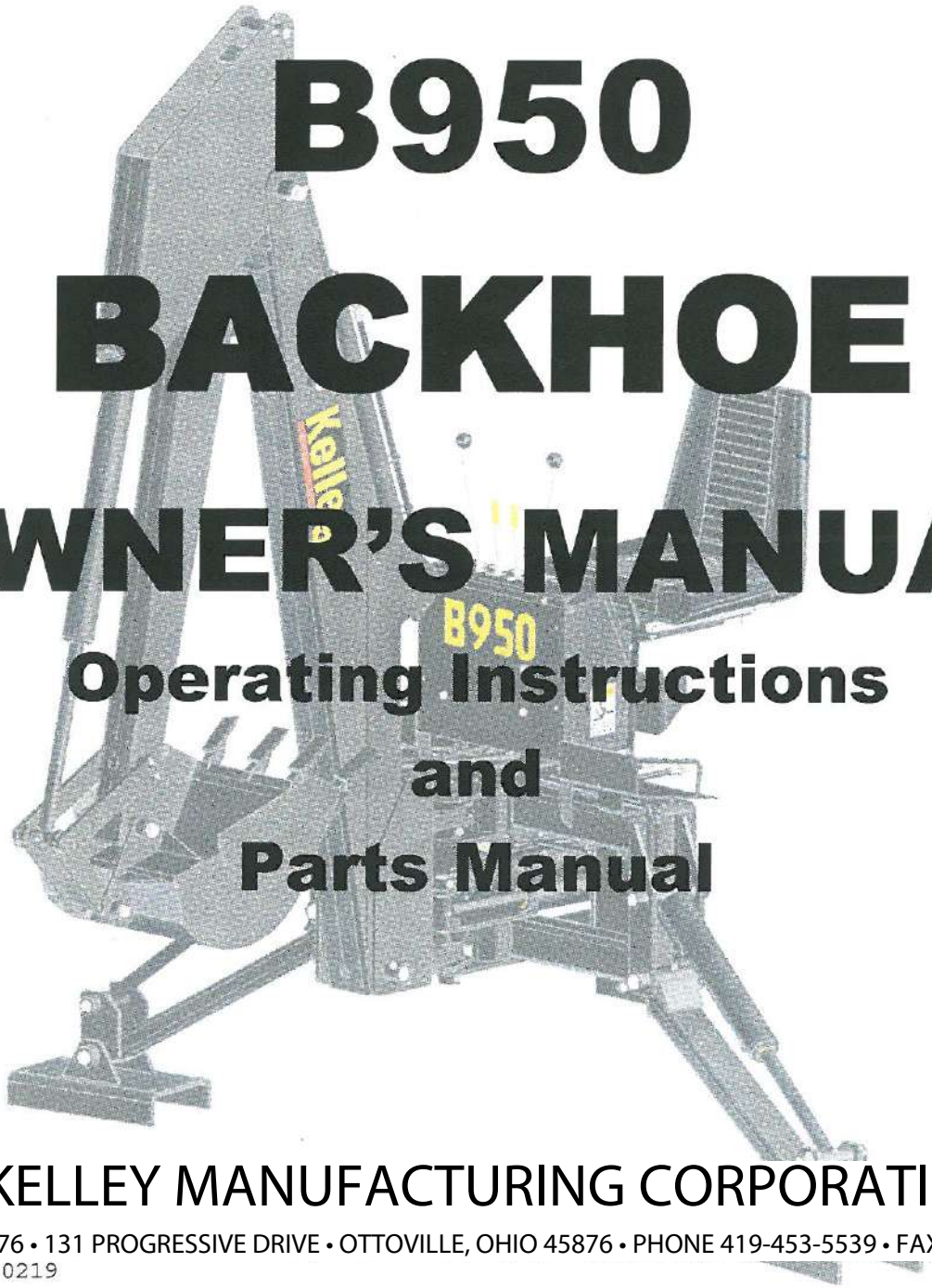
Kelley

B950

BACKHOE

OWNER'S MANUAL



Operating Instructions

and

Parts Manual

KELLEY MANUFACTURING CORPORATION

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

Form 2004-0219

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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 Card 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 Card. Your warranty is valid only if the Warranty Registration Card is returned to us within ten days after the delivery of your backhoe.

The warranty period is one year from the original date of purchase for parts and 6 months for labor. To verify the warranty period, you should keep the sales slip or other proof of purchase date.

This warranty does not cover damage caused by accident, misuse, or tampering with the product. A charge will be made for such repairs.

Attach your CUSTOMER COPY of the Warranty Registration Card or fill in the information below. This information will help you in ordering repair parts for your KELLEY B950 BACKHOE.

MODEL NUMBER SERIAL NUMBER DATE OF SALE
DEALER
ADDRESS
CITY
STATE ZIP
KELLEY MANUFACTURING CORPORATION **OTTOVILLE, OHIO**

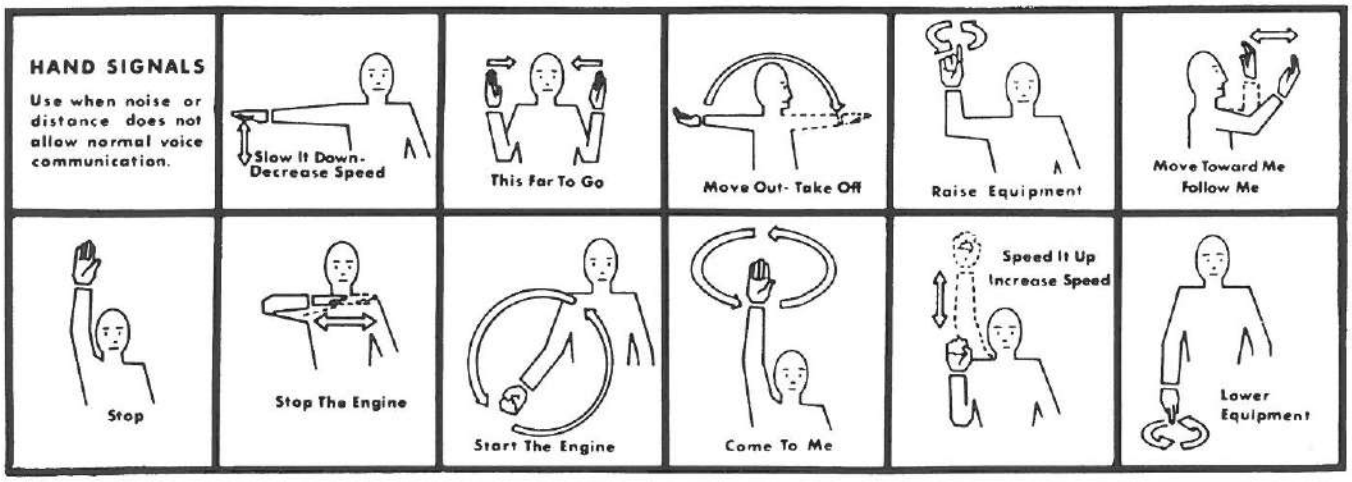
INTRODUCTION

⚠ CAUTION

This manual is provided for you, the operator, to familiarize yourself with the operation, safety precautions, and maintenance of this unit. The safety alert symbol (as shown above) is used throughout this manual to bring to your attention 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, fully understand 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 THE BACKHOE UNTIL THEY HAVE READ THIS MANUAL AND UNDERSTAND IT FULLY.*

1. Your backhoe must be mounted only on a tractor equipped with a Category I, Category II, or Category III 3-point hitch. Failure to do so may result in serious injury.
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 footpads clean to prevent foot slipping when the operator mounts the backhoe.
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 lock is in the 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 from 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. Be extra careful when working on hillsides and close to ditches or any place where danger of tipping or sliding is possible.
16. Do not dig under the stabilizers or backhoe, as a cave-in could occur.
17. Be sure you are not digging over underground wiring or other underground obstructions.

18. 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.
19. Do not attempt to raise the tractor off the ground or move the tractor forward or backward using the boom or stabilizers.
20. When leaving the backhoe for any reason, lower the bucket to the ground for safety.
21. Never leave the backhoe unattended with engine running.
22. 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.
23. Do not wear loose clothing while operating or working near the backhoe. Keep hair and clothing away from all moving parts of the backhoe.
24. Only the operator should be near the backhoe during operation. Keep all others a minimum of fifty feet away from your work area.
25. Keep your work areas clear of obstacles at all times.
26. Children should never be permitted to operate the backhoe.
27. 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.
28. 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.
29. 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.
30. Perform all maintenance procedures as recommended.
31. 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.
32. Use the hand signals shown below for safety during operation.



GENERAL SPECIFICATIONS

⚠ CAUTION Your backhoe must be mounted only on a tractor equipped with a Category I, Category II, or Category III 3-point hitch. Failure to do so voids all warranties associated with this equipment. Your backhoe may be used on a category I hitch (usually in conjunction with a frame kit) and category II and III 3-point hitches. Failure to do so may result in serious injury.

⚠ 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 are using a power beyond setup, the valve must be converted for this use. See the appropriate section of this manual on how to convert your valve. If you do not know how your valve is currently setup, check with your dealer.

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 Your *KELLEY BACKHOE* has been designed to operate at a flow rate of 6-8 GPM and between 2000 PSI and 2200 PSI.

Since many tractor systems exceed the flow rate specified for your backhoe, the flow may have to be adjusted by throttling the engine RPM down to obtain an acceptable flow rate. By adjusting the flow rate correctly, you will prevent sudden shock loads on the cylinders, pins, hoses, seals, etc. This results in smooth operation and reduced maintenance costs and down time.

SELECTING THE HYDRAULIC SYSTEM

TRACTOR SYSTEM

A. If an open center tractor hydraulic system is utilized, attach the backhoe valve pressure hose to the tractor pressure hydraulic outlet and the backhoe valve return hose to the tractor hydraulic oil pump.

POWER BEYOND HYDRAULIC SYSTEM

B. If you wish to run both a loader and a backhoe off of the same hydraulic system, make your connection as illustrated in Figure 1—Power Beyond Hydraulic Systems. Also, refer to the section of this manual entitled **PTO Pump System,** Figure 3. Since there are so many variations for this type of setup, we are showing only a generalized hosing scheme. If you have any questions concerning the specifics for your situation, please contact the factory before attempting operation.

POWER BEYOND HYDRAULIC SYSTEMS

Power Beyond and Closed Center Kit Part # BCV10107

For power beyond applications, a Power Beyond and Closed Center Kit (Part #BCV10107) must be purchased from your *KELLEY BACKHOE* Dealer, then perform the following steps:

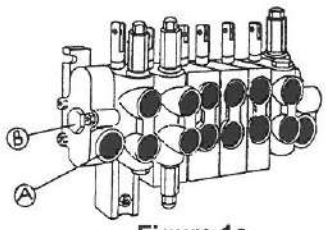


Figure 1a

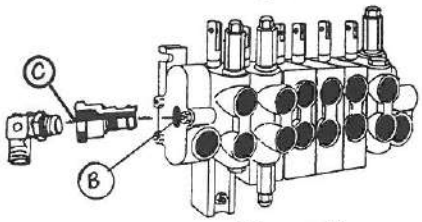


Figure 1b

A. Remove return hose and elbow; only if it was installed at Point B (Figure 1b).

B. Install Power Beyond sleeve at Point B (Figure 1b).

C. Install a #8 O-Ring elbow (Part #SFT272) into closed center sleeve opening Point C (Figure 1b). This converts it to a power beyond sleeve.

D. Install a high-pressure hose going to the inlet of another valve. This hose is not furnished.

E. If the return hose was installed at Point B (Figure 1b) it must be installed at Point A (Figure 1a) of the outlet section. Remove the O-Ring plug and install one C5315 8x10 adapter (Part # SFT10079) and one C5506 swivel nut elbow (Part # SFT271). Connect the return hose to the elbow and the other end to the oil sump of the tractor.

F. Refer to Figure 3 for hosing.

CLOSED CENTER HYDRAULIC SYSTEMS

Power Beyond and Closed Center Kit Part #BVV10107

⚠ CAUTION If you are going to use a closed center tractor hydraulic system to power your *KELLEY BACKHOE*, A Power Beyond and Closed Center Kit (Part #BVV10107) must be purchased from your *KELLEY BACKHOE* Dealer, then you must carefully follow the directions below. Failure to do so may cause extensive damage to your tractor and/or *KELLEY BACKHOE*.

1. Adjust the Valve Bypass

A. Remove the cover nut at Point A (Figure 2) from the valve bypass. This exposes a socket head screw.

B. Loosen locknut and turn socket head screw ***IN*** approximately four complete turns, then tighten locknut.

C. Replace cover nut. Be sure to replace the washer with the cover nut as it acts like a gasket.

2. Installing the Closed Center Sleeve

A. Return hose must be connected with one end to the return section of the valve at Point C (Figure 2) and with the other end to the tractor.

B. Remove plug at Point B (Figure 2) and install the closed center sleeve. Use the plug that was removed to plug the sleeve.

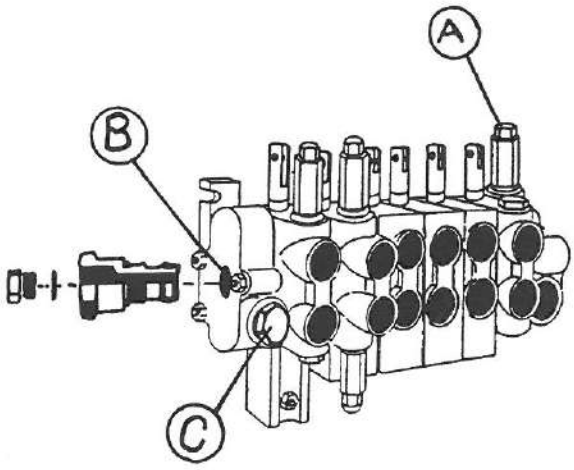


Figure 2

C. Remove the O-Ring plug from the front of the outlet section of the valve at Point C (Figure 2) and replace with a C5315 8x10 adapter. Connect return line to the adapter and to oil sump of the tractor.

This procedure converts the valve to a closed center operation. If the valve is set for closed center operation, it may be converted back to open center by reversing the above procedure.

3. **Choose the Appropriate Hosing**

INDEPENDENT PTO HYDRAULIC PUMP SYSTEM

Install the independent hydraulic system onto the backhoe according to the following procedure. Refer to Figure 3 for the identification of parts. During the assembly, use pipe compound on all pipefittings. None is required on the O-Ring fittings.

A. Insert the filter into the ***SUCTION PORT*** of the reservoir. This is the port that is located on the left side of the reservoir.

B. Attach the ½" street elbow to the ***RETURN PORT*** on the reservoir. This is the port located on the right side of the reservoir.

C. Attach the reservoir to the backhoe as shown in drawings that come with pump kit.

D. Bolt the torque bar to the flange mounting of the pump. Use the 7/16" capscrews, lock washers, and nuts.

E. Connect all fittings as illustrated in the instruction with the PTO hydraulic pump kit.

⚠ CAUTION Do not connect the pressure port to return port of the backhoe valve. This will destroy a hydraulic pump in seconds. The supplier of hydraulic pumps will not warrant pumps under these conditions.

⚠ CAUTION The hydraulic valve can be damaged by:

1. Reversing the flow of oil through the valve.
2. Hydraulic lines disconnected during transport.
3. Disconnecting the return line while the tractor is running.
4. A faulty quick coupler.
5. More than 12 GPM of oil flow while operating the backhoe.
6. By connecting the backhoe to a tractor valve and actuating the valve in the wrong direction causing a reverse flow through the backhoe valve.

FOR ALL TRACTORS

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

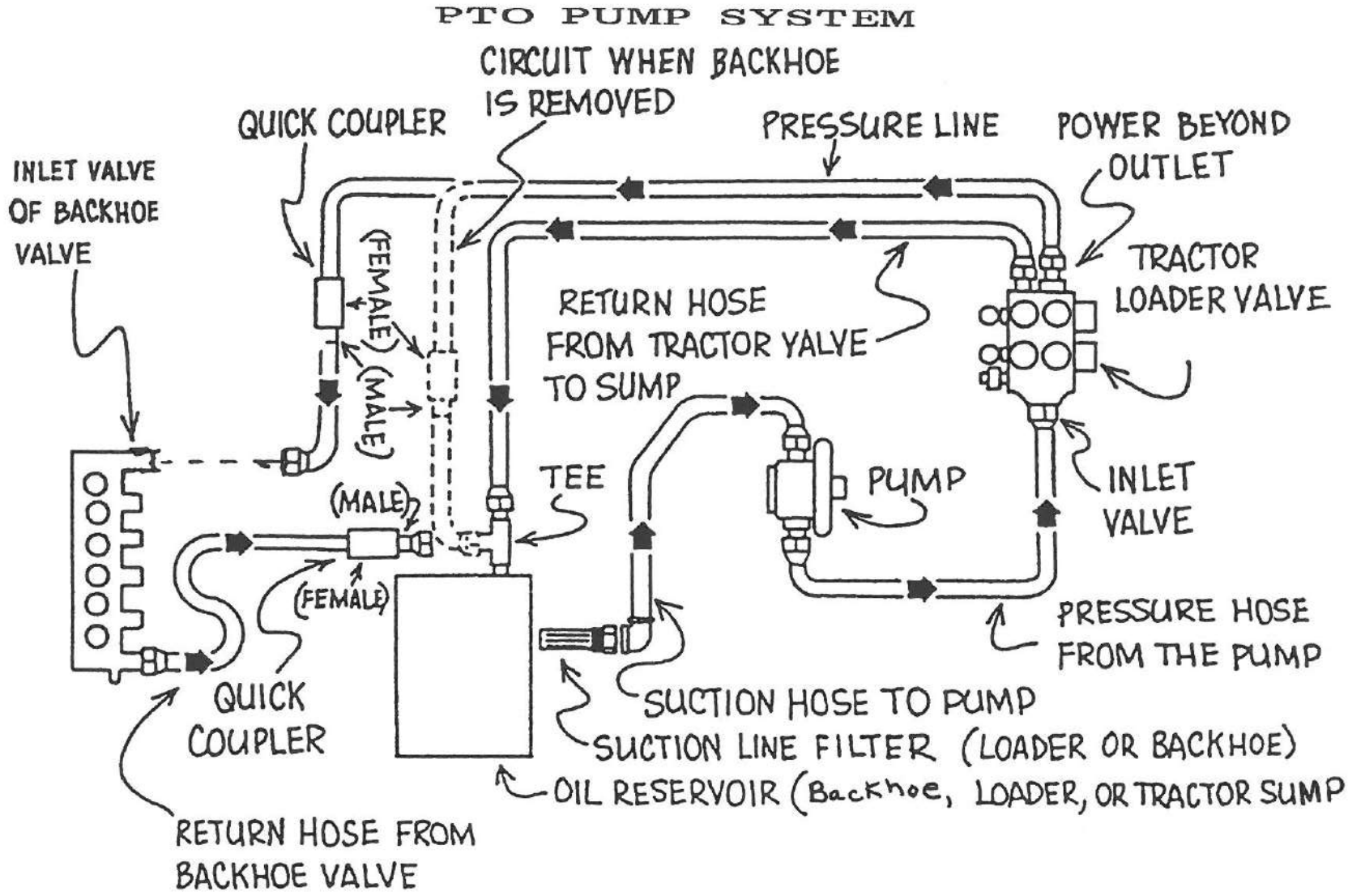

PTO PUMP SYSTEM
CIRCUIT WHEN BACKHOE IS REMOVED
QUICK COUPLER
PRESSURE LINE
POWER BEYOND OUTLET
INLET VALVE OF BACKHOE VALVE
(FEMALE)
(MALE)
TRACTOR LOADER VALVE
RETURN HOSE FROM TRACTOR VALVE TO SUMP
TEE
PUMP
INLET VALVE
(MALE)
(FEMALE)
PRESSURE HOSE FROM THE PUMP
QUICK COUPLER
SUCTION HOSE TO PUMP
SUCTION LINE FILTER (LOADER OR BACKHOE)
OIL RESERVOIR (Backhoe, LOADER, OR TRACTOR SUMP
RETURN HOSE FROM BACKHOE VALVE

Figure 3

ASSEMBLY

FOR JOHN DEERE TRACTORS

The return hose supplied with your *KELLEY BACKHOE* will not be long enough. You will have to purchase a ½" 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 the 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 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.

MOUNTING THE BACKHOE

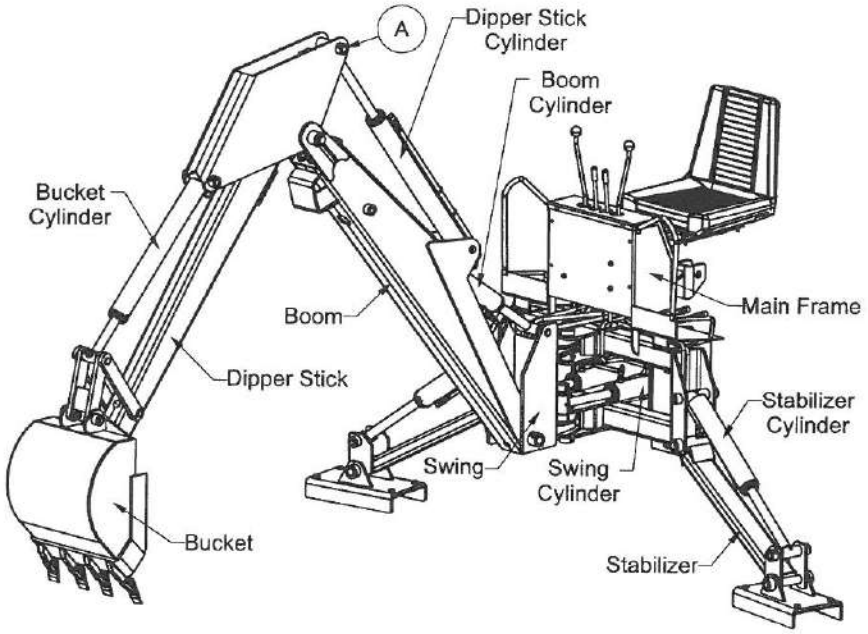


Figure 4 – Description of Major Backhoe Parts

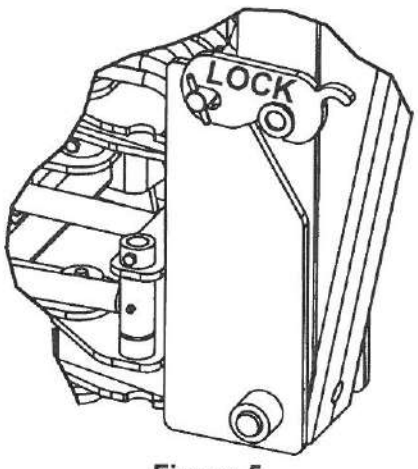


Figure 5

1. Familiarize yourself with all of the terms that will be employed in the following instructions by studying Figure 4—Description of Major Backhoe Parts.
2. Back tractor against backhoe in mounting position.
3. Connect Tractor 3rd point to Backhoe
4. Apply hydraulic power to the backhoe.
5. Raise the boom to take the tension off of the boom lock so you can release the lock (Figure 5).
6. Lower the boom to the ground.

MOUNTING THE BACKHOE CONTINUED

7. Remove the pin from Point A (Figure 4) and connect dipper stick cylinder.

⚠ 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 portion of his body is beneath any part of the backhoe.

8. Extend boom, dipper stick, and stabilizers until they contact with the ground. Remove shipping pallet (Figure 6).
9. Install lower link hitch brackets.
10. By manipulating the cylinder and placing downward pressure on the boom and stabilizers, lift the backhoe vertically for approximately 8" to 12" of ground clearance.
11. Attach the backhoe to the lower lift arms of the tractor using the handle pins supplied.
12. Install Backhoe stabilizer kit according to Figure 7.

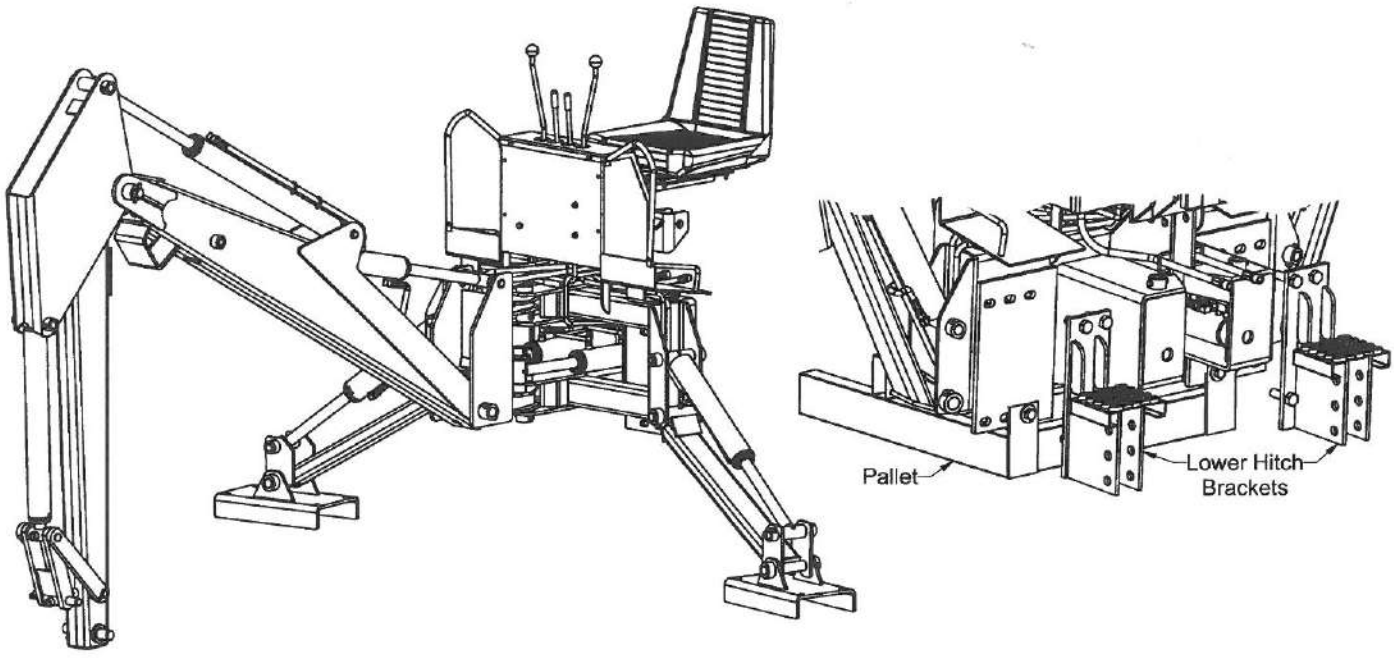


Figure 6

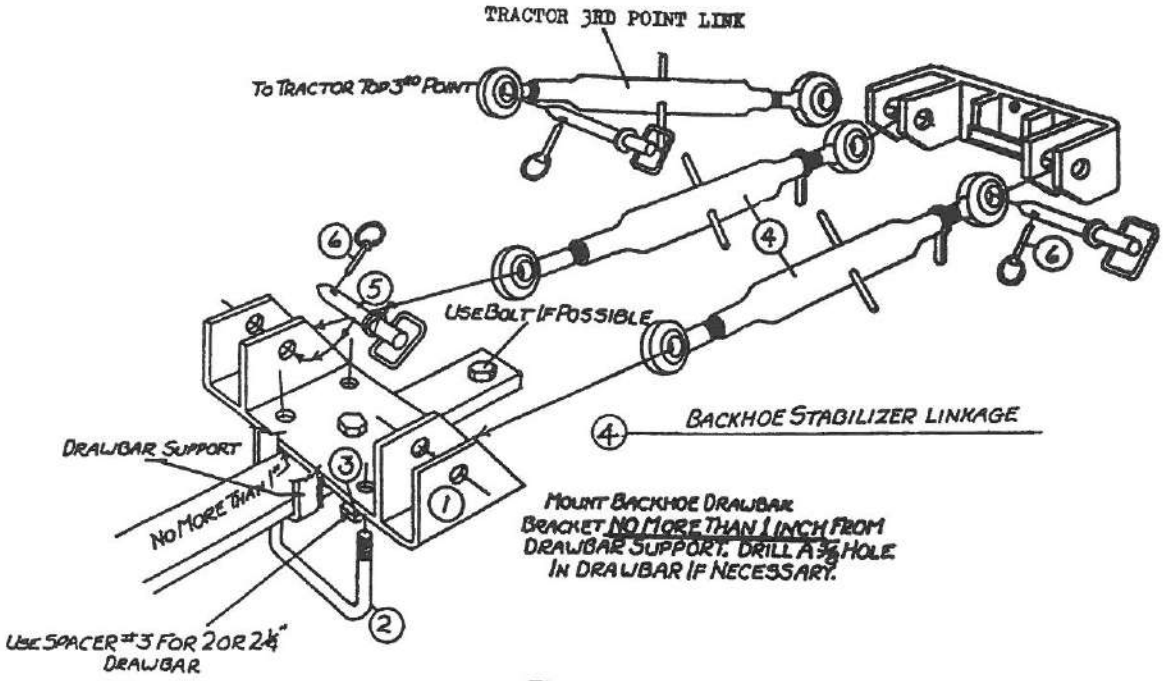
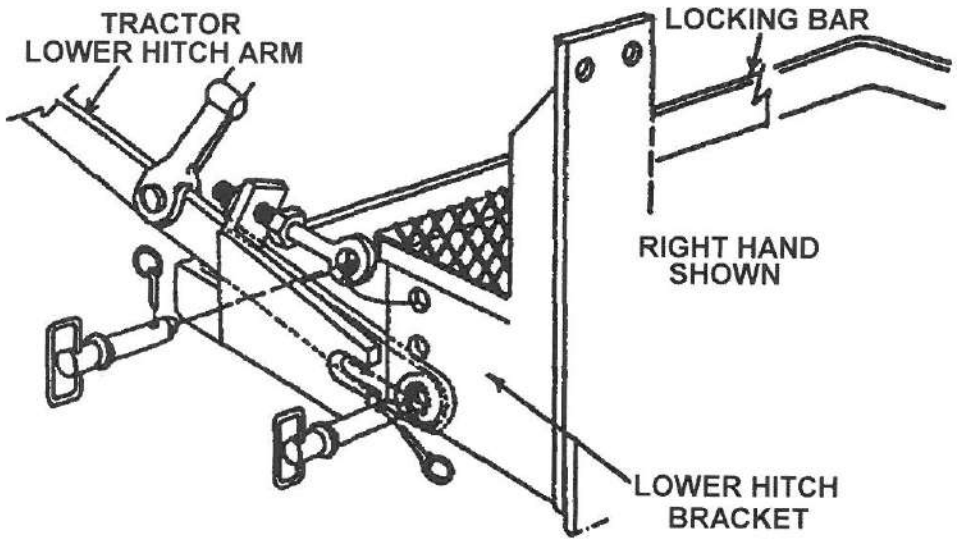


Figure 7



OPTIONAL - LOCKING BAR MOUNT KIT - BMT13255

Figure 8

NOTE: WHEN LOADING OR UNLOADING WITH BOOM LOCK STILL SECURED TO BOOM, DIPPER STICK **MUST** BE EXTENDED (AS SHOWN) TO AVOID CONTACT WITH GROUND. FAILURE TO DO SO MAY RESULT IN SERIOUS DAMAGE TO BACKHOE ASSEMBLY.

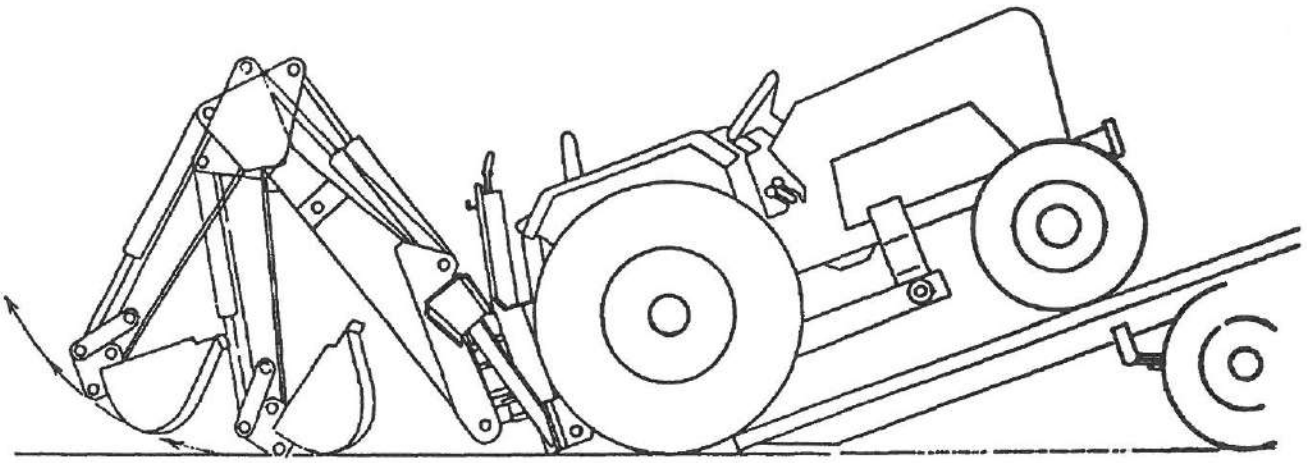


Figure 9

PREPARING FOR OPERATION

PREPARING THE BACKHOE

To unlock the boom lock, you may have to raise the boom in order to relax the tension on the lock.

PREPARING THE TRACTOR

Move the tractor's gearshift 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

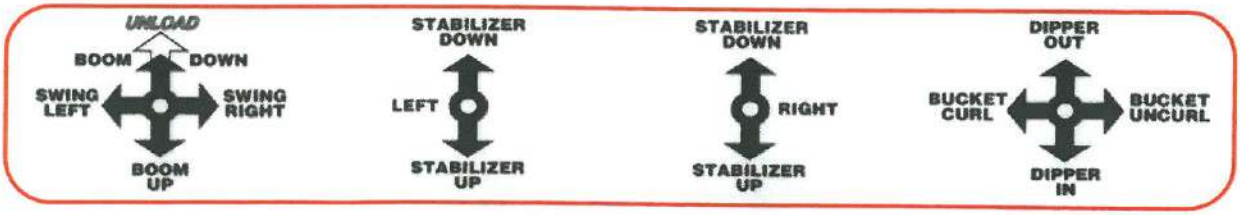


Figure 10

CONTROL FUNCTION

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

To operate your backhoe, mount the backhoe and sit on the operator's seat. In front of you, there are four control levers. Figure 10 above shows this control diagram as it appears on your backhoe. Refer to it for interpreting the following instructions. All directions such as ***RIGHT*** and ***LEFT*** are determined from a seated position in the operator's seat.

STABILIZERS - In the center of the operator's console is the controls for the stabilizers. The center left lever controls the left stabilizer, and the center right lever controls the right stabilizer. To raise the stabilizers, pull the levers towards yourself. To lower the stabilizers, push the levers forward.

The two levers toward the outside 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 lever on the left side of console controls the boom and swing. Pulling the lever towards you raises the boom; pushing the lever forward lowers the boom. Pushing the lever further into detent float position renders the valve functions inoperable.

SWING - Moving the lever to the left swings the boom to the left; moving the lever to the right swings the boom to the right.

DIPPER STICK -The lever on the right side of the console controls the dipper stick and bucket. Pulling the lever towards you moves the dipper stick in; pushing the lever forward moves the dipper stick out.

BUCKET - Moving the lever to the left curls the bucket; moving the lever to the right uncurls 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 be sure that the stabilizers maintain contact with the ground during digging operations. Take time to readjust the stabilizers when necessary during digging.

Before you begin digging, extend the stabilizers so that they make 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.

⚠ 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 Be extra careful when working on hillsides and/or close to ditches. It is always extremely dangerous to work in a position where the risk 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 stick should be at an angle. Do not extend the boom and the dipper stick out into a straight line. See Figure 11.

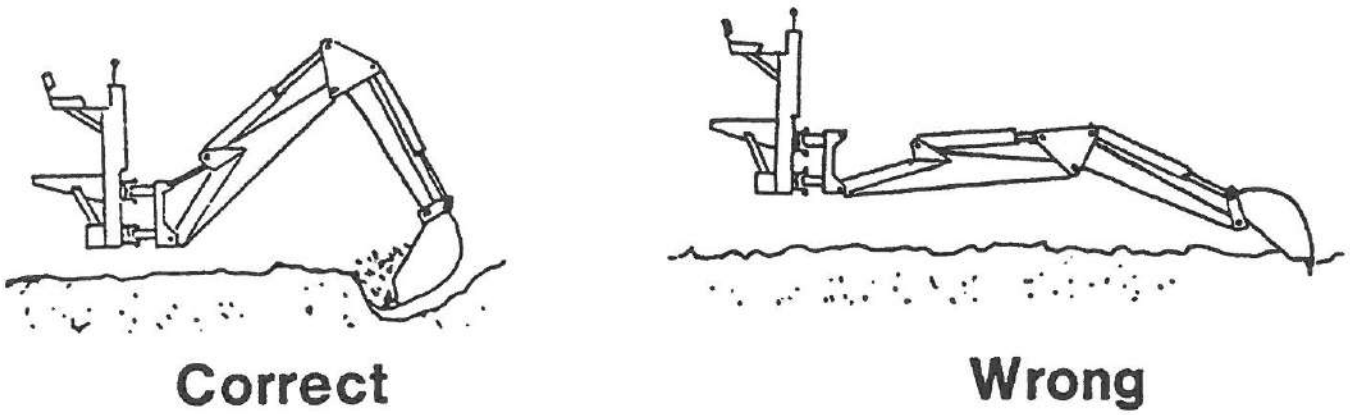


Figure 11

Figure 12 shows the correct angle of the bucket for digging. After you have filled the bucket, do not pull the dipper stick 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.

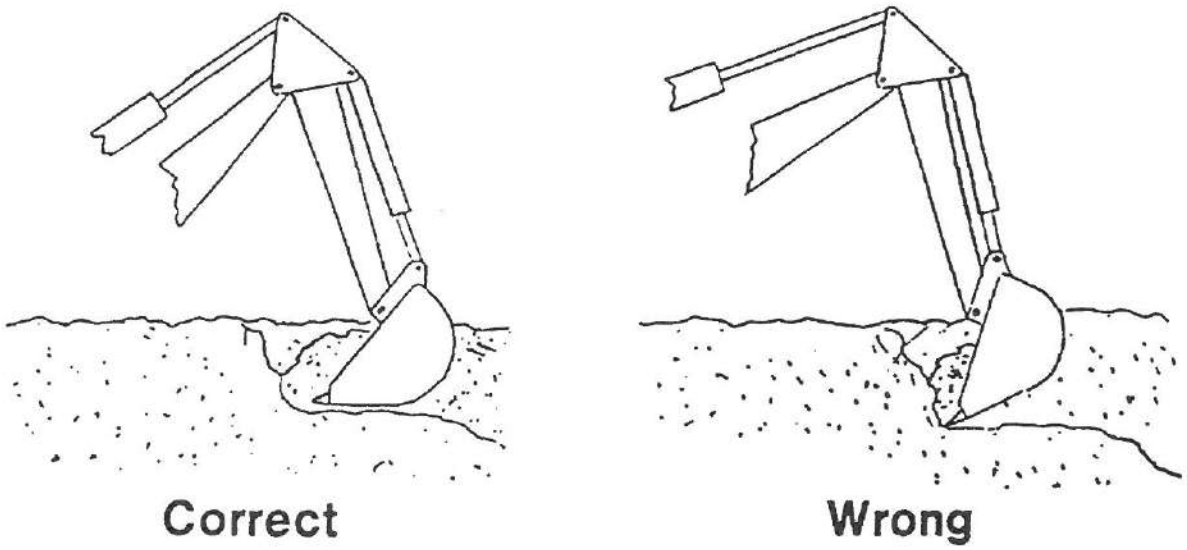


Figure 12

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 are able to dig. To control the depth of the pass, work the bucket and dipper stick controls alternately. In this way you can take an even bite each time you make a pass and obtain a full bucket (Figure 13).

When loading trucks, curling the bucket close to the dipper stick 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 stick by gradually uncurling the bucket. Intermittently pull the boom lever at the same time to maintain a level bottom.

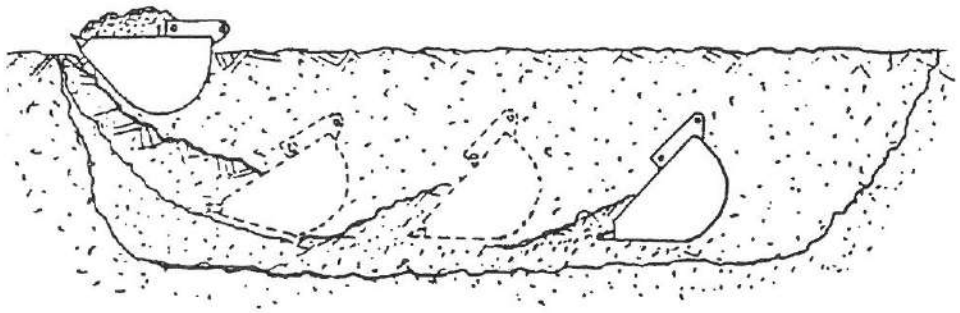


Figure 13

IMPORTANT ⚠ 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 lever to the bottom of the quadrant.

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.

TRANSPORTING THE BACKHOE

⚠ CAUTION While traveling with the backhoe, the tractor must have at least 20% of the combined tractor and 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 a boom lock. This boom lock should be put into proper position anytime you are transporting your backhoe. To ready your backhoe for transport, perform the following:

When unloading from the trailer, it will save damage to the backhoe if you extend the dipper stick.

Observe the following precautions while transporting the backhoe with tractor:

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.

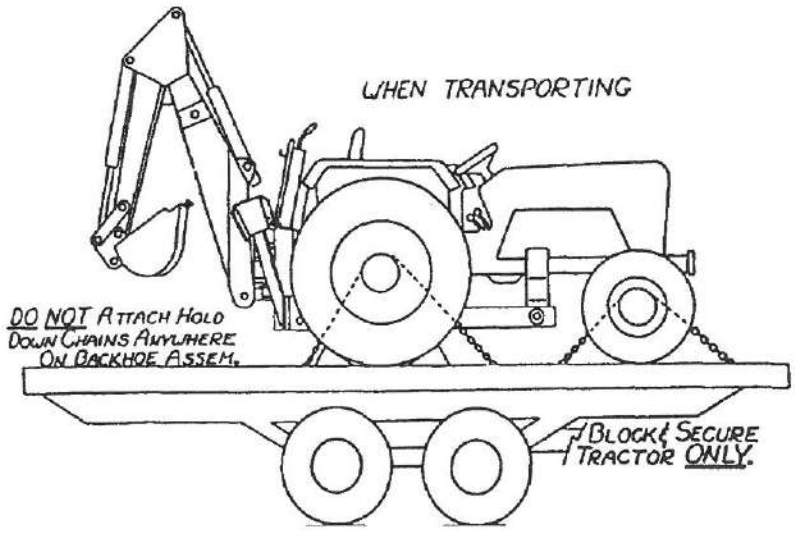


Figure 14

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

If you are using a *KELLEY INDEPENDENT HYDRAULIC SYSTEM*, clean the suction line filter after the first 10 hours of operation. See the following section for details.

SUCTION LINE FILTER CLEANING

Remove suction line from tank outlet. Screw the filter out of the tank. Clean or replace filter screen. Reinstall filter.

DAILY

1. Check all hardware and hoses in order to be sure that they are secure. Check particularly the handle pins and lynch pins. 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 and 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 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.
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 zerks as indicated by the arrows on the drawing in Figure 15—LUBRICATION POINTS.

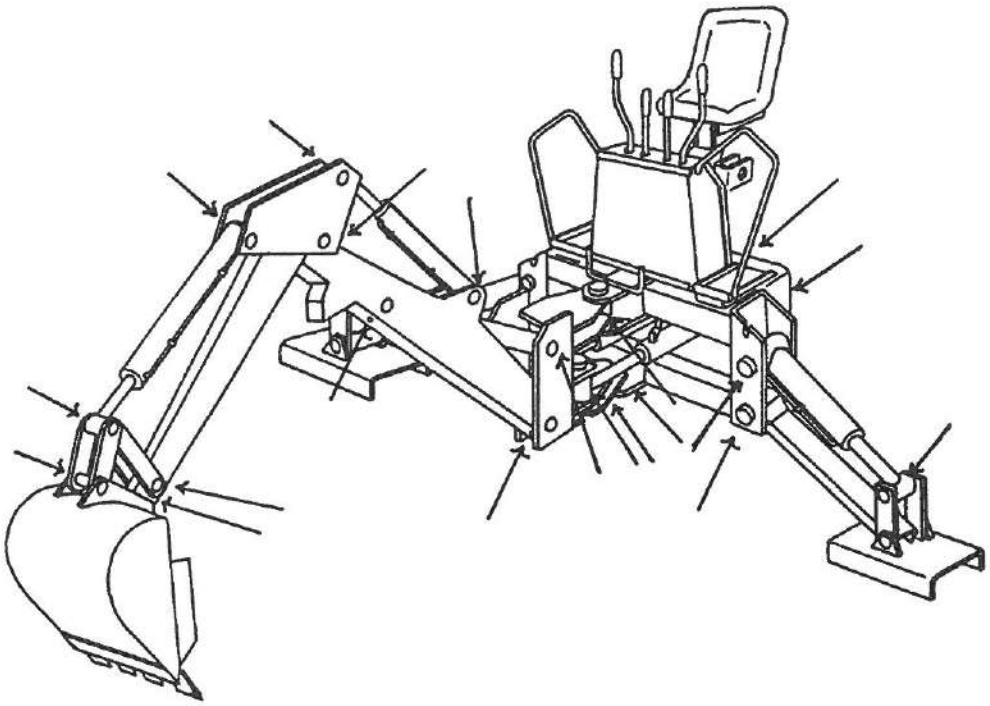


Figure 15
Lubrication Points

BUCKET TOOTH REPLACEMENT

#3 BBK192 TOOTH ASSEMBLY

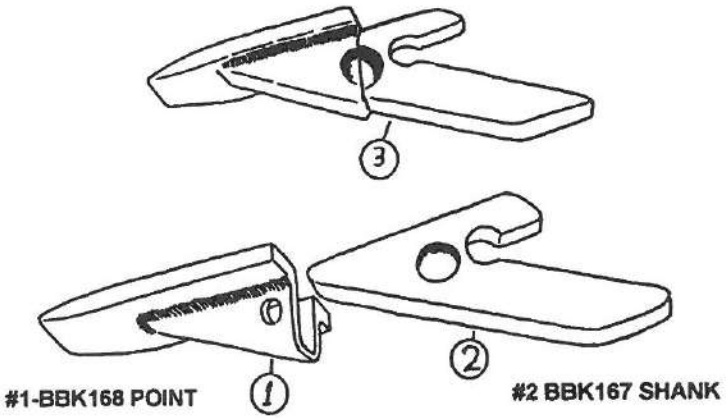


Figure 16

#3 BBK192 Tooth Assembly

To remove a tooth point, heat the point with a torch at the peened section that overlaps the shank. 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 the point with a torch at the peened section that overlaps the shank and hammer the heated section into the recess on the shank.

MAINTENANCE

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 3rd point 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 3rd point pin (you may have to reposition the backhoe to do so). While removing pins, make sure you keep you 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 corrosion preventative.

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

STORING AT THE END OF THE SEASON

Coat all exposed cylinder shafts with grease or corrosion preventative.

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 equipped, to prevent dirt contamination of the hydraulic system. Or, if possible, connect the quick couplers together.

AT THE START OF A SEASON

1. Clear all dirt and debris from all quick couplers, if equipped.
2. Check all hydraulic hoses and replace if necessary.
3. Tighten loose nuts and bolts.
4. Lubricate the unit.
5. Check bucket teeth. Sharpen or replace if required.
6. Run the unit slowly and check the operating controls before starting to dig.

BACKHOE VALVE RELIEF

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

1. The operating pressure is 2200 PSI.
2. Start tractor engine and set RPM at operating speed.
3. Raise stabilizer to top position, continue to hold lever until a reading can be taken. The pressure should be 2200 PSI.

ADJUSTING THE MAIN RELIEF PRESSURE

To adjust the main relief (Point A – Figure 17) remove cap, loosen locknut, hold stabilizer in top position as described in item number 3 above. Screw clockwise to increase pressure or counter clockwise to decrease pressure. Do this until the correct pressure of 2200 PSI is reached.

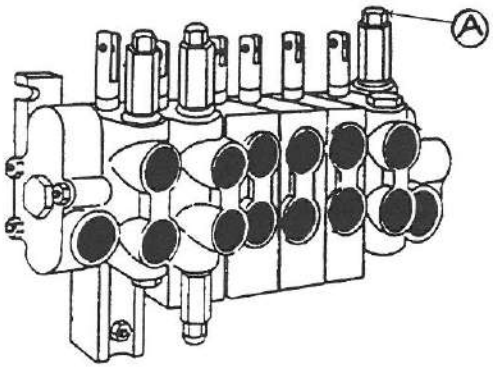


Figure 17

HYDRAULIC VALVE TROUBLESHOOTING

In the disassembly and servicing of the valve, it should be noted that plungers, if removed, must be replaced in the same bore.

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Sticking Plungers	1. Excessively high oil temperature.	1. Eliminate restrictions in pipelines and filtering system.
	2. Dirt in oil.	2. Change oil—clean system.
	3. Pipe fittings too tight.	3. Check torque.
	4. Valve warped from mounting.	4. Loosen valve and check.
	5. Excessively high pressure in valve.	5. Check with gauge on inlet and cylinder lines.
	6. Handle or linkage binding.	6. Free up linkage.
	7. Plunger bent.	7. Replace valve or section.
	8. Return spring damaged.	8. Replace faulty parts.
	9. Spring or detent cap binding.	9. Loosen cap, re-center and re-tighten.
	10. Valve not at thermal equilibrium.	10. Let system warm up.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Leaking Seals	1. Paint on or under seal. 2. Excessive backpressure. 3. Dirt under seal. 4. Scored plunger. 5. Loose seal plates. 6. Cut or scored seal.	1. Remove and clean. 2. Open or enlarge line to reservoir. 3. Remove and clean. 4. Replace valve or section. 5. Clean and tighten. 6. Replace faulty parts.
Unable to move plunger	1. Dirt in valve. 2. Plunger cap full of oil. 3. Bind in linkage.	1. Clean and flush out. 2. Replace seals. 3. Free up linkage.
Blown or Leaking O-Ring Seals Between Valve Sections	1. Improperly connected. 2. Return line was replaced with high-pressure hose. 3. Valve used in power beyond application without installation of power beyond sleeve.	1. Replace O-Ring seals. Make sure all connections are as shown in the assembly section of this manual. 2. Replace O-Ring seals. Remove high-pressure hose and replace it with correct low-pressure hose. 3. Replace O-Ring seals. Install power beyond sleeve as shown in assembly section of this manual.

RELIEF VALVE

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Can Not Get Pressure	Poppet stuck open or dirt under seat.	Check for foreign matter between poppets and their mating members. Members must slide freely.
Erratic Pressure	Pilot poppet seat damaged. Poppet sticking in relief valve housing.	Remove and clean dirt out. If parts are damaged, replace complete relief valve.
Pressure Setting Not Correct	Wear due to dirt. Locknut and adjustment screw loose.	1. See "ADJUSTING THE MAIN RELIEF PRESSURE". 2. Check seats for scratches, nicks or other marks. Replace valve if damaged.
Leaks	Damaged seats, worn O-Rings, parts sticking due to dirt.	Replace worn or damaged O-Rings and back up rings. Inspect for free movement of components, check seat for scratches, nicks or other marks. Replace complete relief if metal parts are damaged.

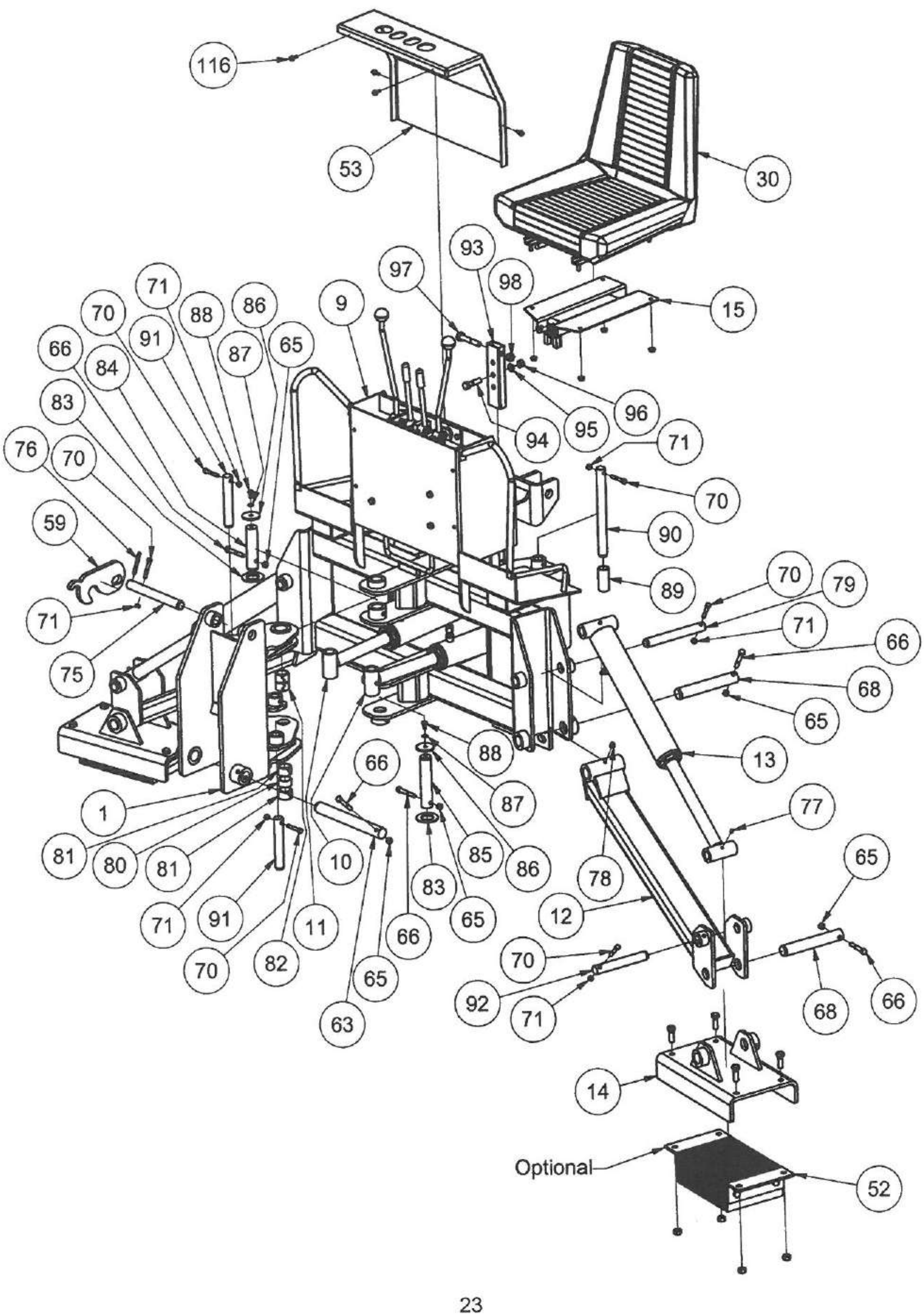
GENERAL TROUBLESHOOTING

⚠ CAUTION Do not attempt any repairs on the backhoe until you have studied all the Cautions in the *Maintenance* section of this manual.

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Backhoe Does Not Operate	1. Low oil supply. 2. Hoses not properly connected. 3. Worn or damaged pump. 4. Broken line.	1. Add oil. 2. Check hose connections. 3. Replace or repair pump. 4. Check for leaks. Replace line.

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Slow Operation and Poor Hydraulic System Performance	1. Engine speed too low. 2. Defective pump. 3. Load too heavy. 4. Faulty main relief valve. 5. Internal valve crack. 6. Suction line filter plugged. 7. Oil too heavy for cold weather use. 8. Power supply may not be plumbing enough oil. 9. Low oil Level. 10. Pressure line restricted. 11. Collapsed suction line. 12. Valve spool not at full stroke.	1. Adjust RPM. 2. Check pressure or replace. 3. Check line pressure. 4. Clean or replace main relief valve. 5. Replace valve section. 6. Clean. 7. Replace with lighter oil. 8. Use a flow meter to check out whether 6-8 GPM flow rate is being achieved. 9. Add oil. 10. Check for obstruction. 11. Check for damage. 12. Check movement and linkage.
Backhoe Does Not Hold Up Load	1. Cylinder seals leaking. 2. Valve spool leaking. 3. Oil bypassing valve spool.	1. Replace seals. 2. Replace seals. 3. Replace valve bank.
Load Drops When Valve Spool Moved From Neutral	Dirt in load check valve.	Disassemble and clean.
Excess Oil Heat	1. Damaged or worn pump. 2. Engine speed too fast. 3. Main relief bypass valve improperly set. 4. Draft control lever not all the way down.	1. Repair or replace. 2. Reduce throttle. 3. Check relief setting. 4. Position correctly.
Oil Leakage	1. Valve spool seals. 2. Loose hose fittings. 3. Broken oil line.	1. Replace seals. 2. Tighten just enough to stop leakage. 3. Replace hose or line.
Independent Hydraulic System Pump Failure	Improperly set relief valve.	Set relief at 2200 PSI.
Independent Hydraulic System Pump Noisy	1. Suction line filter plugged. 2. Oil too heavy.	1. Clean filter. 2. Use a lighter oil.
Jerky or Erratic Action	1. Air in system. 2. Wrong type of oil. 3. Foamy oil.	1. Check for loose connections and/or cycle all valves to remove air. 2. Check tractor manual. For Independent Hydraulic System use Type A non-foaming hydraulic oil. 3. Check tractor manual. For Independent Hydraulic System, use 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.

PARTS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Optional
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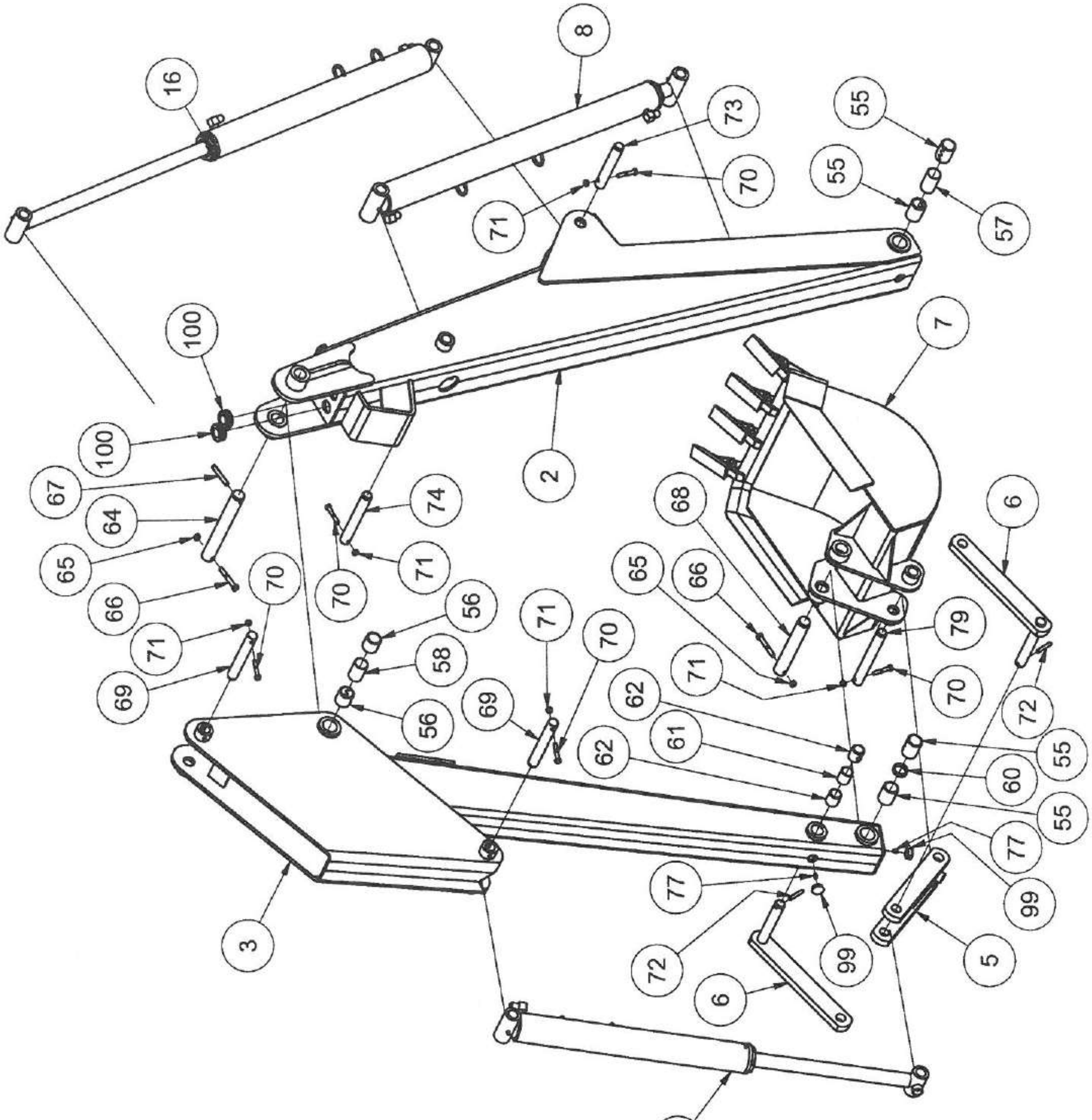
Main Frame, Swing, & Stabilizer

ILL#	Qty	Part#	Description
1	1	BMF15320	Swing weld assembly
9	1	BMF13204	Main frame weld assembly
10	1	BCY13019L	Cylinder, Swing 2-1/2" x 10", LH (BK1L)
11	1	BCY13019R	Cylinder, Swing 2-1/2" x 10", RH (BK1R)
12	2	BMF13013	Stabilizer weld assembly
13	2	BCY13015	Cylinder, Stabilizer 2-1/2" x 13" (BK5)
14	2	BMF13014	Stabilizer pad
15	1	BMS13018	Seat bracket
30	1	BMS215	Seat assembly with nuts
52	1	BMF13100	Pad kit rubber street with capscrews and nuts
53	1	BMS13002	Console cover - Includes Control direction decal & Warning decal
59	1	BMF13016	Boom safety locking bar
63	1	SPN116	Pin, 1-1/4" x 10-3/4" with 3/8" hole 1/2" from end - boom pivot
65	13	SNT2031	Locknut, 3/8"-16
66	9	SBT10796	Capscrew, 3/8"-16 x 2-1/2"
68	5	SPN13004	Pin, 1-1/4" x 7-7/8" with 3/8" hole 1/2" from end - Bucket pivot, Stabilizer pivot
70	14	SBT10795	Capscrew, 5/16" x 2"
71	16	SNT12434	Locknut, 5/16" NC
75	1	SPN13008	Pin, 1" x 8-3/4" with two 5/16" holes 5/16" and 2-1/8" from end - Boom cylinder rod pivot
76	1	SPN13289	Roll pin, 5/16" x 2-1/2"
77	21	SFT11734	Zerk threaded 1/4"
78	2	SFT13328	Zerk threaded 90 deg. 1/4"
79	3	SPN119	Pin, 1" x 7-3/4" with 5/16" hole 1/2" from end - Bucket/bucket link pivot, Stabilizer cylinder base pivot
80	1	SBU15021	Bushing, 1-7/16" OD with 14 GA wall x 3/4"
81	2	SBU15042	Bushing, spring 1-1/2" OD x 1-1/4" ID x 1" steel
82	1	SBU15044	Bushing, spring 1-1/2" OD x 1-1/4" ID x 2" steel with groove
83	2	SWS10961	Washer, machine 2-1/2" OD x 1-3/8" ID heat treated
84	1	SPN13005	Pin, 1-1/4" x 5-1/8" with 3/8" hole 1-1/8" from chamfered end and 5/16"-18 threaded hole in other end - Upper swing pivot
85	1	SPN13006	Pin, 1-1/4" x 6-1/8" with 3/8" hole 5/8" from end and 5/16"-18 threaded hole on other end - Lower swing pivot
86	2	SWS13088	Washer, swing mast pin retainer 2"
87	8	SWS2019	Lockwasher, internal star 5/16"
88	2	SBT10819	Capscrew, 5/16"-18 x 5/8"
89	2	SMS13292	Spacer, swing cylinder
90	2	SPN13009	Pin, 1" x 10-7/8" with 5/16" hole 1/2" from end - Swing cylinder base pivot
91	2	SPN10520	Pin, 1" x 6-1/4" with 5/16" hole 1/2" from end - Swing cylinder rod pivot
92	2	SPN10458	Pin, 1" x 7" with 5/16" hole 1/2" from end - Stabilizer rod pivot
93	1	BMS13087	Adjustable seat bracket tube
94	1	SBT2074	Capscrew, 1/2"-13 x 2"
95	1	SWS10900	Lockwasher, internal star 1/2"
96	1	SNT2062	Nut, 1/2"-13
97	1	SBT2049	Capscrew, 1/2" x 3"
98	2	SNT2060	Locknut, 1/2"
116	4	SBT10502	Screw, metal 1/4" dia. x 3/4" -- self-tapping
NI	1	BDC15373	B950 Decal Set - Includes 2 Kelley decals, 2 Caution decals, & 1 B950 decal

NOTE: Quantities listed are for backhoe as a whole.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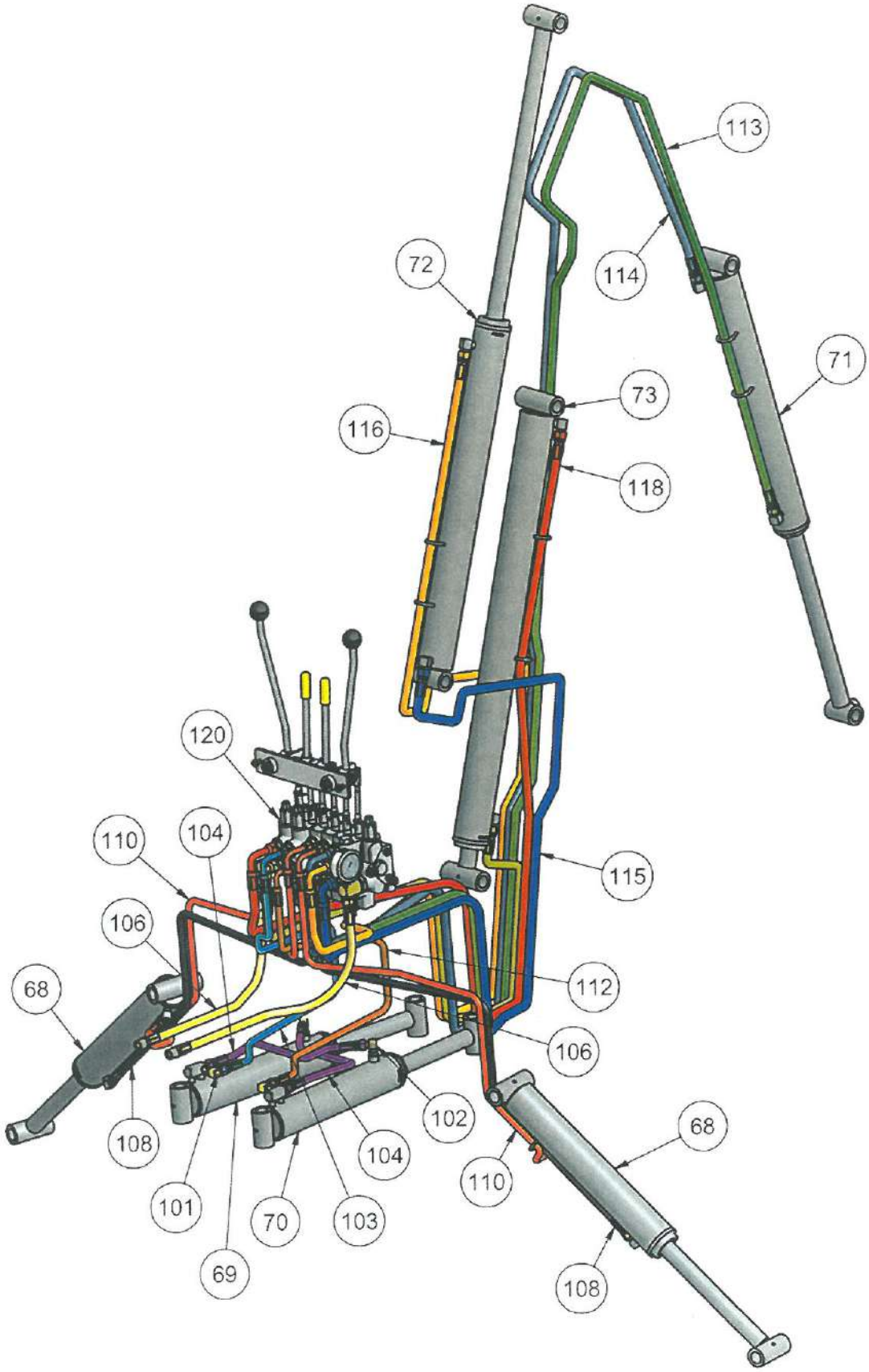
Boom, Dipper Stick, & Bucket Assembly

ILL#	Qty	Part#	Description
2	1	BMF15322	Boom weld assembly
3	1	BMF15321	Dipper stick weld assembly
4	1	BCY13030	Cylinder, Bucket 2-1/2" x 20" (BK4)
5	1	BMF13032	Bucket link
6	2	BMF13033	Bucket cylinder link and pin assembly
7	1	BBK9818	Bucket, 18" - 1.5 cubic feet
8	1	BCY15332	Cylinder, Boom 2-1/2" x 31" (BK7)
16	1	BCY15328	Cylinder, Dipper stick 2-1/2" x 23" (BK6)
55	4	SBU15043	Bushing, spring 1-1/2" OD x 1-1/4" ID x 2" steel
56	2	SBU15041	Bushing, spring 1-1/2" OD x 1-1/4" ID x 1-1/2" steel
57	1	SBU15326	Bushing, 1-3/8" OD with 18 GA wall x 2-1/4"
58	1	SBU15327	Bushing, 1-3/8" OD with 18 GA wall x 2"
60	1	SBU15029	Bushing, 1-7/16" OD with 14 GA wall x 3/8"
61	1	SBU15030	Bushing, 1-3/16" OD with 16 GA wall x 1-3/8"
62	2	SBU15045	Bushing, spring 1-1/4" OD x 1" ID x 1-3/8" steel
64	1	SPN10525	Pin, 1-1/4" x 9-7/8" with two 3/8" holes 1/2" from ends - dipper stick pivot
65	13	SNT2031	Locknut, 3/8"-16
66	9	SBT10796	Capscrew, 3/8"-16 x 2-1/2"
67	1	SPN10946	Roll pin, 3/8" x 2-1/2"
68	5	SPN13004	Pin, 1-1/4" x 7-7/8" with 3/8" hole 1/2" from end - Bucket pivot, Stabilizer pivot
69	2	SPN10949	Pin, 1" x 6-5/8" with 5/16" hole 1/2" from end - Dipper stick cylinder rod pivot and Bucket cylinder base pivot
70	14	SBT10795	Capscrew, 5/16" x 2"
71	16	SNT12434	Locknut, 5/16" NC
72	2	SPN10530	Roll pin, 5/16" x 2"
73	1	SPN10457	Pin, 1" x 6-1/4" with 5/16" hole 7/8" from end - Dipper stick cylinder base pivot
74	1	SPN13025	Pin, 1" x 7-1/4" with 5/16" hole 1/2" from end - Boom cylinder base pivot
77	21	SFT11734	Zerk threaded 1/4"
78	2	SFT13328	Zerk threaded 90 deg. 1/4"
79	3	SPN119	Pin, 1" x 7-7/8" with 5/16" hole 1/2" from end - Bucket/bucket link pivot, Stabilizer cylinder base pivot
99	2	SMS13035	Plastic plug for dipper stick grease zerks
100	2	SMS13034	Rubber grommet (end of boom)

PARTS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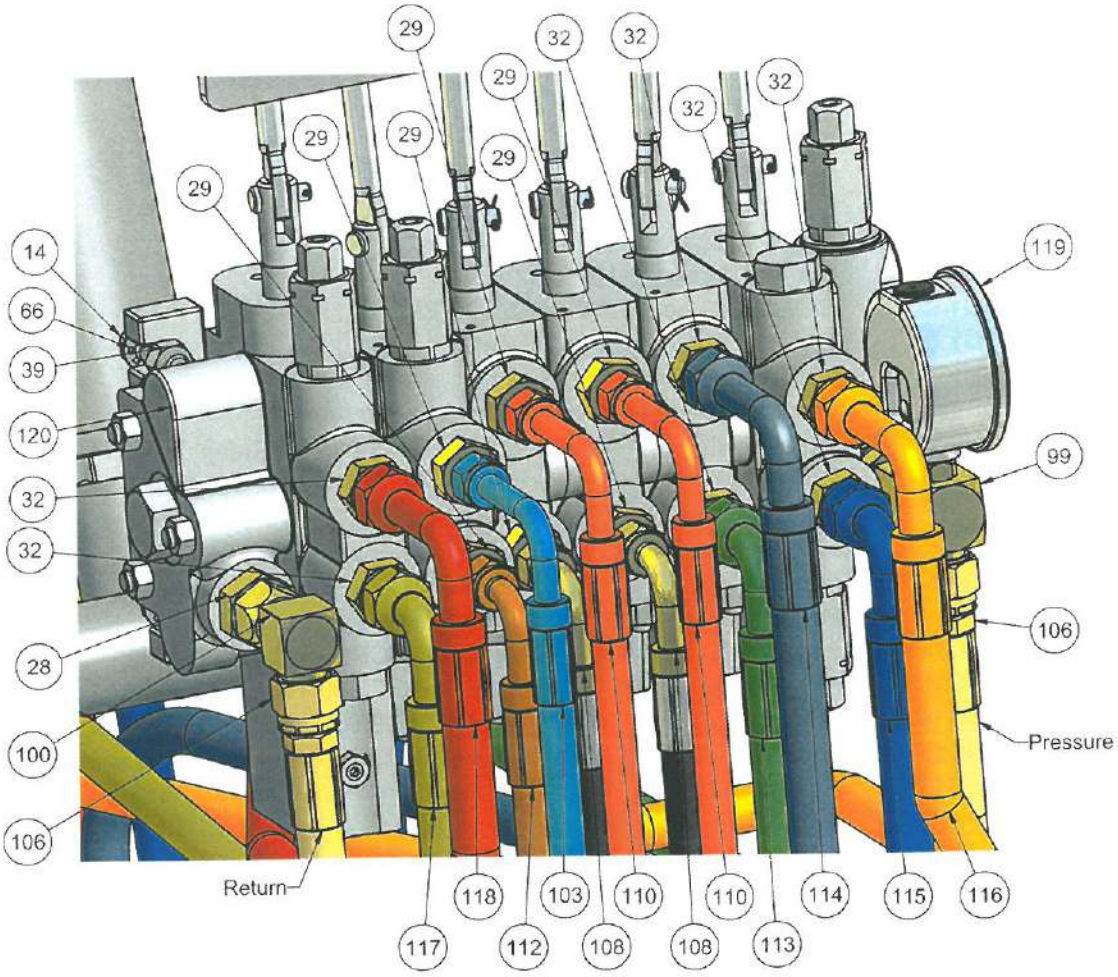
Hydraulic System

ILL#	Qty	Part#	Description
68	2	BCY13015	Cylinder, Stabilizer 2-1/2" x 13" (BK5)
69	1	BCY13019L	Cylinder, Swing 2-1/2" x 10", LH (BK1L)
70	1	BCY13019R	Cylinder, Swing 2-1/2" x 10", RH (BK1R)
71	1	BCY13030	Cylinder, Bucket 2-1/2" x 20" (BK4)
72	1	BCY15328	Cylinder, Dipper stick 2-1/2" x 23" (BK6)
73	1	BCY15332	Cylinder, Boom 2-1/2" x 31" (BK7)
101	2	SFT308	5506 x 6 90 degree swivel elbow
102	2	SFT312	Elbow, #6, 90 degree threaded male with O-ring
103	1	SHO10473	Hose, 04HL1FEFF33 1/4"x33" - 3/8"JM-3/8"JFS - Swing
104	2	SHO11014	Hose, 04HL1FFFF16 1/4"x16" 9/16-18 JICF both ends - Swing cross over
106	2	SHO11123	Hose, 08HL1HAHF50 1/2"x50" 1/2 Male x 3/4-16 JICF - Pressure & Return
108	2	SHO13332	Hose, 04HL1FFFM50 1/4"x50" 9/16 JICF x 9/16 JICF 90 Tube S - Stabilizer
110	2	SHO13333	Hose, 04HL1FFFO50 1/4"x50" 9/16 JICF x 9/16 JICF 90 Tube L - Stabilizer
112	1	SHO14024	Hose, 1/4"x33" 4P-6JICF-6JICF - Swing
113	1	SHO15366	Hose, 3/8"x170" 3/4-16 JICF x 3/4-16 JICF 90 Tube S - Bucket
114	1	SHO15367	Hose, 3/8"x148" 3/4-16 JICF x 3/4-16 JICF 90 Tube L - Bucket
115	1	SHO15368	Hose, 3/8"x92" 3/4-16 JICF x 3/4-16 JICF 90 Tube S - Dipper stick
116	1	SHO15369	Hose, 3/8"x121" 3/4-16 JICF x 3/4-16 JICF 90 Tube L - Dipper stick
118	1	SHO15371	Hose, 06HL1HFHO92 3/8"x96" 3/4-16 JICF x 3/4-16 JICF 90 Tube L - Boom
120	1	SVV13048	Valve, Rexnord with float spool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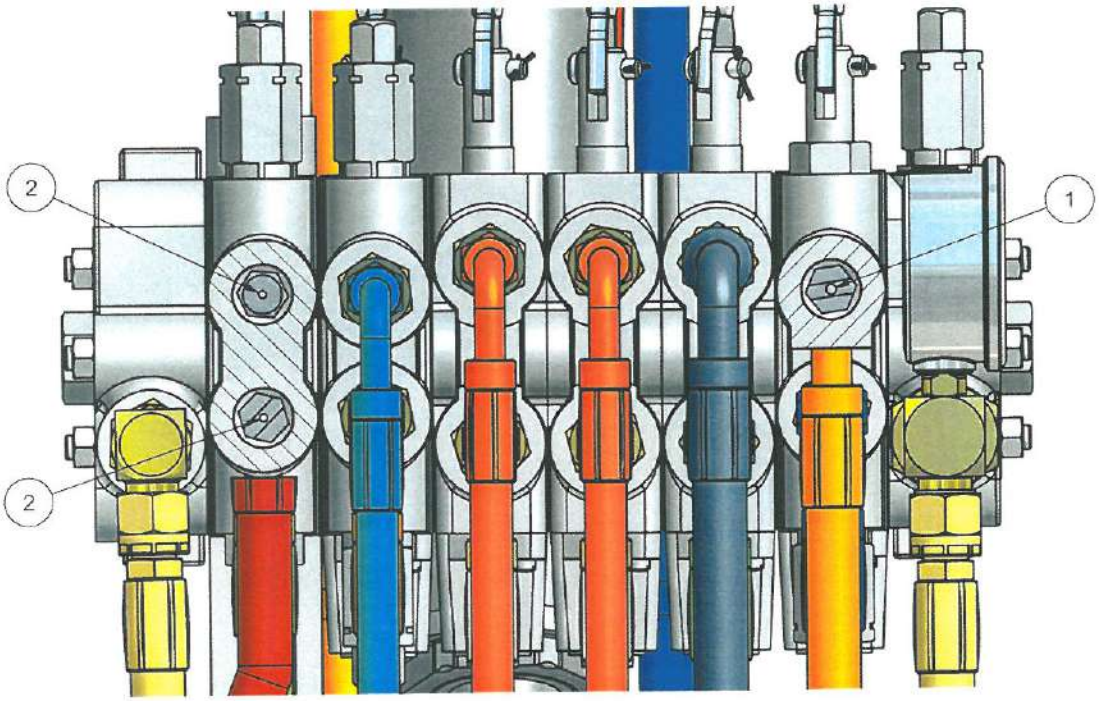
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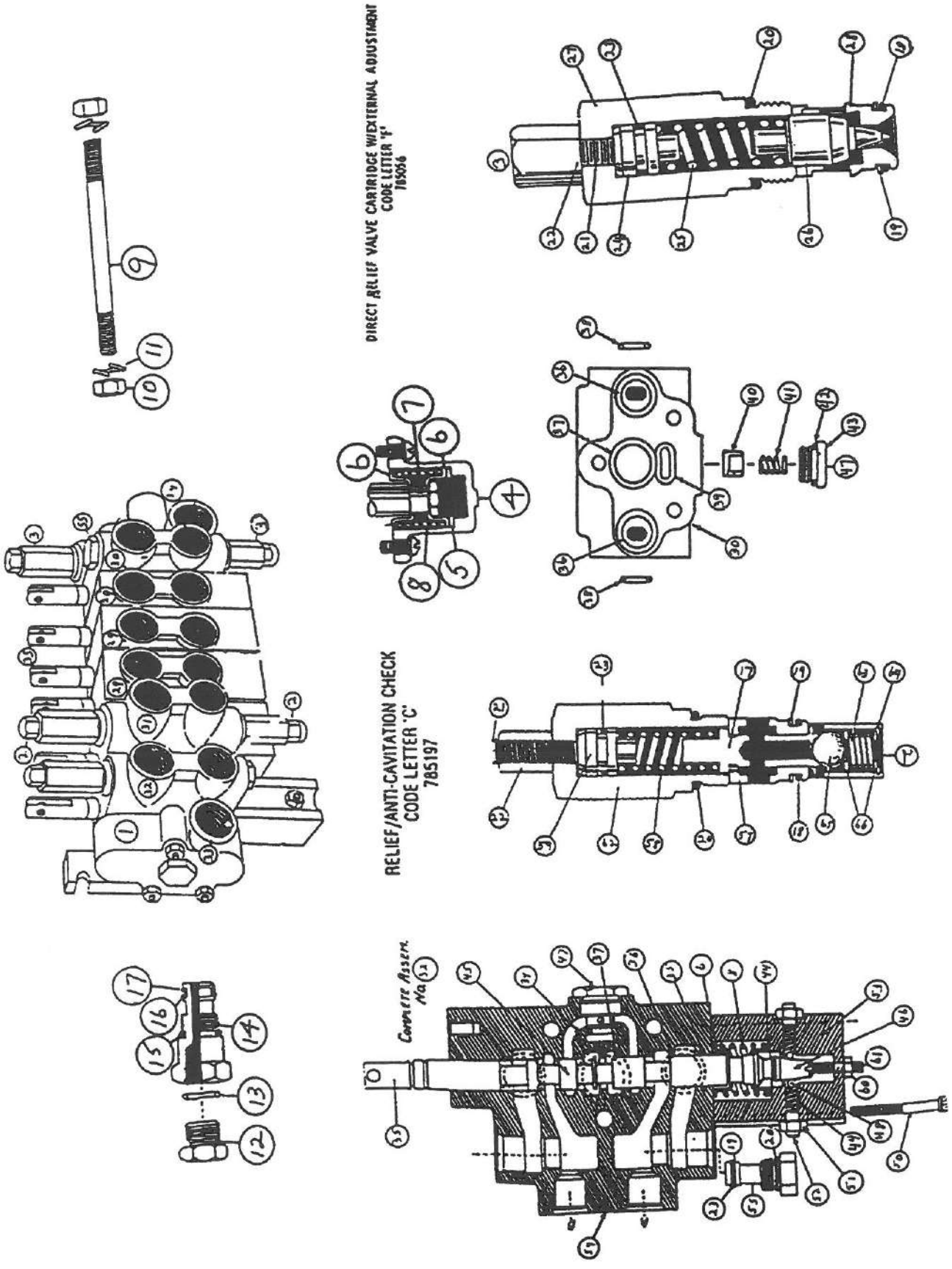
Valve, Fittings, & Hoses

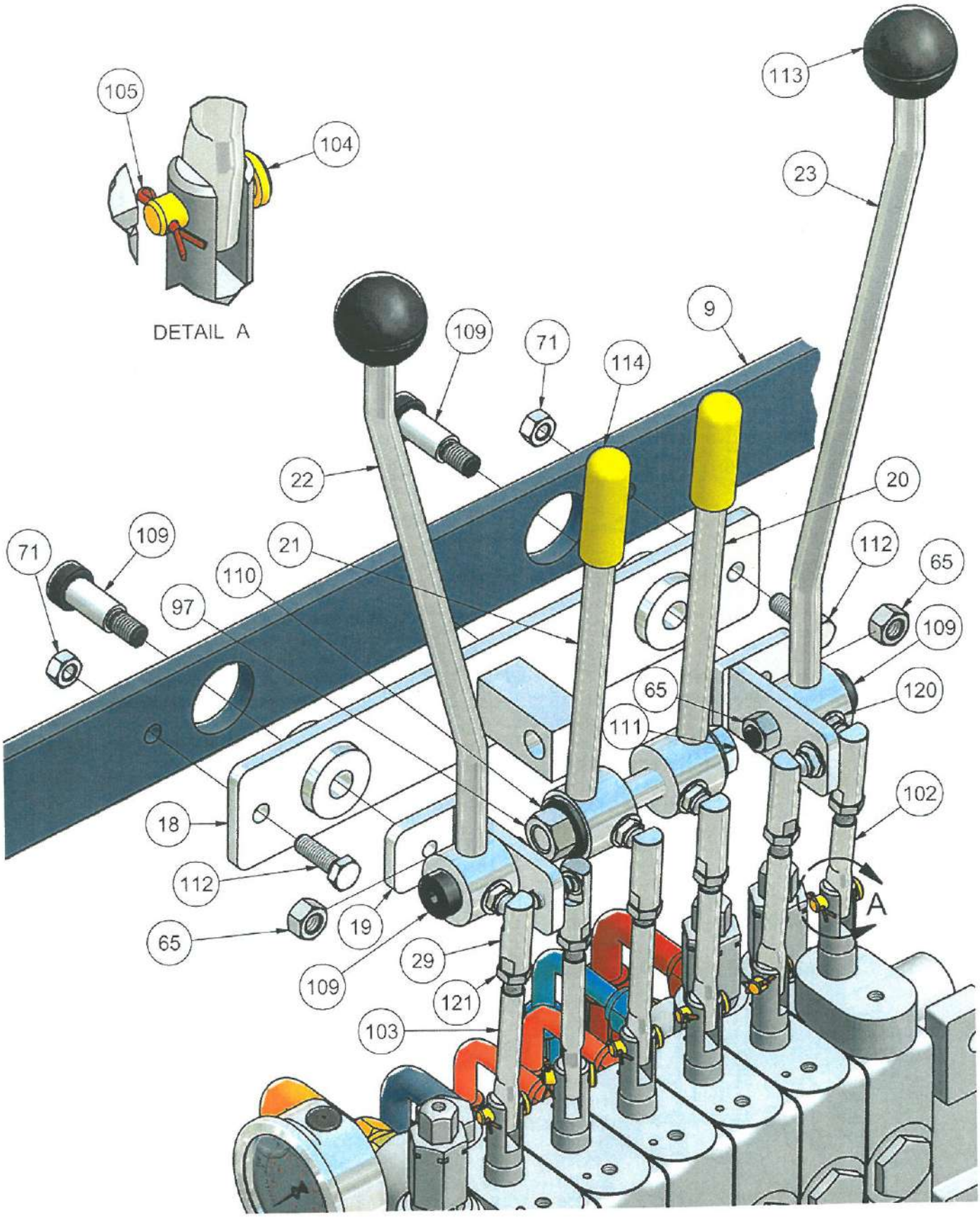
ILL#	Qty	Part#	Description
1	1	255304	1/8" Restrictor for dipper stick rod end port
2	2	255304A	3/32" Restrictor for both boom ports
14	3	SBT2023	Capscrew, 3/8"-16 x 1-1/4"
28	1	SFT10079	C5315 x 8 x 10 O-ring adapter
29	6	SFT10146	C5315 x 6 x 8 O-ring adapter
32	6	SFT2642	C5315 x 8 O-ring adapter
39	3	SNT15343	Nut, 3/8"-16
66	3	SWS2033	Lockwasher, internal star 3/8"
99	1	SFT250	Gauge and inlet fitting
100	1	SFT271	C5506 x 8 90 degree elbow
103	1	SHO10473	Hose, 04HL1FEFF33 1/4"x33" - 3/8"JM-3/8"JFS - Swing
104	2	SHO11014	Hose, 04HL1FFFF16 1/4"x16" 9/16-18 JICF both ends - Swing cross over
106	2	SHO11123	Hose, 08HL1HAHF50 1/2"x50" 1/2 Male x 3/4-16 JICF - Pressure & Return
108	2	SHO13332	Hose, 04HL1FFFM50 1/4"x50" 9/16 JICF x 9/16 JICF 90 Tube S - Stabilizer
110	2	SHO13333	Hose, 04HL1FFFO50 1/4"x50" 9/16 JICF x 9/16 JICF 90 Tube L - Stabilizer
112	1	SHO14024	Hose, 1/4"x33" 4P-6JICF-6JICF - Swing
113	1	SHO15366	Hose, 3/8"x170" 3/4-16 JICF x 3/4-16 JICF 90 Tube S - Bucket
114	1	SHO15367	Hose, 3/8"x148" 3/4-16 JICF x 3/4-16 JICF 90 Tube L - Bucket
115	1	SHO15368	Hose, 3/8"x92" 3/4-16 JICF x 3/4-16 JICF 90 Tube S - Dipper stick
116	1	SHO15369	Hose, 3/8"x121" 3/4-16 JICF x 3/4-16 JICF 90 Tube L - Dipper stick
117	1	SHO15370	Hose, 06HL1HFHM61 3/8"x61" 3/4-16 JICF x 3/4-16 JICF 90 Tube S - Boom
118	1	SHO15371	Hose, 06HL1HFHO92 3/8"x96" 3/4-16 JICF x 3/4-16 JICF 90 Tube L - Boom
119	1	SMS10033	Hydraulic gauge
120	1	SVV13048	Valve, Rexnord with float spool


DIRECT RELIEF VALVE CARTRIDGE W/EXTERNAL ADJUSTMENT
CODE LETTER 'F'
785056
RELIEF/ANTI-CAVITATION CHECK
CODE LETTER 'C'
785197
Complete Assem. No.

Valve Gresen/Rexnord with Float Spool

ILL#	Qty	Part#	Description
1	1	SVV13048	Valve, Rexnord w/float spool
2	3	785197	Cartridge, Relief Anti-Cavitation
3	2	785056	Cartridge, Relief
4	6	254000	Cover
5	6	255034	Spacer
6	11	255013	Spring Retainer
7	6	255035	Spool End
8	6	410512	Spring
9	3	255162	Tie Rod
10	6	401033	Tie Rod Nut
11	6	400908	Tie Rod Lockwasher
12	1	355098	Plug #10
13	1	405393	O-Ring
14	1	255049	Power Beyond Sleeve (optional)
15	1	405688	O-Ring (optional)
16	1	490975	Back Up Ring (optional)
17	1	406460	O-Ring (optional)
18	3	404463	O-Ring
19	5	490963	Back Up Ring
20	5	405393	O-Ring
21	5	410556	Adjustment Screw
22	5	255271	Jam Nut
23	5	401272	O-Ring
24	2	255143	Spring Seat
25	2	410557	Spring
26	2	255003	Poppet
27	6	255144	Direct Relief Valve Cartridge Body
28	1	255044	Poppet Body
29	3	981100	L.H. and R.H. Stabilizer & Bucket
30	1	980972	Stick Cylinder Section
31	1	980973	Swing Section
32	1	981139	Boom Section w/Float Position
33	1	980774	Outlet Section
34	1	981113	Inlet Section
35	6	255002	Female Spool End
36	12	490308	O-Ring
37	6	405895	O-Ring
38	12	401248	O-Ring
39	6	406127	O-Ring
40	6	255021	Load Check Piston
41	6	410520	Spring
42	6	505688	O-Ring
43	8	255020	Plug
44	1	255258	Spring Retainer
45	1	255257	Spool Assembly-Boom Spool only
46	1	255305	Spool End, Float
47	1	785011	Load Check Assembly
48	2	401072	Ball, Detent
49	2	410560	Spring, Detent
50	2	402964	Screw, Allen Head
51	2	401032	Nut
52	2	410540	Screw, Allen Head
53	1	254235	Lower Extension
54	1	254241	Section Body
55	2	785012	#8 SAE Plug Complete
56	2	255033	#8 SAE Plug
NI	5	255256	Spool-Standard

PARTS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DETAIL A
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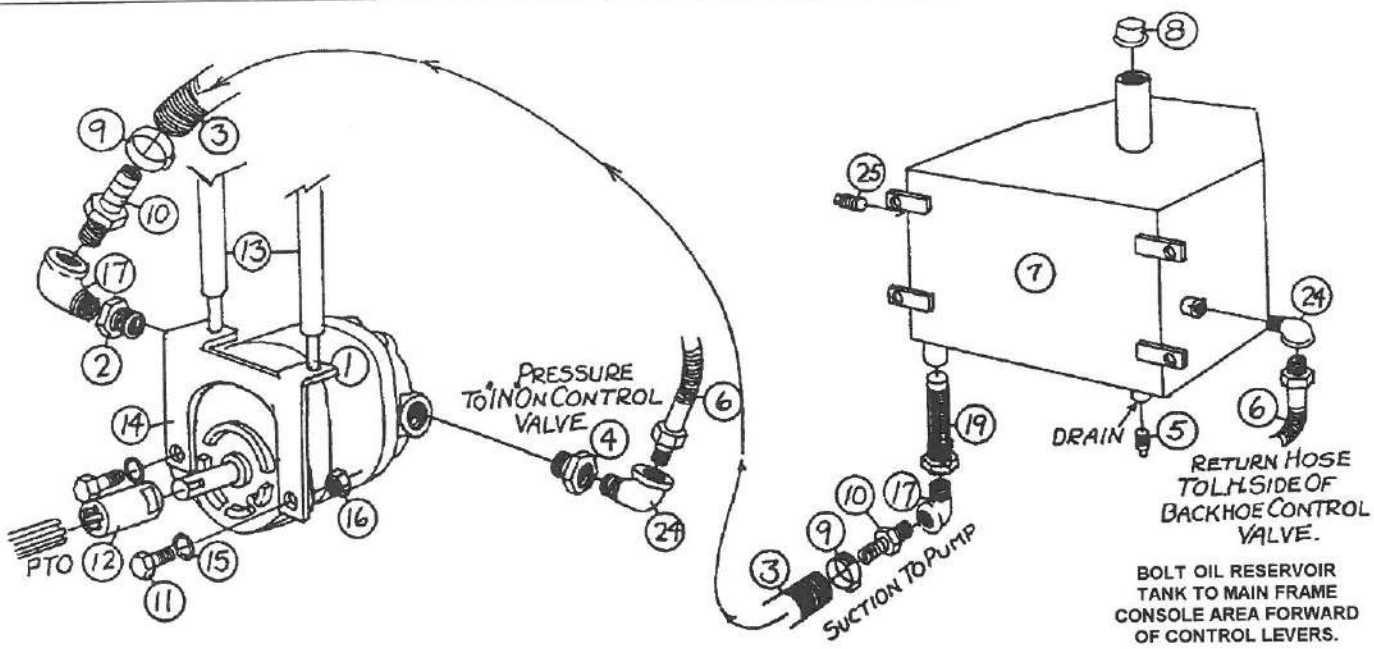
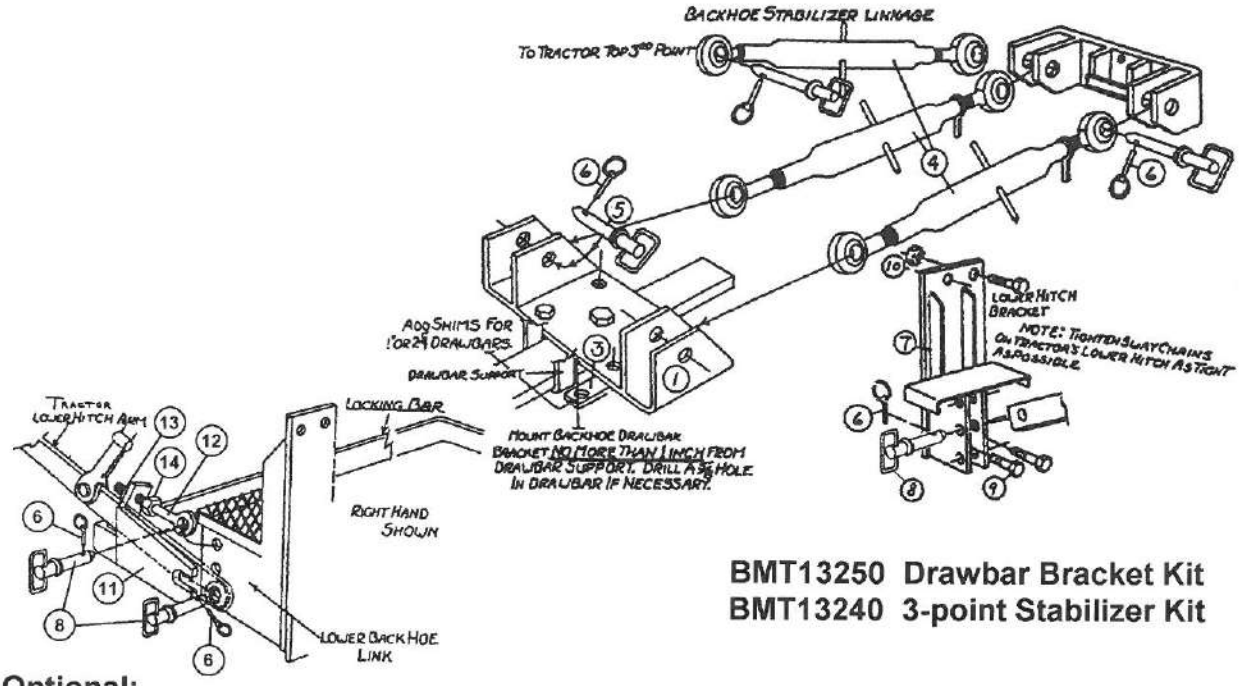
Controls

ILL#	Qty	Part#	Description
9	1	BMF13204	Main frame weld assembly
18	1	BMS13037	Control bracket
19	2	BMS13038	Control pivot bracket
20	1	BMS13041	Control handle - LH stabilizer
21	1	BMS13042	Control handle - RH stabilizer
22	1	BMS13039	Control handle - dipper stick, bucket
23	1	BMS13040	Control handle - boom, swing
29	1	BMS12595	Ball joint connector
65	13	SNT2031	Locknut, 3/8"-16
71	16	SNT12434	Locknut, 5/16" NC
97	2	SNT2060	Locknut, 1/2"
102	1	BMS13045	Control rod, 2-7/8" (Boom section)
103	5	BMS13046	Control rod, 3-7/8" (All other sections)
104	6	SPN10060	Pin, control rod 1/4" x 3/4"
105	6	SPN11377	Cotter pin, 1/16" x 1/2"
109	4	SBT13043	Socket shoulder bolt, 1/2" x 1" shoulder with 3/8"-16 x 5/8" threads
110	2	SWS15236	Washer, 1/2" ID x 1-1/16" OD
111	1	SBT13044	Capscrew, 1/2"-13 x 4-1/2" cut to 3-1/2"
112	2	SBT13373	Capscrew, 5/16" x 1" NC
113	2	SMS15230	Handle ball, 1/2" drive-on
114	2	SMS13047	Handle grips for stabilizer controls
120	8	SWS2019	Lockwasher, internal star 5/16"
121	6	SNT11382	Jam nut, 5/16" NF



PTO Independent Hydraulic System BCP13093 540 RPM

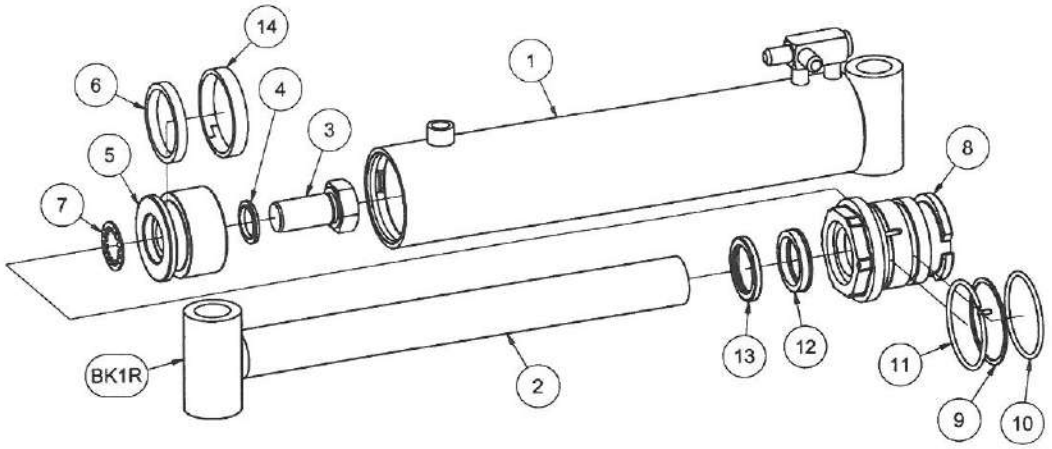
ILL#	Qty	Part#	Description
1	1	SPP6242	388K Webster Pump (Side Ported)
2	1	SFT2644	6405-20-16 Suction Adapter Fitting
3	1	SHO11140	16R-0-0-50" Lg. Hose
4	1	SFT2645	6405-16-8 Pressure Adapter Fitting
5	1	SFT2502	Drain Plug, 3/8"
6	2	SHO11123	8P-8JFS-8-50" Lg Hose
7	1	BPP13073	Oil Reservoir
8	1	SPP2639	Breather Cap
9	2	SCL2640	Hose Clamp 1"
10	2	SFT13096	Nipple 1" Barb
11	2	SBT2047	Capscrew 1/2" x 2"
12	1	SPP6243	540,1 3/8 PTO Pump Drive Coupler w/1" Bore
13	2	SMS13286	Rubber hose Cover 3/4x10
14	1	SPP12952	Torque Bar For Webster 388K Pump
15	2	SWS2061	Lockwasher 1/2"
16	2	SNT2062	Nuts 1/2"
17	2	SFT2529	90 Degree Street Elbow, 1"
19	1	SPP6230	Filter
24	1	SFT2527	90 Degree Street El 1/2"
25	1	SFT2502	Level Plug, 3/8"
NI	4	SBT10820	Capscrew 5/16" x 1" Gr 5
NI	4	SNT12434	Locknuts 5/16"
NI	1	BCP10109	Parts Carton (Except Reservoir)



BMT13250 Drawbar Bracket Kit
BMT13240 3-point Stabilizer Kit

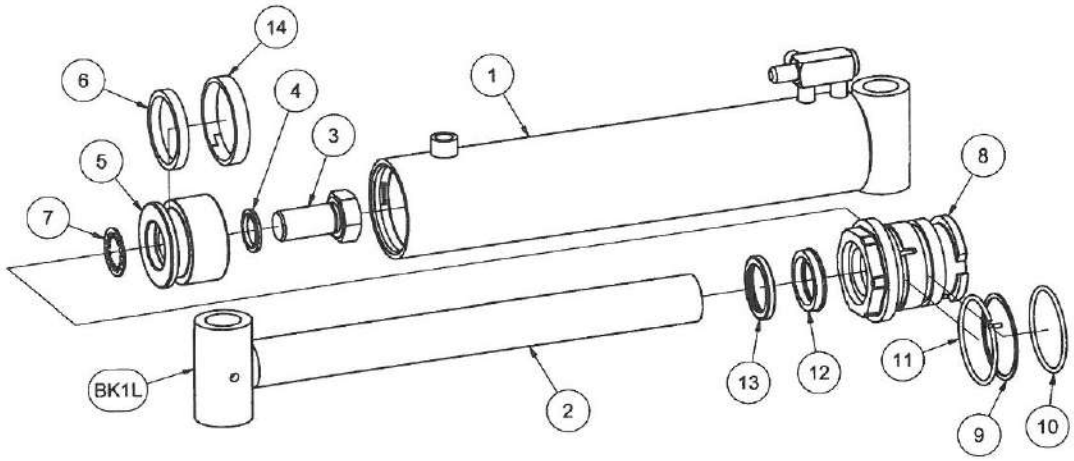
Optional:
BMT13255 Locking Bar Mount Kit

ILL#	Qty	Part#	Description
1	1	BMT13269	Tractor Drawbar Bracket
2	1		Tractor Third Point Link
3	2	BMT13274	Width Shim For Drawbar Bracket
4	2	BMT13272	Adjustable Stabilizer Linkage Category II
5	5	SPN13077	1" X 5 3/4 Pin Category II Third Point Pin
6	9	SPN11558	1/4" Lynch Pin
7	1	BMT13075	L.H. Lower Hitch Assembly (SHOWN)
7	1	BMT13074	R.H. Lower Hitch Assembly
8	4	SPN13084	7/8" x 4-1/2" Hitch Pin
9	8	SBT2093	Gr5, 3/4" X 2-1/2" Capscrew
10	8	SNT13089	3/4" Locknut
11	1	BMT13299	Locking bar assembly
12	2	SBT10452	3/4" x 7" Eyebolt
13	2	SNT2102	3/4" Nut
14	2	SNT10584	3/4" Jam Nut
NI	5	SNT2102	3/4" Nut
NI	13	SWS2104	3/4" Flatwasher
NI	2	SBT14007	3/4" X 2-1/2" X 3" Drawbar Brkt U-Bolt
NI	1	SNT2086	5/8" Nut
NI	2	SWS2089	5/8" Flatwasher
NI	1	SNT10435	5/8" Jam Nut
NI	1	SBT10263	3/4" x 3 1/2" Capscrew
NI	2	SFT327	Bushing Category I & II
NI	1	SBT2073	Capscrew 5/8" x 3-1/2"



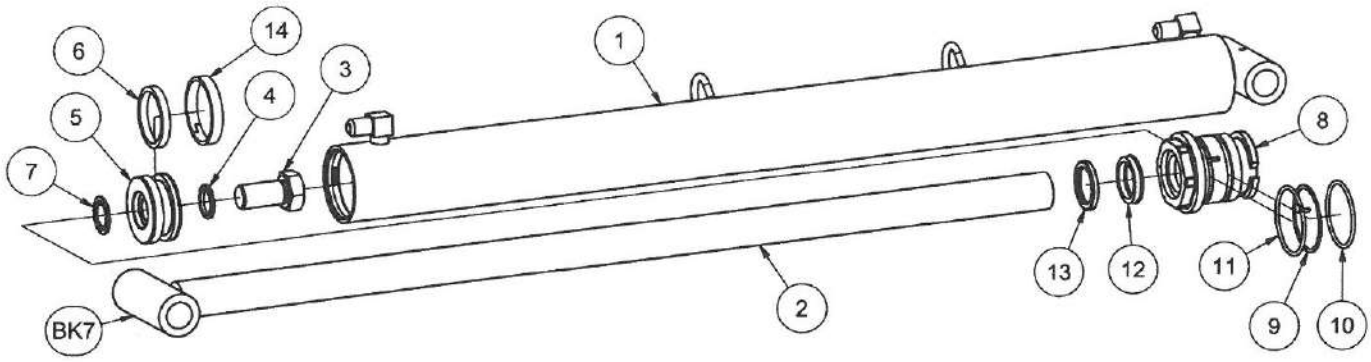
BCY13019R 2-1/2" x 10" Swing Cylinder

ILL#	Qty	Part#	Description	ILL#	Qty	Part#	Description
1	1	SCY13062R	Barrel assembly	9	1	SCY1070	Backup ring 2-1/2"
2	1	SCY13063	Rod assembly	10	1	SCY1024	O-ring, 2-1/2" Dia.
3	1	SBT1017	Capscrew 7/8" N.F. x 2"	11	1	SCY1026	Lockwire 2-1/2" Dia.
4	1	SCY1018	Seal stato 7/8"	12	1	SCY1025	Seal rod 1-3/8" polypack
5	1	SCY356	Piston	13	1	SCY1027	Rod wiper 1-3/8"
6	1	SCY15039	Piston seal, 2-1/2" inner seal	14	1	SCY15040	Piston seal, 2-1/2" outer seal
7	1	SWS245	Lockwasher, internal star, 7/8"				
8	1	SCY1023	Cylinder head 2-1/2" with 1-3/8" bore	NI	1	SCY1030	Seal kit



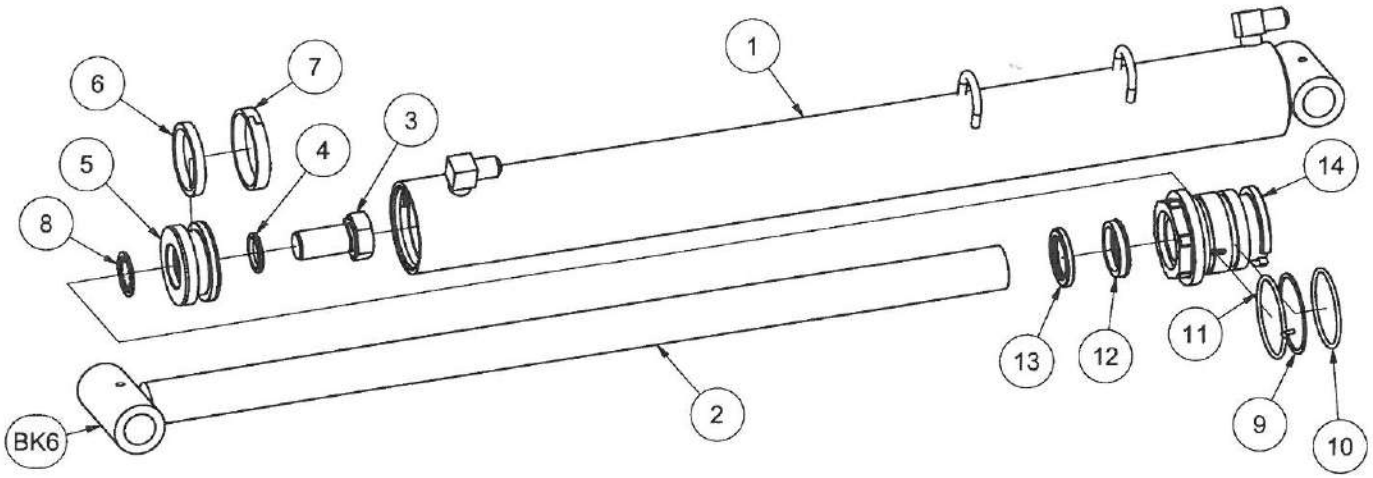
BCY13019L 2-1/2" x 10" Swing Cylinder

ILL#	Qty	Part#	Description	ILL#	Qty	Part#	Description
1	1	SCY13062L	Barrel assembly	9	1	SCY1070	Backup ring 2-1/2"
2	1	SCY13063	Rod assembly	10	1	SCY1024	O-ring, 2-1/2" Dia.
3	1	SBT1017	Capscrew 7/8" N.F. x 2"	11	1	SCY1026	Lockwire 2-1/2" Dia.
4	1	SCY1018	Seal stato 7/8"	12	1	SCY1025	Seal rod 1-3/8" polypack
5	1	SCY356	Piston	13	1	SCY1027	Rod wiper 1-3/8"
6	1	SCY15039	Piston seal, 2-1/2" inner seal	14	1	SCY15040	Piston seal, 2-1/2" outer seal
7	1	SWS245	Lockwasher, internal star, 7/8"				
8	1	SCY1023	Cylinder head 2-1/2" with 1-3/8" bore	NI	1	SCY1030	Seal kit



BCY15332 2-1/2" x 31" Boom Cylinder

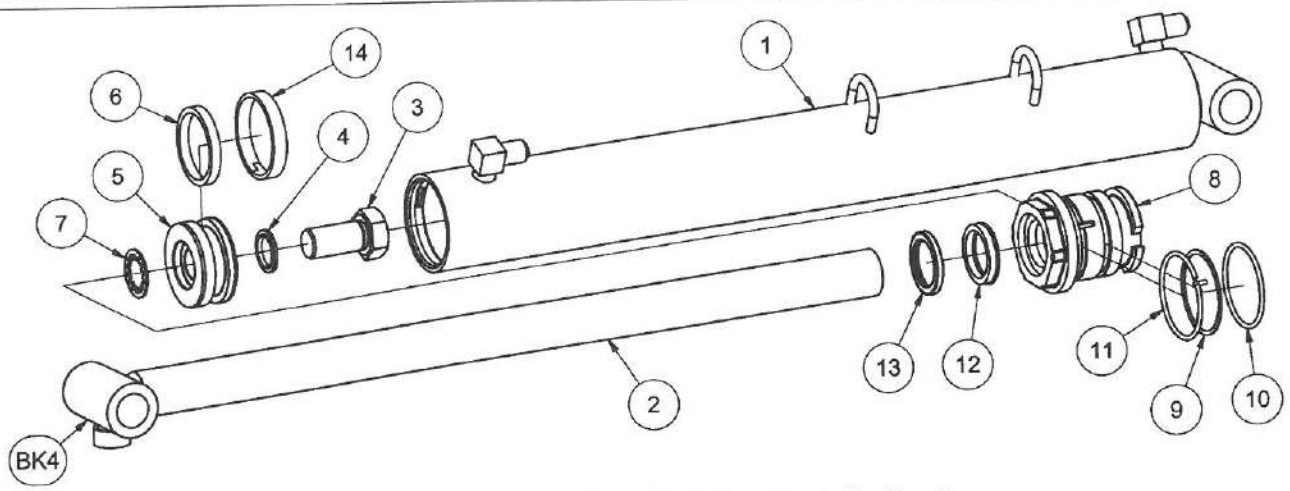
ILL#	Qty	Part#	Description	ILL#	Qty	Part#	Description
1	1	SCY15333	Barrel assembly	9	1	SCY1070	Backup ring 2-1/2"
2	1	SCY15334	Rod assembly	10	1	SCY1024	O-ring, 2-1/2" Dia.
3	1	SBT1017	Capscrew 7/8" N.F. x 2"	11	1	SCY1026	Lockwire 2-1/2" Dia.
4	1	SCY1018	Seal stato 7/8"	12	1	SCY1025	Seal rod 1-3/8" polypack
5	1	SCY1020	Piston 2-1/2" dia. for 1-3/8" rod	13	1	SCY1027	Rod wiper 1-3/8"
6	1	SCY15039	Piston seal, 2-1/2" inner seal	14	1	SCY15040	Piston seal, 2-1/2" outer seal
7	1	SWS245	Lockwasher, internal star, 7/8"				
8	1	SCY1023	Cylinder head 2-1/2" with 1-3/8" bore	NI	1	SCY1030	Seal kit



BCY15328 2-1/2" x 24" Dipper Stick Cylinder

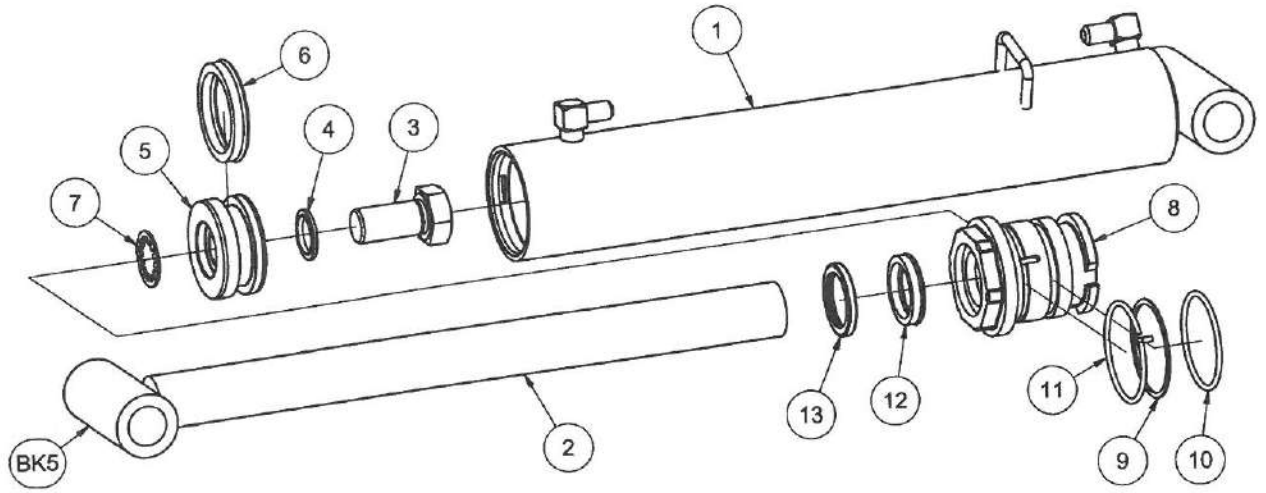
ILL#	Qty	Part#	Description	ILL#	Qty	Part#	Description
1	1	SCY15329	Barrel assembly	9	1	SCY1070	Backup ring 2-1/2"
2	1	SCY15330	Rod assembly	10	1	SCY1024	O-ring, 2-1/2" Dia.
3	1	SBT1017	Capscrew 7/8" N.F. x 2"	11	1	SCY1026	Lockwire 2-1/2" Dia.
4	1	SCY1018	Seal stato 7/8"	12	1	SCY1025	Seal rod 1-3/8" polypack
5	1	SCY1020	Piston 2-1/2" dia. for 1-3/8" rod	13	1	SCY1027	Rod wiper 1-3/8"
6	1	SCY15039	Piston seal, 2-1/2" inner seal	14	1	SCY1023	Cylinder head 2-1/2" with 1-3/8" bore
7	1	SCY15040	Piston seal, 2-1/2" outer seal				
8	1	SWS245	Lockwasher, internal star, 7/8"	NI	1	SCY1030	Seal kit

PARTS



BCY13030 2-1/2" x 20" Bucket Cylinder

ILL#	Qty	Part#	Description
1	1	SCY13066	Barrel assembly
2	1	SCY13067	Rod assembly
3	1	SBT1017	Capscrew 7/8" N.F. x 2"
4	1	SCY1018	Seal stato 7/8"
5	1	SCY1020	Piston 2-1/2" dia. for 1-3/8" rod
6	1	SCY15039	Piston seal, 2-1/2" inner seal
7	1	SWS245	Lockwasher, internal star, 7/8"
8	1	SCY1023	Cylinder head 2-1/2" with 1-3/8" bore
9	1	SCY1070	Backup ring 2-1/2"
10	1	SCY1024	O-ring, 2-1/2" Dia.
11	1	SCY1026	Lockwire 2-1/2" Dia.
12	1	SCY1025	Seal rod 1-3/8" polypack
13	1	SCY1027	Rod wiper 1-3/8"
14	1	SCY15040	Piston seal, 2-1/2" outer seal
NI	1	SCY1030	Seal kit



BCY13015 2-1/2" x 13" Stabilizer Cylinder

ILL#	Qty	Part#	Description
1	1	SCY13068	Barrel assembly
2	1	SCY13067	Rod assembly
3	1	SBT1017	Capscrew 7/8" N.F. x 2"
4	1	SCY1018	Seal stato 7/8"
5	1	SCY1020	Piston 2-1/2" dia. for 1-3/8" rod
6	1	SCY13285	Piston seal polypack
7	1	SWS245	Lockwasher, internal star, 7/8"
8	1	SCY1023	Cylinder head 2-1/2" with 1-3/8" bore
9	1	SCY1070	Backup ring 2-1/2"
10	1	SCY1024	O-ring, 2-1/2" Dia.
11	1	SCY1026	Lockwire 2-1/2" Dia.
12	1	SCY1025	Seal rod 1-3/8" polypack
13	1	SCY1027	Rod wiper 1-3/8"
NI	1	SCY13300	Seal kit polypack

GENERAL SPECIFICATIONS

Maximum Digging Depth	10'6"
Digging Depth (Two foot flat bottom)	9'6"
Reach from Swing Pivot	12'10"
Transport Height	8'4"
Bucket Clearance – Loading Height	8'8"
Stabilizer Spread Down (Operating)	9'4"
Stabilizer Spread Up (Transporting)	5'10"
Bucket Rotation	180°
Swing Arc	180°
Bucket Curl Power at Cutting Lip	3591 lbs
Crowd Power at End of Dipper Stick	2510 lbs
Hydraulic System Relief Valve Setting	2200 PSI
Hydraulic Flow Requirements	6.0 to 8.0 GPM
Tractor HP Requirements	45 to 90 HP

BUCKET SPECIFICATIONS

Width	# of Teeth	Weight	Heaped Capacity	Struck Capacity
9"	3	86 lbs	0.86 ft^3	0.75 ft^3
12"	3	90 lbs	1.14 ft^3	1.00 ft^3
15"	4	101 lbs	1.56 ft^3	1.25 ft^3
18"	4	112 lbs	1.85 ft^3	1.50 ft^3
24"	5	133 lbs	2.38 ft^3	2.00 ft^3
36"	6	160 lbs	3.40 ft^3	3.00 ft^3

CYLINDER SPECIFICATIONS

Type	Piston Dia.	Stroke	Closed Length	Open Length	Rod Dia.
Stabilizer BCY15328 (BK5)	2-1/2"	13"	20"	33"	1-3/8"
Swing BCY13019R (BK1R) BCY13019L (BK1L)	2-1/2"	10"	17"	27"	1-3/8"
Boom BCY15332 (BK7)	2-1/2"	31"	38"	69"	1-3/8"
Dipper Stick BCY15328 (BK6)	2-1/2"	24"	31"	55"	1-3/8"
Bucket BCY13030 (BK4)	2-1/2"	20"	27"	47"	1-3/8"

Notes:

Limited Warranty

Kelley Manufacturing Corporation warrants each new Kelley product to be free from defects in material and workmanship. This Warranty is applicable only for the normal service life expectancy of the product or components, not to exceed twelve consecutive months from the date of delivery of the new Kelley product to the original purchaser. This warranty is valid only if the purchaser has returned to Kelley a signed Warranty Registration Card within ten days after the equipment is delivered to the purchaser. To verify the warranty period, purchaser should keep the sales slip or other proof of the purchase date.

Genuine Kelley replacement parts and components will be warranted for 90 days from date of purchase, or the reminder of the original equipment warranty period, whichever is longer.

Under no circumstances will it cover any merchandise or components thereof, which, in the opinion of Kelley, has been subjected to misuse, unauthorized modifications, alteration, an accident or if repairs have been made with parts other than those obtainable through Kelley. Warranty shall not apply to any part of the equipment if it has been installed, altered, repaired, 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 normal wear, 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 material, and labor difficulties.

Within twelve months 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 in no way warrants engines, batteries, tires, pumps valves or other trade accessories since these items are warranted separately by their respective manufacturer.

Kelley's obligation under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part that, in its judgment, shall show evidence of such defects, provided further that such part shall be returned within thirty (30) days from date of failure to Kelley routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. The purchaser of the Kelley equipment is responsible for any transportation, damages, or losses that result from a warranty claim.

This Warranty shall not interpreted to render Kelley liable for any costs involving labor. No warranty shall be allowed as to the attachment of the equipment to specific tractors: it is beyond Kelley's control that tractor manufacturers make changes, which may require minor alterations of the mounting and or attachments. This warranty does not extend to the loss of crops, loss because of delays in completion of jobs or harvest, or any expense or loss incurred for labor, substitute machinery, rental or for any other reason.

Except as set forth above, **Kelley shall have no obligation or liability of any kind on account of any equipment and shall not be liable for special or consequential damages. Kelley makes no other warranty, expressed or implied, and, specifically, Kelley disclaims any implied warranty or merchantability or fitness for a particular purpose. Some states or provinces do not permit limitations or exclusions of implied or incidental or consequential damages, so the limitations or exclusion in this warranty may not apply.**

This warranty is subject to any existing conditions of supply, which may directly affect our ability to obtain materials or manufacture replacement parts.

Kelley reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

No one is authorized to alter, modify or enlarge this warranty nor the exclusion, limitations and reservations.

KELLEY MANUFACTURING CORPORATION

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

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