

**Operator's - Service
Manual**

OM 397

5707 10-25-91



800 Backhoe

**Box 266
DELHI, IOWA 52223**



800 BACKHOE

FOR JD170, JD24, 3-POINT HITCH & FRONT MOUNT


C O N T E N T S

WARRANTY	1
IDENTIFICATION VIEWS	3
SPECIFICATIONS	5
OPERATION	11
Function of a Control Valve	11
Engine Speed	11
Ballast	12
Controls	12
Attaching and Detaching Backhoe	16
Operating the Backhoe	24
Digging Techniques	27
Lifting with the Backhoe	29
Changing Buckets	31
Transporting	31
Storing	32
SAFETY SUGGESTIONS	34
Hand Signals	36
LUBRICATION	37
TROUBLE SHOOTING	39
SERVICE	42
ATTACHMENTS	47
ASSEMBLY	48

OWNER'S MANUAL

TO THE PURCHASER

This backhoe was carefully designed and manufactured to give years of dependable service. To keep it running efficiently, read the instructions in this operator's manual. Each section is clearly identified so you can easily find the information you need--whether it is operation, lubrication, or service. Read the table of contents to learn where each section is located.

 This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of bodily injury, and carefully read the message that follows.

In addition to the equipment furnished with your backhoe, attachments are available to help you do a better job in special conditions. These are described in the attachments section of this manual and can be purchased from your Bradco dealer.

Unless noted otherwise, "right-hand" and "left-hand" sides are determined by facing the direction in which the backhoe operates. Front is at the bucket and rear is at the backhoe control levers.

Record your backhoe serial number in the space below. Your dealer needs this information to give you prompt, efficient service when you order parts or attachments. If your backhoe requires replacement parts, go to your Bradco dealer.

EQUIPMENT TYPE _____ MODEL _____
SERIAL NO. _____
MOUNTED ON _____ TRACTOR
DATE PURCHASED _____
DEALER NAME _____

The serial number plate is located on the right-front side of the main frame.



LIMITED WARRANTY

All new unused Bradco products are warranted to be free from defects in material or workmanship which may cause failure under normal usage and service when used for the purpose intended.

In the event of failure within six months of delivery (excluding ground engaging parts such as sprockets, digging chain, bearings, teeth, tamping and demolition heads, and blade cutting edges), if after examination, Bradco determines failure was due to defective material and/or workmanship, parts will be repaired or replaced by Bradco. Bradco may request defective part or parts be returned prepaid to them for inspection at their place of business at Delhi, Iowa, or to a location specified by Bradco.

Any claims under this Warranty must be made within fifteen (15) days after the Buyer learns of the facts upon which such claim is based. All claims not made in writing and received by Bradco within the time period specified above shall be deemed waived.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL BRADCO BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES.

BRADCO'S LIABILITY FOR ANY AND ALL LOSSES AND DAMAGES TO BUYER, RESULTING FROM ANY CAUSE WHATSOEVER, INCLUDING BRADCO'S NEGLIGENCE, IRRESPECTIVE OF WHETHER SUCH DEFECTS ARE DISCOVERABLE OR LATENT, SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PARTICULAR PRODUCTS WITH RESPECT TO WHICH LOSSES OR DAMAGES ARE CLAIMED, OR, AT THE ELECTION OF BRADCO, THE REPAIR OR REPLACEMENT OF DEFECTIVE OR DAMAGED PRODUCTS.

SAFETY PRECAUTIONS

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



THIS SYMBOL MEANS:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

SIGNAL WORDS: Note the use of signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

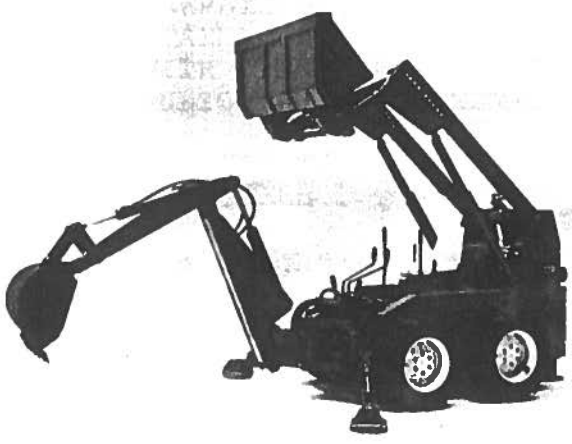
DANGER: Indicates an imminently hazardous situation which, if not avoided, will result death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

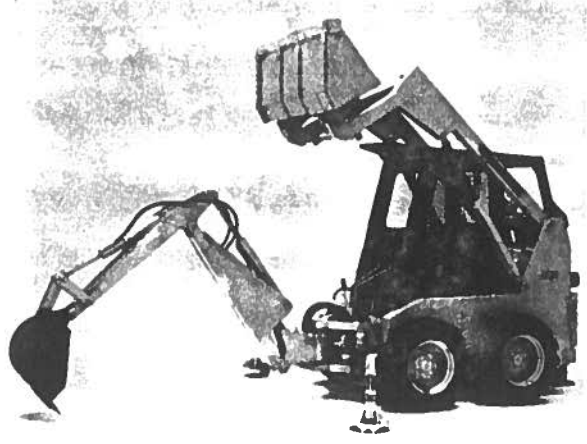
CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

bradco OWNER'S MANUAL

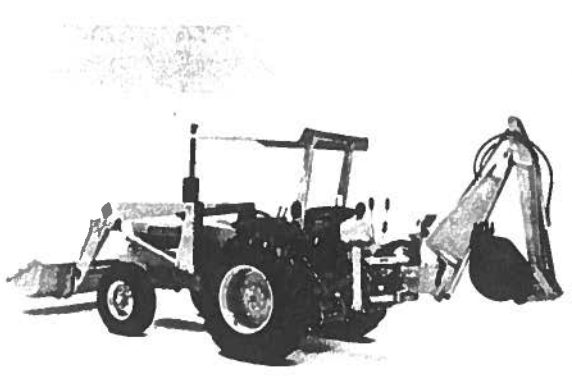
IDENTIFICATION VIEWS



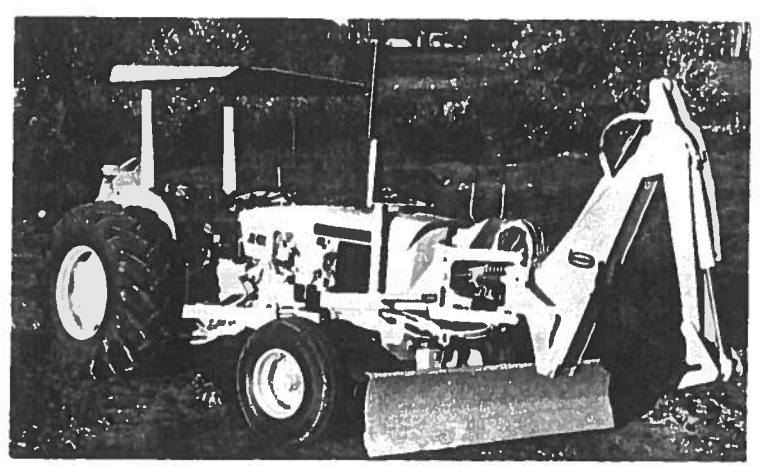
JD170 Skid Steer



JD24 Skid Steer



3-Point Hitch



Front Mount

bradco OWNER'S MANUAL

SPECIFICATIONS

JD170, JD24 & 3-POINT HITCH

SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE. WHEREVER APPLICABLE, SPECIFICATIONS ARE IN ACCORDANCE WITH IEMC AND SAE STANDARDS. SPECIFICATIONS ARE BASED ON A JOB-READY MACHINE WITH STANDARD EQUIPMENT, AN 18-INCH BUCKET, AND 2000 PSI HYDRAULIC FLUID PRESSURE.

A.	Digging Depth	106½ in. (2.70m)
B.	Loading Height	68 in. (1.72m)
C.	Reach from Center Swing Pivot	141 in. (3.58m)
D.	Transport Height	JD170 & JD24 78in. (1.98m) 3-Point Hitch 86 in. (2.18m)
E.	Bucket Rotation	180°
F.	Digging Force	
	Bucket Cylinder	4560 lbs. (2068.4kg)
	Dipperstick Cylinder	2860 lbs. (1287.2kg)
G.	Transport Overhand to Rear	
	From Center Swing	57 in. (1.44m)
H.	Swing Arc	180°
I.	Stabilizer-Operating Position	97½ in. (2.47m)
J.	Stabilizer Spread -	
	Transport Position	70½ in. (1.79m)

bradco OWNER'S MANUAL

SPECIFICATIONS

JD170, JD24, & 3-POINT HITCH

FOLLOWING SPECIFICATIONS CALCULATED AT 2000 PSI (140kg/c²)

Boom Lift Capacity (Less Bucket)

(2 Feet Off Ground). 1611 lbs. (729.8 kg)

Dipperstick Lift Capacity (Less Bucket)

(5 Feet Off Ground). 3661 lbs. (1658.4kg)

CYLINDERS

Bucket	3 in x 17½ in (76.2mm x 444.5mm)
Boom	3 in x 21 in (76.2mm x 533.4mm)
Dipper	3 in x 21 in (76.2mm x 533.4mm)
Swing	3 in x 14 in (76.2mm x 355.6mm)
Front Stabilizers	3 in x 12 in (76.2mm x 304.8mm)
Rear Stabilizers (JD170 & JD24)	2 in x 18 in (50.8mm x 457.2mm)

VALVE

6 Spool Open Center (JD170 & JD24)

6 Spool Open or Closed Center (3-Point Hitch)

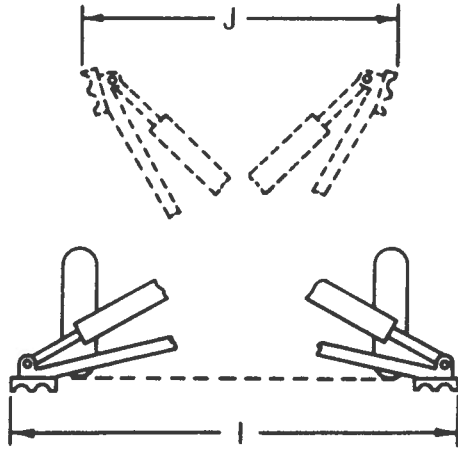
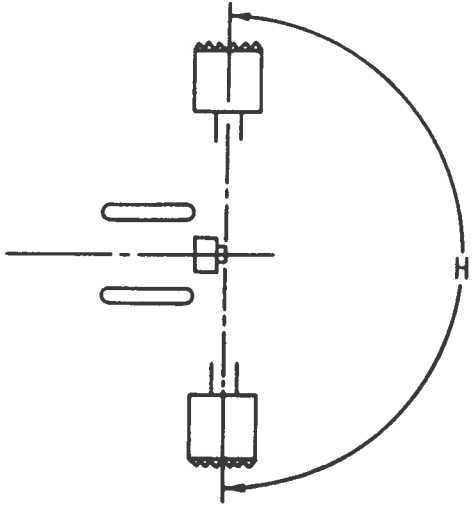
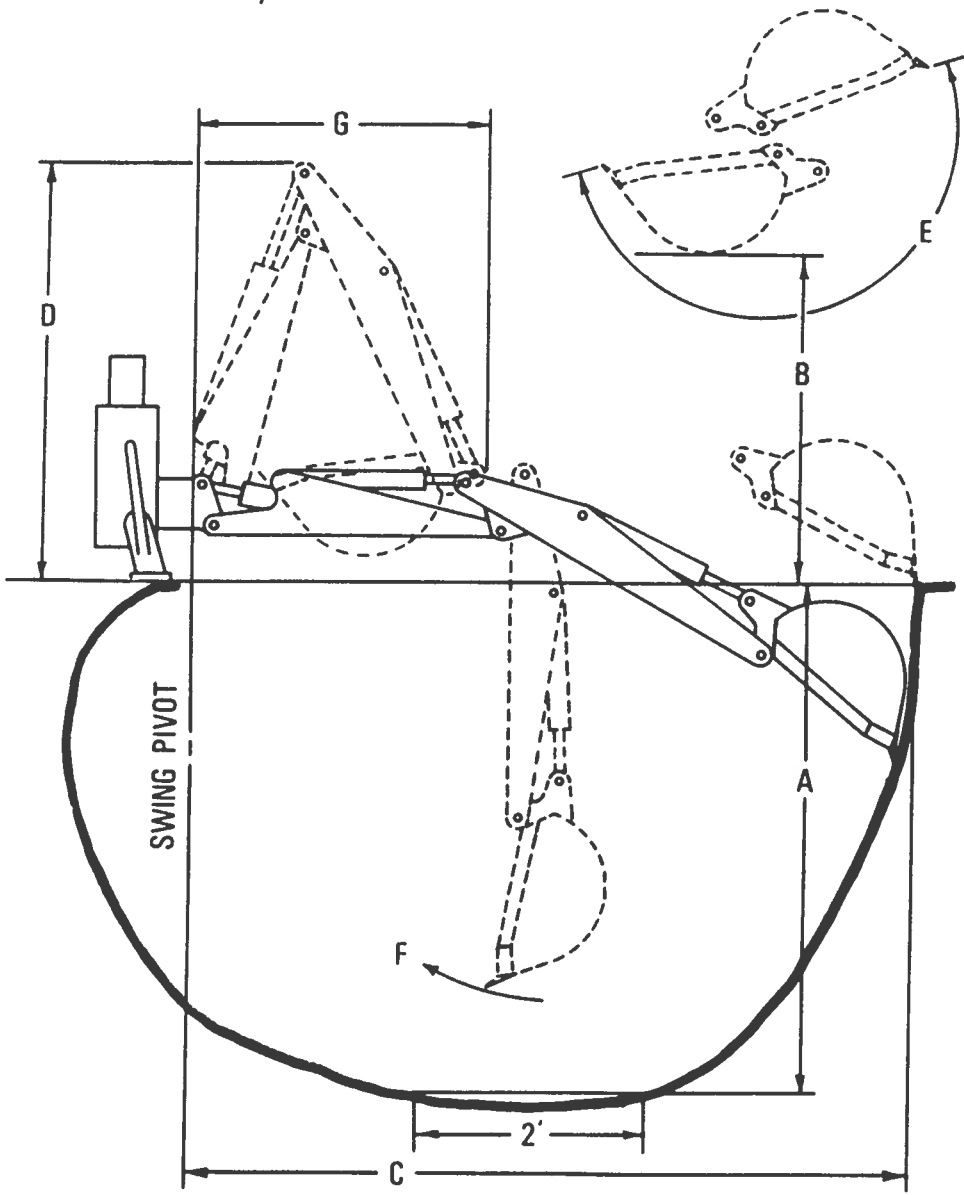
BUCKETS

<u>Width</u>	<u>SAE Struck Capacity (Cubic Ft.)</u>	<u>Weight</u>
12 in. (304.8mm)	1.8 (.0509 cu.m)	110 lbs. (49.8kg)
18 in. (457.2mm)	2.7 (.0764 cu.m)	135 lbs. (61.2kg)
24 in. (609.6mm)	3.6 (.1018 cu.m)	158 lbs. (71.6kg)
36 in. (914.4mm)	3.7 (.1047 cu.m)	193 lbs. (87.5kg)

bradco OWNER'S MANUAL

SPECIFICATIONS

JD170, JD24 & 3-POINT HITCH



bradco OWNER'S MANUAL

SPECIFICATIONS

FRONT MOUNT BACKHOE

SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE. WHEREVER APPLICABLE, SPECIFICATIONS ARE IN ACCORDANCE WITH IEMC AND SAE STANDARDS. SPECIFICATIONS ARE BASED ON A JOB-READY MACHINE WITH STANDARD EQUIPMENT, AN 18-INCH BUCKET, AND 2105 PSI HYDRAULIC FLUID PRESSURE.

- A. Digging Depth 90 in. (2.28m)
- B. Loading Height 82 in. (2.08m)
- C. Reach from Center Swing Pivot 141 in. (3.58m)
- D. Transport Height 92 in. (2.33m)
- E. Bucket Rotation 180°
- F. Digging Force
 - Bucket Cylinder 4799 lbs. (2173.9kg)
 - Dipperstick Cylinder 3010 lbs. (1363.5kg)
- G. Transport Overhang to Rear
 - From Center Swing 57 in. (1.44m)
- H. Swing Arc 180°

FOLLOWING SPECIFICATIONS CALCULATED AT 2105 PSI (147.3kg/c²)

Boom Lift Capacity (Less Bucket)

(2 Feet Off Ground) 1696 lbs. (768.3kg)

Dipperstick Lift Capacity (Less Bucket)

(5 Feet Off Ground) 3853 lbs. (1745.4kg)

bradco OWNER'S MANUAL

SPECIFICATIONS

FRONT MOUNT BACKHOE

HYDRAULICS

Pump Capacity Required 13gpm (49.2 Liters/min)

CYLINDERS

Bucket 3 in. x 17½ in (76.2mm x 444.5mm)

Boom 3 in. x 21 in (76.2mm x 533.4mm)

Dipper 3 in. x 21 in (76.2mm x 533.4mm)

Swing 3 in. x 14 in (76.2mm x 355.6mm)

VALVE

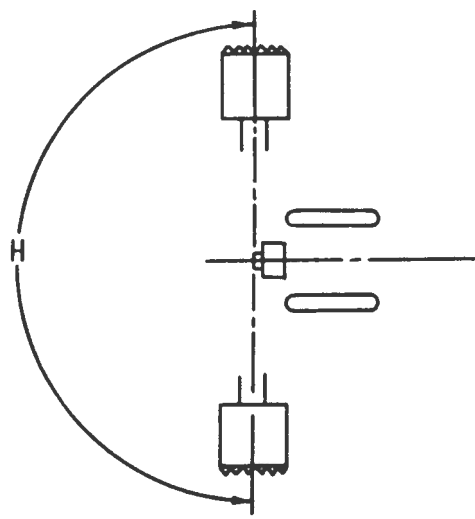
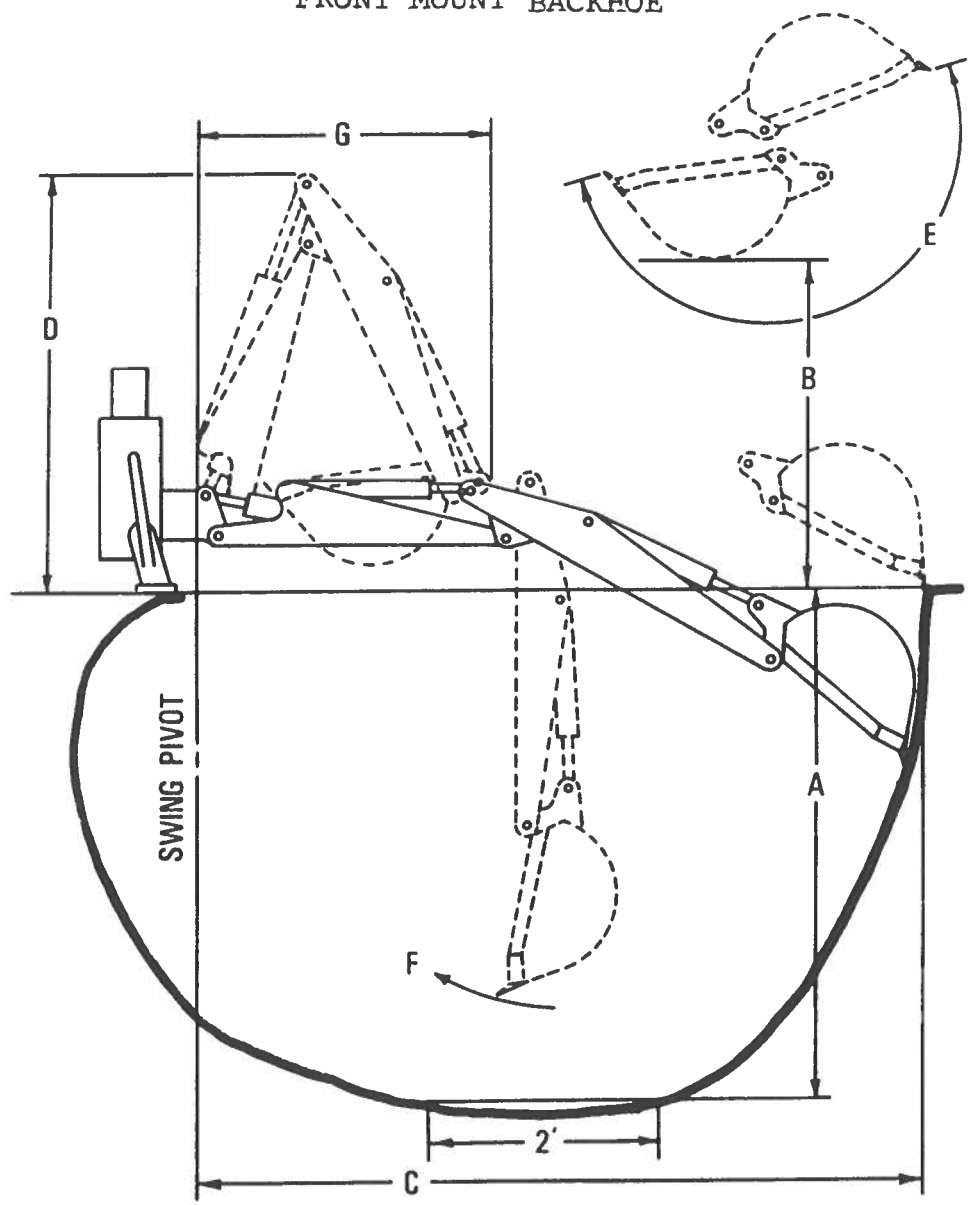
4 Spool Closed Center

BUCKETS

<u>Width</u>	<u>SAE Struck Capacity (Cubic Ft.)</u>	<u>Weight</u>
12 in. (304.8mm)	1.8 (.0509cu.m)	110 lbs. (49.8kg)
18 in. (457.2mm)	2.7 (.0764cu.m)	135 lbs. (61.2kg)
24 in. (609.6mm)	3.6 (.1018cu.m)	158 lbs. (71.6kg)
36 in. (914.4mm)	3.7 (.1047cu.m)	193 lbs. (87.5kg)

bradco OWNER'S MANUAL


SPECIFICATIONS FRONT MOUNT BACKHOE



OWNER'S MANUAL

OPERATION

FUNCTION OF A CONTROL VALVE


 **CAUTION:** To avoid possible bodily injury all tractors should have adequate rollover protection.

The Bradco 800 Backhoe can be mounted on a JD170 - JD24 Skid Steer Loader, a 3-point hitch on the JD820, 1020 Series, 1520 Series, 2020 Series, and 2030 Series, or it can be mounted on the front of a JD300, JD301, JD400, JD401, or JD401A tractor.

When mounted on a JD170 - JD24 Skid-Steer Loader, the backhoe's 6-spool control valve hooks into the loader's open-center hydraulic system. When mounted on a 3-point hitch, the backhoe's 6-spool control valve will function with an open-center hydraulic system or it can be easily adapted to function with a closed-center hydraulic system. The Bradco 800 front-mounted backhoe utilizes a 4-spool valve and a closed-center hydraulic system. In all cases, the control valve actuates the "crowd", "lift", "bucket", and "swing" functions of the backhoe. In a 6-spool application, right-hand and left-hand stabilizer functions are added.

ENGINE SPEED

For maximum efficiency of Backhoe operation, Bradco recommends 10 to 12 gpm of hydraulic oil be supplied to the Backhoe. Depending on the tractor's hydraulic system, engine speed should be balanced to supply approximately this amount of oil. Should your tractor be equipped with a small-size hydraulic pump, you will be able to get full power but rather slow operation out of your backhoe at full engine rpm. Should your tractor be equipped with a large hydraulic pump, you may want to idle your engine back somewhat to give an amount of oil to the backhoe which gives the operator good control over his machine. An inexperienced operator should familiarize himself with all the controls and practice all the functions at a slow operating speed. As he becomes more efficient, he may increase his speed of operation.

 **CAUTION:** The backhoe swing function moves rather rapidly when operated at high speed. Be sure that the area is clear of all spectators before operating the machine.

bradco OWNER'S MANUAL

BALLAST

Tractor front end stability is necessary for efficient operation and safety. Add weight to your tractor as follows:

<u>Tractor</u>	<u>Weight (Pounds)</u>
820	730
1020	685
1520	620
2020	600
2030	600

Counter weight can be in form of Bradco blade or JD loader.

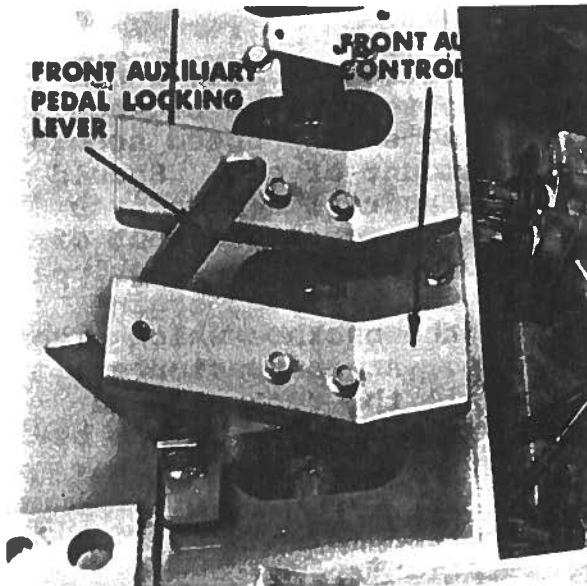
For Skid Steer Loaders two additional rear weights are recommended.

For front mounted backhoe, no additional weight is required.

CONTROLS

A) JD170 - JD24 SKID STEER

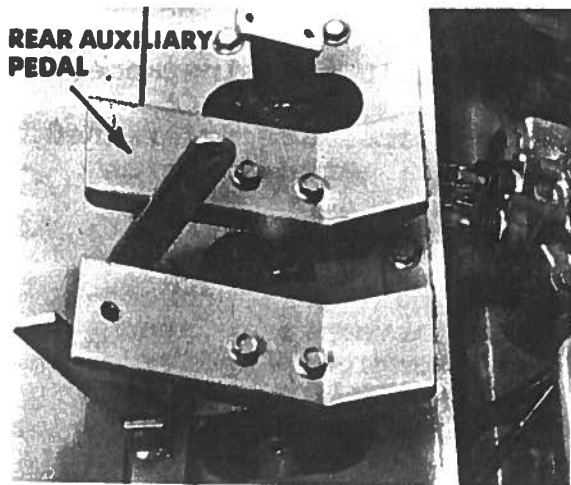
Front Auxiliary Control Pedal



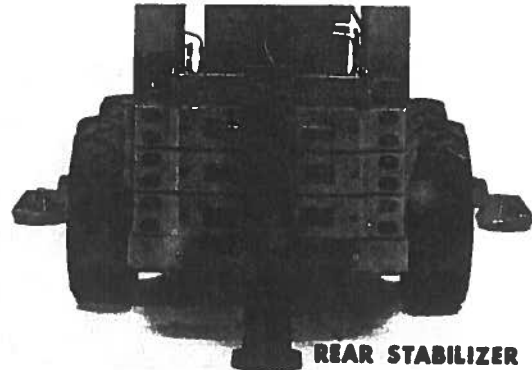
To direct hydraulic fluid to the backhoe control valve, pull the loader's front auxiliary pedal locking lever rearward.

bradco OWNER'S MANUAL

Rear Auxiliary Control Pedal - Rear Stabilizer



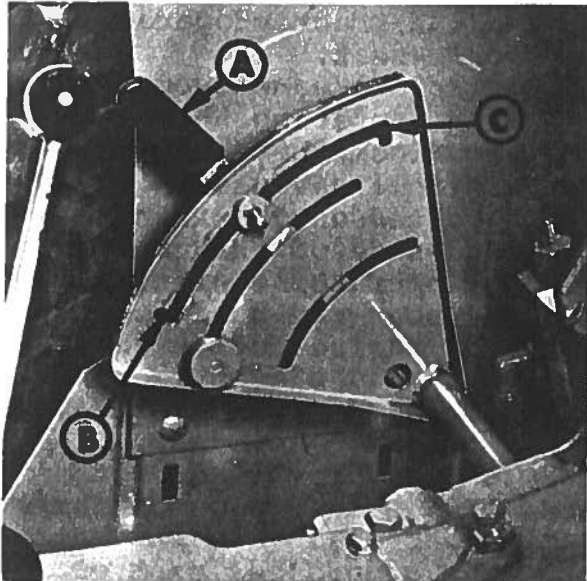
The rear auxiliary pedal controls the operation of the rear stabilizer.



To lower the rear stabilizer, press the rear auxiliary pedal forward; to raise, press the pedal rearward.

B) 3-POINT HITCH TRACTORS

Rockshaft Control Lever



NOTE: In this instance, right-hand and left-hand sides are determined from a seated position on the tractor operator's seat.

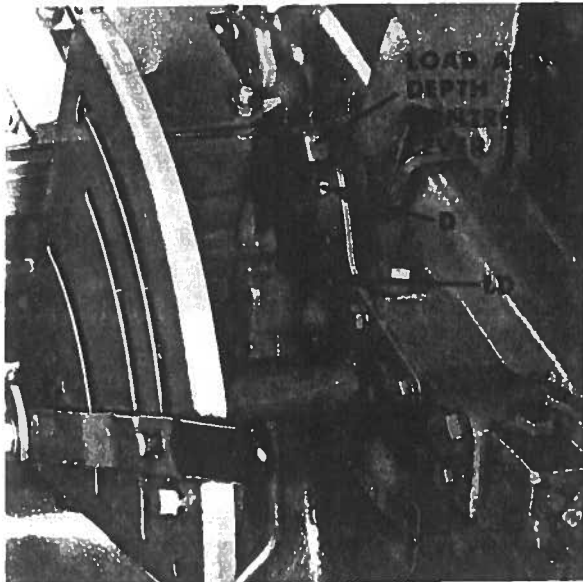
To raise or lower the backhoe main frame, use the rockshaft control lever "A", located on the right-hand side of the tractor operator's seat.

When operating the backhoe, place the rockshaft control lever all the way forward in the locking notch "B".

When transporting the backhoe, place the rockshaft control lever all the way rearward in the locking notch "C".

bradco OWNER'S MANUAL

Load and Depth Control Lever

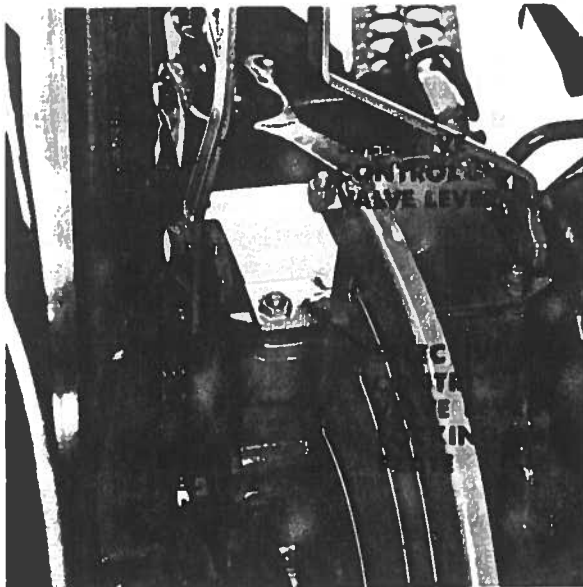


NOTE: In this instance, right-hand and left-hand sides are determined from a seated position on the tractor operator's seat.

The load and depth control lever is located on the right-hand side of the tractor operator's seat.

When operating the backhoe, place the load and depth control lever in the "D" or "Depth" position.

Selective Control Valve Lever (If Equipped)

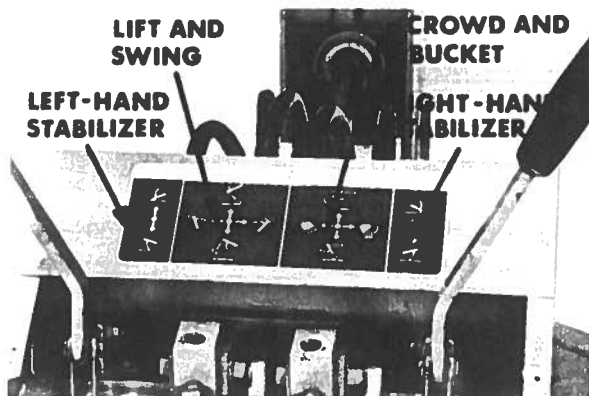


NOTE: In this instance, right-hand and left-hand sides are determined from a seated position on the tractor operator's seat.

When operating the backhoe, lock the selective control valve lever (located on the right-hand side of the tractor operator's seat) in the rearward position with the selective control valve lever locking plate.

bradco OWNER'S MANUAL

C) BACKHOE CONTROLS



Before operating, refer to the control valve pattern for the "stabilizer", "lift", "swing", "crowd", and "bucket" functions of the backhoe.

D) FRONT STABILIZER CONTROL LEVERS

The right-hand and left-hand front stabilizers on each side of the backhoe main frame are individually controlled by two levers. The stabilizers can be raised or lowered individually or simultaneously.

To lower the stabilizers for backhoe operation, move the control levers forward; to raise stabilizers, pull the levers rearward.

E) LIFT AND SWING CONTROL LEVERS

The movements of the "boom" and the "swing" are controlled by the left-hand offset lever. Pull the lever back to make the lift move up and towards the operator. Push the lever forward to make the lift move down and away from the operator. Move the lever to the left to make the swing move to the left. Move the lever to the right to make the swing move to the right.

F) CROWD AND BUCKET CONTROL LEVERS

The movements of the crowd (dipperstick) and the bucket are controlled by the right-hand offset lever.

Pull the lever back to make the crowd move down and towards the operator. Push the lever forward to make the crowd move up and away from the operator. Move the lever to the left to make the bucket curl. Move the lever to the right to make the bucket extend.

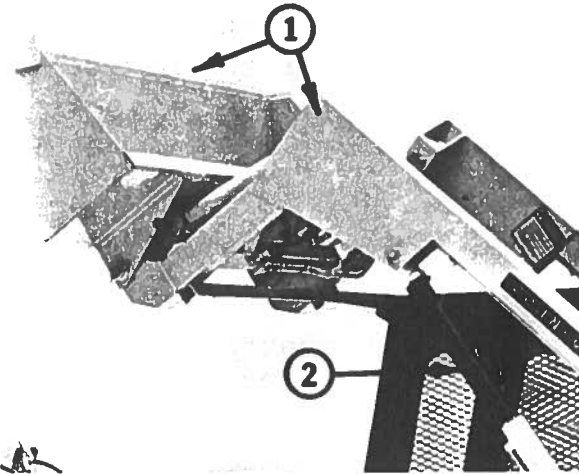
bradco OWNER'S MANUAL

ATTACHING AND DETACHING THE BACKHOE

A) FROM A JD170 - JD24 SKID STEER LOADER

Attaching Backhoe to Loader

IMPORTANT: The loader hydraulic system must be modified before attaching the backhoe. (See assembly)



1. Raise the loader's boom; then retract the bucket.
2. Install boom locks.
3. (Not illustrated) Drive the loader into position directly in front of the backhoe main frame.
4. Remove dust caps from female ends of Quik-couplers on backhoe hoses and dust caps from male ends of Quik-couplers on loader. Hook-up Quik-couplers.
5. Engage front auxiliary control pedal by pulling the front auxiliary pedal locking lever rearward.
6. (Not illustrated) Carefully raise the backhoe main frame with the hydraulic system by extending the boom and both stabilizer cylinders until the backhoe main frame is in a vertical position.

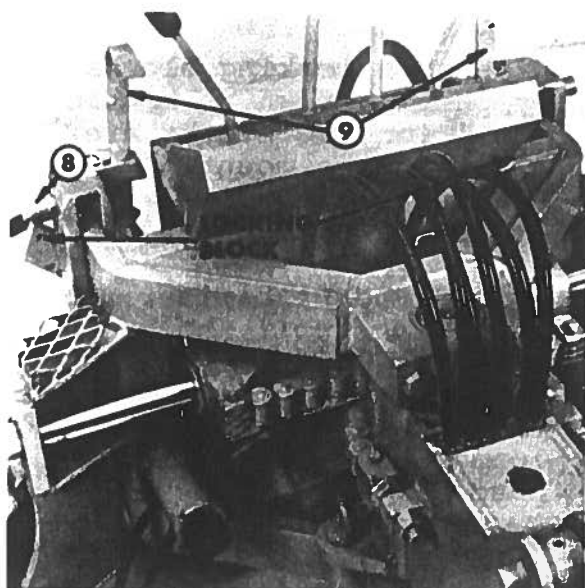
NOTE: Shut off engine to remove pressure from hydraulic system before hooking up hydraulic Quik-couplers.

bradco OWNER'S MANUAL

Attaching Backhoe to Loader - Continued

⚠ CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes, and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

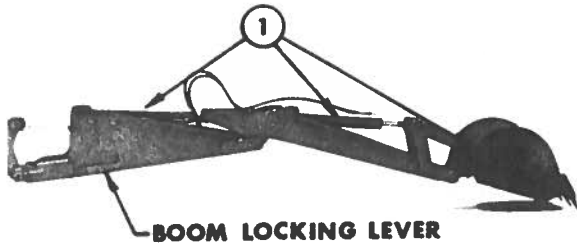


7. (Not illustrated) Carefully drive the loader into position and align the loader mounting brackets with the backhoe mounting pins.
8. Carefully raise and lower boom and stabilizer cylinders until the four mounting pins are resting in mounting brackets and weight is off the stabilizers.
9. Position locking blocks by moving handles up.
10. (Not illustrated) Raise stabilizers until they are fully retracted. Raise the boom and retract the dipperstick. Curl the bucket until the backhoe is in the transport position. (See Transporting the Backhoe)

bradco OWNER'S MANUAL

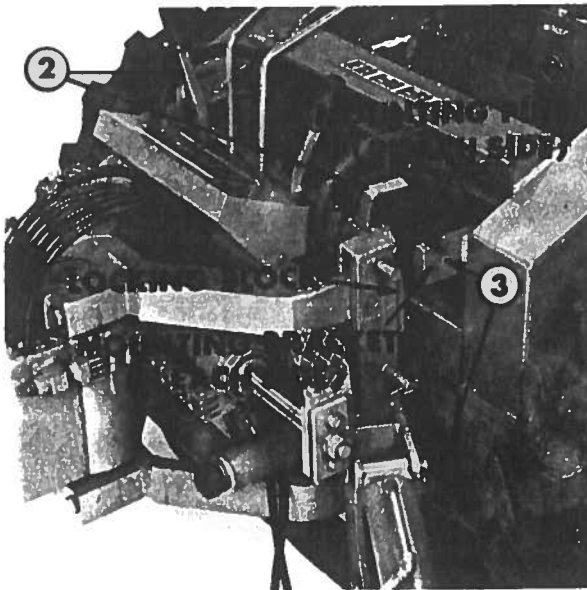
Detaching Backhoe from Loader

By using the backhoe hydraulic system, the backhoe can be easily detached to free the loader for other jobs.



1. Position the loader and backhoe on level ground. Retract the bucket and crowd cylinders and extend lift cylinder until backhoe is fully extended and the bucket is resting on the ground.

CAUTION: To avoid possible bodily injury or damage to the backhoe, be sure boom locking latch is in the open (operating) position when storing backhoe.

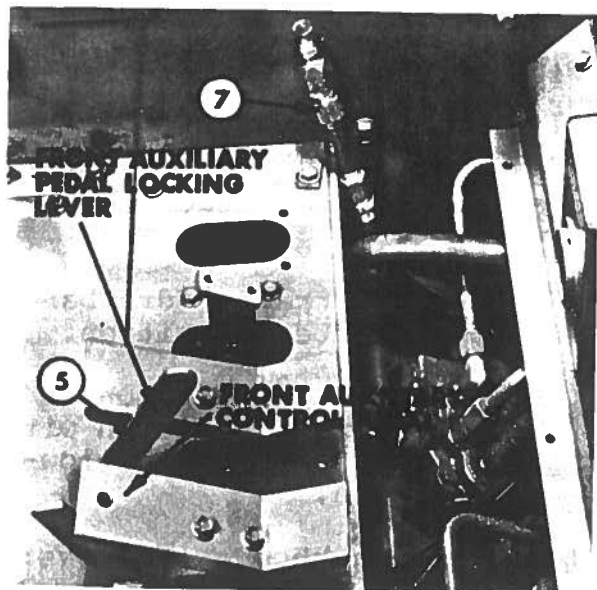


2. Disengage locking blocks by pushing down on handles until locking blocks are clear of the mounting bracket and handles are locked in the notch.
3. Extend the stabilizer cylinders until the backhoe mounting pins are clear of the loader mounting brackets; then carefully back the loader away. Do not strain hoses.
4. (Not illustrated) Retract stabilizer cylinders until the main frame is resting on the ground tilted slightly forward.

CAUTION: Carefully back loader away until it is clear of the backhoe-making sure the hoses are not strained.

bradco OWNER'S MANUAL

Detaching Backhoe from Loader - Continued



5. Shut off hydraulic fluid pressure to the backhoe by pushing front auxiliary pedal locking lever forward allowing the pedal to return to its normal position.
6. (Not illustrated) Shut off loader engine.
7. Disconnect the backhoe hydraulic hoses at Quik-couplers. Install dust caps in female end of Quik-couplers and dust caps on male end of Quik-couplers on loader.

⚠ CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes, and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

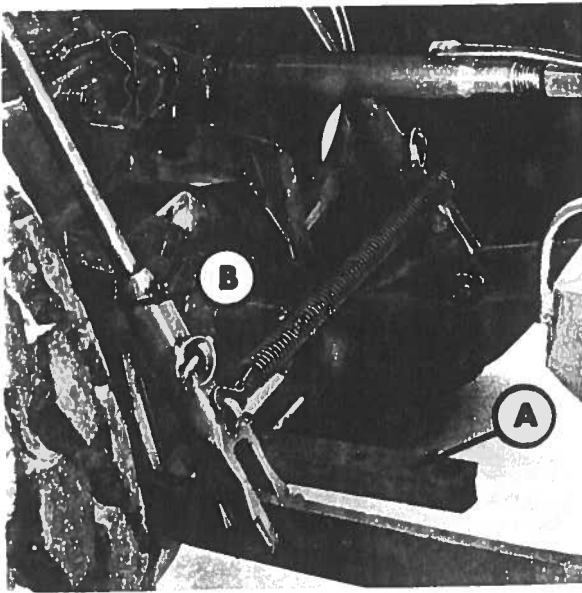
bradco OWNER'S MANUAL

B) FROM A JD 3-POINT HITCH

Attaching Backhoe to Tractor

NOTE: If you do not have or do not wish to use a selective control valve for backhoe operation, your tractor hydraulic system must be modified before attaching the backhoe.

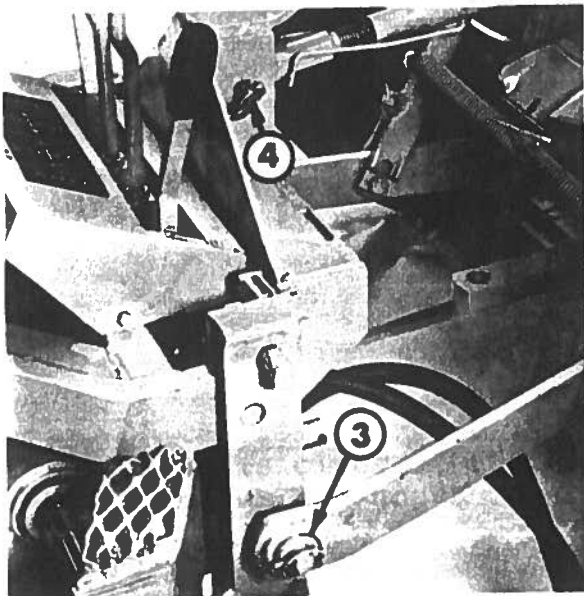
Make the following adjustments before attempting to attach the backhoe to the tractor:



- A. Adjust the tractor drawbar to the shortest position.
- B. Place the 3-point hitch in the category 1 position with the sway blocks in the lower position.

Attach the backhoe as follows:

1. (Not illustrated) Carefully back the tractor into the mounting position and using the rockshaft control lever, position the draft links so they can be attached to the backhoe mounting pins.
2. (Not illustrated) Put the tractor range shift lever in the "Park" position.
3. Attach the draft links to the backhoe mounting pins and secure with Quik-lock pins (stored in backhoe mounting pins.)
4. Attach center link to 3-point hitch adapter by inserting bushing (used on Category 2 center link), pin, and secure with Quik-lock pin.



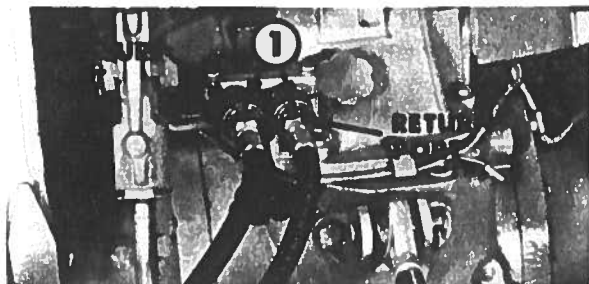
bradco OWNER'S MANUAL

Attaching Hydraulic Hoses

! **CAUTION:** Escaping hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that hydraulic lines are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

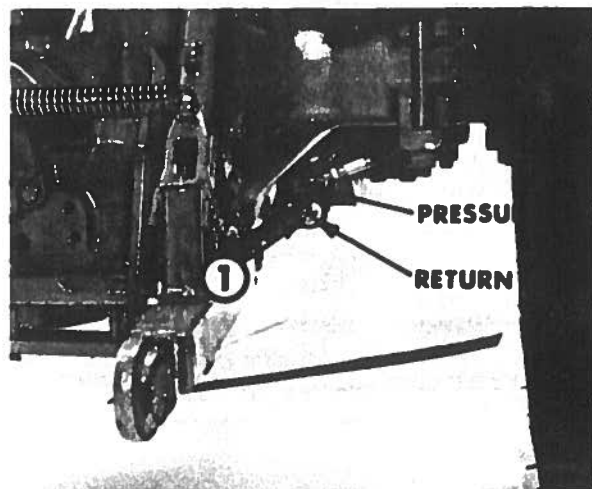
If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Closed-Center Tractors with Selective Control



Insert grooved male Quik-coupler into pressure port (left-hand port when facing rear of tractor) on selective control. Insert plain male Quik-coupler into return port (right-hand port) on selective control.

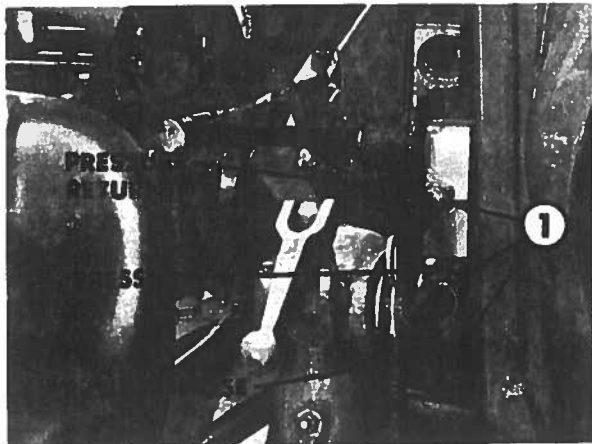
Closed-Center Tractors with Selective Control Not Used for Backhoe Operation



Remove caps and attach pressure hose to pressure port (under tractor) and connect return hose to filter cover (under tractor).

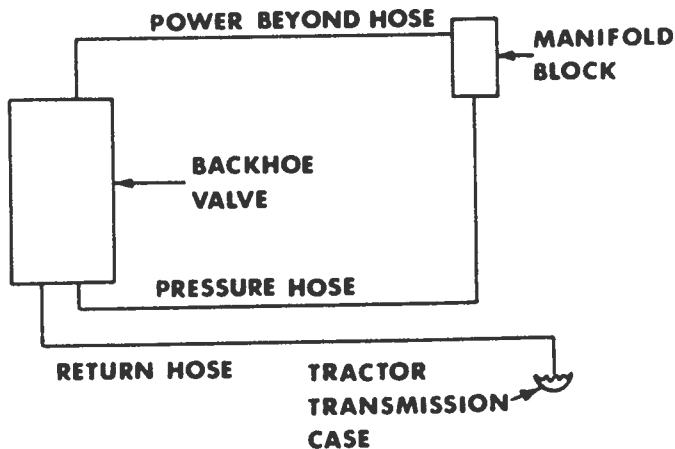
bradco OWNER'S MANUAL

Open-Center Tractors

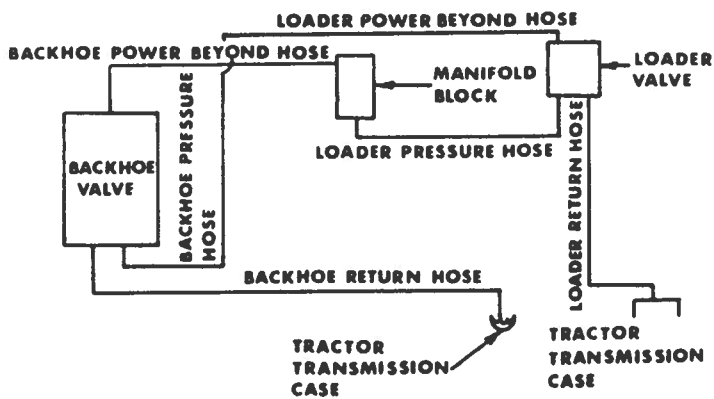


NOTE: Do not use selective control valve to operate backhoe hydraulic system on open-center tractors.

Attach pressure hose to pressure port on manifold block. Attach power beyond hose to pressure return port on manifold block. Attach return hose to transmission case under tractor seat on right-hand side).



Open-Center Tractors in Conjunction with 37 Loader

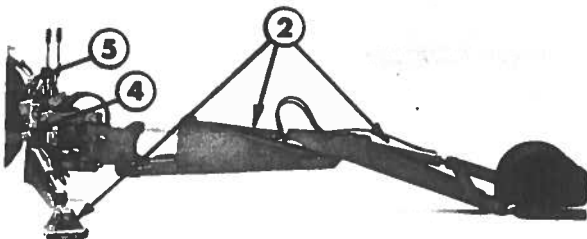


Connect pressure hose (Backhoe to power beyond hose (Loader) with an adapter. Attach power beyond hose (Backhoe to pressure return port on manifold block. Attach pressure hose (Loader) to the pressure port on the manifold block. Attach return hose (Backhoe) to the tractor transmission case under tractor seat. Attach return hose (Loader) to the tractor transmission case at the rear of the tractor.

bradco OWNER'S MANUAL

Detaching Backhoe from Tractor

⚠ CAUTION: To avoid possible bodily injury or damage to the backhoe, be sure boom locking lever is not latched when detaching backhoe from tractor.



⚠ CAUTION: To avoid possible bodily injury or machine damage, do not engage backhoe control levers unless you are safely seated on backhoe operator's seat with your feet on the foot pads.

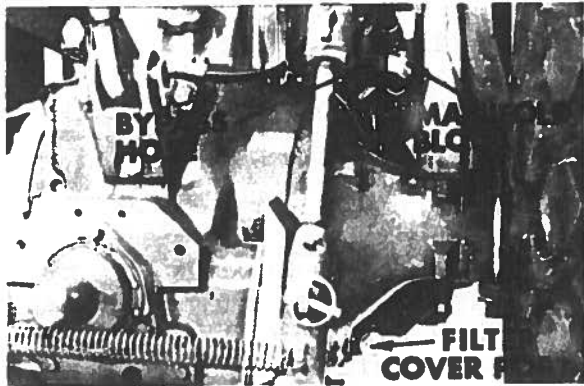
1. (Not illustrated) With the tractor-backhoe on level ground, use the rockshaft control lever to lower the backhoe main frame to the ground.
2. Mount the backhoe operator's seat and retract the bucket and crowd cylinders; then extend the lift cylinder until the bucket touches the ground. Lower the stabilizers to the ground.

⚠ CAUTION: To avoid injury from escaping hydraulic oil under pressure, relieve the pressure in the system by moving the hydraulic control levers in both directions before attaching couplers.

3. (Not illustrated) Shut off tractor engine and disconnect hoses from tractor.
4. Disconnect center link from 3-point hitch adapter by removing Quik-lock pin, bushing (used on Category 2 center link), and pin. Store Quik-lock pin, bushing (if used), and pin in 3-point hitch adaptor.
5. Remove Quik-lock pins and disconnect draft links from backhoe mounting pins. Store Quik-lock pins in the backhoe mounting pins.
6. Remove hydraulic hose and cap ends to prevent contamination of the system.

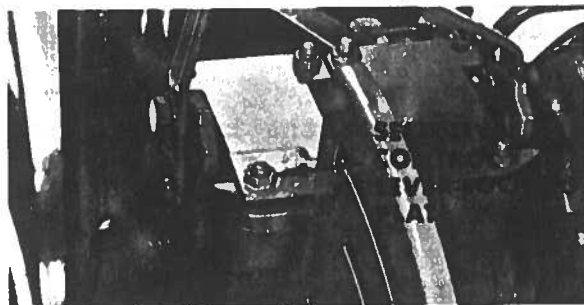
bradco OWNER'S MANUAL

Open-Center Tractors



When operating tractor after detaching backhoe, attach bypass hose (Part No. GT3641) to manifold block and cap (Part No. GT3105) to transmission case port.

Closed-Center Tractors with Selective Control



When operating the tractor after detaching the backhoe, remove the selective control lever locking plate or reinstall as shown to the left.

OPERATING THE BACKHOE

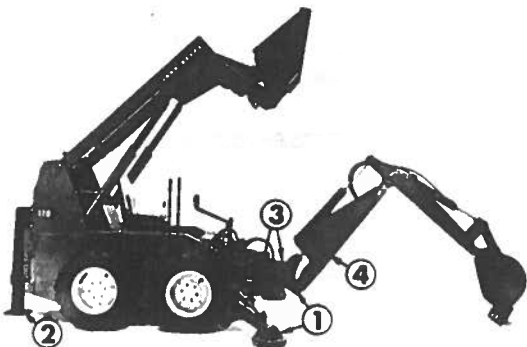
⚠ CAUTION: To avoid possible bodily injury or damage to other machinery, a barricade should be positioned around the swing area before digging with the backhoe.

(A) Preparing Loader-Backhoe for Operation

Set engine rpm. Pull front auxiliary control pedal lever rearward.

bradco OWNER'S MANUAL

Operating the Backhoe - Continued



1. Lower stabilizers until they support some of the backhoe weight.
2. Lower the rear stabilizer (if equipped) until it supports some of the loader's weight.
3. Remove swing pin from the transport position and store it in the swing arm.
4. Swing the boom locking lever to the operating position.

(B) Preparing Tractor-Backhoe for Operation

! CAUTION: To avoid possible bodily injury or damage to buried cable, check for underground obstructions before digging.

Move the tractor range shift lever to the "Park" position and set the engine rpm.

Lower the front loader or blade (if equipped) to the ground.

IMPORTANT: Check front end weight. Do not operate or transport backhoe without adequate front end weight.

Move the load and depth control lever to the "D" (Depth) position.

Lower the backhoe main frame to the ground using the rock-shaft control lever.

Set selective control lever (if equipped) and lock in position.

! CAUTION: To avoid possible bodily injury, do not engage backhoe control levers unless you are seated on the backhoe operator's seat with your feet on the foot pads.

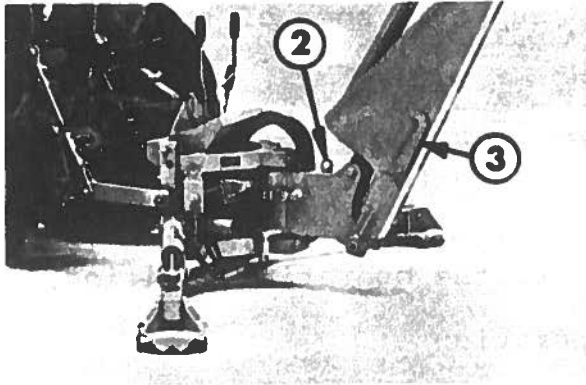
The upper link must be adjusted so the backhoe main frame is vertical when it is one foot off the ground.

bradco OWNER'S MANUAL

Preparing Tractor-Backhoe for Operation - Continued

1. Mount the backhoe operator's seat and lower the stabilizers until the backhoe main frame is lifted approximately one foot (or to suit local conditions) off the ground.

IMPORTANT: Do not raise tractor tires off the ground.



2. Remove swing pin from the transport position and store it in the swing arm.
3. Move the boom locking lever to its operating position.

OPERATING POINTERS

Operate the backhoe control levers to become familiar with their speed and movements. The engine speed and the size of the hydraulic system will determine the speed of cylinder operation. (On a 3-point hitch mounted backhoe, the setting of the selective control valve-if equipped-will also determine the speed of cylinder operation).

Swing the boom several times to practice controlling the speed of swing. Do not operate the swing more than 45° each way for the first few times; then gradually increase the arc.

IMPORTANT: To avoid damage to the backhoe, do not slam swing into rubber bumper pads.

Smooth, light handling of the controls will result in the most efficient machine operation.

It is not difficult to become an efficient operator. A control lever operating decal is located in front of the control levers. Study this decal; it will assist you in becoming familiar with the controls.

Best results are obtained by digging near the center of the swing so material can be dumped on either side.

bradco OWNER'S MANUAL

Operating Pointers - Continued

When opening a trench, maneuver the dipperstick into a vertical position; then move it forward approximately two more feet. The bucket should be positioned to skin 3 or 4 inches of top soil off the surface without dragging the heel of the bucket. On succeeding passes, lower the boom 4 to 6 inches and proceed as before.

When dirt begins to pile too high, utilize the crowd and bucket cylinder to move dirt away from the hole.

On extreme swing, take care not to over-balance the tractor.

As you become familiar with the operation of the backhoe, it will become common practice to operate two controls at one time. For example, with the bucket extended and the dipperstick extended, the lift control and the crowd control can be operated together to bring the bucket toward you with downward pressure on it. As the dipperstick approaches you, the crowd and bucket controls can be operated to move the bucket up and away from you to save time in clearing the excavation.

The dual operation of controls will hasten and simplify the digging operation. Normally, the two or more movements will not be equal or even simultaneous, but as the pressure within a cylinder changes and the resistance on an operating member of the hoe lessens, it will begin to move. It is the balancing of the force of one member against the other. Actuating the crowd and bucket simultaneously will insure full buckets and prevent lost motion and time.

⚠ CAUTION: When digging far to either side and in close to the loader, the bucket could contact the stabilizers and cause serious damage.

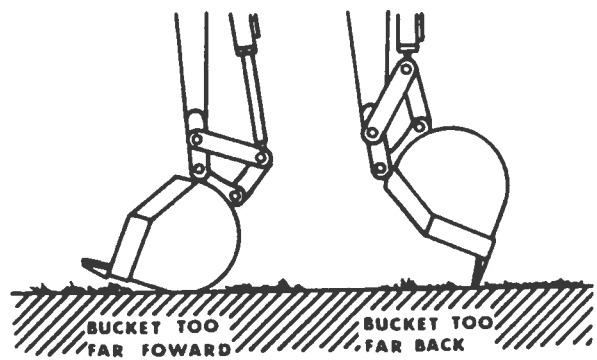
DIGGING TECHNIQUES

Two different digging techniques, bucket digging and crowd digging, can be used. Ground conditions and type of bucket being used will determine the best method to use.

⚠ CAUTION: To avoid possible bodily injury or damage to a buried cable, check for underground obstructions before digging. To avoid possible bodily injury or damage to other machinery, a barricade should be positioned around the swing area before digging with the backhoe.

bradco OWNER'S MANUAL

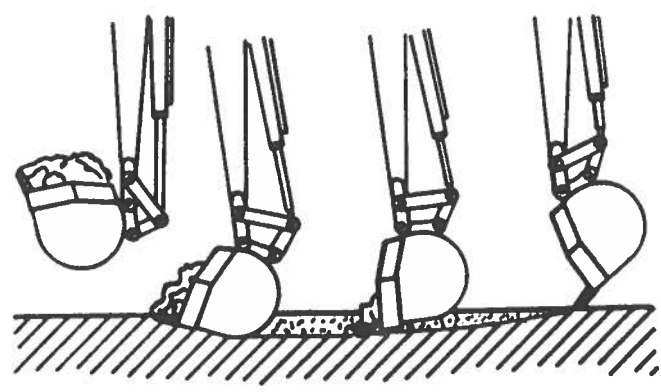
Bucket Digging



Lower the bucket to the digging area and, using downward pressure on the bucket bottom, force the bucket into the ground.

It is important for the bucket to be in the proper position when starting to dig. Never attempt to dig with the bucket in the wrong position--too far forward or too far backward as shown to the left.

With the bucket in the ground, simultaneously retract the dipperstick and roll the bucket until the bucket is full.



If the bucket stalls, raise the boom slightly and continue to dig until the bucket is full.

Raise the bucket to the top of the trench and dump it on the spoil pile. With a little practice, raising, swinging, and dumping can be accomplished in one smooth operation.

When you load trucks with high sides, continue rolling the bucket as it is being raised to prevent spilling its contents.

OWNER'S MANUAL

Crowd Digging

Lower the bucket into the ground the same as in bucket digging; then roll the bucket until the cutting edge teeth are flat on the ground.

Using only the crowd cylinder, retract the dipperstick--dragging the bucket through the trench until it is approximately half full. Begin to roll the bucket while you continue to retract the dipperstick--until the bucket is completely full.

Raise the bucket and swing the boom until the bucket can be dumped in the spoil area.

When operating on hillsides, dump the spoil dirt on the uphill side of the trench. The unit will be in a more stable position, and backfilling will be easier.

When operating on level ground, the unit can be moved backward quickly by pushing it with the backhoe bucket against the ground. (When operating a JD170 - JD24 Skid-Steer Loader, first raise the backhoe stabilizers and the rear stabilizer off the ground. When operating a 3-point hitch mounted backhoe, first raise the stabilizers off the ground and put the tractor gearshift in "neutral", making sure to place the tractor range shift lever in the park position before continuing operation.)

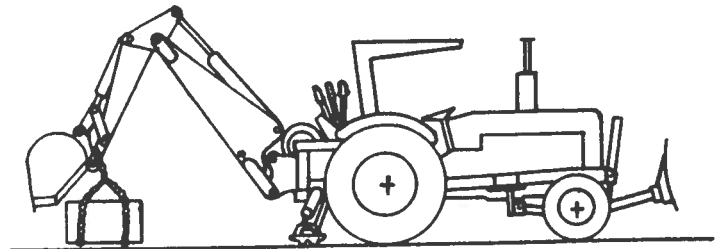
LIFTING WITH THE BACKHOE

The backhoe can be used to lift heavy loads. The lifting capacity is restricted by the limits of the relief valves. Use the following procedure to lift the maximum load with your backhoe:

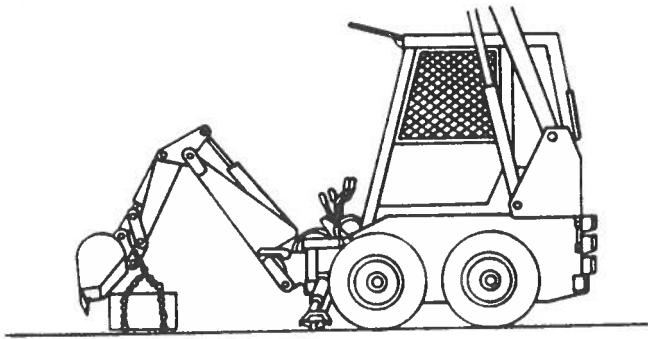
1. Extend the boom and crowd cylinders until the lifting chain can be attached. Attach chain to dipperstick approximately two inches from bucket pin. Be sure all chains are securely connected.
2. Retract the boom cylinder to raise the boom to full height.
3. If necessary, extend the crowd cylinder; then retract the crowd cylinder to lift the load.

bradco OWNER'S MANUAL

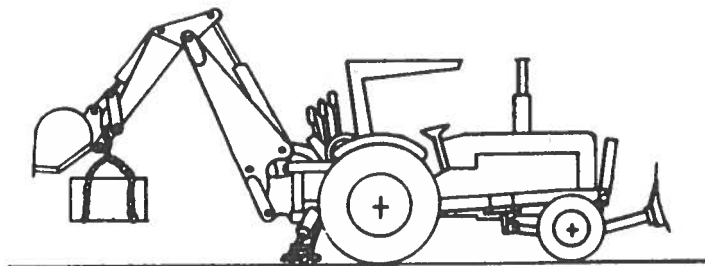
LIFTING WITH THE BACKHOE



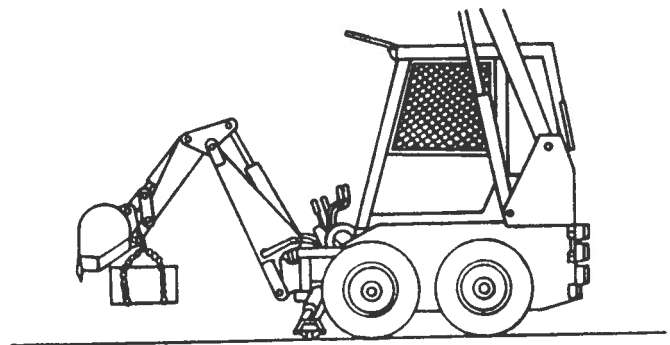
Step 1



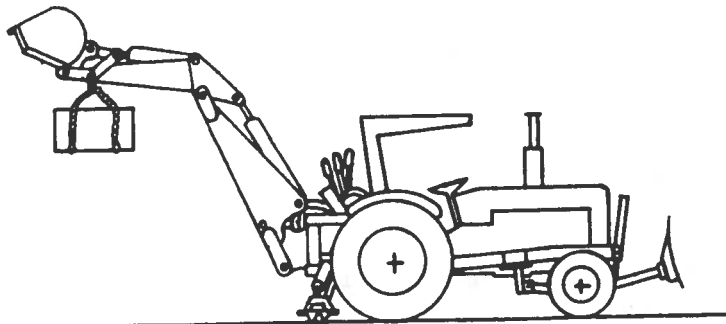
Step 1



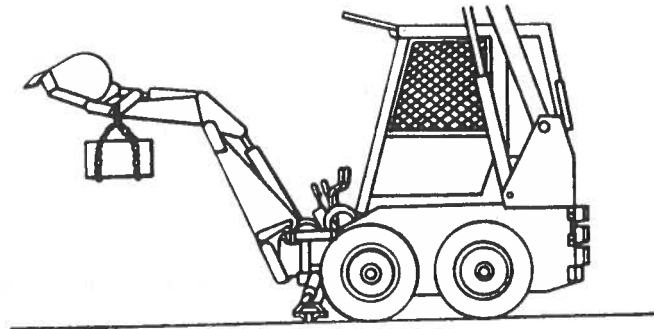
Step 2



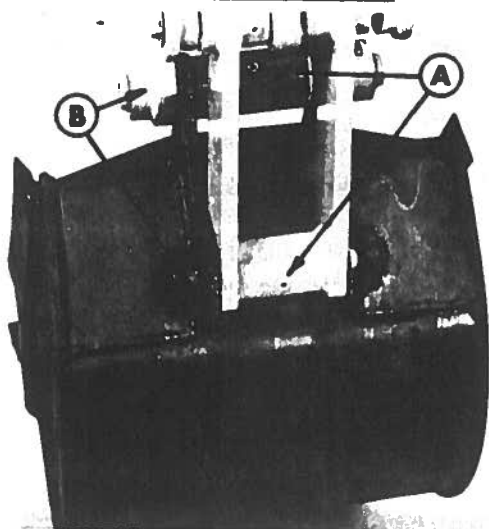
Step 2



Step 3



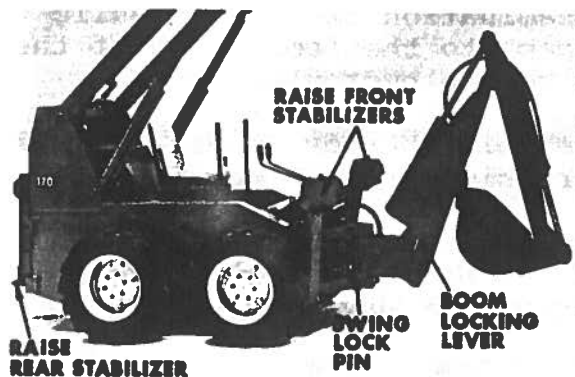
Step 3

CHANGING BUCKETS

The bucket is connected to the dipperstick and bucket link with allen screws and snap rings.

To change buckets, loosen allen screws at "A", remove snap rings & washers at "B", and remove the pivot pins.

Remove the old bucket and position the new bucket. Install the pivot pins and secure with the washers and snap rings; then tighten allen screws.

TRANSPORTING

Before transporting the backhoe, position the boom, dipperstick, and bucket as illustrated above.

OWNER'S MANUAL

Transporting - Continued


Install the swing lock pin and latch the boom locking lever.

Raise all stabilizers.

On a 3-point hitch mounted backhoe, raise the backhoe seat to the vertical position, and raise the backhoe main frame to its highest position-using the rockshaft control lever.

Attach the SMV emblem to the rear of the loader or to the bracket on the dipperstick (3-point hitch mounting).

Drive slowly when transporting the backhoe over uneven terrain.

 **CAUTION:** When transporting the backhoe on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local government regulations. Various safety lights and devices are available from your John Deere dealer.

STORAGE

End of Season

To prevent contamination of the hydraulic fluid system, always insert dust caps to the female end of the Quik-couplers on the pressure and return hydraulic hoses.

Coat the exposed piston rods of all hydraulic cylinders with a grease or corrosion preventive.

Clean the exterior of the unit removing all mud, dirt, grease, and other foreign material. To prevent rust, touch up the painted surfaces where they may have been scratched or chipped.

If possible, store the backhoe in a dry protected place. If it is necessary to store the backhoe outside, cover it with waterproof canvas or other suitable protective material.

bradco OWNER'S MANUAL

Beginning of Season

Remove all protective coverings.

Check hydraulic hoses for deterioration, and if necessary, replace.

Lubricate all grease fittings and oil swing cylinder chains.

Tighten all loose nuts, bolts, and set screws.

Inspect bucket teeth. If necessary, sharpen or replace them.

 **OWNER'S MANUAL**SAFETY SUGGESTIONS

The safety of the operator was one of the prime considerations in the design of this backhoe. Proper shielding, convenient controls, simple adjustments, and other safety features have been built into this backhoe.

You can avoid many accidents by observing the following safety rules. Insist that they be followed by those working with and for you.

Only one person--the operator--should be allowed on the unit while it is in operation.

Never operate the backhoe except from the operator's seat.

While operating the backhoe, remain at the controls until the operation is completed.

Never lift a person with the backhoe.

Carry the backhoe low at all times--especially when working on a sidehill, or backing up an incline.

Always lower the bucket to the ground before leaving the backhoe's seat.

Watch for overhead wires. Never touch wires with any part of the backhoe.

Be sure bystanders are clear of the backhoe before lowering stabilizers or moving the boom.

Be sure area is clear of underground obstructions before digging.

A barricade should be positioned around the work area.

Do not use the backhoe bucket as a battering ram.

Do not drive the unit near the edge of a ditch, gully, or excavation.

Be careful to prevent the unit from tipping sideways if it strikes an excavation, ditch, or other irregularities, especially on hillsides. The rate of travel on hillsides and curves should always be such that there is no danger of tipping.

Do not oil, grease, or adjust the unit while it is in motion.

bradco OWNER'S MANUAL

Safety Suggestions - Continued

Travel slowly over rough terrain.

Do not change relief valve settings--they are factory set for best backhoe performance and safety.

When operating on a slope, avoid swinging the bucket to the downhill direction, if possible. This will reduce the stability of the backhoe. Always dump on the uphill side.

When driving connecting pins in or out, use care to guard against injury from particles that may chip off the pin or object used in striking the pin.

Protect eyes with safety glasses.

When operating or transporting loader (tractor)-backhoe, always use boom locks.

When storing backhoe be sure boom locking lever is not latched.

Never leave the unit unattended with the engine running.

Never allow anyone to work under a raised bucket.

A JD170 and JD24 Skid Steer Loader with a Bradco 800 Backhoe should be equipped with adequate rollover protection.

On a loader-backhoe or 3-point hitch mounted backhoe, do not dig under the stabilizers or loader-backhoe. Soft ground or sandy soil might cause cave-in.

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes, and hoses are not damaged.

Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

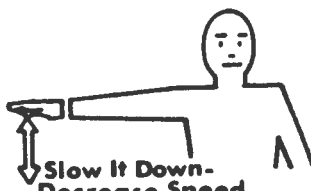



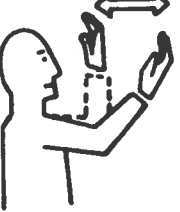


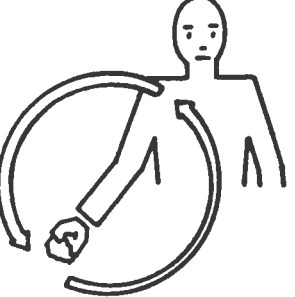

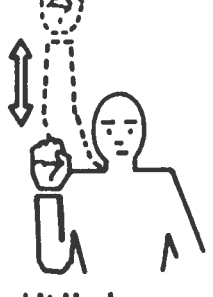
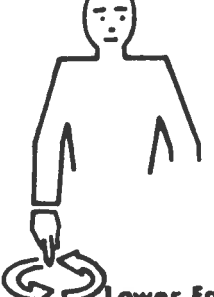
If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

bradco OWNER'S MANUAL

Safety Suggestions - Continued

When transporting the backhoe unit on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local governmental regulations. Various safety lights and devices are available at your John Deere dealer.

HAND SIGNALS

<p>HAND SIGNALS</p> <p>Use when noise or distance does not allow normal voice communication.</p>	 <p>Slow It Down- Decrease Speed</p>	 <p>This Far To Go</p>	 <p>Move Out- Take Off</p>
 <p>Raise Equipment</p>	 <p>Move Toward Me-Follow Me</p>	 <p>Stop</p>	 <p>Stop The Engine</p>
 <p>Start The Engine</p>	 <p>Come To Me</p>	 <p>Speed It Up-Increase Speed</p>	 <p>Lower Equipment</p>

bradco OWNER'S MANUAL

LUBRICATION

Economical and efficient operation of any machine is dependent upon regular and proper lubrication of all moving parts with a quality lubricant. Neglect leads to reduced efficiency, heavy draft, wear, breakdown, and needless replacement parts.

⚠ CAUTION: Shut off loader (tractor) engine before lubricating backhoe.

All parts provided with grease fittings should be lubricated as indicated. If any grease fittings are missing, replace them immediately. Clean all fittings thoroughly before using grease gun.

IMPORTANT: Avoid excessive greasing. Dirt collects on exposed grease and greatly increases wear. After greasing, wipe off excessive grease from fittings.

SYMBOLS



Lubricate daily or every 10 hours of operation, whichever comes first, with SAE Multi-Purpose Lubricant or an equivalent SAE Multi-Purpose type grease.



Lubricate roller chain periodically with Chain Lube or equivalent.

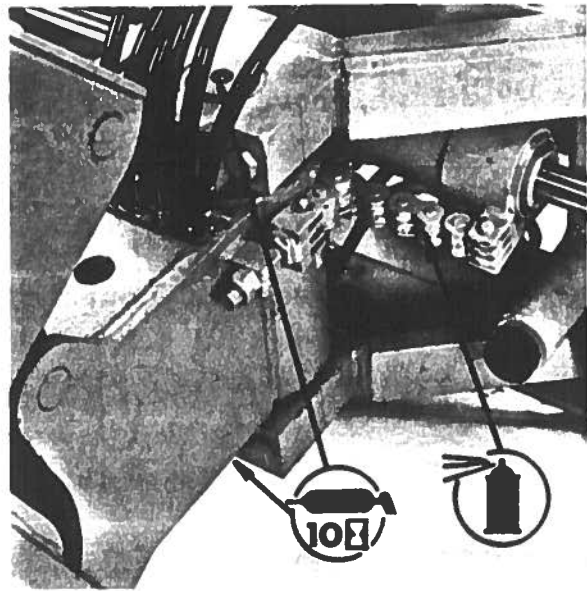
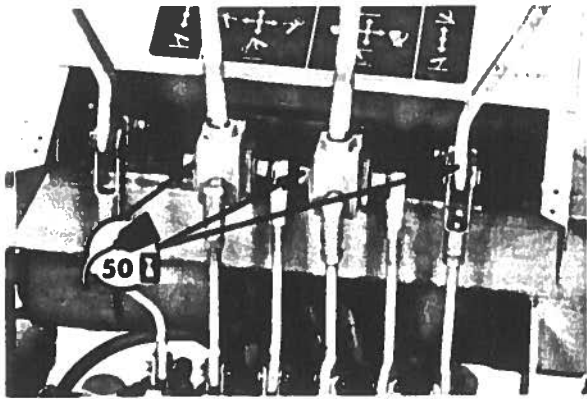
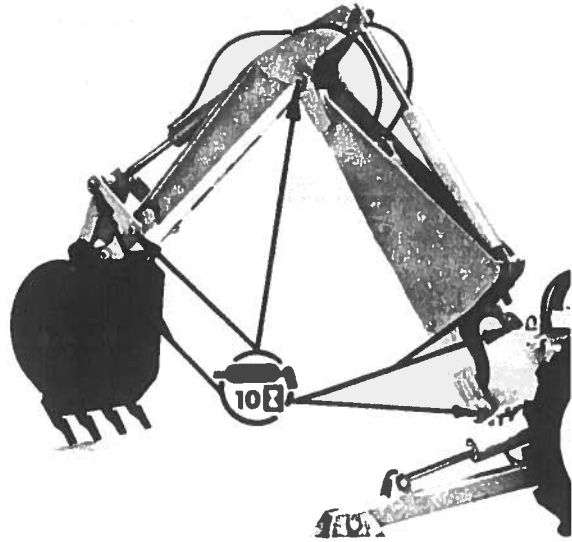
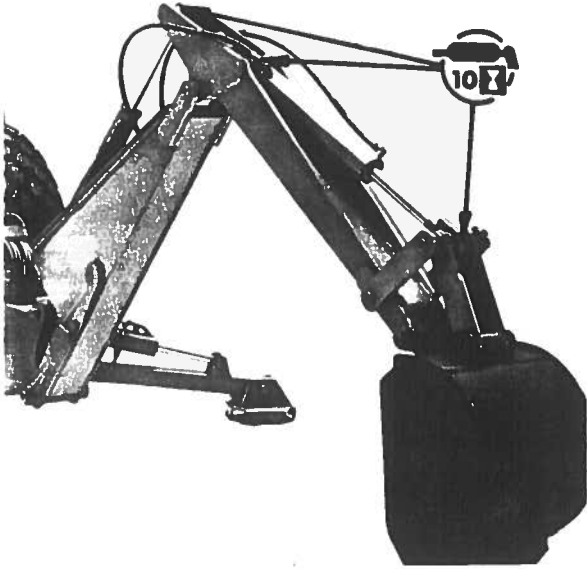


Oil every 50 hours of operation with SAE 30 Oil.



OWNER'S MANUAL

LUBRICATION




OWNER'S MANUAL
TROUBLE SHOOTING

<u>Trouble</u>	<u>Possible Cause</u>	<u>Possible Remedy</u>
A) Backhoe fails to lift or swing.	Low oil supply.	Add oil.
	Improper hose hook-up.	Check hydraulic diagram; re-install properly.
	Worn control valve section.	Replace section.
	Pump damaged or worn.	Replace pump.
	Broken hydraulic line.	Check for leaks and replace line.
	Jammed swing linkage.	Remove interference.
	Bent piston rod.	Replace or repair cylinder.
B) Backhoe lifting or swinging too slowly.	Cold oil.	Warm oil with engine at idle speed.
	Engine speed too slow.	Open throttle.
	Oil leaking past control valve.	Replace or repair worn section.
	Oil too heavy.	Use recommended oil.
	Pump damaged or worn.	Replace or repair pump.
	Oil leaking past cylinder packings.	Replace packings.
	Dirty oil filter.	Replace filter.
	Faulty relief valve.	Clean or replace.


OWNER'S MANUAL
Trouble Shooting - Continued

<u>Trouble</u>	<u>Possible Cause</u>	<u>Possible Remedy</u>
C) Backhoe fails to hold up load.	Broken or leaking lines.	Replace broken hose and check for leaks.
	Dirty oil.	Drain oil and refill, and replace filter.
	Oil leaking past cylinder packings.	Replace packings.
	Oil leaking past control valve.	Replace or repair worn section.
D) Oil heating.	Faulty relief valve.	Clean or replace.
	Dirty oil.	Drain oil and refill, replace filter.
	Control valve held open too long.	Return control to neutral position when not in use.
	Oil too light in hot weather.	Use recommended oil.
	Engine running too fast.	Reduce throttle.
	Damaged oil lines.	Replace damaged lines.
	E) External leakage.	Control valve tie bolts loose.
Damaged O-rings between valve sections.		Repair control valve.
Damaged O-rings on valve spools.		Repair control valve.
Cylinder seals damaged.		Repair cylinder.


OWNER'S MANUAL

Trouble Shooting - Continued

<u>Trouble</u>	<u>Possible Cause</u>	<u>Possible Remedy</u>
	Damaged O-rings on valve drop check.	Repair control valve.
	Broken oil line.	Replace hose and check for leaks.
F) Swing cylinder malfunctioning.	Oil leaking past packing or seals.	Replace packing or seals.
	Faulty relief valve.	Clean or replace.
G) Control valve sticking or working hard.	Dirty valve.	Clean valve.
	Scored bore or bent spool.	Replace valve section.
	Control linkage misaligned.	Correct misalignment.
	Control valve tie bolts too tight.	Tighten bolts only to 20 ft. lbs. torque.
	Return spring binding or broken.	Replace spring.
	Foreign matter in spool bore.	Clean valve.


OWNER'S MANUAL

SERVICE

BLEEDING BACKHOE HYDRAULIC SYSTEM

If the hydraulic hoses have been disconnected from the backhoe, the tractor or loader, all trapped air must be removed after the hoses are connected. Start the tractor or loader engine and move all of the remote hydraulic operating levers on the backhoe several times to bleed the air from the system.

HYDRAULIC SYSTEM HOSES

 **CAUTION:** Escaping fluid under pressure can have sufficient force to penetrate the skin causing serious bodily injury. Before disconnecting lines, be sure to relieve all pressure, before applying pressure to the system, be sure all connections are tight and that lines, pipes, and hoses are not damaged.

Fluid escaping from a very small hole can be almost invisible, use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Oil leaks in the pressure side of the system can be located by carefully inspecting the external area of the hoses and fittings.

Check the return side of the system for leaks by examining the oil in the tractor or loader reservoir. If air is being drawn into the system, the oil will contain air bubbles and appear to foam.

When tightening connections always use two wrenches.

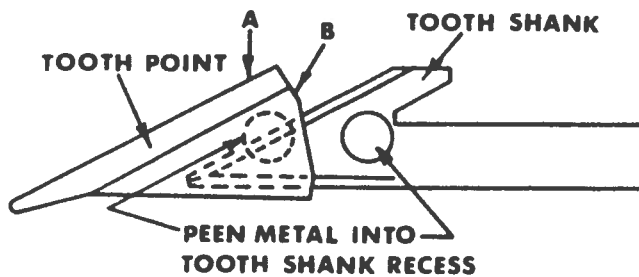
IMPORTANT: Do not tighten fittings too tight; make them just tight enough to eliminate leaks.

bradco OWNER'S MANUAL

TIGHTENING BOLTS AND NUTS

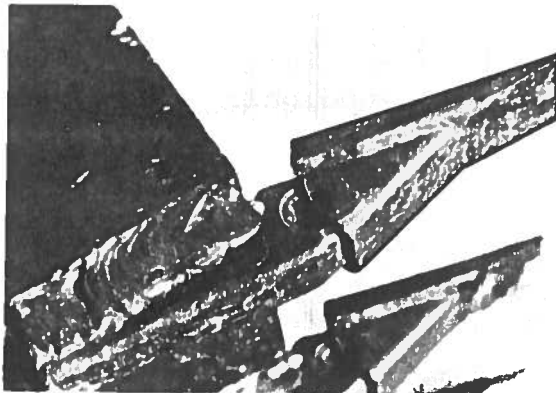
Periodically, check to be sure all bolts and nuts are tight.

REPLACING BUCKET TOOTH POINTS



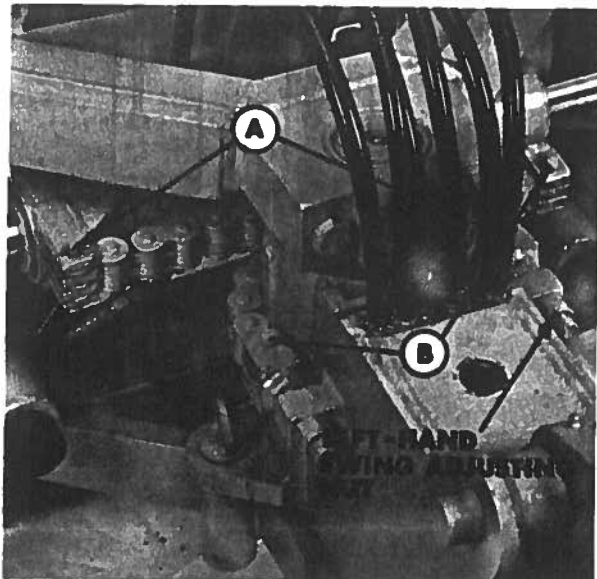
The points on the bucket teeth shanks can be replaced when they become worn or broken.

The bucket teeth are self-sharpening and require little attention; however, the points on the bucket teeth shanks can be replaced when they become worn or broken.



A tooth point can be removed from the welded tooth shank by hammering at "A" on the tooth point or by driving a chisel at "B" just between the tooth point box section and the tooth shank. Install the new point and anchor it to the tooth by peening at the location shown.

REPLACING SWING CYLINDER CHAIN



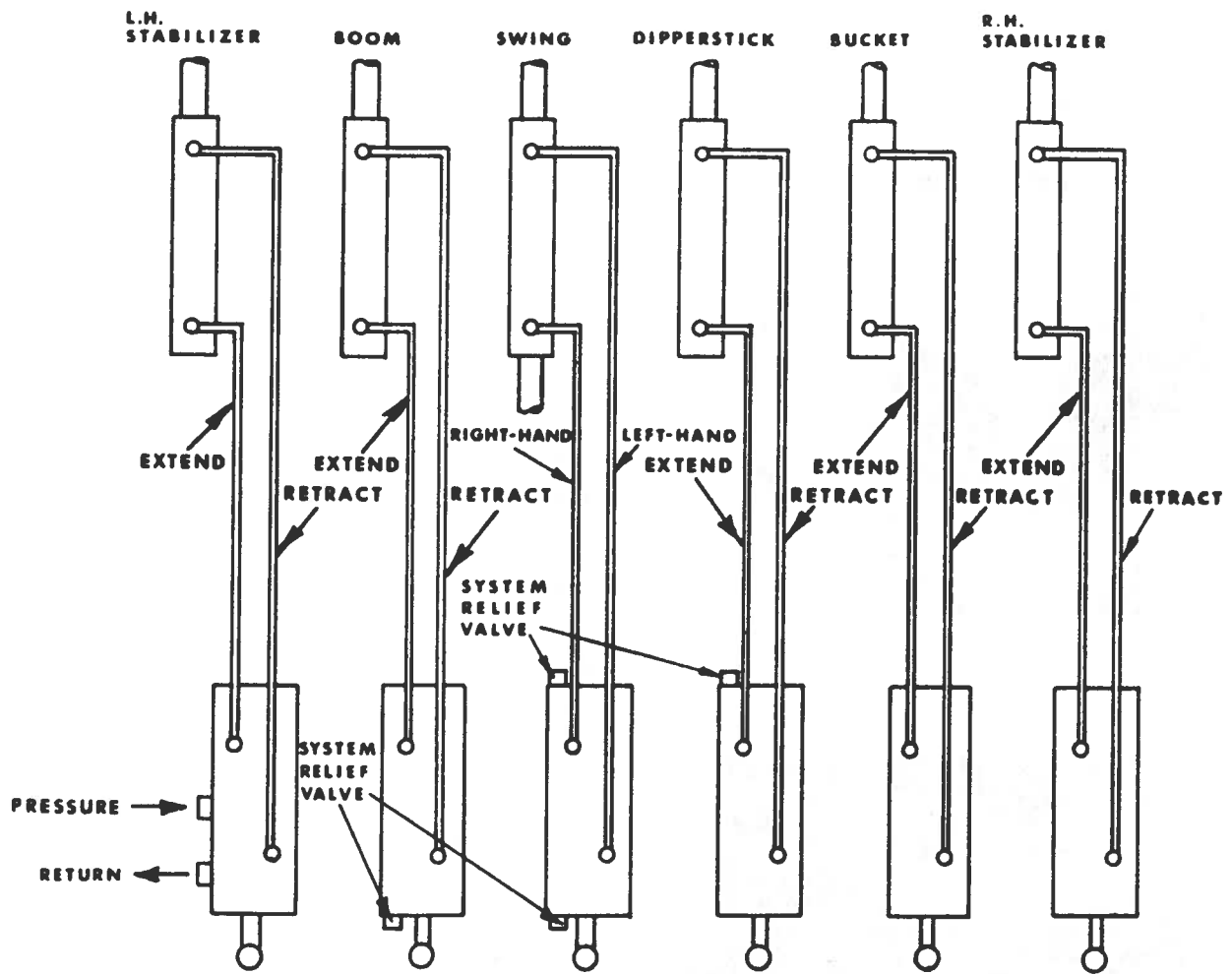
To replace left swing chain remove pins at "A" and adjust using left swing adjusting nut.

To replace right swing chain remove pins at "B" and adjust using right swing adjusting nut.

bradco OWNER'S MANUAL

SERVICE - CONTINUED

HYDRAULIC SYSTEM DIAGRAM 800 BACKHOE



6-Spool Control Valve

bradco**SERVICE BULLETIN**

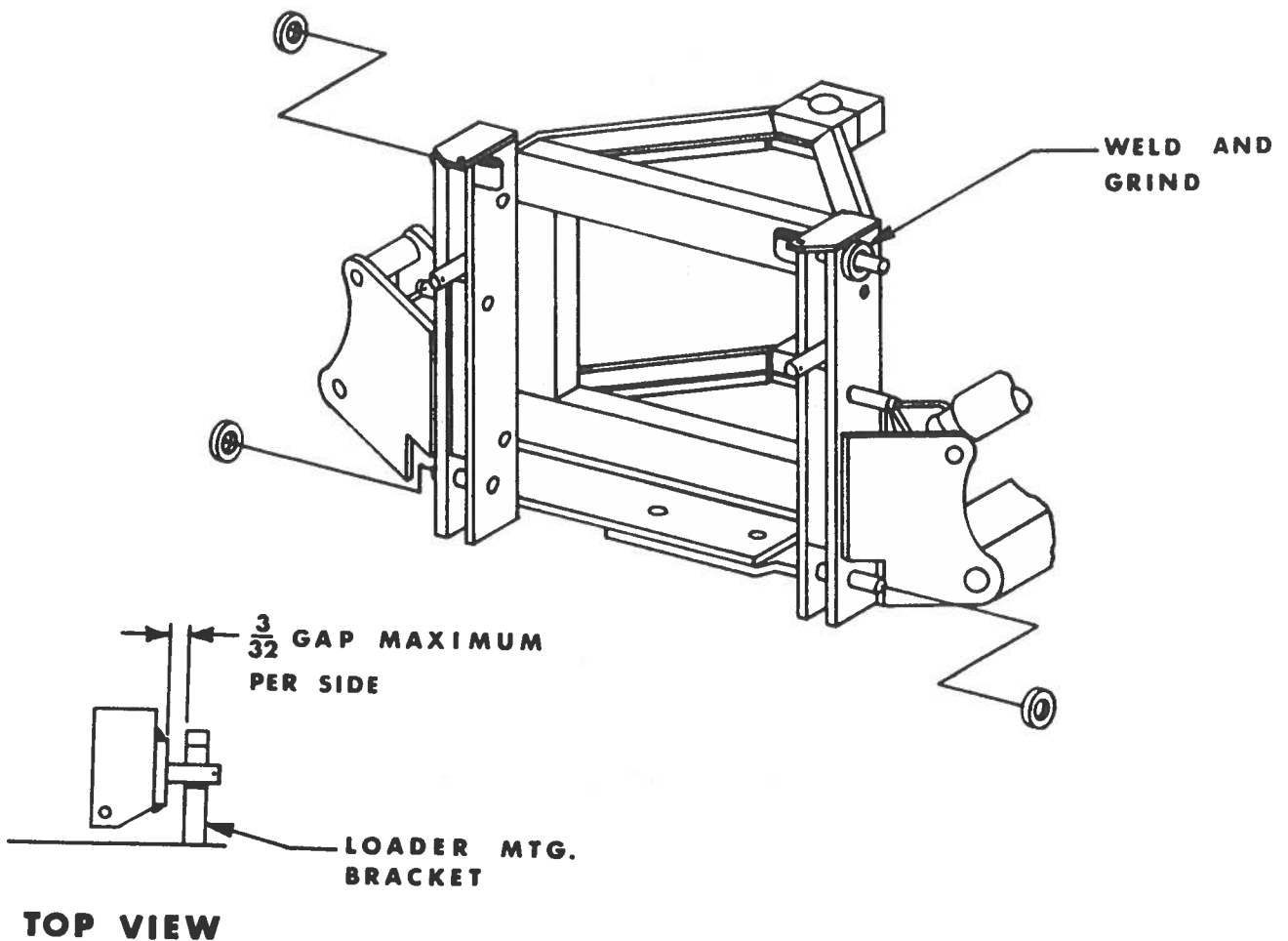
Number 09.08.73

SUBJECT: Eliminating side movement in Skid-Steer Backhoe mounting.

It has been found on several units that an undesirable amount of side movement is present when the Bradco 800 Backhoe is mounted on a John Deere 170 or JD24 Skid-Steer Loader. If this condition is allowed to remain, you will experience pin and latch failures.

To remedy this problem, we recommend the welding of washers to the backhoe main frame to take up the gap. See the sketch below.

The washers should be sized to provide $\frac{3}{16}$ " or less total side play between the backhoe main frame and the loader mounting hooks.



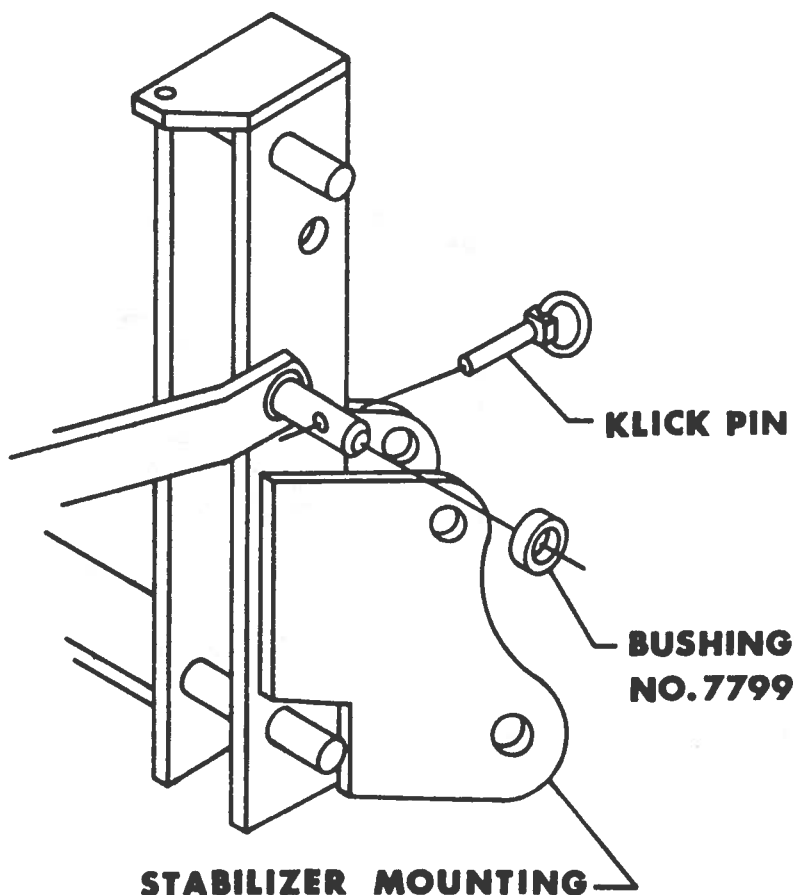
bradco SERVICE BULLETIN

NUMBER 17.10.73

SUBJECT: FAILURE OF THE LOWER 3-POINT HITCH
PINS ON THE BRADCO 800 BACKHOE

In the past we have had failure of the lower 3-point hitch pins on the Bradco 800 Backhoe mounted on a Category I 3-point hitch. The failure is the result of too much side play of the connecting arm on the pin. To prevent this side play, we are offering a 3/8" long bushing that is to be placed on the 3-point hitch pin between the arm and the klick pin as shown below.

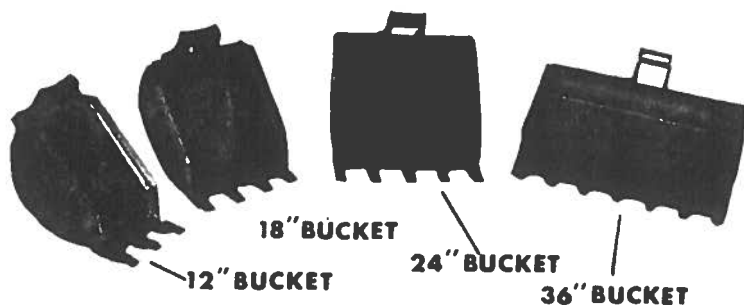
You may order your bushings at no charge direct from Bradco.



bradco OWNER'S MANUAL

ATTACHMENTS

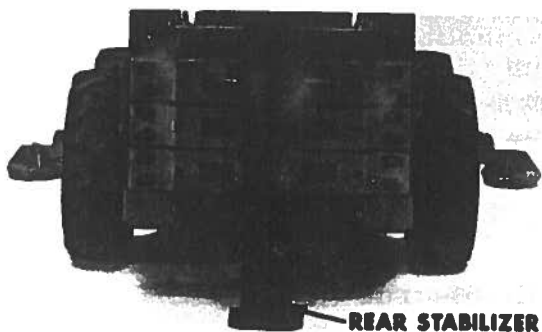
BUCKETS



No. of Teeth	Size of Bucket
3	12-Inch
4	18-Inch
5	24-Inch
7	36-Inch

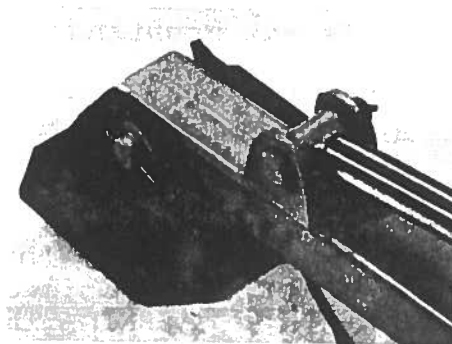
Teeth are attached to the front cutting edge of the buckets in the amounts listed above. Tooth tips can be driven on or off the shanks as needed.

REAR STABILIZER



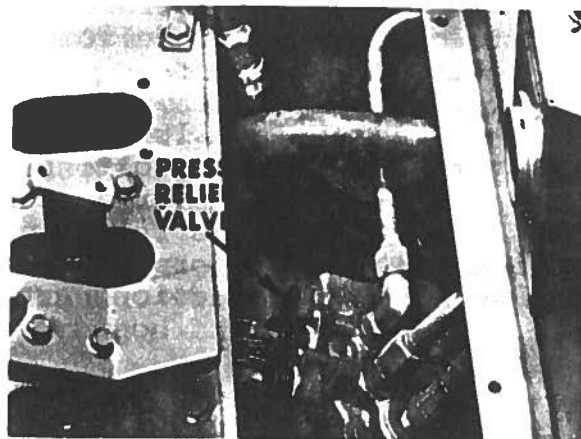
On a JD170 or JD24 Skid-Steer Loader with a Bradco 800 Backhoe, a rear stabilizer can be used to give the loader-backhoe more stability.

TURF PADS



A turf pad can be attached to each stabilizer for working in areas where the stabilizers will be lowered on grass such as golf courses or cemeteries.

2000 PSI LOADER PRESSURE RELIEF VALVE



On a JD170 or JD24 Skid-Steer Loader, for greater digging power, a 2000 PSI replacement system relief valve (JD Part #AW13533) for the loader's hydraulic system is available. This replaces the loader's standard equipment 1750 PSI system relief valve.

bradco OWNER'S MANUAL

ASSEMBLY


NOTE: The following assembly procedures are applicable to the three different basic mounting packages available. Be sure you are following the correct procedure. The different mountings covered are:

- A) Skid Steer Loader
- B) Three Point Hitch
- C) Front Mounted Backhoe
- D) Common Assembly Procedure

A) ASSEMBLY OF A BRADCO 800 BACKHOE ON A JD170 or JD24 SKID-STEER LOADER.

Adapt the loader hydraulic system and assemble the backhoe as illustrated in the following pages. The illustrations show clearly the parts to be assembled and attached in their proper order. Separate all bundles and arrange them conveniently for assembly.

When the term "right-hand" or "left-hand" is used, it is determined from a seated position on the loader.

 **CAUTION:** Before attempting to modify the loader hydraulic system, the engine should be shut off.

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting hoses, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes, and hoses are not damaged.

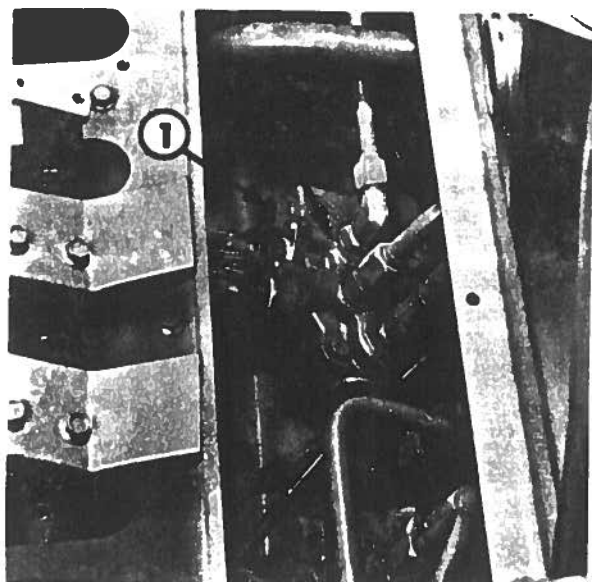
Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

bradco OWNER'S MANUAL

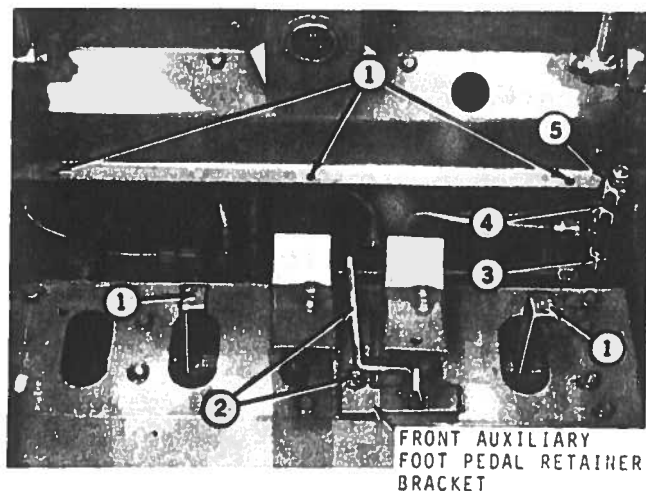
A) Assembly - Continued

ADAPTING LOADER HYDRAULIC SYSTEM



To increase the operating capacity of the backhoe, remove the heel plate and replace the old 1750 PSI system control valve with a new 2000 PSI system control valve, part number AW13533.

HYDRAULIC FLUID PRESSURE LINE ON LOADER

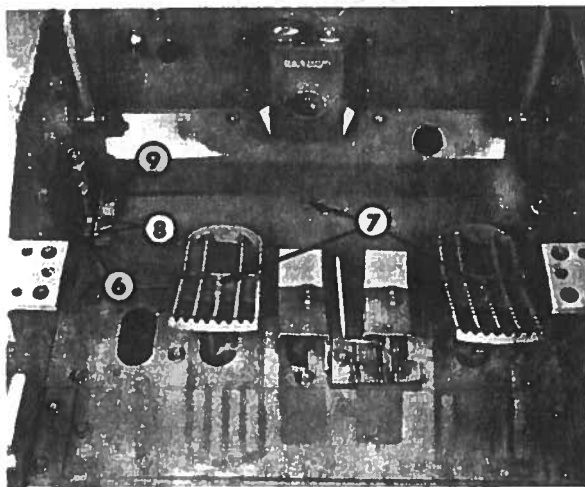
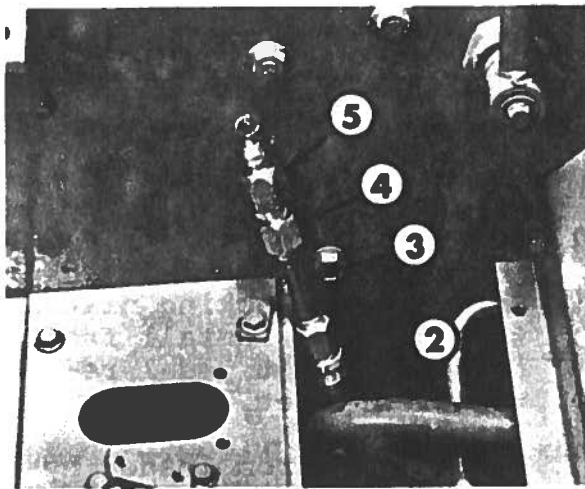
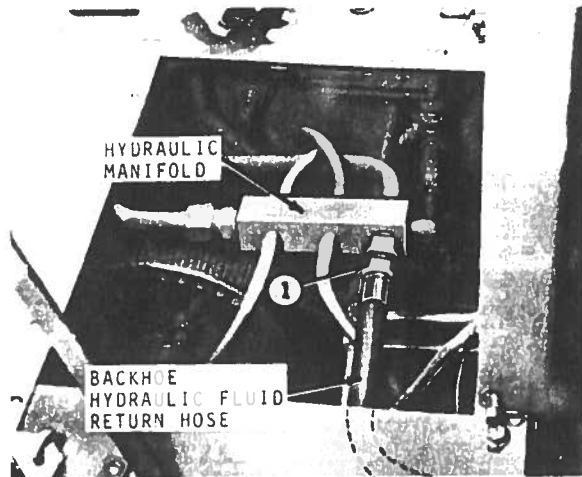


1. Remove heel plate and pedals.
2. Slide pedal locking plates together and install front auxiliary foot pedal retainer bracket.
3. Remove cap from loader hydraulic pressure line and attach extension line.
4. Attach 5/8 x 3/4 inch O-ring adaptor.
5. Install male end of Quik-coupler.

bradco OWNER'S MANUAL

A) Assembly - Continued

HYDRAULIC FLUID RETURN LINE ON LOADER



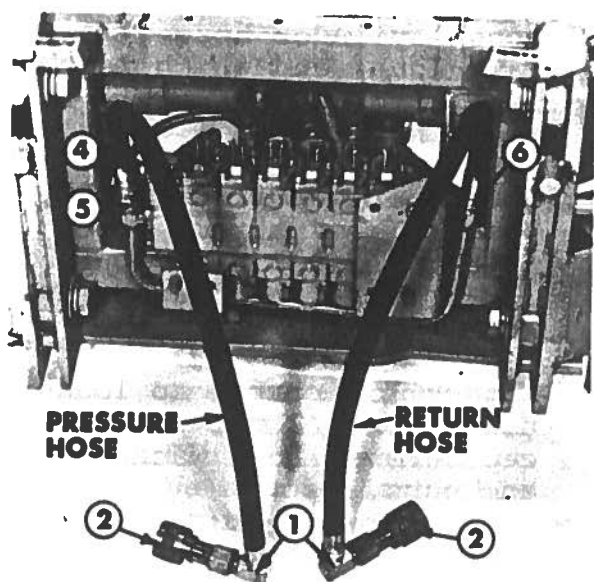
1. Tilt the loader seat forward. Remove pipe plug from the hydraulic manifold and screw 45° swivel elbow into hydraulic manifold. Attach 1/2 inch x 40 inch hose to the elbow. Run the hose towards the front of the loader.
2. Pull the end of the backhoe hydraulic fluid return hose through the opening in the floor of the loader.
3. Attach the extension tube to the end of the hose.
4. Attach a 5/8 x 3/4 inch O-ring adapter.
5. Install the male end of Quik-coupler.
6. Before installing the heel plate, cut out a 1-1/2 inch wide x 4 inch long section on right side of plate - to allow room for the hydraulic fluid return line.
7. Install heel plate and pedals.
8. Clamp hydraulic lines to angles with U-clamps.
9. Attach angles to heel plate with existing bolts.

bradco OWNER'S MANUAL

A) Assembly - Continued

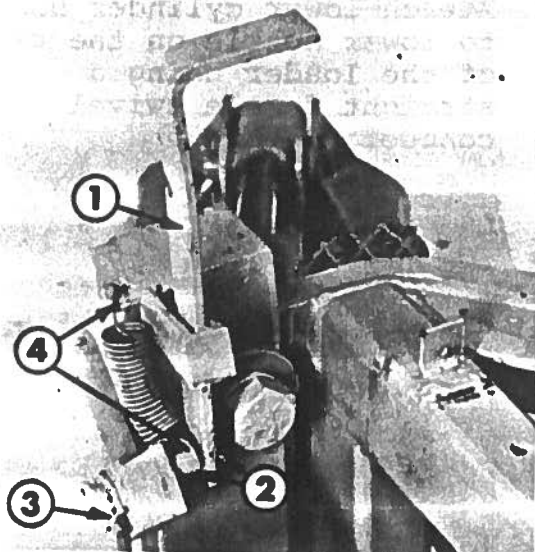
ASSEMBLING THE BACKHOE

Hydraulic Pressure Line and Hydraulic Return Line



1. Attach 90° elbow to male end of 3/8 inch hose.
2. Attach female Quik-coupler to 90° elbow.
3. (Not illustrated) Rotate the elbows on the backhoe control valve so that the return elbow points straight down and the pressure elbow points straight up.
4. Attach crossover pipe to return elbow on control valve.
5. Attach hose with female swivel to pressure elbow on control valve.
6. Attach hose with male end to crossover pipe.

Locking Blocks (Loader Only)

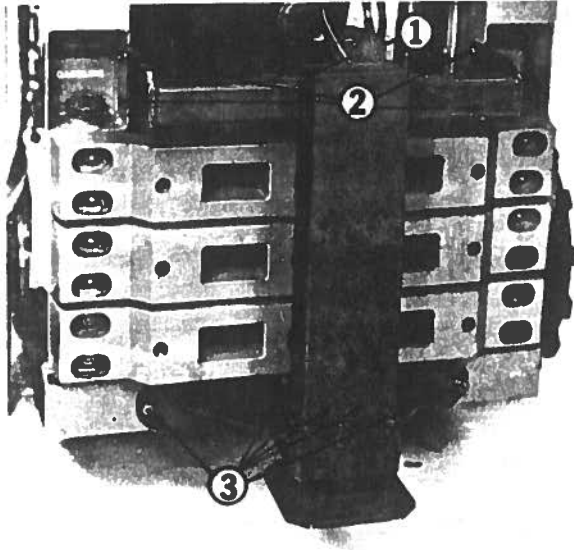


1. Insert locking block handle in main frame bracket.
2. Install pipe spacer on pin of locking block and position block on main frame stud and on handle at the same time.
3. Secure with flat washers and cotter pins.
4. Attach springs to main frame and to pipe spacer.

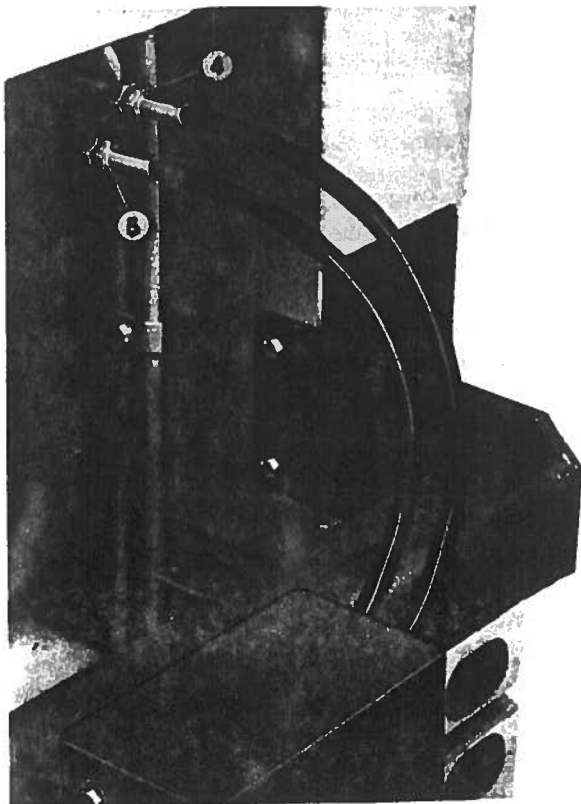
bradco OWNER'S MANUAL

A) Assembly - Continued

REAR STABILIZER (ATTACHMENT LOADER ONLY)



1. Take off plate from top of stabilizer and remove bag of hardware. Before re-installing the top plate, note which hose is the upper cylinder hose (1/4 x 28 inch) and which is the lower cylinder hose (1/4 x 48 inch)
2. Lift rear stabilizer into position and attach upper arms to loader with four 3/8 x 1-1/4 inch cap screws, lock washers, and nuts.
3. Attach lower arms to loader using six 1/2 x 1-3/4 inch cap screws, lock washers, and nuts.



4. Attach upper cylinder hose to upper nozzle on the rear of the loader using a straight female swivel connector.
5. Attach lower cylinder hose to lower nozzle on the rear of the loader using a straight female swivel connector.

bradco OWNER'S MANUAL

B) ASSEMBLY OF A BRADCO 800 BACKHOE ON A 3-POINT HITCH MOUNT (JOHN DEERE)

Adapt tractor hydraulic system and assemble the backhoe as illustrated on the following pages. The illustrations show clearly the parts to be assembled in their proper order. Separate all bundles and arrange them conveniently for assembly.

When the term "right-hand" or "left-hand" is used, it is determined from a seated position on the backhoe seat.

⚠ CAUTION: Before modifying the tractor hydraulic system, shut off the engine.

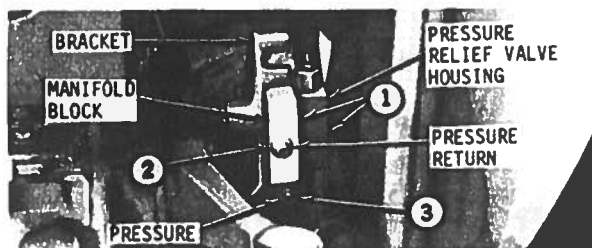
Escaping hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, make sure all connections are tight and that lines, pipes, and hoses are not damaged.

Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

ADAPTING TRACTOR HYDRAULIC SYSTEM

Open-Center Tractors

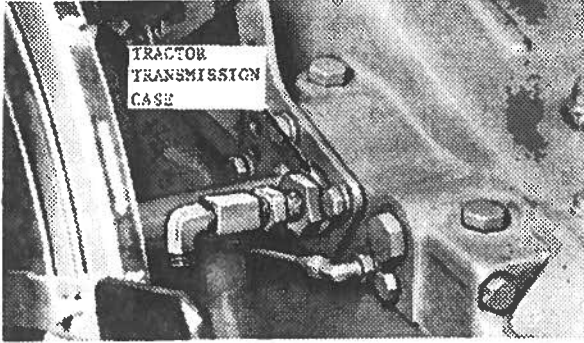


1. Remove pressure relief valve housing. Position manifold block between bracket and pressure relief valve housing. Attach with two 5/16 x 3-1/4 inch cap screws.
2. Attach adapter to manifold block at the pressure return port.
3. Attach elbow to manifold block at the pressure port.

bradco OWNER'S MANUAL

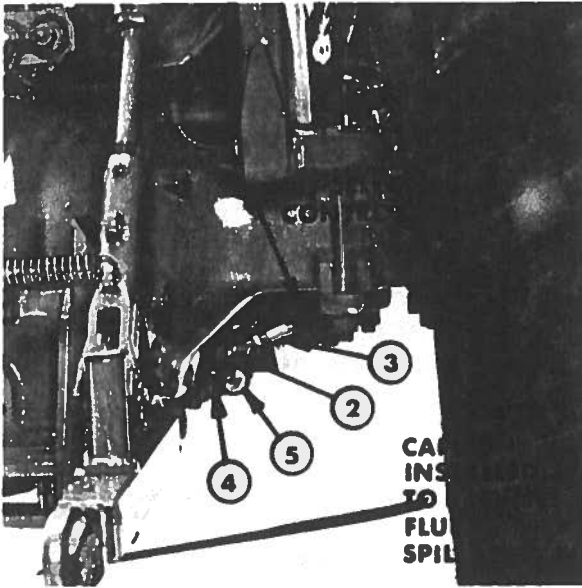
B) Assembly - Continued

NOTE: Steps 2 and 4 are the only steps necessary for tractor modification when the backhoe is used in conjunction with the 37 loader.



4. Remove plug from transmission case. Install adapters (#3148 & #3070) and 90 degree swivel elbow (#3149).

Closed-Center Tractors with Selective Control Not Used for Backhoe Operation

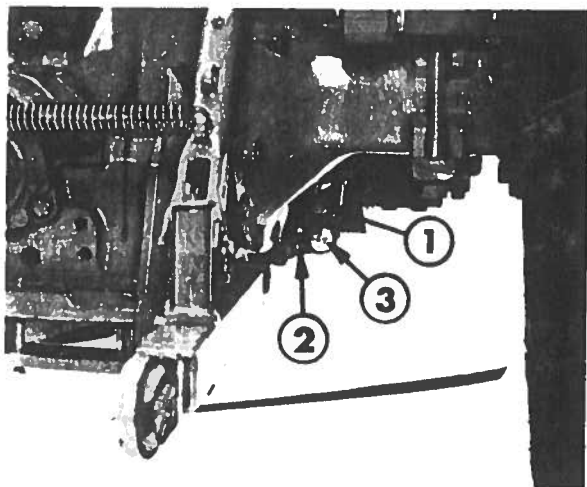


1. (Not illustrated) Remove tube from selective control valve to pressure port.
2. Install tee (#8JIC female to #8JIC male to #8JIC male at pressure port).
3. Attach hose (1/2 x 24 inch 2-wire with #8JIC female swivel on each end) to tee and selective control valve.
4. Install filter cover with port and O-rings (if not already equipped).
5. Attach adapter to port on filter cover.

bradco OWNER'S MANUAL

B) Assembly - Continued

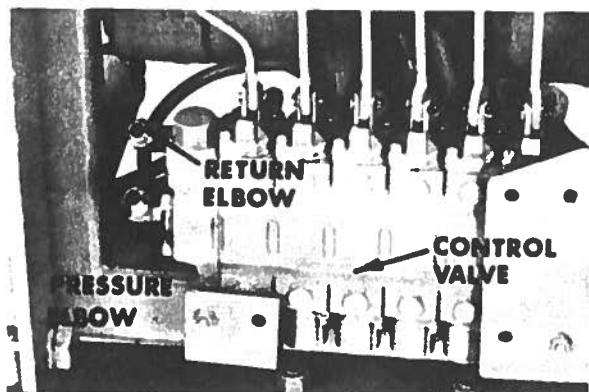
Closed Center Tractors Without Selective Control



1. Install adapter at pressure ports.
2. Install filter cover with port and O-rings (if not already equipped).
3. Attach adapter to filter cover port.

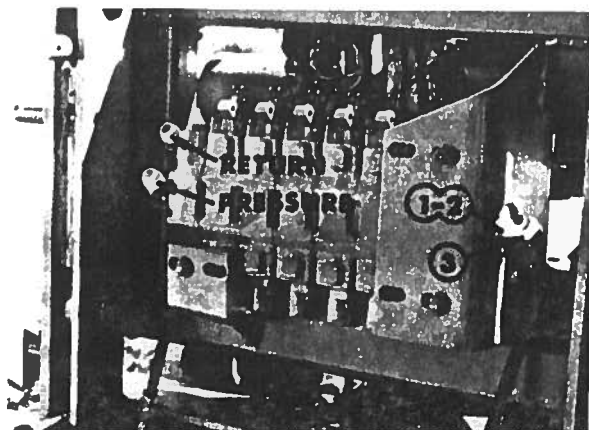
ASSEMBLING THE BACKHOE

Pressure and Return Elbows



Rotate the pressure and return elbows so they are pointing upward and away from the bucket end of the backhoe as shown.

Power Beyond Elbow (Open-Center Tractors Only)

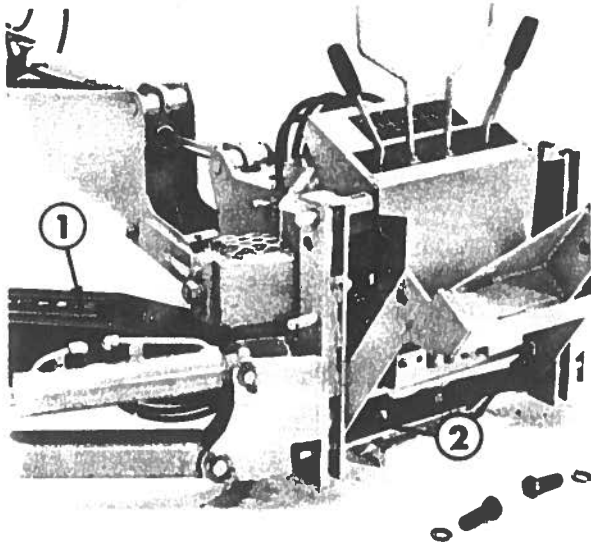


1. Remove open-center plug.
2. Install power-beyond plug.
3. Install elbow and position similar to pressure and return elbows.

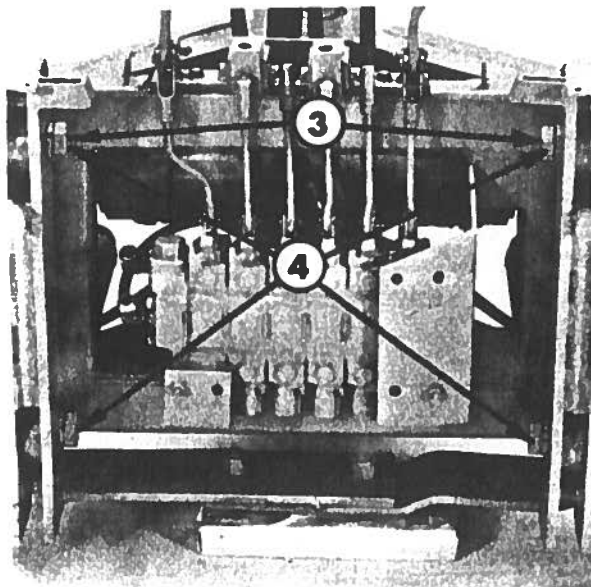
bradco OWNER'S MANUAL

B) Assembly - Continued

3-Point Hitch Adapter



1. Support backhoe with jack or chain hoist for easier hole alignment.
2. Remove lower mounting bolts (1 x 2-1/2 inch) lock washers, and flat washers, line up lower holes on adapter with lower holes on backhoe and attach loosely with large bolts (1 x 3 inch) and lock washers.
3. Remove upper mounting bolts (1 x 2-1/2), lock washers, and flat washers. Swing adapter into position and install longer bolts (1 x 3 inch) and lock washers at upper mounting holes. (Adjust the amount of weight on the jack or hoist to achieve best hole alignment.)

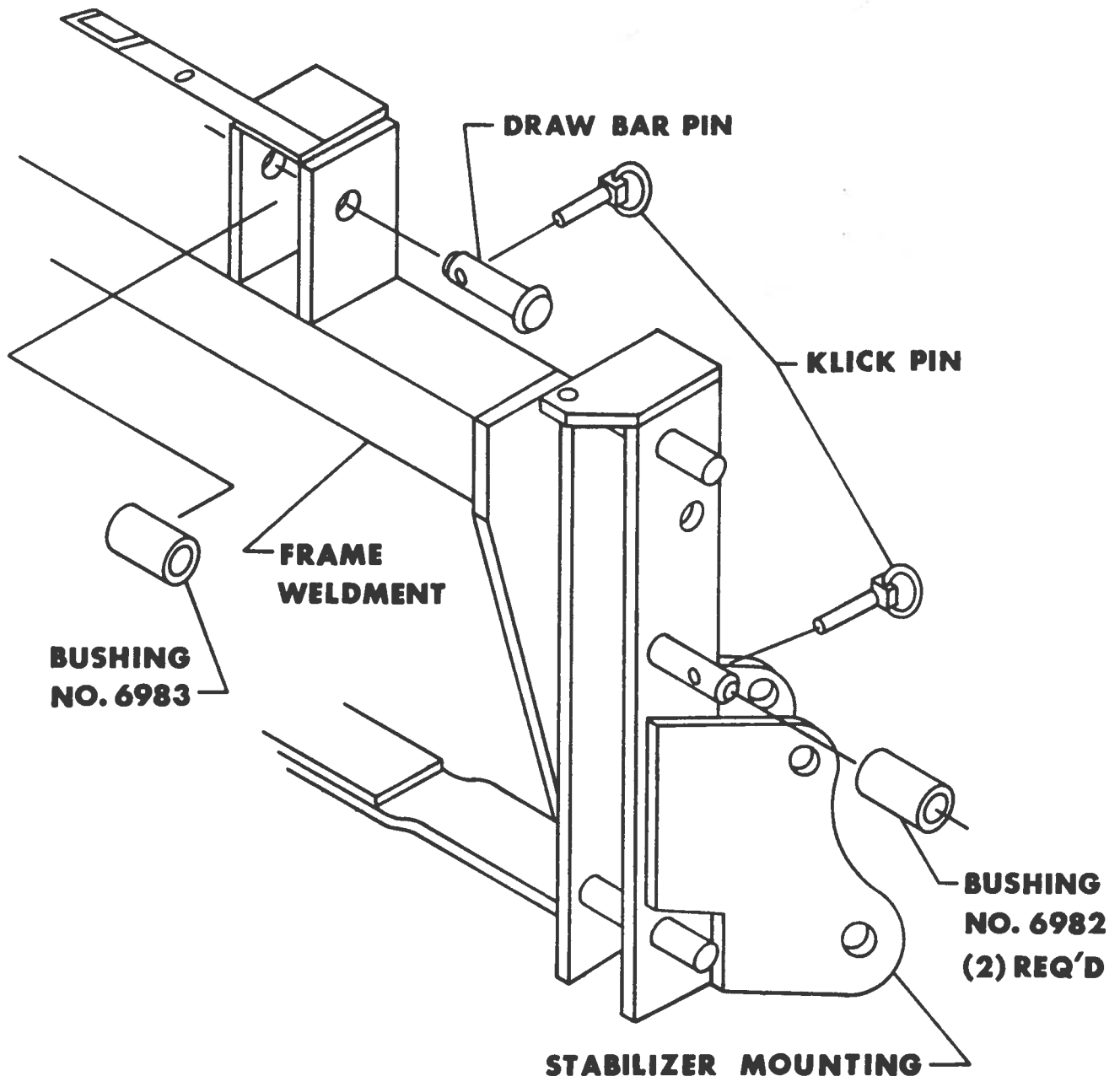


bradco OWNER'S MANUAL

B) Assembly - Continued

ATTACHING BACKHOE TO A CATEGORY II 3-POINT HITCH

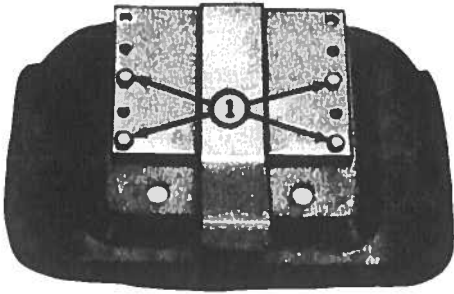
- 1) Slide bushings No. 6982 onto stabilizer mounting pins.
- 2) Install bushing into upper link and attach to backhoe using a draw bar pin and klick pin.
- 3) Slide lower links over the bushings on the stabilizer mounting pins and secure with klick pins.



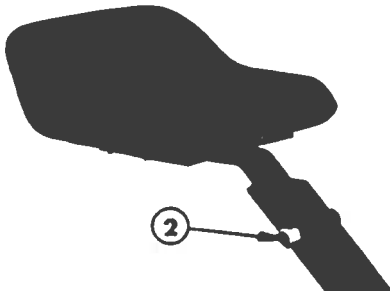
bradco OWNER'S MANUAL

B) Assembly - Continued

Backhoe Seat

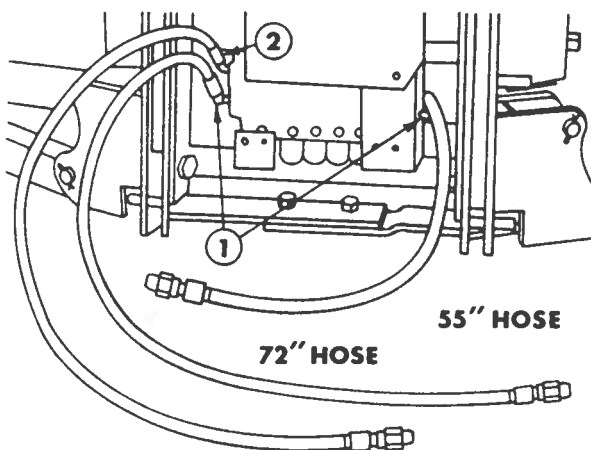


1. Attach seat mounting bracket to seat with four 5/16 x 1 inch cap screws and lock washers. By using the different sets of mounting holes, the seat can be adjusted forward or rearward to suit the operator.



2. Attach seat to 3-point hitch adapter with a 3/4 x 4 inch bolt and lock nut.

Hydraulic Hoses (Open-Center Tractors)



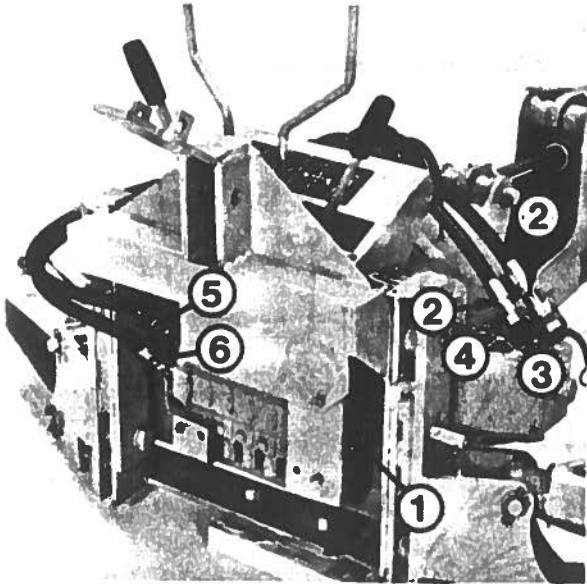
1. Attach one 55 inch hose to the power-beyond elbow on the control valve and the other to the pressure elbow on the control valve.
2. Attach the 72 inch hose to the return elbow on the control valve.

bradco OWNER'S MANUAL

B) Assembly - Continued

Hydraulic Hoses

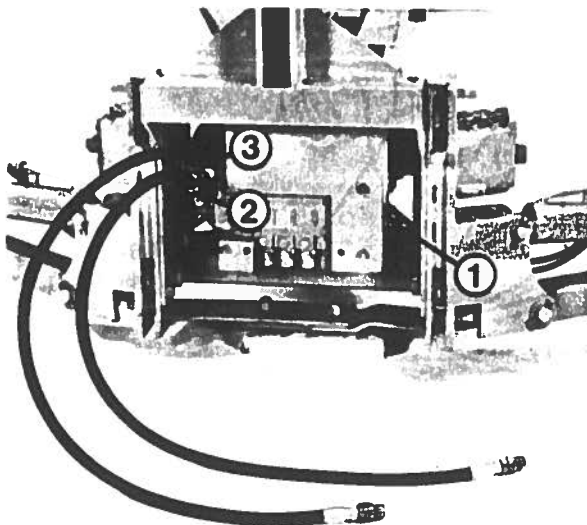
(Closed-Center Tractors with Selective Control)



1. Remove open-center plug from control valve and replace with closed-center plug.
2. Attach O-ring adapter to male end of 46 inch hoses.
3. Attach grooved male Quik-coupler to one 40 inch hose.
4. Attach plain male Quik-coupler to the other 40 inch hose.
5. Attach hose with grooved male Quik-coupler to pressure elbow on control valve.
6. Attach hose with plain male Quik-coupler to return elbow on control valve.

Hydraulic Hoses

(Closed-Center Tractors Without Selective Control or With Selective Control Not Used for Backhoe Operation)



1. Remove open-center plug from control valve and replace with closed-center plug.
2. Attach one 55 inch hose to the pressure elbow on the control valve.
3. Attach the other 55 inch hose to the return elbow on the control valve.

bradco OWNER'S MANUAL

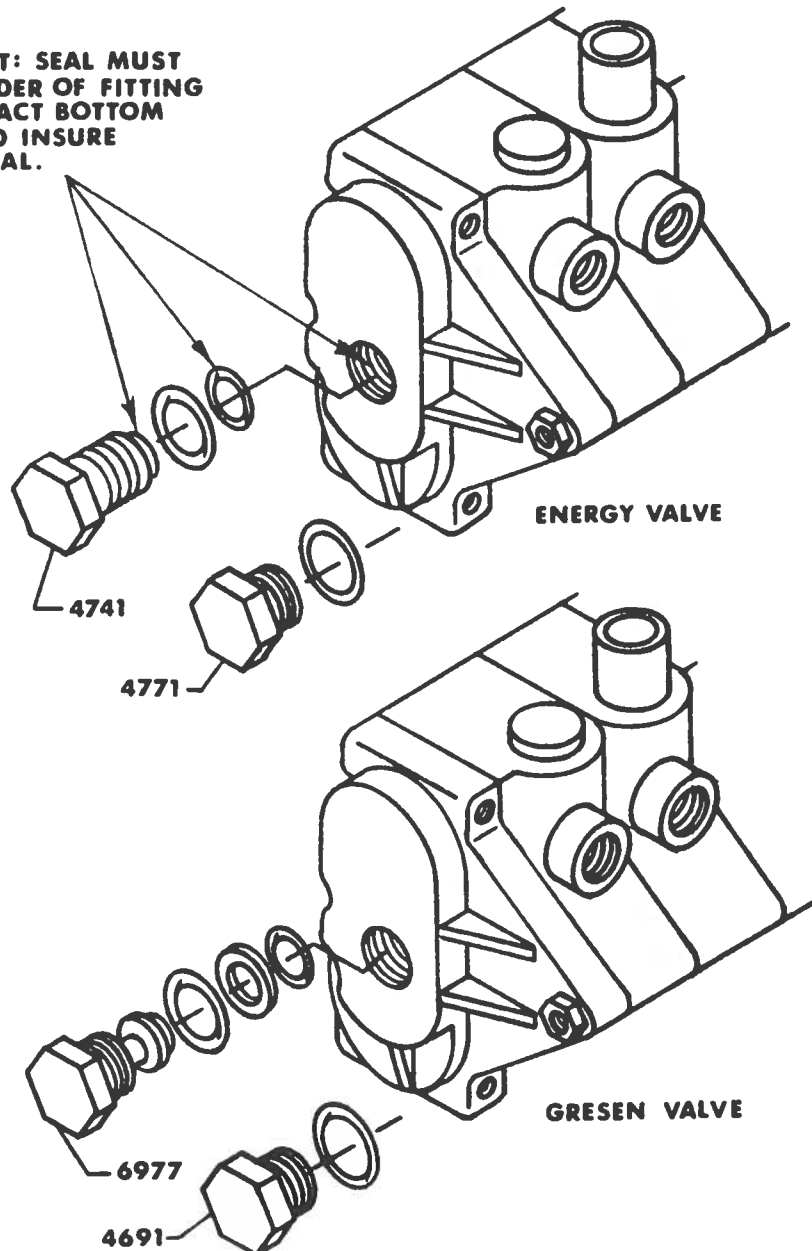
B) Assembly - Continued

Converting Open Center System to Closed Center

1. Remove open center plug No. 4771 from energy valve or open center plug No. 4691 from gresen valve.
2. Install closed center plug No. 4741 in energy valve or closed center plug No. 6977 in gresen valve.

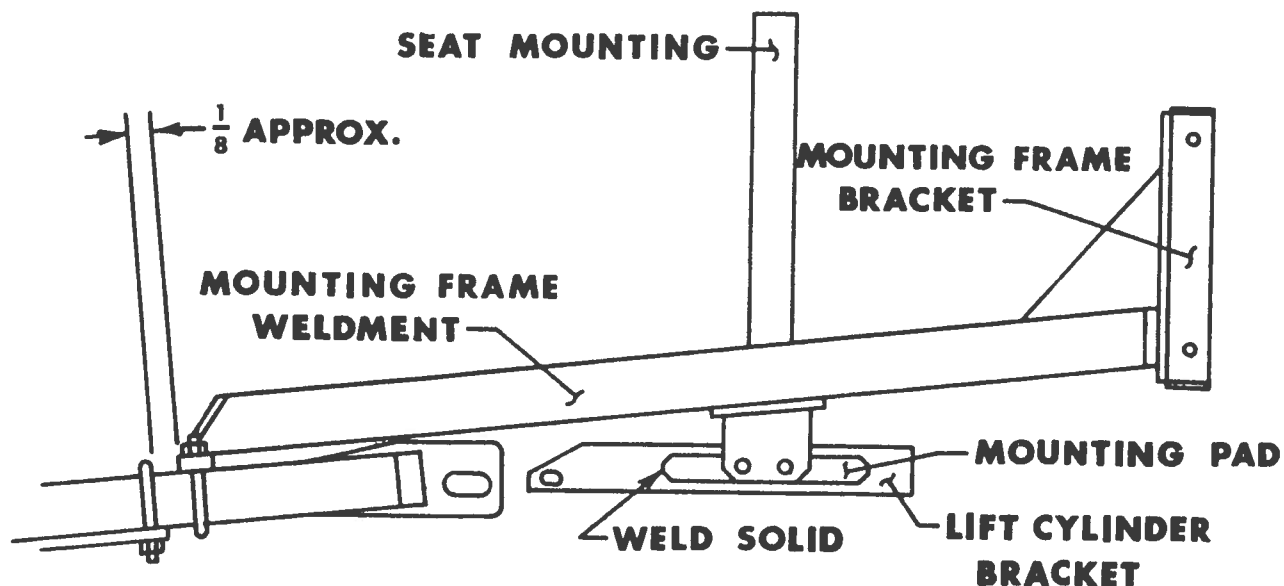
IMPORTANT: Damage to the o-ring and improper seal will occur if the plugs are not installed carefully.

IMPORTANT: SEAL MUST FIT SHOULDER OF FITTING AND CONTACT BOTTOM OF HOLE TO INSURE PROPER SEAL.



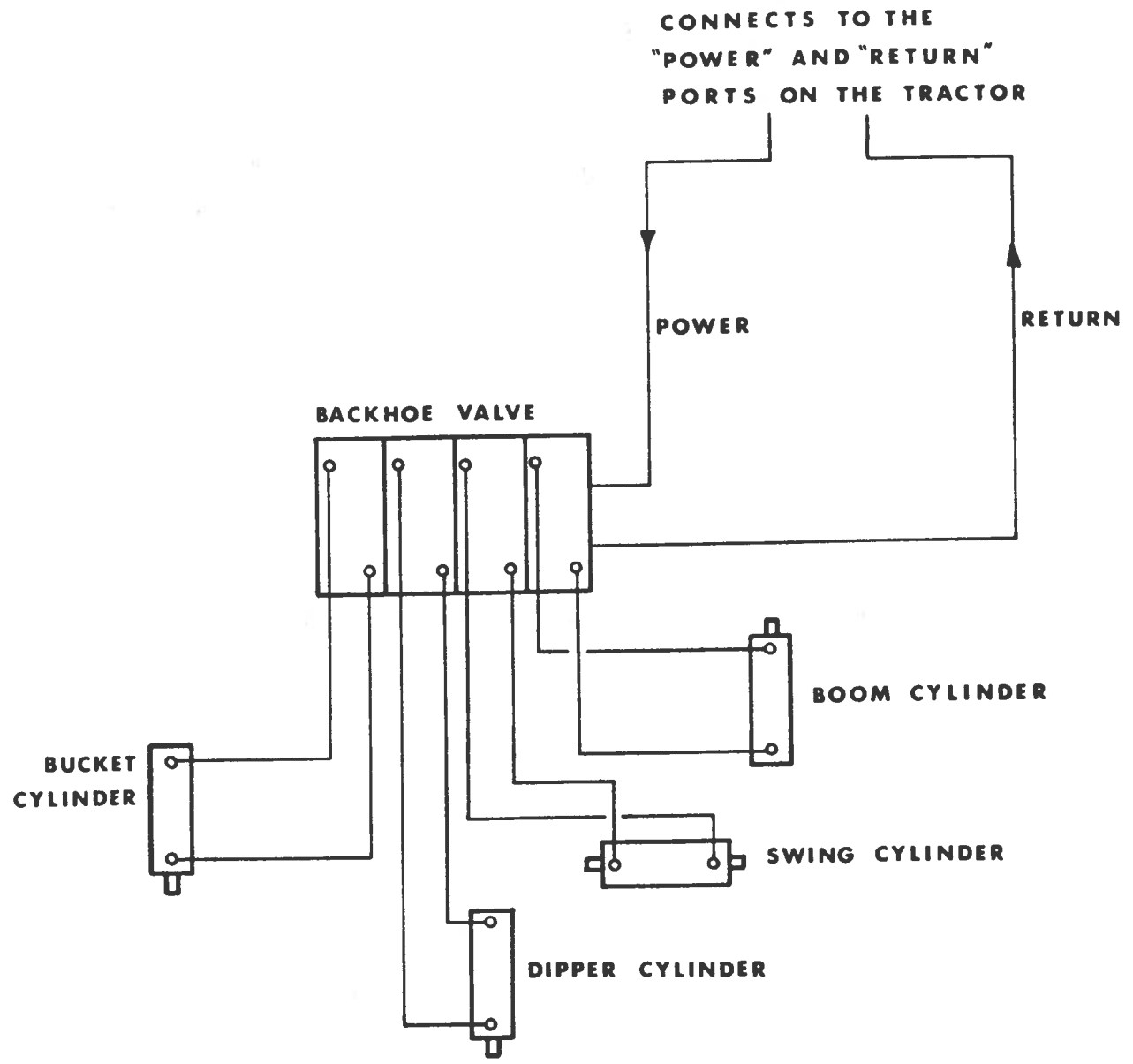
bradco OWNER'S MANUAL

C) ASSEMBLY OF A BRADCO 800 BACKHOE, FRONT-MOUNTED ON A JD TRACTOR.



1. Mount the mounting frame weldment to the Bradco universal frame as shown in the illustration above.
 - a. Align the mounting frame weldment on the universal frame so that the "U" bolt which holds the blade pod weldment to the universal frame is about 1/8" from the mounting frame weldment.
 - b. A "U" bolt attaches the rear end of each mounting frame to the universal frame.
 - c. The bottom ear of the mounting frame weldment attaches to the mounting pad with two 3/4 x 1-1/2 cap screws and lock washers.
 - d. When the mounting pad is centered on the blade lift cylinder bracket, weld the mounting pad in place.
2. The backhoe can now be mounted on the mounting frame bracket.
 - a. Position the backhoe so that the four holes in the mounting frame bracket align with the four holes on the bracket main frame.
 - b. Attach the backhoe to the mounting frame with the four pins and cotter pins.
3. Mount the seat weldment on the mounting frame weldment.
4. Hook up the hydraulic hoses as shown in the hydraulic hook-up diagram.

**FRONT MOUNTED BACKHOE
Hydraulic Schematic Diagram**

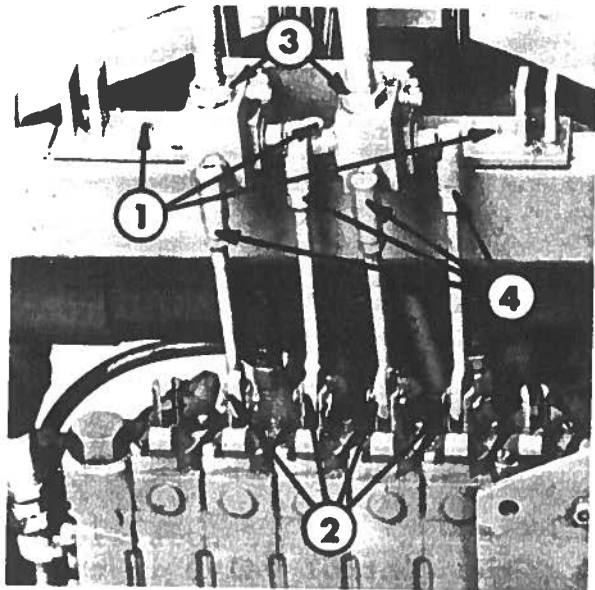


bradco OWNER'S MANUAL

D) COMMON ASSEMBLY PROCEDURE

CONTROL LEVERS

(SKID STEER, 3-POINT HITCH, & FRONT MOUNT)



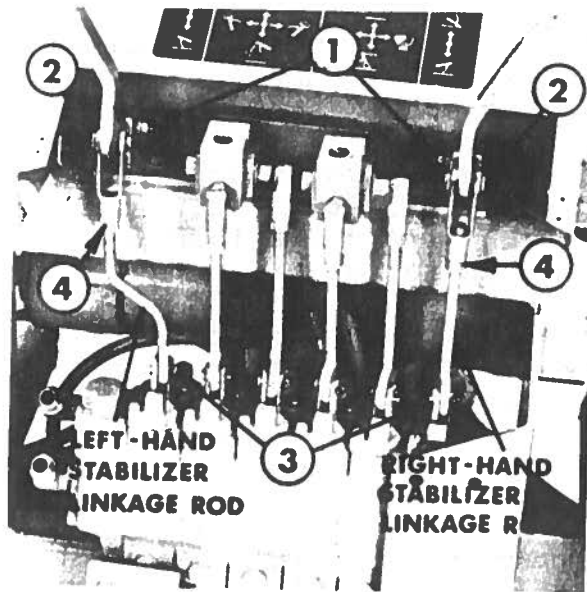
1. Mount pivot block bracket to main frame using three $3/8 \times 3/4$ inch cap screws and lock washers.
2. Attach pivot block linkage to the control valve using four $1/4 \times 7/8$ inch pins with cotter pins.
3. Screw end of handles into pivot blocks and secure with two $5/8$ inch jam nuts.
4. Adjust linkage rods with control valve in the neutral position until control handles are in a vertical position.

bradco OWNER'S MANUAL

D) Assembly - Continued

STABILIZER CONTROL LEVERS

(SKID STEER & 3-POINT HITCH)



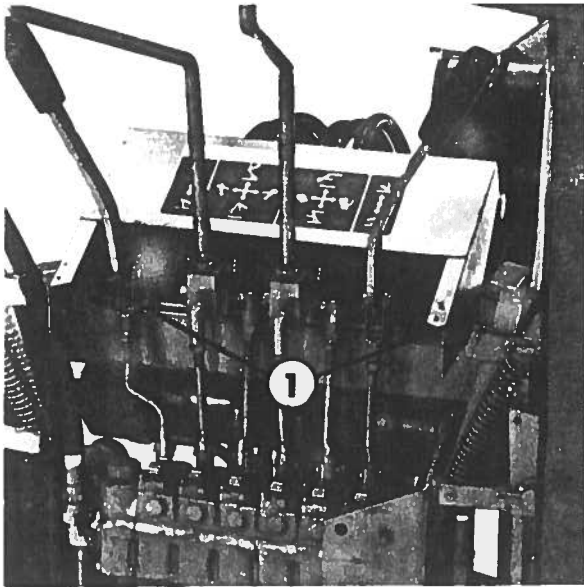
1. Attach stabilizer control handles to pivot block bracket using (2) 1/4 x 1-1/2 inch cap screws and nuts.
2. Attach clevis ends of linkage rods to stabilizer control handles using (2) 3/8 x 1 1/16 inch pins and cotter pins.
3. Attach end of linkage rods to control valve using (2) 1/4 x 7/8 inch pins and cotter pins.
4. Adjust linkage rods with the control valve in the neutral position until the control handles are in a vertical position.

bradco OWNER'S MANUAL

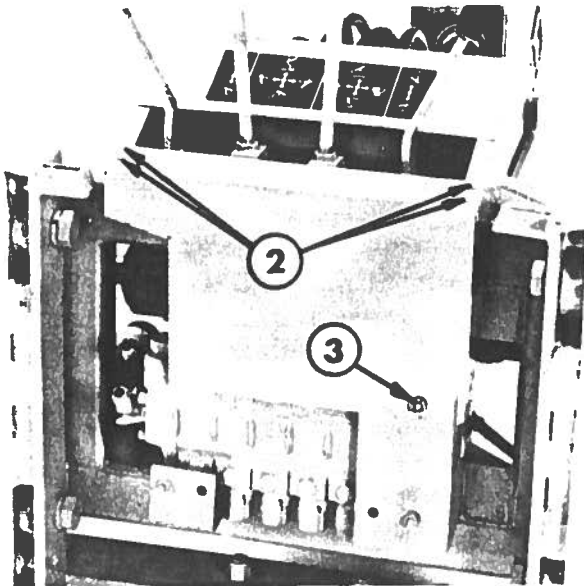
D) Assembly - Continued

CONTROL VALVE SHIELD (Continued)

(SKID STEER, 3-POINT HITCH & FRONT MOUNT)



1. Mount top shield to main frame using (2) 1/4 x 1/2 inch self-tapping screws and lock washers.
2. Attach rear shield to top shield using (4) No. 10 x 1/2 inch self-tapping screws.
3. Attach rear shield to control valve using existing cap screw, lock washer, and nut.

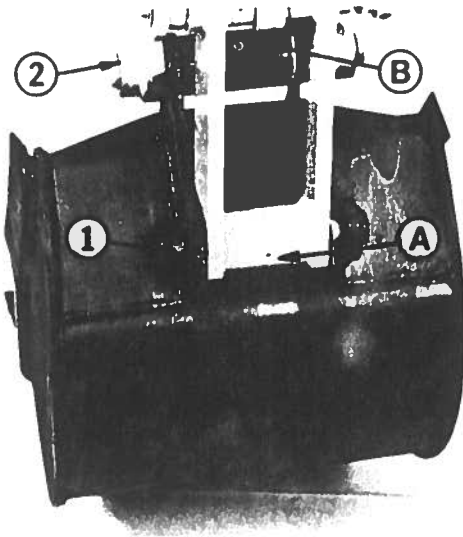


bradco OWNER'S MANUAL

D) Assembly - Continued

BUCKET

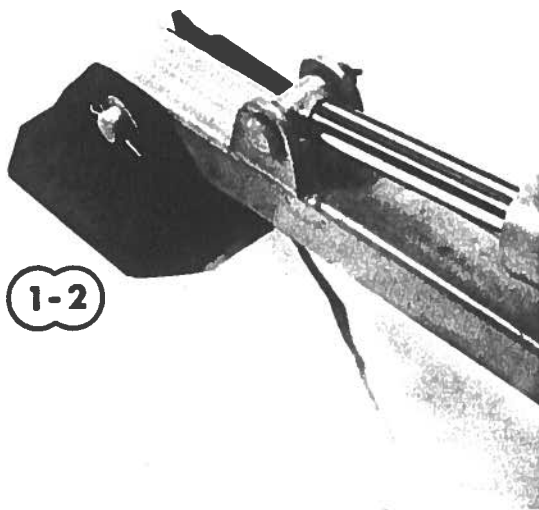
(SKID STEER, 3-POINT HITCH & FRONT MOUNT)



1. Attach bucket to bucket link by installing a 1-3/8 x 8-3/8 inch pin. Secure with flat washer and snap ring at each end and 1/2 x 3/4 inch socket head screw at "A".
2. Attach to dipperstick by installing a 1-3/8 x 10 1/4 inch pin. Secure with flat washer and snap ring at each end and 1/2 x 3/4 inch socket head screw at "B".

TURF PADS (ATTACHMENT)

(SKID STEER & 3-POINT HITCH)



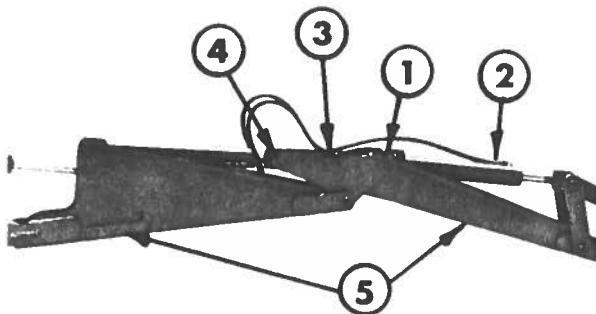
1. Remove cotter pin and flat washer. Slide 1-1/4 x 4-3/4 inch pin out of stabilizer arm.
2. Attach turf pad with 1-1/4 x 4-3/4 inch pin. Secure with flat washer and cotter pin.

bradco OWNER'S MANUAL

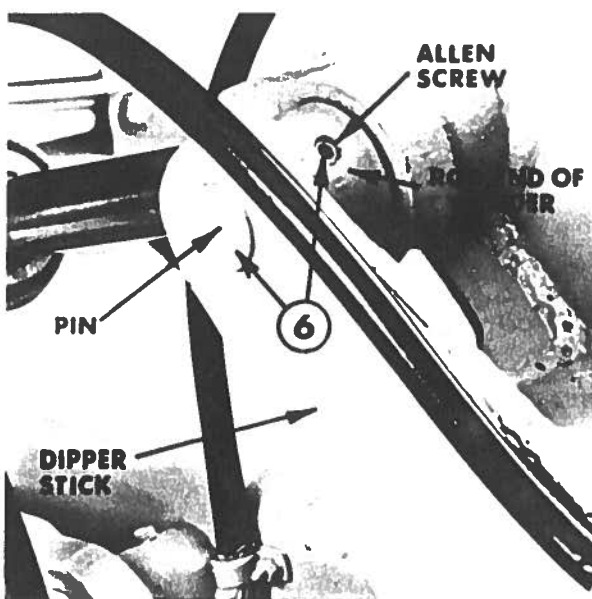
D) Assembly - Continued

BUCKET CYLINDER AND DIPPERSTICK CYLINDER HOSES

(SKID STEER, 3-POINT HITCH & FRONT MOUNT)



1. Attach right-hand 3/8 inch hose to the bucket cylinder extend port.
2. Attach left-hand 3/8 inch hose to the bucket cylinder retract port.
3. Install 5/8 inch hose clamps two 1/4 x 1/2 inch hex. hd. cap screws and lock washers.
4. Remove pin from end of dipperstick.
5. With safety lock to boom out of the locked position, use some type of lifting device to lower backhoe to a horizontal position.



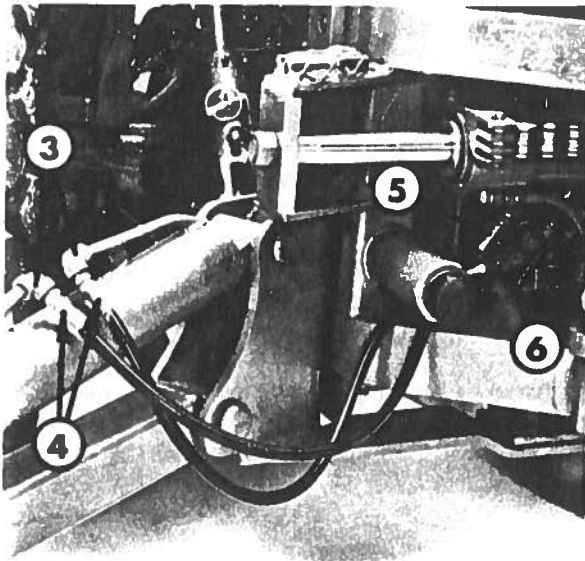
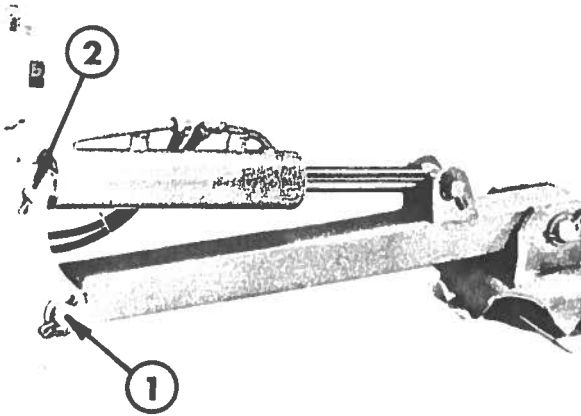
6. Attach rod end of dipperstick cylinder to dipperstick by installing a 1-3/8 x 6 inch pin. Secure by tightening set screw.

bradco OWNER'S MANUAL

D) Assembly - Continued

FRONT STABILIZERS

(SKID STEER & 3-POINT HITCH)



1. Attach both right-hand and left-hand stabilizer arms to main frame using 1-1/4 x 4-3/4 inch pins. Secure with flat washers and cotter pins.
2. Extend stabilizer cylinders and attach to main frame using 1 x 5 inch pins. Secure to main frame using flat washers and cotter pins.
3. Position elbows to point forward on both stabilizer cylinders.
4. Attach 1/4 inch male end of 3/8 inch hose to 90° elbows.
5. Attach 3/8 inch swivel end of extend stabilizer hose to top port on backhoe control valve.
6. Attach 3/8 inch swivel end of retract stabilizer hose to bottom port on backhoe control valve.


OWNER'S MANUAL

BRADCO 800 BACKHOE
MAIN BACKHOE ASSEMBLY

No.	Req'd.	Part No.	Description
1	1	4565	Seal, Top Swing Post
2	1	4566	Seal, Bottom Swing Post
3	2	6264	Cylinder, Boom & Dipper
4	1	6265	Cylinder, Bucket
5	10	6355	Bushing (1 3/8 I.D.)
6	2	6356	Bushing, Boom Pivot (1 3/4 I.D.)
7	2	6373	Pin, Dipper Cylinder
8	1	6375	Pin, Bucket Link
9	2	6402	Pin, Boom Cylinder
10	6	6615	Bearing (1 3/8 I.D.)
11	20	6616	Grease Zerk
12	2	6617	Bearing (2 1/2 I.D.)
13	1	6562	Spring
14	2	6619	Retaining Ring (1 3/4 Pin)
15	10	6620	Retaining Ring (1 3/8 Pin)
16	4	6621	Clamp
17	2	6622	Washer, Thrust (1 3/4 I.D.)
18	10	6623	Washer, Thrust (1 3/8 I.D.)
19	2	6896	Pin, 1 3/8 x 10 Dipper Link
20	1	6897	Pin, 1 3/8 x 10 1/4 Dipper to Bucket
21	1	6898	Pin, 1 3/8 x 7 1/8 Boom Cyl. to Swing Pos
22	1	6899	Pin, 1 3/8 x 9 1/2 Boom to Dipper
23	1	6900	Pin, 1 3/4 x 11 1/8 Lower Boom Pivot
24	2	6903	Retainer, Front Bearing
25	2	6912	Dipper Link Weldment
26	1	6915	Dipper Weldment

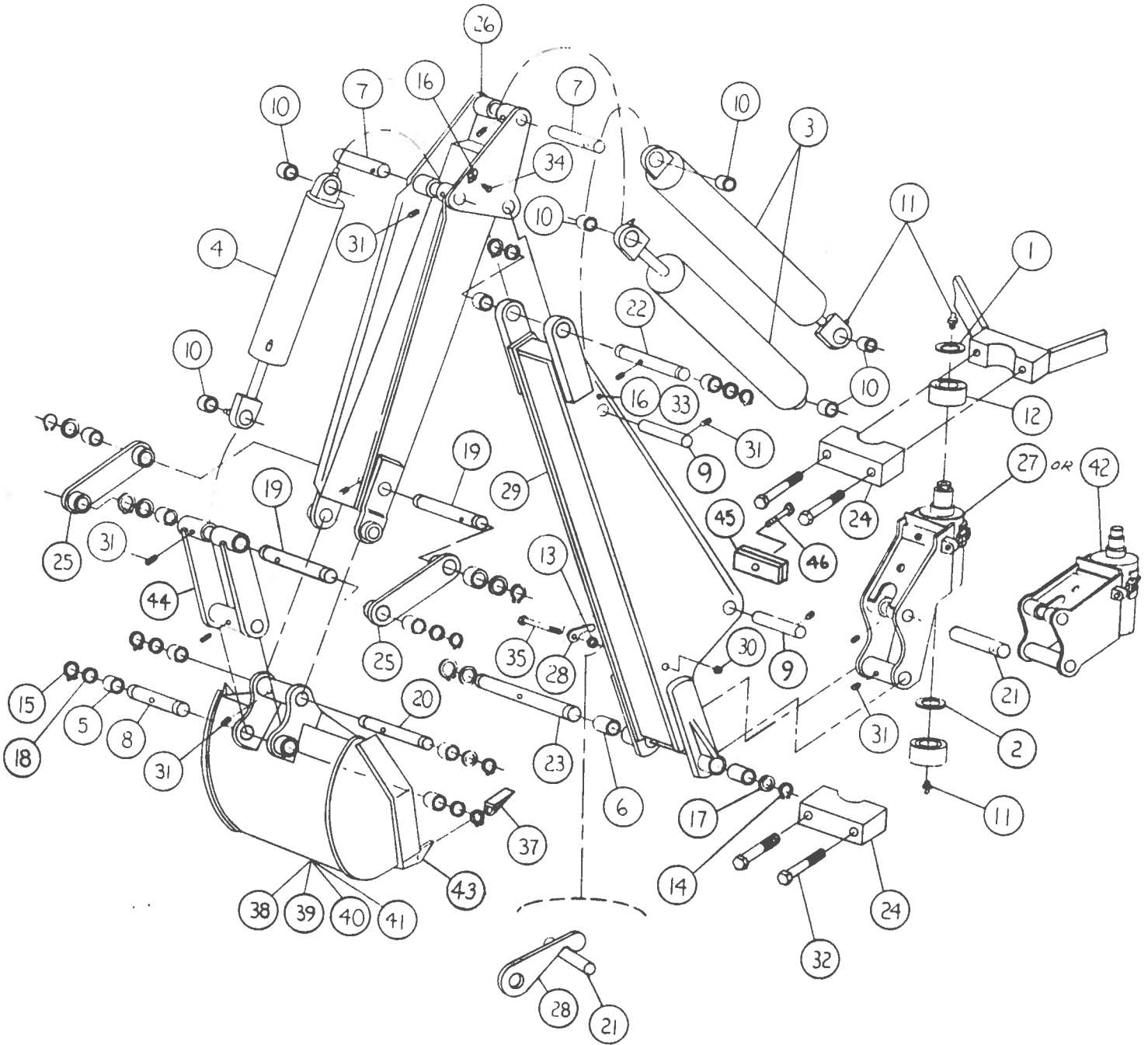

OWNER'S MANUAL

 BRADCO 800 BACKHOE
 MAIN BACKHOE ASSEMBLY

No.	Req'd.	Part No.	Description
27	1	6917	Swing Pivot Weldment
28	1	6938	Boom Safety Hook
29	1	6947	Boom Weldment
30	5	1534	3/4 - 10 Lock Nut
31	11	1574	Socket Set Screw, Cup Point, Self-Lock 1/2 - 13 x 3/4
32	4	1152	3/4 UNC x 6 1/2 Hex Capscrew
	4	1231	3/4 UNC Hex Nut
	4	1507	3/4" Lock Washer
33	2	1003	1/4 UNC x 1" Hex Capscrew
	2	1224	1/4 UNC Hex Nut
	2	1501	1/4 Lock Washer
34	2	1001	1/4 UNC x 1/2 Hex Capscrew
	2	1501	1/4 Lock Washer
35	1	1155	3/4 UNC x 8" Hex Capscrew
37	Varied	6397	Tooth
38	1	6399	Bucket 24"
39	1	6400	Bucket 18"
40	1	6401	Bucket 12"
41	1	6989	Bucket 36"
42	1	6918	Swing Pivot Weldment
43	Varied	6398	Shank, Tooth
44	1	6930	Bucket Link Wm't
45	1	6380	Hose Clamp Assy.
46	1	1046	3/8 UNC x 1 3/4 Hex Capscrew

bradco OWNER'S MANUAL

BRADCO 800 BACKHOE MAIN BACKHOE ASSEMBLY



bradco OWNER'S MANUAL

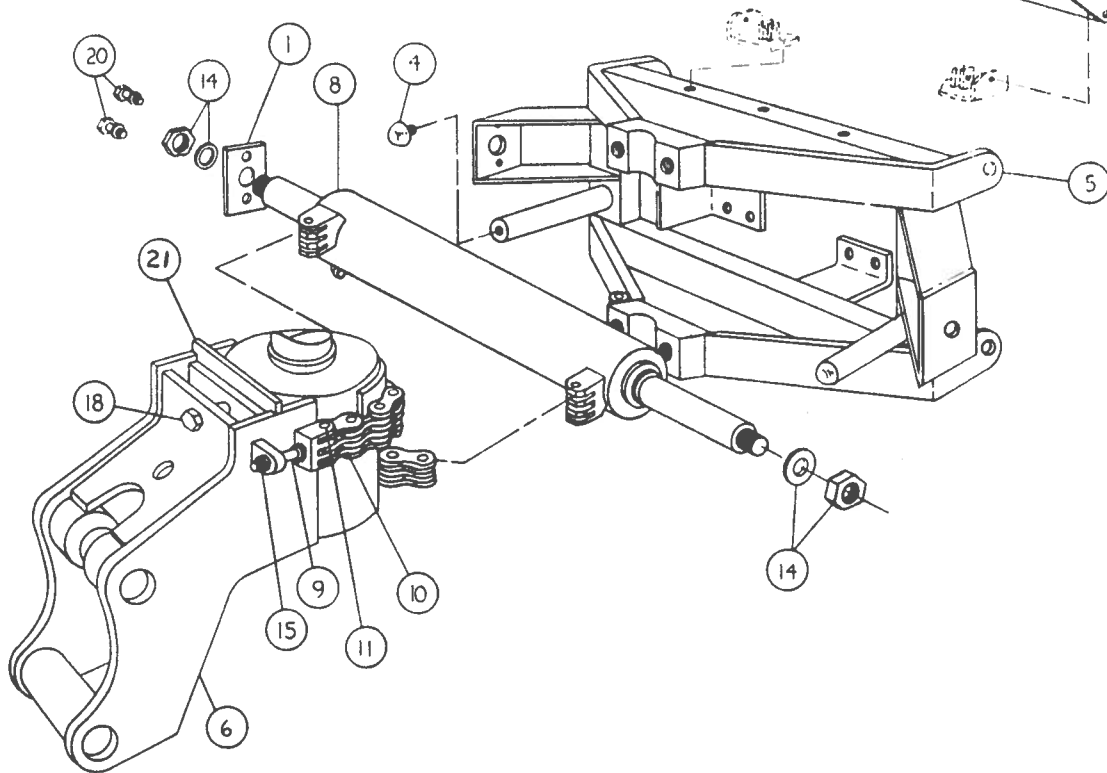
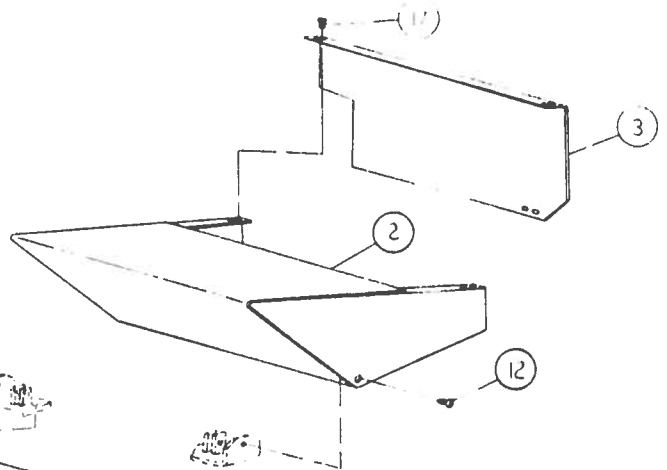
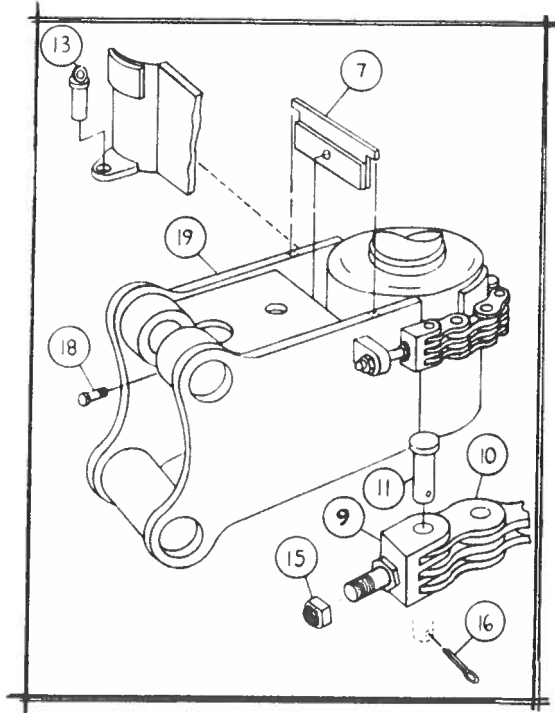
BRADCO 800 BACKHOE

MAIN FRAME ASSEMBLY

No.	Req'd.	Part No.	Description
1	1	6252	Plate, Removable Cyl.
2	1	6825	Valve Cover
3	1	6829	Bottom Sheet (valve cover)
4	2	6886	Rubber Bumper
5	1	6910	Swing Frame
6	1	6917	Swing Pivot Weldment
7	1	6929	Hose Clamp Ass'y.
8	1	6943	Swing Cylinder
9	2	6945	Bolt Weldment
10	2	6959	Chain, Swing Leaf
11	4	6960	Pin, Swing Chain
12	2	6964	1/4 x 1/2 Screw, Hex Hd. Self-tap
13	1	6965	Pin, 3 3/4 (anti-swing)
14	2	1535	1" - 14 Hex Nut
	2	1509	1" Lock Washer
15	5	1534	Lock Nut 3/4 - 10
16	4	1611	Cotter Pin, 1/8 x 1
17	4	7108	Screw, #10 Type B Self-Tapping
18	1	1046	Hex Bolt 3/8 - 16 x 1 3/4
19	1	6918	Swing Pivot Weldment
20	2	1089	1/2 UNC x 1 1/4 Hex Capscrew
	2	1505	1/2 Lock Washer
21	1	7603	Hose Clamp Assembly

bradco OWNER'S MANUAL

BRADCO 800 BACKHOE MAIN FRAME ASSEMBLY




OWNER'S MANUAL

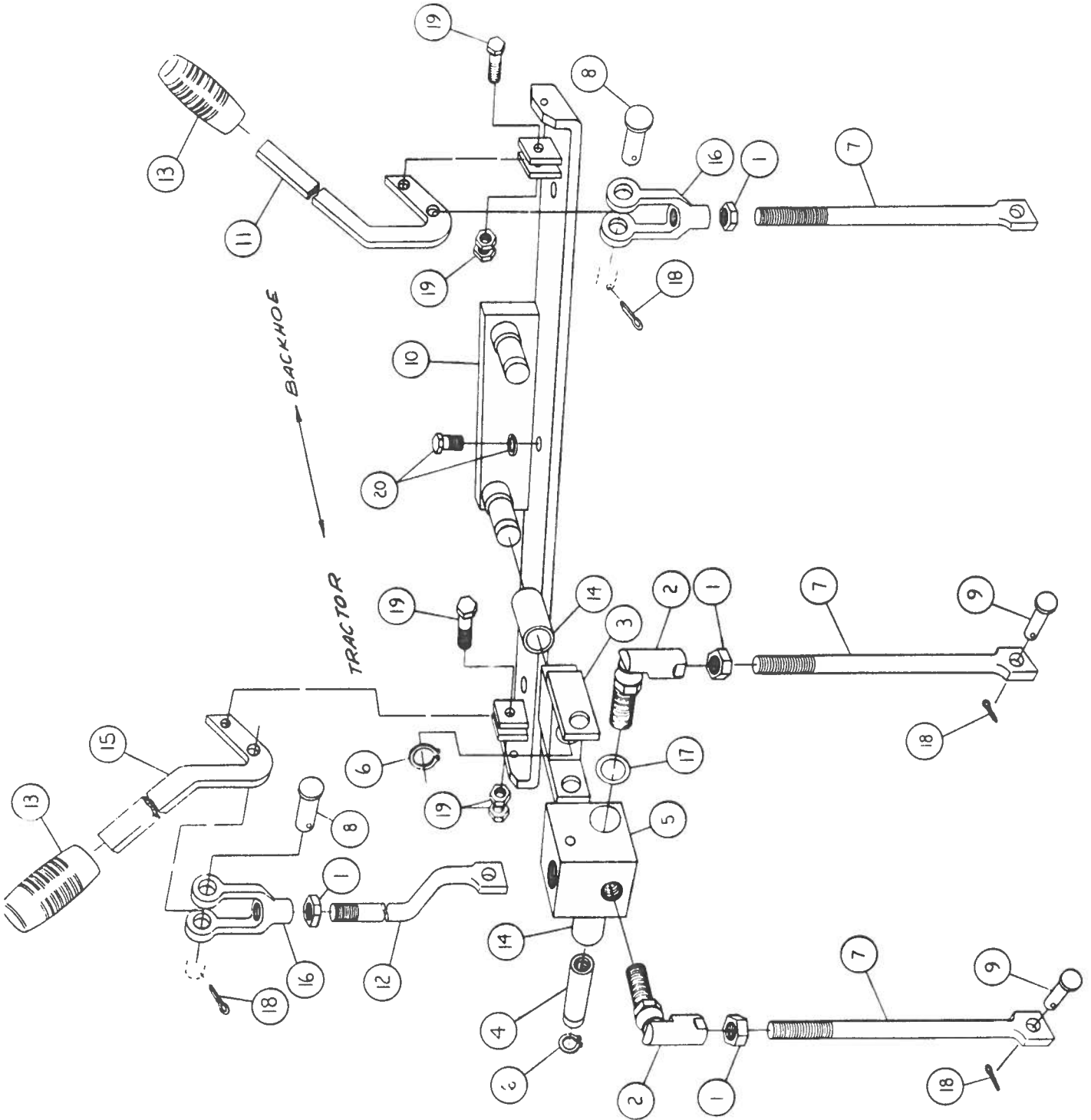
BRADCO 800 BACKHOE

2 LEVER CONTROL ASSEMBLY

No.	Req'd.	Part No.	Description
1	6	1476	Hex Nut, 3/8-24 UNF
2	4	5545	Ball Joint
3	2	6270	Yoke Wm't (includes bushing 6961)
4	2	6271	Pivot Pin
5	2	6272	Block, Pivot (includes bushing 6961)
6	4	6274	Retaining Ring
7	5	6277	Control Rod Weldment
8	2	6624/	Clevis Pin
9	6	6776	Clevis Pin
10	1	6858	Bracket, Handle Mtg.
11	1	6868	Stabilizer Handle (right)
12	1	6869	Control Rod (offset)
13	2	6894	Handle Grip
14	4	6961	Bronze Bushing
15	1	6962	Stabilizer Handle (left)
16	2	6963	Control Rod Clevis
17	4	1525	3/8 SAE Flat Washer Pin
18	8	1612	Cotter Pin 3/32 x 1/2
19	2	1005	1/4 UNC x 1 1/2 Hex Capscrew
	4	1228	1/2 UNC Hex Nut
20	3	1042	3/8 UNC x 3/4 Hex Capscrew
	3	1503	3/8 Lock Washer

bradco OWNER'S MANUAL

TWO LEVER CONTROL



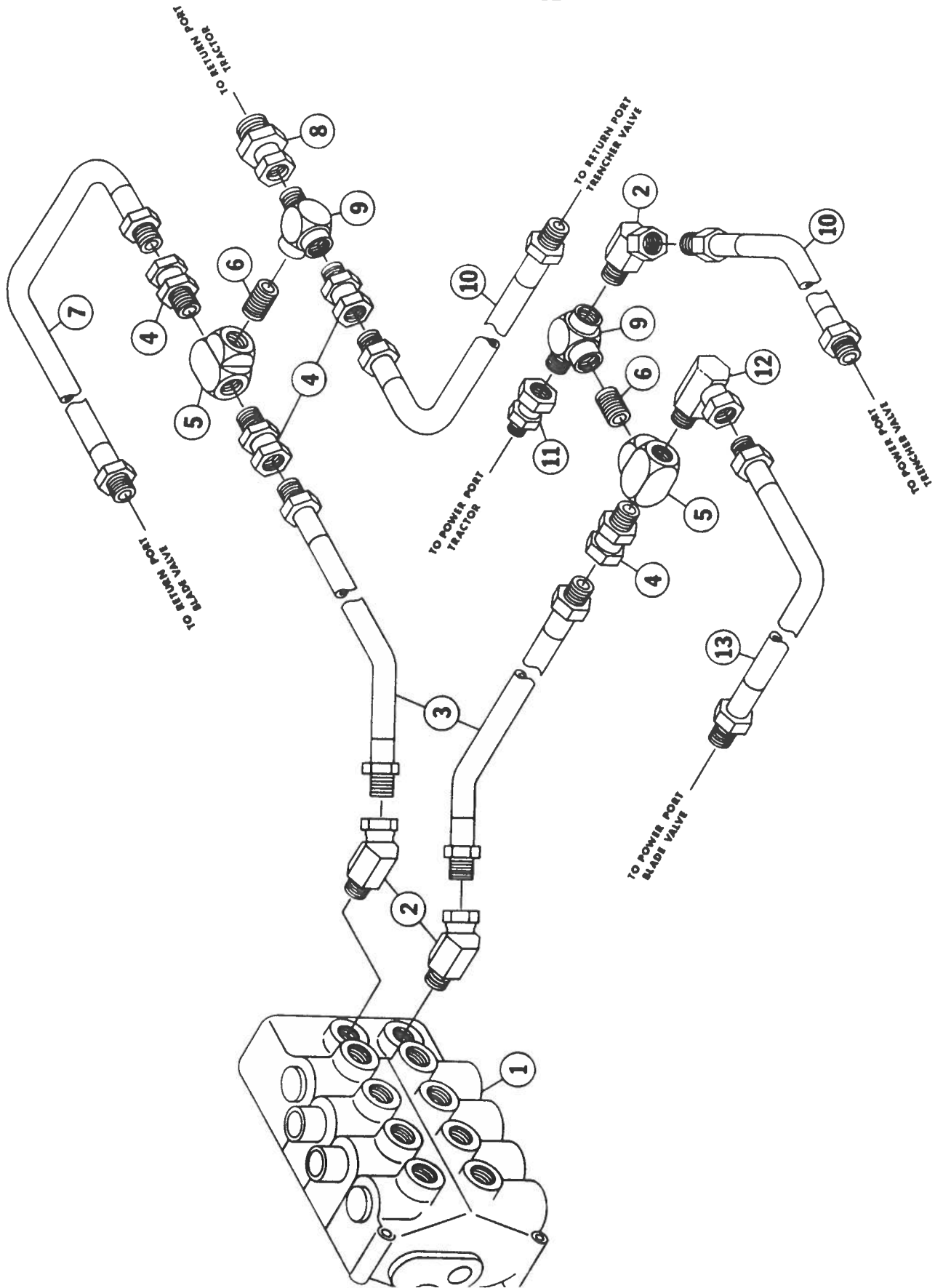
JOHN DEERE FRONT MOUNT BACKHOE

VALVE & FITTINGS

No.	Part No.	Req'd.	Description
1	6357	1	Valve
2	3080	3	1/2 x 45 ^o Hose Adaptor
3	3656	2	1/2" Hose x 123"
4	3005	4	1/2" Straight Hose Adaptor
5	3110	2	1/2" NPT Female Tee
6	3030	2	1/2" Close Nipple
7	3657	1	1/2" Hose x 21 1/2"
8	3038	1	1/2" to 3/4" Straight Hose Adaptor
9	3031	2	1/2" Tee Service
10	3579	2	1/2" Hose x 52"
11	3037	1	3/8" to 1/2" Straight Hose Adaptor
12	3033	1	1/2" x 90 ^o Hose Adaptor
12	3585	1	1/2" Hose to 24"

bradco OWNER'S MANUAL

JOHN DEERE FRONT MOUNT BACKHOE VALVE & FITTINGS



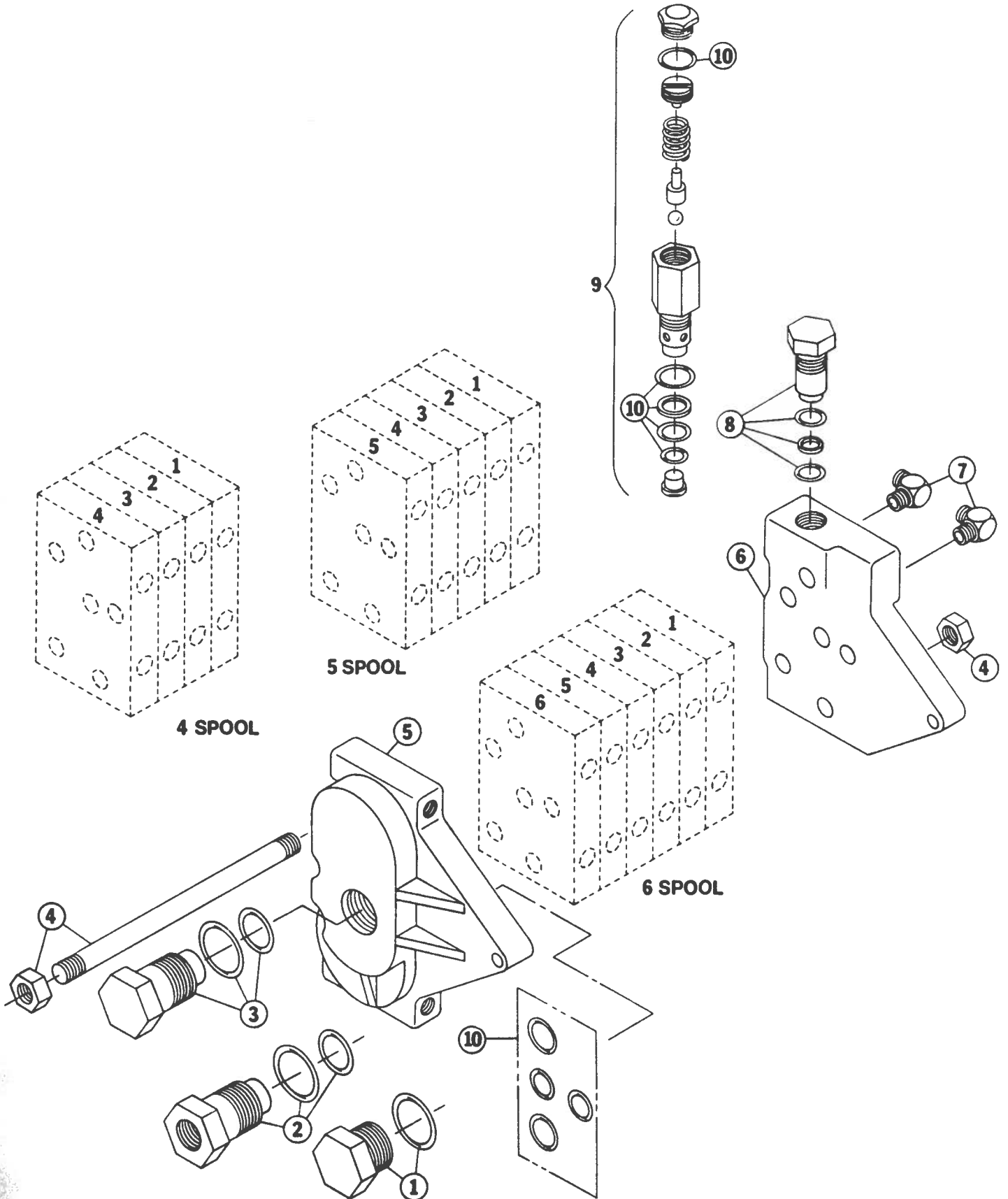

OWNER'S MANUAL

END COVERS FOR ENERGY 4, 5, 6 SPOOL VALVE

Item No.	No. Req'd.	Part No.	Description
1	1	4771	Open Center Plug Assy.
2	1	4770	Power Beyond Adaptor Kit
3	1	4741	Closed Center Plug Assy.
4	3	4724	Assy. Stud w/3/8 Nuts (4 Spool)
	3	4725	Assy. Stud w/3/8 Nuts (5 Spool)
	3	4726	Assy. Stud w/3/8 Nuts (6 Spool)
5	1	4760	Right Cover Plate
6	1	4765	Left Cover Plate
7	2	3079	Elbow 90°
8	1	4742	Plug Assy. - No Relief
9	1	4769	Relief Valve Cartridge
10	1	4783	Seal Kit

bradco OWNER'S MANUAL

END COVERS FOR ENERGY 4, 5, 6 SPOOL VALVE



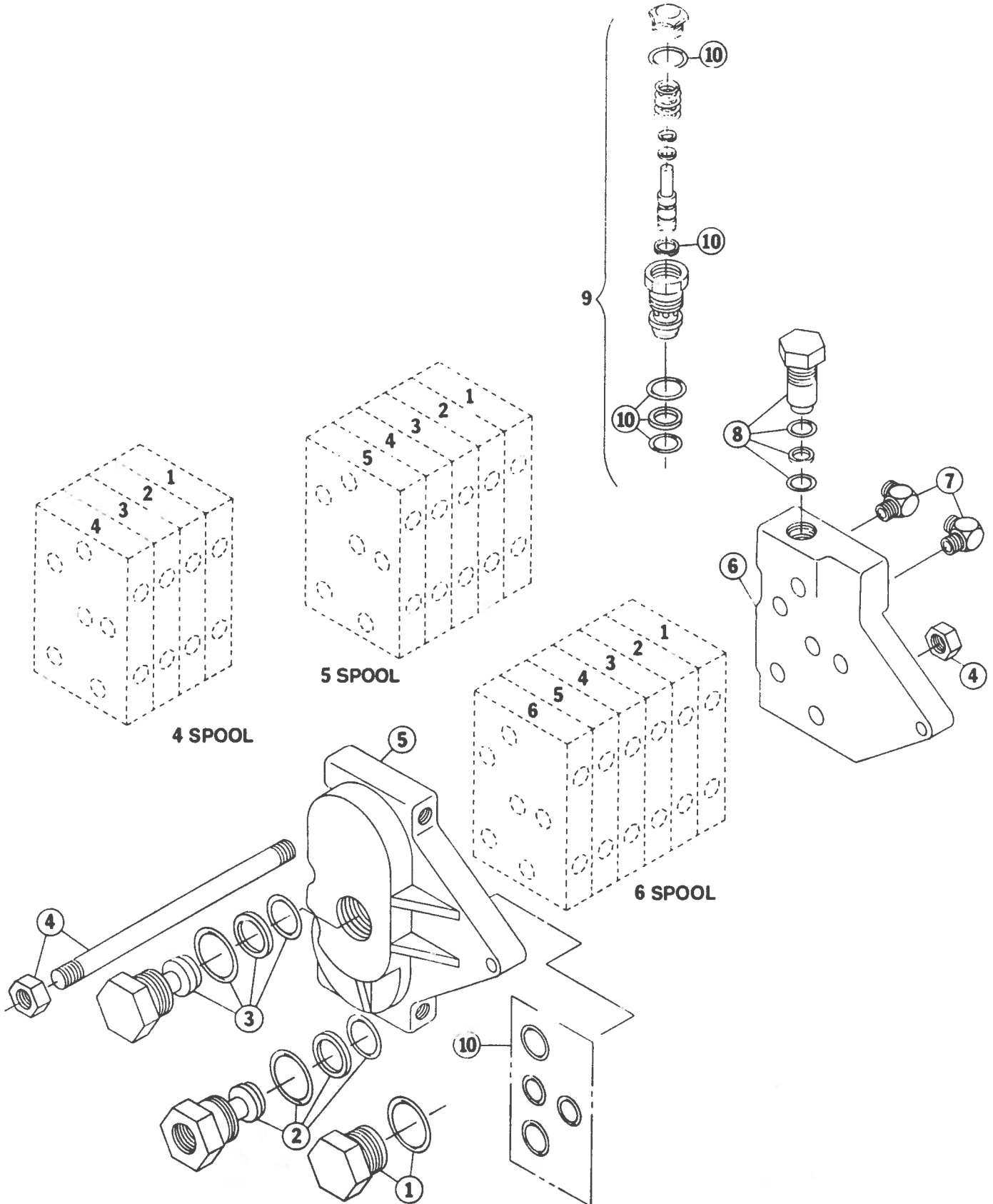
bradco OWNER'S MANUAL

END COVERS FOR GRESEN 4, 5 & 6 SPOOL VALVE

Item No.	No. Req'd.	Part No.	Description
1	1	4691	Open Center Plug Assembly
2	1	4698	Power Beyond Adaptor Kit
3	1	6977	Closed Center Plug Assembly
4	3	4724	Assy. Stud w/3/8 Nuts (4 Spool)
	3	4725	Assy. Stud w/3/8 Nuts (5 Spool)
	3	4726	Assy. Stud w/3/8 Nuts (6 Spool)
5	1	4690	Right Cover Plate
6	1	4647	Left Cover Plate
7	2	3079	Elbow 90°
8	1	4648	Plug Assembly - No Relief
9	1	4713	Relief Valve Cartridge
10	1	4784	Seal Kit

bradco OWNER'S MANUAL

END COVERS FOR GRESEN 4, 5, 6 SPOOL VALVE



bradco OWNER'S MANUAL

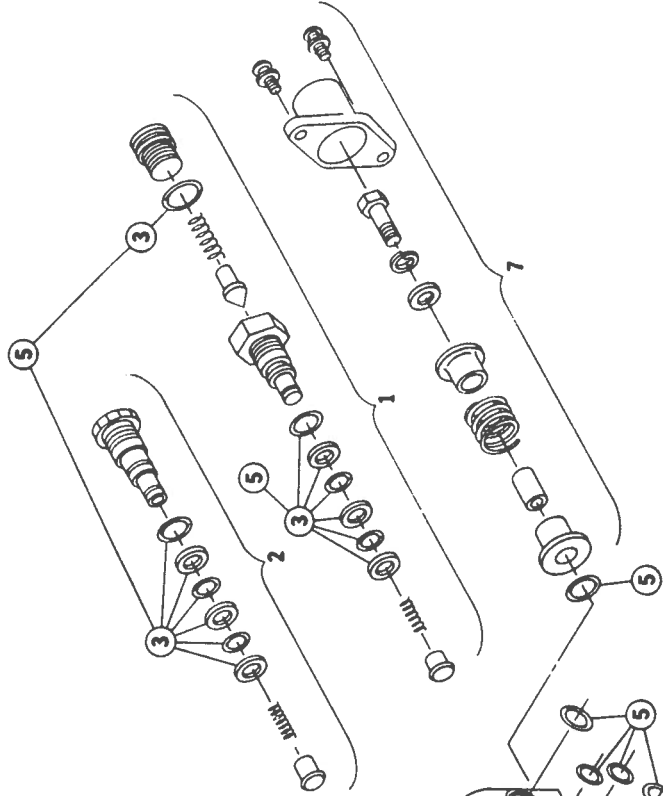
ENERGY 4, 5, 6 SPOOL VALVE

ENERGY 4 SPOOL VALVE

Description	Item No.	Req'd Per Sec.	Req'd No. Sec. 1	Req'd No. Sec. 2	Req'd No. Sec. 3	Req'd No. Sec. 4
Port Relief Cartridge	1	4	4772	12, 4772	4772	4772
Port Check Valve Assembly	2	4	4745	12, 4745	4745	12, 4745
Seal Kit - Port Relief or Port Check	3	8	12, 4773	12, 4773	12, 4773	12, 4773
1/4-20x3/4 Filler HD Cap Screw	4	8	12, 4658	12, 4658	12, 4658	12, 4658
Seal Kit - Complete Section	5	4	4743	4743	4743	4743
Handle Bracket	6	4	4748	4748	4748	4748
Spring Center Cover Assembly	7	4	4746	4746	4746	4746

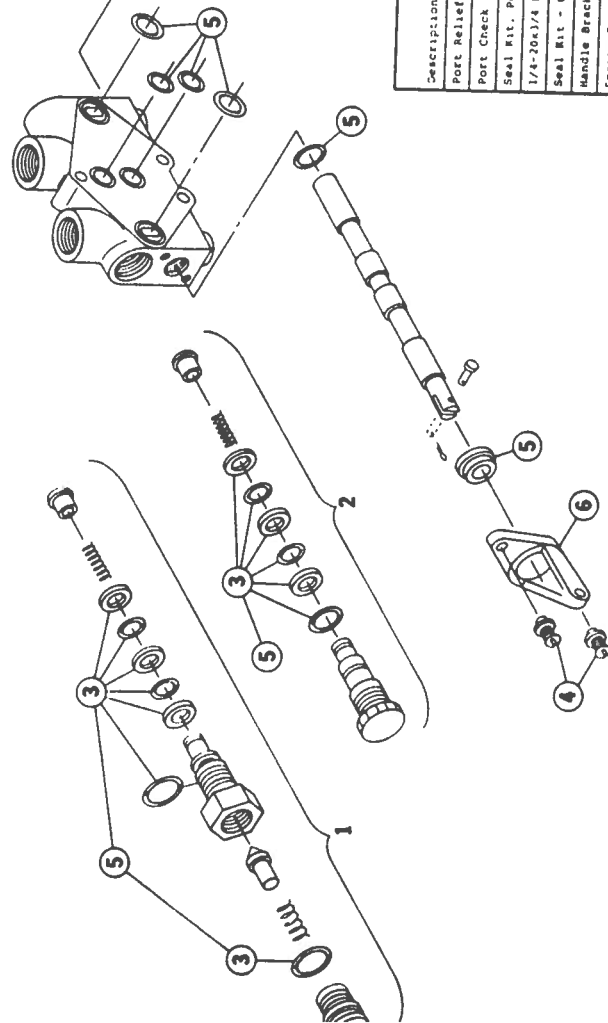
ENERGY 5 SPOOL VALVE

Description	Item No.	Req'd Per Sec.	Req'd No. Sec. 1	Req'd No. Sec. 2	Req'd No. Sec. 3	Req'd No. Sec. 4
Port Relief Cartridge	1	4	4772	12, 4772	4772	4772
Port Check Valve Assembly	2	6	4745	12, 4745	4745	12, 4745
Seal Kit - Port Relief or Port Check	3	12	12, 4773	12, 4773	12, 4773	12, 4773
1/4-20x3/4 Filler HD Cap Screw	4	10	12, 4658	12, 4658	12, 4658	12, 4658
Seal Kit - Complete Section	5	5	4743	4743	4743	4743
Handle Bracket	6	5	4748	4748	4748	4748
Spring Center Cover Assembly	7	5	4746	4746	4746	4746

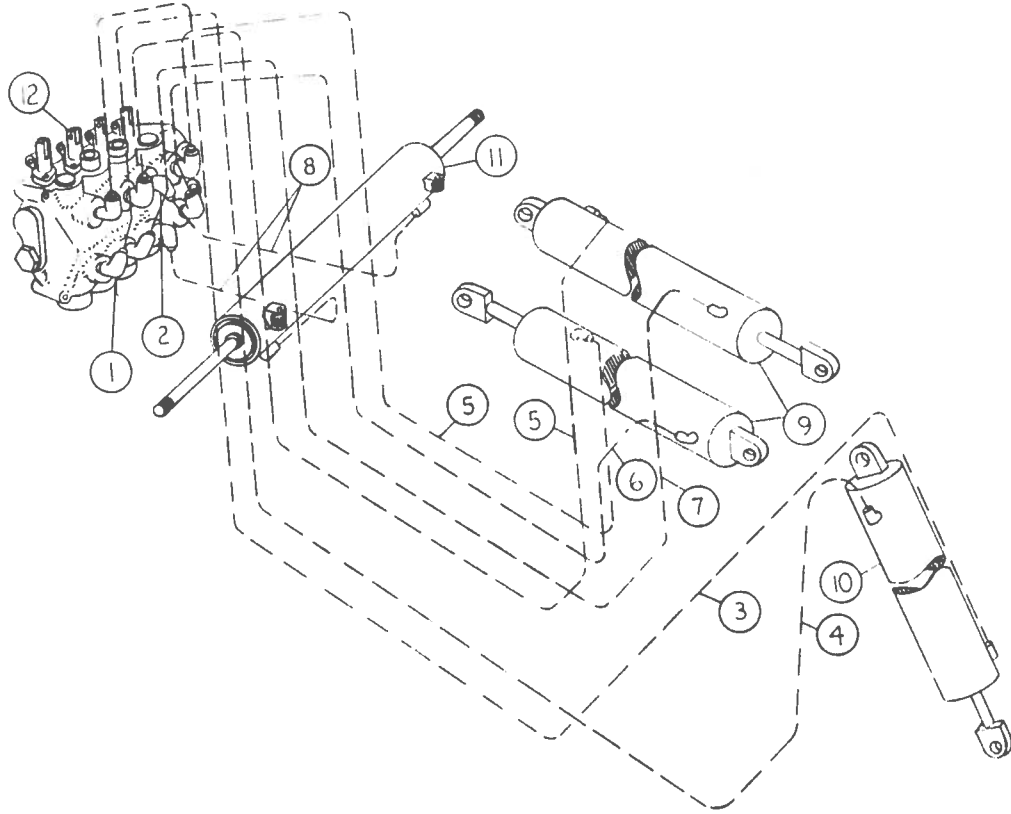


ENERGY 6 SPOOL VALVE

Description	Item No.	Req'd Per Sec.	Req'd No. Sec. 1	Req'd No. Sec. 2	Req'd No. Sec. 3	Req'd No. Sec. 4
Port Relief Cartridge	1	4	4772	12, 4772	4772	4772
Port Check Valve Assembly	2	6	2, 4745	4745	4745	4745
Seal Kit - Port Relief or Port Check	3	12	12, 4773	12, 4773	12, 4773	12, 4773
1/4-20x3/4 Filler HD Cap Screw	4	12	12, 4658	12, 4658	12, 4658	12, 4658
Seal Kit - Complete Section	5	6	4743	4743	4743	4743
Handle Bracket	6	6	4748	4748	4748	4748
Spring Center Cover Assembly	7	6	4746	4746	4746	4746



bradco OWNER'S MANUAL



BRADCO 800 BACKHOE

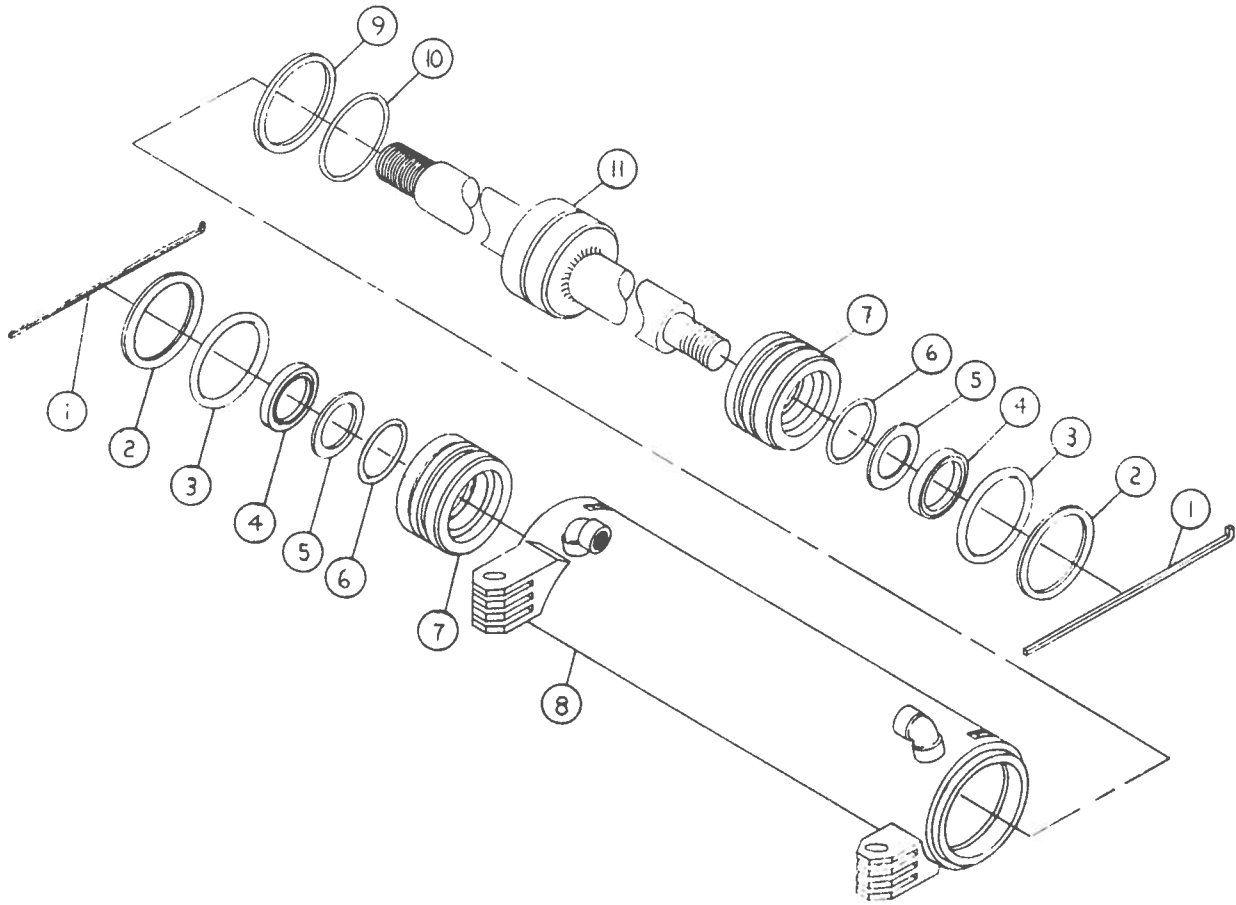
BACKHOE HYDRAULIC SYSTEM

No.	Req'd	Part No.	Description
1	6	3002	Elbow, 90° Male
2	6	3088	Elbow, 90° Male Long
3	1	3628	Hose, 3/8 x 150 Bucket Cyl.
4	1	3629	Hose, 3/8 x 132 Bucket Cyl.
5	2	3630	Hose, 3/8 x 82 w/spring
6	1	3631	Hose, 3/8 x 84 boom cyl.
7	1	3632	Hose, 3/8 x 90 Dipper Cyl.
8	2	3633	Hose, 1/4 x 26 Swing Cyl.
9	2	6264	Cylinder, Boom & Dipper
10	1	6265	Cylinder, Bucket
11	1	6943	Cylinder, Swing

bradco

OWNER'S MANUAL

BACKHOE SWING CYLINDER #6943

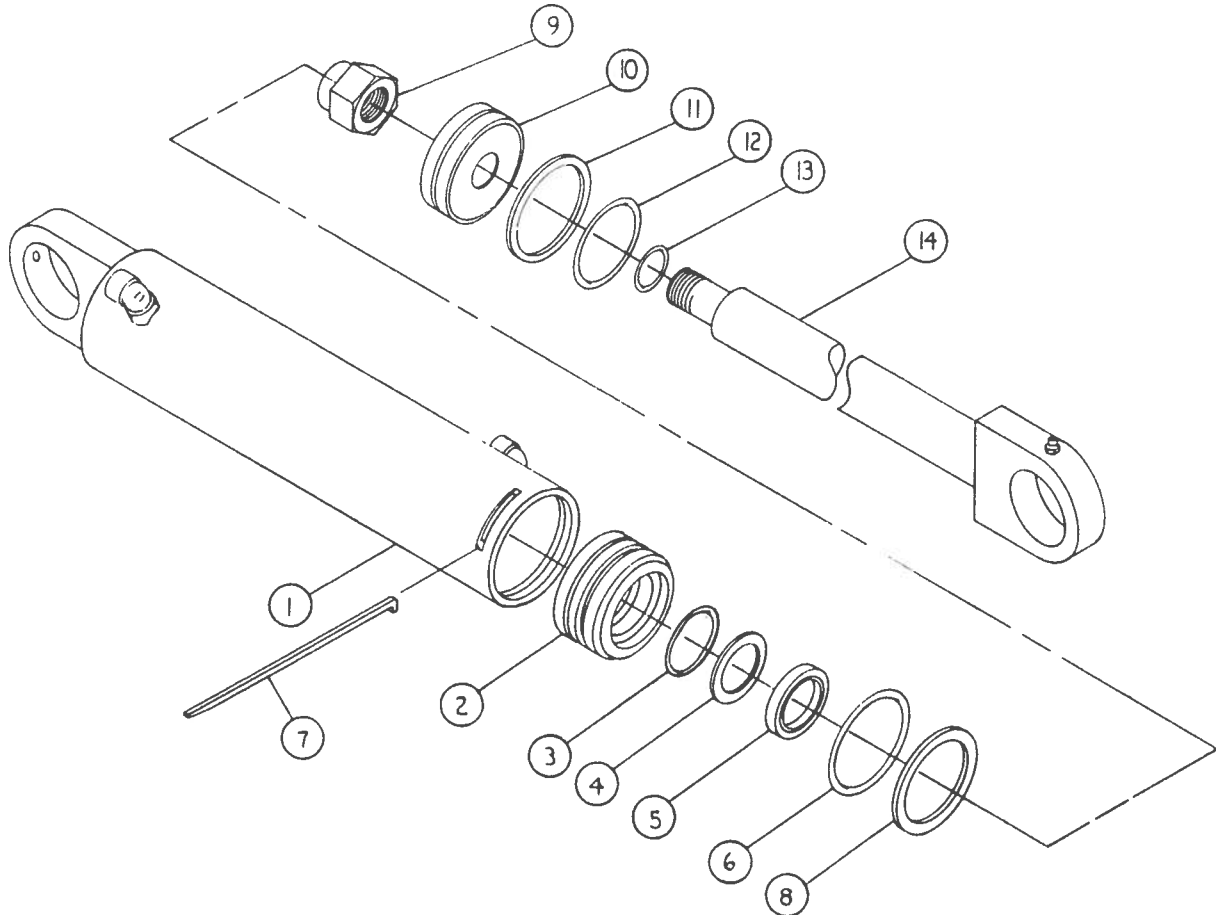


NO.	REQ'D	PART NO.	DESCRIPTION
1	2	----*	ROD, GLAND RETAINER
2	2	----*	BACK-UP WASHER, GLAND EXTERNAL
3	2	----*	O-RING, GLAND EXTERNAL
4	2	----*	ROD WIPER
5	2	----*	BACK-UP WASHER, GLAND INTERNAL
6	2	----*	O-RING, GLAND INTERNAL
7	2	6723	GLAND
8	1	6724	CYLINDER TUBE
9	1	----*	TEFLON RING
10	1	----*	O-RING
11	1	6725	PISTON & ROD WELDMENT

OVERHAUL KIT NO. 4571 INCLUDES ALL OF THE PARTS MARKED WITH AN ASTERISK (*). PARTS ARE NOT SOLD SEPARATELY.

bradco OWNER'S MANUAL

BUCKET CYLINDER #6265

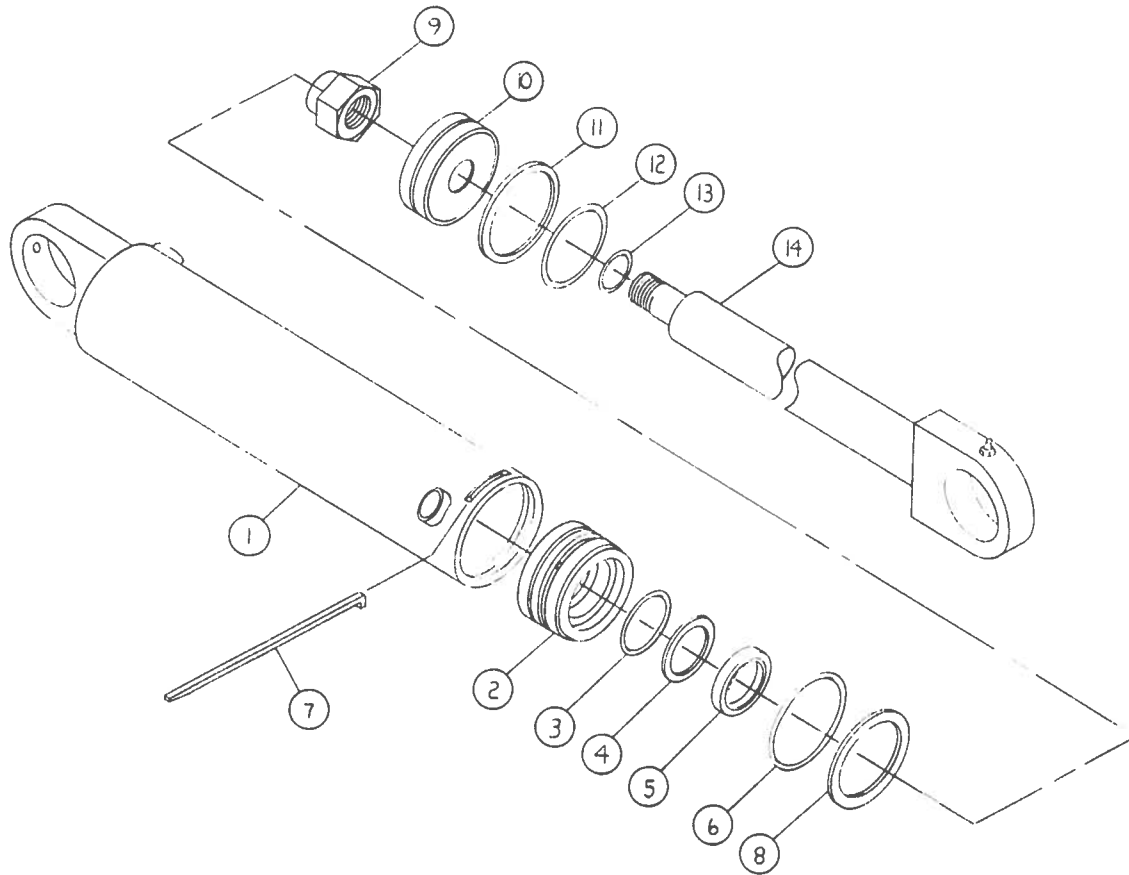


NO.	REQ'D	PART NO.	DESCRIPTION
1	1	6727	CYLINDER TUBE
2	1	6723	GLAND
3	1	----*	O-RING, GLAND INTERNAL
4	1	----*	BACK-UP WASHER, GLAND INTERNAL
5	1	----*	ROD WIPER
6	1	----*	O-RING, GLAND EXTERNAL
7	1	----*	ROD, GLAND RETAINER
8	1	----*	BACK-UP WASHER, GLAND EXTERNAL
9	1	7174	LOCK NUT
10	1	6731	PISTON
11	1	----*	TEFLON RING
12	1	----*	O-RING, PISTON EXTERNAL
13	1	----*	O-RING
14	1	6729	CYLINDER ROD

OVERHAUL KIT NO. 4572 INCLUDES ALL OF THE PARTS MARKED WITH AN
 ASTERISK (*). PARTS ARE NOT SOLD SEPARATELY.

bradco OWNER'S MANUAL

BOOM & DIPPER CYLINDER #6264



NO.	REQ'D	PART NO.	DESCRIPTION
1	1	6726	CYLINDER TUBE
2	1	6723	GLAND
3	1	----	O-RING, GLAND INTERNAL
4	1	----	BACK-UP WASHER, GLAND INTERNAL
5	1	----	ROD WIPER
6	1	----	O-RING, GLAND EXTERNAL
7	1	----	ROD, GLAND RETAINER
8	1	----	BACK-UP WASHER, GLAND EXTERNAL
9	1	7174	LOCK NUT
10	1	6731	PISTON
11	1	----	TEFLON RING
12	1	----	O-RING, PISTON EXTERNAL
13	1	----	O-RING
14	1	6728	ROD WELDMENT

OVERHAUL KIT NO. 4572 INCLUDES ALL OF THE PARTS MARKED WITH AN ASTERISK (*). PARTS ARE NOT SOLD SEPARATELY.

bradco OWNER'S MANUAL

BRADCO 800 BACKHOE

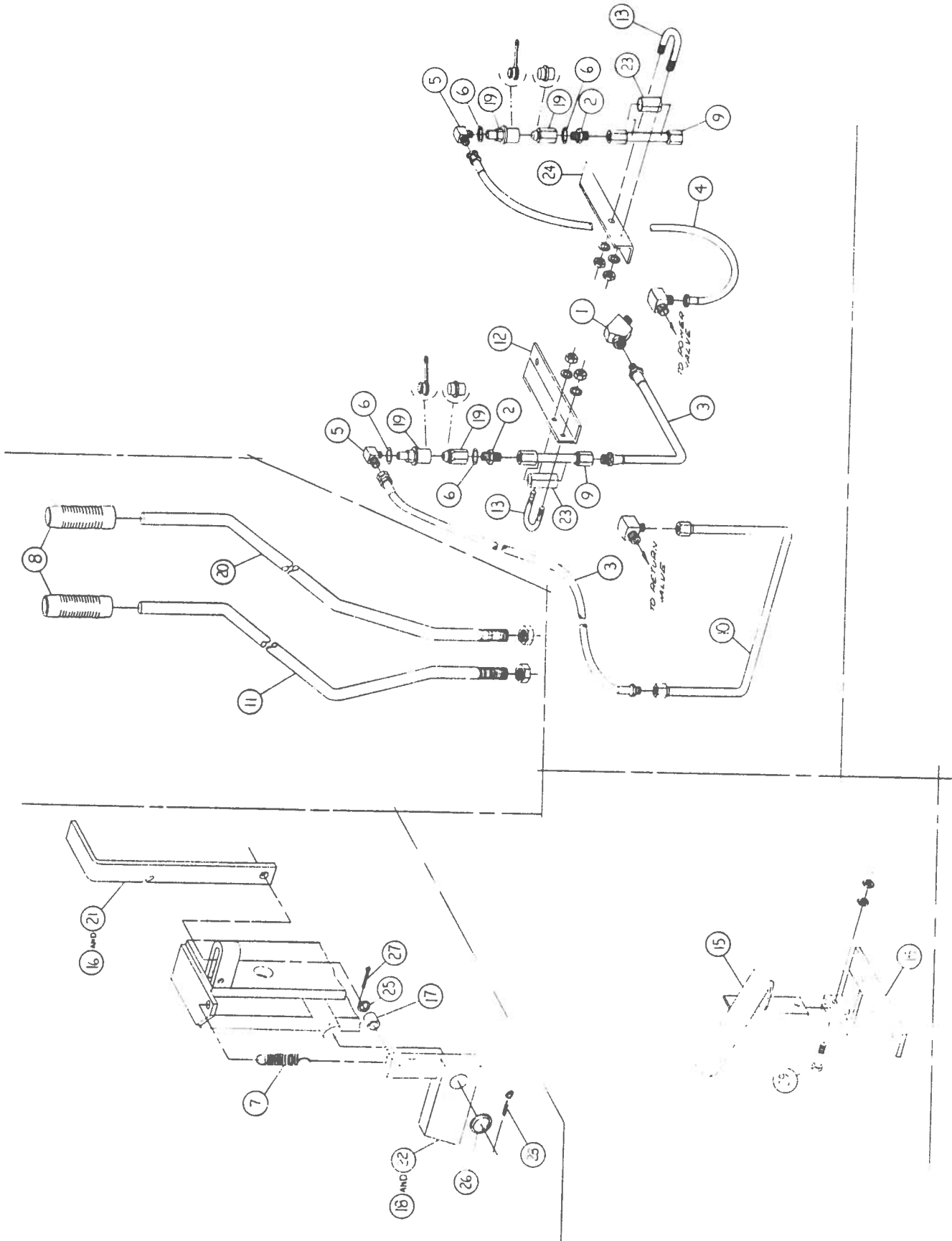
LOADER MOUNTING KIT

No.	Req'd	Part No.	Description
1	1	3080	Elbow 45° Swivel 1/2 FNPT-1/2 MNPT
2	2	3086	Male Connector 5/8 JIC-3/4-16 CNF
3	2	3625	Hose 1/2 x 40 2 Wire 5/8 MJIC 1/2 MNPT
4	1	3626	Hose 1/2 x 40 2 Wire 5/8 FJIC 1/2 MNPT
5	2	3087	Elbow, 90° Swivel 1/2 FNPT-3/4 - 16 O-Ring
6	4	4629	O-Ring
7	1	6595	Spring
8	2	6894	Handle Grip
9	2	6934	Hydraulic Line 5/8 Tube x 5
10	1	6935	Hydraulic Line 5/8 (cross over)
11	1	6937	2 Lever Control Handle (right)
12	1	6939	Quick Coupler Clamp Angle (right)
13	2	6940	U-Bolt, 1/4 w/nuts & lw
	4	1224	1/4 UNC Hex Nut
	4	1501	1/4 Lock Washer
14	1	6952	Hydraulic Lock Base Weldment
15	1	6953	Hydraulic Lock Lever Weldment
16	1	6955	Latch Bar (right)
17	2	6956	Spacer Tube
18	1	6957	Hoe Frame Lock Weldment (right)
19	1	6970	Quick Coupler Ass'y.
20	1	6984	2 Lever Control Handle (left)
21	1	6999	Latch Bar (left)
22	1	7056	Hoe Frame Lock Weldment (left)
23	2	7087	Rubber Protector
24	1	7106	Quick Coupler Clamp Angle (left)
25	2	1516	Flat Washer, 1/2 nom.
26	2	1520	Flat Washer, 1 nom.
27	2	1611	Cotter Pin 1/8 x 1
28	2	1613	Cotter Pin 1/4 x 2
29	1	1023	5/16 UNC x 1 1/4 Hex Capscrew
	2	1225	5/16 UNC Hex Nut

bradco OWNER'S MANUAL

BRADCO 800 BACKHOE

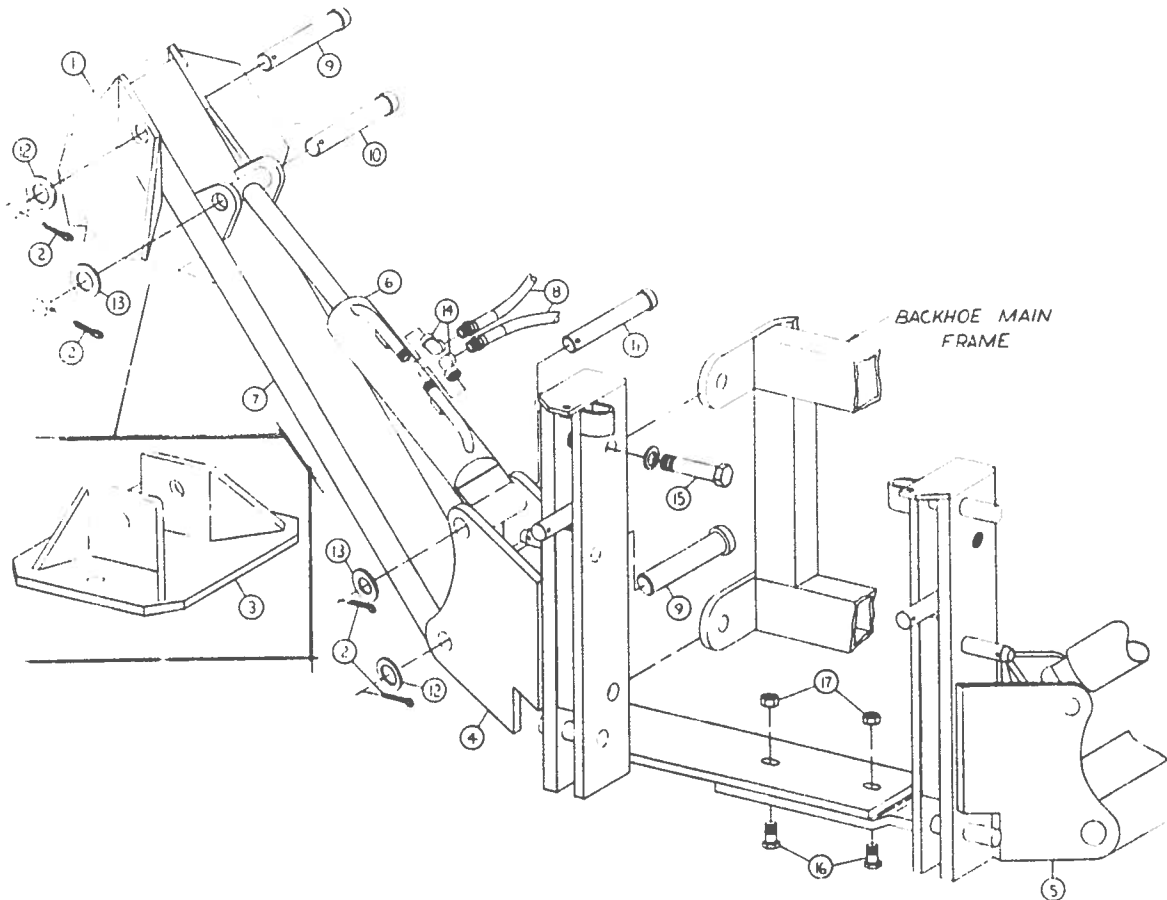
LOADER MOUNTING KIT



bradco OWNER'S MANUAL

BRADCO 800 BACKHOE

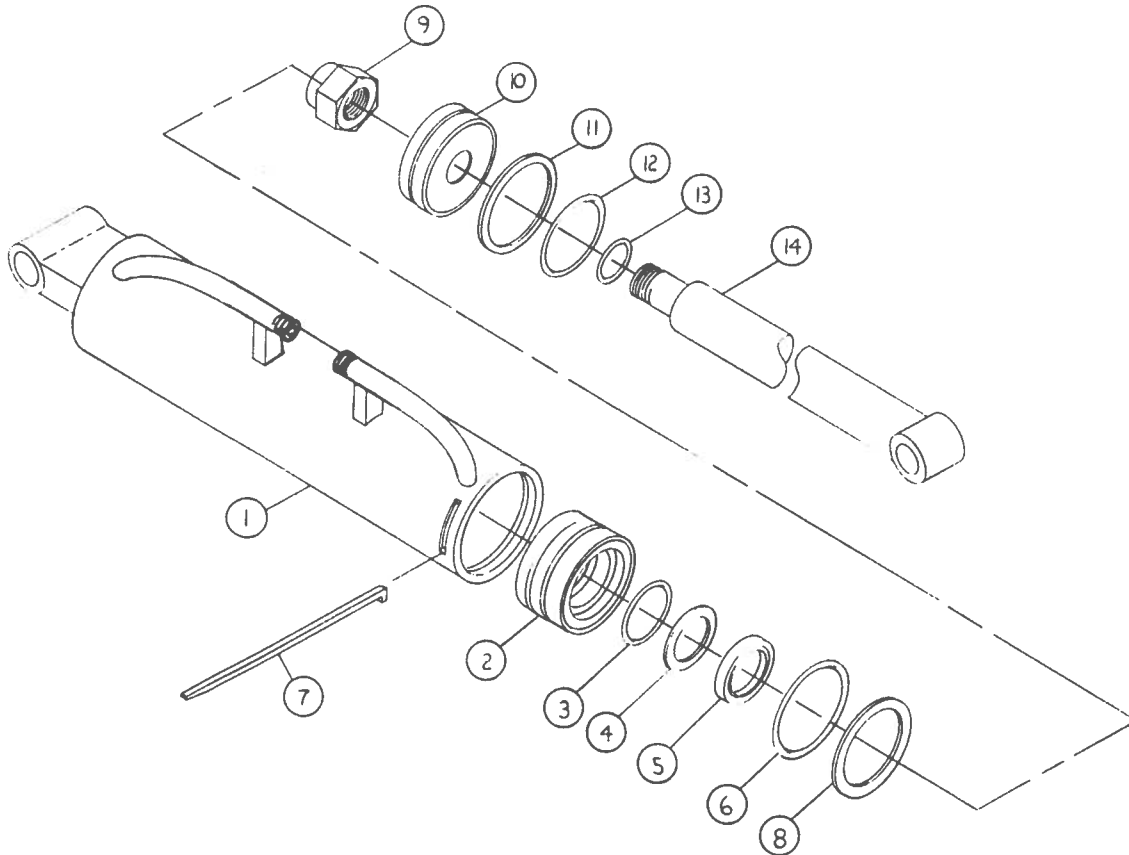
FRONT STABILIZER SKID STEER LOADER



No.	Req'd	Part No.	Description
1	2	6411	Stabilizer Pad
2	8	1613	Cotter Pin 1/4 x 2
3	2	6969	Flat Stabilizer Pad (option)
4	1	6950	Stabilizer Mounting (right)
5	1	6951	Stabilizer Mounting (left)
6	2	6958	Stabilizer Cylinder
7	2	6954	Stabilizer Arm
8	4	3634	Stabilizer Cylinder Hose 1/4 x 30
9	4	7057	Pin 1 1/4 x 4 3/4
10	2	5727	Pin 1 x 3 3/4
11	2	5730	Pin 1 x 5
12	4	1521	Flat Washer 1 1/4 I.D.
13	4	1520	Flat Washer 1" I.D.
14	4	3057	Elbow 90° - 1/4 NPT forged 2000#
15	4	1187	1" UNC x 2 1/2 Hex Capscrew
	4	1509	1" Lock Washer
16	2	1139	Hex Bolt 3/4 x 2
17	2	1534	Lock Nut 3/4 - 10

bradco OWNER'S MANUAL

STABILIZER CYLINDER #6958



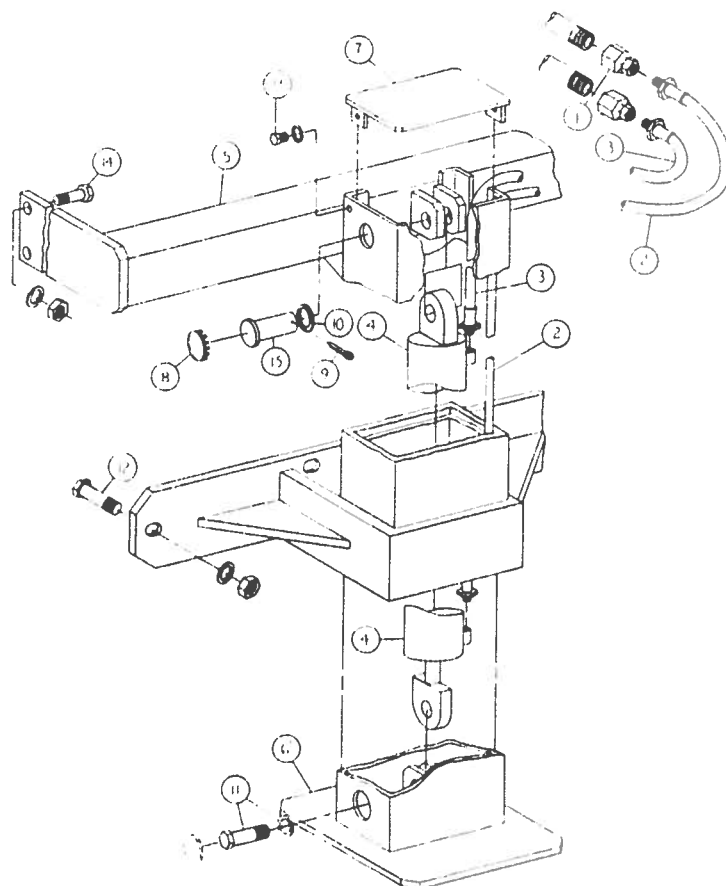
NO.	REQ'D	PART NO.	DESCRIPTION
1	1	7180	CYLINDER TUBE
2	1	6723	GLAND
3	1	----	O-RING, GLAND INTERNAL
4	1	----	BACK-UP WASHER, GLAND INTERNAL
5	1	----	ROD WIPER
6	1	----	O-RING, GLAND EXTERNAL
7	1	----	ROD, GLAND RETAINER
8	1	----	BACK-UP WASHER, GLAND EXTERNAL
9	1	7174	LOCK NUT
10	1	6731	PISTON
11	1	----	TEFLON RING
12	1	----	O-RING, PISTON EXTERNAL
13	1	----	O-RING
14	1	7177	ROD WELDMENT

OVERHAUL KIT NO. 4572 INCLUDES ALL OF THE PARTS MARKED WITH AN ASTERISK (*). PARTS ARE NOT SOLD SEPARATELY.

bradco OWNER'S MANUAL

BRADCO 800 BACKHOE

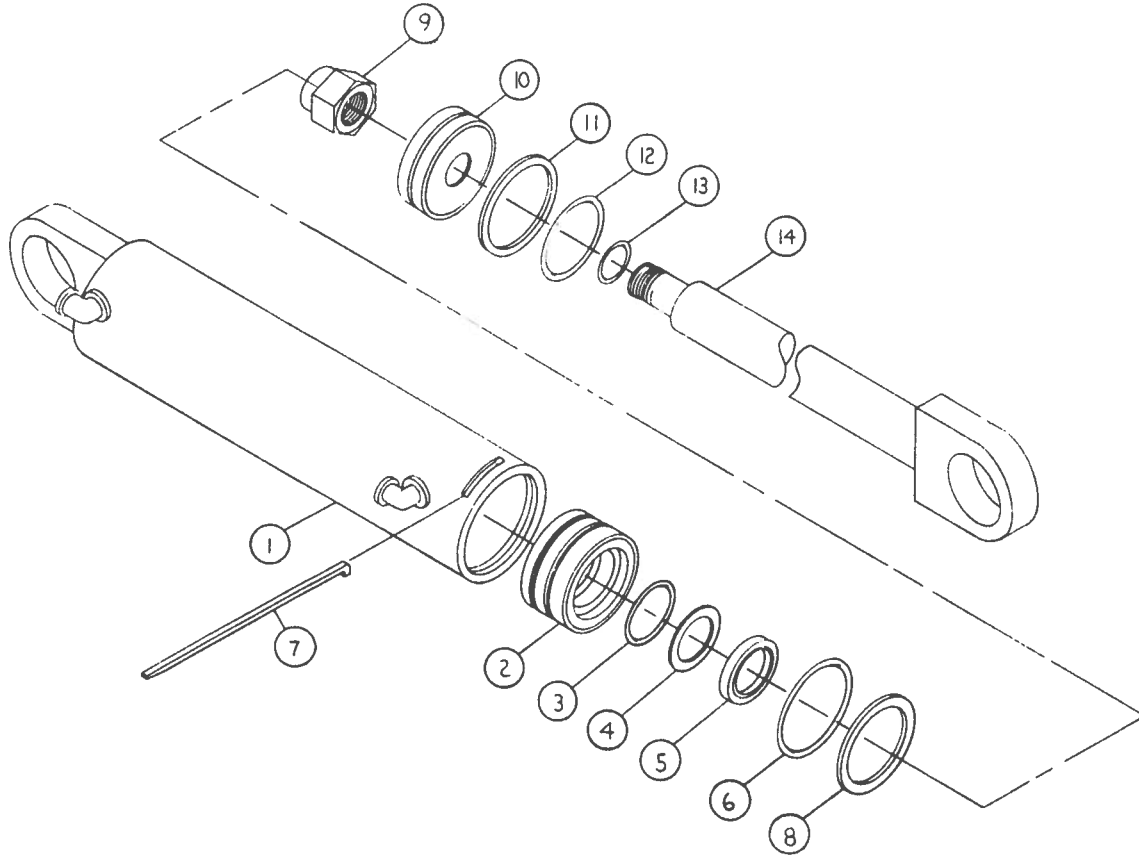
REAR STABILIZER SKID STEER LOADER



No.	Req'd	Part No.	Description
1	2	3029	Straight Adapter 1/4 NPT
2	1	3627	Hose 48 x 1/4-1 Wire 1/4 MNPT Both Ends
3	1	3635	Hose 28 x 1/4-1 Wire 1/4 MNPT Both Ends
4	1	6971	Rear Stabilizer Cyl. 2 x 18
5	1	6972	Mounting Tube Weldment
6	1	6973	Telescoping Tube Weldment
7	1	6998	Tube Cap Weldment
8	1	7096	Button Plug
9	1	1613	Cotter Pin 1/4 x 2
10	1	1531	1" SAE Flat Washer
11	1	1191	1" UNC x 3 1/2 Hex Capscrew
	1	1509	1" Lock Washer
12	6	1091	1/2 UNC x 1 3/4 Hex Capscrew
		1228	1/2 UNC Hex Nut
		1505	1/2" Lock Washer
13	2	1042	3/8 UNC x 3/4 Hex Capscrew
	2	1503	3/8" Lock Washer
14	4	1043	3/8 UNC x 1" Hex Capscrew
	4	1226	3/8 UNC Hex Nut
	4	1503	3/8" Lock Washer
15	1	5729	Cylinder Pin

bradco OWNER'S MANUAL

REAR STABILIZER CYLINDER #6971

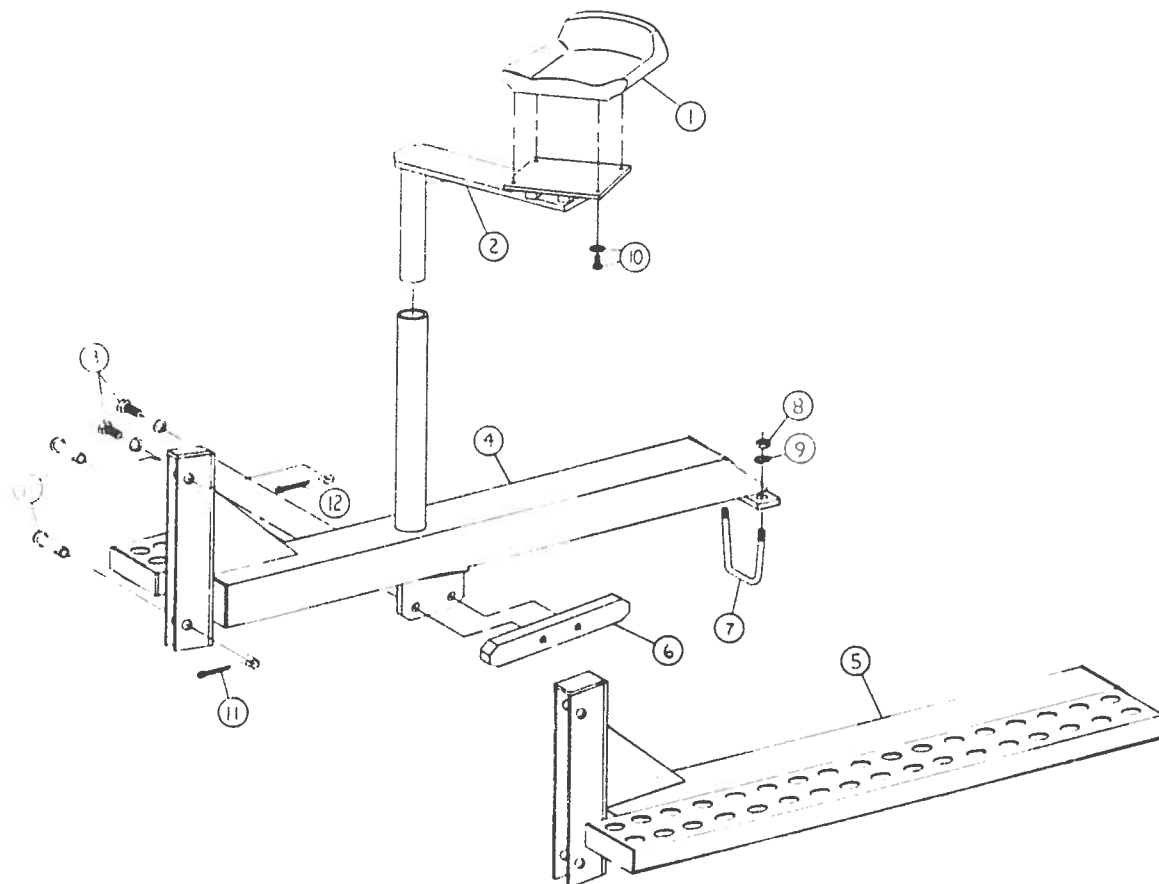


NO.	REQ'D	PART NO.	DESCRIPTION
1	1	6990	CYLINDER TUBE
2	1	6991	GLAND
3	1	----	O-RING, GLAND INTERNAL
4	1	----	BACK-UP WASHER, GLAND INTERNAL
5	1	----	ROD WIPER
6	1	----	O-RING, GLAND EXTERNAL
7	1	----	ROD, GLAND RETAINER
8	1	----	BACK-UP WASHER, GLAND EXTERNAL
9	1		JAM NUT
10	1	6992	PISTON
11	1	----	TEFLON RING
12	1	----	O-RING, PISTON EXTERNAL
13	1	----	O-RING
14	1	6993	ROD WELDMENT

OVERHAUL KIT NO. 4582 INCLUDES ALL OF THE PARTS MARKED WITH AN ASTERISK (*). PARTS ARE NOT SOLD SEPARATELY.

bradco OWNER'S MANUAL

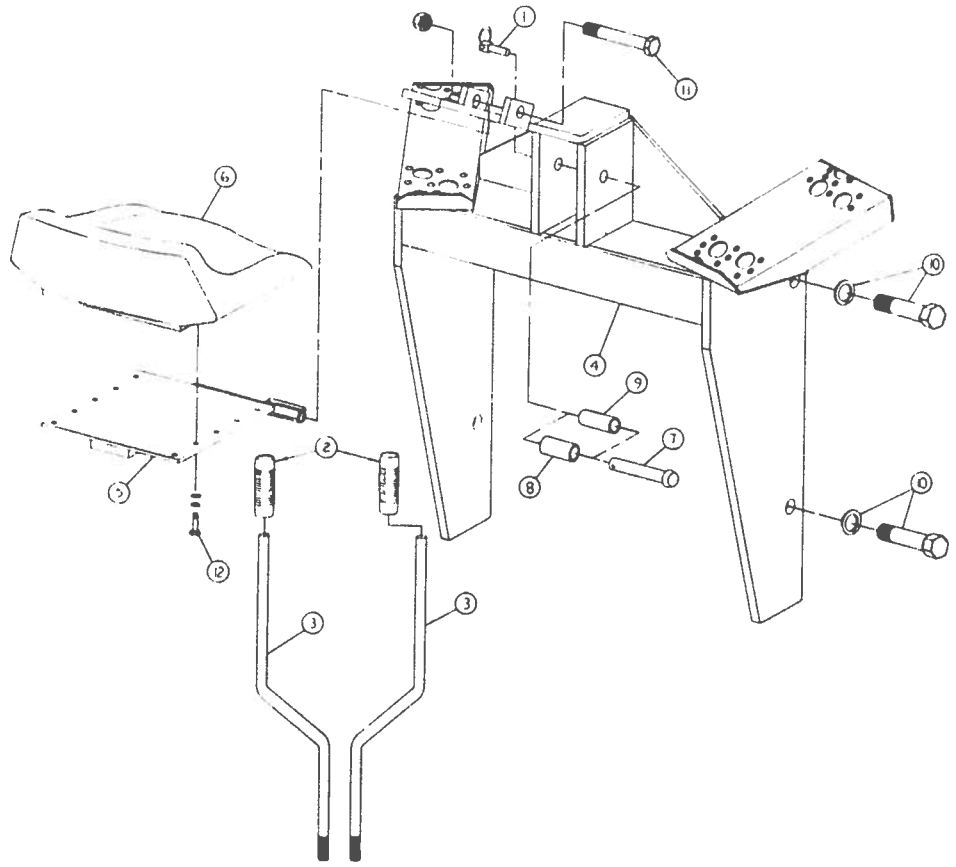
BRADCO 800 BACKHOE JD 301 & 401 FRONT MOUNTING FRAME



No.	Req'd	Part No.	Description
1	1	6830	Seat
2	1	7284	Seat Mount Weldment
3	4	1137	3/4 UNC x 1 1/2 Hex Capscrew
	4	1507	3/4" Lock Washer
4	1	6674	Frame Mtg. Weldment (right)
5	1	6675	Frame Mtg. Weldment (left)
6	2	6684	Mtg. Pad
7	2	6683	U-Bolt
8	4	1230	Nut 5/8 UNC
9	4	1507	Lock Washer, 5/8
10	4	1021	5/16 UNC x 3/4 Hex Capscrew
	4	1502	5/16 Lock Washer
11	4	5729	Pin 1 x 2 3/16
12	4	1613	Cotter Pin 1/4 x 2

bradco OWNER'S MANUAL

BRADCO 800 BACKHOE
3 POINT HITCH BACKHOE MTG.



No.	Req'd	Part No.	Description
1	3	6626	Klik Pin
2	2	6894	Handle Grip
3	2	6974	2 Lever Control Handle
4	1	6978	Frame Weldment
5	1	6979	Seat Pivot Weldment
6	1	6980	Seat
7	1	6981	Draw Bar Pin
8	2	6982	Bushing 7/8 x 1 1/8 Category II
9	1	6983	Bushing 3/4 x 1 Category II
10	4	1189	1" UNC x 3 Hex Capscrew
	4	1509	1" Lock Washer
11	1	1148	3/4 UNC x 4 1/2 Hex Capscrew
	1	1534	3/4 - 10 Lock Nut
12	4	1021	5/16 UNC x 3/4 Hex Capscrew
	4	1502	5/16 Lock Washer
	4	1513	5/16 Flat Washer

