.
- Use only nitrogen (N₂) for charging the accumulators. The use of other gases may cause accumulators to explode.
- When measuring hammer operating pressure, you are working in the hammer's danger area. Protect yourself against flying debris.
- Do not exceed 250 bar (3630 psi) pressure setting. Relief valves are designed to protect the system against dangerous or extreme conditions.
- High noise level. Continuous exposure to noise above 90 dB could cause hearing impairment. Wear approved hearing protection to prevent personal injury.
- Consult your power machine Operator's Manual for operating capacity, lifting capacity, and operating specifications. Exceeding rated capacities and specifications can result in loss of control, roll-over or other serious hazard.
- Do not use Hydraulic Breaker or hammer tools for lifting. Contact your Kubota dealer to find out how to correctly lift objects with your power machine.

IMPORTANT: Constant idle strokes have a deteriorating effect on the hammer and side plates. These parts will then wear out more quickly.

IMPORTANT: The hammer must not be used under water. The hammer may be damaged by strong pressure waves if the space between piston and tool is filled with water.

IMPORTANT: Plug pressure and return lines before washing the hammer to prevent dirt from entering into the hammer.

IMPORTANT: The accumulator charging device does not have a pressure relief valve. Shut-off gas bottle valve when gauge shows correct charging pressure.

Installation on Non-Kubota Machines

Kubota Hydraulic Breakers are factory checked to match Kubota machines. Non-Kubota machines may have issues with stability of hammer and machine as well as hydraulic and mechanical compatibility between hammer and machine.

Stability



DANGER

To avoid serious injury or death:

- Exceeding the carrying capacity may result in tipping over of the power machine.

The total weight of hammer and mounting parts must not exceed the limits given by the power machine manufacturer.

Power Machine Damage

Using a Kubota mounting bracket on a non-Kubota machine may allow contact between hammer and dipper stick, while the cylinder is not in its end position. This may result in severe damage to either the steel structures or to the cylinder.

Using hydraulic hoses and connectors that are sized too small for your non-Kubota machine will result in a heat load, which cannot be handled with the oil cooler.

Hammer Damage

The hydraulic settings of the power machine (operating pressure and oil flow) must be within specifications.

Settings that are too high will overload the Hydraulic Breaker and shorten the lifetime of the main components. See **"Operating Hydraulic Pressure"** on page 38.

In addition, the relief valve setting and the back pressure must be properly adjusted. See:

- **"BR310, BR360, & BR460 Specifications & Capacities"** on page 60.
- **"BR510, BR560, & BR860 Specifications & Capacities"** on page 62.

Safety Prior to Operation

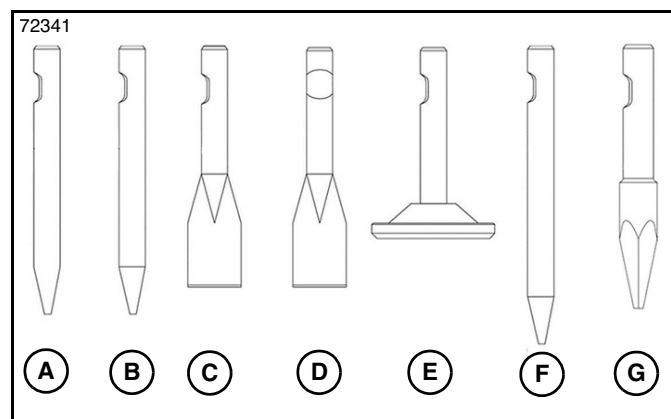
1. Do not work with the hammer until you are familiar with it. Study this manual before installing, operating or maintaining the hammer. Also read the power machine Operator's Manual.
2. Do not start any job until you are sure that you and those around you will be safe.
3. If you are unsure of anything, ask someone who knows. Do not assume anything. Find out.
4. Wear protective clothing to suit the job. Examples are: safety helmet, safety shoes, safety glasses, well-fitting overalls, ear-protectors and industrial gloves. Keep cuffs fastened.
5. You can be injured if you use faulty lifting equipment. Make sure lifting equipment is in good condition. Make sure lifting tackle complies with all local regulations and is suitable for the job. Make sure lifting equipment is strong enough for the job and you know how to use it. Refer to **"Lift Instructions"** on page 17.

Safety During Operation

1. Do not use hammers or hammer tools for lifting objects. Contact your Kubota dealer to find out how to lift with your excavator.
2. Obey all laws, work site rules and local regulations, which affect you and your equipment.
3. Defective equipment can injure you or others around you. Do not operate equipment which is defective or has missing parts. Make sure the maintenance procedures in this manual are completed before using the equipment. Operating the equipment beyond its design limits can cause damage. It can also be dangerous.
4. Do not try to upgrade the hammer's performance with unapproved modifications. Non-approved modifications can cause injury and damage. Contact your Kubota dealer for advice before modifying the hammer.
5. Disconnect the carrier alternator and battery before welding on a hammer that is installed on the carrier. Welding on the hammer tools will render them useless.
6. Fine jets of hydraulic fluid at high pressure can penetrate the skin causing serious allergic reaction and gangrene. Do not touch fine jets of hydraulic fluid at high pressure, they can penetrate the skin. Do not use your fingers to check for hydraulic fluid leaks. 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 fluid leak. Should an injury occur, contact a physician immediately.
7. Hydraulic fluid at system pressure can injure you. Before disconnecting or connecting hydraulic hoses, stop the carrier engine and operate the controls to release pressure trapped in the hoses. During hammer operation, keep people away from the hydraulic hoses.
8. You can be injured by flying splinters when driving metal pins in and out. Use a soft-faced hammer or drift pins to remove and fit metal pins, such as pivot pins. Always wear safety glasses.
9. Kubota recommends the use of a rollover protective structure (ROPS) or falling object protective structure (FOPS) and seat belt fastened around the operator.

This combination will reduce risk of serious injury or death should the excavator or skid steer tip over.
10. Do not operate a breaker/hammer without the following safety protection: Open air cab or stand on loader - safety glasses with an additional face shield. Closed cab machine with tempered front glass window or door - Use a polycarbonate front door or window. Polycarbonate 1/2" (13 mm) thick recommended.



Tool Selections
Figure 6-1

Tool Selection

Refer to Figure 6-1:

- A. Chisel Tool (Standard with hammer)
- B. Moil Tool (Standard with hammer)
- C. Spade, Parallel to Boom (Accessory)
- D. Spade, Transverse to Boom (Accessory)
- E. Compacting Plate (Accessory)
- F. Long Moil Tool (Accessory for BR510/560/860)
- G. Pyramid Tool (Accessory for BR310/360/460)

Kubota offers a selection of standard and special tools to suit any application. See “**Section 9: Specifications & Capacities**” on page 60. The correct tool must be selected for best possible working results and maximum life for tool. Contact your Kubota dealer for more information.

Chisel and Moil

Use chisel or moil when breaking concrete or when application is trenching and benching.

Spade Tool

The spade tool is used to cut frozen or compact ground as well as asphalt.

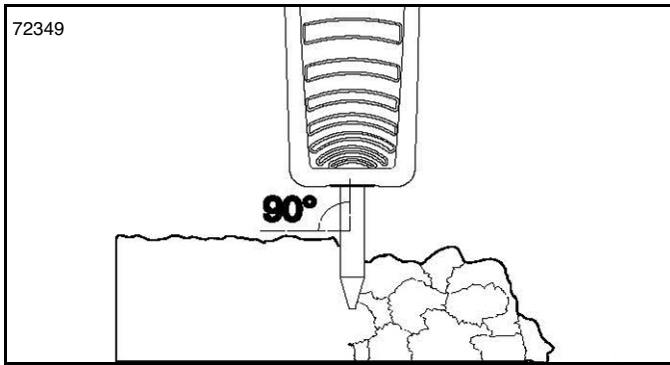
Please note there are two spade tools available: parallel or transverse to excavator boom.

Compacting Plate

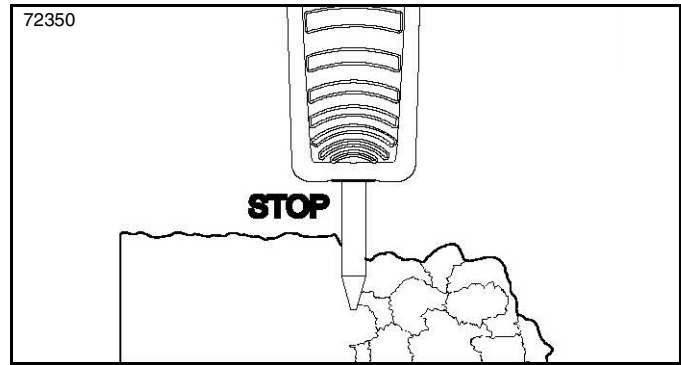
A compacting plate is used for ground compacting.

Pyramid Tool

The pyramid tool is used for breaking hard, abrasive material in demolition applications.



Positioning the Tool
Figure 6-2



When to Stop the Tool
Figure 6-3

Principle of Breaking

Refer to Figure 6-1 on page 41:

In penetrative breaking, a moil or chisel tool is forced into the material. This method is most effective in soft, layered or plastic, low abrasive material. Using the chisel in hard material will cause the sharp edge to wear very quickly and reduce productivity.

The high impact rate of Kubota hammers makes them superior for penetrative breaking.

Correct Working Methods



DANGER

To avoid serious injury or death:

Always protect yourself and bystanders against flying chips of rock. Do not operate hammer or power machine if someone is near the hammer.

1. Prepare the carrier for normal breaking work.
2. Move carrier to the required position.
3. Disengage the boom lock (if fitted).
4. Set engine speed to the recommended engine rpm.

Refer to Figure 6-2:

5. Place tool against the object at a 90 degree angle. Avoid small irregularities on the surface which will break easily and cause either idle strokes or incorrect working angle.
6. Use the excavator boom to press hammer firmly against the object. Do not pry the hammer with the boom, as this will definitely break the tool.
 - Applying too much down force with the boom will cause rapid wear of the hammer and tool.
 - Applying too little down force with the boom will cause vibration, which will cause rapid wear of the tool, hammer, and excavator.
7. Start hammer.
8. Do not let the tool move outwards from the hammer when it penetrates. Keep boom down pressure on the hammer.

9. Keep the tool at a 90 degree angle at all times. If object moves or its surface breaks, correct the angle immediately. Keep feed force aligned with the tool's centerline.

Refer to Figure 6-3:

10. Stop hammer quickly. Do not let hammer produce idle strokes by working after object breaks.

Refer to Figure 6-4 on page 43:

IMPORTANT: Constant idle strokes have a deteriorating effect on the hammer and side plates. These parts will then wear out more quickly.

11. Do not hammer in one spot for more than 15 seconds at a time. If object does not break, stop and change position of the tool. Working too long in one spot will produce stone dust under the tool, which will dampen the impact effect. The tool will overheat and reduce its life.

Refer to Figure 6-5 on page 43:

12. When breaking concrete in hard or frozen ground, never hammer and bend with the tool at the same time. The tool may snap off. Bending may be caused by stone that is inside hard or frozen ground. Be careful while hammering and stop hammering if sudden resistance is seen under the tool.

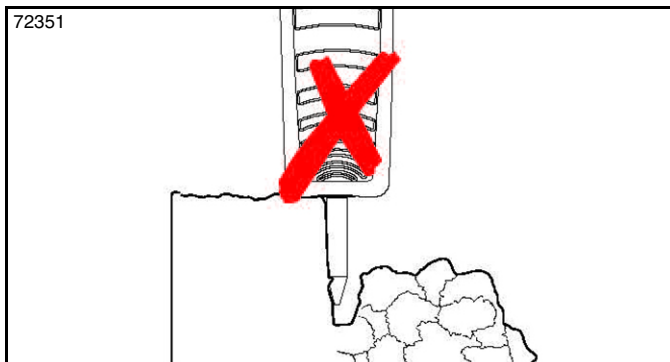
Listen to the hammer's sound while using it. If the sound becomes thinner and impacts less efficient, the tool is misaligned with material and/or there is not enough feed force on the tool. Realign tool and press hammer firmly against the material.

Do not operate hammer with power machine's boom, stick, or bucket cylinder at the end of its stroke (fully extended or fully retracted). Damage to the cylinders could result.

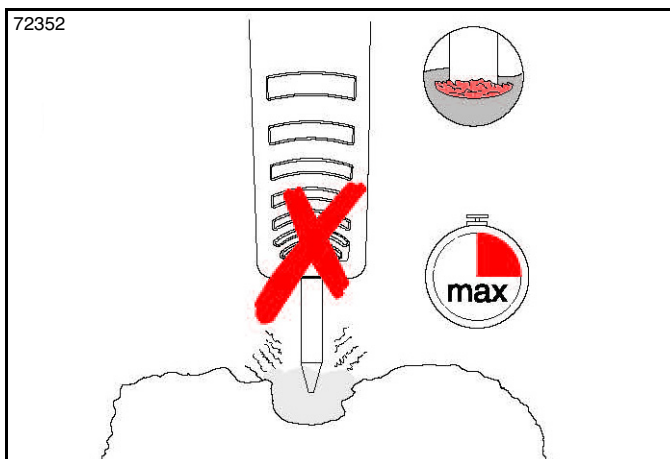
Refer to Figure 6-6 on page 43:

IMPORTANT: The hammer must not be used under water. The hammer may be damaged by strong pressure waves if the space between piston and tool is filled with water.

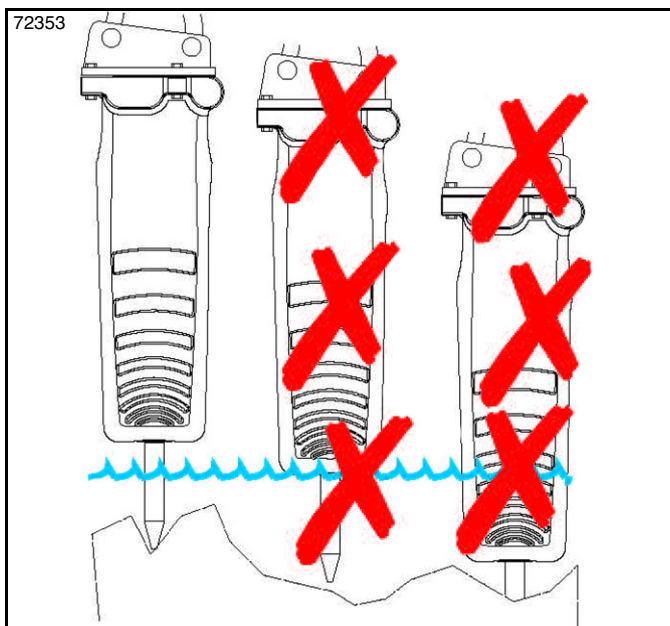
13. Do not use the hammer under water.



When Not to Hammer
Figure 6-4



When Not to Hammer
Figure 6-5



When Not to Hammer
Figure 6-6

Operating Temperature

The operating temperature range for the hammer is -4°F to $+176^{\circ}\text{F}$ (-20°C to $+80^{\circ}\text{C}$). The oil viscosity must be between 131°E - $2,90^{\circ}\text{E}$ (1000 - 20 cSt) while the hammer is being operated. See "Hydraulic Fluids" on page 58.

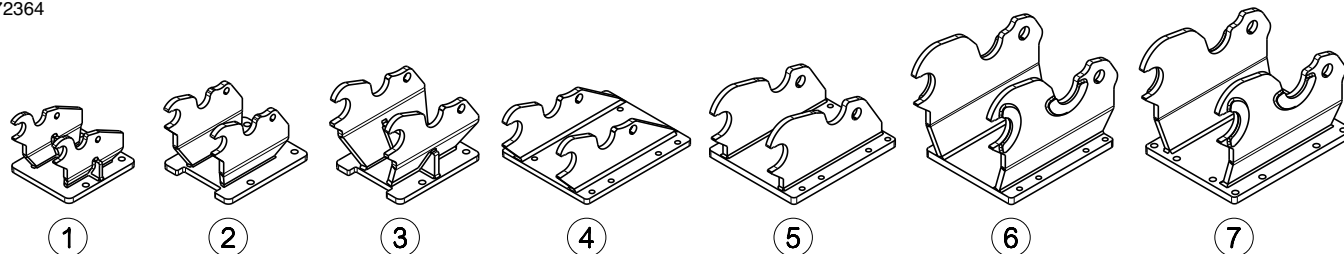
- If temperature is lower than -4°F (-20°C), the hammer and tool should be preheated before starting operation in order to avoid damage to the accumulator membrane and tool.
- If temperature of the hydraulic oil exceeds $+176^{\circ}\text{F}$ ($+80^{\circ}\text{C}$), an auxiliary oil cooler is needed.

Noise Dampening

Operating the hammer near urban areas or other noise exposure areas can cause noise pollution. In order to avoid unnecessary noise, follow these basic rules:

- When operating with the hammer, keep the tool at 90° to material. Working at other angles may increase noise level by as much as 10 dB.
- Replace or fix all parts that are worn out, damaged or loosened. This increases your hammer life and decreases the noise level.

72364



Quick Coupler Mounts For Excavators with QA Couplers			
Quick Coupler Mount		Fits Kubota Breaker Models	Fits Kubota Excavator Model Nos.
Item	Part No.		
1	317-344A	BR360	U17 & KX018
2	317-345A	BR460	U25 & U27
3	317-346A	BR460	U35, KX71, KX033, & KX040
4	317-347A	BR510	KX040
5	317-348A	BR510 & BR560	KX057 & U55
6	317-406A	BR560	KX080
7	317-350A	BR860	KX080

Optional Quick Coupler Mounts

Figure 7-1

Excavator Quick Coupler Mounts

Refer to Figure 7-1:

These optional excavator quick coupler mounts are available for bolting to the BR360, BR460, BR510, BR560, and BR860 Hydraulic Breakers and provide a means to quick couple the breaker to the quick attach coupler on Kubota's excavators. Hardware for attaching the quick coupler mount is included with the hammer.

Backhoe Quick Coupler Mounts

Refer to Figure 7-2:

Part No.	Description
317-343A	BR310 Quick Coupler Mount (B26 Backhoe)
317-346A	BR460 Quick Coupler Mount (M62 Backhoe)

This optional backhoe quick coupler mount is bolted to the BR310 or BR460 Hydraulic Breaker and provides a means for hooking-up the hammer to Kubota's B26 or M62 backhoe. Hardware for mounting the quick coupler mount to the hammer is included with the hammer.

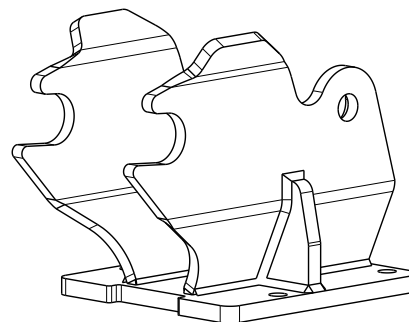
K008 Excavator Pin-on Mount

Refer to Figure 7-3:

Part No.	Description
317-351A	Assembly, Pin-on Mount (K008 Excavator)

This optional pin-on mount is bolted to the BR310 Hydraulic Breaker and provides a means for hooking-up the hammer to Kubota's K008 excavator. Hardware for attaching the pin-on mount is included with the BR310 hammer. Hardware for mounting the pin-on mount to the backhoe is included with the backhoe.

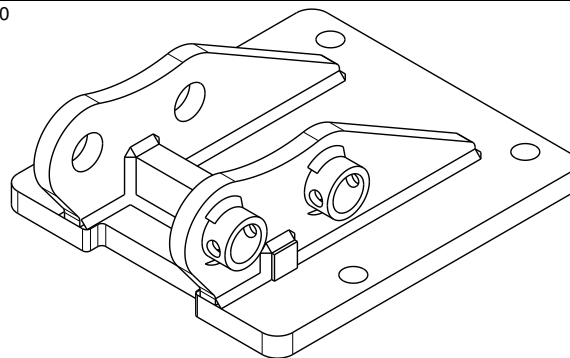
72367



Quick Coupler Mount for Backhoes

Figure 7-2

72440



Pin-on Mount #317-351A For K008 Excavator

Figure 7-3

Excavator Pin Grabber Mounts

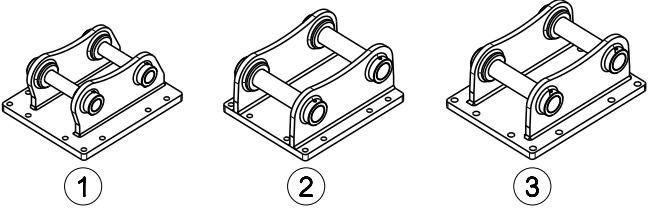
Refer to Figure 7-4:

These optional excavator pin grabber mounts are available for attaching to the BR510, BR560, and BR860 breakers. With Kubota's pin grabber coupler attached to the dipper arm, the customer will be able to hook-up and unhook the pin grabber without leaving the operator's seat.

Hardware for attaching the pin grabber mount to the breaker is included with the breaker.

Use the match chart in Figure 7-4 to determine which pin grabber mount fits your breaker. Purchase from your local Kubota dealer the pin grabber mount that matches your breaker model.

If your excavator's dipper arm does not have the matching pin grabber coupler, then you must also purchase matching pin grabber coupler #K6131 for your KX057 excavator or #K6141 for your KX080 excavator.



Item	Fits Kubota Excavator Model No.	Fits Kubota Breaker Models	Pin Grabber Part No.
1	KX057	BR510 & BR560	317-441A
2	KX080	BR560	317-444A
3	KX080	BR860	317-442A

Optional Pin Grabbers
Figure 7-4

Skid Steer QA Mounts

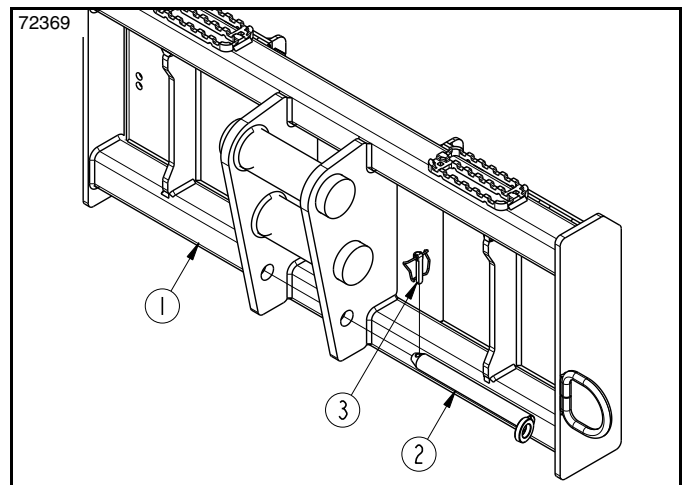
Refer to Figure 7-5:

Part No.	Description	Fits Excavator
317-391A	SS QA Breaker Mount, BR510	KX040
317-467A	Combo Mount BR510/560, 5-Ton	KX057

NOTE: Use skid steer QA mount 317-391A with quick coupler mount 317-347A and hydraulic breaker BR510. Refer to item (#4) in Figure 7-1 on page 44.

Use skid steer QA mount 317-467A with quick coupler mount 317-348A and hydraulic breakers BR510 and BR560. Refer to item (#5) in Figure 7-1 on page 44.

Lock pin(#2) and lock pin keeper (#3) are included with the skid steer QA mounts. Customer must supply optional quick coupler mount item (#4 or #5) shown in Figure 7-1 on page 44.



Skid Steer Quick Attach Mount #317-391A
Figure 7-5

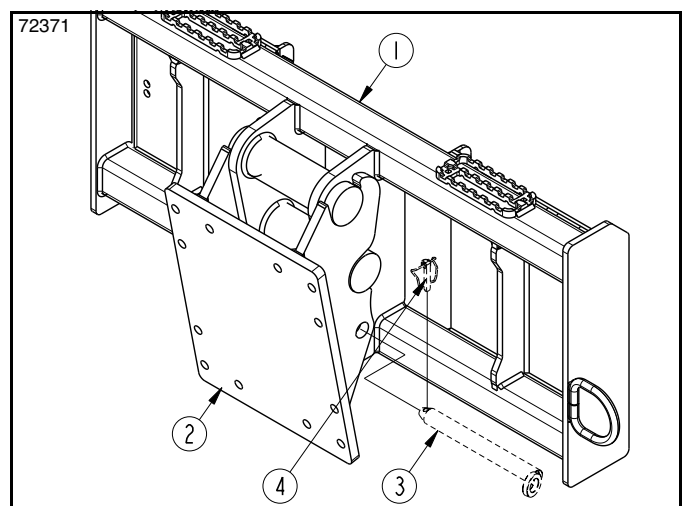
Skid Steer & BR510 QA Mount Assembly

Refer to Figure 7-6:

Part No.	Description
317-392A	Assembly, Skid Steer Mount, BR510

NOTE: Use Skid Steer Quick Attach Mount only with Model BR510 Hydraulic Breaker. Using the mount with Model BR560 Hydraulic Breaker can damage the mount and hammer.

This assembly consist of one skid steer QA mount (#1) one QA mount (#2), lock pin (#3), and lock pin keeper (#4) for hooking-up the BR510 Hydraulic Breaker to a skid steer or track loader. This assembly is intended for users who do not already have a BR510 QA coupler mount. Hardware for attaching the quick coupler mount to the hammer is included with the hammer.



Skid Steer QA Mount and BR510 Quick Attach Mount
Figure 7-6

Skid Steer BR510 / BR560 Mount

Refer to Figure 7-7:

Part No.	Description
317-349A	Assembly, Skid Steer Mount, BR510 / BR560

This skid steer mount with BR510/560 hammer mount is designed for attaching to the BR510 or BR560 Hydraulic Breakers with bolts. Hardware for attaching the skid steer quick attach mount is included with the hammer.

Compact Loader BR360 / BR460 CII Mount

Refer to Figure 7-8:

Part No.	Description
317-415A	Assembly, CII Mount, BR360 / BR460

This compact loader CII (Common Industry Interface) mount is designed for attaching the BR360 and BR460 Hydraulic Breakers with bolts.

Hardware for attaching the CII mount is included with the hammer.

Compact Loader BR360 / BR460 2-lever Mount

Refer to Figure 7-9:

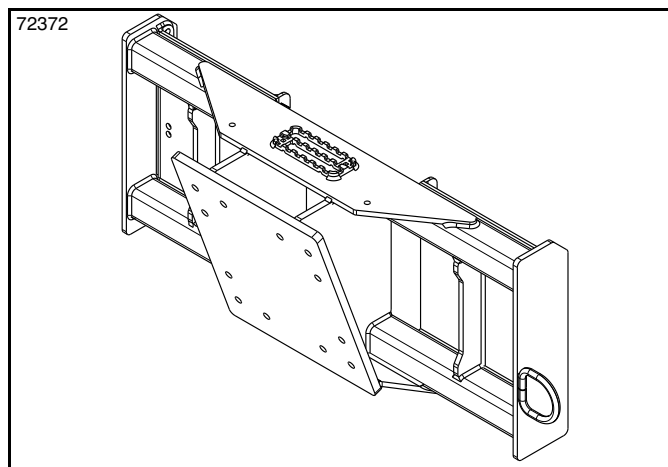
Part No.	Description
317-426A	Assembly, 2-Lever Mount, BR360 / BR460

This compact loader 2-lever mount is designed for attaching the BR360 and BR460 Hydraulic Breakers with bolts.

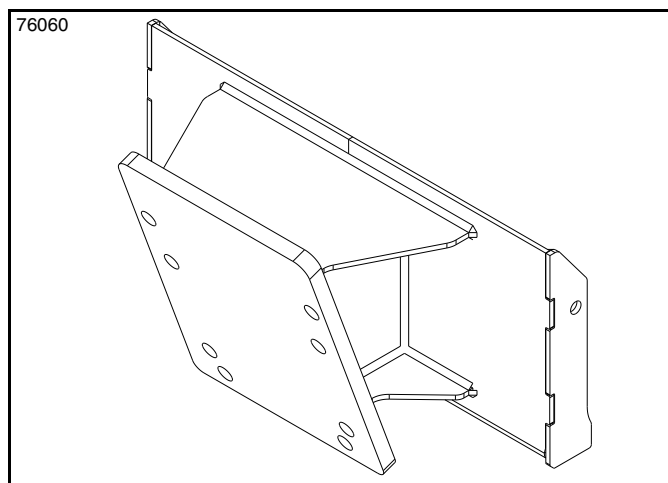
Hardware for attaching the 2-lever mount is included with the hammer.

Optional Hydraulic Hose Kits

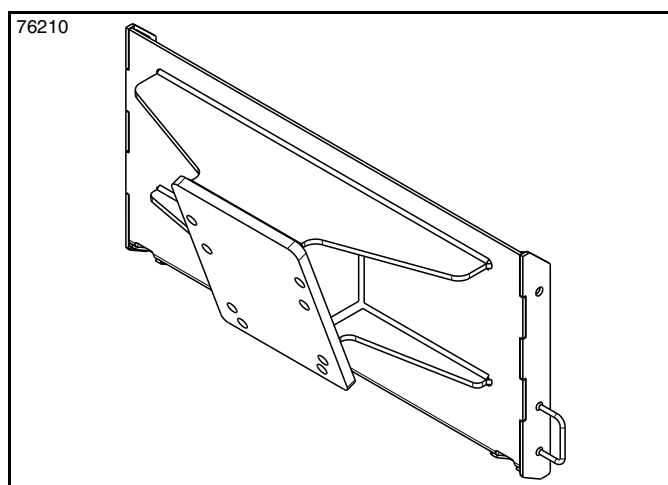
A variety of optional hydraulic hose kits are available for connecting Kubota hammers to Kubota's power machines.



Skid Steer QA Mount with BR510/560 Bolt-on Mount
Part Number #317-349A
Figure 7-7



Compact Loader BR360/460 CII Bolt-on Mount
Part Number #317-415A
Figure 7-8



Compact Loader BR360/460 2-Lever Bolt-on Mount
Part Number #317-426A
Figure 7-9

Compact Loader Hose Kits

Refer to Figure 7-10:

These hydraulic hose kits come with a pair of hoses, and 1 1/16" male and female flat face couplers for hooking-up hammer hydraulics to the compact loader male and female flat face hydraulic couplers.

Skid Steer Hydraulic Hose Kit

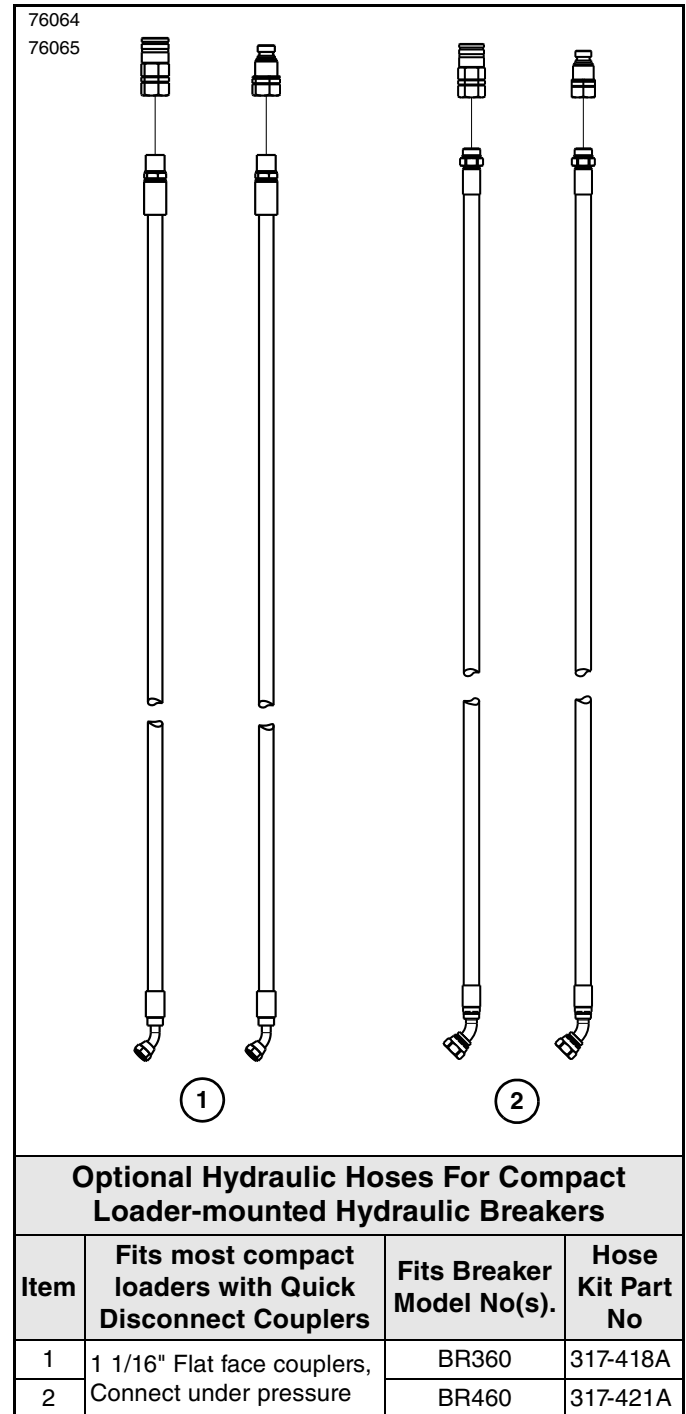
Refer to Figure 7-11 on page 48:

This hose kit is complete with hoses, 90° elbows, and 1 1/16" male and female flat face couplers for hooking-up hammer hydraulics to the skid steer male and female flat face hydraulic couplers.

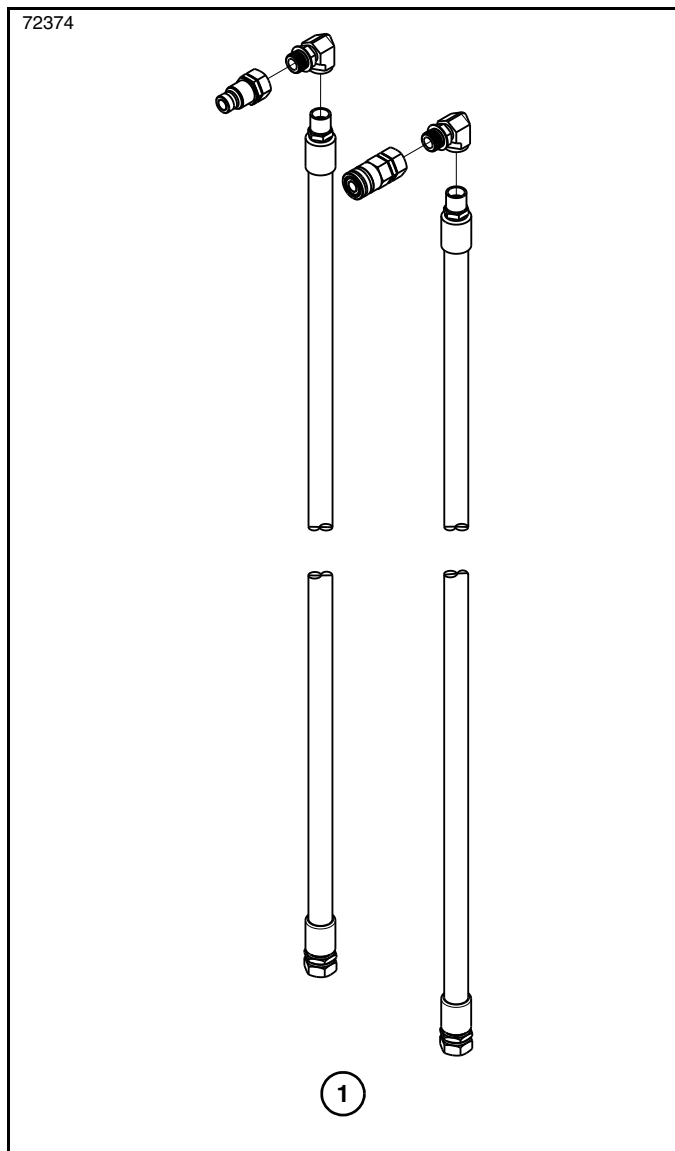
Excavator/Backhoe Hose Kits

Refer to Figure 7-12 on page 48:

These hydraulic hose kits are complete for connecting one end of the pair of hoses to the hammer hydraulic ports and the other ends to the excavator or backhoe hydraulic ports. Quick disconnect couplers located at the excavator or backhoe ports provide easy hook-up.



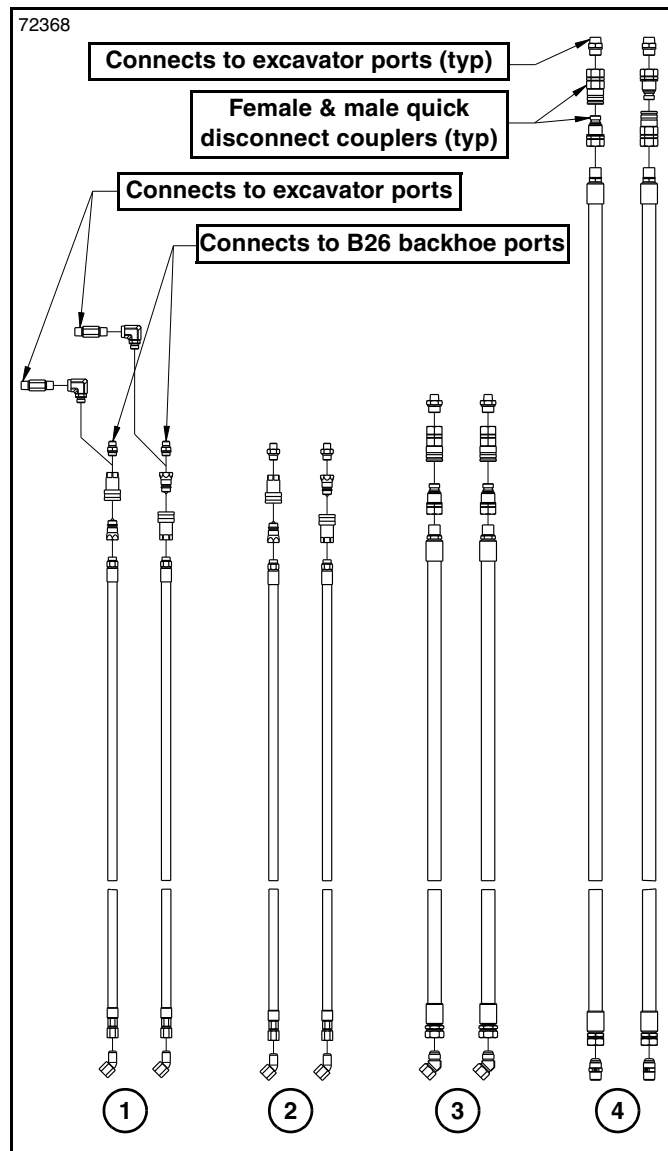
Compact Utility Loader Hydraulic Hoses
Figure 7-10



Optional Hydraulic Hoses For Skid Steer Mounted Hydraulic Breakers

Item	Fits most Skid Steers with Quick Disconnect Couplers	Fits Breaker Model No(s).	Hose Kit Part No
1	1 1/16" Flat face couplers, Connect under pressure	BR510 BR560	317-353A

Skid Steer Hydraulic Hoses
Figure 7-11



Optional Hydraulic Hoses For Excavator or Backhoe Mounted Hydraulic Breakers

Item	Fits Excavator or Backhoe Model No(s).	Fits Breaker Model No(s).	Hose Kit Part No
1	K008 excavator B26 backhoe	BR310	317-389A
2	U17 & KX018 excavators	BR360	317-390A
3	U25 & U27, U35, KX71, & KX033 excavators M62 backhoe KX040 excavator KX057 & U55 excavators	BR460 BR460/BR510 BR510/BR560	317-352A
4	KX080 excavator	BR860	317-354A

Excavator/Backhoe Hydraulic Hoses
Figure 7-12

Intell-Attach System™

The Intell-Attach System allows the Kubota power unit with a closed cab, hydraulic hitch, high-flow, and Telematics to intelligently recognize a Kubota by Land Pride Attachment when equipped with an Intell-Attach receiver and tag. Real time feedback between the attachment and SVL 97-3 helps the operator maximize performance and speed machine set-up.

The Intell-Attach System automatically adjusts the AUX flow. This auto adjust feature prohibits high-flow when connecting to an attachment requiring standard flow.

Receiver/Cover Assembly

Refer to Figure 7-13:

The receiver is mounted on the track loader and once programmed, the communication between the receiver and tag automatically recognizes the capabilities of the attachment and adjusts the power unit to match.

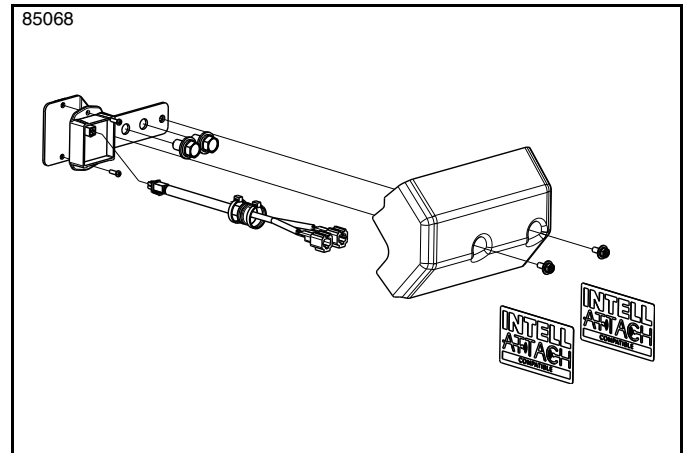
RECEIVER/COVER ASM701-256A

Tag/Bracket Assembly

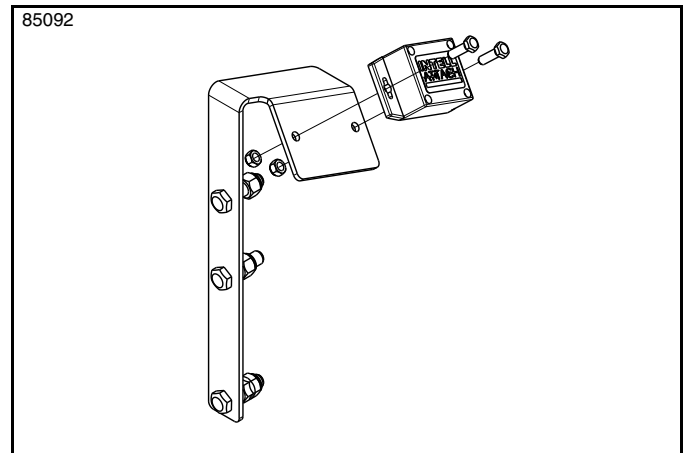
Refer to Figure 7-14:

The tag is mounted on the attachment and communicates using Bluetooth® wireless technology to communicate with the receiver on the track loader.

TAG/BACKET ASM #2701-254A



**Receiver/Cover Assembly
Figure 7-13**



**Tag/Bracket Assembly
Figure 7-14**

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Section 8: Maintenance & Lubrication

Maintenance

Proper servicing and adjustment are key to the long life of any attachment. With careful and systematic inspection, you can avoid costly maintenance, time, and repair.

After using your hammer for several hours, check all bolts to be sure they are tight. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Kubota dealer.



DANGER

To avoid serious injury or death:

- Do not go near or under raised loader arms without first securing loader arms in the raised position with an approved lift-arm support.
- Keep body, body extremities, clothing, pull strings, etc. away from rotating/moving parts. Always shut off hydraulics to the attachment and shutdown the power machine before adjusting or servicing the equipment.
- Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to the hydraulics is off.



WARNING

To avoid serious injury or death:

- Make sure controls are all in the neutral position or park before starting the power machine.
- Always shut power machine down using the "Shutdown Procedure" provided in this manual before servicing, adjusting, cleaning, or maintaining the attachment.
- Allow only persons to perform maintenance on this attachment who have been properly trained in the safe operation of this attachment.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the attachment back into service.
- Check hitch fit-up frequently. An improper fit-up can result in the attachment falling from the loader hitch plate.
- Do not alter attachment or replace parts on the attachment with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the attachment. Replace parts only with genuine OEM parts.
- Hydraulic fluid can become hot as it flows through components such as hydraulic couplers, hoses, lines, fittings, motors, etc. Wear gloves when working with hydraulic components including while connecting and disconnecting couplers. It is best to allow hydraulic components to cool before touching them.

- Check hydraulic hoses and fittings frequently for leaks or damage. Fluid escaping under pressure can penetrate skin. Large leaks can drop the attachment.
- Lubricate, make adjustments and repairs in a safe area away from traffic and other hazards..

Basic Maintenance Rules

Whenever hammer maintenance work is performed, keep these basic rules in mind:

1. The hammer is a precision made hydraulic attachment. Absolute cleanliness and great care are basic and essential matters in handling any hydraulic component.
Dirt is the worst enemy of hydraulic systems.
 - Do not drop hydraulic hose ends in the dirt.
 - Do not leave hammer IN and OUT ports open on site for sand and dust to enter.
2. Handle hammer parts carefully. Remember to cover cleaned and dried parts with clean lint free cloth.
3. Only use purpose designed materials for cleaning hydraulic parts. Never use water, paint thinners or carbon tetrachloride.
4. Components, gaskets, and seals in the hydraulic system should be covered with very clean hydraulic oil before assembly.

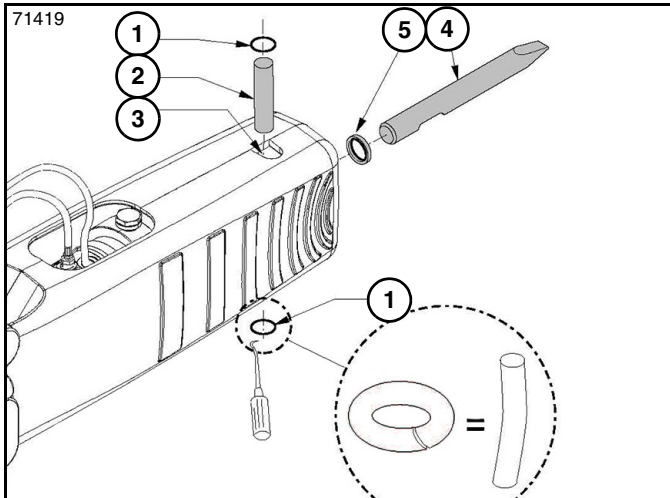
Release Hydraulic Oil Pressure



WARNING

To avoid serious injury or death:

- The hydraulic pressure inside the hammer must always be released before making any adjustments or repairs to a hammer that is attached to a carrier. There may also be pressurized oil trapped inside the hammer even if the hammer is disconnected from the carrier.
 - Release hydraulic oil pressure according to the instructions provided in this manual, and wait at least 10 minutes before opening any plugs or valve covers.
 - The steps below do not release pressure from the accumulators. Do not disassemble the hammer before releasing oil pressure from the hammer and gas pressure from the accumulator. Please contact your Kubota dealer for further instructions before disassembling the hydraulic hammer.
1. Shut power machine down before dismounting. follow "**Shutdown Procedures**" on page 15.
 2. Operate hydraulic controls to release any pressure trapped inside the hydraulic system.
 3. Wait 10 minutes for oil pressure to drop inside the hammer.
 4. Close hammer inlet and outlet lines. If quick couplers are used, disconnection automatically closes hammer lines. If hammer line includes ball valves, please make sure that they are closed.



Tool Maintenance (310/360/460)
Figure 8-1

Tool Maintenance (310/360/460)

Refer to Figure 8-1:



WARNING

To avoid serious injury or death:

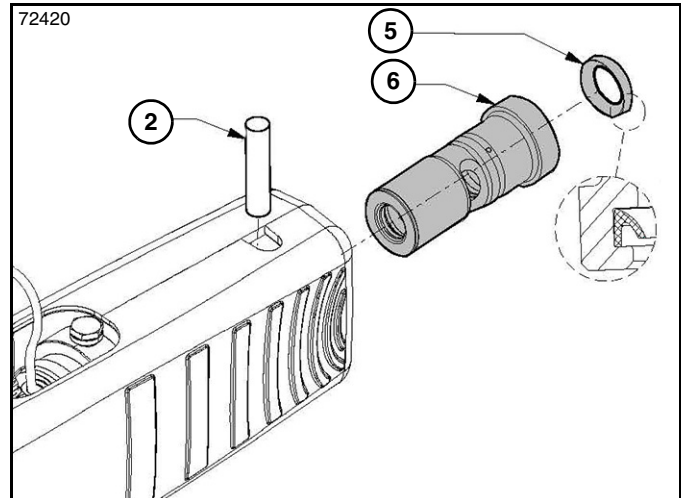
- The hydraulic pressure inside the hammer must always be released before removing the tool. After operating the hammer, wait 10 minutes for the oil pressure to drop inside the hammer. Not complying may result in a serious injury.
- A tool that has been just used can be very hot. Do not touch or remove the tool until after it has cooled.

Remove Tool

1. Set the hammer on level ground.
2. Shut power machine down before dismounting. Follow “**Shutdown Procedures**” on page 15.
3. Wait 10 minutes for oil pressure to drop inside the hammer before continuing with step 4.
4. Pry out upper and lower rubber rings (#1) with customer supplied hook tool.
5. Remove tool retaining pin (#2) by pushing it through hole (#3) located on the opposite side.
6. Remove tool (#4). Use a lifting device if necessary.

Install Tool

1. Clean and lubricate tool (#4) and pin (#2). Remove burrs from the tool. If using old tools, check tool and bushing wear limits. Refer to Figure 8-7 & Figure 8-8 on page 55.
2. **Refer to Figure 8-2:** Check seal (#5) inside tool bushing (#6) for wear and replace if required. Install seal (#5).
3. Install tool (#4). Align notch of tool with pin bore.
4. Install tool retaining pin (#2).
5. Install upper and lower rubber ring(s) (#1).



Tool Bushing Maintenance (310/360/460)
Figure 8-2

Tool Bushing Maintenance (310/360/460)

Refer to Figure 8-2:

Remove Tool Bushing

1. Set the hammer on level ground.
2. Shut power machine down before dismounting. Follow “**Shutdown Procedures**” on page 15.
3. Wait 10 minutes for the oil pressure to drop inside the hammer before continuing with step 4.
4. Remove tool. See “**Remove Tool**” on this page.
5. Remove tool bushing (#6).
6. Remove seal (#5) from tool bushing.

Install Tool bushing

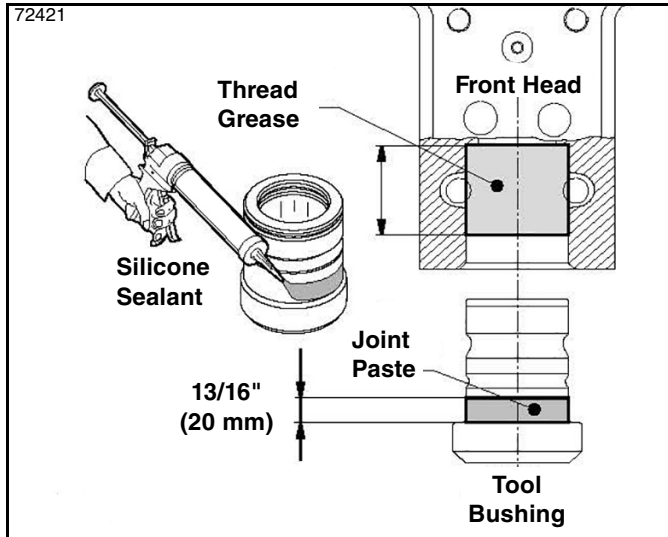
1. Clean all parts.
2. Measure inner diameter of bushing (#6). Replace bushing if necessary. Refer to Figure 8-8 on page 55.
3. Check seal (#5) for wear and replace if required. Install seal (#5).

Refer to Figure 8-3 on page 53:

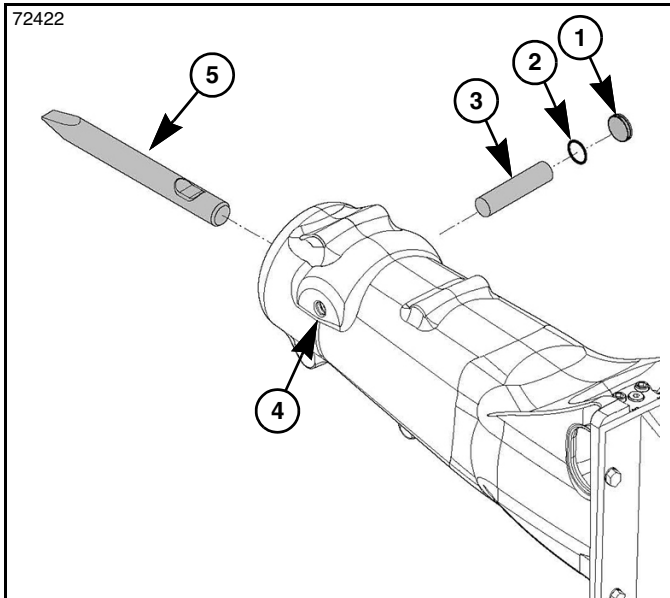
4. Apply a thin layer of joint paste (silicone sealant) on tool bushing's outer surface as shown.
 - Suitable area is approximately 13/16" (20 mm).
 - Do not apply joint paste inside front head bore.
5. Apply thread grease inside front head bore as shown in the illustration (make sure the thread grease and joint paste will not get mixed). The thread grease will prevent corrosion and seizures and make bushing removal easier.

Refer to Figure 8-2:

6. Install tool bushing (#6), in its place before the joint paste hardens.
7. Install tool. Refer to “**Install Tool**” on this page.



BR310/360/460 Tool Bushing Preparation
Figure 8-3



Tool Maintenance (510/560/860)
Figure 8-4

Tool Maintenance (510/560/860)

Refer to Figure 8-4:

WARNING

To avoid serious injury or death:

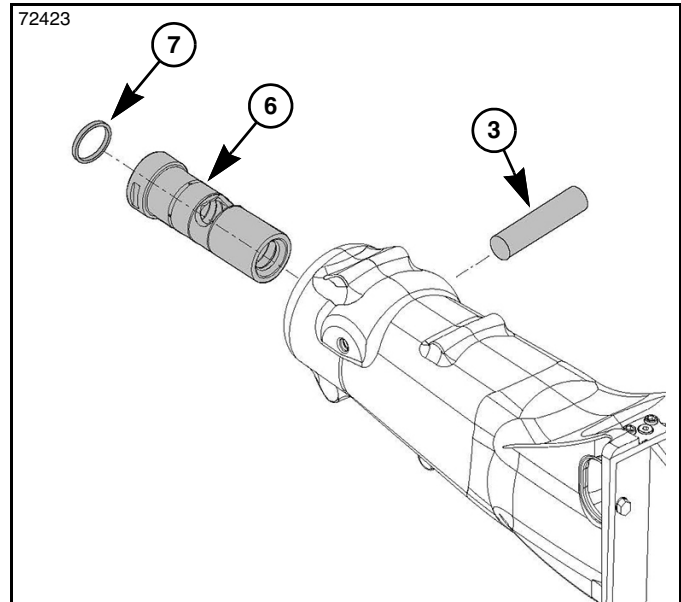
- The hydraulic pressure inside the hammer must always be released before removing the tool. After operating the hammer, wait 10 minutes for the oil pressure to drop inside the hammer. Not complying may result in a serious injury.
- A tool that has been just used can be very hot. Do not touch or remove the tool until after it has cooled.

Remove Tool

1. Set the hammer on level ground.
2. Shut power machine down before dismounting. Follow “**Shutdown Procedures**” on page 15.
3. Wait 10 minutes for oil pressure to drop inside the hammer before continuing with step 4.
4. Pry out plug (#1).
5. Pry out O-ring (#2) with customer supplied hook tool.
6. Remove tool retaining pin (#3) by pushing it through hole (#4) located on the opposite side.
7. Remove tool (#5). Use a lifting device if necessary.

Install Tool

1. Clean and lubricate tool (#5) and pin (#3). Remove burrs from the tool. If you are using old tools, check tool and bushing wear limits. Refer to Figure 8-7 & Figure 8-8 on page 55.
2. Install tool (#5). Align notch of tool with pin bore.
3. Install tool retaining pin (#3).
4. Install rubber ring (#2) and plug (#1).



Tool Bushing Maintenance (510/560/860)
Figure 8-5

Bushing Maintenance (510/560/860)

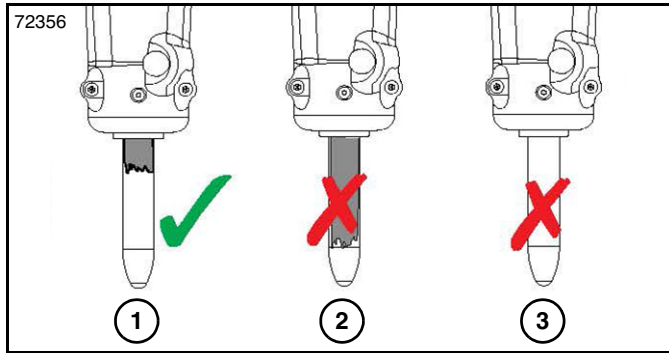
Refer to Figure 8-5:

Remove Tool Bushing

1. Set hammer on level ground.
2. Shut power machine down before dismounting. Follow “**Shutdown Procedures**” on page 15.
3. Wait 10 minutes for oil pressure to drop inside the hammer before continuing with step 4.
4. Remove tool. See “**Remove Tool**” on this page.
5. Remove tool bushing (#6).
6. Remove the seal (#7) from tool bushing.

Install Tool Bushing

1. Clean all parts.
2. Check seal (#7) for wear and replace if required.
3. Measure inner diameter of bushing (#6) to check for wear. Replace bushing if necessary. Refer to Figure 8-8 on page 55.
4. Install seal (#7).
5. Install tool bushing (#6).
6. Install tool. Refer to “**Install Tool**” on this page.



Visible Lubrication on the Tool

Figure 8-6

Operator Maintenance

It is the operator's responsibility to perform the following maintenances:

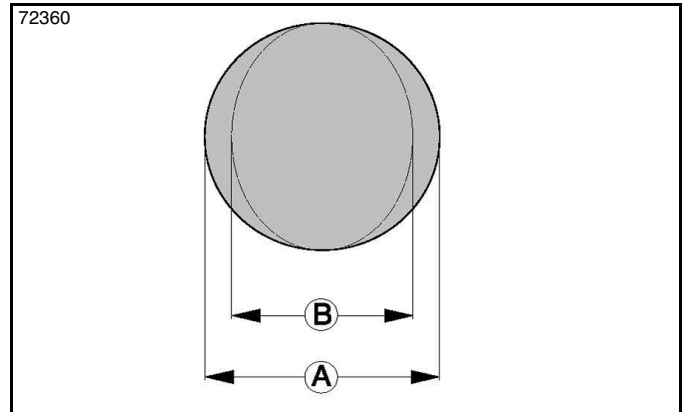
Every Two Hours or Daily

Refer to Figure 8-6:

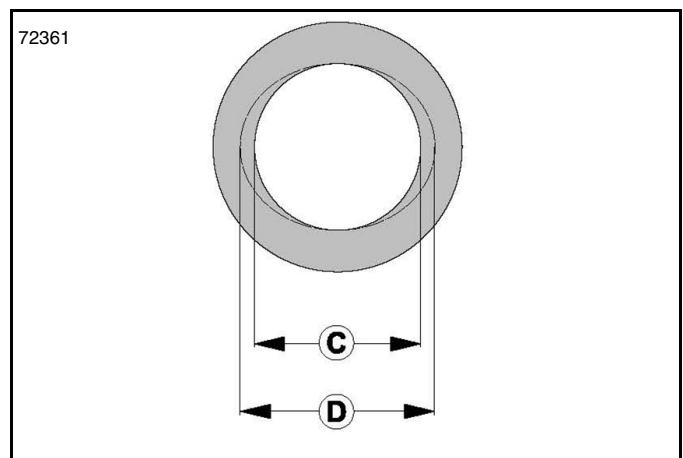
- Grease tool shank and tool bushings. Refer to "Lubrication Points" on page 57.
- Regular visual inspections during operation are recommended.
 - A tool shank (#1) covered in grease part way down the shank is properly greased.
 - A tool shank (#2) covered with excessive grease requires less frequent greasing intervals.
 - A tool shank (#3) that is dry requires frequent grease intervals.
- Refer to Figure 8-9 on page 57:** Visually inspect condition of grease zerks and the presence of the grease nipple. Replace grease zerk if lost or destroyed.
- Observe hydraulic oil temperature, all hydraulic lines and connections as well as impact efficiency and evenness of operation.
- Tighten loose connections.

Every Ten Hours or Monthly

- Refer to Figure 8-7:** Check tool shank for wear. Replace tool if tool shank diameter is less than dimension (B) in the table.
- Refer to Figure 8-8:** Check tool bushings for wear. Replace tool bushing if bushing diameter is larger than dimension (D) in the table.
- Check hydraulic hoses, replace if necessary. Do not let dirt get into the hammer or hoses.



Models	Tool Wear Limits inches (mm)	
	New (A)	Worn Out (B)
BR310	1.42 (36)	1.34 (34 mm)
BR360	1.65 (42 mm)	1.57 (40 mm)
BR460	1.97 (50)	1.89 (48)
BR510	2.83 (72)	2.76 (70)
BR560	3.15 (80)	3.07 (78)
BR860	3.54 (90)	3.46 (88)

Tool Wear Limits
Figure 8-7

Models	Tool Bushing Wear Limits inches (mm)	
	New (C)	Worn Out (D)
BR310	1.42 (36)	1.50 (38)
BR360	1.65 (42)	1.73 (44)
BR460	1.97 (50)	2.05 (52)
BR510	2.83 (72)	2.91 (74)
BR560	3.15 (80)	3.23 (82)
BR860	2.54 (90)	3.62 (92)

Tool Bushing Wear Limits
Figure 8-8

Annual Service

Kubota recommends the hammer be serviced by your Kubota dealer ever 600 hours or annually, whichever comes first. Your Kubota dealer will inspect and repair as required.

1. Check all hydraulic connections.
2. Check hydraulic hoses. Make sure they do not rub against the power machine in any operating position.
3. Replace hydraulic oil filters in the power machine.

Washing the Hammer

IMPORTANT: Plug pressure and return lines before washing the hammer to prevent dirt from entering into the hammer.

Dirt (mud, concrete dust, etc.) can attach to the hammer. Wash the outside of the hammer with a steam washer before sending it to the workshop. Doing this will help prevent contamination from dirt while being repaired.

Long-Term Storage

Clean, inspect, service, and make necessary repairs to the hydraulic hammer when storing it for long periods and at the end of the season. This will help ensure the unit is ready for field use the next time you hook-up to it.



DANGER

To avoid serious injury or death:

- Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to the hydraulics is off.

IMPORTANT: Plug pressure and return lines before washing the hammer to prevent dirt from entering into the hammer.

1. Remove any dirt and grease that may have accumulated on the hydraulic hammer and moving parts. Scrape off compacted dirt and then wash the outside of the hammer. Refer to “**Washing the Hammer**” on this page.
2. Inspect for loose, damaged, or worn tool, tool bushing, and bushing seal and replace as needed.
3. Have the hammer serviced every 600 hours or annually, whichever comes first. Refer to “**Annual Service**” on this page.

4. Repaint parts where paint is worn or scratched to prevent rust. Ask your Land Pride dealer for aerosol touch-up paint. Paint is also available in touch-up bottles with brush, quarts, and gallon sizes by adding TU, QT, or GL to the end of the aerosol part number.

Touch-Up Paint

Part No.	Part Description
821-070C	Gloss black enamel spray can
821-070CTU	Gloss black enamel bottle with brush
821-070CQT	Gloss black enamel quart
821-070CGL	Gloss black enamel gallon

5. Replace all damaged or missing decals.
6. Lubricate as noted in the lubrication section. See “**Lubrication Points**” on page 57.
7. The tool must be removed from the hammer.
8. The lower end of the piston, tool and tool bushings must be well protected with grease to minimize oxidation.
9. Open connections must be sealed with clean plugs to prevent oil leakage and dirt access into the hydraulic system.
10. The hammer must be stored in the vertical position in a clean, dry place. Inside storage will reduce maintenance and make for a longer hammer life.
11. Make sure the hammer is secured from falling.
12. Follow all unhooking instructions.
 - Refer to “**Unhook Hammer**” on page 25 if unhooking the hammer from an excavator or backhoe.
 - Refer to “**Unhook BR510 Breaker**” on page 31 if disconnecting the quick coupler mount from the skid steer quick attach mount.
 - Refer to “**Unhook Skid Steer QA Mount**” on page 31 if disconnecting the loader hitch plate from the skid steer quick attach mount.

Lubrication Points

Grease Interval

Refer to Figure 8-9 & Figure 8-10:

1. Every two hours or daily, apply grease to the tool bushing and tool. Generally, 3-5 pumps is enough.
2. Adapt interval and amount of grease to wear rate of tool and working conditions.
3. Tool shank must be well lubricated before installing the tool.

Grease Instructions

1. BR310, BR360, & BR460 hammer must be standing upright with pressure against the tool to ensure even flow of grease around the tool and bushing.
2. Do not fill the space between piston and tool with grease.
3. Insufficient greasing may cause:
 - Abnormal wear of tool bushing and tool.
 - Tool breakage.

Grease Type

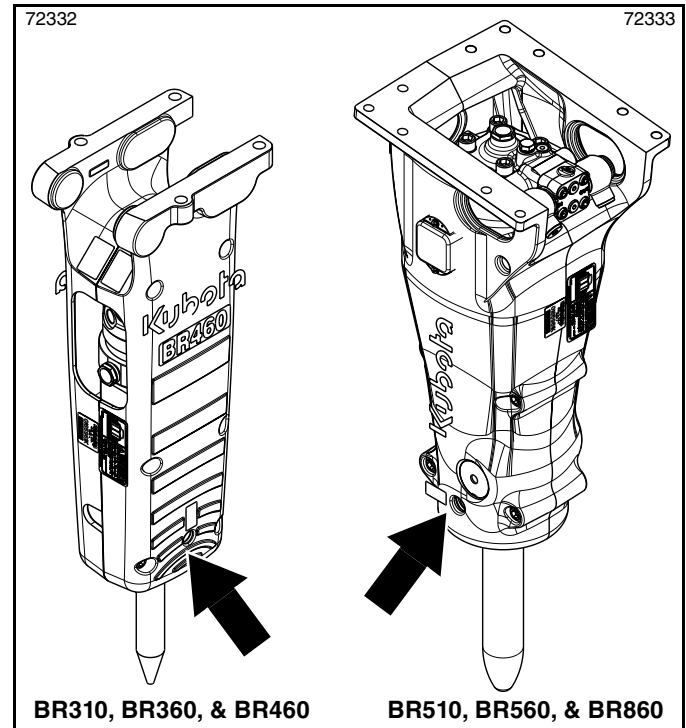
Grease must meet the following requirements:

- No dropping point (or very high, over 250 °C/ 480 °F)
- Minimum working temperature under lowest ambient temperature.
- Maximum working temperature over 150 °C/ 300 °F.
- Additives: molybdenum disulphide (MoS₂), graphite or equivalent
- Grade (thickness): NLGI 0-2
- Water resistant.

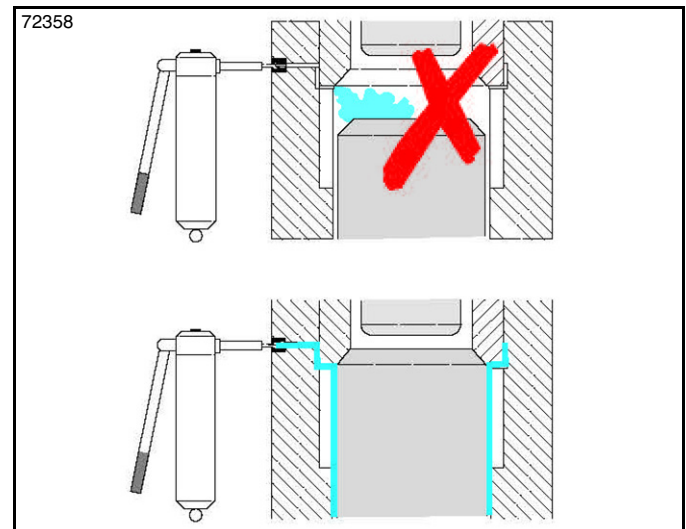
Recommended Grease

Kubota recommends using chisel paste grease.

Part No.	Description
821-082C	Grease, Chisel Paste 16 oz (0.45 kg)



Zerk Location
Figure 8-9



Lubricating the Tool
Figure 8-10

Standard Hydraulic Oil				
	Units	Winter (low)	Moderate	Summer (high)
Temperature range	Fahrenheit Centigrade	-4° to +140° (-20° to +60°)	-14° to +148° (-10° to +70°)	+32° to +176° (-0° to +80°)
Viscosity grade		ISO 32	ISO 46	ISO 68
Kubota		Kubota Hyd. Oil 32	Kubota Hyd. Oil 46	ISO 68

Hydraulic Fluids

Generally the hydraulic oil originally intended for a Kubota excavator is suitable for the Kubota hydraulic hammer. However, working with the hydraulic hammer will create more heat than standard excavation work, so the oil viscosity must be checked.

Normal operating viscosity of the hydraulic oil should be 2.90- 5.35 °E (20-40 cSt). Do not start the hammer if viscosity of the hydraulic oil is above 131 °E (1000 cSt) or below 2.90 °E (20 cSt).

Hydraulic oil normalizes at a certain level depending on conditions and on the power machine. During continuous use, the operating temperature range should be between -4 °F to +176 °F (-20 °C to +80 °C). If temperature is lower than -4 °F, the hammer and tool should be preheated before starting operation to avoid damage to the accumulator membrane and tool. For additional information, See “**Hydraulic Oil Cooling**” below.

Hydraulic Oil Cooling

The maximum permitted hydraulic oil temperature in continuous hammer use is 120-175° F (50-80° C) depending on the viscosity of the oil in the system. The temperature of the hydraulic oil depends on ambient conditions, cooling system efficiency and duty cycle of the hammer.

When the hydraulic hammer is used continuously it is necessary to have an oil cooling system. The oil cooler of the carrier must have a volume flow capacity of at least twice the hammer's maximum volume flow. The cooler must stand the dynamic pressure of 20 bar, 290 psi (2 MPa). If the oil temperature is still too high in spite of the cooler, please contact your Kubota dealer.

Standard Hydraulic Oil

The table above shows hydraulic oils recommended for hammer use. The most suitable oil is selected in such a way that the temperature of the hydraulic oil in continuous use is in the permitted range.

It is strongly recommended to change hydraulic oils between summer and winter if there is an average temperature difference of more than 63° F (35° C). The correct hydraulic oil viscosity would thus be ensured.

Substandard Hydraulic oil

Damaged to the Hydraulic Breaker attributed to incorrect hydraulic oil in hammer:

Oil too Thick

- Difficult start up.
- Stiff operation.
- Hammer strikes irregularly and slowly.
- Danger of cavitation in the pumps and hydraulic hammer.
- Sticky valves.
- Filter bypass, impurities in oil not removed.

Oil too Thin

- Efficiency losses (internal leaks).
- Damage to gaskets and seals, through leakage.
- Accelerated wear of parts, due to reduced lubrication efficiency.

Special Oils

In some cases special oils (e.g. biological oils and non-flammable oils) can be used with Kubota hydraulic hammers. Observe the following aspects when considering use of special oils:

- The viscosity range in the special oil must be in the specified range 2,90 °E - 131 °E (20-1000 cSt).
- Lubrication properties must be proper.
- The corrosion resistance properties must be proper.

Special oil may be used in the carrier. Due to the high piston speed in hammer, always check suitability with hammer. Please contact your Kubota dealer for more information about special oils.

Hydraulic Oil Purity

No separate filter is required when the Kubota hammer is installed in the hydraulic circuit. The hydraulic oil filter of the carrier will clean the oil flowing through the hammer.

The purpose of the oil filter is to remove impurities from the hydraulic oil since impurities accelerate component wear, blockages and even seizure. Impurities also cause heat and deterioration. Air and water are considered impurities in oil. Oil sampling is recommended at regular intervals, as not all impurities can be seen with the naked eye.

Impurities Enter Hydraulic System

- During hydraulic oil changes and refilling.
- When components are repaired or serviced.
- When hammer is being installed on carrier.
- Due to component wear.

Oil Filter

In hydraulic hammer work, the power machine's oil filter must fulfill the following specifications:

- The oil filter must allow a maximum particle size of 25 microns.
- The oil filter material must be man-made fiber cloth or very fine gauge metallic mesh to withstand pressure fluctuations.
- The oil filter must have a volume flow capacity of at least twice the hammer's maximum flow.

Adding New Oil

In general, new oils have a maximum particle count of 40 microns. New oil must be filtered when adding oil to the power machine's reservoir.

Component Damage Caused by Oil Impurities

The following is a list of Component damages caused by hydraulic oil impurity in the power machine and hammer circuits:

Pump Working Life is Shortened

- Rapid wear of parts
- Cavitation

Valves Do Not Function Properly

- Spools bind
- Rapid wear of parts
- Blocking of small transfer ports

Cylinder and Gasket Wear

- Reduces Hammer Efficiency
- Rapid wear of moving parts and seals
- Danger of piston seizing up
- Oil leakage

Shortened Working Life and Reduced Efficiency of the Hydraulic Oil

- Oil overheats
- Oil quality deteriorates
- Electro-chemical changes in hydraulic oil

Repair Hammer and Clean Hydraulic System



WARNING

To avoid serious injury or death:

- The hydraulic pressure inside the hammer must always be released before removing any plugs or valve covers. Read the instructions on releasing the hydraulic pressure from the hammer. See "Release Hydraulic Oil Pressure" on page 51.
- Wait at least 10 minutes after releasing the hydraulic pressure before opening any of the plugs or valve covers.
- Releasing hydraulic oil pressure does not release pressure from the accumulators! Do not disassemble the hammer before releasing gas pressures from the accumulators.
- Please have your Kubota dealer relieve accumulator gas pressure and disassemble the hammer.

Component damage is only "a symptom." The trouble will not be cured by removing "the symptom." After any component damage due to impurities in the oil, the hammer must be disassembled and the entire hydraulic system cleaned. The hammer must not be disassembled before releasing hydraulic oil pressure inside the hammer and gas pressure in the accumulator. Refer to "Release Hydraulic Oil Pressure" on page 51 and "Service Accumulator" below.

Please have your Kubota dealer dismantle, clean, replace damaged components, reassemble, and fill the hammer with new hydraulic oil.

Service Accumulator



WARNING

To avoid serious injury or death:

- Do not release gas pressure from the accumulator before releasing oil pressure from the hammer's hydraulic system.
- Do not disassemble hammer before releasing the gas pressure from the accumulators.
- Use only nitrogen (N₂) for charging the accumulators. The use of other gases may cause accumulators to explode. Not complying could result in serious injury or death.

IMPORTANT: The charging device does not have a pressure relief valve. The nitrogen gas bottle valve must be closed when its gauge shows correct charging pressure.

Please have your Kubota dealer release accumulator gas pressure, service the accumulator, and recharge the accumulator with nitrogen.

BR310, BR360, & BR460 Specifications & Capacities

Breaker Specifications & Capacities ¹				
Model Numbers	Unit	BR310	BR360	BR460
Frequency range ²	bpm	1300-2500	1200-2600	1000-2000
Oil flow range	gpm (lpm)	3.9-8.7 (15-33)	5.3-12.7 (20-48)	7.9-16.6 (30-63)
Operating pressure	psi (bar)	1450-1740 (100-120)	1740-2030 (120-140)	1740-2030 (120-140)
Pressure relief setting minimum ³	psi (bar)	2170-2460 (150-170)	2460-2760 (170-190)	2460-2760 (170-190)
Pressure relief setting maximum	psi (bar)		3190 (220)	3190 (220)
Tool shank diameter	in (mm)	1.42 (36)	1.65 (42)	1.97 (50)
Operating weight, minimum ⁴	lbs (kg)	215 (98)	311 (141)	476 (216)
Net weight ⁵	lbs (kg)	183 (83)	247 (112)	394 (179)
Carrier weight ⁶	ton (m ton)	.88-2 (0.8-1.8)	1.4-3 (1.3-2.7)	2.2-4.4 (2.0-4.0)
Thread on valve housing		BSP 1/2" Female	BSP 1/2" Female	BSP 3/4" Female
Hammer weight ⁷	lbs (kg)	177 (80)	238 (108)	379 (172)

Tool Specifications ¹								
	Units	Chisel Tool ⁷	Moil Tool ⁸	Spade, Parallel	Spade, Transverse	Compact Plate	Long Moil Point	Pyramid Tool
BR310								
Part number		BH401SK	BH403SK	BH405SK	BH406SK	Not Available	Not Available	BH403K3SK
Length	in (mm)	14 1/4 (360)	14 1/4 (360)	15 (380)	15 (380)			15 (380)
Weight	lbs (kg)	6.0 (2.7)	5.7 (2.6)	7.1 (3.2)	7.1 (3.2)			6.0 (2.7)
BR360								
Part number		BH601SK	BH603SK	BH605SK	BH606SK	Not Available	Not Available	BH603K3SK
Length	in (mm)	16 (405)	16 (405)	16 1/2 (420)	16 1/2 (420)			16 (405)
Weight	lbs (kg)	9.0 (4.1)	8.6 (3.9)	9.0 (4.1)	9.1 (4.0)			9.0 (4.1)
BR460								
Part number		BH801SK	BH803SK	BH805SK	BH806SK	BH807SK	Not Available	BH803K3SK
Length	in (mm)	19 3/8 (490)	19 3/8 (490)	19 3/8 (490)	19 3/8 (490)	17 3/8 (440)		19 3/8 (490)
Weight	lbs (kg)	15.6 (7.1)	15.0 (6.8)	15.0 (6.8)	15.0 (6.8)	25.8 (11.7)		15.8 (7.2)

1. Specifications are subject to change without prior notice. Refer to Figure 6-1 on page 41 for tool illustrations.

2. Depends on hydraulic parameters (oil flow, pressure and nozzle).

3. Operating pressure +50 bar.

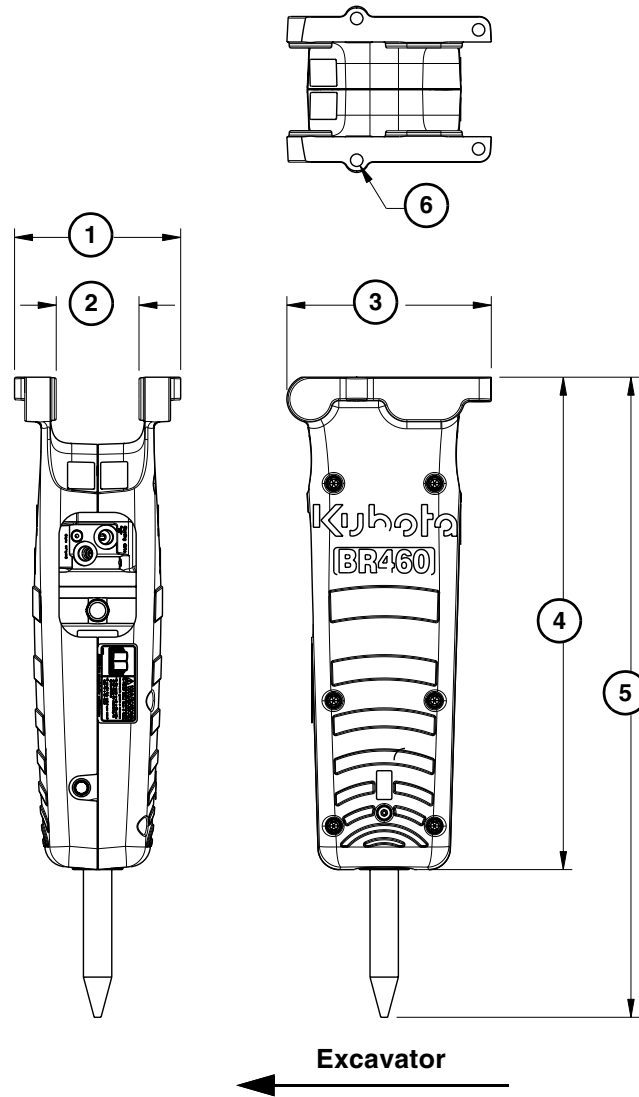
4. Operating weight includes hammer, one standard tool, standard mount, & hydraulic hoses.

5. Includes hammer and one standard tool only.

6. Check Carrier's lifting capacity, especially with flange mount hammers and mounting bracket.

7. Weight of hammer only. (without a tool)

8. Standard with hammer.



72343

Model Number	Dimensions [in (mm)] ¹						Qty
	1	2	3	4	5	6 ²	
BR310	9 (228)	4 15/16 (125)	10 1/4 (262)	26 3/4 (677)	34 7/8 (884)	11/16 (17)	4
BR360	10 1/2 (265)	5 5/16 (135)	11 7/8 (300)	30 1/4 (767)	39 1/8 (994)	13/16 (21)	4
BR460	11 1/2 (292)	6 5/16 (160)	14 1/4 (360)	34 1/4 (868)	44 3/8 (1129)	13/16 (21)	4

1. Dimensions are subject to change without prior notice.

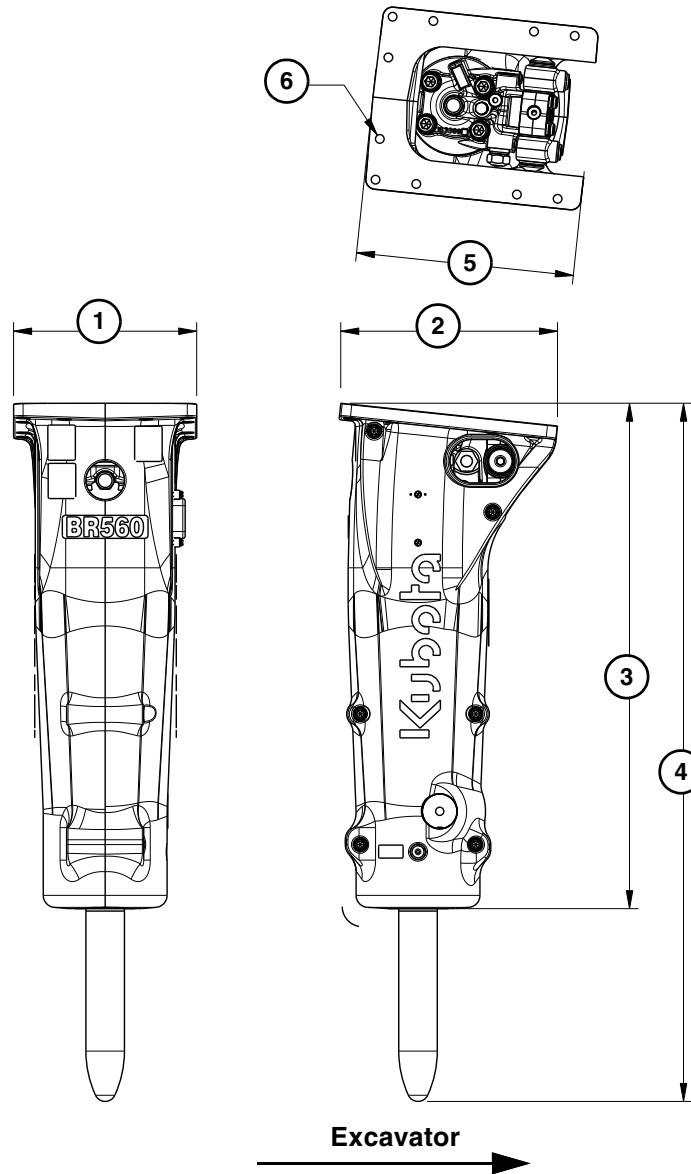
2. Diameter of holes.

BR510, BR560, & BR860 Specifications & Capacities

Breaker Specifications & Capacities ¹				
Model Numbers	Unit	BR510	BR560	BR860
Frequency range ²	bpm	600-1800	500-1700	500-1700
Oil flow range	gpm (Lpm)	9-24 (35-90)	10-32 (40-120)	13-40 (50-150)
Operating pressure	psi (bar)	1300-2030 (90-140)	1300-2030 (90-140)	1450-2030 (100-140)
Pressure relief setting minimum ³	psi (bar)	2030-2900 (140-200)	2030-2760 (140-190)	2180-2760 (150-190)
Pressure relief setting maximum	psi (bar)	3190 (220)	3190 (220)	3190 (220)
Back pressure, maximum	psi (bar)	290 (20)	290 (20)	290 (20)
Operating weight, minimum ⁴	lbs (kg)	635 (288)	878 (398)	1222 (554)
Net weight ⁵	lbs (kg)	553 (251)	756 (343)	1028 (466)
Tool shank diameter	in (mm)	2.83 (72)	3.15 (80)	3.54 (90)
Mini-excavator, tractor backhoe weight ⁶	ton (m ton)	3.7-8.8 (3.4-8.0)	5.05-9.9 (4.6-9.0)	7.7-13.8 (7.0-12.5)
Skid steer, robot weight ⁶	ton (m ton)	2.1-3.95 (1.9-3.6)	2.85-5.5 (2.6-5.0)	4.4-7.7 (4.0-7.0)
Hammer weight ⁷	lbs (kg)	511 (232)	696 (316)	944 (428)

Tool Specifications ¹						
	Units	Chisel Tool ⁷	Moil Tool ⁸	Spade, Parallel	Spade, Transverse	Compact Plate
BR510						
Part number		BJ631SK	BJ633SK	BJ635SK	BJ636SK	BJ637SK
Length	in (mm)	25 5/8 (650)	25 5/8 (650)	25 5/8 (650)	25 5/8 (650)	20 1/8 (510)
Base width or diameter	in (mm)			6 (150)	6 (150)	13 (330)
Weight	lbs (kg)	42 (19)	42 (19)	40 (18)	40 (18)	112 (51)
BR560						
Part number		BJ701SK	BJ703SK	BJ705SK	BJ706SK	BJ707SK
Length	in (mm)	29 1/8 (740)	29 1/8 (740)	29 1/8 (740)	29 1/8 (740)	27 5/8 (740)
Base width or diameter	in (mm)			8 (200)	8 (200)	13 (330)
Weight	lbs (kg)	60 (27)	60 (27)	55 (25)	55 (25)	150 (68)
BR860						
Part number		BJ801SK	BJ803SK	BJ805SK	BJ806SK	BJ807SK
Length	in (mm)	32 3/4 (830)	33 1/8 (840)	33 1/8 (840)	33 1/8 (840)	31 1/2 (800)
Base width or diameter	in (mm)			8 3/8 (210)	8 3/8 (210)	13 (330)
Weight	lbs (kg)	84 (38)	84 (38)	84 (38)	84 (38)	170 (77)

1. Specifications are subject to change without prior notice.
2. Depends on hydraulic parameters (oil flow, pressure and nozzle).
3. Operating pressure +50 bar.
4. Operating weight includes hammer, one standard tool, standard mount, & hydraulic hoses.
5. Includes hammer and one standard tool only.
6. Check Carrier's lifting capacity, especially with flange mount hammers and mounting bracket.
7. Weight of hammer only (without a tool)
8. Standard with hammer.



72344

Model Number	Dimensions [in (mm)] ¹						Qty
	1	2	3	4	5	6 ²	
BR510	15 (380)	16.4 (417)	35.9 (911)	49.6 (1261)	17 (432)	0.7 (18)	10
BR560	15 (380)	17.8 (453)	40.6 (1032)	57 (1449)	17.87 (454)	0.7 (18)	10
BR860	15.8 (400)	20.7 (526)	47.9 (1217)	65.7 (1669)	20.62 (524)	0.87 (22)	12

1. Specifications are subject to change without prior notice.

2. Diameter of holes.

Features and Benefits of All Models

Features	Benefits
Oil fired	Oil fired units do not have a bladder of nitrogen that has to be re-filled.
No tie rods	Tie rods can become loose and need tightening periodically.
Service interval = 1000 hrs.	The Hydraulic Breaker is built tough to last a long time between service intervals.
Higher impact rate, Up to 2600 bpm (bumps per minute)	Able to complete the job faster than most machines.
All models operate quiet	Each model has a lower operating noise level than the competitors.
Standard tools included: 1moil point and 1 chisel point	All hammers are shipped with two of the most heavily used tools to ensure the hammer is equipped to work.
BR510, BR560, & BR860 models have CBE (Constant blow energy)	Constant energy throughout a given oil flow range means less drop off in effective energy with lower oil flow and pressures.
Models with CBE span a larger hydraulic range	Fewer adjustments between power machines.

Troubleshooting Chart

Problem	Cause	Solution
Hammer does not start	Pressure or return lines are closed.	Check the connection of quick couplers in hammer line. Open hammer line ball valves if closed.
	Pressure and return hoses installed backward.	Swap the pressure and return hoses.
	Piston is in its lower hydraulic brake.	Keep hammer control valve open and force tool against an object. The tool head will push the piston out of its brake area.
	Hammer control valve does not open.	When operating the hammer, check that the pressure line pulsates (this indicates the hammer control valve opens). If the valve does not operate, check operating means: mechanical connections, pilot pressure, or electrical control.
	Relief valve in hydraulic circuit opens at a low pressure. Hammer operating pressure is not reached.	Check the installation. Check the relief valve operation. Adjust the relief valve in hydraulic circuit. Measure the high pressure in the hammer inlet line.
	Leakage from pressure to return in excavator hydraulic circuit.	Check the installation. Check pump and other hydraulic components.
	Excessive back pressure in return line.	Check installation. Check size of return line.
	Failure in hammer valve or distributor operation.	Disassemble hammer. Check distributor and pressure adjusting valve.
	Grease between piston and tool contact area.	Remove the tool and wipe excessive grease off.
	Piston not operating	Disassemble hammer.
Hammer operates irregularly but the blow has full power	Relief valve in hydraulic circuit opens at a low pressure. Hammer operating pressure is not reached.	Check the installation. Check the relief valve operation. Measure pressure on the high pressure line to the hammer. Contact your Kubota dealer.
	The low pressure accumulator has lost its nitrogen charge.	Disassemble the accumulator. Check the membrane. Charge accumulator.
	Pressure adjusting valve setting is incorrect.	See "Section 5: Adjustments" on page 38.
	Working method is not correct.	See "Correct Working Methods" on page 42.
	Hammer valve or distributor operation not working.	Disassemble hammer. Check distributor and pressure adjusting valve.
Continued on next page.		

Troubleshooting Chart

Problem	Cause	Solution
Impact rate slows down	Oil has overheated. (Over +80°C/+176°F)	• Check for a fault in the oil cooling system or an internal leak in the hammer. • Check hydraulic circuit of the carrier. • Check relief valve operation in the carrier. • Check line size. Assemble an additional oil cooler.
	Excessive back pressure in return line.	Check installation. Check size of hammer return line.
	Relief valve in hydraulic circuit opens at a low pressure. Hammer operating pressure is not reached.	Check installation. Check relief valve operation. Measure pressure on the hammer inlet line.
	Leakage from pressure to return in excavator hydraulic circuit.	Check pump and other hydraulic components.
	Hammer valve or distributor operation not working.	Disassemble hammer. Check distributor and pressure adjusting valve.
	Pressure loss in the low pressure accumulator.	Disassemble accumulator. • Check membrane. • Charge accumulator.
	Hydraulic oil viscosity too low.	Check hydraulic oil viscosity.
Oil overheats	Relief valve in hydraulic circuit opens at a low pressure. Hammer operating pressure is not reached.	Check installation. Check the relief valve operation. Adjust the relief valve in hydraulic circuit. Measure the high pressure in the hammer inlet line.
	Leakage from pressure to return in excavator hydraulic circuit.	Check the installation. Check the pump and the other hydraulic components.
	Internal oil leak in hammer.	Disassemble the hammer. Locate the oil leak. Change all O-rings and seals.
	Hydraulic oil viscosity too low.	Check hydraulic oil viscosity.
	Cooling capacity of oil cooler is too small.	Assemble an additional oil cooler.
	Application not correct for hammer.	See "Correct working methods" on page 12.
	Excessive back pressure in return line.	Check the installation. Check the size of the return line.
Recurrent tool failure	Rapid wear of tool.	Do not work with tool in one spot for more than 15 seconds. Refer to recommended use and to correct working methods. See "Correct Working Methods" on page 42
	Rough operating practices.	There is a wide selection of tools available for different applications. See "Tool Selection" on page 41. Consult your Kubota dealer for more information.
	Tool does not get enough lubricant.	See "Lubrication Points" on page 57. Also check on correct working methods. See "Correct Working Methods" on page 42.
Further assistance	If further assistance is required, please prepare to answer the following questions before calling your Kubota dealer.	• Model and serial number. • Working hours and service history. • Excavator model. • Installation: Oil flow, operating pressure and return line pressure if known. • Application. • Has the product operated normally before.

Torque Values Chart for Common Bolt Sizes																	
Bolt Size (inches)	Bolt Head Identification						Bolt Size (Metric)	Bolt Head Identification									
		Grade 2			Grade 5				Grade 8			Class 5.8			Class 8.8		
in-tpi ¹	N · m ²	ft-lb ³	N · m	ft-lb	N · m	ft-lb	mm x pitch ⁴	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb		
1/4" - 20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7				
1/4" - 28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11				
5/16" - 18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27				
5/16" - 24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29				
3/8" - 16	27	20	42	31	59	44	M10 X 1.5	33	24	52	38	72	53				
3/8" - 24	31	22	47	35	67	49	M10 X 1.25	35	26	53	39	76	56				
7/16" - 14	43	32	67	49	95	70	M12 X 1.75	58	42	91	67	125	93				
7/16" - 20	49	36	75	55	105	78	M12 X 1.5	60	44	95	70	130	97				
1/2" - 13	66	49	105	76	145	105	M12 X 1	90	66	105	77	145	105				
1/2" - 20	75	55	115	85	165	120	M14 X 2	92	68	145	105	200	150				
9/16" - 12	95	70	150	110	210	155	M14 X 1.5	99	73	155	115	215	160				
9/16" - 18	105	79	165	120	235	170	M16 X 2	145	105	225	165	315	230				
5/8" - 11	130	97	205	150	285	210	M16 X 1.5	155	115	240	180	335	245				
5/8" - 18	150	110	230	170	325	240	M18 X 2.5	195	145	310	230	405	300				
3/4" - 10	235	170	360	265	510	375	M18 X 1.5	220	165	350	260	485	355				
3/4" - 16	260	190	405	295	570	420	M20 X 2.5	280	205	440	325	610	450				
7/8" - 9	225	165	585	430	820	605	M20 X 1.5	310	230	650	480	900	665				
7/8" - 14	250	185	640	475	905	670	M24 X 3	480	355	760	560	1050	780				
1" - 8	340	250	875	645	1230	910	M24 X 2	525	390	830	610	1150	845				
1" - 12	370	275	955	705	1350	995	M30 X 3.5	960	705	1510	1120	2100	1550				
1-1/8" - 7	480	355	1080	795	1750	1290	M30 X 2	1060	785	1680	1240	2320	1710				
1-1/8" - 12	540	395	1210	890	1960	1440	M36 X 3.5	1730	1270	2650	1950	3660	2700				
1-1/4" - 7	680	500	1520	1120	2460	1820	M36 X 2	1880	1380	2960	2190	4100	3220				
1-1/4" - 12	750	555	1680	1240	2730	2010	¹ in-tpi = nominal thread diameter in inches-threads per inch ² N · m = newton-meters ³ ft-lb= foot pounds ⁴ mm x pitch = nominal thread diameter in millimeters x thread pitch										
1-3/8" - 6	890	655	1990	1470	3230	2380											
1-3/8" - 12	1010	745	2270	1670	3680	2710											
1-1/2" - 6	1180	870	2640	1950	4290	3160											
1-1/2" - 12	1330	980	2970	2190	4820	3560											
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.																	
All locknuts or lubricated fasteners: Use 75% of torque value. (i.e. 1/2"-13 GR5 = 76 ft-lb; 75% of 76 or .75 x 76 = 57 ft-lb)																	

Warranty

Land Pride warrants to the original purchaser that this Land Pride product will be free from defects in material and workmanship beginning on the date of purchase by the end user according to the following schedule when used as intended and under normal service and conditions for personal use.

Overall Unit: One year Parts and Labor

All wear items are excluded, including: seals, hoses, and moil/chisel points

This Warranty is limited to the repair or replacement of any defective part by Land Pride and the installation by the dealer of any such replacement part, and does not cover common wear items such as blades, belts, tines, etc. Land Pride reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Land Pride's judgment shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. Misuse also specifically includes failure to properly maintain oil levels, grease points and driveline shafts.

Claims under this Warranty should be made to the dealer which originally sold the product and all warranty adjustments must be made through an authorized Kubota dealer. Kubota reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Land Pride liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Land Pride shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Land Pride within 30 days from the date of original purchase. Registration is done by your dealer.

IMPORTANT: The Online Warranty Registration should be completed by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

Model Number _____

Serial Number _____

Legal Disclaimer

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The Product(s) described in this Publication are designed and manufactured only for the country in which they are initially wholesaled by Kubota. Kubota does not provide parts, warranty or service for any Product which is re-sold or retailed in any country other than the country for which the Product(s) were designed or manufactured.



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