

Kelley 40 & 55

BACK-HOE

OWNER'S MANUAL

Operating Instructions

**KELLEY MANUFACTURING
CORPORATION**

PO BOX 276 • 131 PROGRESSIVE DRIVE • OTTOVILLE, OHIO 45876
PHONE 419-453-5539 • FAX 419-453-2278

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KELLEY MANUFACTURING and its marketing representatives (including its distributors and dealers) accept no warranty liability whatsoever resulting from the use of the KELLEY backhoe and/or its accessories unless a signed and completed Warranty Registration Form is returned to the KELLEY factory within ten days after the KELLEY backhoe is delivered to the customer.

Instructions for Completing Warranty Registration Form

Dealer must complete the Warranty Registration Form in triplicate. Dealer and customer must sign the form. Return the yellow copy of the form to the factory. Dealer takes the pink copy. Customer retains the blue copy in his manual.



Kelley 40 and 55 Backhoe Owner's Manual

September 1979


READ THIS PAGE BEFORE OPERATING YOUR BACKHOE

Do not operate your backhoe until you do the following:

1. Read this operator's manual thoroughly.
2. Have your dealer complete and return the Warranty Registration Form that accompanies this manual.

If you did not receive a Warranty Registration Form, contact your dealer. He will be able to obtain one for you. It is important that you return your Warranty Registration Form. Your warranty is valid only if a signed Warranty Registration Form is returned to us within ten days after the delivery of your backhoe. Also, should a safety-related problem develop concerning your backhoe, your returned Warranty Registration Form enables us to notify you directly about the problem.

WARNING

This manual is provided for you the operator to familiarize yourself with the operation, safety precautions and maintenance of this unit. This safety alert symbol  is used throughout this manual to bring to your attention the safety precautions and potentially dangerous situations that can cause injury or machine malfunction. Read the warnings below carefully before operating the backhoe. It is extremely important that you the operator understand fully the mounting, hydraulic connections, and the operation of the backhoe. Understand thoroughly the proper method of trenching or digging. Do not use this backhoe for anything other than for what it is designed. Otherwise, injury and/or machine failure may result. Follow directions and methods carefully and instruct others that may operate this machine as to its proper use. Insist that they read this manual carefully. *Let no one operate this unit until he has read the manual and understands it fully.*

1. Your backhoe must be mounted only on a tractor equipped with a Category II or Category III hitch. This backhoe is not safe to operate unless it is mounted on a Category II or Category III hitch. Failure to do so may result in serious injury or death.
2. When servicing backhoe, make sure all moving parts are on the ground.
3. To avoid injury from escaping pressurized hydraulic oil, move the control levers in all directions before disconnecting any hoses, steel lines, or couplers.
4. Keep foot pads clean to prevent foot slipping when the operator mounts the backhoe.

introduction

5. Do not transport your backhoe with the bucket fully raised.
6. Be sure your tractor has sufficient front end weight to operate and transport the backhoe.
7. When traveling on highways and roads, be sure the boom and stabilizers are in the fully raised position and transport chains are in the transport lock position.
8. When traveling on the road with your backhoe, use proper safety lights and warning signs. Check local regulations.
9. When traveling with your backhoe, do not make sudden starts, stops or turn at high speeds. Do not exceed safe speed limits on rough ground. Do not make sudden starts when climbing grades.
10. Always wear protective headgear while operating the backhoe.
11. Be sure to lower the stabilizers to the ground before operating the backhoe.
12. Watch overhead low hanging wires. Do not touch wires with any part of the backhoe.
13. Do not operate from any other position than the operator's seat.
14. Before swinging the backhoe for any reason, make sure you have room to swing and that all persons are clear of the backhoe.
15. When swinging the backhoe to either side, do not slam the swing into the stops.
16. Be extra careful when working on hillsides and close to ditches or any place where danger of tipping or sliding is possible.
17. Do not dig under the stabilizers or backhoe as a cave-in could occur.
18. Be sure you are not digging over underground wiring or other underground obstructions.
19. When digging to either side and close to the tractor, be extremely careful that the backhoe does not contact the stabilizers as serious damage could occur.
20. Do not attempt to raise the tractor off the ground or move the tractor forward or backward using the boom or stabilizers.
21. When leaving the backhoe for any reason, lower the bucket to the ground for safety.
22. Never leave unit unattended with engine running.
23. To prevent injury during assembly, installation, operation, adjustment, or removal of the backhoe, it is recommended that gloves, safety glasses or face shield, and safety toe shoes be worn.

introduction

24. Do not wear loose clothing while operating or working near the backhoe. Keep hair and clothing away from all moving parts of the backhoe.
25. Only the operator should be near the backhoe during operation. Keep all others a minimum of fifty feet away from your work area.
26. Keep your work area clear of obstacles at all times.
27. Children should never be permitted to operate the backhoe.
28. Do not attempt any repairs, maintenance, or adjustments of your backhoe while it is in operation. Always turn off your tractor before making repairs or adjustments or performing maintenance procedures.
29. When the use of hand tools is required to perform any part of assembly, installation, removal or adjustment of the backhoe, be sure that the tools which are used are designed and recommended by the tool manufacturer for the specific task in which they are being used.
30. Keep all bolts and nuts tight. Replace any damaged or worn parts such as hydraulic hoses and fittings immediately. Always use replacement parts of equivalent strength and quality.
31. Perform all maintenance procedures as recommended.
32. Anytime hoses are disconnected from your backhoe, cover all open ports with protective caps or plugs in order to prevent contamination of the oil supply.
33. Use the hand signals shown below for safety during operation.










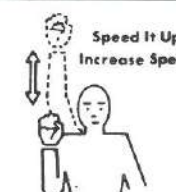
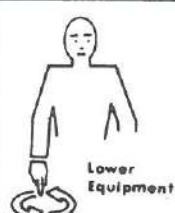
HAND SIGNALS Use when noise or distance does not allow normal voice communication.	 Slow It Down - Decrease Speed	 This Far To Go	 Move Out - Take Off	 Raise Equipment	 Move Toward Me Follow Me
 Stop	 Stop The Engine	 Start The Engine	 Come To Me	 Speed It Up Increase Speed	 Lower Equipment

Table of Contents

INTRODUCTION

Warnings	2
----------------	---

ASSEMBLY

General Specifications	6
Mounting the Backhoe	6
Power Beyond Hosing	8
Description of Backhoe Parts	10
Closed Center Hydraulic Systems	13
Closed Center to Open Center Conversion	14
Swing Valve Kit Installation	15

OPERATION

Transporting the Backhoe	16
Preparing for Operation	17
Operating the Backhoe	17
Digging Suggestions	18

MAINTENANCE

Maintenance and Lubrication	21
Oil Filter Replacement	22
Suction Line Filter Cleaning	22
Bucket Tooth Replacement	23
Storing the Backhoe	24
Pressure Measurements	25
Circuit Relief Cleaning	26

TROUBLESHOOTING	28
-----------------------	----

PARTS

B40 Backhoe	30
B55 Backhoe	32
Valve Hoses and Fittings	34
Valve Controls	35
Swing and Stabilizer Hoses and Fittings	36
BCV216 Swing Control Valve Kit	37
BCV191 High Pressure Filter Assembly	37
Hydreco V33 Series Valve	38
BCV165 High Pressure Carryover Kit	38
BCY110 2-1/2" x 12" Swing Cylinder	39
BCY111 2-1/2" x 15" Stabilizer Cylinder	39
BCY124 2-1/2" x 26" Dipper and Bucket Cylinder	40
BCY225 2-1/2" x 32" Dipper Cylinder	40
BCY132 2-1/2" x 32" Boom Cylinder	41
BCY204 3" x 32" Boom Cylinder	41

SPECIFICATIONS	43
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General Specifications

CAUTION

Your backhoe must be mounted only on a tractor equipped with a Category II or Category III hitch. Failure to do so voids all warranties associated with this equipment. This backhoe is not safe to operate unless it is mounted on a Category II or Category III hitch. Failure to do so may result in serious injury or death.

CAUTION

The backhoe valve must be compatible with the hydraulic system that will power it. Make sure that if you are powering the backhoe with an open center hydraulic system, the backhoe is set for open center operation. If you are using a closed center hydraulic system, the valve must be set for closed center operation. If you do not know how your valve is currently set up, see the section entitled "Closed Center to Open Center Conversion".

Your backhoe unit has been filled with oil at the factory. The oil in the unit is compatible with most tractor manufacturers' oil. Do not move any control levers on the unit until after hydraulic connections to the tractor or the independent hydraulic system have been made.

Hydraulic System Requirements: The Kelley backhoe has been designed to be operated at a flow rate of 8 - 12 GPM (30 - 45 liters per minute) at 2200 PSI (154 Kp/cm²). Any tractor hydraulic system used in conjunction with this backhoe must have a PSI rating of 2200 minimum.

Since many tractor systems exceed a flow rate of 12 GPM, the flow may have to be adjusted either by (1) throttling the engine RPM down to obtain an acceptable GPM flow, or (2) if your tractor is equipped with a hydraulic output flow rate adjuster, slow engine or "turtle" it down for a flow rate between 8 to 12 GPM at a comfortable engine RPM. By adjusting the flow rate correctly, you will prevent sudden shock loads on the cylinders, pins, hoses, seals, etc. This results in a smooth operation and reduced maintenance costs and down time.

Mounting The Backhoe

1. If you are not using a Kelley independent hydraulic system, proceed to Step 2.

Install the independent hydraulic system onto the backhoe according to the following procedures. Refer to page 42 of this manual for the identification of the parts. During assembly, use pipe compound on all pipe fittings. None is required on the O'ring fittings.

- a. Attach the reservoir to the backhoe by bolting it through the four holes drilled in the step plates. Use the 5/8" capscrews, lockwashers, and nuts. The holes are located at A of Figure 1.
- b. Insert the 3/4" close nipple into the out port of the reservoir. (This is the port that is located nearest to the bottom of the reservoir.)
- c. Attach the filter assembly to the end of the 3/4" close nipple.
- d. Connect the filter assembly to the pump with the 1" suction hose and miscellaneous parts. See the illustration on page 42 for details.
- e. Bolt the torque bar to the flange mounting of the pump. Use the 1/2" capscrews, lockwashers, and nuts.

- f. Attach the O'ring pressure fitting, the 3/4" to 1/2" reducer bushing, and the 1/2" street ell to the outlet port of the pump per the illustration on page 42.
- g. Place the PTO adapter on the pump shaft and secure it with the two set screws. Attach the pump assembly to the PTO shaft of the tractor.

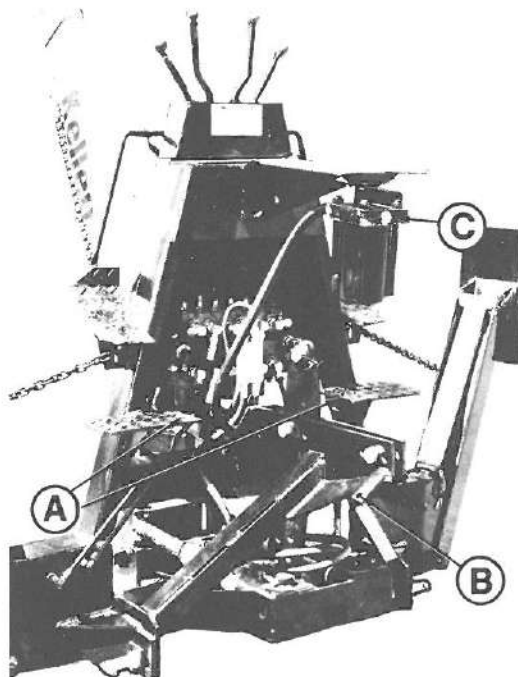


Figure 1

- h. Attach one end of the torque chain to the hole in the torque bar. Use 3/8" hardware in this order: 3/8" x 2-1/4" capscrew, flatwasher, chain, flatwasher, torque bar, lockwasher, and nut.
- i. Attach the free end of the torque chain to either the chain tab on the backhoe frame (B of Figure 1) or a fixture of the tractor. Use the remaining 3/8" hardware in the same manner as above.

Imagine a vertical plane that divides the backhoe from the tractor. This plane passes through the torque bar. It is very important that the chain is attached to a point located on the plane or on the tractor side of the plane.

By attaching to such a point, the chain applies pressure on the pump so that it is not pulled off of the PTO adapter during operation.

- j. Attach the 1/2" return hose and fittings to the "in" port of the reservoir as shown in the illustration on page 42.

You will use this return hose in place of the hose supplied in the backhoe seat carton.

2. Locate the seat carton that accompanies your backhoe. Inside it you will find the seat, seat hardware, a 3/8" pressure hose with a 50" length, and a 1/2" return hose 50" long. (If you have installed a Kelley independent hydraulic system, discard the 50" return hose.)

Install the seat with the hardware supplied.

3. Remove the plug from the oil filter (C of Figure 1) and discard.
4. Take the 3/8" 100R1 pressure hose of length 50" and connect the 3/4" JIC male O'ring end to the inlet side of the oil filter from which the plug was removed.
5. The remaining end of the pressure hose has a 1/2" male pipe fitting. (A male coupler of the appropriate type may be attached to this end.)

Attach this end of the hose as follows:

- a. If an open center tractor hydraulic system is being utilized, attach the hose to the tractor hydraulic outlet.

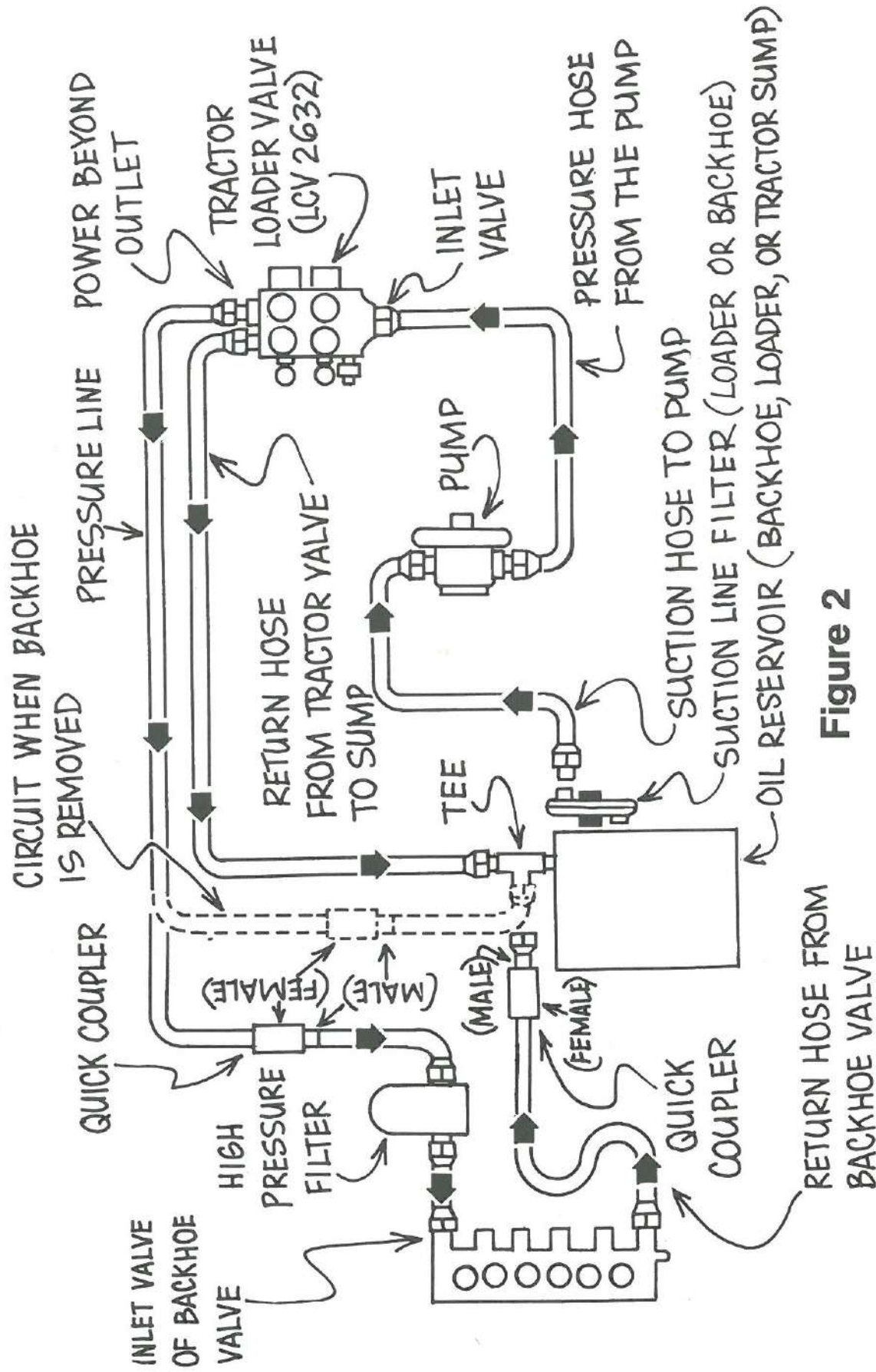


Figure 2

Power Beyond Hosing.

- b. If the *Kelley* independent hydraulic system is being utilized, attach the hose to the 1/2" street ell that is connected to the independent hydraulic system's pump.
- c. If a closed center tractor hydraulic system is being utilized, refer to the section of this manual entitled "Closed Center Hydraulic Systems" on page 13.
- d. If you wish to run both a loader and a backhoe off of the same hydraulic system, make your connection as illustrated in Figure 2 -- Power Beyond Hosing.

Since there are so many variations for this type of set-up, we are showing only a generalized hosing scheme. If you have any questions concerning the specifics for your situation, please call the factory before attempting operation.

- 6. Remove the pipe plug from the 1/2" street ell located on the extreme left-hand side of the backhoe control valve (see 6 on page 34).
- 7. Attach one end of the 1/2" return hose to the 1/2" street ell.
- 8. Attach the remaining end of the return hose according to the instructions below.

CAUTION

Do not connect the return hose to a snap coupler on the tractor valve. A coupler may be used, but it must be connected directly to the oil sump of the tractor. Connection through the tractor valve makes it possible for oil to flow through the backhoe valve in a reverse direction. This could cause serious injury, as a rupture of the return hose may result. Also, damage to the machine may result, since a reverse flow of oil nullifies the action of the circuit reliefs that are built into the valve to prevent damage to the cylinders and machine. The return line is designed to blow at 200 PSI. This protects the backhoe valve against reverse flow. This is a fuse hose designed to blow in order to prevent damage to the machine. Therefore it is not covered under warranty.

- a. If an open center tractor hydraulic system is being utilized, attach the hose to the oil sump of the tractor.
- b. If the *Kelley* independent hydraulic system is being utilized, you should already be connected to the reservoir.
- c. If a closed center tractor hydraulic system is being utilized, refer to the section of this manual entitled "Closed Center Hydraulic Systems" on page 13.
- d. If you wish to run both a loader and a backhoe off of the same hydraulic system, make your connection as illustrated in Figure 2 -- Power Beyond Hosing.

Since there are so many variations for this type of set-up, we are showing only a generalized hosing scheme. If you have any questions concerning the specifics for your situation, please call the factory before attempting operation.

- 9. If you are not familiar with the operation of the *Kelley* backhoe, do not proceed until you have studied the operating instructions contained within this manual.

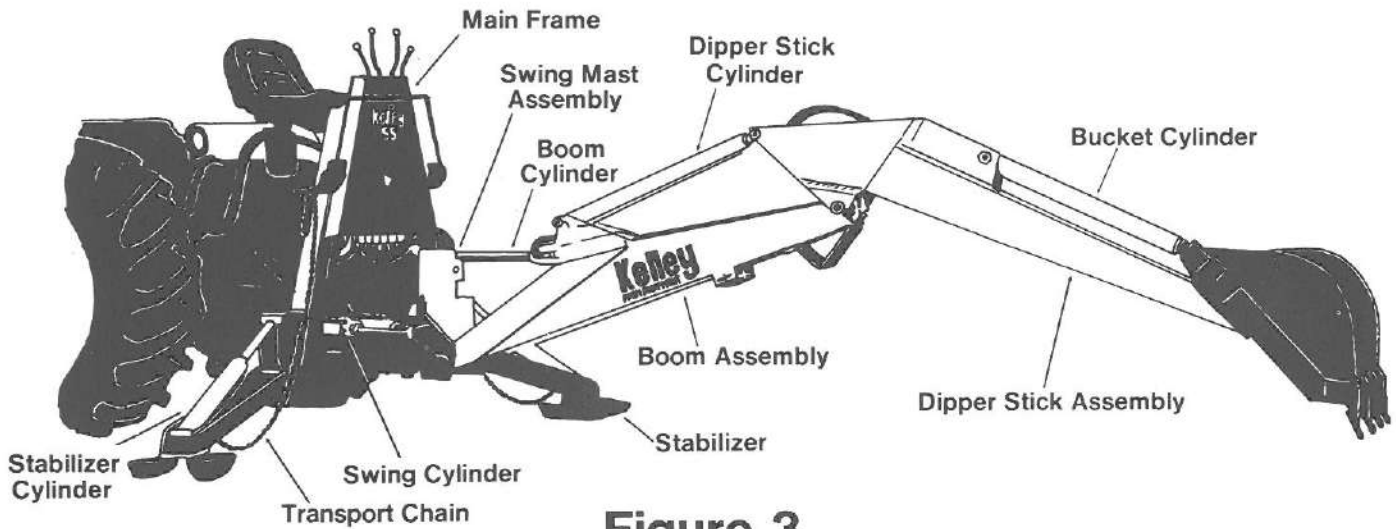


Figure 3

Description of Major Backhoe Parts

10. Familiarize yourself with all of the terms that will be employed in the following instructions by studying Figure 3 -- Description of Major Backhoe Parts.

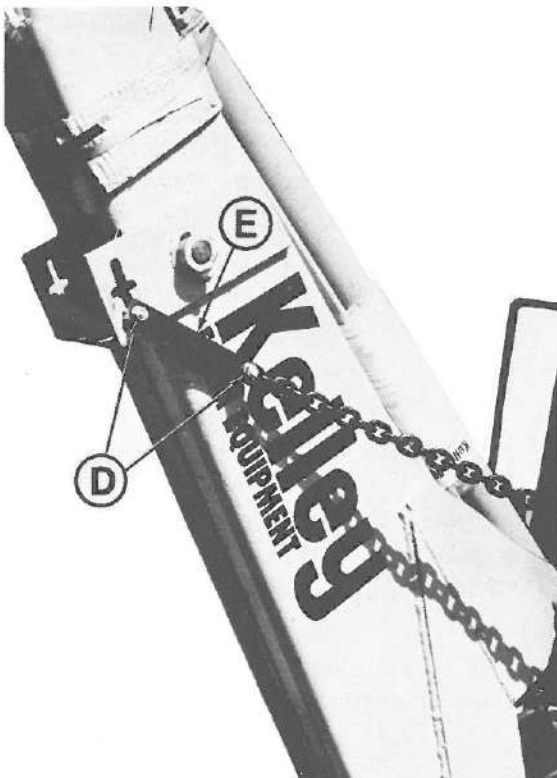


Figure 4.

11. Apply power to the backhoe.

12. Raise the boom and stabilizers to take the tension off of the transport chains.

NOTE: This chain routing is used only for shipping. See instructions elsewhere in this manual on how the chains are used during normal use.

13. Remove the four bolts and nuts that attach the transport chains to the boom (D of Figure 4). Discard the shipping straps (E).

14. Lower the boom to the ground.

15. Remove the pin from location F of Figure 5.

16. Disconnect the strapping and padding that attaches the dipper stick cylinder to the boom.

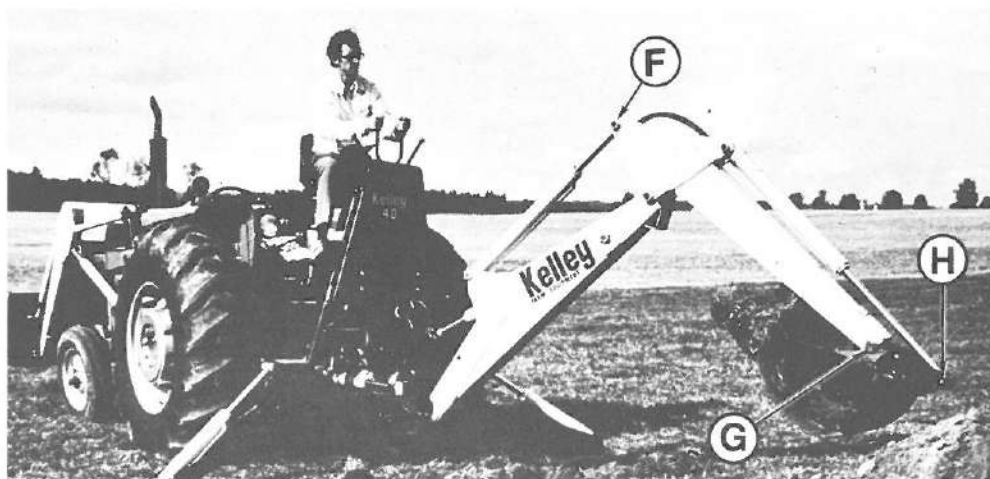


Figure 5

17. Extend the dipper stick cylinder until it is possible to align the rod bushing of the dipper stick cylinder with the bushings at point F on the dipper stick.
18. Install the pin at point F to secure the cylinder to the dipper stick. Use the 3/8" locking bolt, lockwasher, and nut to lock the pin in place.

CAUTION

Keep all people clear of your work area during the next steps. Until the backhoe is securely mounted, the operator should make sure that no parts of his body are beneath any parts of the backhoe.

19. By manipulating the cylinders and placing down pressure on the boom and stabilizers, lift the backhoe vertically for approximately 12" - 14" of ground clearance.
20. Remove the two lower link pins (I of Figure 6) and bolt (J) so that the shipping pallet may be removed from the backhoe. You may discard the pallet, as it is only necessary for shipping.
21. Reinstall the lower link pins. Be sure to install the flatwasher and tighten the nuts securely.
22. Attach the backhoe to the lower lift arms of the tractor by attaching the lower link pins to the lower lift arms of the tractor. Secure the lower link pins with the spring lock pins. Once this attachment is secured, the lower lift arms should be placed in a "neutral" position.
23. Remove the bolts and hardware at K of Figure 6 in order to free the top link (L of Figure 6).

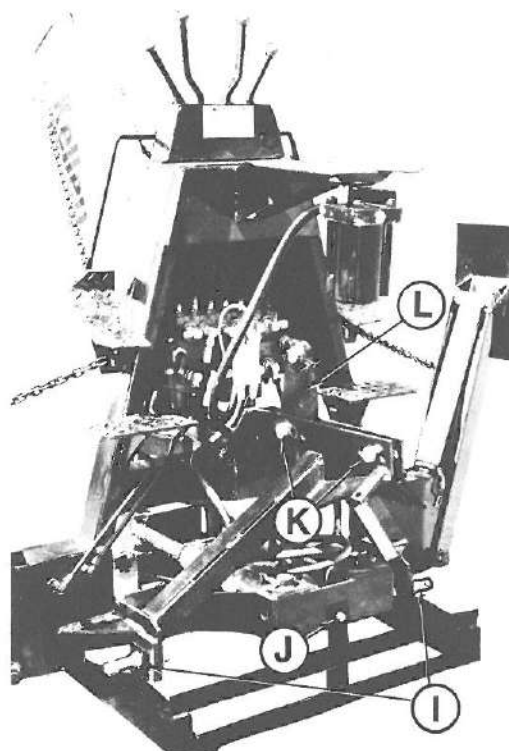


Figure 6

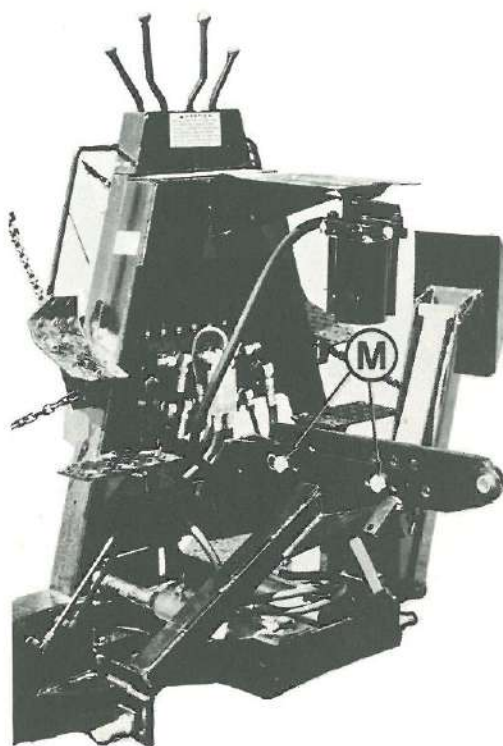


Figure 7

the ground with a 12" - 14" ground clearance. If you have to "cheat" in one direction, make it so that the backhoe tilts towards the tractor rather than away. If you cannot find a satisfactory set of holes, turn the top link upside down and try again. In some extreme cases it may be necessary to drill additional holes in the top link.

CAUTION

For tractors with a top link draft control system, make sure the draft control is in its heavy position. It is very important to prevent the top link from exerting pressure that may activate the draft control system. Continued operation with the draft control system activated can cause overheating of the hydraulic fluid and can cause tractor hydraulic pump failure. Put the draft control level to the bottom of the quadrant.

Once an appropriate set of holes is found, secure the backhoe to the top link using the hardware that was removed in Step 23.

24. Remove the wire that holds the 1-1/4" - 1" reducer bushing in the top link. If you are installing your backhoe on a Category III hitch, discard the bushing; otherwise, it should be used on a Category II hitch. Do not use less than a 1" pin in the tractor third point.
25. Mount the top link to the tractor third point. NOTE: There is no correct side up for the top link -- it depends on your tractor. You may have to try both sides "up" in order to find the best position for your backhoe.
26. Mount the top link of the backhoe to the main frame of the backhoe. To do this maneuver the backhoe until you can align the holes in the backhoe frame (at M of Figure 7) with a set of holes in the top link. It is important to pick a set of holes that places the backhoe in a vertical position in relationship to the ground.
27. Remove the pin attached to the rod bushing of the bucket cylinder. Also, remove the strapping and padding attached to the bucket cylinder.
28. Remove the pin on the dipper stick assembly (G of Figure 5).
29. Position the dipper stick and bucket cylinder in order to mount the bucket. Mount the bucket at points G and H of Figure 5. Secure the bucket pins with the 3/8" locking bolts, lockwashers and nuts.

Closed Center Hydraulic Systems



CAUTION If you are going to use a closed center tractor hydraulic system to power your *Kelley* backhoe, you must follow the directions below carefully. Failure to do so may cause extensive damage to your tractor and/or *Kelley* backhoe.

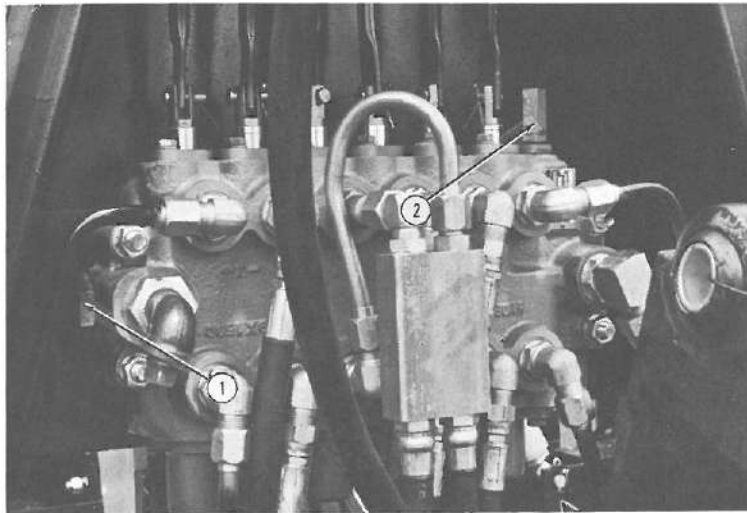


Figure A

the slotted screw in approximately four complete turns. Replace the cover nut. Be sure to replace the washer with the cover nut, as it acts as a gasket.

1. Install a High Pressure Carryover Kit

It will be necessary to install a *Kelley* High Pressure Carryover Kit (Part Number BCV165) on your backhoe valve. The kit is pictured on page 38.

To install the kit, remove the large hex head plug on the backhoe valve (1 of Figure A). Screw the carryover kit into the plug opening. Remove the cover nut (2 of Figure A) from the valve bypass, and turn

2. Choose the Appropriate Hosing

For John Deere Tractors:

The return hose supplied with your *Kelley* backhoe will not be long enough. You will have to purchase a 1/2" return hose with a length suitable for the following procedure.

Purchase a Port Filter Cover (JOHN DEERE Part Number AT30197) from your dealer. Install it on your tractor.

Attach the backhoe's pressure hose to a tractor quick coupler. Attach the backhoe's return hose to the port filter cover that you installed. Move the control lever on the tractor so that it starts a flow to the backhoe valve, and secure it in full open position.

The above procedure results in a direct connection to the John Deere master pump, and it eliminates a return into the rear transfer pump chamber. The problem with returning oil into the rear transfer pump chamber is that if the tractor engine RPM is throttled down to a point at which the oil transfer pump cannot supply sufficient oil to the main system pump, the main pump runs out of oil in its sump and starts chattering.

assembly

For other tractors:

We highly suggest that you purchase a *Kelley* independent hydraulic system for your backhoe.

However, if you wish to use the tractor hydraulic system, consult the dealer of your tractor for a safe and proper method of connecting the *Kelley* backhoe to your tractor.

CAUTION If pressurized oil flow is reversed through the backhoe valve via the return line hose of the valve, the backhoe will not perform and various circuit relief protection features will be nullified -- possibly causing severe damage to the unit.

Figure B shows a valve prepared for open center operation; Figure C shows a valve prepared for closed center operation. Make sure your valve appears as in figure C. Note the high pressure carryover kit that has been installed in the valve shown in Figure C.

Figure B

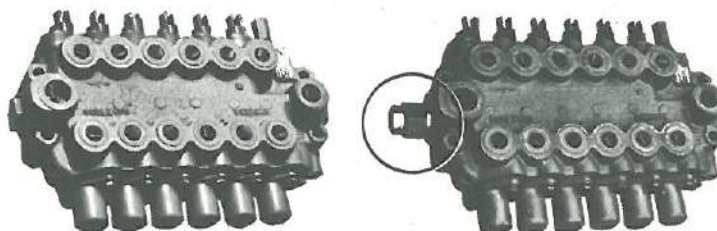


Figure C

Closed Center to Open Center Conversion

Compare Figure B with Figure C. If there is a protrusion on the backhoe valve as in Figure C, your backhoe valve has been adapted for closed center tractor hydraulic system use. If there is no protrusion, and your valve appears as in Figure B, your backhoe is ready to be used with an open center tractor hydraulic system.

To convert a closed center backhoe valve to open center, do the following:

1. Remove the high pressure carryover kit from 1 of Figure A. Install a large hex plug and o'ring seal at this point.
2. Remove the cover nut (2 of Figure A) from the valve bypass.
3. Insert via a tee connection a pressure gauge into the pressure line of the backhoe.
4. Turn the slotted screw in the valve bypass out until you feel the spring tension on it release.
5. Apply power to the backhoe, and raise one of the stabilizers as high as it will go.
6. Continue holding the stabilizer control lever down (in the "raise" position). Turn the slotted screw in the valve bypass in until a pressure gauge reading of 2200 P.S.I. is obtained.
7. Remove power from the backhoe.
8. Replace the cover nut and remove the pressure gauge and the tee from the pressure line. Be sure to replace the washer with the cover nut, as it acts as a gasket.

Swing Valve Kit Installation

If your backhoe came equipped with a swing valve, it has already been properly installed at the factory. You need to follow the instructions below only if you are adding a swing valve to your backhoe. NOTE: Some of the connections indicated below may have already been made to the valve at the factory.

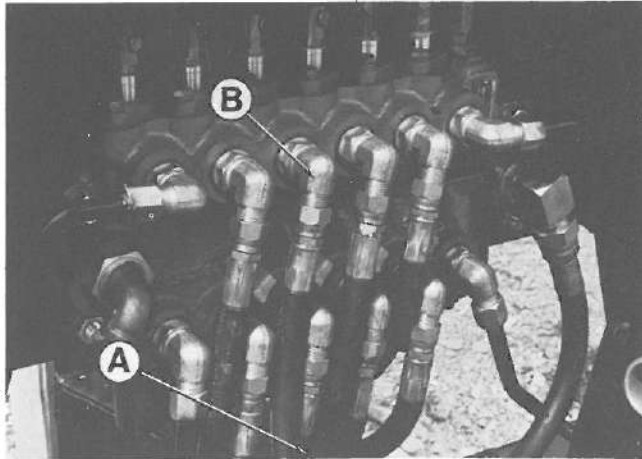


Figure 1

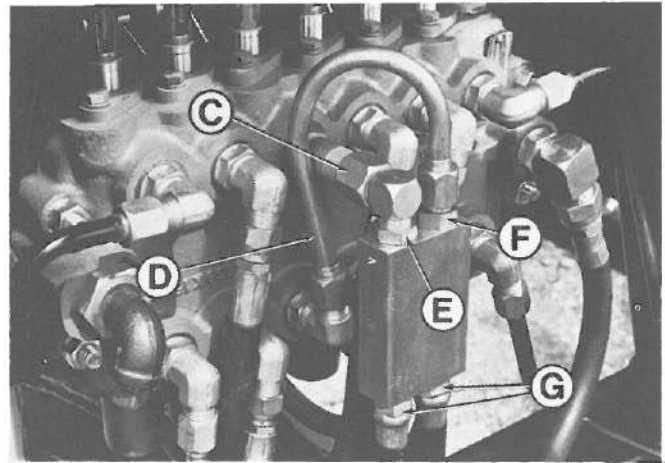


Figure 2

1. Disconnect the swing hoses (A of Figure 1) from the main backhoe valve.
2. Remove the O-ring ell (B of Figure 1) from the top swing port.
3. Install the long straight O-ring connector (C of Figure 2) in the top swing port of the main valve.
4. Install the tube (D of Figure 2) in the bottom swing port of the main valve.
5. Locate the top of the swing valve (indicated by a "V" on the side of the valve). Install three O-ring connectors at F and G of Figure 2. Install a 90° O-ring swivel ell with jam nut at E of Figure 2.
6. Attach the O-ring connector (C of Figure 2) to the O-ring swivel ell at E.
7. Attach the tube (D of Figure 2) to the right top port of the swing valve (F).
8. Connect the swing hoses to the lower ports of the swing valve (G of Figure 2).
9. Remove the two swing ram hoses that cross-connect the swing rams from the inner outlets of the manifold fittings (H of Fig. 3).
10. Remove the restrictors from the ends of the swing ram hoses.
11. Remove the manifold fittings from the swing rams (I of Figure 3). Remove the restrictors from the middle outlets of the manifold fittings.
12. Reassemble the manifold fittings to the swing rams.
13. Reconnect the swing hoses to the manifold fittings.
14. Tighten all fittings.

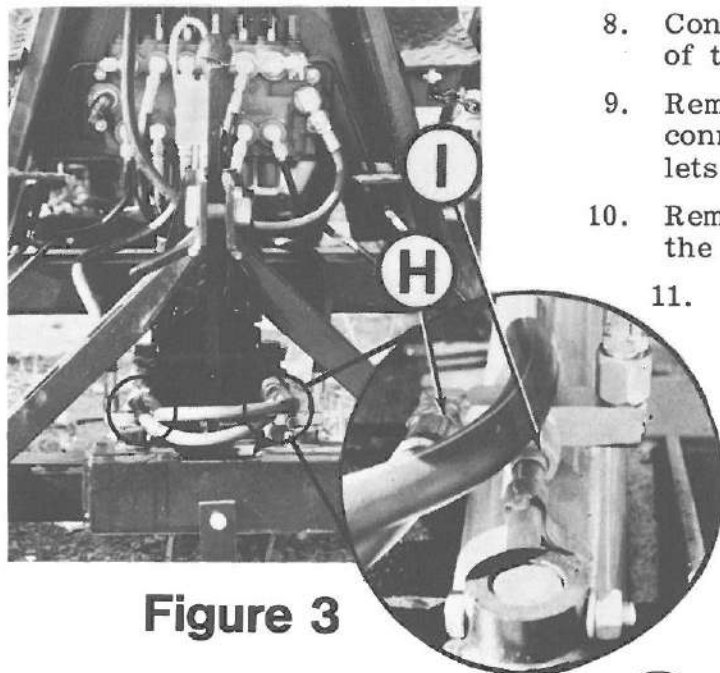


Figure 3

Transporting The Backhoe

⚠ CAUTION While traveling with the backhoe, the tractor must have at least 20% of the combined tractor/backhoe weight on its front wheels. Add additional front end weight, if necessary, to meet this requirement. This is necessary in order to maintain complete control of the tractor during travel.

Your backhoe comes equipped with transport chains. These should be put into proper position anytime you are transporting your backhoe. To ready your backhoe for transport, perform the following:



Raise both stabilizers completely. Raise the boom as high as possible. Curl the bucket completely in. Close the dipper stick in towards the boom assembly as far as possible. Your backhoe should now appear similar to Figure 1.

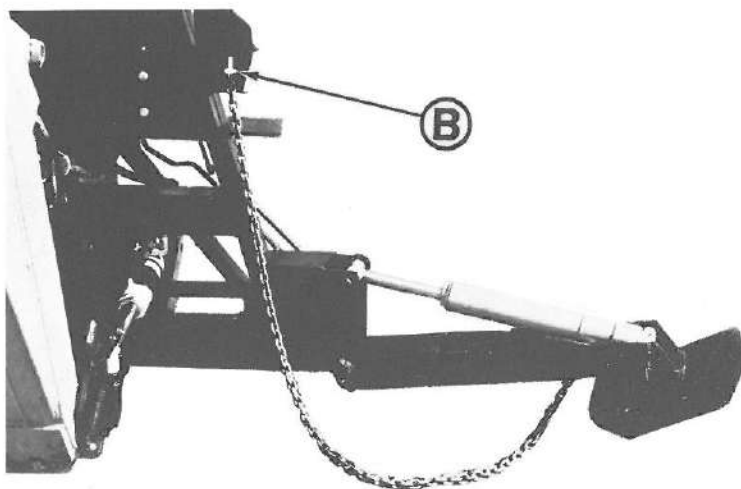
Locate the end of the transport chain which is not bolted to the stabilizer. Thread this end through the hole on the plate that is welded to the boom (A of Figure 1). Pull the chain taut and lock it in place by slipping it into the slot in the plate. Repeat this procedure with the transport chain on the other side of the backhoe.

NOTE: The chains should connect directly from the stabilizers to the boom. They should not be threaded through the hole beneath the foot pads.

Observe the following precautions while transporting the backhoe:

1. When traveling on roads, use the proper safety lights and warning signs. (Check your local regulations.)
2. When traveling over rough ground, do not exceed safe speed limits.
3. Do not make sudden starts or stops.
4. Do not make turns at high speeds.
5. When climbing grades, be particularly careful not to make sudden starts.

Preparing For Operation



Preparing the Backhoe

You must first place the transport chains in their operating position. To do this, disconnect the transport chains from the boom. (You may have to raise the boom in order to relax the tension of the chains.) Then lower both stabilizers to the ground. Connect the free ends of the transport chains to the storage holes in the plates beneath the foot pads (B of Figure 2).

Secure the chains by pushing a link into the slot in each of the plates. It is essential that you leave enough slack in the chains so that the stabilizers can be extended freely.

Preparing the Tractor

Move the tractor's gear shift lever to a neutral position. Set the engine throttle to the correct RPM. For added stability, lower the front end loader or blade to the ground (if so equipped). Move the draft control lever to the bottom most position. If you are using an independent hydraulic system, engage the PTO.

Operating The Backhoe



CAUTION Operate the backhoe only from the operator's seat. Be sure to place your feet on the foot pads during operation. This protects them from injury that could result from moving parts.

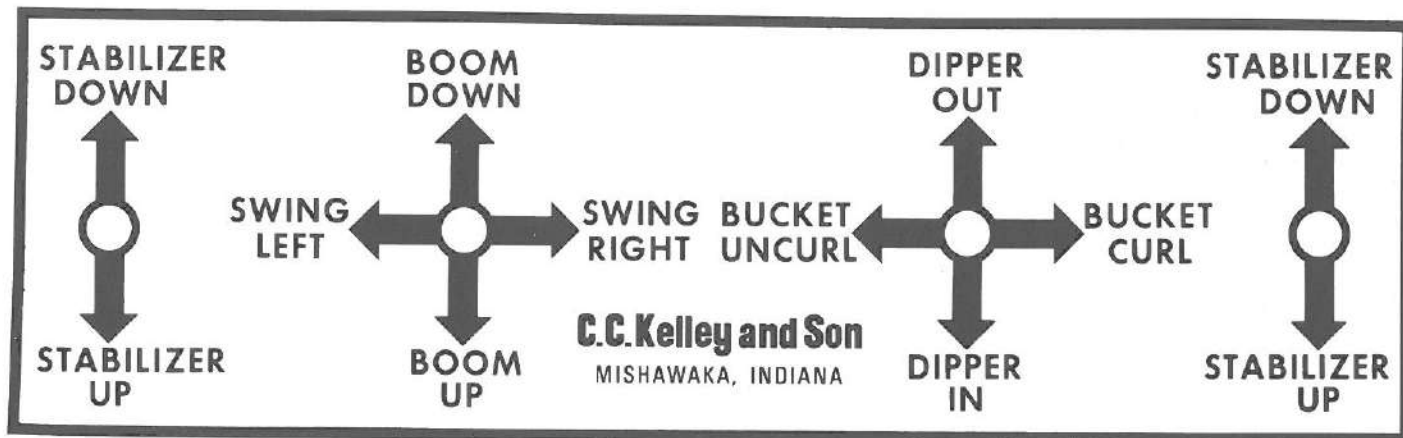


Figure 3

To operate your backhoe, mount yourself on the operator's seat. In front of you there are four control levers. Beneath the control levers is a decal that instructs you on the proper operation of the levers. Figure 3 above shows this control diagram as it appears on your backhoe. Refer to it for interpreting the following instructions. (All directions such as in or out and right or left are determined from a seated position in the operator's seat.)

operation

Stabilizers: The levers on the extreme right and extreme left of the operator's console control the stabilizers. The left lever is for the left stabilizer, and the right lever is for the right stabilizer. To raise the stabilizers, pull the levers towards yourself. To lower the stabilizers, push the levers forward (i.e. away from yourself).

The two levers in the center of the console control the operation of the backhoe. The left-hand lever controls the boom and the swing. The right-hand lever controls the dipper stick and the bucket.

Boom: The second lever from the left controls the boom. Pulling the lever towards yourself raises the boom; pushing the lever forward lowers the boom.


By moving the lever to the left, the boom will swing to the left; moving the lever to the right swings the boom to the right.

Dipper Stick and Bucket: The second lever from the right controls the dipper stick and the bucket. Pulling the lever towards yourself moves the dipper stick in; pushing the lever forward moves the dipper stick out.

By moving the lever to the left, the bucket will uncurl; moving the lever right curls the bucket.


Familiarize yourself with these controls before beginning to operate the backhoe. After a little experience, you will be able to operate the unit with a smooth steady motion.


Digging Suggestions

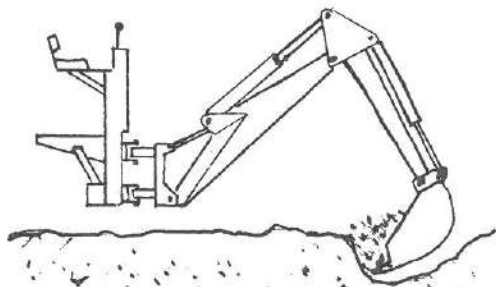
 **CAUTION** Always make sure that the stabilizers maintain contact with the ground during digging operations. Take the time to readjust these when necessary during digging.

Before you begin digging, extend the stabilizers so that they make a firm contact with the ground. This is essential in order to gain the necessary stability and weight transfer to insure safe digging.

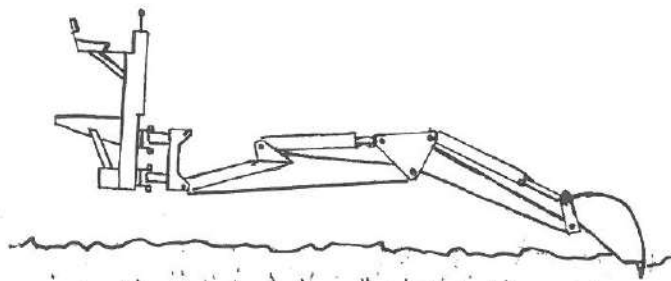
Observe the following cautions while digging.

 **CAUTION** Before swinging the backhoe, make sure you have room to swing and that all people are clear of the backhoe. For added protection, place a barricade around the swing area before commencing operation.

 **CAUTION** Be sure that you are not digging over any underground wiring, pipes, or other obstructions. If there is any doubt, call your public service agency.

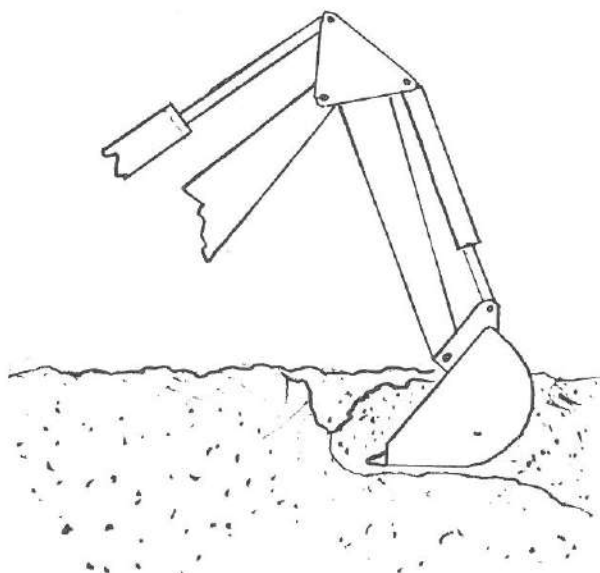


Correct

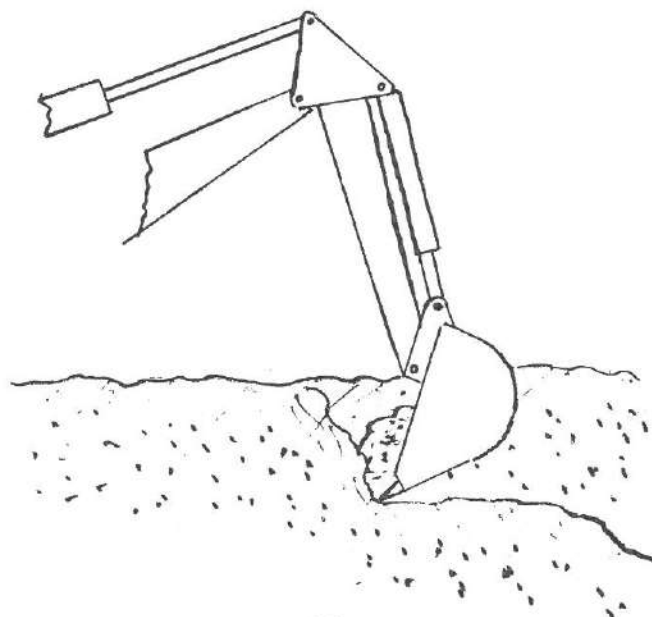


Wrong

Figure 4



Correct



Wrong

Figure 5

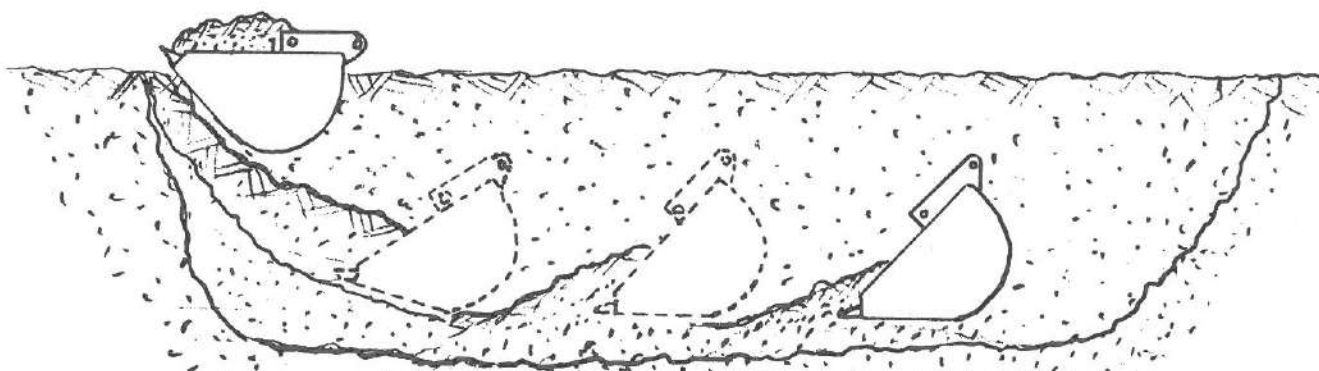






Figure 6

 **CAUTION** When digging to either side and/or close to the tractor, be extremely careful that the bucket does not contact the stabilizers, as serious damage may occur.

 **CAUTION** When swinging the backhoe to either side, do not slam the swing mast into the stops.

 **CAUTION** Be extra careful when working on hillsides and/or close to ditches. It is always extremely dangerous to work in a position where the danger of tipping or sliding exists.

 **CAUTION** Digging on a slope should be done from the top down. When digging across a slope, use the stabilizers to keep the backhoe level and always dump uphill. Use caution when digging under these conditions. Move the unit carefully and at a safe ground speed.

The following suggestions should aid you in gaining maximum efficiency with your backhoe.

Digging at the correct angle is essential. To obtain the best penetration, the dipper arm assembly should be at an angle. Do not extend the boom and the dipper arm out into a straight line. See Figure 4.

Figure 5 shows the correct angle of the bucket for digging. After you have filled the bucket, do not pull the dipper arm any closer to the boom than is necessary in order to clear the hole. When the bucket is clear, swing it to the side to dump. Always start dumping far enough to the side so as not to run out of dumping room. It is desirable while swinging to the side to make contact with the already removed material in order to lessen shock on the machine. This also aids the operator in pushing the material away from the working area.


The length of the pass should be just long enough so that the bucket will be full at the end of the pass. The depth of the pass will depend upon the type of soil. Do not drag a full bucket of dirt. After making a pass you will be able to determine how deep you will be able to dig. To control the depth of the pass, work the bucket and dipper arm controls alternately. In this way you can take an even bite each time you make a pass and obtain a full bucket. See Figure 6.


When loading trucks, curling the bucket close to the dipper arm will prevent undue spillage when the bucket is raised so that it can be dumped in the truck bed.


To obtain a level bottom, set the bucket teeth at a slight angle. Keep this angle as you drag the bucket with the dipper arm by gradually uncurling the bucket. Intermittently pull the boom lever at the same time to maintain a level bottom.


When digging for pipe leaks or underground cables, dig parallel to the pipe or cable run -- never across it.

Maintenance and Lubrication

 **CAUTION** Failure to perform the routine maintenance procedures outlined below may cause your backhoe to operate improperly. Such operation could lead to personal injury. Your *Kelley* backhoe requires only a few minutes of maintenance before each use. For your own safety, follow the procedures suggested below.

 **CAUTION** When servicing the backhoe, make sure all moving parts are resting on the ground.

 **CAUTION** Do not service, adjust, or work on the backhoe while it is operating. Remove all power from both the backhoe and the tractor while servicing the backhoe.


 **CAUTION** To avoid injury from escaping pressurized hydraulic oil, move the control levers in all directions before disconnecting any hoses, steel lines, or couplers.

Initial Break-in Period


1. Replace the high pressure filter element after the first 25 hours of operation. See "Oil Filter Replacement" in this section of the manual.
2. If you are using a *Kelley* Independent Hydraulic System, clean the suction line filter after the first 10 hours of operation. See the section entitled "Suction Line Filter Cleaning".

Daily

1. Check all hardware and hoses in order to be sure that they are secure. Check particularly the 3-point bolts, the lower link pin nuts and locking pins, and the snap lock pins in the 3-point mounting top link. Check all retaining bolts in pins.
2. Check the hoses for cracks, cuts, or leaks. If a hose is defective, replace it.

 **CAUTION** Under no circumstances should you attempt to repair a defective hose. Always replace defective hoses.

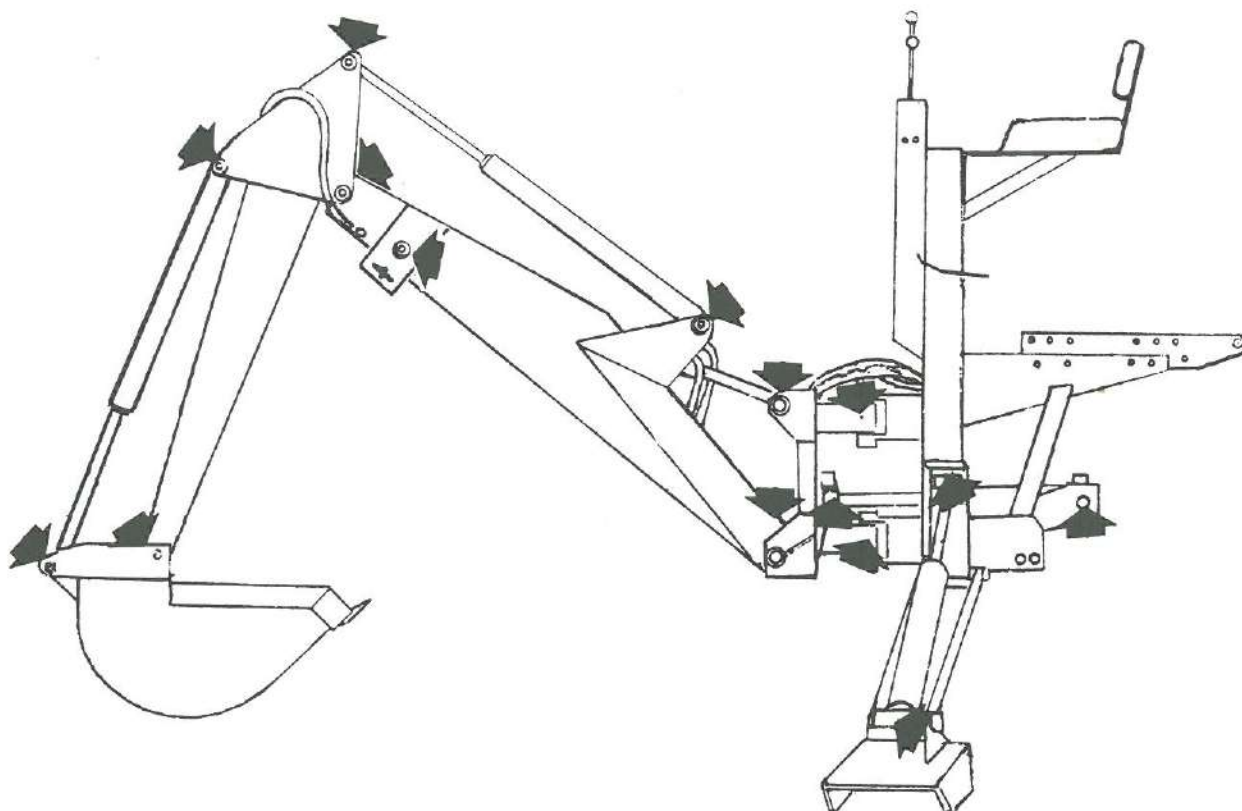
3. Check for defective parts. If any are found, repair or replace them before operating the backhoe.

 **CAUTION** Whenever you replace a part, make sure it is replaced with a part having a strength rating equivalent to or greater than that of the original part.

4. If you are using the *Kelley* Independent Hydraulic System, make sure that the oil level is at the proper height. Add a Type A non-foaming hydraulic fluid if necessary.
5. Remove all dirt from the machine. Particularly remove any dirt on the swing mast or on the top side of the stabilizers around the stabilizer cylinders. Clogged dirt can damage cylinders and hoses.

maintenance

6. Check for any hoses that may be rubbing against sharp edges. If you find any such hoses, try to reposition them to a safer place.
7. Lubricate all points as indicated by the arrows on the drawing "Lubrication Points".



Lubrication Points

Every 50 Hours of Operation

1. Replace the high pressure oil filter element. See "Oil Filter Replacement" in this section of the manual.

NOTE: If the oil filter is plugged, a built-in bypass is activated. It is not obvious to the user when the filter is not working. Periodic replacement of the filter element is necessary to avoid this situation.

2. If you are using a Kelley Independent Hydraulic System, clean the suction line filter as outlined in the section entitled "Suction Line Filter Cleaning".

Oil Filter Replacement

You will need a Filter Element Replacement Kit (part number BCV202).

Remove the four nuts that hold the filter shell in place. Remove the shell. Unscrew the filter element and discard. Screw the new element in place. Remove the O'ring seal from the head and discard. Install the new O'ring. Replace the shell. Torque the shell nuts of 45 ft/lbs.

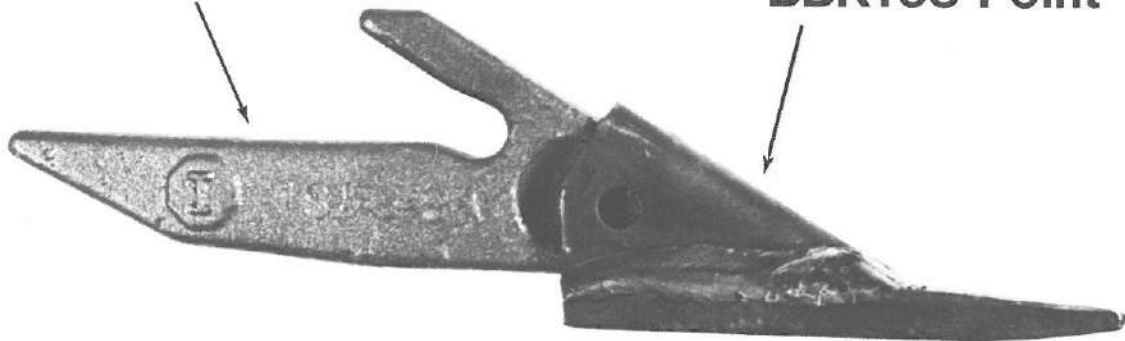
Suction Line Filter Cleaning

Remove the bolt from the center of the suction line filter. The filter will then come apart in two halves. Remove the screen. Wash it and replace it. Then screw the two halves of the filter back together.

Bucket Tooth Replacement

BBK167 Shank

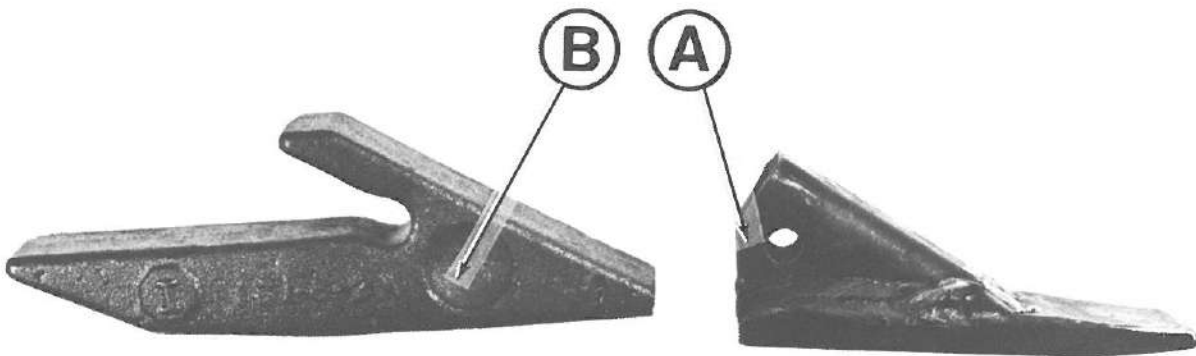
BBK168 Point



BBK192 Tooth Assembly

To remove a tooth point, heat the point with a torch at A (the peened section that overlaps B). Then hammer at the top of the point until the point comes free from the shank.

To replace a tooth point, hammer the point onto the shank. Heat at A and hammer the heated section into recess B.



Storing the Backhoe



CAUTION

To avoid injury while disconnecting the backhoe from a tractor, slow the tractor RPM down to avoid sudden and quick reactions from the hydraulic cylinders.



CAUTION

To avoid injury from escaping pressurized hydraulic oil, move the control levers in all directions before disconnecting any hoses, steel lines, or couplers.

The first step in removing your *Kelley* backhoe from your tractor is to lower the hydraulic stabilizers to the ground. Then lower the bucket to the ground. This will provide a third position point for stability.

Now by maneuvering the stabilizers and the boom cylinder, position the backhoe so that the weight load is removed from the pins connecting the backhoe to the 3-Pt. of the tractor. Be sure that the backhoe maintains a stable position that will not shift once the pins are removed.

Remove the lower hitch pins. Then remove the top link pin (you may have to reposition the backhoe to do so.) While removing pins, make sure you keep your body above the frame of the backhoe in case it shifts its position.

At this point the backhoe can be removed from its hydraulic source. It is advisable to block the base of the backhoe if you wish to prevent the stabilizer cylinders from settling down and letting the backhoe sit directly on the ground.

Once the backhoe is removed, perform the recommended procedures below.

Storing for Short Periods

Coat all exposed cylinder shafts with grease or a corrosion preventive. (Remove before operating again.)

Install dust caps on the quick couplers, if so equipped, to prevent dirt contamination of the hydraulic system. Or, if possible, connect the quick couplers together.

Storing at the End of a Season

Coat all exposed cylinder shafts with grease or a corrosion preventive.

Store the backhoe in a dry protected place.

Clean the unit of all mud and dirt. Touch up the paint to prevent rust.

Install dust caps on the quick couplers, if so equipped, to prevent dirt contamination of the hydraulic system. Or, if possible, connect the quick couplers together.

At the Start of a Season

Clear all dirt and debris from all quick couplers, if so equipped.

Remove the protective coatings.

Check all hydraulic hoses and replace if necessary.

Tighten loose bolts and nuts.

Lubricate the unit.

Check bucket teeth. Sharpen or replace if required.

Run the unit slowly and check the operating controls before starting to dig.

Pressure Measurements

Main Relief Valve

To measure the setting of the main relief valve, perform the following steps:

1. Insert a pressure gauge into the pressure line of the backhoe via a tee connection.
2. Apply power to the backhoe, and raise one of the stabilizers as high as it will go.
3. Continue holding the stabilizer control lever back (in the "up" position). Read the pressure gauge.

The normal reading should be approximately 2200 P.S.I. If you need to make an adjustment, remove the cover nut of the valve bypass, and adjust the slotted screw in the valve bypass until the appropriate reading is made.

The main relief valve measurement procedure outlined above uses the stabilizer cylinders because the stabilizer cylinders do not contain circuit reliefs. This enables a true reading of the main relief valve pressure setting.

Circuit Relief Valves

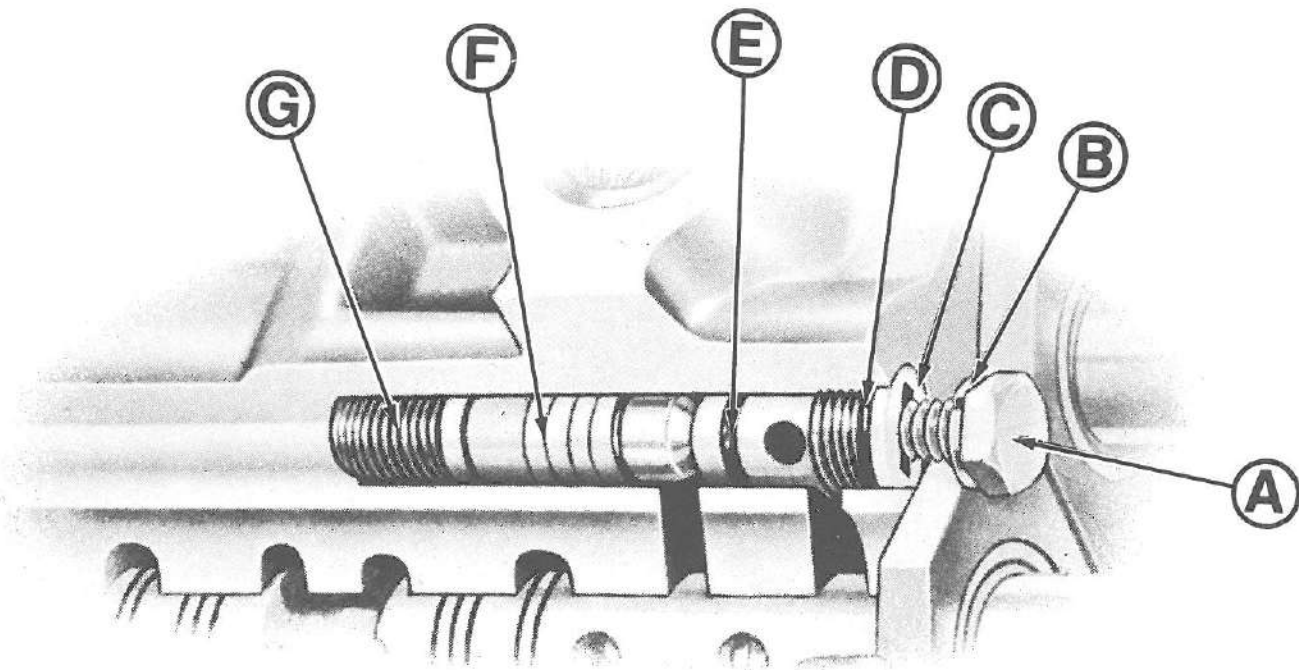
Whether the circuit relief valves are functioning correctly can be determined indirectly by measuring the main relief valve pressure.

To test a circuit relief for a cylinder, do the following:

1. Insert a pressure gauge into the pressure line of the backhoe via a tee connection.
2. Apply power to the backhoe, and extend the troublesome cylinder as far as it will go.
3. While still holding the control lever for the cylinder in the "extend" position, take a pressure reading.
4. Now retract the same cylinder as far as it will go.
5. While still holding the control lever for the cylinder in the "retract" position, take a pressure reading.

If both readings are 2200 P.S.I., the circuit relief is functioning properly. If one reading equals 2200 P.S.I., but the other reading is less than 2200 P.S.I., the circuit relief is sticking open. Remove the circuit relief and clean it. If both readings are less than 2200 P.S.I., you need to repair the cylinder with a piston seal kit.

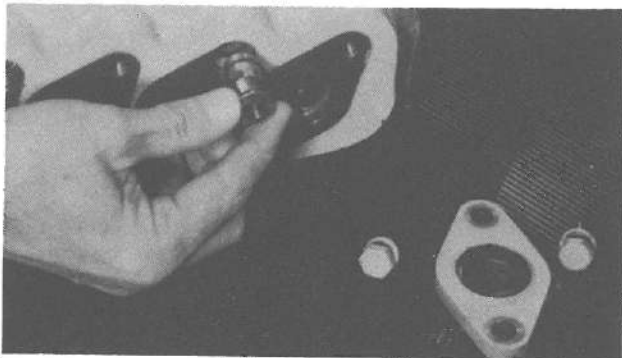
Circuit Relief Cleaning



422X69 Circuit Relief Valve Assembly

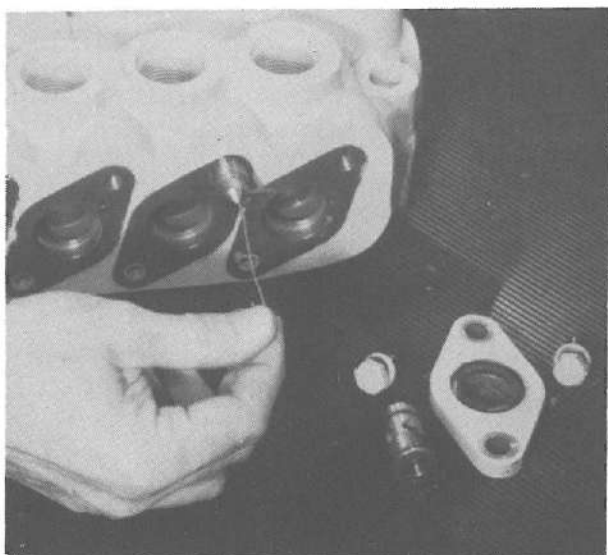
Consisting of:	A102X3	Capscrew (A)
	A252X8	Lockwasher (B)
	414X135	Relief Poppet Seat (C)
	A848X2	O'ring (D)
	A848X1	O'ring (E)
	SKO-318-2500	Circuit Relief Poppet Cartridge (F)
	A501X479	Relief Spring (G)

Letters in parentheses refer to the components of the above figure.



1. Remove relief poppet seat (C) with O'rings (D) and (E). See Figure 1.

Figure 1



2. Remove relief poppet cartridge (F) with hooked wire through hole. See Figure 2.

Figure 2

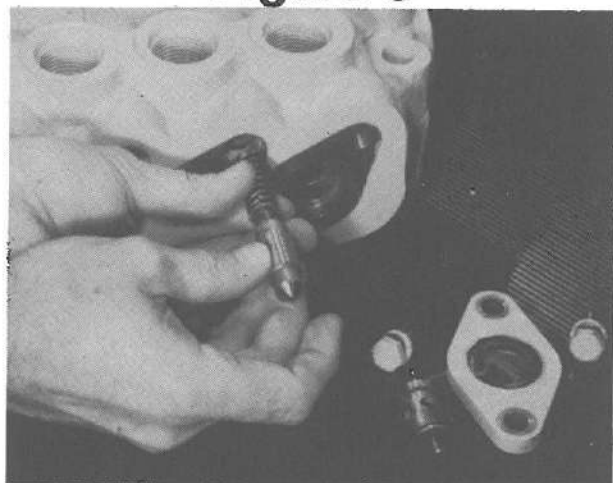
3. Wash all parts in solvent and dry with lint-free cloths or dry compressed air.

NOTE: The relief poppet cartridge is factory set and individual parts are not available for field replacement. Replace the complete assembly if malfunctioning due to reasons other than the presence of foreign material.



4. Install relief spring (G) and poppet cartridge (F). See Figure 3.

Figure 3



5. Install relief poppet seat (C) with O-rings (D) and (E) in place. See Figure 4.
6. Install lockwasher (B) and capscrew (A).

Figure 4

troubleshooting



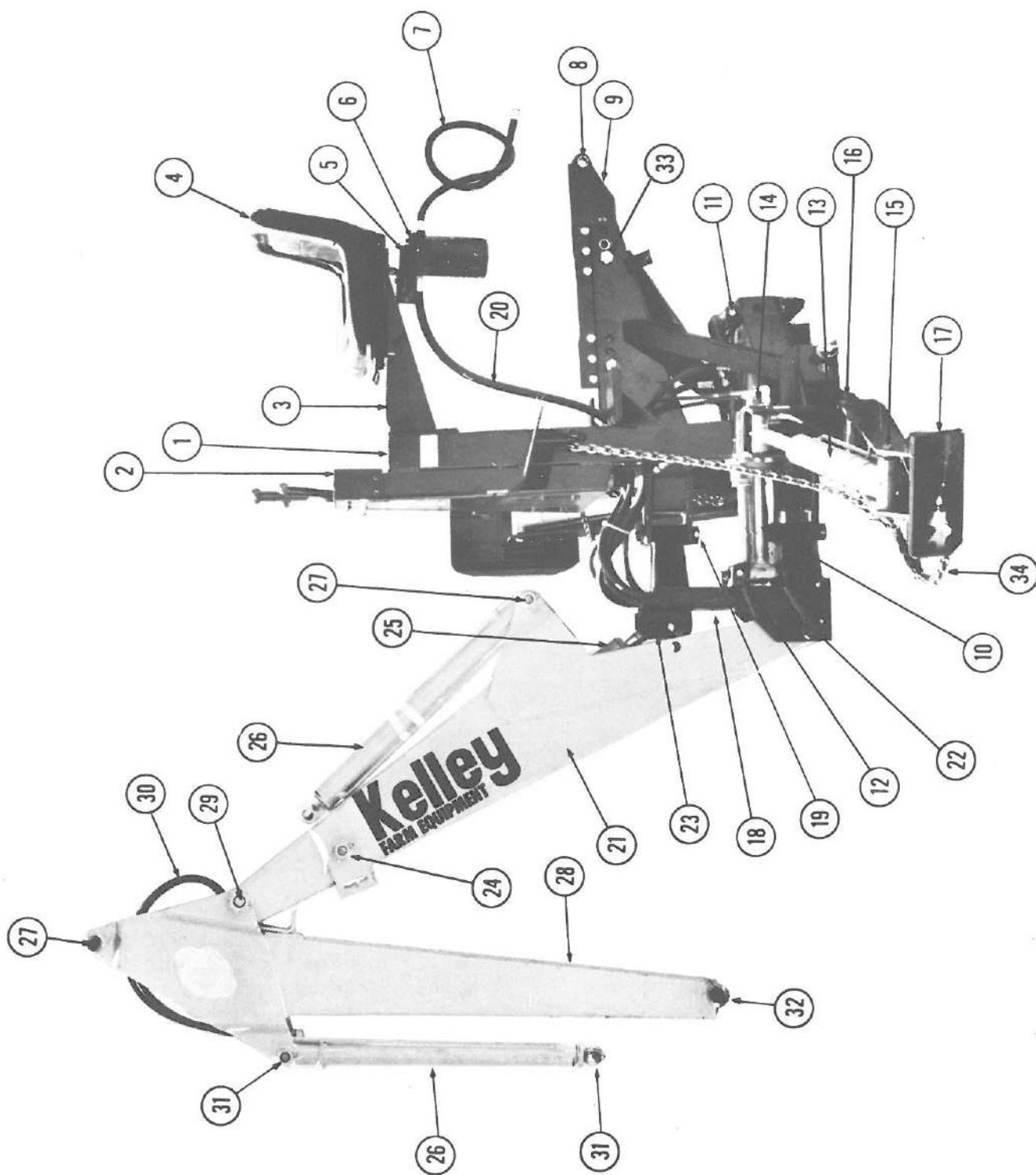
CAUTION
of this manual.

Do not attempt any repairs on the backhoe until you have studied all the cautions in the Maintenance section

<u>Problem</u>	<u>Possible Cause</u>	<u>Possible Remedy</u>
Backhoe does not operate.	Low oil supply.	Add oil.
	Hoses not properly connected.	Check hose connection.
	Worn or damaged pump.	Replace or repair pump.
	Broken oil line.	Check for leaks. Replace line.
Slow Operation	Engine speed too low.	Adjust RPM's.
	Worn or damaged pump.	Replace or repair pump.
	Cylinder seals leaking.	Replace seals.
	Dirty oil filter.	Replace.
	Circuit relief not holding.	Remove and clean. See Maintenance topic "Circuit Relief Cleaning".
	Faulty main relief valve.	Clean or replace.
	Suction line filter plugged.	Clean.
	Oil too heavy for cold weather use.	Replace with lighter oil.
	Power supply may not be pumping enough oil.	Use a flow meter to check out whether a 8-12 GPM flow rate is being achieved.
	Low oil level.	Add oil.
	Pressure line restricted.	Check for obstruction.
	Collapsed suction line.	Check for damage.
Backhoe does not hold up load.	Cylinder seals leaking.	Replace.
	Valve spool leaking.	Replace seals.

troubleshooting

<u>Problem</u>	<u>Possible Cause</u>	<u>Possible Remedy</u>
Excess oil heat.	Damaged or worn pump.	Repair or replace.
	Too fast of an engine speed.	Reduce throttle.
	Main relief bypass valve improperly set.	Check relief setting.
	Draft control lever not all the way down.	Position correctly.
Loss of power on a single cylinder.	Circuit relief sticking.	Remove and clean.
Oil leakage.	Valve spool seals.	Replace seals.
	Loose hose fittings.	Tighten just enough to stop leakage.
	Broken oil line.	Replace hose or line.
Independent hydraulic system pump failure.	Improperly set relief valve.	Set relief at 2200 PSI.
Independent hydraulic system pump noisy.	Suction line filter plugged.	Clean filter.
	Oil too heavy.	Use a lighter oil.
Jerky or erratic action.	Air in system.	Check for loose connections. Cycle all valves to remove air.
	Wrong type oil.	Check tractor manual. For independent hydraulic system, use a type A non-foaming hydraulic oil.
	Foamy oil.	Check tractor manual. For independent hydraulic system, use a Type A non-foaming hydraulic oil.
Blown return line.	Improperly connected.	Make sure all connections are as shown in the assembly section of this manual.

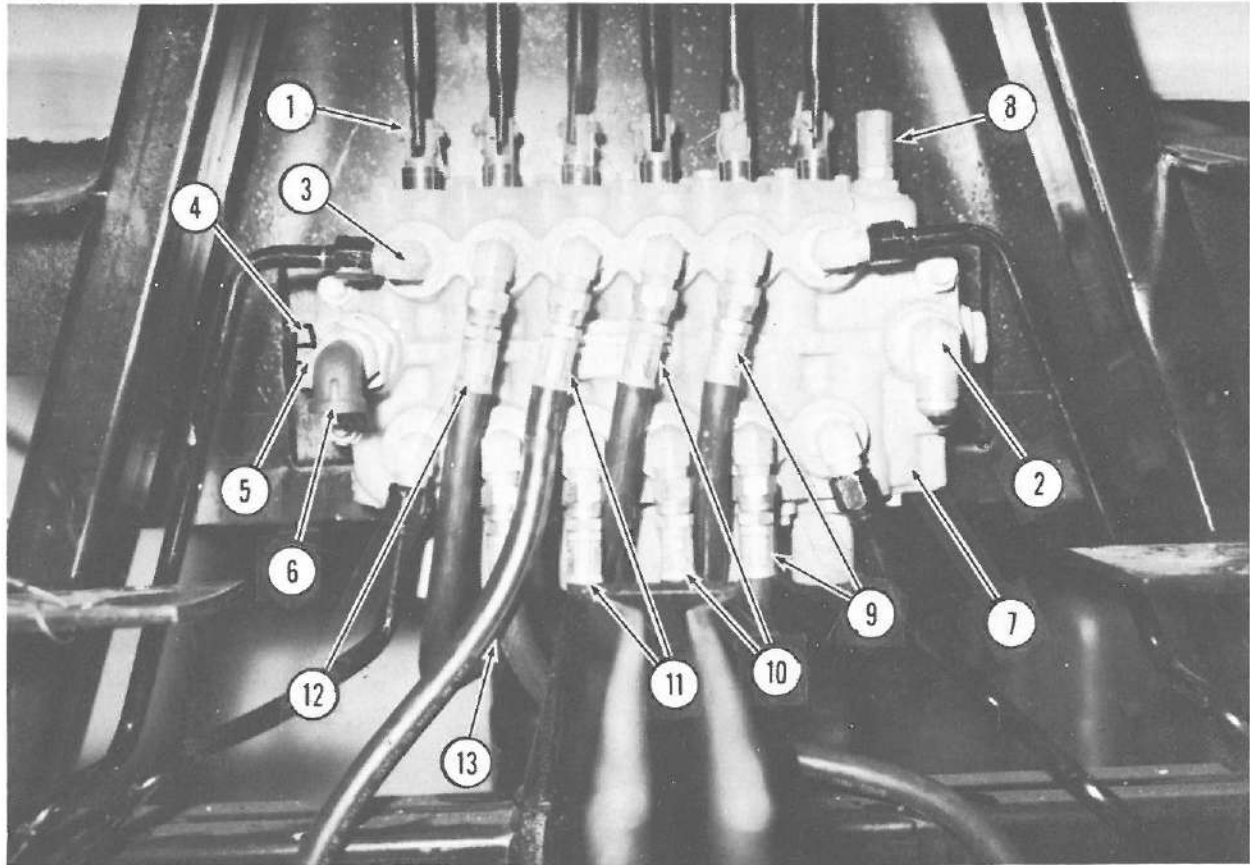


B40 Back-Hoe

Reference Number	Qty.	Part No.	Description	Reference Number	Qty.	Part No.	Description
1	1	BMF102	Main Frame Weld Assembly	25	1	BCY132	Boom Ram, 2-1/2" x 32" Stroke
2	1	BMF103	Control Panel Cover	26	2	BCY124	Dipper Ram and Bucket Ram, 2-1/2" x 26" Stroke
3	1	BMS243	Seat Bracket	27	2	BMS115	Ram Pin, Base & Rod End, 1" x 6-1/4"
4	1	BMS231	Seat Assembly	28	1	BMF179	Dipper Weld Assembly
5	1	BMT205	Filter Mounting Bracket	29	1	BMS126	Dipper Pivot Pin, 1-1/4" x 9-5/8"
6	1	BCV191	Hi Pressure Filter Assembly	30	2	BHO160	Bucket Ram Hose, 6P-8JM-8JFS-39"
7	1	BHO190	Pressure Hose, 6P-8-O'ring-8-50"	31	2	BMS115	Ram Pin, Base & Rod End, 1" x 6-1/4"
8	1	BFT109	Category II Bushing	32	1	BMS130	Bucket Pivot Pin, 1-1/4" x 3-1/4"
9	1	BMS108	Third Point Link	33	2	BMS169	Third Point Link Bolt, 7/8" x 2-1/2" W/Nut & Lockwasher
10	2	BCY110	Swing Ram, 2-1/2" x 12" Stroke	34	2	BMS230	Transport Chain
11	2	BMS115	Ram Pin, Base & Rod End, 1" x 6-1/4"	Not Illustrated Parts			
12	2	BMS115	Ram Pin, Base & Rod End, 1" x 6-1/4"	2	BMS232	Seat Adjusters	
13	2	BCY111	Stabilizer Ram, 2-1/2" x 15" Stroke	2	BHO123	Dipper In and Out Hose, 6P-8JM-8JFS-80"	
14	2	BMS118	Stabilizer Ram Pin, Rod End, 1" x 5-1/2"	1	BMS180	Bulkhead Elbow Retaining Plate	
15	2	BMS120	Stabilizer Ram Pin, Base End, 1" x 6-1/2"	2	BFT128	Bulkhead Elbow W/Nut (for bucket ram hose)	
16	2	BMS119	Stabilizer Pivot Pin, 1" x 7-3/4"	2	BMT181	Steel Hydraulic Line (inside boom)	
17	2	BMF113	Stabilizer	11	BMS172	Locking Pin W/Nut, 3/8" x 2-1/4"	
18	1	BMF112	Swing Mast	5	BMS173	Locking Pin W/Nut, 3/8" x 2-1/2"	
19	2	BMS114	Swing Mast Pin, 1-1/4" x 7"	2	BMT131	Hose & Line Clamp Plate (inside boom)	
20	1	BHO189	Pressure Hose, 8P-8-O'ring-12JFS-50"	10	BMS133	Steel Bushing for 1-1/4" Pin Pivot Point	
21	1	BMF178	Boom Weld Assembly	21	LMS2012	5/16" Drive Zerk	
22	1	BMS116	Boom Pivot Pin, 1-1/4" x 10-1/2"	5	LMS2006	5/16" x 3-1/2" Cotter Pin	
23	1	BMS117	Boom Ram Pin, Rod End, 1" x 4"	1	BMS215	Complete Seat Assembly (BMS231 & BMS232)	
24	1	BMS122	Boom Ram Pin, Base End, 1" x 8-3/4"				

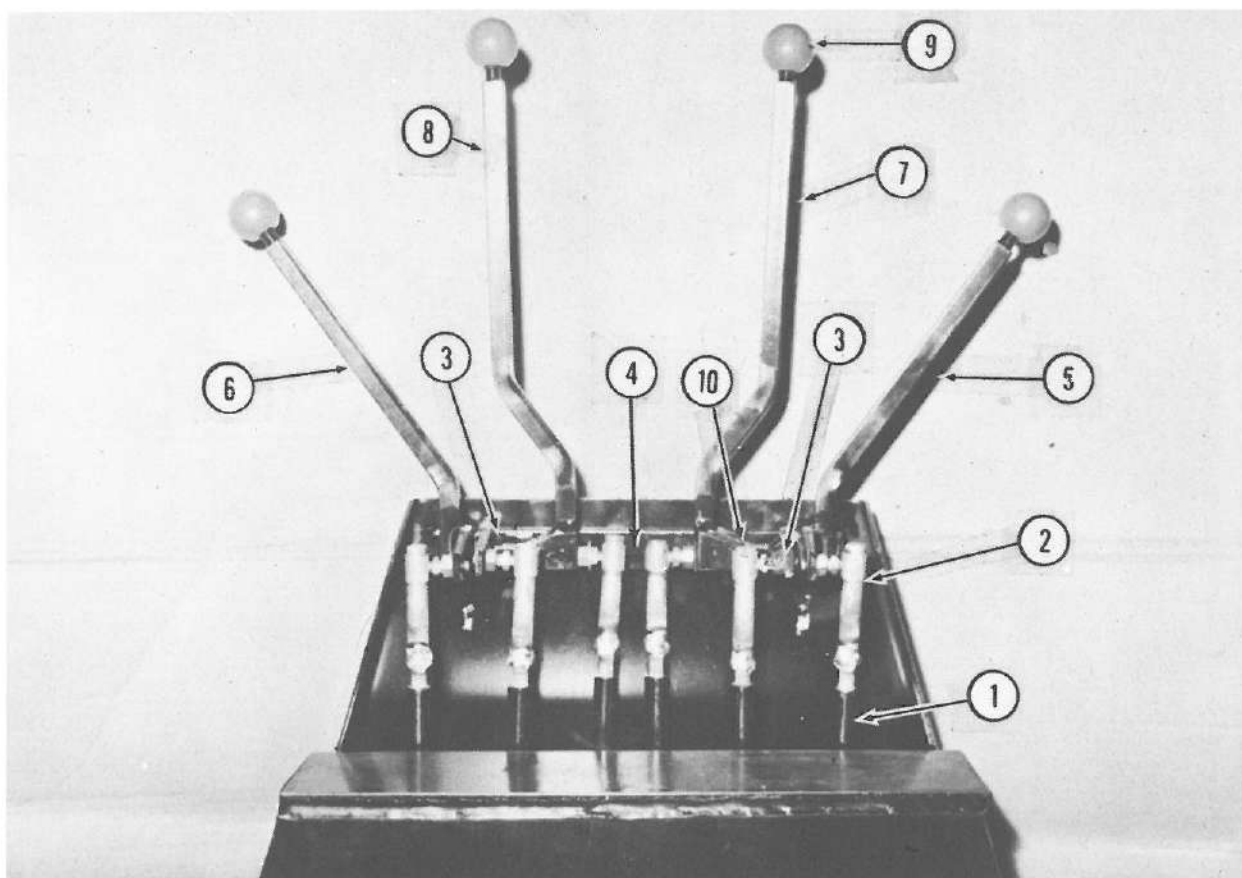


Reference Number	Qty.	Part No.	Description	Reference Number	Qty.	Part No.	Description
1	1	BMF102	Main Frame Weld Assembly	28	2	BMS115	Dipper Ram Pin, Rod & Base End, 1" x 6-1/4"
2	1	BMF103	Control Panel Cover	29	2	BMT212	Dipper Ram Steel Hydraulic Line (inside boom)
3	1	BMS243	Seat Bracket	30	1	BMS126	Dipper Pivot Pin, 1-1/4" x 9-5/8"
4	1	BMS231	Contour Seat	31	1	BMF185	Dipper Weld Assembly
5	1	BMT205	Filter Mounting Bracket	32	1	BCY124	Bucket Ram, 2-1/2" x 26" Stroke
6	1	BCV191	Hi Pressure Filter Assembly	33	2	BHO162	Bucket Ram Hose, 6P-8JM-8JFS-60"
7	1	BHO190	Pressure Hose, 6P-8-O'ring-8-50"	34	2	BMS115	Bucket Ram Pin, Rod & Base End, 1" x 6-1/4"
8	1	BFT109	Category II Bushing	35	1	BMS130	Bucket Pivot Pin, 1-1/4" x 8-1/4"
9	1	BMS108	Third Point Link	36	2	BMS169	Third Point Link Bolt, 7/8" x 2-1/2" W/ Nut & Lockwasher
10	2	BCY110	Swing Ram, 2-1/2" x 12" Stroke	37	2	BMS230	Transport Chain
11	2	BMS115	Swing Ram Pin, Base End, 1" x 6-1/4"	Not Illustrated Parts			
12	2	BMS115	Swing Ram Pin, Rod End, 1" x 6-1/4"	2	BMS174	Seat Bracket	Seat Bracket
13	2	BCY111	Stabilizer Ram, 2-1/2" x 15" Stroke	2	BMT187	Bucket Ram Steel Hydraulic Line (inside boom)	Bucket Ram Steel Hydraulic Line (inside boom)
14	2	BMS118	Stabilizer Ram Pin, Rod End, 1" x 5-1/2"	1	BMS180	Bulkhead Elbow Retainer Plate	Bulkhead Elbow Retainer Plate
15	2	BMS120	Stabilizer Ram Pin, Base End, 1" x 6-1/2"	2	BFT128	Bulkhead Elbow W/Nut (for bucket ram hose)	Bulkhead Elbow W/Nut (for bucket ram hose)
16	2	BMS119	Stabilizer Pivot Pin, 1" x 7-3/4"	2	BMT131	Hose & Line Clamp Plate (inside boom)	Hose & Line Clamp Plate (inside boom)
17	2	BMF113	Stabilizer	11	BMS172	Locking Pin W/Nut, 3/8" x 2-1/4"	Locking Pin W/Nut, 3/8" x 2-1/4"
18	1	BMF182	Swing Mast	5	BMS173	Locking Pin W/Nut, 3/8" x 2-1/2"	Locking Pin W/Nut, 3/8" x 2-1/2"
19	2	BMS114	Swing Mast Pin, 1-1/4" x 7"	10	BMS133	Steel Bushing for 1-1/4" Pin	Steel Bushing for 1-1/4" Pin
20	1	BHO189	Pressure Hose, 8P-8-O'ring-12JFS-50"	21	LMS2012	Pivot Point	Pivot Point
21	1	BMF183	Boom Weld Assembly	5	LMS2006	5/16 Drive Zerk	5/16 Drive Zerk
22	1	BMS116	Boom Pivot Pin, 1-1/4" x 10-1/2"	1	BMS215	5/16" x 3-1/2" Cotter Pin	5/16" x 3-1/2" Cotter Pin
23	1	BMS117	Boom Ram Pin, Rod End, 1" x 4"	Complete Seat Box Assembly (BMS231 & BMS232)			
24	1	BMS122	Boom Ram Pin, Base End, 1" x 8-3/4"				
25	1	BCY204	Boom Ram, 3" x 32" Stroke				
26	1	BCY225	Dipper Ram, 2-1/2" x 32" Stroke				
27	2	BHO211	Dipper In and Out Hose, 6P-8JM-8JM-15"				



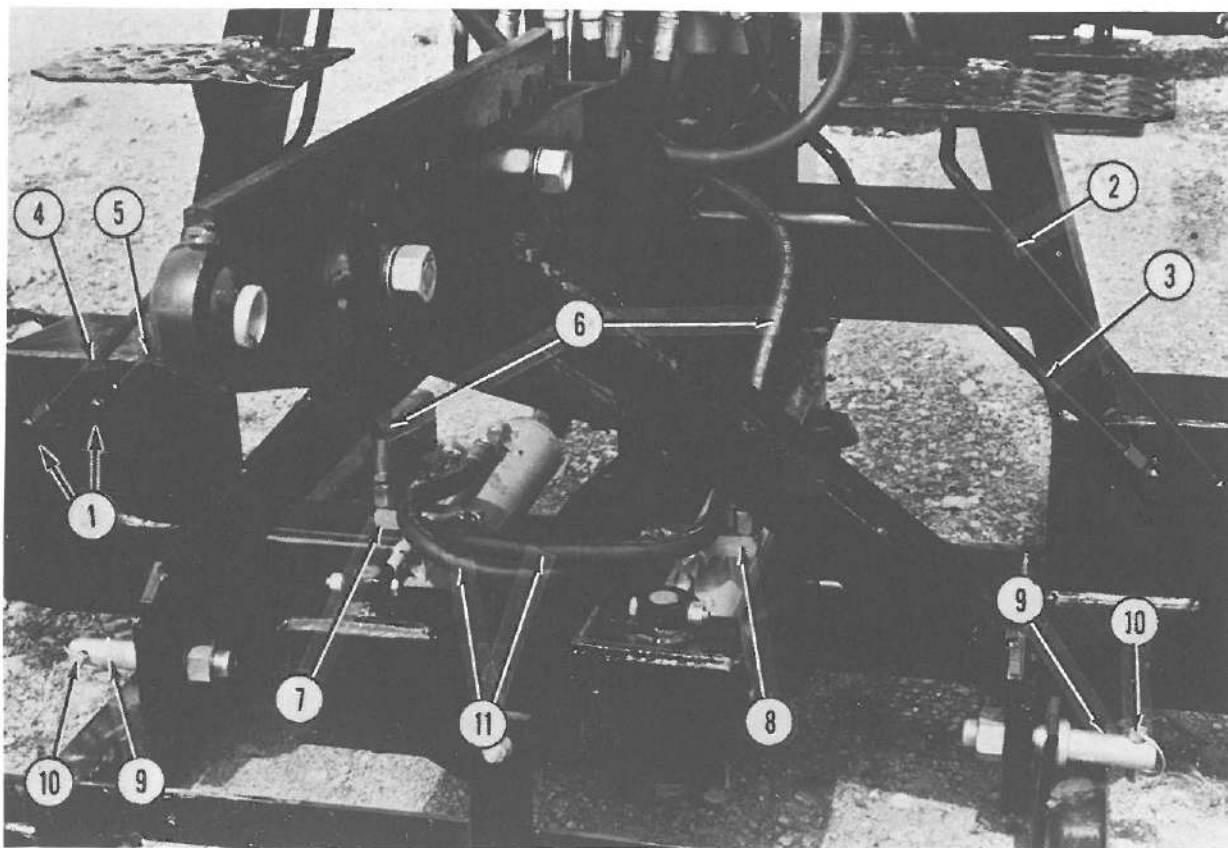
Valve Hoses and Fittings

Reference Number	Qty.	Part No.	Description
1	6	BMS154	Control Rod Pin
2	1	BFT155	O'ring Ell Pressure Fitting, C5512x12
3	12	BFT156	O'ring Ell Port Outlet, C5515x8x10
4	1	A971X10	Hex Head Carryover Port Plug
5	1	BFT157	Return Port Bushing, C3269x16x8
6	1	LFT2527	1/2" 90° Street Ell.
NI	1	BHO244	Return Hose, 8R-8-8-50"
7	1	BCV158	Hydreco V33 Series Hydraulic Valve
8	1	BCV159	Hi Pressure Relief Cartridge
9	2	BHO123	Dipper Ram Hose, 6P-8JM-8JFS-80" (for Model B40)
9	2	BHO184	Dipper Ram Hose, 6P-8JM-8JFS-90" (for Model B55)
10	2	BHO162	Bucket Ram Hose, 6P-8JM-8JFS-60"
11	2	BHO139	Swing Ram Hose, 6P-8-O'ring-8JFS-24" (for Model B40)
11	2	BHO210	Swing Ram Hose, 6P-8-O'ring-8JM-24" (for Model B40 equipped with optional swing valve and Model B55)
12	1	BHO163	Boom Ram Down Hose, 6P-8JM-8JFS-96"
13	1	BHO164	Boom Ram Up Hose, 6P-8JM-8JFS-100"



Valve Controls

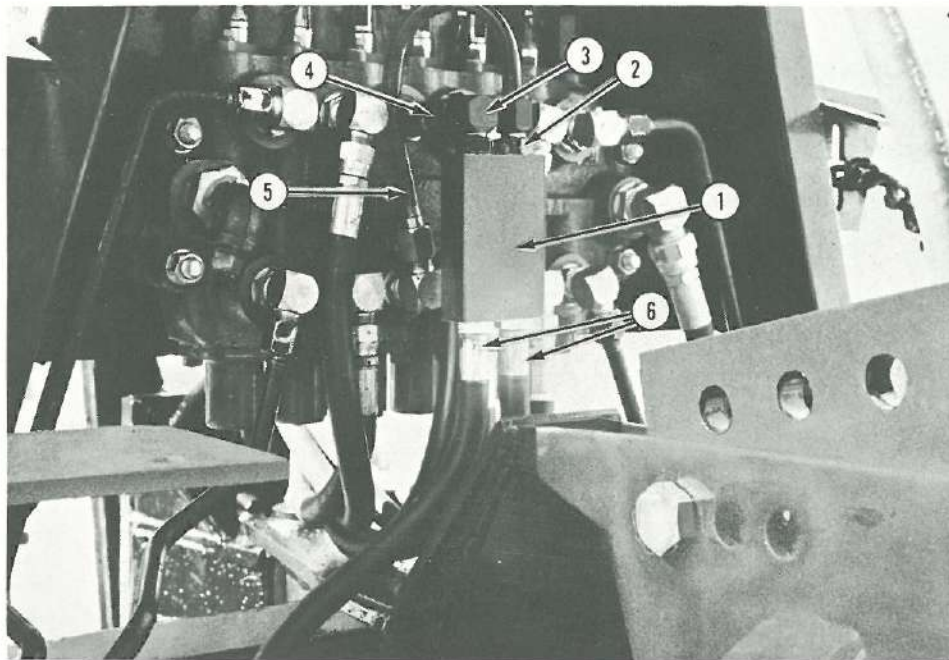
Reference Number	Quantity	Part No.	Description
1	6	BCV142	Control Rod
2	6	BCV143	Ball Joint Connector
3	2	BMS144	Control Pivot Pin
4	1	BMT147	Control Bracket
5	1	BMS148	Stabilizer Control Handle, RH
6	1	BMS149	Stabilizer Control Handle, LH
7	1	BMS150	Dipper and Bucket Control Handle
8	1	BMS151	Boom and Swing Control Handle
9	4	LMS3149A	Control Handle Knob
10	2	BMS153	Lever Pin
<u>Not Illustrated Parts</u>			
	2	BMS146	Snap Ring
	1	BMS152	Control Lever



Swing and Stabilizer Hoses and Fittings

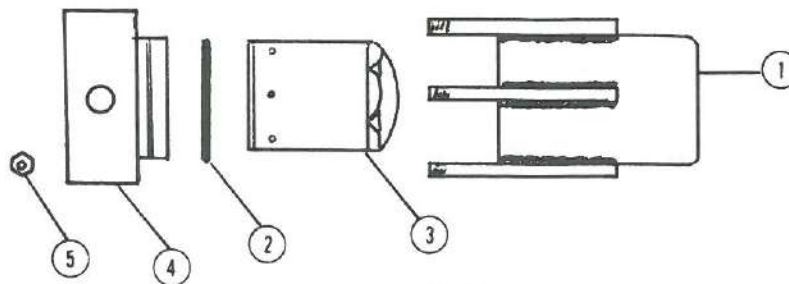
Reference Number	Qty.	Part No.	Description
NI	4	BFT128	Bulkhead Ell with Nut, C5525x8
1	4	LFT2618	Swivel Nut Elbow, C5506x8
2	1	BMT135	Stabilizer Down Steel Line, Right Hand
3	1	BMT136	Stabilizer Up Steel Line, Right Hand
4	1	BMT137	Stabilizer Down Steel Line, Left Hand
5	1	BMT138	Stabilizer Up Steel Line, Left Hand
6	2	BHO139	Swing Ram Hose, 6P-8-O'ring-8JFS-24" (for Model B40)
6	2	BHO210	Swing Ram Hose, 6P-8-O'ring-8JM-24" (for Model B40 equipped with optional swing valve and Model B55)
7	1	BFT219	JIC Manifold, 10005-8L, Left Hand
8	1	BFT218	JIC Manifold, 10006-8R, Right Hand
9	2	BMS140	Lower Link Pin with Nut
10	2	BMS141	7/16" Spring Lock Pin
11	2	BHO139	Swing Ram Hose, 6P-8JM-8JFS-24"
NI	4	BHO160	Stabilizer Ram Hose, 6P-8JM-8JFS-39"

BCV216 Swing Control Valve Kit



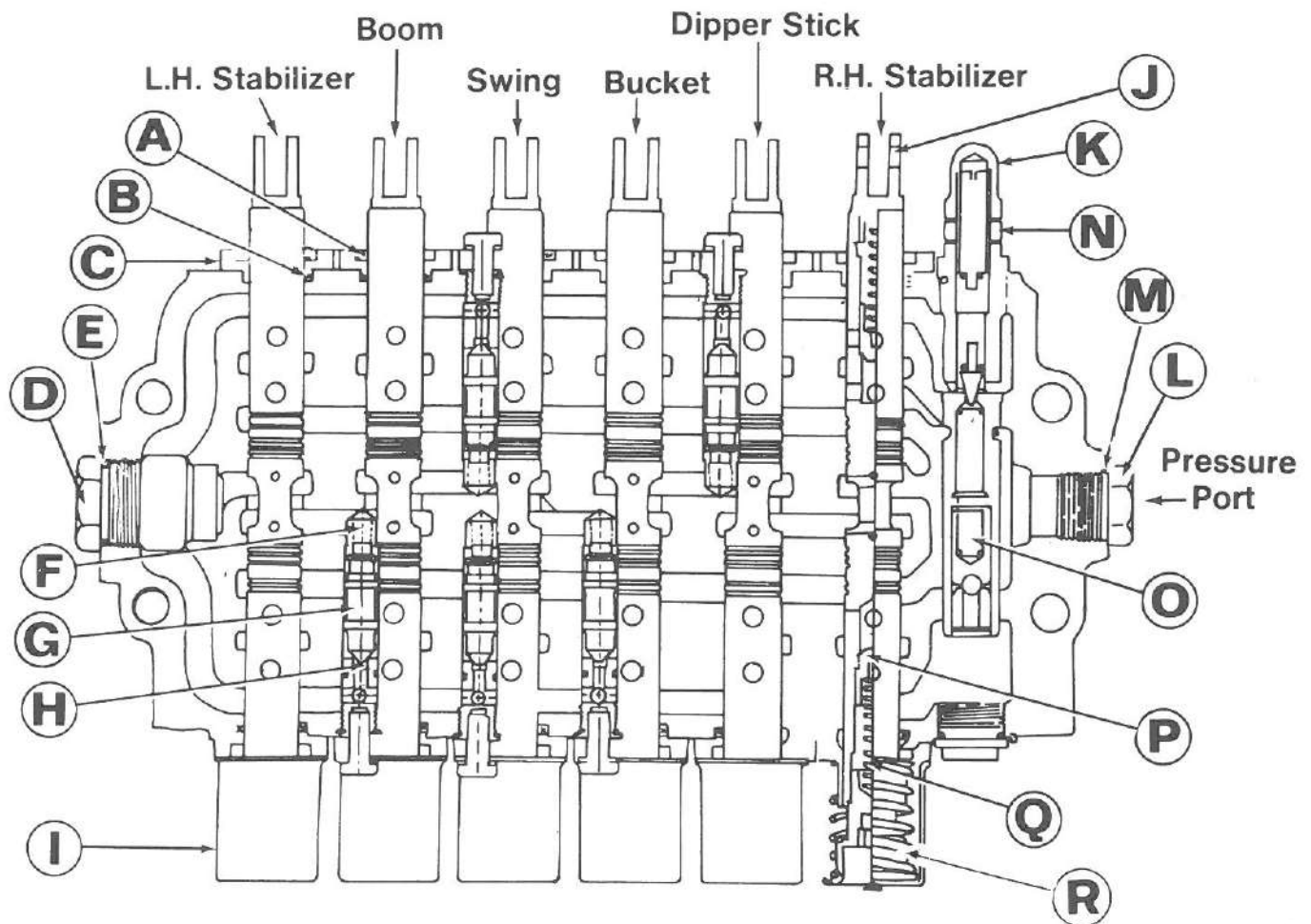
<u>Reference Number</u>	<u>Quantity</u>	<u>Part No.</u>	<u>Description</u>
1	1	BCV236	Swing Control Valve
2	1	LFT2642	O'ring Connector, 850Bx8
3	1	BFT213	O'ring Swivel Ell, 2211x8x10
4	1	BFT214	Special O'ring Connector, C531x10
5	1	BMT226	Swing Valve Steel Tube
6	2	BHO210	Swing Valve Hose, 6P-8-O'ring-8JM-24"

BCV191 High Pressure Filter Assembly

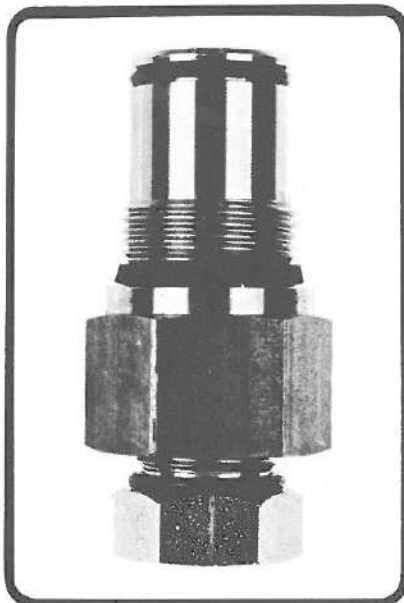


<u>Reference Number</u>	<u>Quantity</u>	<u>Part No.</u>	<u>Description</u>
1	1	BCV239	Filter Shell
2	1	BCV199	O'ring Seal
3	1	BCV197	Filter Element
4	1	BCV240	Filter Head
5	4	LMS2087	5/8" NF Nut
		BCV202	Filter Element Replacement Kit

Hydreco V33 Series Valve

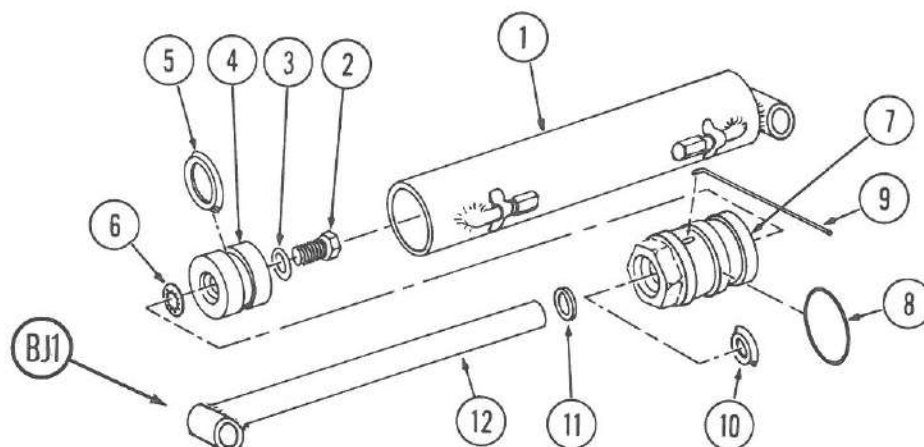


BCV165 High Pressure Carryover Kit



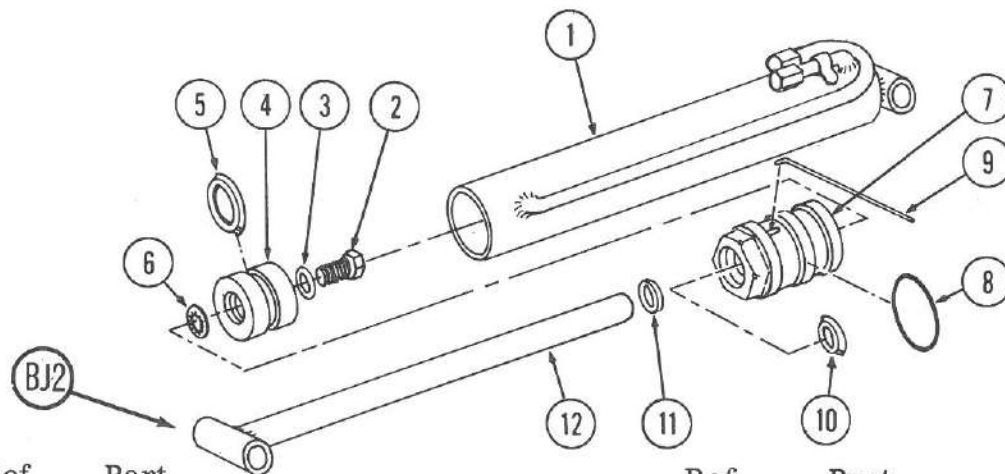
Ref. Letter	Quantity Required	Part No.	Description
A	12	A364X10	Wiper
B	12	A821X17	Quad Ring
C	12	521X52	Retaining Plate
D	1	A971X10	Cap
E	1	A970X10	O'ring
F	5	A501X479	Relief Spring
G	5	SKO-318-2500	Circuit Relief Poppet Cartridge
H	5	414X135	Relief Poppet Seat
I	6	M10X24	Spring Cover
J	6	516X90	Plunger Eye Clevis
K	1	A427X10	Acorn Nut
L	1	A971X8	Cap
M	1	A970X8	O'ring
N	1	A249X5	Jam Nut
O	1	422X72	Master Relief Valve Assembly
P	12	513X40	Reverse Flow Check
Q	12	501X20	Reverse Flow Check Spring
R	6	501X279	Spool Centering Spring
<u>Seal Kits</u>		BCV291	Master Relief Valve Seal Kit
		BCV292	Circuit Relief Seal Kit
		BCV293	Single Spool Seal Kit
		BCV294	High Pressure Carryover Seal Kit

BCY110 2-1/2" x 12" Swing Cylinder



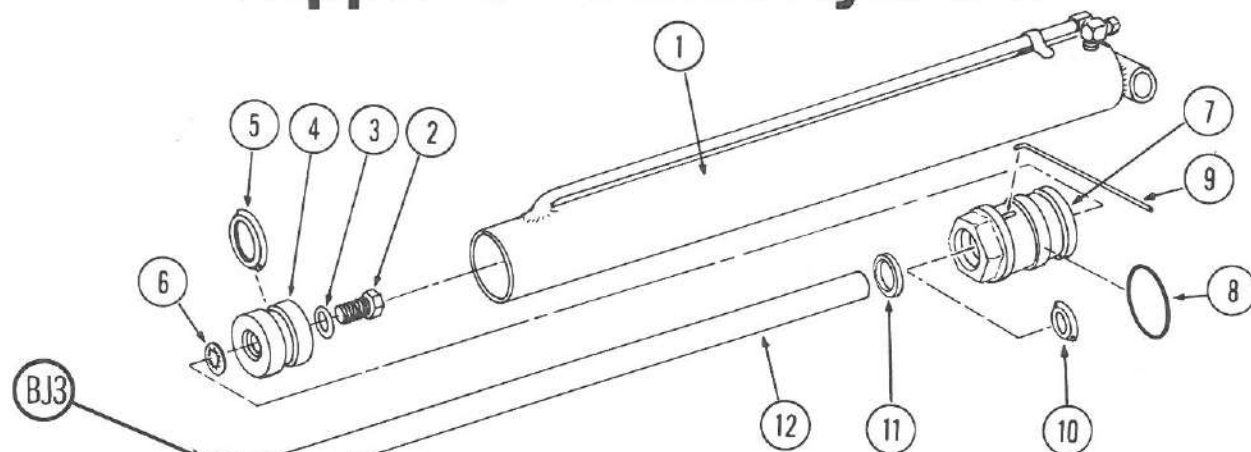
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	BCY1068	Barrel Assembly	7	LCY1023	Ram Head
2	LCY1017	7/8" Capscrew	8	LCY1024	O'ring
3	LCY1018	7/8" Dyna Seal	9	LCY1026	Lockwire
4	LCY1020	Piston	10	LCY1025	Rod Seal
5	LCY1019	Piston Seal	11	LCY1027	Rod Wiper
6	BMS245	Internal Lockwasher	12	BCY1067	Rod Assembly
				LCY1030	Seal Kit

BCY111 2-1/2" x 15" Stabilizer Cylinder



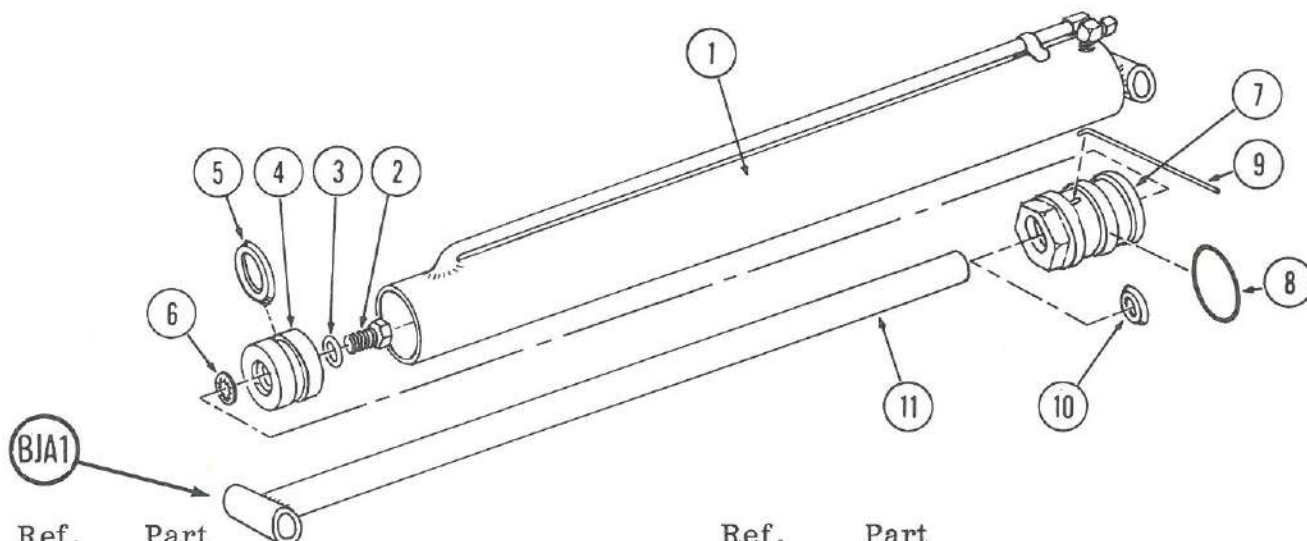
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	BCY1070	Barrel Assembly	7	LCY1023	Ram Head
2	LCY1017	7/8" Capscrew	8	LCY1024	O'ring
3	LCY1018	7/8" Dyna Seal	9	LCY1026	Lockwire
4	LCY1020	Piston	10	LCY1025	Rod Seal
5	LCY1019	Piston Seal	11	LCY1027	Rod Wiper
6	BMS245	Internal Lockwasher	12	BCY1069	Rod Assembly
				LCY1030	Seal Kit

BCY124 2-1/2" x 26" Dipper & Bucket Cylinder



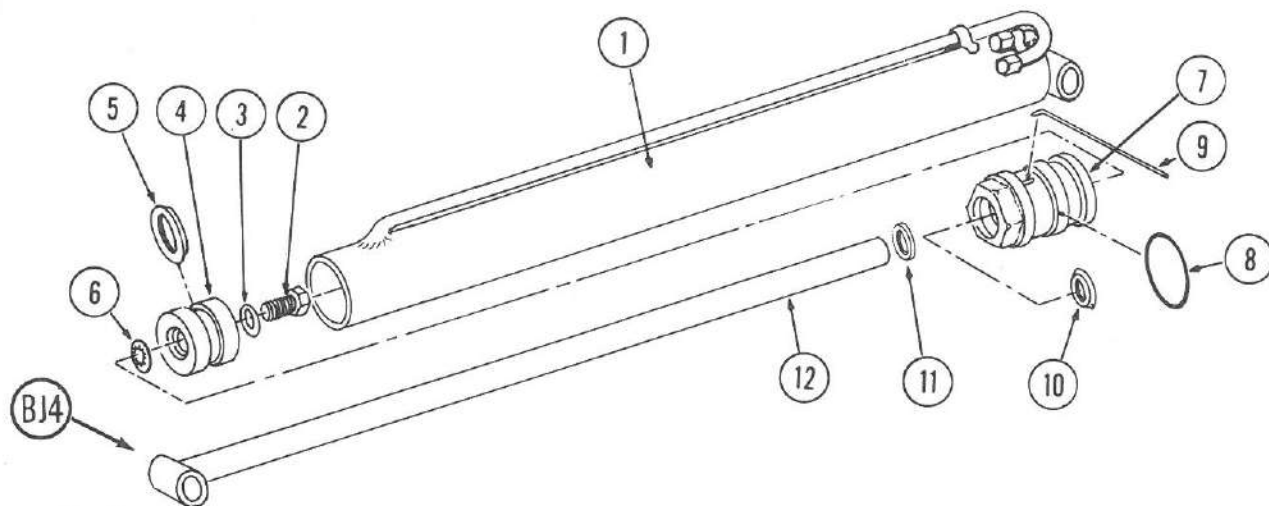
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	BCY1074	Barrel Assembly	7	LCY1023	Ram Head
2	LCY1017	7/8" Capscrew	8	LCY1024	O'ring
3	LCY1018	7/8" Dyna Seal	9	LCY1026	Lockwire
4	LCY1020	Piston	10	LCY1025	Rod Seal
5	LCY1019	Piston Seal	11	LCY1027	Rod Wiper
6	BMS245	Internal Lockwasher	12	BCY1073	Rod Assembly
				LCY1030	Seal Kit

BCY225 2-1/2" x 32" Dipper Cylinder



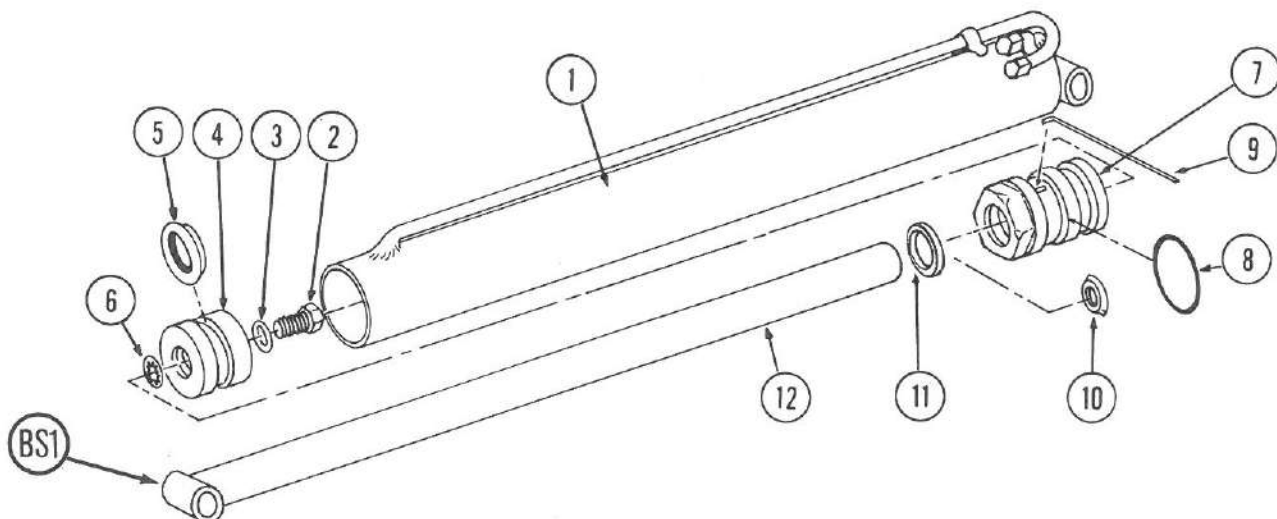
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	BCY1076	Barrel Assembly	7	BCY223	Ram Head
2	LCY1017	7/8" Capscrew	8	LCY1024	O'ring
3	LCY1018	7/8" Dyna Seal	9	LCY1026	Lockwire
4	BCY224	Piston	10	LCY1006	Rod Seal
5	LCY1019	Piston Seal	11	BCY1079	Rod Assembly
6	BMS245	Internal Lockwasher		BCY222	Seal Kit

BCY132 2-1/2" x 32" Boom Cylinder



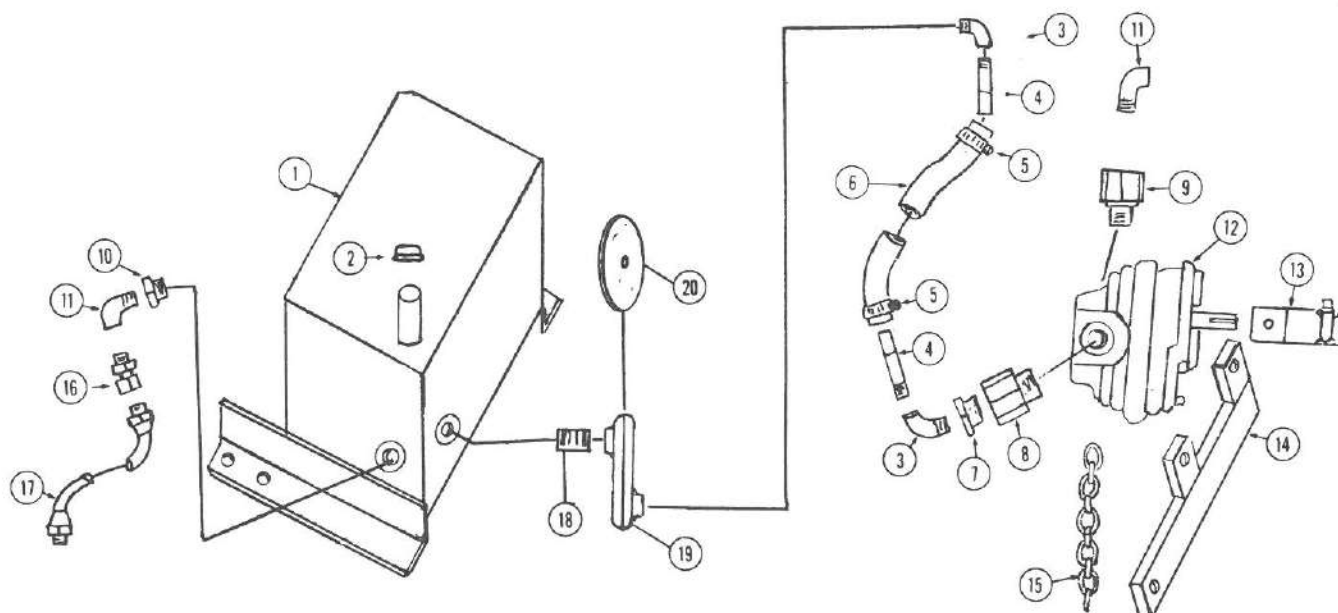
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	BCY1072	Barrel Assembly	7	LCY1023	Ram Head
2	LCY1017	7/8" Capscrew	8	LCY1024	O'ring
3	LCY1018	7/8" Dyna Seal	9	LCY1026	Lockwire
4	LCY1020	Piston	10	LCY1025	Rod Seal
5	LCY1019	Piston Seal	11	LCY1027	Rod Wiper
6	BMS245	Internal Lockwasher	12	BCY1071	Rod Assembly
				LCY1030	Seal Kit

BCY204 3" x 32" Boom Cylinder



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	BCY1078	Barrel Assembly	7	BCY234	Ram Head
2	LCY1017	7/8" Capscrew	8	BCY233	O'ring
3	LCY1018	7/8" Dyna Seal	9	BCY221	Lockwire
4	BCY227	Piston	10	LCY1013	Rod Seal
5	BCY220	Piston Seal	11	BCY229	Rod Wiper
6	BMS245	Internal Lockwasher	12	BCY1077	Rod Assembly
				BCY228	Seal Kit

BPP200 Independent Hydraulic System



Reference Number	Qty.	Part No.	Description
1	1	BPP100	Reservoir
2	1	LPP2639	Breather Cap
3	2	LFT2528	3/4" 90° St. Ell.
4	2	LFT2562	3/4" Hose Nipple
5	2	LMS2640	1" Hose Clamp
6	1	LHO2854	16R-0-0-24" Suction Hose
7	1	LFT2565	1" to 3/4" Reducer Bushing
8	1	LFT2644	3269-20-16 Section Fitting
9	1	LFT2645	3269-16-8 Pressure Fitting
10	1	LFT2544	3/4" to 1/2" Reducer Bushing
11	1	LFT2527	1/2" 90° St. Ell.
12	1	LPP6242	388KB1 Webster Pump
13	1	LPP6243	Standard PTO Pump Drive Adapter, 540 RPM, 1-3/8"
13	1	LPP6251	Optional PTO Pump Drive Adapter, 1000 RPM, 1-3/4"
14	1	LPP6245	Torque Bar
15	1	BPP101	24" Torque Chain
16	1	LFT2604	1/2" Male x 1/2" Female Swivel Adapter
17	1	LHO2845	8R-8-8-22" Return Hose
18	1	LFT2509	3/4" Close Nipple
19	1	LPP2638	F-240 Filter Assembly
20	1	LPP6246	80 Mesh Filter Screen

specifications

	Model 40	Model 55
Digging Depth	10'0"/3.05 m.	10'6"/3.20 m.
Reach (from swing pivot)	12'4"/3.76 m.	14'4"/4.37 m.
Reach (from rear axle) approx.	16'6"/5.03 m.	18'6"/5.64 m.
Transport Height	7'8"/2.34 m.	9'0"/2.74 m.
Loading Height	6'0"/1.83 m.	9'3"/2.28 m.
Shipping Weight	1500 lb./680 kg.	1600 lb./725 kg.
Bucket Curl	135°	135°
Swing	180°	180°
Bucket Pryout Power	5000 lb./2267 kg.	5000 lb./2267 kg.
Dipper Stick Power	3215 lb./1458 kg.	3166 lb./1436 kg.
Stabilizer Spread:		
Operating Position	10'10"/3.30 m.	10'10"/3.30 m.
Transport Position	7'2"/2.18 m.	7'2"/2.18 m.
System Relief Valve Setting	2200 psi/154 Kp-cm ²	2200 psi/154 Kp-cm ²
High Pressure Filter	Standard	Standard
Control Swing Valve	Optional	Standard
Independent Hydraulic System	Optional	Optional
Pump Furnished	Webster 388K (LPP6242)	
Pump Rating	9 GPM @ 600 RPM/34.07 liters @ 600 RPM	
Hydraulic System Capacity	10 gallons/37.85 liters	
Filter	Suction Type	

BUCKETS

Width	Weight	Struck Capacity
12"/30.48 cm.	120 lb/54 kg.	1.33 cu. ft./0.037 m. ³
18"/45.72 cm.	150 lb/68 kg.	2.67 cu. ft./0.075 m. ³
24"/60.96 cm.	180 lb/81 kg.	3.33 cu. ft./0.094 m. ³
30"/76.20 cm.	195 lb/88 kg.	3.53 cu. ft./0.10 m. ³
36"/91.44 cm.	215 lb/97 kg.	4 cu. ft./0.113 m. ³

CYLINDERS

Type	Model	Piston Diameter	Stroke	Closed Length	Open Length	Rod Diameter
Swing (BCY110)	40 & 55	2-1/2" 6.35 cm.	12" 30.48 cm.	19" 48.26 cm.	31" 78.74 cm.	1-3/8" 3.49 cm.
Boom (BCY132)	40	2-1/2" 6.35 cm.	32" 81.28 cm.	40" 101.60 cm.	72" 182.88 cm.	1-3/8" 3.49 cm.
Boom (BCY204)	55	3" 7.62 cm.	32" 81.28 cm.	40" 101.60 cm.	72" 182.88 cm.	1-3/4" 4.45 cm.
Dipper Stick (BCY124)	40	2-1/2" 6.35 cm.	26" 66.04 cm.	33" 83.82 cm.	59" 149.86 cm.	1-3/8" 3.49 cm.
Dipper Stick (BCY225)	55	2-1/2" 6.35 cm.	32" 81.28 cm.	40" 101.60 cm.	72" 182.88 cm.	1-1/2" 3.81 cm.
Bucket (BCY124)	40 & 55	2-1/2" 6.35 cm.	26" 66.04 cm.	33" 83.82 cm.	59" 149.86 cm.	1-3/8" 3.49 cm.
Stabilizer (BCY111)	40 & 55	2-1/2" 6.35 cm.	15" 38.10 cm.	22" 55.88 cm.	37" 93.98 cm.	1-3/8" 3.49 cm.

Limited Warranty

C. C. Kelley and Son, Inc., hereinafter referred to as Kelley warrants to the original retail purchaser of Kelley equipment that it will either repair or replace any part which proves, upon inspection by Kelley, to have been defective within 180 days from the date of original retail purchase. This warranty is valid only if the purchaser has returned to Kelley a signed Warranty Registration Form within ten days after the equipment is delivered to the purchaser.

This warranty shall not apply to any part of the equipment if it has been installed, altered, repaired, or misused in a way that in the opinion of Kelley affects the reliability of or detracts from the performance of the equipment. Neither does this warranty apply to any part of the equipment if its serial number has been altered, defaced, or removed; nor does it cover replacements or repairs necessitated by loss or damage resulting from any cause beyond the control of Kelley including, but not limited to, Acts of God, acts of government, floods, fires, shortages of materials, and labor difficulties.

Within 180 days from date of purchase any warranty claim must be brought to the attention of the Kelley dealer from whom the equipment was purchased. The dealer will complete a Request for Credit Authorization form and return it to Kelley for consideration. All defective parts must be returned freight prepaid to Kelley before a warranty claim will be considered.

Kelley will not assume liability for any costs involving labor, altering of design, or welding unless prior authorization is granted by Kelley. Kelley reserves the right to make the final determination of time and hourly rate for labor claims. The purchaser of the Kelley equipment is responsible for any transportation expenses, damages, or losses that result from a warranty claim.

Defects in components purchased by Kelley as complete units for installation in or with Kelley equipment will only be made good by Kelley to the extent that the original manufacturer warrants them to Kelley. Standard warranty on all purchased items is replacement only of defective parts upon inspection by the original manufacturer. Kelley will not be liable for any operational delays or consequential damages under this warranty.

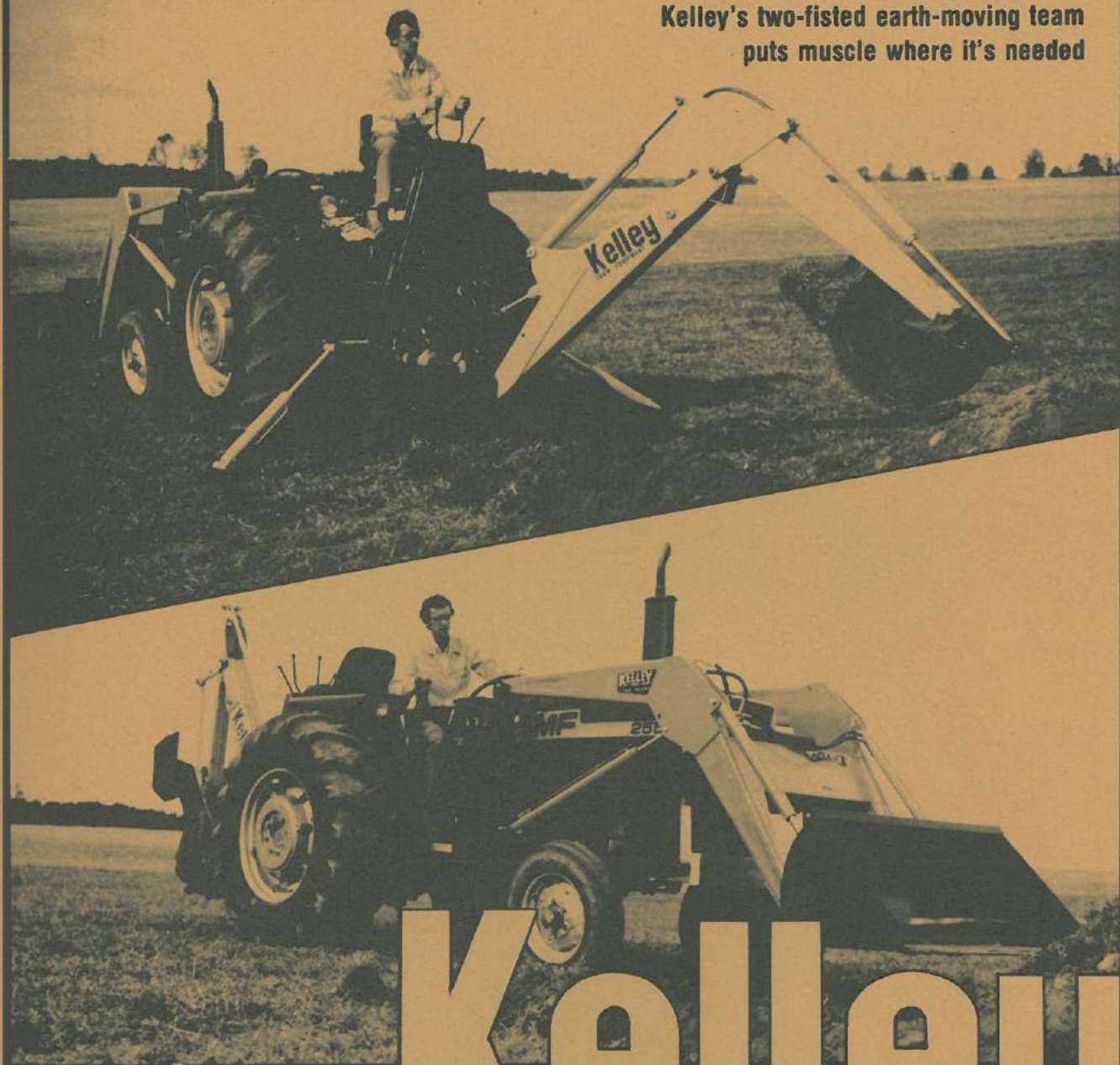
Kelley neither assumes nor authorizes any person to assume for Kelley any other obligation or liability in connection with the sale of this equipment.

KELLEY MANUFACTURING CORPORATION

PO BOX 276 • 131 PROGRESSIVE DRIVE • OTTOVILLE, OHIO 45876
PHONE 419-453-5539 • FAX 419-453-2278

Kelley 40 & 50 Backhoes • Kelley 800 Utility Loader

Kelley's two-fisted earth-moving team
puts muscle where it's needed



Kelley

A GREAT NAME IN TRACTOR EQUIPMENT

Built for a universal Category II or III 3-point mounting, the Kelley 40 Backhoe has a 10 ft. digging depth with a 12'4" bucket reach, and the Model 55 reaches 14'4". Both 40 & 55 Models have a 180° turning radius powered by two double-acting swing cylinders and a 135° bucket curl. Also standard on the Model 40 & 55 backhoes are hydraulic stabilizing arms which allow a wide 10'10" stance in the down position. The Kelley solid 3-point mounting gives a weight transfer onto the backhoe and locks the unit in the best possible working position. A

variety of bucket sizes are available from 12" to 36" along with an optional independent PTO pumping system. The Kelley backhoes are designed for the irrigation work of the farmer and the utility needs of the contractor.

Engineered and constructed to withstand high-pressure work loads, the Kelley 800 Utility Loader handles the most difficult farm chores with ease. A front bumper provides grill protection for the tractor, and the loader is powered by the tractor hydraulic system or by an independent hydraulic system.

Kelley

FARM EQUIPMENT