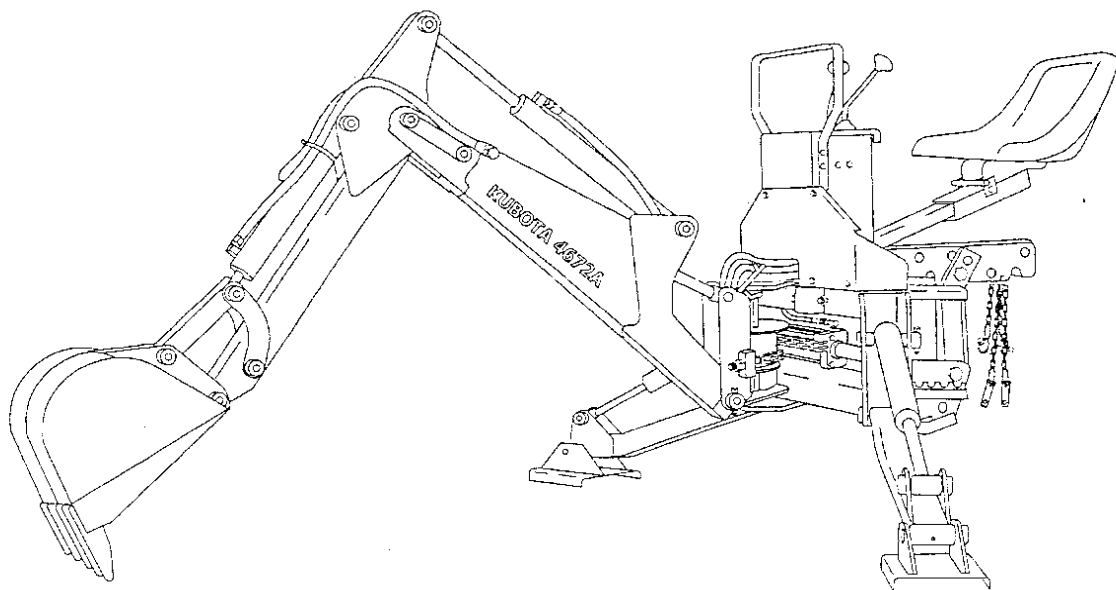


OPERATOR'S & PARTS MANUAL

KUBOTA[®]

B4672A & BL4690A

BACKHOE



Form 70000-73822

Rev. 3/02

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SAFETY PRECAUTIONS



SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.



DANGER: Indicates an immediately hazardous situation which, if not avoided, will result in death or serious injury.



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



CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

IMPORTANT:

Indicates that equipment or property damage could result if instructions are not followed.

NOTE:

Gives helpful information.

Kubota backhoes are designed to give safe, dependable service if they are operated according to instructions. Read and understand this manual and the tractor manual before operating the backhoe. It is the backhoe owner's responsibility to be certain anyone operating the backhoe read this manual first to become familiar with the backhoe and all safety precautions. Failure to do so could result in serious personal injury or equipment damage. If you have any questions, consult your Kubota dealer.

Kubota strongly recommends the use of a ROPS (Roll Over Protective Structure) and seat belt in almost all applications. Never fasten the seat belt without a ROPS. Always fasten the seat belt when operating this equipment. Do not modify a ROPS in any way. Welding, bending, drilling or cutting any portion of the replaced, not repaired or revised. If any structural member is damaged, replace the entire structure at your local Kubota dealership. Check the seat belt daily and replace it if damaged or frayed.

BEFORE OPERATION

• Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are generally attracted to machines and the work being done. Never assume children will remain where you last saw them.

1. Keep children out of the operating area and under the watchful eye of another responsible adult.

2. Be alert and turn the machine off if children enter the work area.

3. Before and when backing, look behind and down for small children.

4. Never carry children while operating the machine. They may fall off and be seriously injured or interfere with safe operation of the machine.

5. Never allow children to play on the machine or attachment even when turned off.

6. Never allow children to operate the machine even under adult supervision.

7. Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.

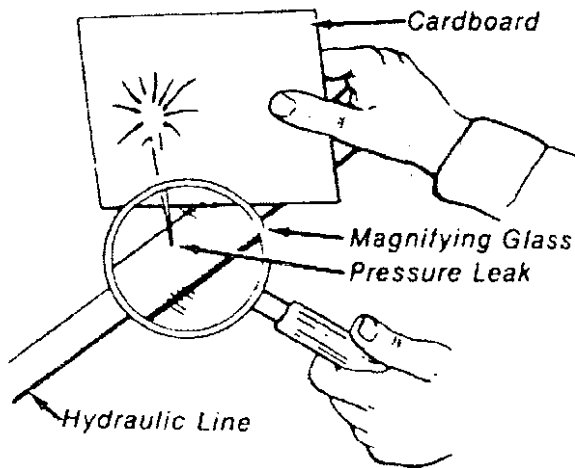
SAFETY PRECAUTIONS - Continued

DURING OPERATION

- Allow only trained personnel to operate or service this equipment. Know and understand all precautions before service or operation. Also read and understand all precautions found in the Tractor and Loader Operator's Manuals.
- For safe operation, check all bolts and nuts for tightness before each days operation. Also observe all maintenance and lube procedures, and inspect all hoses and cylinders daily.
- Do not permit anyone but the operator to ride on the unit while in operation or transport. There is no safe place for passengers on this equipment.
- Use the hand rail and mounting steps while getting on and off the backhoe. Keep the steps and operator's platform clean and free of mud, grease or oil, and other debris.
- This 4600 Series backhoe has been designed for excavating ONLY! DO NOT use this unit for lifting or craning. There is NO safe way to attach a lifting chain or sling to the backhoe boom, dipper or digging bucket.
- For all excavation work, operate the backhoe from the backhoe operator's seat only.
- A complete front loader, including the lift arms and bucket, is required for backhoe stability, at all times.
- If the tractor/loader is to be used with the backhoe removed from the tractor, rear ballast or calcium chloride in the rear tires is required for tractor/loader stability.
- Make sure the stabilizers and loader bucket are on solid footing, and the unit is as level as possible, before backhoe operation.
- Keep all bystanders away from the swing arc; from under the boom and dipper, and well clear of the backhoe, at all times.
- Do not place spoil close to the edge of the excavation where its weight could cause a cave-in.
- Use care when operating on slopes to avoid an overturn. Travel at speeds compatible with safe operation, especially when operating on uneven terrain, crossing ditches and while turning.
- When working on slopes, one stabilizer will be lower than the other. Use extreme care during excavation, as risk of overturn will be increased.
- When excavating on a slope, dig with the backhoe uphill.
- Do not dig under the stabilizers or tractor, especially in soft or sandy soil. Take extra precautions in wet or thawing ground. These conditions can become unstable, and may collapse under the weight of the unit.
- To reduce the risk of overturn on a slope, place the spoil to the height side of the excavation.
- Keep the backhoe and loader well clear of electrical lines. If in doubt on safe distance, contact the local power company.
- Be alert for buried electrical, telephone, water, and gas lines. When in doubt on their possible location, contact the local utility companies for their buried location.
- Check local codes or regulations that may apply to tractor, loader, backhoe operation on public streets or highways, before transporting. Use a slow moving vehicle (SMV) sign, and the tractor flashing lights when traveling on public roads.
- Park the unit on level ground whenever possible. Center the boom and lower the backhoe bucket and both stabilizers to the ground, engage the swing lock pin, and disengage the tractor PTO. Lower the loader bucket, set the parking brake, shut off the engine, and remove the key before leaving the unit unattended.
- Always securely fasten the tractor, loader, backhoe with chains and chain binders; determine and note the height of the backhoe for underpass clearance; before transporting on a trailer.

MAINTENANCE

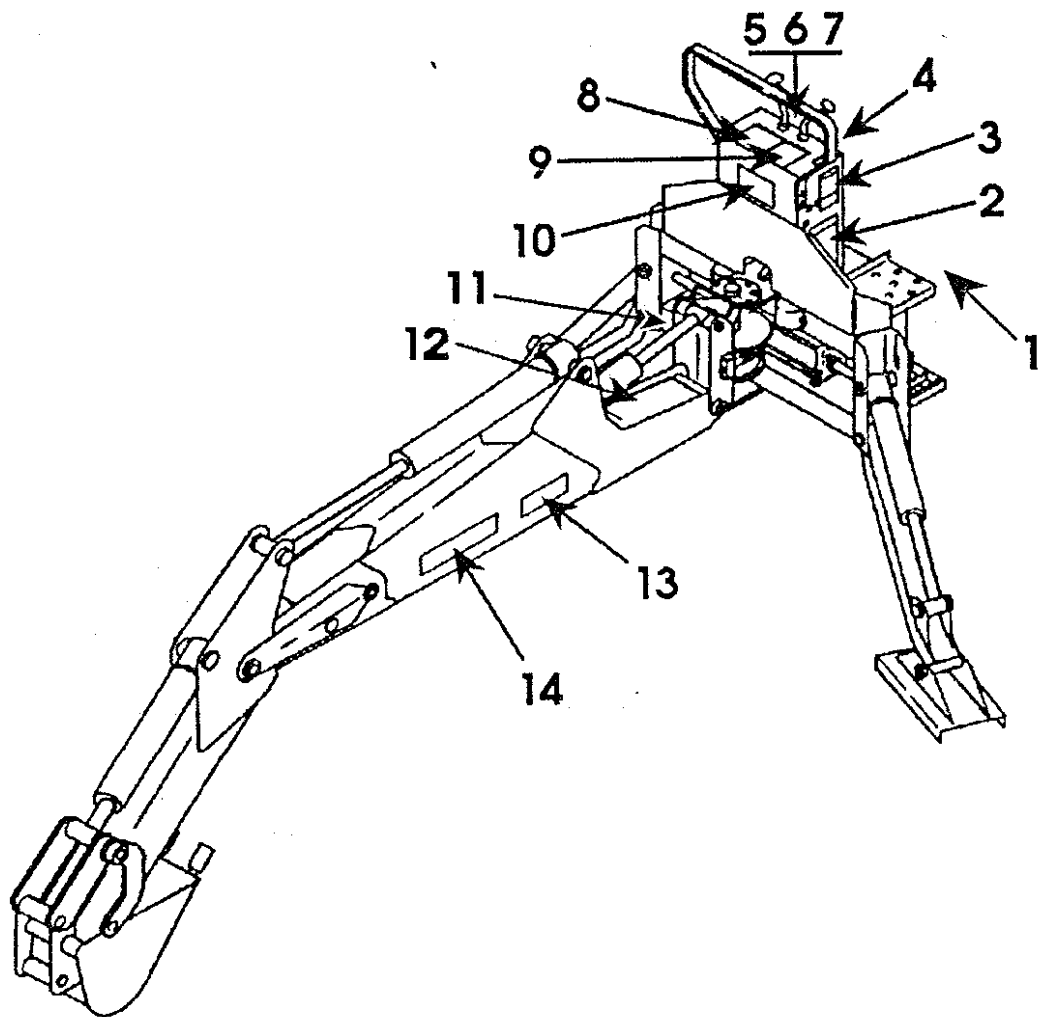
- DO NOT change any backhoe control valve relief settings. They have been set at the factory for best backhoe performance and operator safety.
- Never make any repairs, service, or adjustments, when the hydraulic system is under pressure, when the engine is running, or when any backhoe cylinder is under load.
- Escaping hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before applying pressure to the system, make sure all connections are tightened, and lines, pipes and hoses are not damaged. Fluid escaping from pinholes may be invisible. Do not use your hands to search for suspected leaks. Instead, use a piece of cardboard and wear protective eyewear such as safety goggles.
- Do not work under an elevated backhoe boom, or any part of the tractor/loader/backhoe unless it is securely supported by a suitable hoist, floor jack, or jackstands. Position the hoist, floor jacks and jackstands with care to assure stable support for the tractor, loader and backhoe.
- When installing or removing tight fitting pins or bolts, care should be taken to guard against injury from pieces that may chip off of the pin, bolt, or object used in striking it. Always use a brass punch and lead hammer, and always wear safety glasses.
- After daily service, make sure the hand rail, control levers and steps are free of grease, oil, or mud.
- Replace all Safety Signs that are damaged, lost, or otherwise become illegible. If a part to be replaced has a sign on it, obtain a new safety sign from your KUBOTA Dealer and install it in the same place as on the removed part.



- Obtain IMMEDIATE MEDICAL CARE if injured in any way by escaping hydraulic fluid. Serious allergic reaction or infection will develop if proper treatment is not administered, by a doctor, at once.

SAFETY SIGNS

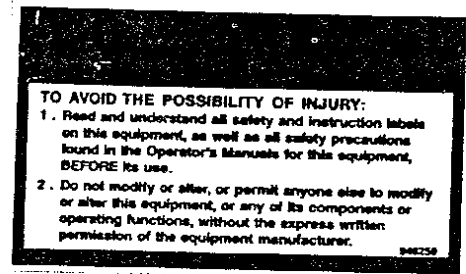
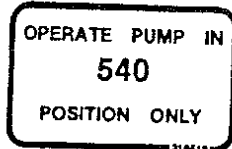
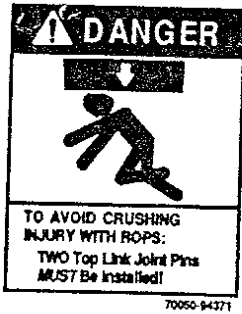
SAFETY SIGN LOCATIONS



CARE OF SAFETY SIGNS

1. Keep safety signs clean and free from obstructing material.
2. Clean safety signs with soap and water and dry with a soft cloth.
3. Replace damaged or missing safety signs with new safety signs from your KUBOTA Dealer.
4. If a component with safety sign(s) affixed is replaced with a new part, make sure new safety sign(s) is (are) attached in the same location(s) as the replaced component.
5. Mount new safety signs by applying on a clean dry surface and pressing air bubbles to outside edges.

SAFETY SIGN ILLUSTRATIONS & PART NUMBERS



INSTRUCTIONS FOR REMOVING & REINSTALLING
(Also See Backhoe Operator's Manual)

REMOVING THE BACKHOE

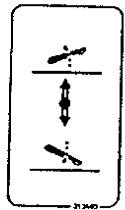
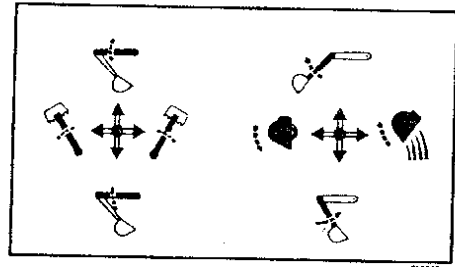
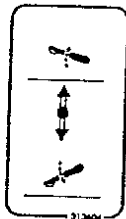
Before removal, make sure the backhoe swing lock is engaged.

1. Locate the tractor-loader-backhoe on a level surface. Place the hand throttle at low idle, the transmission in neutral, set the parking brake and engage the tractor PTO. **Keep hands and feet out from under backhoe while removing.**
2. Fully lower the boom and dipper and set the bucket on the ground. Lower both stabilizers to the ground.
3. Remove the upper locking pin from the attaching link on the tractor 3-point top link bracket.
4. Using the backhoe boom circuit, apply force downward to take pressure off the attaching link. Using the stabilizer circuit, lift the attaching ear off the 3-point pin. Remove the lift arm pins and allow the lift arms to fall.
5. Drive the tractor forward approximately 1 foot. Lower the backhoe until the mainframe comes in contact with the ground. Disengage the PTO and shut off the engine before continuing.
6. Remove the pump from the tractor PTO shaft, start, and slowly drive the tractor-loader away from the backhoe. **Cover the operator's platform, hydraulic reservoir and PTO pump with suitable weather protection during backhoe storage!**

REINSTALLING THE BACKHOE

These instructions are not to be used for winter (new) backhoe installation. Follow set-up procedures in the Operator's Manual.

1. Back the tractor-loader, centered, over the backhoe mainframe. Stop the tractor 16 to 18 inches away from mount alignment. **Make sure the tractor PTO is disengaged, the parking brake is set and the engine shut off before proceeding. Make sure the swing lock pin is still engaged!**
2. Slide the PTO pump onto the tractor shaft. Make sure the pump bracket is restrained by the drawbar bracket and the spined coupler is firmly locked to the PTO tractor shaft. **Keep hands and feet out from under the backhoe while attaching to the tractor.**
3. Start the tractor, engage the PTO, and lift the backhoe mainframe from 16 to 18 inches, using the stabilizers.
4. Back the tractor, with the lift arms down, under the mainframe until you can install the lift arm pins in their proper locations (refer to the chart in the backhoe operator's manual). Install both hairpin clips.
5. Using both the stabilizer circuit and boom circuit, lower the attaching ear onto the 2nd top link pin.
6. Install the top link lock pin. Adjust the sway chains to hold the backhoe centered, and lock in place. Raise the boom and stabilizers to the transport position and retain with the boom lock link. Install the hairpin clip.



CAUTION

1. Read and understand all safety precautions listed in the Tractor, Loader and Backhoe Operator's Manual.
2. For all operations work, operate the backhoe from the backhoe operator's seat ONLY.
3. A complete front loader is required for backhoe control at all times.
4. Make sure the stabilizers and lower pin are fully locked and the lift is as level as possible. Never backhoe operation.
5. Keep all equipment away from the swing arm, and rear view of the backhoe, at all times.
6. Do not place small items in the edge of the excavator when its weight may cause it to shift.
7. The backhoe end of overhead or a wheel, when the end is on the high side of the excavation.
8. Keep the backhoe and loader CLEAR of high voltage lines. Be constantly aware of the potential for buried electrical, telephone, gas lines, etc. When in doubt, assume the line is energized.
9. No persons are to work within 40 ft (12 m) or other specified limits.
10. Disengage the tractor PTO and engage the boom and swing arms before transporting.
11. Lower the bucket, both stabilizers, and the front loader to the ground, shut off the engine, remove key, and set the parking brake before leaving the tractor unattended.

SWING LOCK

11. 70050-93389

BOOM LOCK

12. 70050-93388

8. 70050-94392

2. 70050-93723



DANGER

CRUSHING HAZARD

FAILING TO FOLLOW THESE STEPS MAY RESULT IN SERIOUS INJURY OR DEATH FROM THE BACKHOE BEING THROWN UPWARD, FORWARD OR REARWARD BY DRIVING FORCES

1. Only approved KUBOTA Tractors are to be used with this backhoe.
2. Never operate the Backhoe unless the front ear is retained to the tractor top link bracket with two high strength pins. The 3-point hitch bracket must also be correctly installed and adjusted.
3. Never operate the Backhoe if there is less than 48 inches of clearance between the seat and bottom edge of the top of the ROPS bar.
4. See the backhoe Operator's Manual for correct backhoe to tractor attachment and adjustment procedures.

9. 70050-94393

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13. 70050-02082

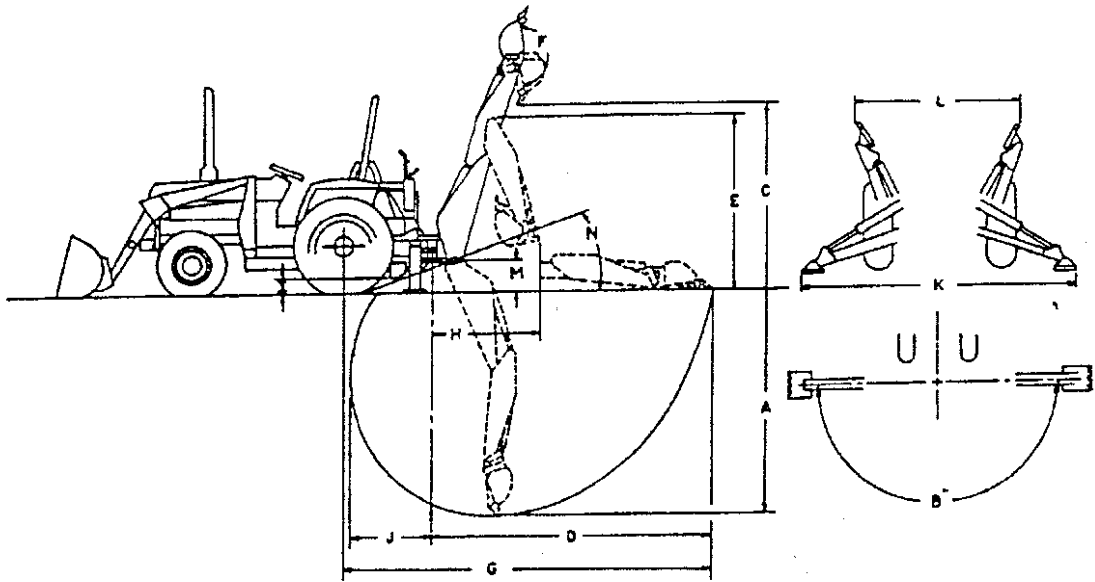
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13. 70050-02083

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14. 70050-01589

SPECIFICATIONS



B4672 *

BL4690 **

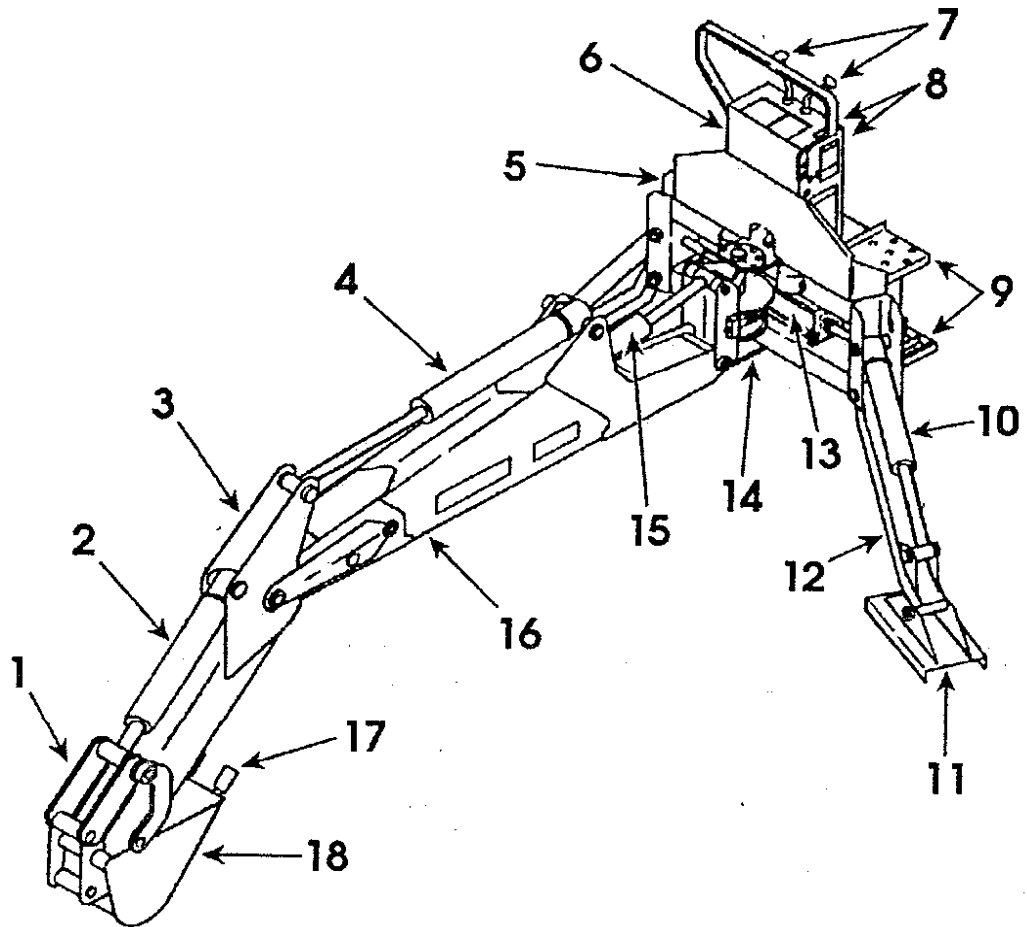
A. DIGGING DEPTH	73.9" (1877 mm)	90.2" (2291 mm)
B. SWING ARC	180°	180°
C. LOADING HEIGHT	65.0" (1651 mm)	78.9" (2004 mm)
D. REACH - from centerline - SWING PIVOT	98.1" (2492 mm)	116.5" (2959 mm)
E. TRANSPORT HEIGHT	70.7" (1796 mm)	79.0" (2007 mm)
F. BUCKET ROTATION	180°	180°
G. REACH - from centerline - REAR AXLE	136.7" (3472 mm)	158.0" (4013 mm)
H. OVERHANG - from centerline - SWING PIVOT	38.7" (983 mm)	45.7" (1161 mm)
I. MINIMUM GROUND CLEARANCE	8.5" (216 mm)	8.5" (216 mm)
J. UNDERCUT - from centerline - SWING PIVOT	24.1" (612 mm)	32.8" (833 mm)
K. STABILIZER SPREAD - Full Down	102.0" (2590 mm)	102.0" (2590 mm)
L. STABILIZER SPREAD - Full Up	59.0" (1498 mm)	59.0" (1498 mm)
M. BOOM PIVOT PIN - Height from Ground	14.25" (362 mm)	13.5" (343 mm)
N. ANGLE OF DEPARTURE	18°	15° to 21.5°
DIGGING FORCE - Curl Cylinder	2950 lbs (1338 kg)	2950 lbs (1338 kg)
DIGGING FORCE - Crowd Cylinder	1740 lbs (789 kg)	1740 lbs (789 kg)
HYDRAULIC CYLINDERS	Dimensions in Inches	Dimensions in Inches
Boom Cylinder - Bore/Stroke/Rod Dia.	2.25 / 19.0 / 1.125	2.25 / 19.0 / 1.125
Crowd Cylinder - Bore/Stroke/Rod Dia.	2.25 / 16.0 / 1.125	2.25 / 19.0 / 1.125
Curl Cylinder - Bore/Stroke/Rod Dia.	2.25 / 12.0 / 1.125	2.25 / 12.0 / 1.125
Stabilizer Cylinder - Bore/Stroke/Rod Dia.	2.25 / 12.0 / 1.125	2.25 / 12.0 / 1.125
Swing Cylinder - Bore/Stroke/Rod Dia.	2.25 / 11.0 / 1.125	2.25 / 11.0 / 1.125
B4672 SHIPPING WEIGHT including crate	851 lbs (386 kg)	
BL4690 SHIPPING WEIGHT including crate		912 lbs (414 kg)

* B4672 per SAE J49 on a B1750DT Tractor. Specifications will vary with tractor and tire application.

** BL4690 per SAE J49 on a B2150DT Tractor. Specifications will vary with tractor and tire application.

SPECIFICATIONS - Continued

BACKHOE TERMINOLOGY



1. LINK, Bucket
2. CYLINDER, Curl (Bucket)
3. DIPPERSTICK
4. CYLINDER, Crowd (Dipper)
5. MAINFRAME
6. CONSOLE, Control
7. LEVER, Backhoe Control
8. LEVER, Stabilizer (on rear of console)
9. STEP

10. CYLINDER, Stabilizer
11. PAD, Stabilizer
12. STABILIZER
13. CYLINDER, Swing
14. FRAME, Swing Post
15. CYLINDER, Boom
16. BOOM
17. TEETH, Bucket
18. BUCKET

GENERAL TERMINOLOGY

GENERAL

This manual has been carefully prepared to assist with safe operation and proper maintenance of the 4600 Series Backhoe. After reading this manual thoroughly, you will find that you can perform some of the regular maintenance yourself. However, when in need of repair parts, or when requiring special or major service, be sure to contact your KUBOTA Dealer.

To prevent personal injury or damage to the backhoe, OBSERVE and FOLLOW all SAFETY precautions before maintenance or operation is attempted.

When referring to the Backhoe ONLY, all references to right and left, forward or rearward, are as viewed from the backhoe operator's seat, facing the boom.

MODEL/SERIAL INFORMATION

If at any time a service problem is encountered, or repair parts are required, contact your KUBOTA Dealer. They will need the model and serial numbers of the tractor and backhoe to give you prompt service and up-to-date parts for your backhoe.


Locate the model-serial plate on the backhoe mainframe and record its information, the tractor model number, your dealers name, and the date of purchase, in the box below.

Backhoe Model Number _____
Backhoe Serial Number _____
Tractor Model Number _____
Date of Purchase _____
Dealer Name _____


Kubota Tractor reserves the right to change, modify, or eliminate from time to time, for technical or other reasons, certain or all data, specifications, or equipment of the product or the products themselves, without any liability or obligation.


PRE-OPERATION INSTRUCTIONS

OPERATIONAL CHECK-OUT

 **CAUTION:**
For safe operation, check all bolts and nuts for tightness **BEFORE** each days operation. Also observe all maintenance and lube procedures, and inspect all hoses and cylinders daily.


The backhoe operator's seat is adjustable with three positions forward and rearward, and four positions vertically. Reposition it for maximum comfort, taking special note of seat/ROPS safety information found on page 39.


 **CAUTION:**
A complete front loader, including lift arms and bucket, is required for backhoe stability, **AT ALL TIMES.**

 **CAUTION:**
If the tractor/loader is to be used with the backhoe removed from the tractor, rear ballast or calcium chloride in the rear tires is required for tractor/loader stability.


IMPORTANT:
The backhoe has been designed to operate in the 540 PTO-RPM position only. Do not operate in the 750 position or backhoe hydraulic system damage may result.


Place the transmission in neutral, set the parking brake, and start the engine. Place the tractor power take off in the 540 RPM position and set the hand throttle at 1800 to 2000 RPM.

 **DANGER:**
TO AVOID SERIOUS INJURY OR DEATH FROM ELECTRICAL SHOCK:
Keep the backhoe and loader **WELL CLEAR** of electrical lines. If in doubt on safe distance, contact the local power company.

 **CAUTION:**
Keep all bystanders away from the swing arc, from under the boom and dipper, and well clear of the backhoe, **AT ALL TIMES.**

Make sure the boom and swing locks are disengaged before beginning backhoe operation. Locate the unit on open level ground and dig near the center so spoil can be placed on either side of the excavation. For best pre-operational testing, the backhoe should be operated for 20 to 30 minutes. This will insure that all hydraulic components are fully warmed up, and any loose hoses, fasteners, etc., will be evident and corrected before customer delivery.

 **WARNING:**
DO NOT change any backhoe control valve relief settings. They have been set at the factory for best backhoe performance and operator safety.

 **CAUTION:**
Use the hand rail and mounting steps while getting on and off the backhoe. Keep the steps and operator's platform clean and free of mud, grease or oil, and other debris.

Operate the backhoe control levers to become familiar with backhoe speed and movement. Control labels are located on the console near the stabilizer levers. Make sure backhoe function is **EXACTLY** the same as these labels indicate. More specific information can be found in the Operating Instructions, under Backhoe Controls.

Swing the boom back and forth several times to practice controlling the speed of the swing. **DO NOT** slam the swing frame into the stop pads. Smooth, light handling of the backhoe control levers will result in the most efficient operation.

Following pre-operational checks, double check and make sure the complete unit has been fully serviced, especially hydraulic oil in the backhoe reservoir, as shown in the Maintenance and Lubrication section.

OPERATING INSTRUCTIONS

OPERATING SPEEDS

The 4600 Series Backhoe can be operated at any engine speed from 1800 to factory rated RPM, in the 540 PTO-RPM position. The backhoe is most efficient at full engine speed. However, in easy digging conditions, or in residential neighborhoods where noise may be a consideration, the engine speed can be lowered to 1800 to 2400 RPM based on performance requirements.

IMPORTANT:

The 3-point hitch lever must remain in the down position at all times when the backhoe is mounted.



CAUTION:

Use care when operating on slopes to avoid an overturn. Travel at speeds compatible with safe operation, especially when operating on uneven terrain, crossing ditches or when turning.

Due to the configuration of the tractor, with separate operator's stations divided by the ROPS, the backhoe should not be used to move the unit. The boom and dipper and both stabilizers should be raised to clear ground level, and the unit should be moved along the trench line or excavation with the tractor.



CAUTION:

DO NOT permit anyone but the operator to ride on the unit while in operation or transport. There is NO SAFE PLACE for passengers on this equipment.

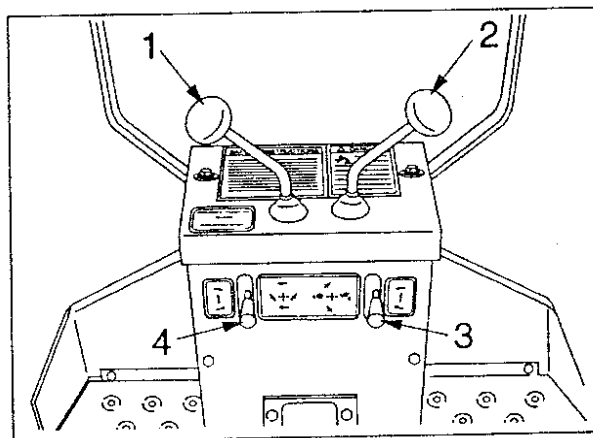
BACKHOE CONTROLS

The backhoe is controlled by the use of a two lever "joystick" system. The left lever controls the boom and swing circuits and the right lever controls the crowd (dipper) and curl (bucket) circuits. The further the levers are moved from neutral, the faster the components will move. Learn to "feather" the controls for smooth precise component movement.

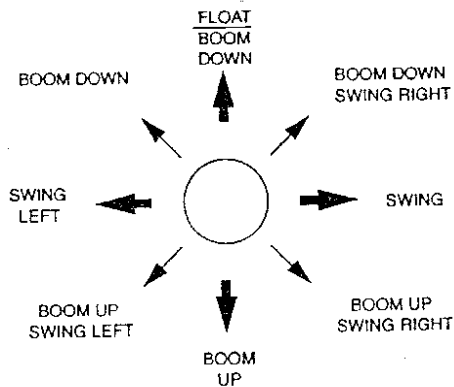


CAUTION:

DO NOT change any backhoe control valve relief settings. They have been factory set for best backhoe performance and operator safety.



1. Boom & Swing Lever 2. Crowd & Curl Lever
3. RH Stabilizer Lever 4. LH Stabilizer Lever

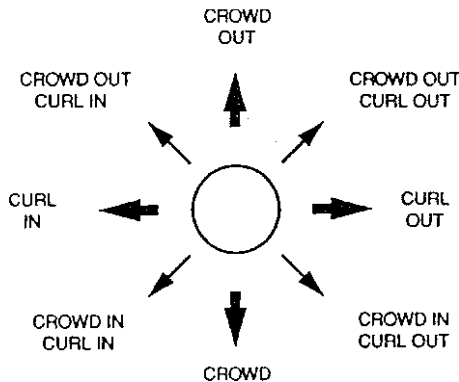


1. BOOM & SWING LEVER. (LH)

Pushing this lever forward will lower the boom, dipper and bucket. Latching it in the forward most position will allow the boom and dipper to "float" down. Pulling this lever back will raise the boom and dipper. Movement to the left will swing the backhoe to the left, and right lever movement will swing the backhoe to the right.

OPERATING INSTRUCTIONS - Continued

BACKHOE CONTROLS - Continued



2. CROWD & CURL LEVER (RH)

Pushing the lever forward will crowd the dipper and bucket out, and pulling it back will crowd them in. Lever movement to the left will curl the bucket for filling, and right lever movement will dump the bucket.

By moving either lever out of the plus (+) position, into an "X" relationship, it is possible to make the functions work together.

With experience, the use of both "joystick" levers will allow lift, swing, crowd out and spoil dumping, all in one smooth movement, or swing, lowering, crowd in and bucket filling with reverse movement.

3 & 4. STABILIZER CONTROL LEVERS

The stabilizer levers are operated independently of the joystick levers for all digging operations. They should be operated from the operator's seat, the only exception being when removing or reinstalling the backhoe. Moving the levers UP will raise the stabilizers, and DOWN movement will lower them.

PLACING THE STABILIZERS

Lower the stabilizers and remove the weight of the backhoe from the rear wheels. However, one or both rear tires should remain in light contact with the ground. This will give the backhoe the widest possible stance and the lowest center of gravity. If the rear wheels are raised too high, digging depth will be reduced and unnecessary stress will be exerted on the backhoe frame components.

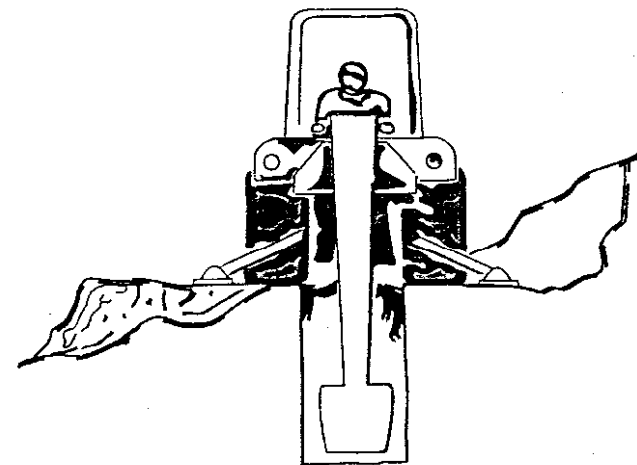


CAUTION:

When working on slopes, one stabilizer will be lower than the other. Use extreme care during excavation, as risk of overturn will be increased.

CAUTION:

To reduce the risk of an overturn on a slope, place the spoil on the high side of the excavation.



The front loader bucket should be lowered to give the backhoe unit a "tri-pod" stance. With the loader bucket in contact with the ground, front tire bounce will not be a factor in overall control. When possible, the loader bucket cutting edge should be lowered vertically into the ground. This will assist the stabilizers, not allowing the unit to slide or shift position while excavating. However, on a slope, the bottom of the bucket should be used, and only the side that contacts the uneven terrain. Too much loader down pressure will restrict the unit from being leveled, and will place unnecessary stress on the loader bucket and lift arms.

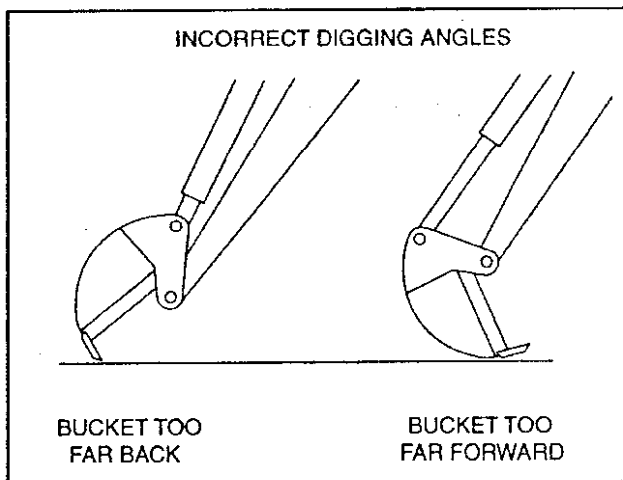
OPERATING INSTRUCTIONS - Continued

GENERAL OPERATION

Two different digging techniques, bucket digging and dipperstick digging, can be used. Ground condition, bucket size, and excavation type will determine the best method to use.

CAUTION: DO NOT dig under the stabilizers or tractor, especially in soft or sandy soil. Take extra precautions in wet or thawing ground. These conditions can become unstable very quickly, and may collapse under the weight of the unit.

BUCKET DIGGING. It is important for the bucket to be in the correct position when starting to dig. Lower the bucket to the digging area and using downward boom pressure, begin to force the bucket into the ground. Simultaneously retract the dipper by crowding in, curling the bucket as it fills. If the backhoe stalls, raise the boom slightly and continue to crowd in as the bucket fills.



To avoid buildup of spoil directly in front of the backhoe, crowd out and completely curl the bucket while lifting from the excavation. In this way, excess spoil will fall back into the excavation.

DIPPERSTICK DIGGING. Lower the bucket to the ground, the same as with bucket digging, then curl until the bucket teeth are almost flat with the ground.

Using only the crowd cylinder, retract the dipperstick, dragging the bucket thru the trench until it is approximately half full. Begin to curl the bucket while continuing to crowd in, until the bucket is completely full. Raise and swing the boom and dump in the spoil area in the high side of the excavation.

SPOIL PILE LOCATION. Carefully pre-plan the location of the spoil that will be removed from the excavation. This location will depend on type, depth, obstructions, and whether the spoil will eventually be returned to the excavation or hauled away.

CAUTION: DO NOT place spoil close to the edge of the excavation where its weight could cause a cave-in.

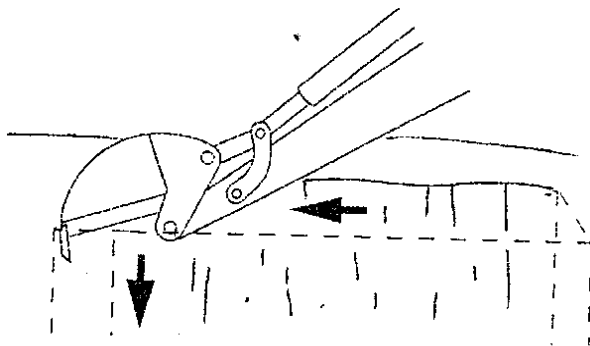
The height of the spoil pile can be controlled without moving the tractor. Approach the pile with the backhoe bucket full and ready to empty. Instead of dumping, lower the full bucket onto the top of the pile. Begin dumping and crowding out at the same time. As the bucket opens and dumps, the bottom will push the top of the pile off and behind, safely away from the excavation.

DANGER
TO AVOID DEATH OR SERIOUS INJURY FROM EXPLOSION OR ELECTRIC SHOCK:
Be alert for buried electrical, telephone, water, or gas lines. When in doubt on their possible location, contact the local utility companies for their buried location.

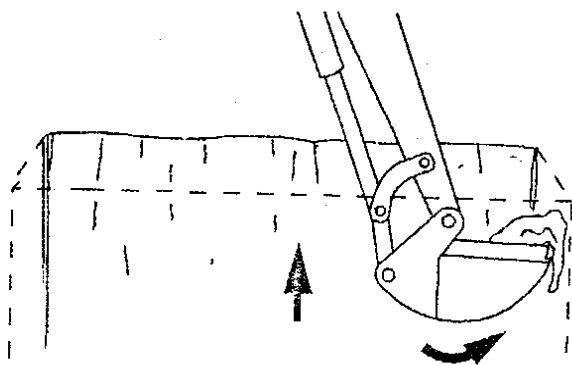
STRAIGHT WALL OR CEMETARY DIGGING. Strip the top soil off the ground, within the confines of the straight hole or grave to be dug. Clean out as much material as possible with normal digging methods.

GENERAL INFORMATION - Continued

Finish the far wall by crowding out while forcing the bucket down with the boom. Curl the bucket out to keep the bottom of the bucket vertical while making the down cut.

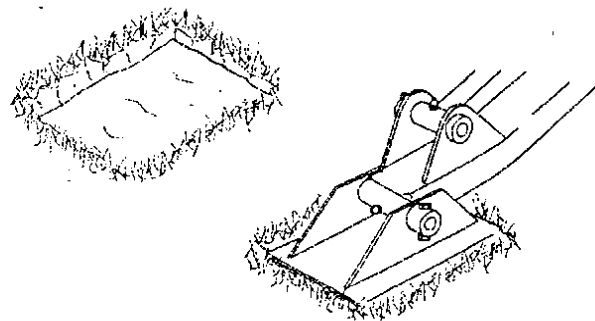


To finish the near wall, raise the boom while crowding in. The bucket will have to be curled to keep the cutting edge horizontal with the wall during the up cut.



When finishing straight walls, digging graves, or in sandy soil, use a platform under the front loader bucket and under the backhoe stabilizers. The platform distributes the unit weight over a larger area, to reduce the possibility of a ground cave-in.

When a platform is not used on sodded areas, remove the sod from under each stabilizer pad. After digging has been completed, the sod can be replaced.



BACKFILLING THE EXCAVATION

IMPORTANT:

There are **ONLY TWO** acceptable methods of backfilling with a tractor and loader when it is equipped with a backhoe. Dipperstick damage **WILL** occur if lateral backfilling with the side of the backhoe bucket is attempted.

METHOD ONE - Loader Backfilling

The front end loader is the preferred method of backfilling a backhoe excavation. Its design, and consequently its inclusion on the overall unit is specifically for this purpose.

The loader bucket should be used to dig into the pile, carry to, and dump fill the excavation.

The loader bucket can also be used like a dozer blade, in the float position, to fill a trench like excavation, or to back-drag for smoothness.

OPERATING INSTRUCTIONS - Continued

METHOD TWO - Backhoe Backfilling

The backhoe should ONLY be used to fill the excavation in its design configuration as a digging tool. It MUST be used to scoop, carry and dump, exactly in the same manner as when the hole or trench was excavated.

DO NOT use the side of the bucket and lateral swing to attempt to backfill. This method places huge stresses on the entire backhoe frame that will cause major failures that can effect the entire tractor-loader-backhoe.

IMPORTANT:

Lateral swing backfilling is perhaps the most common abuse placed on backhoes today. All backhoes are designed as digging units. They are not to be used as prying units.

LOADING TRUCKS

Depending on soil conditions, loading with the backhoe can be quicker and easier than with the loader. When the soil is sandy, soft, or muddy, maneuvering with the loader can be difficult. Rear tire traction is reduced, and the front tires will sink, making steering control with a full loader bucket very difficult. Loading with the backhoe, in these conditions, will be more efficient, and much safer.



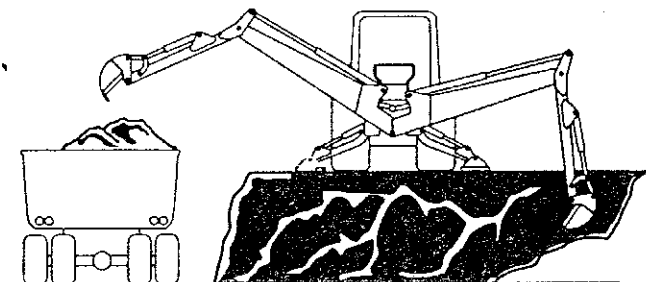
DANGER
TO AVOID DEATH OR SERIOUS INJURY FROM
ELECTRIC SHOCK:

Keep the loader and backhoe well clear of electrical lines. If in doubt on safe distance, contact the local power utility company.

When the operator knows the spoil is to be hauled off the jobsite, he should load directly from the excavation. Doing so will ease clean-up and complete the job quickly.

When loading a truck, spot the truck as close as safely possible to the excavation. This will cut swing time to a minimum, and assure complete coverage of the truck box.

"Pit Style" loading is another common technique when truck loading, especially when the pile consists of unusually heavy material, or is hard packed from inactivity.



Position the backhoe above the truck, making sure the pile is solid enough to support its weight. When following this procedure, the depth of cut should be at least 6 feet. This will provide enough material without wasting time moving the backhoe during the loading process.

LIFTING OR CRANING




WARNING:

This backhoe has been designed for excavating only! DO NOT use this unit for lifting or craning. There is no safe way to attach a lifting chain or sling to the backhoe boom, dipper, or digging bucket.

This light utility backhoe unit does not have sufficient lifting capacity for most loads, and lacks the necessary stability for most lifting operations.

If lifting or craning is required on your jobsite, locate another backhoe that has lifting capabilities, or better yet, get a crane to do the lifting chores.


TRANSPORTING THE BACKHOE


 **CAUTION:**
DO NOT permit anyone but the operator to ride on the unit while in operation or transport. There is no safe place for passengers on this equipment.

DRIVING ON THE JOBSITE

When operating on public roads or highways, or on a jobsite where other equipment is being used;

- lock the brake pedals together and be sure they are adjusted to brake evenly.
- be constantly aware that other persons may be in the vicinity and the travel of your unit may be a hazard to them.
- be alert to potential hazards caused by poor visibility, adverse ground conditions, or other vehicles in the area.

 **CAUTION:**
Raise and center the boom, close the bucket and dipper, engage the swing and boom locks and disengage the tractor PTO, before transporting the backhoe around the jobsite.


 **CAUTION:**
Check local laws, codes, or regulations that may apply to tractor, loader, backhoe operation on public streets or highways before transporting. Use a slow moving vehicle (SMV) sign, and the tractors flashing lights when traveling on public roads.

TRAILER TRANSPORTING:


The operator must be thoroughly familiar with unit controls, overall dimensions, and the unit center of gravity, before attempting to load the tractor, loader, backhoe on a trailer. "Chocks or blocks . . .

. . . should be placed under the tires of the trailer or transport vehicle to prevent it from rolling during the loading process.

Load the unit from level ground, with rigid and secure ramps, long enough to provide a low angle of approach to the transport vehicle. If short ramps are used, the unit should be BACKED onto the transport vehicle. After loading, the boom lock link (if engaged) should be disengaged and the hairpin clip placed in its storage position. Lower the boom, dipper and bucket to the bed of the transport vehicle. Lower the loader bucket, set the parking brake, shut off the engine, and remove the key.

 **CAUTION:**
Always securely fasten the tractor, loader, backhoe, with chains and chsin binders; determine and note the height of the backhoe for underpass clearance, before transporting on a trailer.

Common chain tie down points include the tractor axle housings, openings thru the wheels, over the loader arms or backhoe dipper end at the bucket attaching points. Make sure the tie down chains or chain binders do not come in contact with steering tie rods, backhoe or loader hoses or cylinders, or the tractor tires.

 **CAUTION:**
Park the unit on level ground whenever possible. Center the boom and lower the backhoe bucket and both stabilizers to the ground, engage the swing lock pin, and disengage the tractor PTO. Lower the loader bucket to the ground, set the parking brake, shut off the engine and remove the key, before leaving the unit unattended.

OPERATING INSTRUCTIONS - Continued

REMOVING/REINSTALLING THE BACKHOE

Once the backhoe has been initially set-up and installed on the tractor-loader, follow all information on the instruction labels found on either side of the backhoe control valve stand below the console, or on the label copy reproduced below.

INSTRUCTIONS FOR REMOVING & REINSTALLING (Also See Backhoe Operator's Manual)

REMOVING THE BACKHOE

Before removal, make sure the backhoe swing lock is engaged.

1. Locate the tractor-loader-backhoe on a level surface. Place the hand throttle at low idle, the transmission in neutral, set the parking brake and engage the tractor PTO.

Keep hands and feet out from under backhoe while removing.

2. Fully lower the boom and dipper and set the bucket on the ground. Lower both stabilizers to the ground.
3. Remove the upper locking pin from the attaching link on the tractor 3-point top link bracket.
4. Using the backhoe boom circuit, apply force downward to take pressure off the attaching link. Using the stabilizer circuit, lift the attaching ear off the 3-point pin. Remove the lift arm pins and allow the lift arms to fall.

5. Drive the tractor forward approximately 1 foot. Lower the backhoe until the mainframe comes in contact with the ground.

Disengage the PTO and shut off the engine before continuing.

6. Remove the pump from the tractor PTO shaft, start, and slowly drive the tractor-loader away from the backhoe.

Cover the operator's platform, hydraulic reservoir and PTO pump with suitable weather protection during backhoe storage!

REINSTALLING THE BACKHOE

These instructions are not to be used for initial (new) backhoe installation. Follow set-up procedures in the Operator's Manual.

1. Back the tractor-loader, centered, over the backhoe mainframe. Stop the tractor 16 to 18 inches away from mount alignment.

Make sure the tractor PTO is disengaged, the parking brake is set and the engine shut off before proceeding.
Make sure the swing lock pin is still engaged!

2. Slide the PTO pump onto the tractor shaft. Make sure the pump bracket is restrained by the drawbar bracket and the splined coupler is firmly locked to the PTO tractor shaft.

Keep hands and feet out from under the backhoe while attaching to the tractor.

3. Start the tractor, engage the PTO, and lift the backhoe mainframe from 16 to 18 inches, using the stabilizers.
4. Back the tractor, with the lift arms down, under the mainframe until you can install the lift arm pins in their proper locations (refer to the chart in the backhoe operator's manual). Install both hairpin clips.
5. Using both the stabilizer circuit and boom circuit, lower the attaching ear onto the 2nd top link pin.
6. Install the top link lock pin. Adjust the sway chains to hold the backhoe centered, and lock in place. Raise the boom and stabilizers to the transport position and retain with the boom lock link. Install the hairpin clip.

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CAUTION:

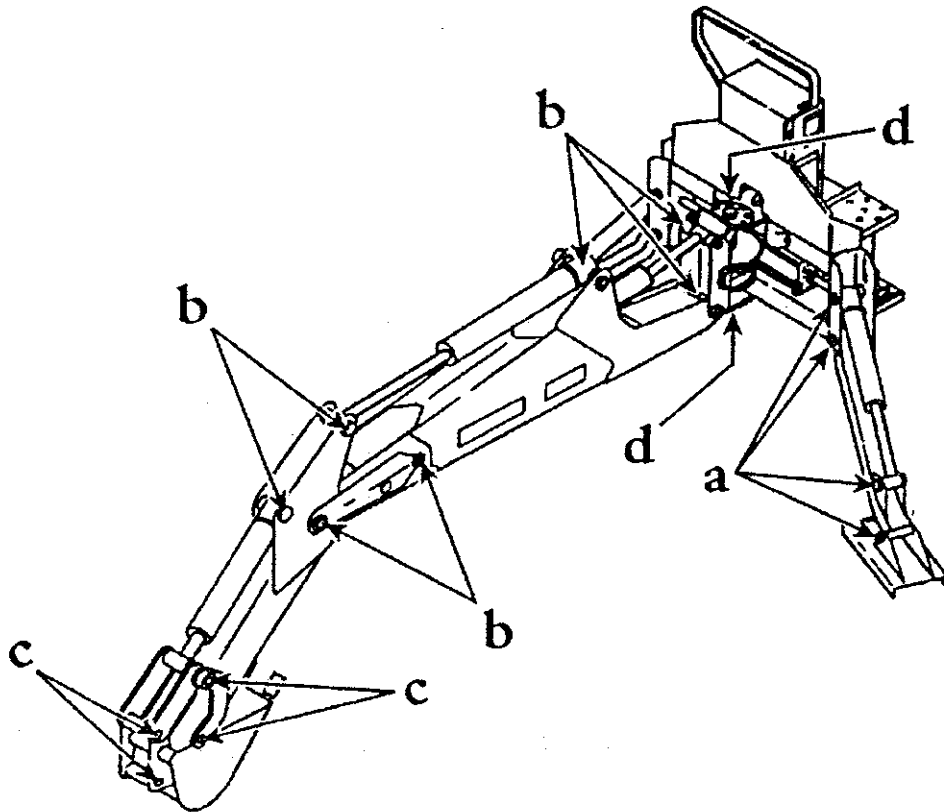
A complete front end loader, including lift arms and bucket, is required for backhoe stability, at all times.



CAUTION:

If the tractor/loader is to be used with the backhoe removed from the tractor, rear ballast or calcium chloride in the rear tires is required for tractor/loader stability.

BACKHOE LUBRICATION FITTINGS



GREASE FITTINGS are provided at the points shown in the illustration above, in the areas listed below. There are a total of 21 grease fittings on the 4600 Series Kubota Backhoe. Using a high quality multi-purpose grease, lubricate all fittings on the backhoe every 10 hours of continuous operation, or daily.


IMPORTANT:

The bucket and link pins (C) should be greased every 2 to 4 hours if the backhoe is being used in muddy or water laden ground conditions.

- a. Stabilizer Arms and Cylinder Ends 8 fittings, 4 per side
- b. Boom, Cylinders, and Upper Dipper 7 fittings
- c. Lower Dipper and Bucket Links 4 fittings
- d. Swing Post Pivot Pin 2 fittings

LUBRICATION & MAINTENANCE - Continued


HYDRAULIC SYSTEM SERVICE

 **CAUTION:** Never make any repairs, service, or adjustments when the hydraulic system is under pressure, when the tractor engine is running, or when any backhoe cylinder is under load.

The hydraulic oil should be checked every 10 hours of operation, or daily. Check the oil with the unit on a level surface, the backhoe locked in its transport position, and the tractor engine SHUT OFF. Remove the fillcap-dipstick. The level should be on the full mark on the dipstick. Add KUBOTA "UDT" oil, or other approved KUBOTA oil as necessary to fill the reservoir.


CHANGE the HYDRAULIC OIL and FILTER after the first 50 hours of backhoe operation. The hydraulic system capacity is approximately 6.5 US gallons. After the initial 50 hour system oil change, the oil and filter should be changed every 250 hours, or more frequently if the backhoe is being used in very dusty or sandy conditions.

The hydraulic oil and filter should also be changed anytime there has been any kind of component failure where contamination may have been introduced into the hydraulic system.

 **CAUTION:** After daily service, make sure the hand rail, control levers and steps, are free of grease, oil or mud.

BACKHOE BUCKET SERVICE

Changing the backhoe bucket becomes necessary as the type of job to be accomplished changes. Remove the existing bucket, and install the correct size bucket following instructions on page 40.

 **CAUTION:** When installing or removing tight fitting pins or bolts, care should be taken to guard against injury from pieces that may chip off of pin, bolt, or object used in striking it. Always use a brass punch and lead hammer, and always wear safety glasses.

SWING CHAIN ADJUSTMENT

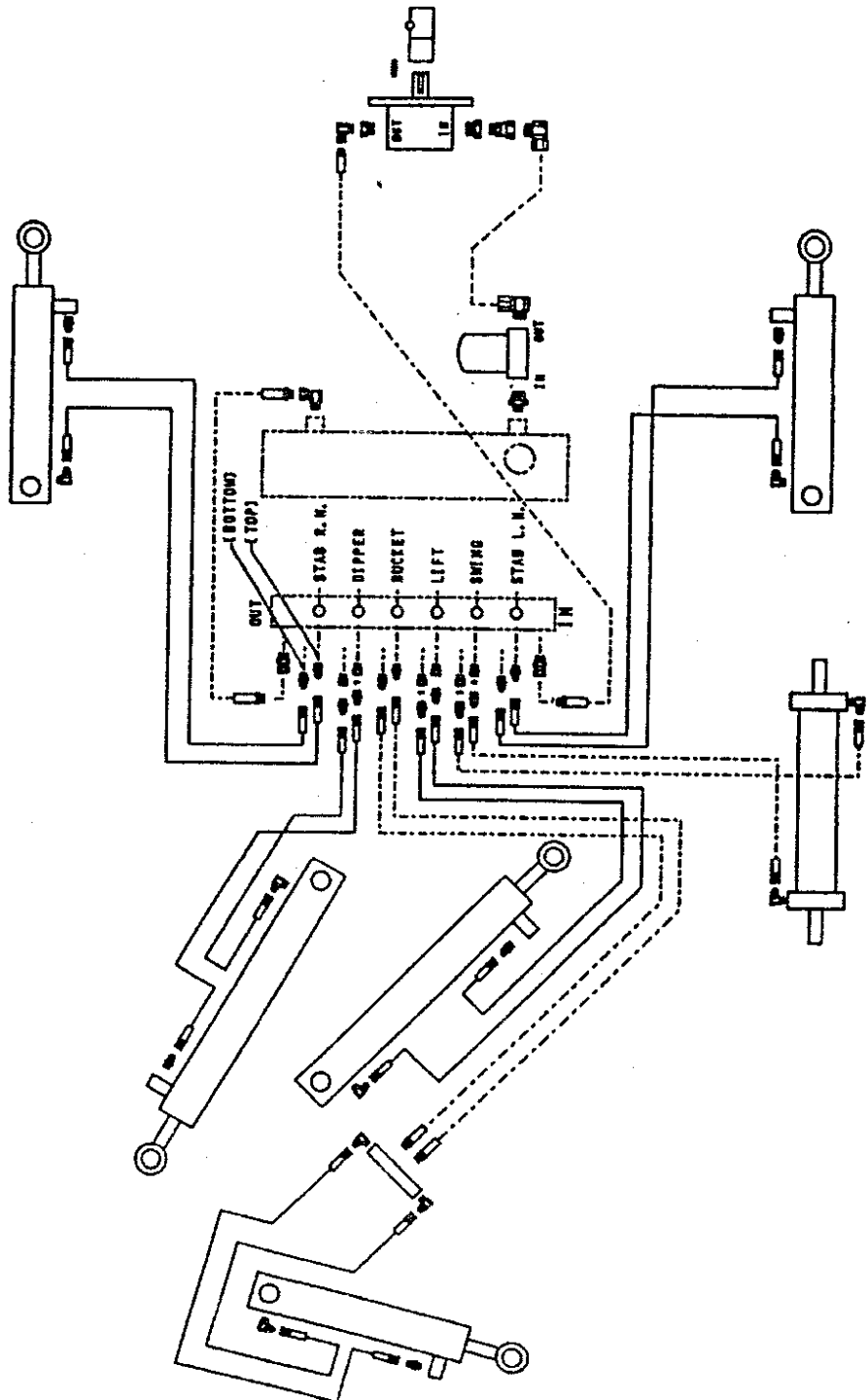
Initial swing chain adjustment has been made to the factory. However, shipping distance and storage time may have allowed the chain to loosen.

Adjustment is accomplished by loosening the locknuts on the chain ends, and by turning each adjustment nut equally to tighten or loosen the chain. Make sure both locknuts are tightened against the adjusting nuts to maintain the desired tension.

Boom and dipper side to side movement, with the tractor and backhoe shut off, should be zero to 1/4 of an inch. Correct chain tension is "taut" without being too tight or loose.

Because the chain will take a "set" and in time will wear into the swing frame, the swing chain should be checked and adjusted after the 1st hour of operation, again after 8 hours of operation, and every 40 hours thereafter.

HYDRAULIC CIRCUIT SCHEMATIC



IMPORTANT:

Restrictor plate size and location is critical to safe backhoe operation. If the valve is serviced and the restrictors are removed, refer to the drawing on page 61 for correct restrictor size and port location during reassembly.


TORQUE TIGHTENING CHART


All torque values apply only to new plated fasteners, or when fasteners have been cleaned and coated with new engine oil.

SAE Grade 5 torque values shown are for both coarse (UNC) and fine (UNF) threaded fasteners.

Separate torque values for coarse and fine metric fasteners are shown on the right chart below.

Use the following charts for all 4600 Series Backhoe fastener torques unless otherwise specified in this manual, or as noted in the Special Torque Applications below.

SAE GRADE 5		
		
Bolt Size	ft. lbs.	N·m
1/4-20	9 - 11	12 - 15
5/16-18	17 - 21	23 - 27
3/8-16	35 - 42	48 - 57
7/16-14	54 - 84	73 - 87
1/2-13	80 - 86	109 - 130
9/16-12	110 - 132	149 - 179
5/8-11	150 - 180	203 - 244
3/4-10	270 - 324	366 - 439
7/8-9	400 - 480	542 - 651
1-8	580 - 696	787 - 944

METRIC GRADE 8.8		
		
Bolt Size	ft. lbs.	N·m
Coarse	Coarse	Coarse
M8-1.25	20 - 26	27 - 35
M10-1.5	38 - 46	52 - 62
M12-1.75	57 - 66	77 - 89
M14-2.0	96 - 109	130 - 148
Fine	Fine	Fine
M8-1.0	22 - 31	30 - 42
M10-1.25	40 - 52	54 - 71
M12-1.25	62 - 75	84 - 101
M14-1.5	107 - 124	145 - 168

SPECIAL TORQUE APPLICATIONS

SWING CYLINDER RETAINING BOLTS (5/8-18 x 1-1/2 UNF) 140-160 ft. lbs. (190-218 N·m)

SETTING-UP INSTRUCTIONS

BACKHOE / TRACTOR / ROPS APPLICATIONS

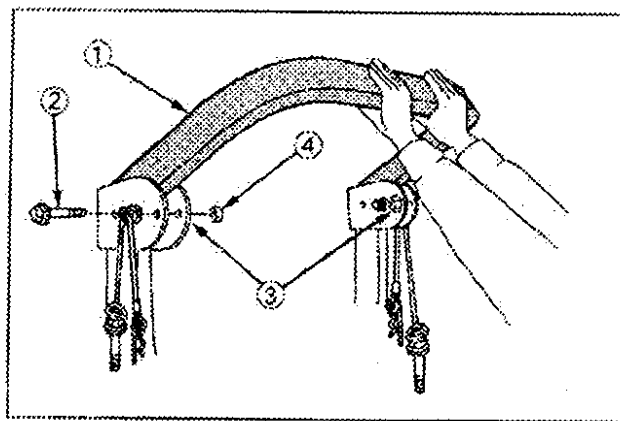
IMPORTANT:

Tractor / Backhoe application listed on the following page must be equipped with an appropriate approved Rops. If the tractor is not equipped with its approved backhoe ROPS, the correct ROPS must be installed to provide the minimum recommended operator head clearance between the ROPS top bar and the backhoe seat. See page 39 for important clearance information.

CAUTION:

TO AVOID PERSONAL INJURY:

- Tractor applications with foldable ROPS require the installation of an additional stop bolt to prevent Foldable ROPS upper frame, when folded, from contacting backhoe controls or other components. Install the 5/8-18x4 hex stop bolt included with KUBOTA Backhoe as shown. Tighten snugly into welded nut. Be careful not to over-tighten. Install 5/8-18 nut and torque nut to 95 – 105 ft. lbs. (13.2 ~ 14.5 kgf-m).
- Do Not Operate backhoe with ROPS in Folded Position.



- (1) Upper Frame
- (2) 5/8-18x4 Hex Stop Bolt (part no. 75599-02780)
- (3) 5/8-18 Welded Hex Nut.
- (4) 5/8-18 Hex Nut (part no. 75599-31027)

The Kubota B4672 - 6 foot Backhoe and the Kubota BL4690 - 7 1/2 foot backhoe have been designed to mount on approved Kubota Tractors as shown on the next page, equipped with a Kubota approved Front Loader.

NOTE:

Tractor Group Number shown on the chart refers to Mast mounting information beginning on page 30.

SETTING-UP INSTRUCTIONS - Continued

Tractor Model (Rops Models Only)	Approved Backhoe Model	Approved Rops Model	Tractor Group Number
B7100*, B7200* B1550*, B1750*	B4672	B1072	Group 1
B7300, B1700, B2100, B2400	B4672	B1073	
B7400, B7500, B2410	B4672	SFB-F24	
B2710	B4672 or BL4690	B1077 or SFB-F29	
B2910	B4672 or BL4690	SFB-F29	
B8200**, B9200**, B1250**	B4672 or BL4690	B1083	
L2050, L2350	BL4690	SFL-20	Group 3
L2250, L2550, L2650, L2950	BL4690	SFL-25, L1182A or SFL-32	
L2500	BL4690	SFL-20A	
L2600, L3000	BL4690	SFL-30 or SFL-F30	
L2900, L3300 L3010, L3410	BL4690	SFL-33A or SFL-F33A	
L2850, L3250, L3450, L3650	BL4690 BL4690	L1194A, L1182A or SFL-32 L1194A or SFL-32	
L3600, L4200, L3710, L4310	BL4690	SFL-42(A) or SFL-F42(A)	Group 4
L4300	BL4690	SFL-42A or SFL-F42A	
L4610	BL4690	SFL-46 or SFL-F46	

* - Installation on B7100, B7200, B1550, and B1750 Tractors requires ordering the following:

1. Heavy duty top link bracket, P/N 70050-93214, qty 1.
2. Seat Spacer, P/N 70050-93682, qty 1.
3. Seat Spacer, P/N 70050-93219, qty 2.
4. M10-1.5X40 Bolt, P/N 01053-51040, qty 2.

** - Installation on B8200, B9200, and B2150 Tractors requires ordering the following:

1. Heavy Duty Top link bracket, P/N 70050-93213, qty 1.
2. M10-1.5 X 40 Bolt, P/N 01053-51040, qty 1.

SETTING-UP INSTRUCTIONS - Continued

TRACTOR PREPARATION

When mounting on tractors equipped with a mid-mount mower, the deck must be locked in the raised position before mounting the backhoe.

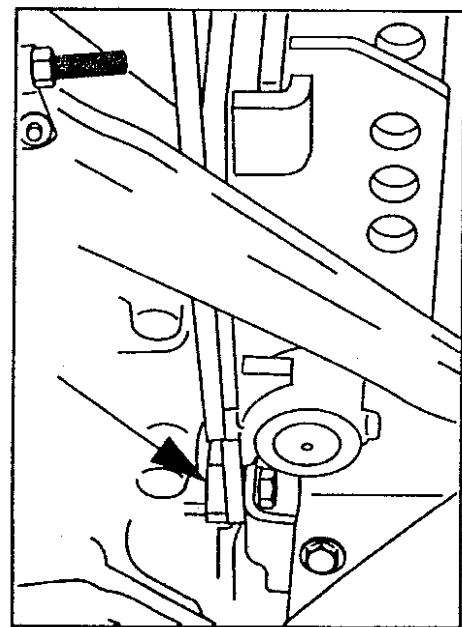
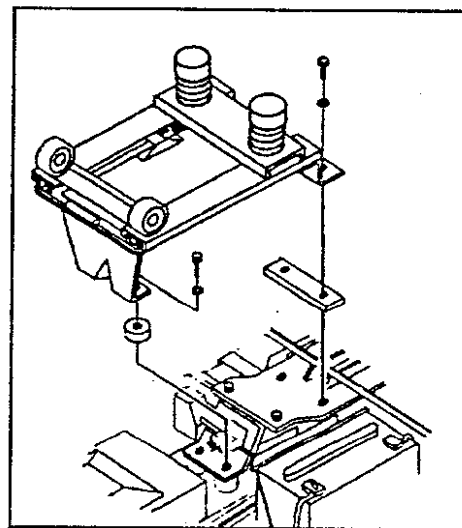
The tractor and backhoe must be assembled on a firm and level surface, with access to an overhead, or "A" frame, hoist. The hoist should have a minimum lifting capacity of 2000 pounds. Fully lower (DOWN) the tractor 3-point arms. Make sure both arms are the same distance from the ground. Adjust the right lift link as necessary to obtain a level dimension.

IMPORTANT:

Tractors that receive a B4672 or B4690 Backhoe require the installation of a Reinforced 3-Point Top Link Bracket. See parts information beginning on page 50 to determine which 3-point Top Link Bracket is correct for your application. Only Special Group 4 Tractors noted on page 33, equipped with the L1194A ROPS, do not require a new 3-point bracket.

Follow instructions in the Tractor Workshop Manual for removing the seat, seat pan tin work, and other items to expose the top cover prior to installing the reinforced top link bracket.

On all B7100, B7200, B1550, and B1750 tractors, the seat bracket must be raised to allow adjusting clearance with the new 3-point top link bracket. Install the seat spacers between the adjuster bracket and top cover as shown. Install and fasten with new metric bolts and lockwashers as shown on page 51.



Tractors equipped with draft control require two small spacers behind the draft control bracket as shown, below the new 3-point top link bracket. The draft control linkage will require adjustment due to the addition of these spacers.

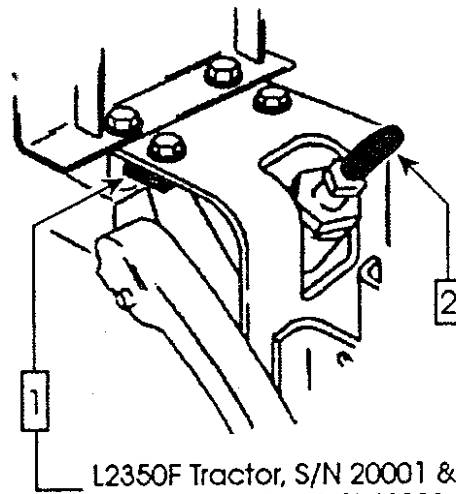
SETTING-UP INSTRUCTIONS - Continued

TRACTOR PREPARATION - Continued

All L2050 & L2350 tractors require the installation of the flat spacer, item 1 shown in the drawing to the right.

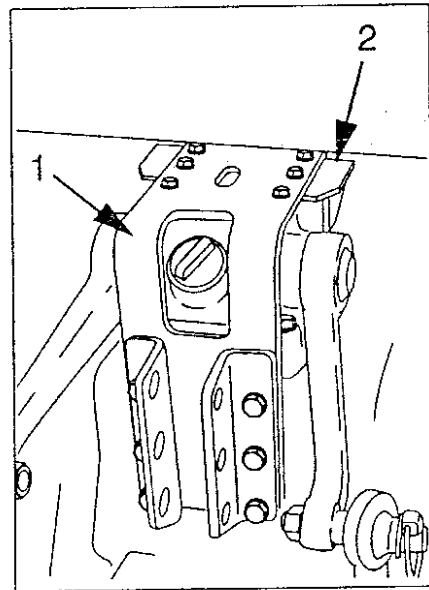
All L2050, L2350, L2500, L2600, and L3000 tractors require the oil return elbow fitting, item 2, shown on the drawing to the right when using the tank port for another implement (e.g. Front Loader).

Remove the 3-point top link and its pins. On all tractors **except the L2050F, L2350F & L2500F** (2 wheel drive) remove the tractor drawbar and its pins. Store these removed items in a clean and dry location. On the L2050F, L2350F & L2500F tractors, adjust the drawbar IN as far as it will go and leave it pinned in place on the tractor.



L2350F Tractor, S/N 20001 & Up
L2350DT Tractor, S/N 60001 & Up

Grand "L" Tractors require the use of braces under the top sides of the heavy duty top link bracket. See the illustration on page 51 for right and left brace identification. This brace is bolted to the top of the transmission case with new M12-1.25 x 55 bolts and lockwashers, and with new M10-1.25 x 35 bolts and lockwashers thru the top link bracket.



1. Heavy Duty Top Link Bracket
2. Grand "L" Top Link Bracket Brace - RH

Torque all fasteners according to the Torque Tightening Chart. Reinstall the removed tractor seat items before proceeding.

BACKHOE PREPARATION

Disassemble and remove the crate from around the backhoe. Remove the small cartoned components and hardware bags from the pallet, open, and check their contents against the packing lists to insure they are complete.

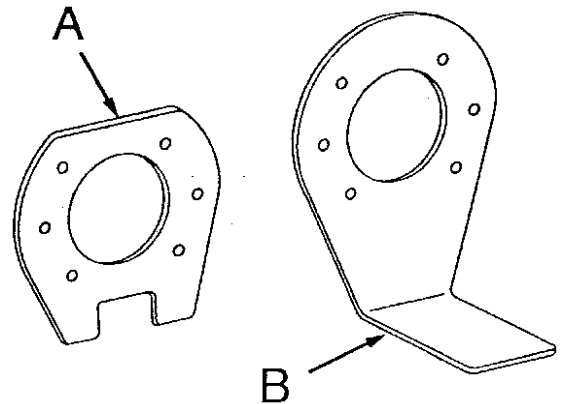
Using the hoist, remove all backhoe items from the pallet and arrange them on the floor in their approximate installation location for assembly. Position the backhoe mainframe and boom 2 to 3 feet from the back of the tractor.

Move the left joystick to the left to release air in the cylinder and center the boom with the mainframe. Install the swing lock pin making sure it is retained with a hairpin clip before proceeding.

NOTE:

Refer to the Parts Illustrations in the rear of this manual for parts identification during assembly of the backhoe. Unless otherwise specified, all fasteners should be tightened according to the Torque Tightening Chart as they are installed.

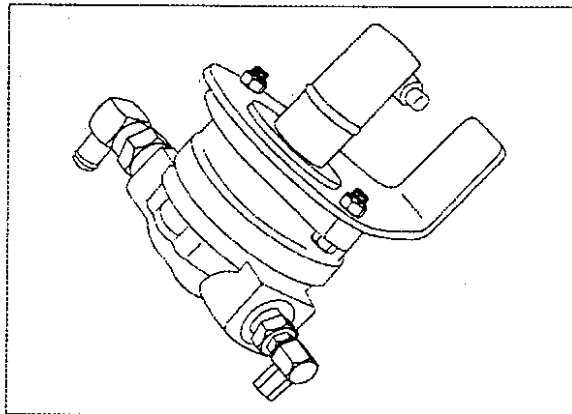
Two wheel drive L2050F, L2350F and L2500F Tractors utilize PTO Pump Bracket "A". All other applicable tractor models use PTO Bracket "B" for Hydraulic Pump mounting.



PTO Pump Bracket Identification

BACKHOE SUB-ASSEMBLY

Install the pump bracket and the splined coupler to the pump as shown. On some applications it may be necessary to rotate the pump on the bracket for fitting clearance between the tractor lift arms. Tighten the coupler set screw to the pump shaft, leaving approximately 1/4 inch between the coupler and pump face. Install both hydraulic fittings, but do not tighten their locknuts.

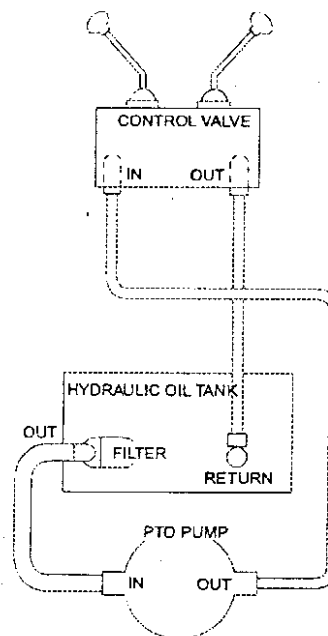


Install the pump to the tractor PTO shaft, making sure the coupler lock is engaged to the tractor shaft, and the pump mount leg or saddle is fully engaged with the drawbar or drawbar bracket. It may be necessary to loosen the coupler set screw and readjust the pump to allow for clearance with the PTO shielding on some tractors.

Install a 90° fitting in the outlet side of the filter manifold. Using thread sealant on the straight fitting, install the filter and manifold into the hydraulic tank. Tighten until the filter is positioned approximately as shown below.

Install a 90° swivel fitting, with thread sealant, into the return port in the tank and tighten so it points up. Install and tighten the control valve OUT hose to this fitting.

Install the pressure hose from the IN side of the control valve to the OUT side of the pump. Install the suction hose to the filter manifold 90° swivel fitting and then to the pump IN port 90° fitting. Tighten these hoses before proceeding.



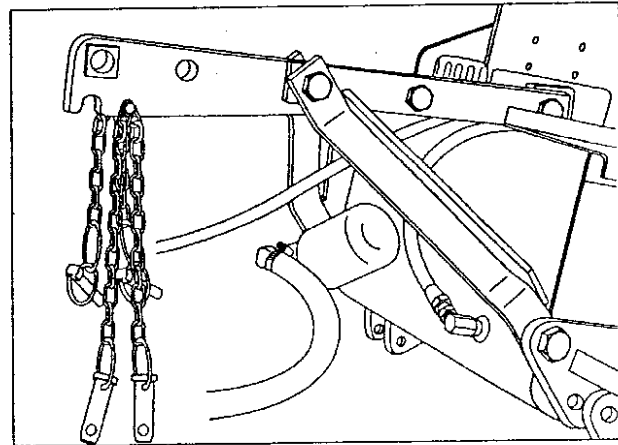
REAR VIEW HYDRAULIC SCHEMATIC

BACKHOE SUB-ASSEMBLY - Continued

IMPORTANT:

Completely review and understand the Backhoe / Tractor / ROPS information on pages 23 and 24 before proceeding. Make sure backhoe mast assembly is correct for the tractor application. Review and understand Mast Mounting Charts beginning on page 30 before mast assembly.

Attach the mast bracers, bars and mounting ear to the mainframe as shown on the Mast Mounting Charts beginning on page 30 for the specific tractor application. Loosely retain with 7/8 fasteners. Do not tighten these fasteners until the mast is fully attached to the tractor 3-point arms and heavy duty top link bracket.



SETTING-UP INSTRUCTIONS - Continued

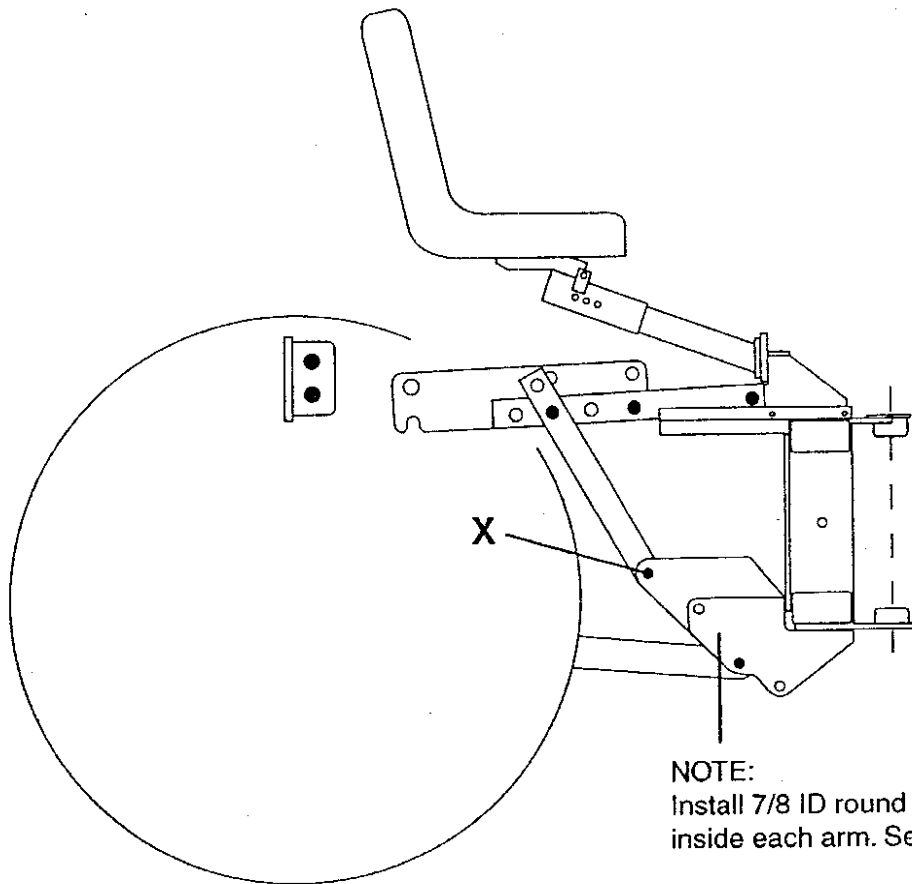
MAST MOUNTING CHART - Group 1 Tractors for B4672 Backhoe Applications

B7100E/DT - B7100HSE/HSD - B7200E/DT - B7200HSE/HSD
B1550E/DT - B1550HSE/HSD - B1750E/DT - B1750HSE/HSD
B7300HSD - B1700E/DT/HSD/HSD - B2100DT/HSD/HSD - B2400HSE/HSD/HSD
B7400HSD - B7500DT/HSD - B2410HSE/HSD/HSD

B2710HSD (This Group 1 Tractor is also applicable with BL4690 Backhoe)

IMPORTANT:

Completely review and understand this information before proceeding with MAST assembly and hook-up of the backhoe to the tractor.



NOTE:
Install 7/8 ID round spacers
inside each arm. See page 49.

NOTE:

The "short end" (noted by 3" hole center) of mast bars are assembled rearward, toward the tractor.



IMPORTANT:

Make sure the braces are mounted to the INSIDE of the mainframe at location X. Correct mounting hole locations are marked out in black.

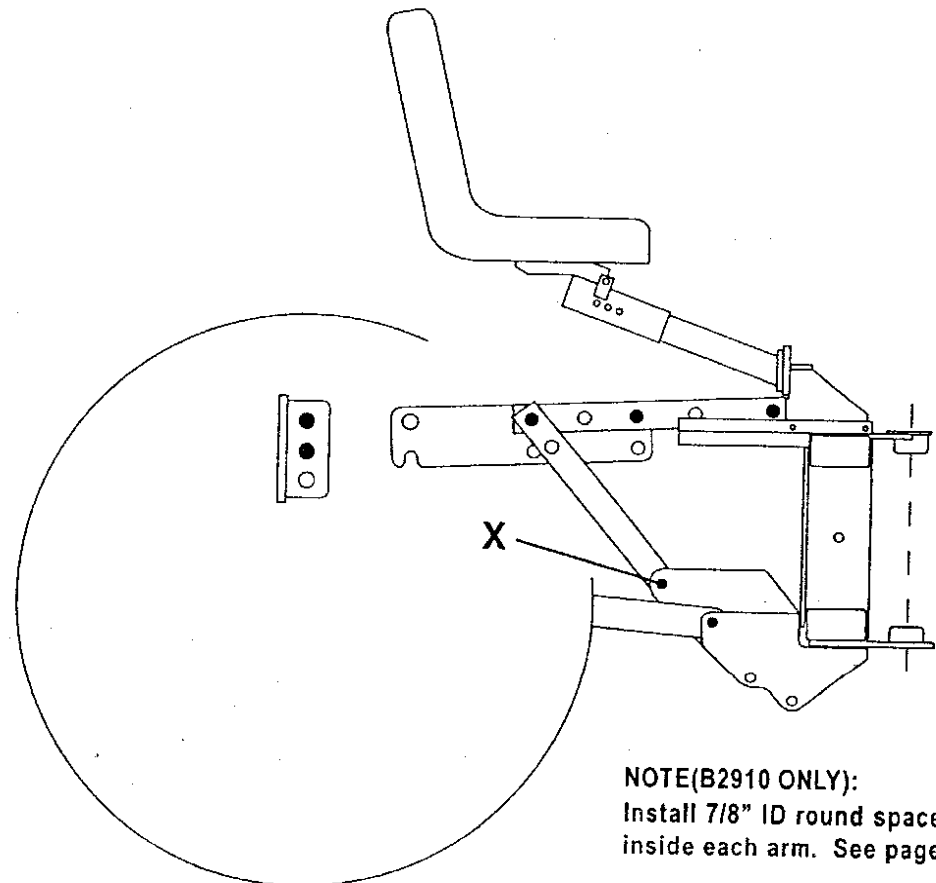
SETTING-UP INSTRUCTIONS - Continued

MAST MOUNTING CHART - Group 2 Tractors and B2910(Group 1 Tractor) for B4672 and BL4690 Backhoe Applications

B8200E/DT - B8200HSE/HSD - B9200E/DT - B9200HSE/HSD
B2150E/DT & B2150HSE/HSD

B2910 - This group 1 tractor only should be set up as indicated below

IMPORTANT:
Completely review and understand this information before proceeding with MAST assembly and hook-up of the backhoe to the tractor.



NOTE(B2910 ONLY):
Install 7/8" ID round spacers
inside each arm. See page 49.

NOTE:
The "short end" (noted by 3" hole center) of mast bars are assembled rearward, toward the tractor.



IMPORTANT:
Make sure the braces are mounted on the **INSIDE** of the mainframe at location X. Correct mounting hole locations are marked out in black.

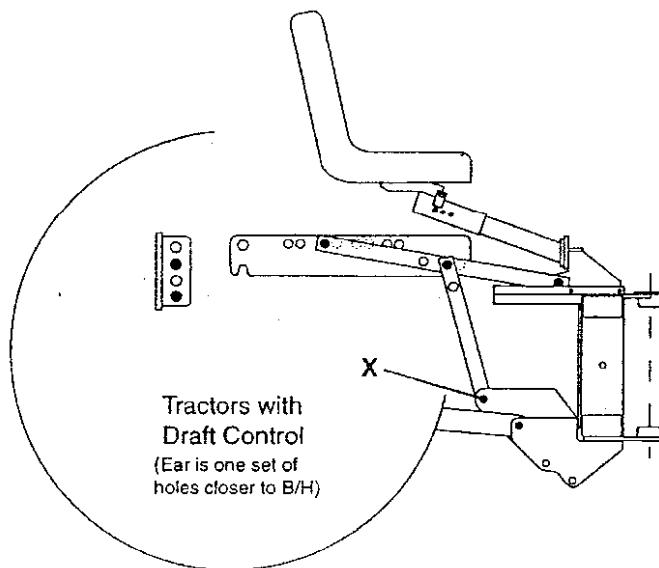
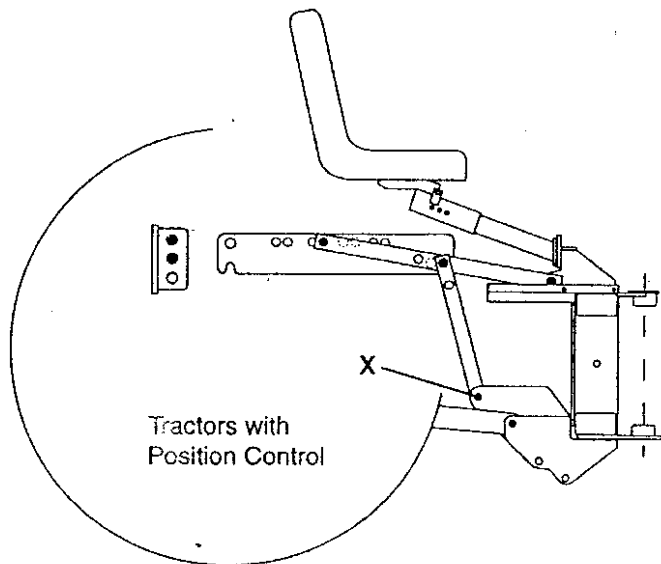
SETTING-UP INSTRUCTIONS - Continued

MAST MOUNTING CHART - Group 3 Tractors for BL4690 Backhoe Applications

L2050F/DT - L2250F/DT - L2350F/DT - L2500F/DT - L2550F/DT/GST - L2600F/DT - L2650F/DT/GST
L2900F/DT/GST - L2950F/DT/GST - L3000F/DT - L3300F/DT/GST
L3010F/DT/GST/HST & L3410DT/GST/HST

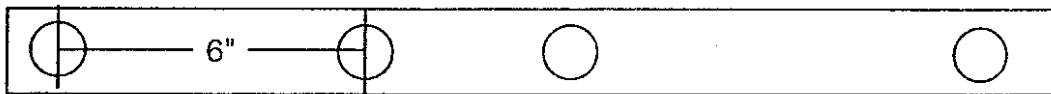
IMPORTANT:

Completely review and understand this information before proceeding with MAST assembly and hook-up of the backhoe to the tractor.



NOTE:

The "short end" (noted by 6" hole center) of mast bars are assembled rearward, toward the tractor.



IMPORTANT:

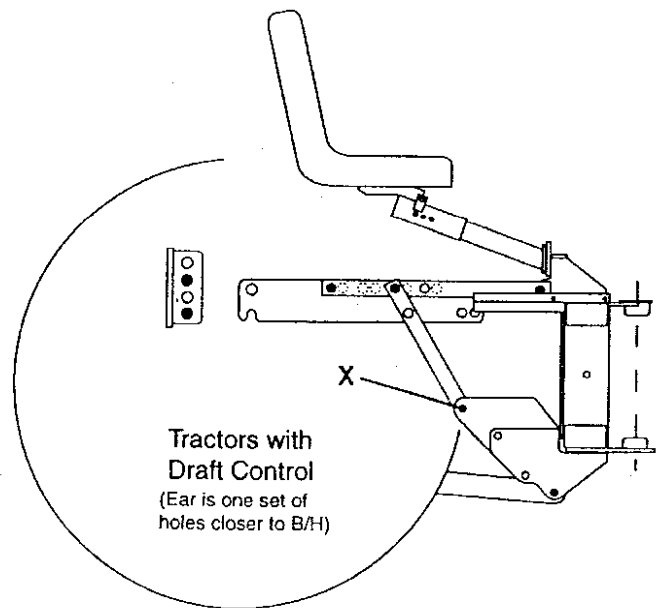
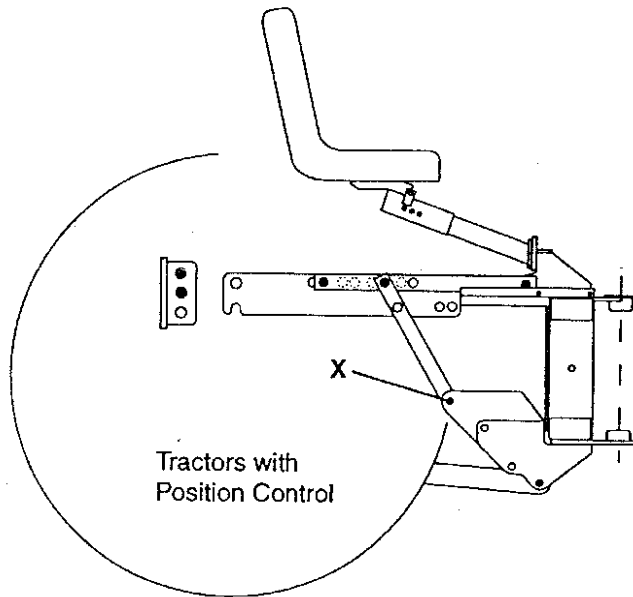
Make sure the braces are mounted on the INSIDE of the mainframe at location X. Correct mounting hole locations are marked out in black.

SETTING-UP INSTRUCTIONS - Continued

MAST MOUNTING CHART - Special Group 4 Tractors for BL4690 Backhoe Applications
L2850F/DT/GST - L3250F/DT - L3450F/DT/GST & L3650F/DT/GST
(Application with L1194A ROPS)

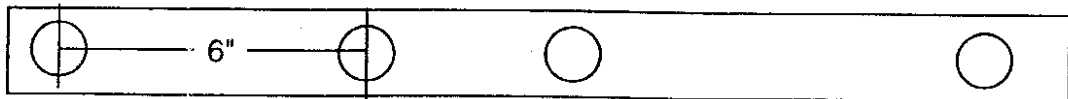
IMPORTANT:

Completely review and understand this information before proceeding with MAST assembly and hook-up of the backhoe to the tractor.



NOTE:

The "short end" (noted by 6" hole center) of mast bars are assembled rearward, toward the tractor.



IMPORTANT:

Make sure the braces are mounted on the **INSIDE** of the mainframe at location X. Correct mounting hole locations are marked out in black.

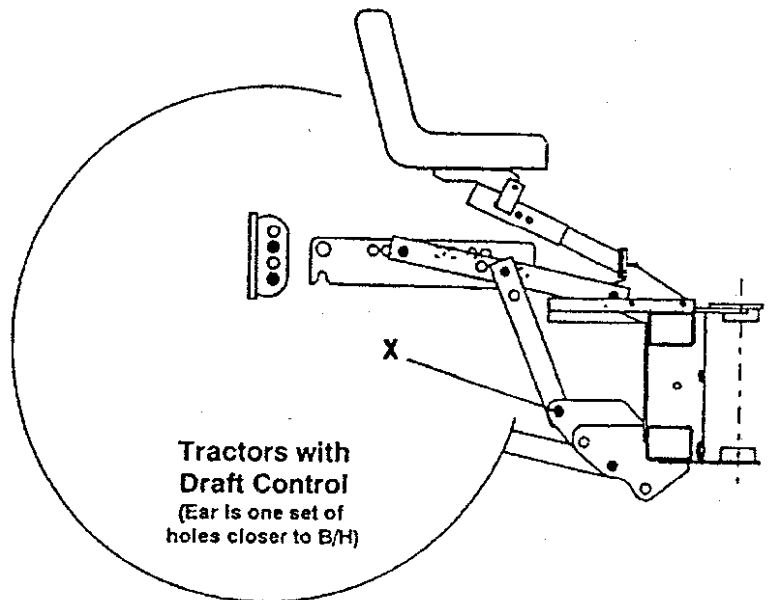
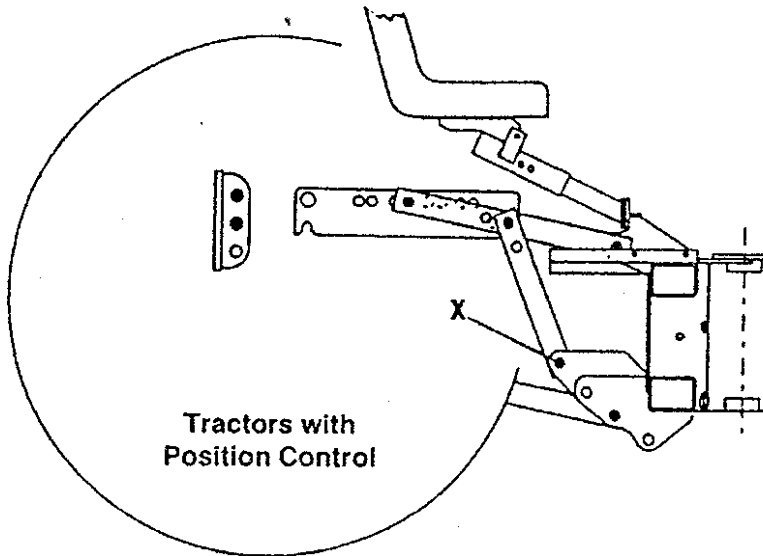
SETTING-UP INSTRUCTIONS - Continued

MAST MOUNTING CHART - Group 4 Tractors for BL4690 Backhoe Applications
L2850F/DT/GST - L3250F/DT - L3450F/DT/GST - L3650F/DT/GST
(Applications with L1182A or SFL-32 ROPS)

L3600DT/GST - L3650F/DT/GST & L4200F/DT/GST
L3710DT/GST/HST - L4300F/DT - L4310F/DT/GST/HST & L4610GST/HST

IMPORTANT:

Completely review and understand this information before proceeding with MAST assembly and hook-up of the backhoe to the tractor.



NOTE:

The "short end" (noted by 6" hole center) of mast bars are assembled rearward, toward the tractor.



IMPORTANT:

Make sure the braces are mounted on the **INSIDE** of the mainframe at location X. Correct mounting hole locations are marked in black.

SETTING-UP INSTRUCTIONS - Continued

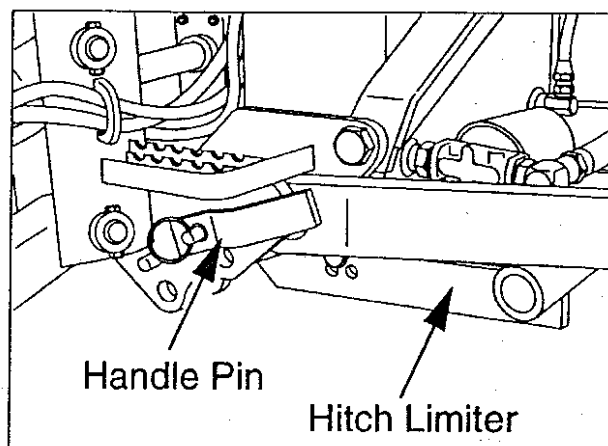
BACKHOE SUB-ASSEMBLY - Continued

Carefully back the tractor up to the backhoe. Lift the backhoe with the hoist 12 to 16 inches off the floor. Make sure the 3-Point Hitch Limiter is loose so it will clear the bottom of the 3-point arms. Connect both 3-point arms with handle pins to the backhoe mainframe, with these pins placed as shown on the applicable chart on pages 30 thru 34.

NOTE:

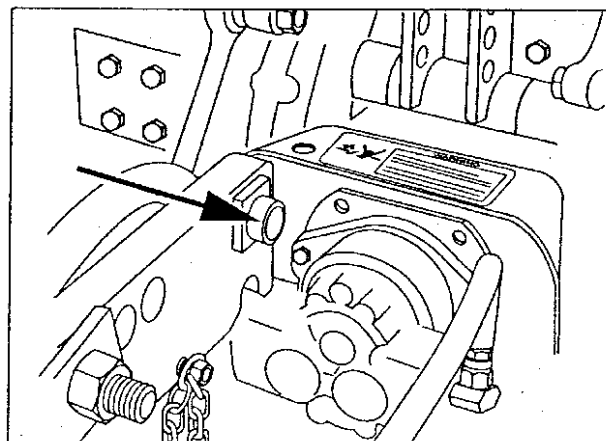
A special 1/2 inch spacer must be placed between the inside of the 3-point arms and backhoe mainframe on Group One Tractors.

Align the hitch pin handles over the pins on the mainframe and retain in place with large key ring clips as shown.



With the hoist, raise the boom and connect the Boom Lock (see photo on page 40) to hold the boom in the full up position.

Install the 1.0 OD round spacer into the hole in the mast ear, above the ear hook. Make sure it stays in place for remaining assembly.



BACKHOE SUB-ASSEMBLY - Continued

Make sure the pump to filter/tank hoses do not get pinched or kinked as assembly continues. It may be necessary to loosen the pump fitting locknuts and reposition the hoses as the backhoe is attached to the tractor. Make sure the locknuts on the PTO pump fittings are retightened after the backhoe is connected.

IMPORTANT:

Chain connected hardened pins and clips included with the backhoe should be used for mast connection to the top link bracket. Those received with the tractor should NOT be used as they are softer and will bend easily.

NOTE:

Pin placement for the top link bracket is shown on the applicable chart, pages 30 thru 34.

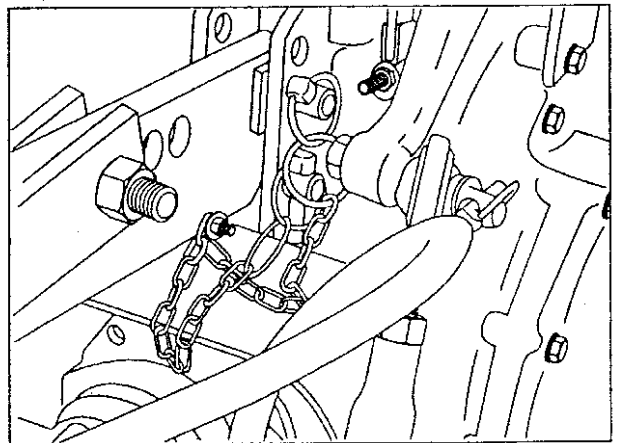
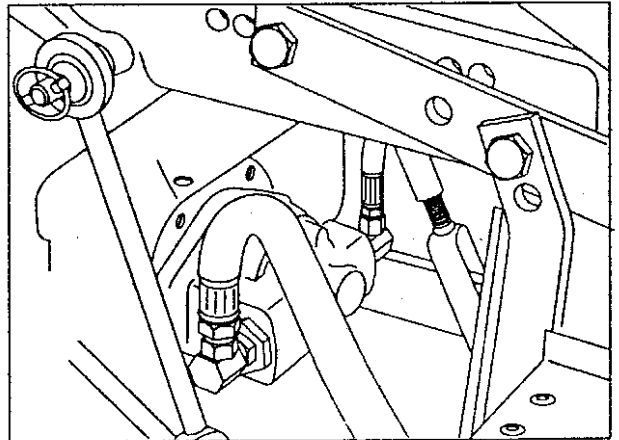
With the hoist still connected to the boom, start the tractor. Using the hoist and the 3-point arms, raise the mast into place and fasten the mast ear over one pin installed in the lowest applicable hole in the new top link bracket. After the ear is fully hooked, install the second hardened pin thru the ear and 1 inch OD spacer. Make sure both are locked with hitch pins.

IMPORTANT:

The 3-point hitch lever must remain in the down position at all times when the backhoe is mounted.

Fully tighten and lock the 3-point arm sway chains, or adjust the 3-point arm telescoping stabilizers, to hold the backhoe centered behind the tractor. All mast fasteners can now be tightened.

Disconnect the hoist from the boom.



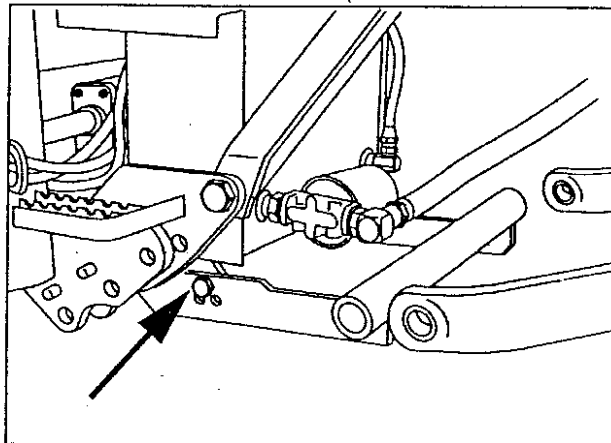
SETTING-UP INSTRUCTIONS - Continued

BACKHOE SUB-ASSEMBLY - Continued

Raise the 3-point hitch limiter up and align the bar as close as possible to the bottom of the 3-point arms. Retain with 5/8-11 x 2 bolts and locknuts. Once set, this limiter should not have to be moved when removing or reinstalling the backhoe to the same tractor.

NOTE:

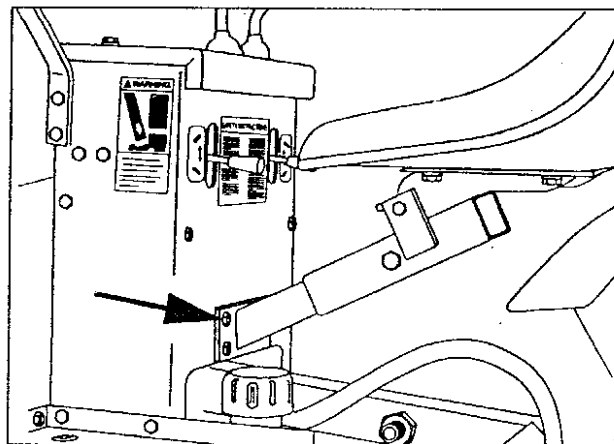
The photograph was taken with the backhoe away from the tractor so the fastening locations can be viewed.



Install the seat bracket to the rear of the console with (4) 7/16-14 x 1 bolts and lockwashers.

NOTE:

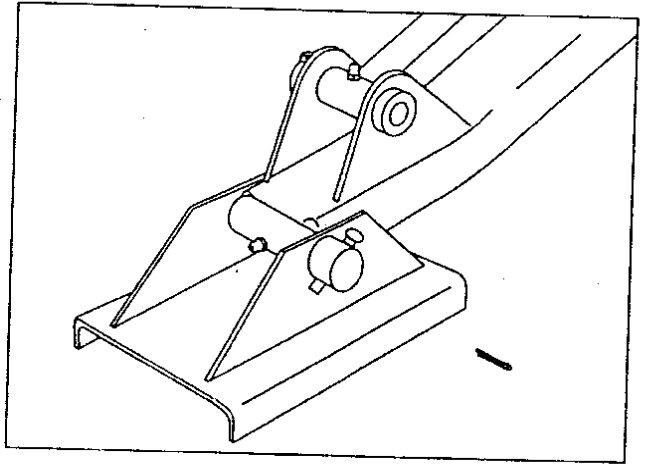
The two piece seat bracket, for BL4690 Backhoe is illustrated. The B4572 Backhoe uses a one piece seat bracket/stand.



SETTING-UP INSTRUCTIONS - Continued

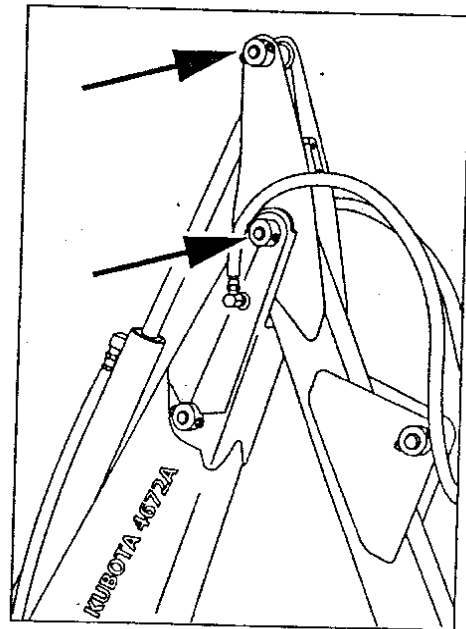
BACKHOE SUB-ASSEMBLY - Continued

Install the stabilizer landing pads with 1 x 5 1/2 pins and retain with 3/16 x 1 1/2 cotter pin.



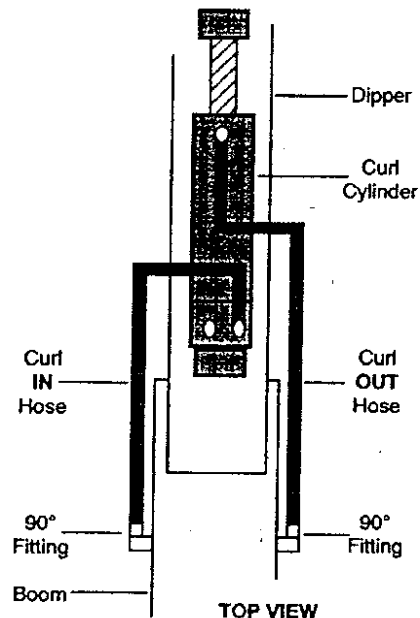
Connect the hoist to the top of the dipper and raise it into place on the boom as shown. Fasten in place with a 30 mm pivot pin, with a lube fitting in one end, and retain with (1) 3/8-16 x 2-1/2 bolt and locknut.

Disconnect the hoist from the top of the dipper and refasten it to the bottom of the dipper. Raise the dipper and connect the crowd cylinder to the top of the dipper with a 1 x 4-3/4 pin and retain with a 3/8-16 x 2-1/4 bolt and locknut.



BACKHOE SUB-ASSEMBLY - Continued

Install both 90° curl cylinder fittings to the ports in the sides of the 4690 boom, tightening so they point straight up. These fittings are already installed in the 4672 boom. Connect and tighten both curl cylinder hoses according to the schematic.



SEAT TO ROPS ADJUSTMENT

NOTE:

The 40 inch clearance minimum should be attainable with the seat in any of its fore and aft positions. However, if it is not within the minimum, the seat may have to be moved forward.



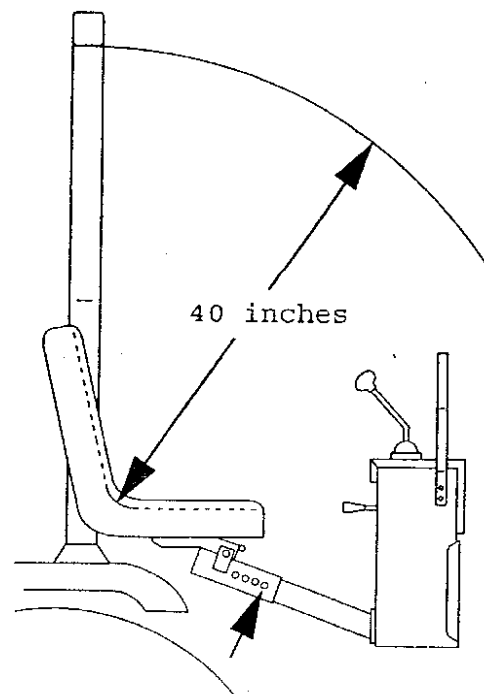
WARNING

TO AVOID SERIOUS INJURY:

If the 40 inch minimum cannot be retained, DO NOT USE THE BACKHOE! Have your Kubota Dealer correctly adjust the backhoe for the 40 inch minimum.

Measure from the intersection of the seat base and back to the bottom of the ROPS post. This radius should be a minimum of 40 inches. If this distance is less than 40 inches, check the following.

1. Make sure the correct ROPS is on the tractor.
2. Make sure the backhoe is correctly attached to the tractor according to the charts beginning on page 30. Also make sure the correct tractor application was followed, and that both chain fastened hardened pins are securely installed and locked in the top link bracket as required.
3. Check and make sure that the ROPS, tractor, 3-point components, or the backhoe itself is not damaged, distorted or defective.

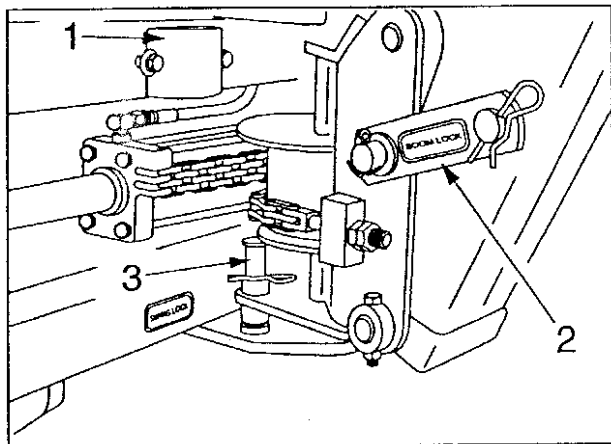


SETTING-UP INSTRUCTIONS - Continued

SWING STOP & SWING BOOM LOCKS

Install the right Swing Stop Bumper using 3/8-16 x 1 bolts, lockwashers, and special shoulder bushings.

THE SWING LOCK PIN can only be installed after the boom is centered behind the tractor. Remove the hairpin clip from the lock pin, allowing the pin to drop into its lock hole thru the mainframe. Retain in the locked position with its hairpin clip.



1. SWING STOP BUMPER
2. BOOM LOCK LINK 3. SWING LOCK PIN

THE BOOM LOCK LINK is specifically designed to be used whenever the backhoe is being transported to and from, or around the jobsite with the tractor.

IMPORTANT:

The boom lock should not be used when the unit is transported on a trailer, or when the unit is stored or parked.

In these instances, the safest procedure with the least amount of load on backhoe components, is to lower the boom allowing the bucket to rest firmly on the trailer or ground.

INSTALLING THE BACKHOE BUCKET

Place the optional KUBOTA bucket in line with, and slightly behind the bucket links on the dipper.

Lower the boom until the dipper end and bucket links are approximately in line with the bucket.

NOTE:

The bucket and bucket link pins are 25 mm outside diameter.

Install one 25 mm pivot pin thru the UPPER mounting ear holes in the bucket, thru the mount hole in the DIPPER. Install the other 25 mm pivot pin thru the LOWER mounting ear holes in the bucket, thru the bucket LINK.

Retain both pins with 3/8-16 x 2-1/4 bolts and locknuts.

SET-UP SERVICE & LUBRICATION

Remove the fillcap-dipstick and fill the reservoir with five (5) gallons of KUBOTA "UDT" oil, or other hydraulic oil approved by Kubota. This quantity is sufficient only for pressurizing and bleeding the hydraulic system. Reinstall the fillcap-dipstick.

IMPORTANT:

Do not attempt to fully bleed air from any backhoe hydraulic circuit unless the unit is out of doors, or in an area where full boom and swing cylinder travel can be accomplished.

Following instructions in the Lubrication & Maintenance Section, lubricate all backhoe grease fittings. Also check the backhoe for maintenance adjustments, especially the swing chain, before bleeding the hydraulic circuit, or, before proceeding with Pre-Operation instructions.

Start the tractor engine, engage the tractor PTO in the 540 RPM position and set the throttle at 1400 to 1600 RPM. DO NOT RELEASE the parking brake, or raise the loader.

Disengage the boom and swing locks and bleed air from the cylinders by operating all backhoe functions, several times, thru as much cylinder stroke as possible.

Add necessary hydraulic oil (approximately ONE gallon) to the reservoir before proceeding.

Continue Backhoe set-up with instructions found in the Pre-Operation section on page 11.

PARTS ILLUSTRATIONS

B4672 & BL4690 BACKHOE

Use only genuine KUBOTA replacement parts on the Tractor, Loader and Backhoe.

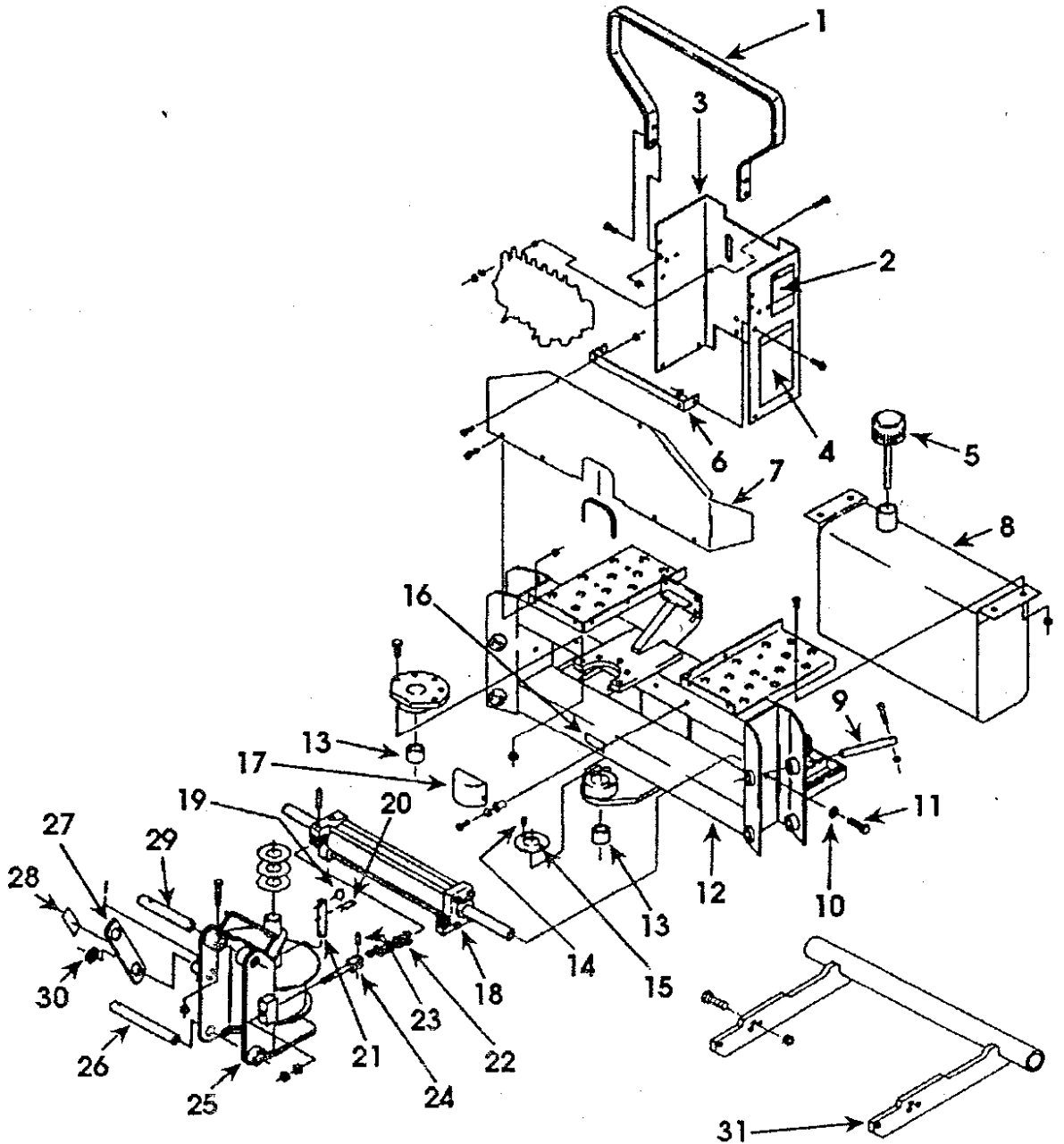
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Kubota Tractor reserves the right to change, modify, or eliminate from time to time, for technical or other reasons, certain or all data, specifications, or equipment of the product, or the product themselves, without any liability or obligation.

PARTS ILLUSTRATIONS - Mainframe Components

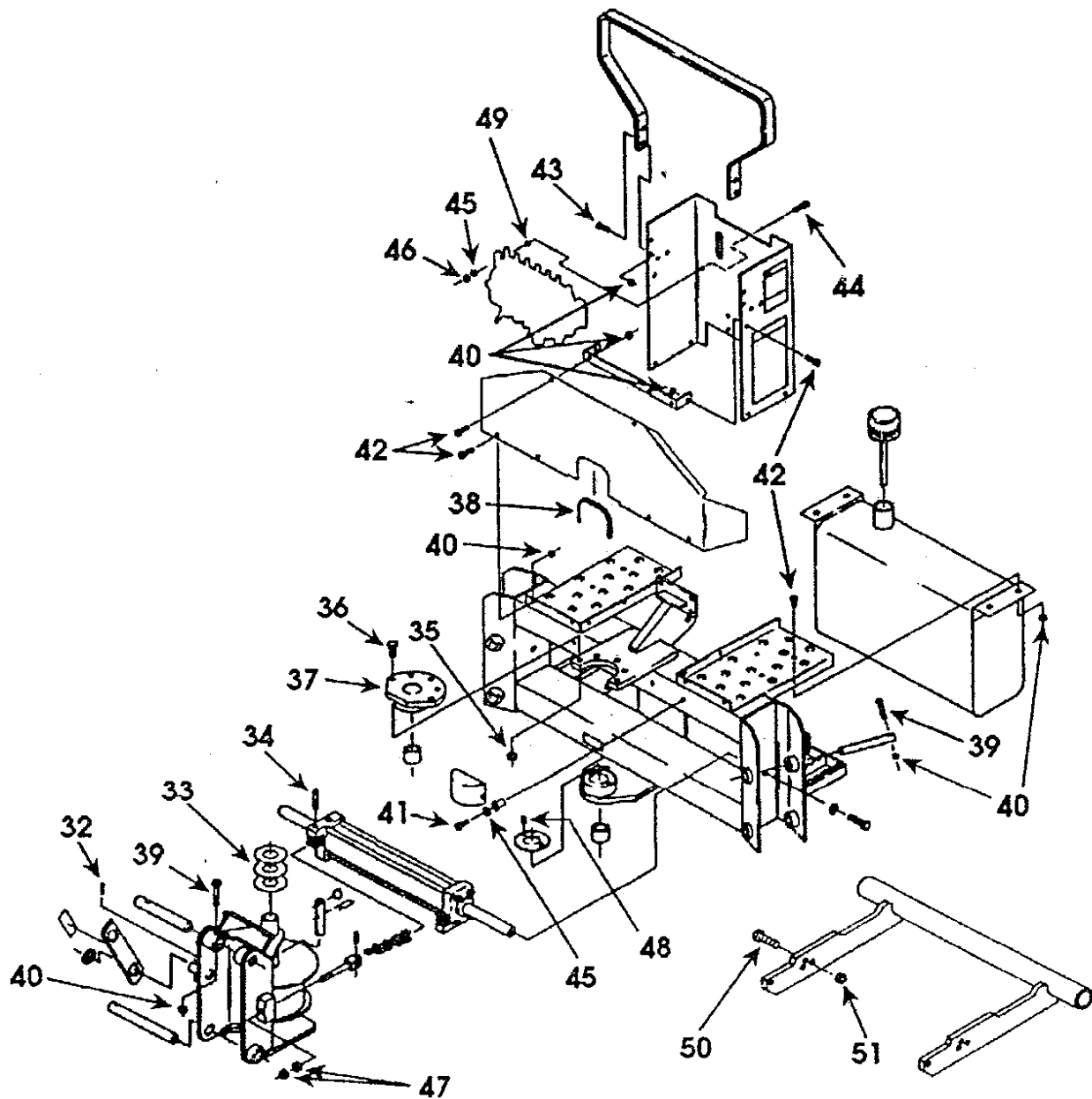
REF	PART NUMBER	DESCRIPTION	QTY
1	70050-93720	GUARD	1
2	70050-93721	Safety Sign, WARNING, Removal	2
3	70050-93722	CONSOLE, w/Signs	1
4	70050-93723	Safety Sign, INSTRUCTION, Attaching	2
5	70050-02751	PRESSURE CAP, Filler-Dipstick	1
6	70050-93724	STRAP, Mounting	1
7	70050-93725	SHIELD, Valve	1
8	70050-93726	RESERVOIR, Hydraulic Oil	1
9	70050-93727	PIN, 1 x 6-1/4, Drilled	4
10	70050-93840	FLAT WASHER, 5/8 - Hardened	2
11	75599-02730	BOLT, 5/8-18 x 1-1/2 UNF	2
12	70050-93728	MAINFRAME	1
13	70050-02309	BEARING, 1-3/4 OD x 1-1/2	2
14	70050-94389	ROLL PIN, 3/16 x 1/2	1
15	70050-02417	THRUST WASHER	1
16	70050-93389	Sign, INSTRUCTION, Swing Lock	1
17	70050-02464	BUMPER PAD, Swing	2
18	70050-93729	CYLINDER, Swing	1
19	70050-02840	RING, Circle Cotter	1
20	70050-01621	HITCH PIN, 3/16	3
21	70050-93730	PIN, Swing Lock	1
22	70050-93731	CHAIN LEAF, 14 Links	2
23	70050-94387	ROLL PIN, 5/16 x 1-1/4	2
24	70050-93733	CONNECTOR	2
25	70050-93734	SWING FRAME	1
26	70050-93735	PIN, 1 x 7-1/2 Drilled	1
27	70050-93736	LINK, Boom Lock	1
28	70050-93388	Sign, INSTRUCTION, Boom Lock	1
29	70050-93737	PIN, 1 x 5-13/16 Drilled	1
30	70050-93738	BUSHING, 1 x 1-1/2 OD	1
31	70050-94380	LIMITER, 3-Point Hitch	1



PARTS ILLUSTRATIONS - Mainframe Components

REF	PART NUMBER	DESCRIPTION	QTY
32	75599-52430	COTTER PIN, 3/16 x 1-1/2	1
33	70050-93739	BUSHING	3
34	70050-94388	ROLL PIN, 5/16 x 2	2
35	75599-31037	JAM NUT, 5/8-11	5
36	75599-01730	BOLT, 5/8-11 x 1-1/2	5
37	70050-93741	BRACKET, Bearing	1
38	70050-93742	TRIM	1
39	75599-01345	BOLT, 3/8-16 x 2-1/4	6
40	75599-31933	LOCKNUT, 3/8-16	26
41	75599-01320	BOLT, 3/8-16 x 1	4
42	75599-01315	BOLT, 3/8-16 x 3/4	18
43	75599-01325	BOLT, 3/8-16 x 1-1/4	4
44	75599-01330	BOLT, 3/8-16 x 1-1/2	2
45	75599-33013	LOCKWASHER, 3/8	6
46	75599-31013	NUT, 3/8-16	2
47	75599-31017	NUT, 5/8-11	4
48	70050-02467	BUSHING, Shoulder	2
49	70050-93817	BUSHING, Spacer	2
50	75599-01740	BOLT, 5/8-11 x 2	2
51	75599-31937	LOCKNUT, 5/8-11	
N/I	70050-93436	Safety Sign, CONTROL, Valve Operation	1
N/I	70050-93391	Safety Sign, CONTROL, LH Stabilizer	1
N/I	70050-93390	Safety Sign, CONTROL, RH Stabilizer	1

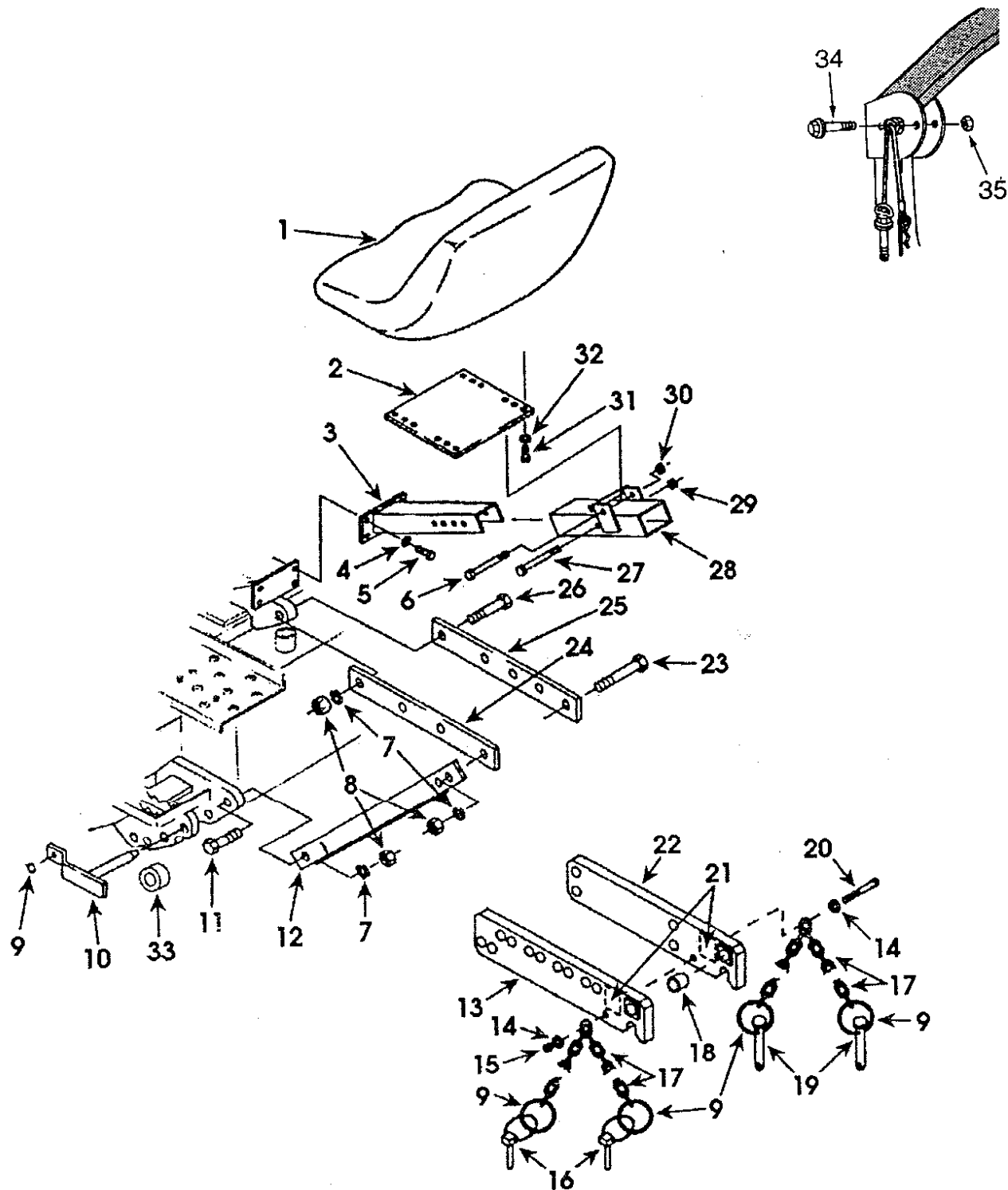
N/I = Not illustrated. All three are located on the console, facing the operator.
See photograph on page 12.



PARTS ILLUSTRATIONS - Seat & Mast Components

REF	PART NUMBER	DESCRIPTION	QTY
1	70050-02325	SEAT	1
2	70050-93761	BRACKET, Seat Mount	1
3	70050-93770	BRACKET, Seat Stand (BL4690 Backhoe)	1
	70050-93857	BRACKET, Seat Stand (B4672 Backhoe)	1
4	75599-33014	LOCKWASHER, 7/16	4
5	75599-01420	BOLT, 7/16-14 x 1	4
6	75599-01380	BOLT, 3/8-16 x 4	1
7	75599-33019	LOCKWASHER, 7/8	4
8	75599-31019	NUT, 7/8-9	4
9	70050-94386	RING, Circle Cotter - 1-3/4	6
10	70050-93769	HITCH PIN, Mainframe Mount	2
11	75599-01950	BOLT, 7/8-9 x 2-1/2	2
12	70050-93767	MAST BRACE, RH	1
	70050-93768	MAST BRACE, LH	1
13	70050-93766	MAST EAR ("L" Series Tractor) **	1
14	75599-32111	FLAT WASHER, 1/4	2
15	75599-31931	LOCKNUT, 1/4	2
16	70050-94379	LINCH PIN	2
17	70050-94377	CHAIN, .148 x 30 links	2
18	70050-93985	SPACER, 1.0 OD x 1-1/2 x .95 wall thickness	1
19	70050-94378	CLEVIS PIN, Special Hardened	2
20	75599-01140	BOLT, 1/4-20 x 2	1
21	70050-94371	Safety Sign, DANGER, Pins	2
22	70050-93765	MAST EAR ("B" Series Tractor) **	1
23	75599-01990	BOLT, 7/8-9 x 4-1/2	1
24	70050-93764	MAST BAR ("L" Series Tractor) **	1
25	70050-93763	MAST BAR ("B" Series Tractor) **	1
26	75599-31933	BOLT, 7/8-9 x 3-1/2	1
27	75599-01580	BOLT, 1/2-13 x 4	1
28	70050-93762	SLIDE, Seat Bracket (BL4690 Backhoe)	1
29	75599-31935	LOCKNUT, 1/2-13	1
30	75599-01970	LOCKNUT, 3/8-16	1
31	75599-01315	BOLT, 3/8-16 x 3/4	4
32	75599-33013	LOCKWASHER, 3/8	4
33	70080-01288	SPACER, 3-Point Arm (Group 1 Tractors Only)	2
34	75599-02780	BOLT, 5/8-18 x 4	1
35	75599-31027	NUT, 5/8-18	1

** For placement identification, see illustrations beginning on page 30.



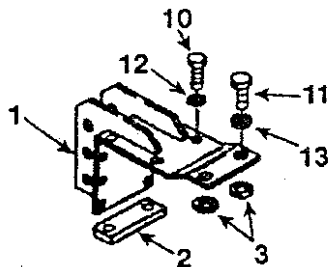
PARTS ILLUSTRATIONS - Reinforced 3-Point Top Link Brackets

REF	PART NUMBER	DESCRIPTION	QTY
1	70050-93214	BRACKET, HD *	1
2	70050-93682	SEAT SPACER *	1
3	70050-93219	SEAT SPACER *	2
4	70050-93213	BRACKET, HD *	1
5	70050-94875	BRACKET, HD	1
6	70050-93881	SPACER	1
7	70050-94880	ELBOW	1
8	70050-94384	BRACE, RH	1
9	70050-94385	BRACE, LH	1
10	01017-50835	BOLT, M8-1.25 x 35	A/R
11	01053-51040	BOLT, M10-1.5 x 40	A/R
12	04512-60080	LOCKWASHER, M8	A/R
13	04512-60100	LOCKWASHER, M10	A/R
14	60009-61075	BOLT, M12-1.25 x 40	A/R
15	04512-60120	LOCKWASHER, M12	A/R
16	01175-61035	BOLT, M10-1.25 x 35	A/R
17	01017-51255	BOLT, M12-1.25 x 55	A/R
18	70050-93986	SPACER, Round - Draft Control Units Only	2
19	70050-94887	SPACER, Flat	2
20	70050-94878	SPACER, Bar	1
21	70050-00540	BRACKET, HD	1
22	01053-51035	BOLT, M10 - 1.5 x 35	A/R
23	75599-02330	BOLT, 3/8-24 x 1 1/2	A/R
24	75599-32113	FLATWASHER, 3/8	A/R

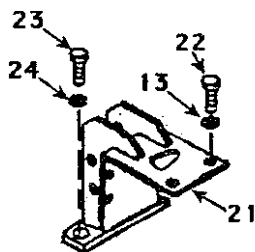
* =Not included, must be ordered through Parts Department

A/R = As required for each application.

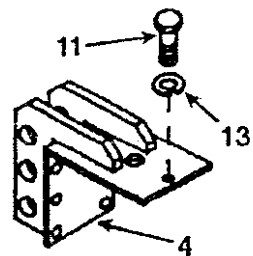
PARTS ILLUSTRATIONS - Reinforced 3-Point Top Link Brackets



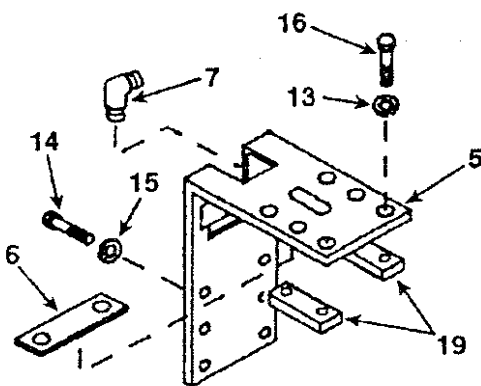
B7100 - B7200
B1550 - B1750
Tractors *



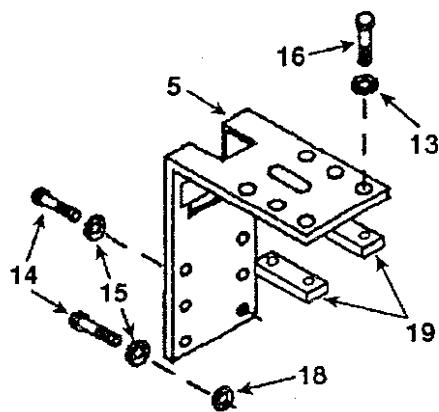
B7300 - B1700 - B2100
B2400 - B7400 - B7500
B2410 - B2710 - B2910
Tractors



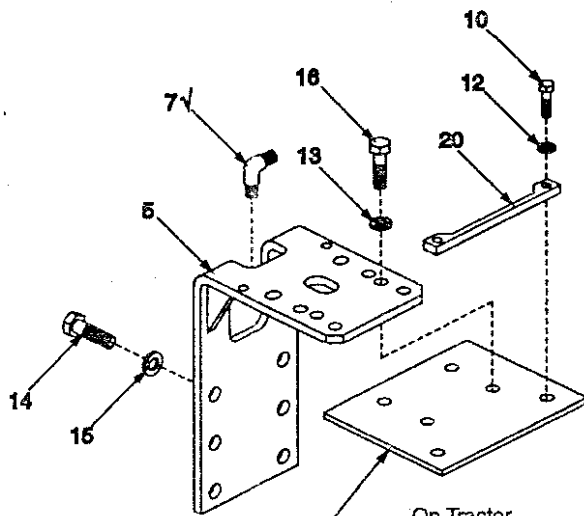
B8200 - B9200 - B2150
Tractors*



L2050 & L2350 Tractors

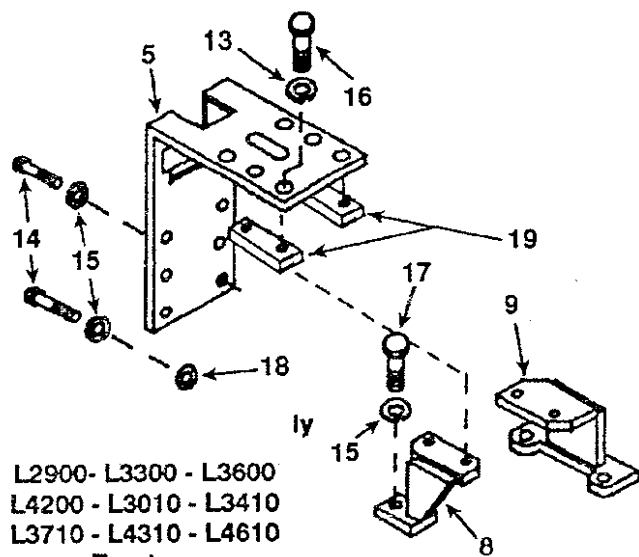


L2250 - L2550 - L2650
L2950 - L2850 - L3250
L3450 - L3650 Tractors



L2500 - L2600 - L3000 - L4300 Tractors

√ Elbow Not Required on L4300



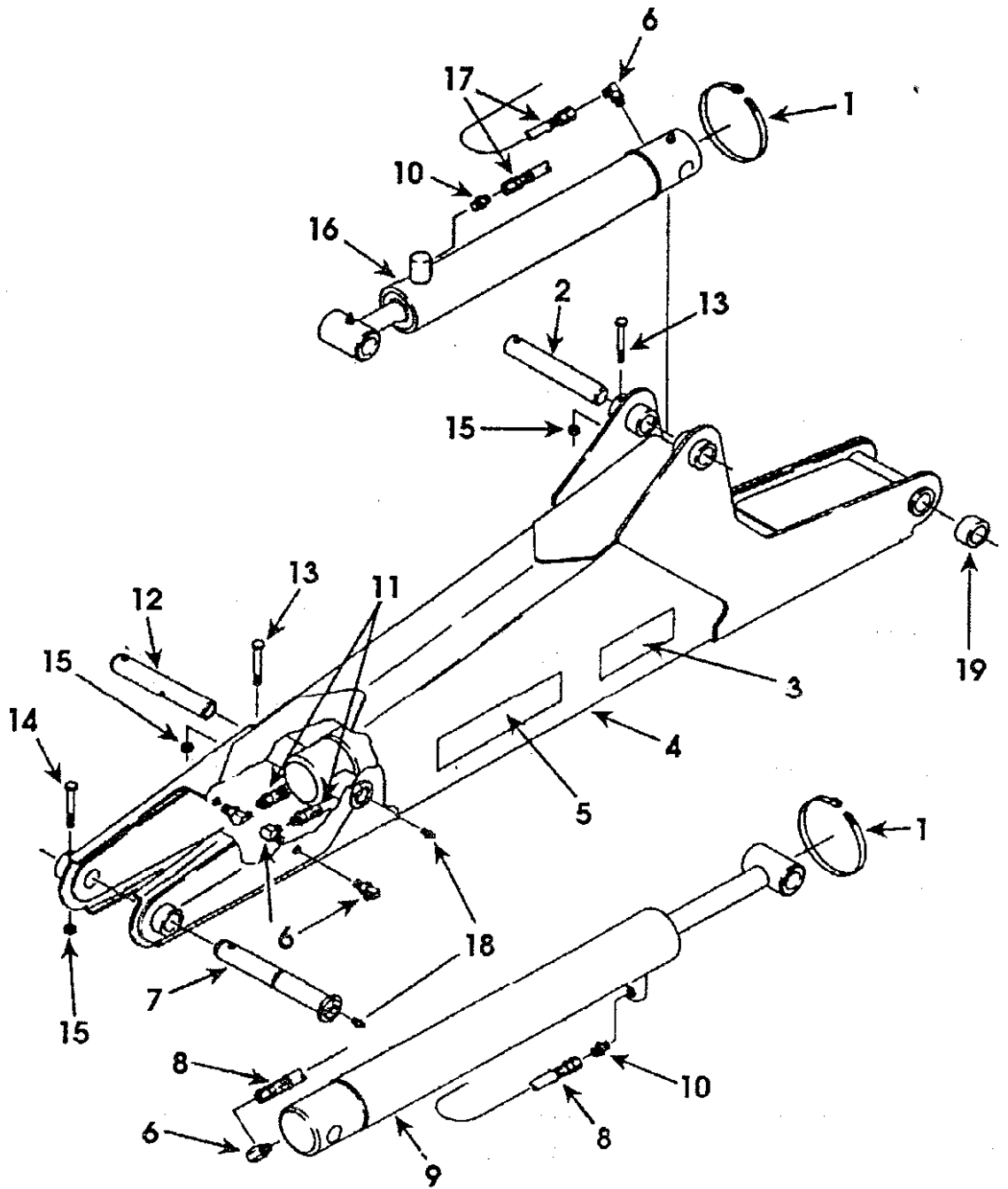
L2900 - L3300 - L3600
L4200 - L3010 - L3410
L3710 - L4310 - L4610
Tractors

* = Some parts must be ordered separately.

PARTS ILLUSTRATIONS - Boom Components

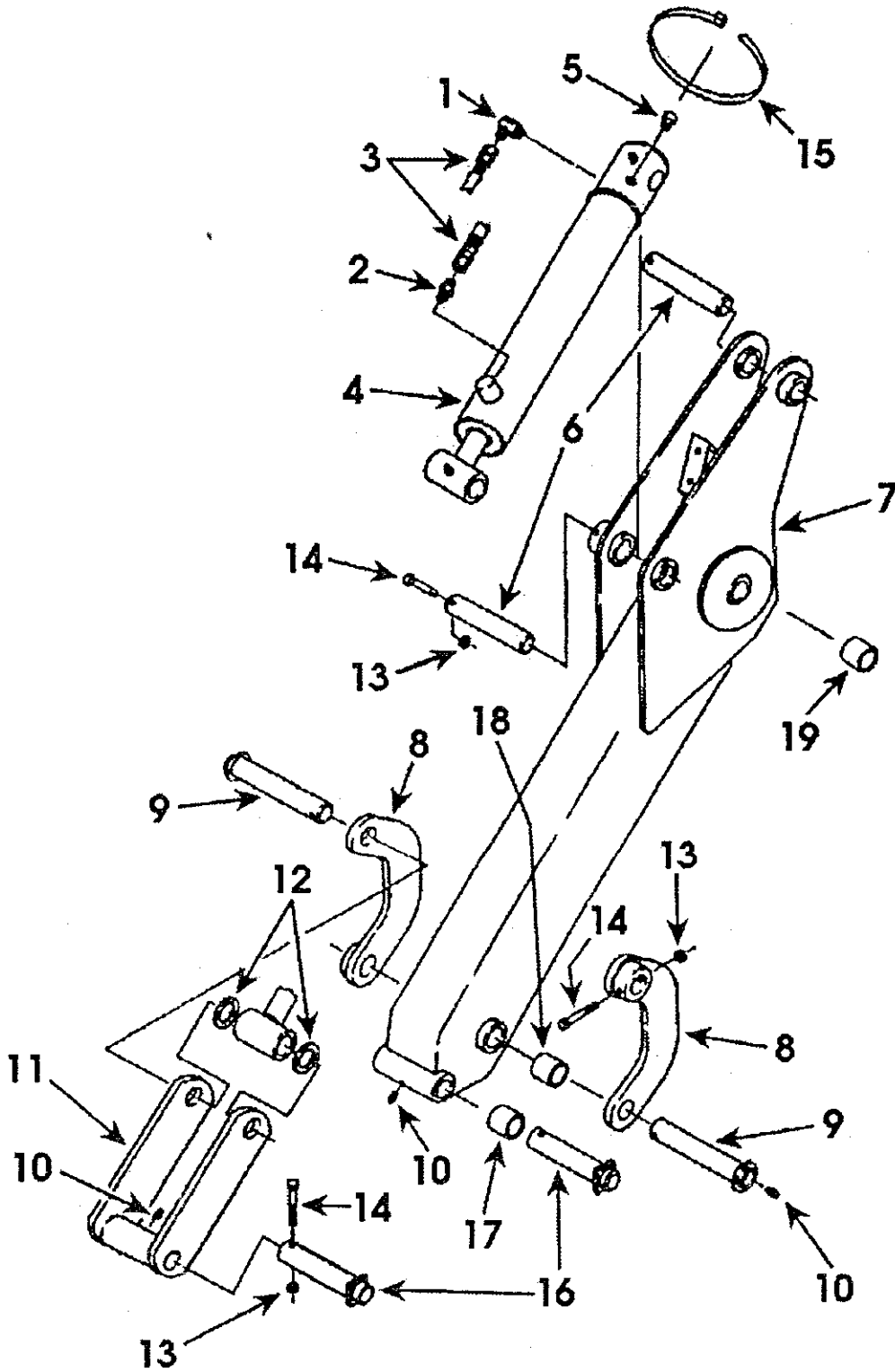
REF	PART NUMBER	DESCRIPTION	QTY
1	70050-01663	CABLE TIE, .31 x 14.6	2
2	70050-93727	PIN, 1 x 6-1/4, Drilled	1
3	70050-94369	BOOM ASSY, w/Signs & Bearings - B4672	1
	70050-94301	BOOM ASSY, w/Signs & Bearings - BL4690	1
4	70050-94382	Sign, MODEL, 4672	2
	70050-94383	Sign, MODEL, 4690	2
5	70050-01589	Sign, KUBOTA, Trademark	2
6	70050-93378	ADAPTER, 9/16 MOR x 9/16 JIC 90°	4
6	70050-93859	FITTING, 9/16 JIC Flare x 90° - B4690	2
	70050-93858	FITTING, 9/16 JIC Bulkhead x 90° - B4672	2
	70050-02592	FITTING, 9/16 JIC Bulkhead - B4690	2
7	78620-23150	PIN, Boom to Dipper, 30 mm OD x 7.95 inches long	1
8	70050-93779	HOSE, 9/16 FL 90° x 68" long	2
9	70050-93780	CYLINDER, Boom	1
10	70050-01554	FITTING, 9/16 MOR x 9/16 MJIC	2
11	70050-93781	HOSE, 1/4 NPTM x 9/16 FL 90° x 79" long - BL4690	2
	70050-93779	HOSE, 9/16 FL 90° x 68" long - B4672	2
12	70050-94381	PIN, 1 x 6-3/4 Drilled	1
13	75599-01345	BOLT, 3/8-16 x 2-1/4	2
14	75599-01350	BOLT, 3/8-16 x 2-1/2	1
15	75599-31933	LOCKNUT, 3/8-16	3
16	70050-93803	CYLINDER, Crowd - B4672	1
	70050-93783	CYLINDER, Crowd - BL4690	1
17	70050-93784	HOSE, 9/16 FL 90° x 75" long	2
18	70070-00181	LUBE FITTING, 1/4-28	2
19	65722-75121	BEARING, 1.0"	2

PARTS ILLUSTRATIONS - Boom Components



PARTS ILLUSTRATIONS - Dipper Components

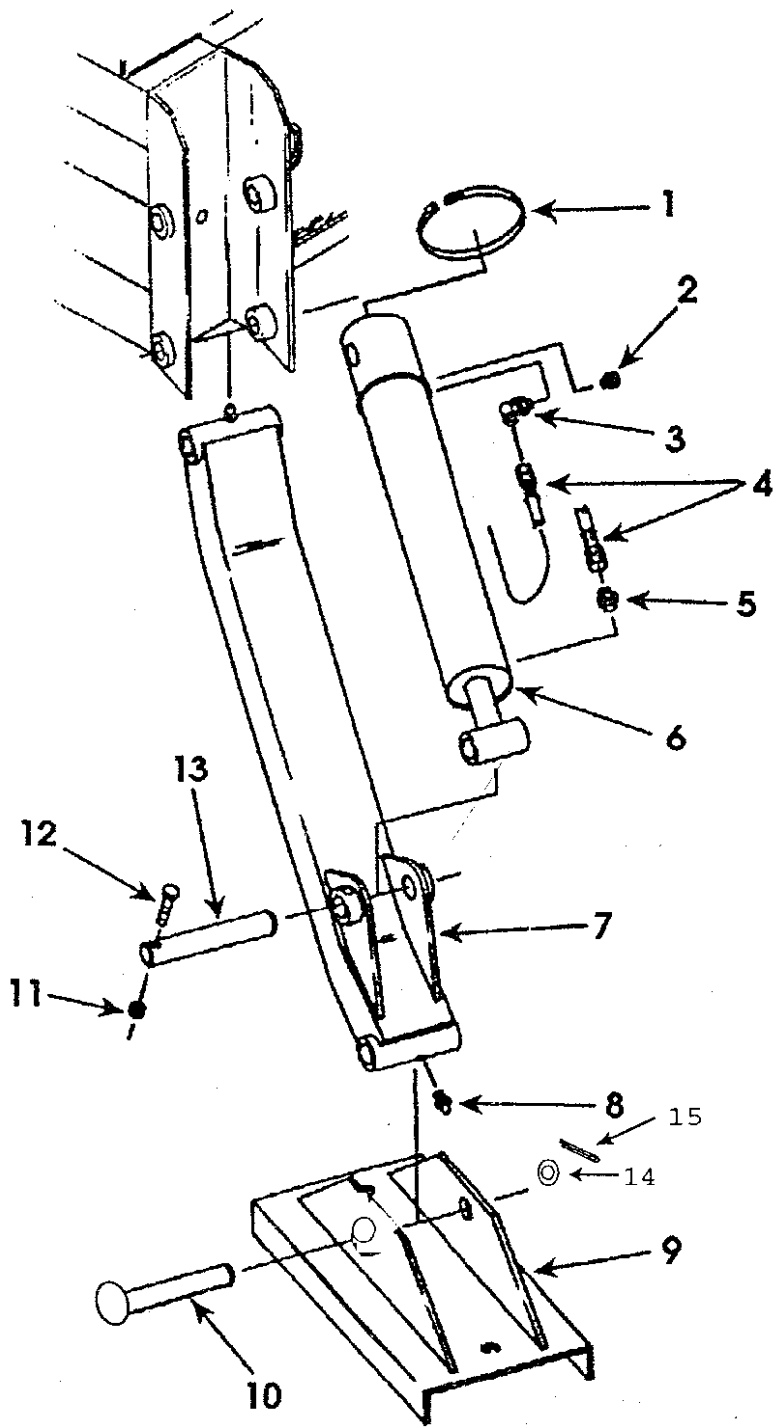
REF	PART NUMBER	DESCRIPTION	QTY
1	70050-93378	ADAPTER, 9/16 MOR x 9/16 JIC 90°	1
2	70050-01554	FITTING, 9/16 MOR x 9/16 MJIC	1
3	70050-93786	HOSE, 9/16 Flare Female x 35" long - B4672	2
	70050-93785	HOSE, 9/16 Flare Female x 46" long - BL4690	2
4	70050-93772	CYLINDER, Curl	2
5	70050-93589	PLUG, 9/16-18 MOR	1
6	70050-93775	PIN, 1 x 4-3/4 Drilled	2
7	70050-94370	DIPPER ASSEMBLY - B4672	1
	70050-94300	DIPPER ASSEMBLY - BL4690	1
8	70050-93789	LINK	2
9	70050-93790	PIN, 1 x 5-11/16	2
10	70070-00181	LUBE FITTING, 1/4-28 Straight	4
11	70050-93791	LINK	1
12	70050-93738	BUSHING, 1 ID x 1-1/2 OD	2
13	75599-31933	LOCKNUT, 3/8-16	6
14	75599-01345	BOLT, 3/8-16 x 2-1/4	6
15	70050-01663	CABLE TIE, .31 x 14.6	1
16	78620-42611	PIN, Bucket & Link, 25 mm OD x 6.46 inches long	2
17	70050-94734	BEARING, 25 mm	2
18	65722-75121	BEARING, 1.0"	2
19	78620-31510	BEARING, 30 mm	2



PARTS ILLUSTRATIONS - Stabilizer Components

REF	PARTS NUMBER	DESCRIPTION	QTY
1	70050-01663	CABLE TIE, .31 x 14.6	2
2	70050-93589	PLUG, 9/16-18 MOR	2
3	70050-93378	ADAPTER, 9/16 MOR x 9/16 JIC 90°	2
4	70050-93771	HOSE, 9/16 FL x 7/16 FL x 44" long	4
5	70050-01554	FITTING, 9/16 MOR x 9/16 MJIC	2
6	70050-93772	CYLINDER, Stabilizer	2
7	70050-93773	STABILIZER ARM ASSEMBLY	2
8	70070-00181	LUBE FITTING, 1/4-28 Straight	4
9	*70050-02081	PAD, Stabilizer	2
	70050-93774	PAD, Stabilizer	2
10	*70050-02080	PIN, Clevis 1 x 5 1/2	2
	70050-93727	Pin, 1 x 6 1/4 Drilled	2
11	75599-31933	LOCKNUT, 3/8-16	*2 or 4
12	75599-01345	BOLT, 3/8-16 x 2-1/4	*2 or 4
13	70050-93775	PIN, 1 x 4-3/4 Drilled	2
14	*70050-93738	BUSHING, 1 x 1 1/2	2
15	*75599-52430	PIN, Cotter 3/16 x 1 1/2	2

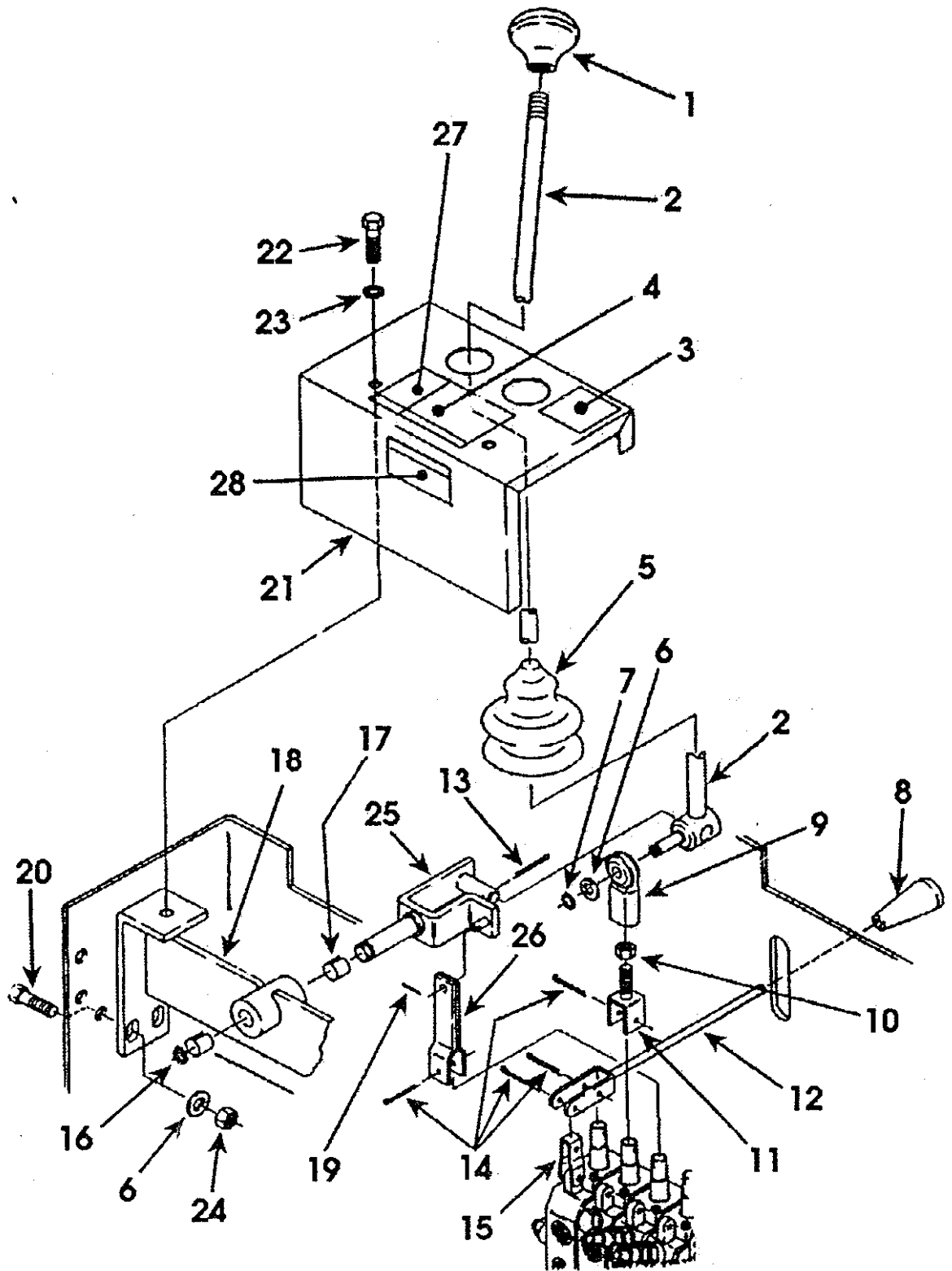
* Parts are used only for the following serial Numbers.
 B4672A Used with Serial Number 31750171 & Up
 BL4690A Used with Serial Number 31800201 & Up



PARTS ILLUSTRATIONS - Hydraulic Controls

REF	PART NUMBER	DESCRIPTION	QTY
1	70050-01605	KNOB, Ball	2
2	70050-93744	LEVER, RH	1
	70050-93745	LEVER, LH	1
3	70050-02373	Safety Sign, RPM, PTO	1
4	70050-94392	Safety Sign, CAUTION, Operation	1
5	70050-93439	BOOT	2
6	75599-32113	FLAT WASHER, 3/8	6
7	70050-02824	SNAP RING, External	2
8	inc. with Ref 12	KNOB	2
9	70050-02818	ROD END, Female	2
10	75599-31023	NUT, 3/8-24 UNF	2
11	70050-93747	BRACKET, "U" Joystick	2
12	70050-93748	ROD, Stabilizer Control	2
13	75599-52220	COTTER PIN, 1/8 x 1	2
14	75599-52330	COTTER PIN, 5/32 x 1-1/2	8
15	70050-93749	LINK, Stabilizer Control	2
16	70050-02823	SNAP RING, External	2
17	70050-93430	BUSHING	4
18	70050-93426	BRACKET, Valve Handle	1
19	75599-52115	COTTER PIN, 1/16 x 3/4	2
20	75599-01320	BOLT, 3/8-16 x 1	4
21	70050-93750	COVER, with Safety Signs	1
22	75599-01315	BOLT, 3/8-16 x 3/4	2
23	75599-33013	LOCKWASHER, 3/8	2
24	75599-31933	LOCKNUT, 3/8-16	4
25	70050-93819	LINK WELDMENT	1
26	70050-93839	LINK, Joystick	2
27	70050-94393	Safety Sign, DANGER, Seat/ROPS Clearance	1
28	70050-93958	Safety Sign, WARNING, Manual/Modification Inst.	1

PARTS ILLUSTRATIONS - Hydraulic Controls

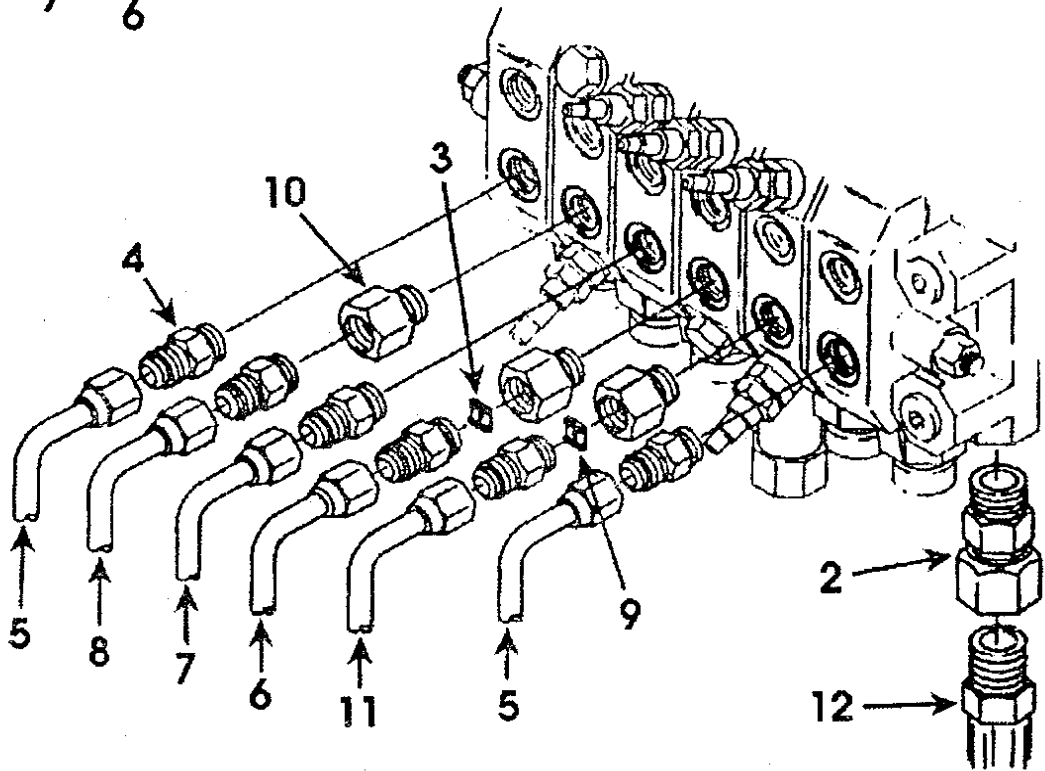
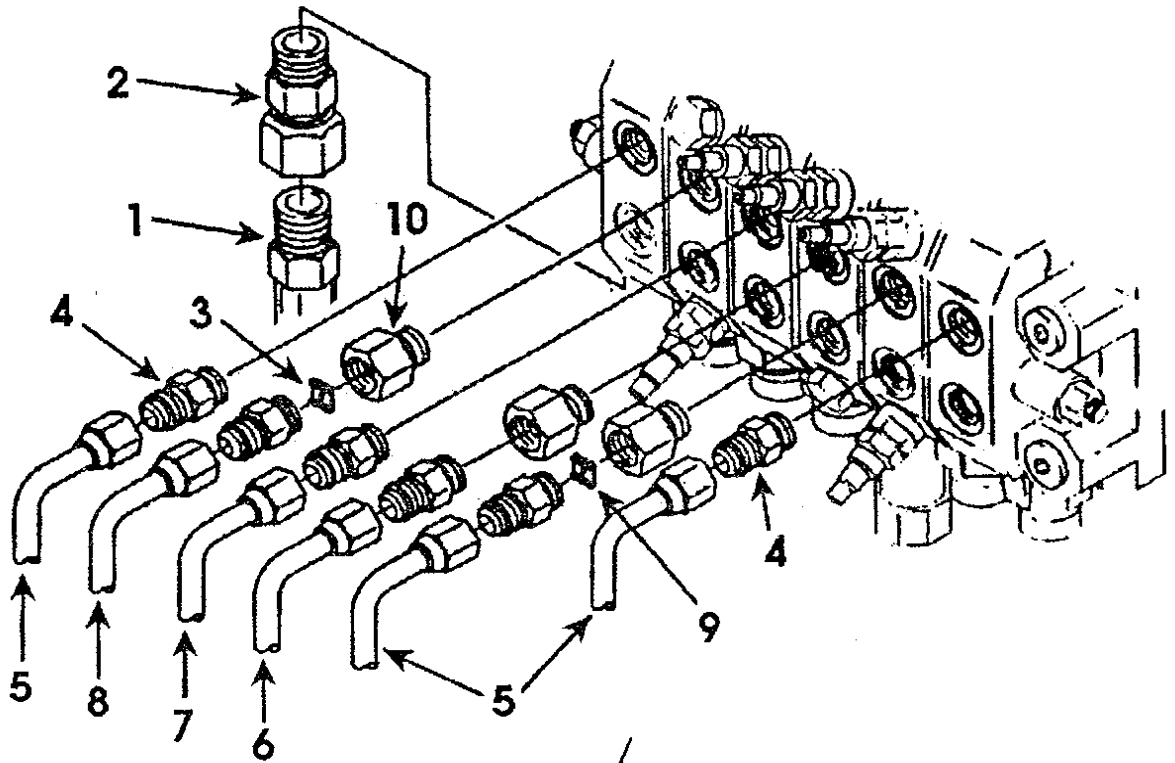


PARTS ILLUSTRATIONS - Control Valve Fittings & Hoses

REF	PART NUMBER	DESCRIPTION	QTY
1	70050-01641	HOSE, 3/8 100R7 x 24" long	1
2	70050-01618	FITTINGS, 3/4-16 MOR x 3/8 NPSM Swivel	2
3	70050-93792	RESTRICTOR PLATE, .094 (Lift & Dipper) **	2
4	70050-01554	FITTING, 9/16 MOR x 9/16 MJIC	12
5	70050-93771	HOSE, 9/16 FL x 7/16 FL x 44" long	5
6	70050-93779	HOSE, 9/16 FL 90° x 68" long	2
7	70050-93781	HOSE, 1/4 NPTM x 9/16 FL 90° x 79" long	2
8	70050-93784	HOSE, 9/16 FL 90° x 75" long	2
9	70050-93793	RESTRICTOR PLATE, .055 (Swing Circuit) **	2
10	70050-93794	ADAPTER, Restrictor Fitting	6
11	70050-93795	HOSE, 9/16FL x 9/16 90° x 31" long	1
12	70050-02320	HOSE, 3/8 MNPTF x 45" long	1

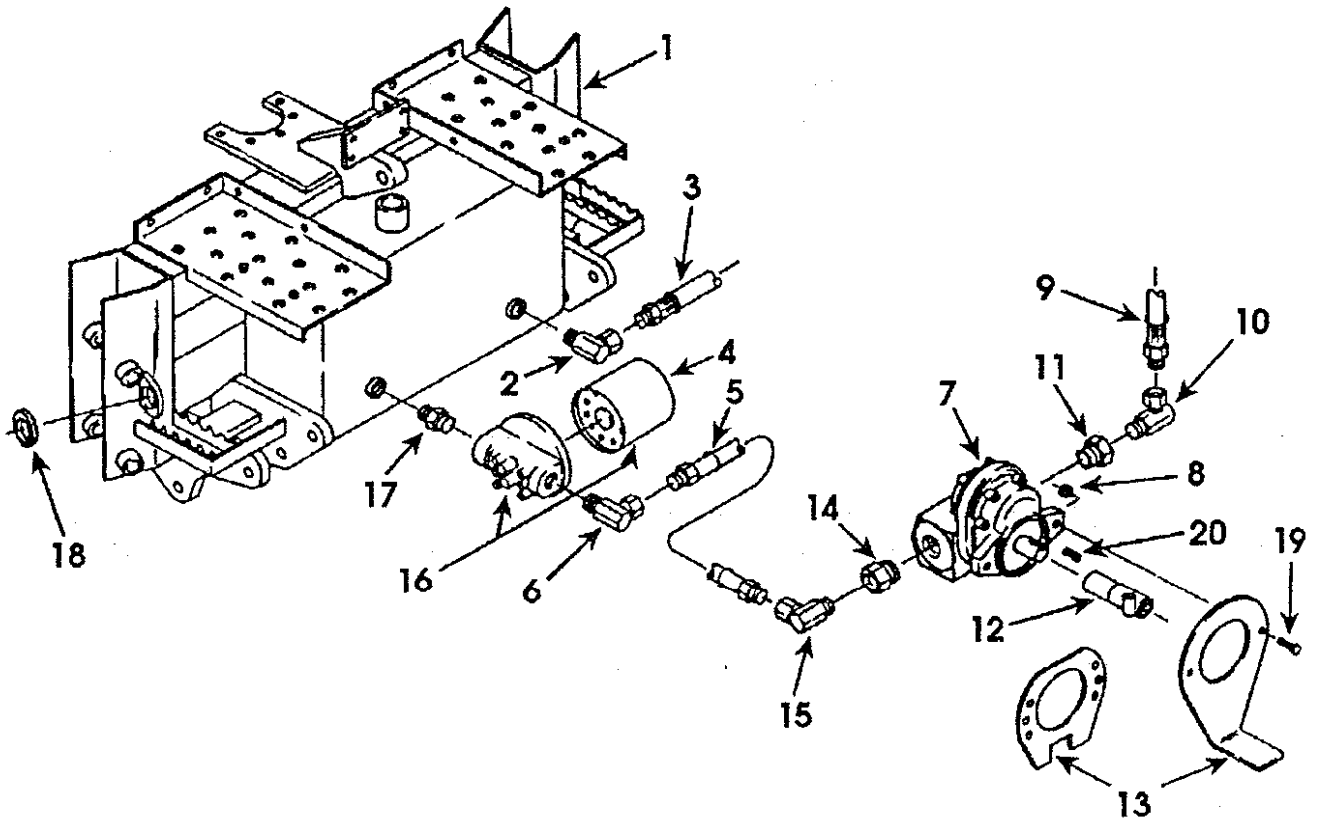
*** Restrictor plate size and location is critical to safe backhoe operation. If the valve is serviced and the restrictors are removed, refer to the drawing on page 61 for correct restrictor size and port location during reassembly.*

PARTS ILLUSTRATIONS - Control Valve Fittings & Hoses



PARTS ILLUSTRATIONS - Pump Hydraulics

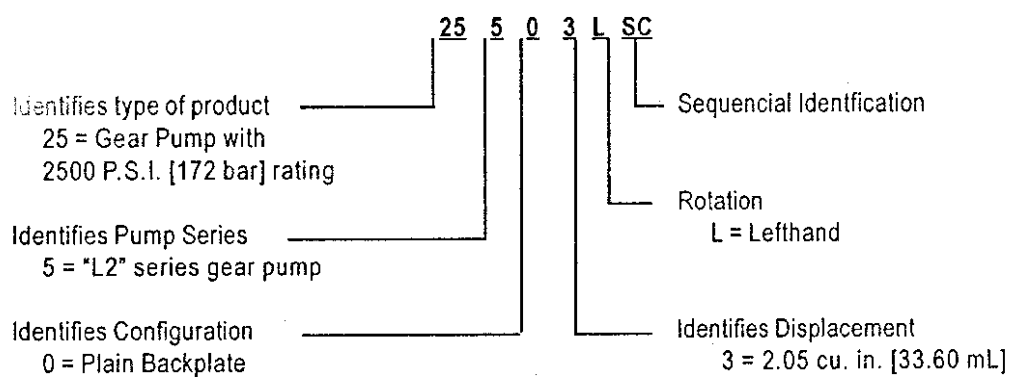
REF	PART NUMBER	DESCRIPTION	QTY
1	70050-93728	MAINFRAME ASSEMBLY	1
2	70050-93227	FITTING, 3/8 Pipe Swivel x 1 NPSM 90°	1
3	70050-01641	HOSE, Return - 3/8 100R7 x 24" long	1
4	70040-93751	ELEMENT, Oil Filter	1
5	70050-93967	HOSE, Suction - 3/4 x 30" long	1
6	70050-93994	FITTING, 3/4-14 NPTM 90°	1
7	70050-93753	HYDRAULIC PUMP	1
8	75599-31935	LOCKNUT, 1/2-13	2
9	70050-02320	HOSE, Pressure - 3/8 MNPTF x 45" long	1
10	70050-01620	FITTING, 3/4-16 MOR 90° x 3/8 NPSM Swivel	1
11	70050-93754	FITTING, 1-1/16 MOR x 3/4 FOR	1
12	70050-93755	COUPLER, Snap Connect - Pump Drive	1
13	70050-93852	"A" BKT, Pump Mount (L2050F, L2350F & L2500F ONLY)	1
13	70050-93756	"B" BKT, Pump Mount (all except L2050F, L2350F & L2500F)	1
14	70050-93757	FITTING, 1-5/8 MOR x 1-1/16 FOR	1
15	70050-02316	FITTING, 3/4-14 NPTM 90° Swivel	1
16	70050-93758	FILTER ASSY, Element & Manifold	1
17	70050-93759	NIPPLE, 3/4 NPT x 1/2 NPT	1
18	70050-93760	GROMMET	1
19	75599-01525	BOLT, 1/2-13 x 1-1/4	2
20	70080-00284	KEY, 1/4 x 1/4 x 1	1



REF	PART NUMBER	DESCRIPTION	QTY
1	70050-93753	HYDRAULIC PUMP ASSEMBLY	1
2	70050-93843	SEAL KIT, Shaft	1
N/I	70050-93842	SEAL KIT, Complete	1

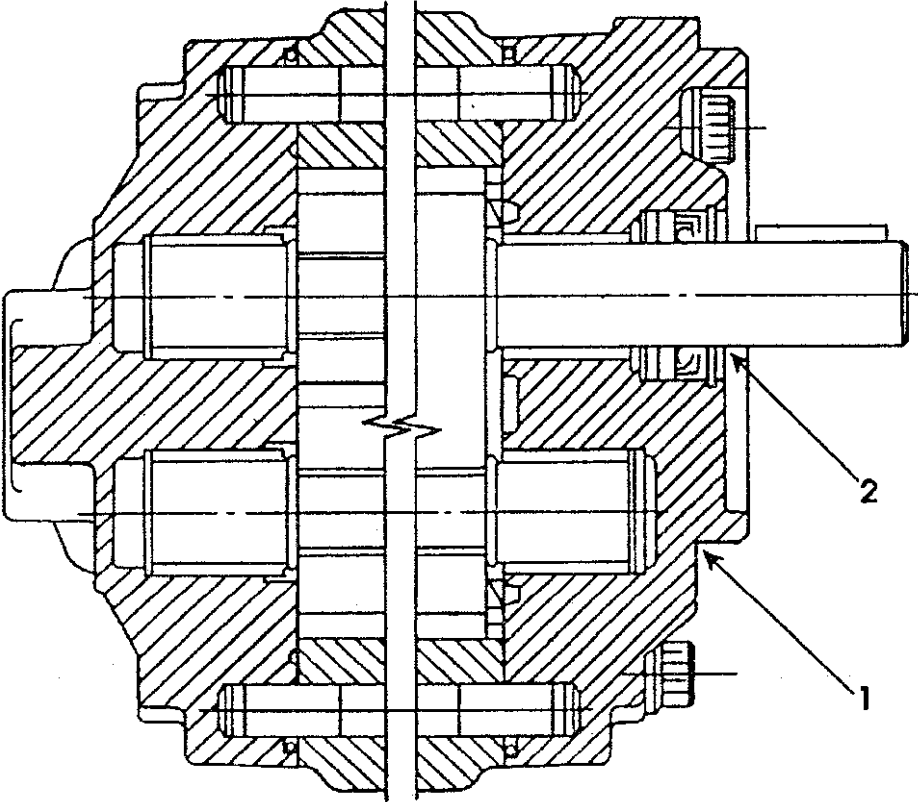
**PUMP IDENTIFICATION NUMBERS
(stamped in pump body)**

25503LSC



N/I = Not Illustrated.

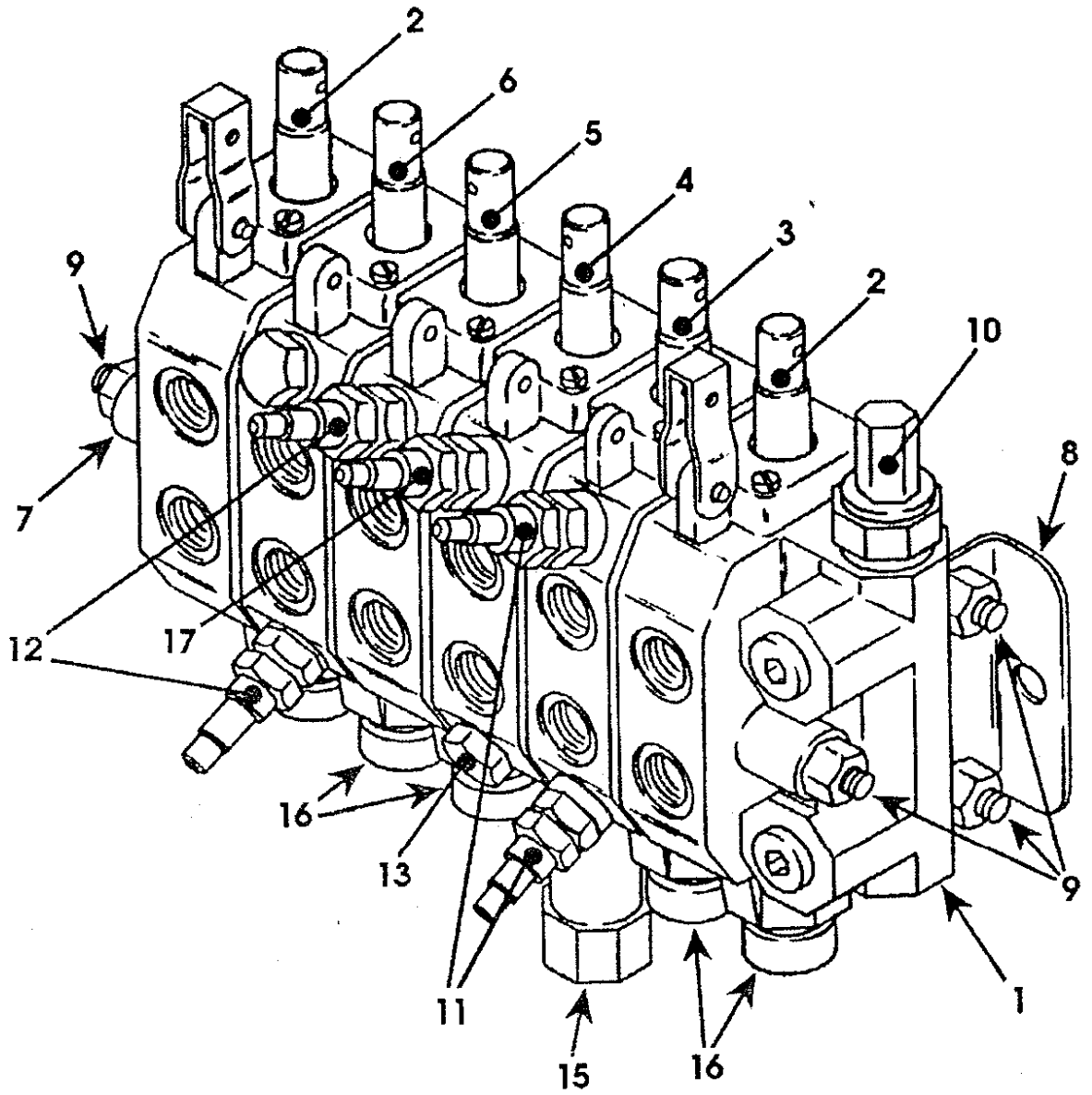
PARTS ILLUSTRATIONS - PTO Pump Service Parts



PARTS ILLUSTRATIONS - Control Valve Service Parts

REF	PART NUMBER	DESCRIPTION	QTY
+	70050-93743	CONTROL VALVE, Complete	1
1	70050-93821	INLET SECTION, with Relief	1
2	70050-93822	STABILIZER SECTION	2
3	70050-93823	SWING SECTION, with Relief	1
4	70050-93824	BOOM SECTION, with Relief	1
5	70050-93825	CURL (Bucket) SECTION, with Relief	1
6	70050-93826	CROWD (Dipper) SECTION, with Relief	1
7	70050-93827	OUTLET SECTION	1
8	70050-93828	BRACKET, Mounting Foot	2
9	70050-93829	TIE ROD KIT, 6 Section Valve	1
10	70050-93830	CARTRIDGE, Main Relief - 2300 psi	1
11	70050-93846	CARTRIDGE, Port Relief with Anti Cav - 2700 psi	2
12	70050-93845	CARTRIDGE, Port Relief - 2700 psi	2
13	70050-93831	PORT PLUG, with Seals	3
14	70050-93833	CAP, Spool/Linkage, with Seals	6
15	70050-93834	KIT, Spool Spring Centering with Float Detent	1
16	70050-93835	KIT, Spool Spring Centering	5
17	70050-93836	CARTRIDGE, Port Relief with Anti Cav - 2000 psi	1
N/I	70050-93832	KIT, Load Check Assembly (on back of valve)	6
N/I	70050-93820	SEAL KIT, Whole Valve	1
N/I	70050-93851	SEAL KIT, Between Section	7
N/I	70050-94666	SEAL KIT, Main Relief Cartridge (Ref 10)	1
N/I	70050-94667	SEAL KIT, Port Relief, Anti-Cav (Ref 11 & 17)	2
N/I	70050-94668	SEAL KIT, Port Relief (Ref 12)	2

N/I = Not Illustrated



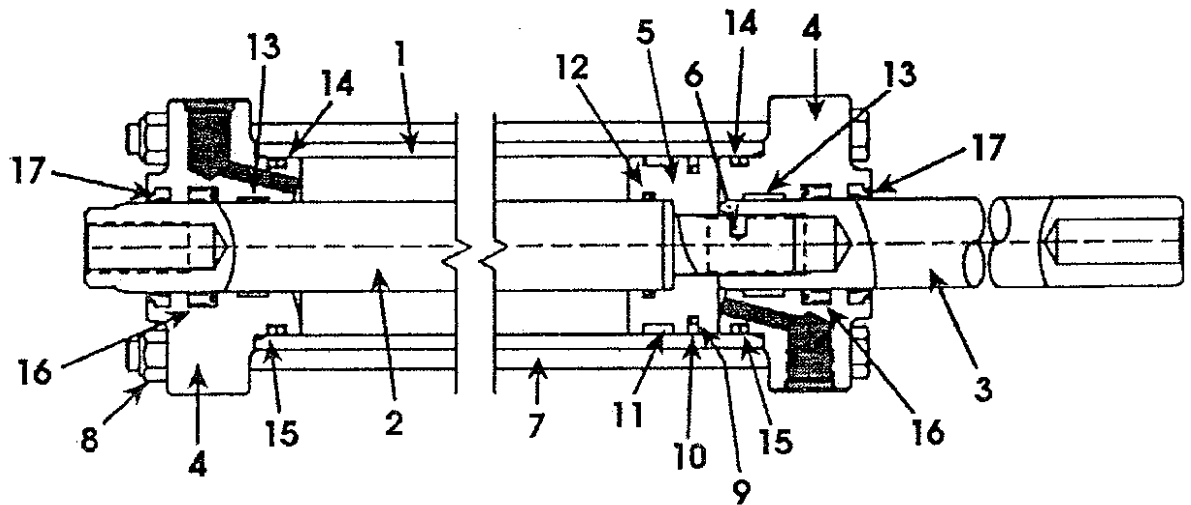
PARTS ILLUSTRATIONS - Swing Cylinder Service Parts ("A" List)

REF	PART NUMBER	DESCRIPTION	QTY
+	70050-93729	CYLINDER ASSEMBLY, Swing	1
1	70050-93813	BARREL	1
2	70050-93811	ROD, Primary	1
3	70050-93807	ROD, Secondary	1
4	70050-93808	HEAD GLAND	2
5	70050-93809	PISTON	1
6	70050-93810	LOCKING INSERT	1
7	70050-93814	BOLT, Special, 3/8-24 UNF x 15-1/2" long	4
8	70050-93812	LOCKNUT, 3/8-20 UNF	4
SK	70050-93815	SEAL KIT, Swing Cylinder	1
9	SK	Square Ring	1
10	SK	Teflon Seal	1
11	SK	Wearband 1	1
12	SK	O-ring	1
13	SK	Wearband 2	4
14	SK	O-ring 2	2
15	SK	Back-up Ring	2
16	SK	Double Lip "U" Cup	2
17	SK	Wiper	2

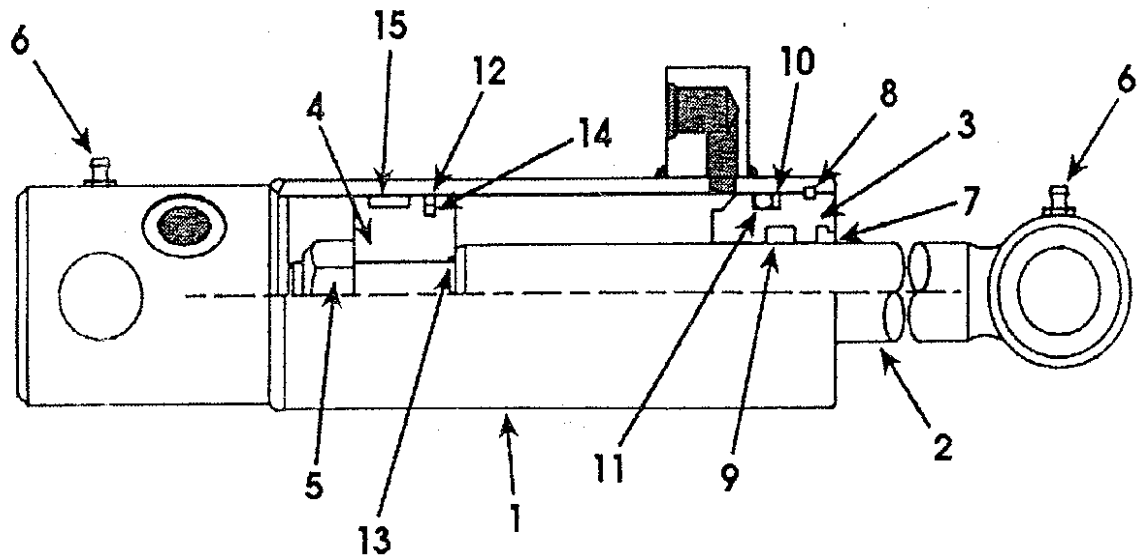
Cylinder Service Parts - Boom, Stabilizer/Crowd & Curl ("B" List)

REF	PART NUMBER	DESCRIPTION	QTY
+	70050-93780	CYLINDER, Boom	1
1	70050-93802	BARREL	1
2	70050-93801	ROD	1
+	70050-93772	CYLINDER, Stabilizer & Curl	3
1	70050-93798	BARREL	1
2	70050-93732	ROD	1
+	70050-93803	CYLINDER, Crowd - B4672	1
1	70050-93805	BARREL	1
2	70050-93804	ROD	1
+	70050-93783	CYLINDER, Crowd - BL4690	1
1	70050-93816	BARREL	1
2	70050-93801	ROD	1
3	70050-93740	HEAD GLAND, Common	1
4	70050-93796	PISTON, Common	1
5	75599-31948	LOCKNUT, 3/4-16 UNF	1
6	70070-00181	LUBE FITTING, 1/4-28	A/R
SK	70050-93800	SEAL KIT, Common	1
7	SK	Wiper	1
8	SK	Wrap-In Wire	1
9	SK	"U" Cup - Double Lip	1
10	SK	Back-up Ring	1
11	SK	O-ring	1
12	SK	Teflon Ring	1
13	SK	O-ring	1
14	SK	Square Ring	1
15	SK	Wearband	1

PARTS ILLUSTRATIONS - Swing Cylinder Service Parts ("A" List)



Cylinder Service Parts - Boom, Crowd, Curl & Stabilizer ("B" List)



NUMERICAL INDEX

PART NUMBER	PAGE	REF	CODE	PART NUMBER	PAGE	REF	CODE
01017-50835	50	10	961287	70050-93227	62	2	409627
01017-51255	50	17	961078	70050-93378	54	1	313270
01053-51035	50	22	961308	70050-93378	56	3	313270
01053-51040	50	11	961309	70050-93388	7	12	313601
01175-61035	50	16	961050	70050-93388	44	28	313601
04512-60080	50	12	961603	70050-93389	7	11	313602
04512-60100	50	13	961604	70050-93389	44	16	313602
04512-60120	50	15	961605	70050-93390	7	7	313603
60009-61075	50	14	961075	70050-93390	46	N/I	313603
65722-75121	52	19	105591	70050-93391	7	5	313604
65722-75121	54	18	105591	70050-93391	46	N/I	313604
70000-73822	Operator's	Manual	314548	70050-93426	58	18	313321
70050-00540	50	21	314549	70050-93430	58	17	313446
70050-01554	52	10	221285	70050-93436	7	6	313352
70050-01554	54	2	221285	70050-93436	46	N/I	313352
70050-01554	56	5	221285	70050-93439	58	5	313455
70050-01554	60	4	221285	70050-93589	54	5	452531
70050-01589	7	14	221290	70050-93589	56	2	452531
70050-01589	52	5	221290	70050-93682	50	2	409100
70050-01605	58	1	221269	70050-93720	44	1	314207
70050-01618	60	2	221279	70050-93721	7	3	314063
70050-01620	62	10	221281	70050-93721	44	2	314063
70050-01621	44	20	221300	70050-93722	44	3	314258
70050-01641	60	1	221272	70050-93723	7	2	314122
70050-01641	62	3	221272	70050-93723	44	4	314122
70050-01663	52	1	967001	70050-93724	44	6	314125
70050-01663	54	15	967001	70050-93725	44	7	314120
70050-01663	56	1	967001	70050-93726	44	8	314162
70050-02080	56	10	314569	70050-93727	44	9	314095
70050-02081	56	9	314558	70050-93727	52	2	314095
70050-02082	7	13	314556	70050-93727	56	10	314095
70050-02083	7	13	314561	70050-93728	44	12	314159
70050-02309	44	13	310118	70050-93728	62	1	314159
70050-02316	62	15	452840	70050-93729	44	18	314052
70050-02320	60	12	310144	70050-93729	68	A+	314052
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70050-02373	7	4	310519	70050-93732	68	B2	314275
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70050-02417	44	15	311172	70050-93734	44	25	314062
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70050-93758	62	16	314163	70050-93807	68	A3	314285
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