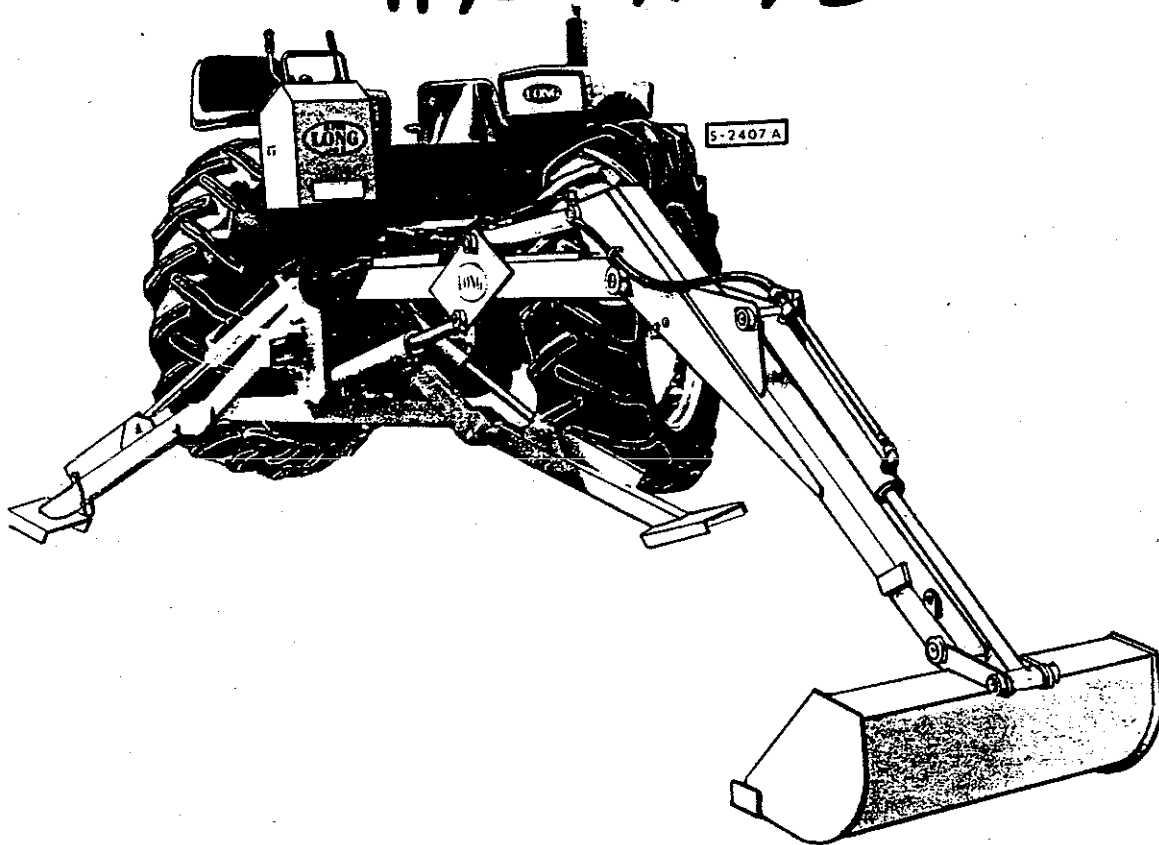


**Owner's
Manual**



Three Point Hitch Backhoes

1198 - 1199 B



LONG MFG. N.C. INC.

Box 1139 (111 Fairview St.)
Tarboro, NC 27886
Tel. (919) 823-4151


Part No. 756114 / Printed in U.S.A. — Rev. 2/88
OPI-E

IMPORTANT — READ CAREFULLY

SAFETY ALERT SYMBOL

This Safety Alert Symbol Means ATTENTION!
BECOME ALERT! YOUR SAFETY IS INVOLVED!

When the Safety  Alert Symbol is seen, you should carefully read the warning that is printed beside or under it.

This Safety  Alert Symbol identifies important safety messages on machines, safety signs, in manuals, or elsewhere. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

The Safety  Alert Symbol is put on Long equipment and in this manual for your protection. AVOID ACCIDENTS!

TO THE OWNER/OPERATOR

Your Long equipment is an investment which deserves the best in maintenance and service. Proper care will allow full return on this investment. Replace parts only with Long-approved replacements. Use of nonapproved parts voids warranty.

Long Mfg. N. C., Inc. maintains a unit history on each machine through production, inspection, test and warranty periods. A detailed inspection form is included in the warranty registration papers supplied by your Long Dealer. Warranty registration is accomplished by the Dealer completing and forwarding the Pre-Delivery Inspection Report or Warranty Registration Form to Long Mfg. N. C., Inc.

It is in your best interest to insure that this has been done. If, after talking with your dealer, you still have questions about warranty or service, contact the Service Administrator located in Tarboro, North Carolina.

Record serial and model numbers below when applicable. Any communication regarding equipment sold by Long must include these reference numbers.

SERIAL NO. _____

MODEL _____

The information contained herein is from data available at the time of printing. LONG Mfg. N.C. Inc. reserves the right to make changes in specifications shown herein or to add improvements without notice and without incurring obligation.

TABLE OF CONTENTS

SAFETY	2
SAFETY PRECAUTIONS.....	3
Signs	5
Hand Signals.....	6
OPERATOR RESPONSIBILITY.....	6
GENERAL DESCRIPTION & SPECIFICATIONS.....	7
MOUNTAIN INSTRUCTIONS.....	8
Hydraulic Diagrams.....	11
HOUSE ROUTING - 1198 BACKHOE.....	13
MOUNTING KITS.....	14
CONTROL IDENTIFICATION.....	17
OPERATION	18
TRANSPORTING	21
MAINTENANCE	22
Lubrication	25
Troubleshooting.....	25
Bucket Teeth.....	27
STORAGE	28
OPTIONAL EQUIPMENT.....	28
TORQUE CHART.....	28
LIMITED WARRANTY.....	Inside Rear Cover

SAFETY

SAFETY ALERT SYMBOL

The symbol shown below is used to call attention to instructions concerning personal safety. Watch for this symbol. Important safety precautions are pointed out. The symbol means: "**ATTENTION! Become Alert! Personal Safety is involved!**" Read the message that follows and be alert to the possibility of personal injury or death.

Occupational safety is of prime concern to the manufacturer. This manual was written with the safety of the operator and others who come in contact with the equipment as a prime concern. The manual presents some of the day-to-day work problems encountered by the operator and other personnel. Safe operating procedures are explained. Follow them!

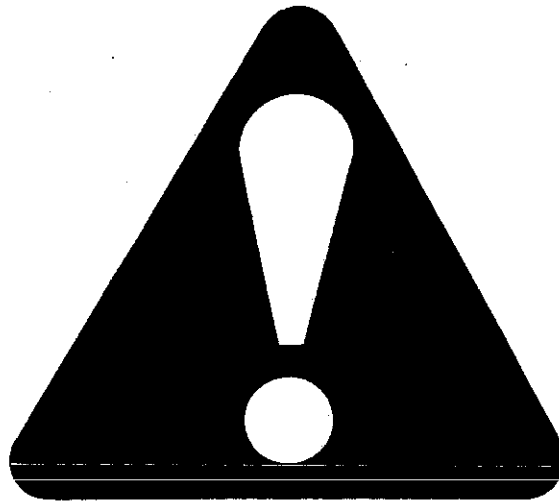
The owner or supervisor is responsible for knowing what specific requirements, precautions and work hazards exist. He is to make these facts known to all other personnel working with the equipment or in the area, so that they too may take any necessary safety precautions that may be required.

Failure to read this manual and its safety instructions is a misuse of the equipment.



WARNING!

Anyone who will operate or work around this system should first read this manual.



BE ALERT!
YOUR SAFETY IS INVOLVED

SAFETY PRECAUTIONS

In addition to endangering life and physical well-being, accidents can cause loss of money and manhours. Most accidents can be avoided if all persons working with and around the equipment use common sense and observe basic safety rules.

1. Only one person — the operator — should be allowed on the machine while it is in operation.
2. Never operate the backhoe except from the operator's seat.
3. When operating the backhoe, remain at the controls until operation is completed.
4. Never lift a person with the backhoe.
5. Never leave the tractor unattended with the engine running.
6. Before swinging the backhoe, make sure there is ample room for the swing and that all people are out of the way.
7. Be certain bystanders are clear of the backhoe before lowering stabilizers or moving the boom.
8. Be certain that the operator has had sufficient time to become familiar with the controls before attempting any work with the backhoe.
9. Be certain to wear protective head gear while operating the backhoe.
10. Carry the backhoe low at all times, especially when working on a hill side or backing up an incline.
12. Watch for overhead wires. Never touch wires with any part of the backhoe.
13. Be careful to prevent the unit from tipping sideways if it strikes an excavation, ditch, or other irregularity, especially on hillsides. The rate of travel on hillsides and curves should always be such that there is no danger of tipping.
14. When working across slopes, avoid bumps and hollows which may cause the backhoe to be tilted to a dangerous degree.
15. Avoid sudden braking in turns or on slippery surfaces.
16. When climbing steep grades, do not open the tractor throttle rapidly.
17. Never dismount while the tractor is in motion.
18. Never start the tractor engine from any position other than sitting in the driving seat.
19. Never transport the backhoe unless the swingpost is in lock position.
20. The stabilizers should be set to the narrowest position when the backhoe is being transported on public roads.
21. When parking the backhoe, or leaving the seat, always lower the bucket to the ground for safety.
22. Do not use maximum speed when cornering, over rough ground, or when using the tractor steering brakes.
23. Never drive the tractor close to the edges of ditches or banks, especially if the ground is loose or wet.
24. When operating or transporting the backhoe, the tractor must have adequate front end weight to balance the unit.
24. Do not attempt to raise the tractor off the ground or move the tractor forward or backward using the backhoe boom or stabilizers.
26. Be certain area is free from underground obstructions before digging.
27. A barricade should be positioned around work area.
28. When digging far to either side and in close to the tractor, do not let the bucket contact the stabilizers which could cause damage to the unit.
29. Do not dig under the stabilizers or tractor-backhoe. Soft ground or sandy soil might cause cave-in.
30. When operating on a slope, avoid swinging the bucket to the downhill direction, if possible. This will reduce the stability of the backhoe. Always dump on the uphill side.
31. Stabilizers must be lowered to the ground before operating the backhoe.
32. Before making adjustments on the backhoe, make sure that moving parts are resting on the ground and securely positioned to prevent lowering which may result in injury to the operator as well as to the backhoe.
33. When driving connecting pins in or out, use care to guard against injury from particles that may chip off the pin or object used in striking the pin. Protect eyes with safety glasses.
34. Do not change backhoe relief valve settings. They are factory set for best backhoe performance and safety.
35. Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes, and hoses are not damaged.
36. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.
37. If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.
38. Do not use the backhoe bucket as a battering ram.
39. Never allow anyone to work under a raised bucket.
40. When storing backhoe, be sure boom locking lever is not latched.

41. Never make any adjustments to the backhoe while it is in operation.
 42. Never run the tractor engine in a closed building or allow the exhaust pipe to come near any flammable material.
 43. Never fill the tractor fuel tank with the engine running. Exercise caution when the engine is hot.
 44. Lubricate the backhoe daily as recommended.
 45. Keep all nuts, bolts, screws and hydraulic connections tight.
- ⚠ **Caution:** Do not mount backhoe on small tractors of under 60 P.T.O. H.P. as damage to the 3-point hitch may result.
 - ⚠ **Caution:** The important thing for an operator learning to use a machine of this type, is to attain skill gradually. The time used in learning to get the "feel" of the machine will be well spent in preventing possible damage to the vehicle or operator and to safeguard other personnel.
 - ⚠ **Caution:** Tractor front-end stability is required for safe and efficient operation of the Backhoe. Add front-end weights to the tractor as needed to maintain stability during operation. For transport, add sufficient weight to provide a vehicle balance which will permit the front wheels to remain in contact with the ground at all times when the level of force necessary to retain directional control on dry surfaces. The vehicle

balance is to be determined with the backhoe fixed in the recommended transport position.

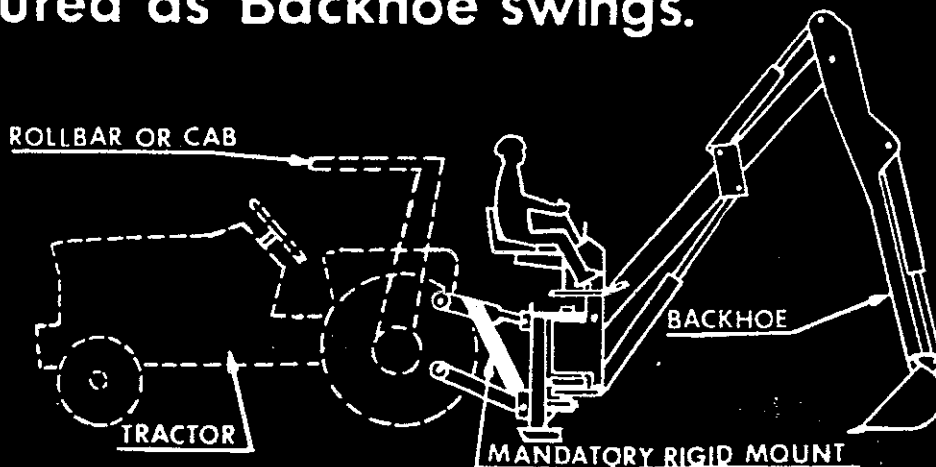
- ⚠ **Caution:** Do not grab any of the backhoe control levers when mounting the machine. Movement of these levers may cause backhoe to shift, causing personal injury or property damage. Use grab rail in front of levers.
- ⚠ **Danger:** You are hereby warned that there is danger in operating a Long Three Point Hitch Backhoe with any tractor equipped with a roll-bar or safety cab.
- ⚠ **Caution:** The 1199B Backhoe cannot be mounted to LONG Mo. 360-460-510-560-610 Tractor using the standard three point hitch.

It has been determined that a backhoe operator can be crushed to death against the rollbar or safety cab where the backhoe is not rigidly mounted, and your Backhoe should not be operated with any such tractor unless it is attached with a rigid **LONG MFG.** mount that prevents the backhoe from being raised or lifted during operation.

Your Backhoe is equipped as standard with a rigid mount. Always make sure that this rigid mount provides safe operator's clearance (see Danger Warning, Part Number 764112 below).

DANGER

Do Not Operate LONG 3 point hitch Backhoe on Tractor with Rollbar or Cab unless Equipped with rigid LONG MFG. Mount and unless Safe Operator Clearance is Assured as Backhoe swings.



764112

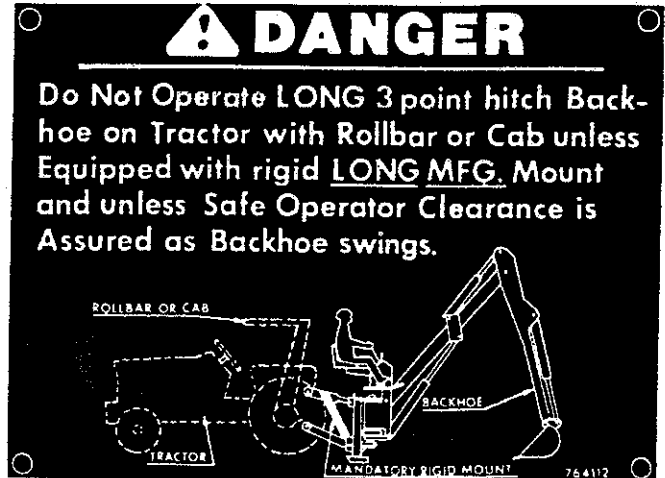
SAFETY SIGNS

The following warning sign will be found on your backhoe unit. Each of these signs contain important safety messages which are necessary for safe operation of the machine. The signs should be kept clean and legible at all times. A soft damp cloth may be used to clean the signs if the

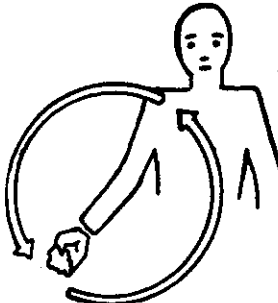
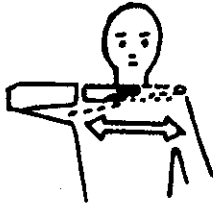
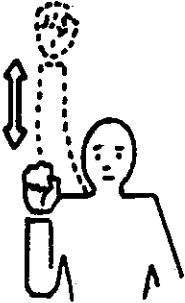


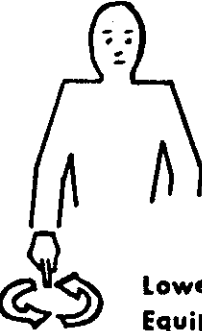
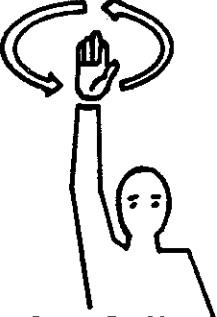
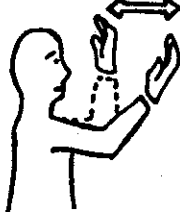
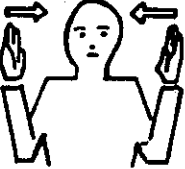

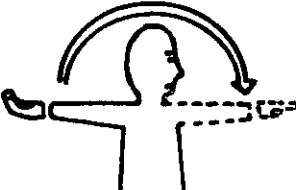
signs are damaged, missing, painted over, or otherwise not readable, they should be replaced with new signs available from your dealer. When components are replaced on the machine during repair, all safety signs on the components must be replaced with new signs.



757546



764112

<p>HAND SIGNALS</p> <p>Use when noise or distance does not allow normal voice communication.</p> <p>S-2406/A</p>	 <p>Start The Engine</p>	 <p>Stop The Engine</p>	 <p>Speed It Up-Increase Speed</p>
 <p>Slow It Down Decrease Speed</p>	 <p>Raise Equipment</p>	 <p>Lower Equipment</p>	 <p>Come To Me</p>
 <p>Follow Me Move Toward Me</p>	 <p>This Far To Go</p>	 <p>Stop</p>	 <p>Move Out - Take Off</p>

OPERATOR RESPONSIBILITY

The operator must assume the responsibility for his own safety and that of those individuals who come in contact with the machine through the course of its operation. The factors that contribute to the overall safety of operation are proper use, maintenance and frequent inspection of the machine, all of which are in the operator's area of responsibility.

The operator is responsible for seeing that the stabilizers are set properly before the machine is used. Failure to do so could result in serious personal injury or property damage. The operator must:

1. See that the machine is set up in correct area before being used, making sure that no underground pipes or structure will be damaged.

2. See that machine is operated properly in areas where underground pipes or structures are located by digging parallel to the pipes not across them.
3. Not allow anyone to come near the backhoe bucket or dipperstick when the machine is in use.
4. Not allow anyone to climb on machine while it is in use.
5. Instruct others in safety precautions.
6. Be in command of machine at all times.
7. Warn others of the danger of falling into the trench or hole being dug.

GENERAL DESCRIPTION AND SPECIFICATIONS

INTRODUCTION

It is the purpose of this manual to help you obtain the utmost efficiency from this product. We recommend that you **carefully read this entire manual** before operating the unit. Time spent in becoming fully acquainted with its performance features, adjustments and maintenance procedures will be repaid in satisfactory performance of the Backhoe.

The Backhoe is designed for tractors equipped with Cat. II Three-Point Hitch. Three-Point Hitches on some smaller tractors may not be strong enough and may require special mounting considerations.

The Three-Point Hitch Backhoes can be mounted to the **LONG 350, 360, 445, 460, 510, 560 and 610 tractors only** in combination with the Model 1528 or 1550 Front End Loader. In this case, optional mounting brackets must be used.

The Backhoe comes standard with male disconnects for attaching directly to the tractors remote hydraulics. A check valve has been added to the return line for protection against pressurization of the return circuit within valve.

An optional 540 or 1000 RPM Gearbox Pump Kit is available for tractors not having adequate hydraulic power.

The Kit consists of a gearbox with a built-in gear pump, elbows, filter, connectors, fittings and hoses. On some tractors it may be necessary to use a universal extension adapter to mount these Kits.

SPECIFICATIONS

(Based on I.E.M.C. Definition)

	Model No.	
	1198 +	1199B
Shipping Weight (lbs.) approx.	1235	1285
Bucket Type & Size (Volume)		
*12" Trenching (1.4 Cu. Ft.)	X	X
12" Trenching (1.4 Cu. Ft.)	X	X
18" Trenching (2.1 Cu. Ft.)	X	X
24" Trenching (2.8 Cu. Ft.)	X	X
28" Trenching (2.4 Cu. Ft.)	—	X
36" Grave Digging (3.1 Cu. Ft.)	—	X
A - Transport Height	7'-3"	10'-4"
C - Ground Clearance	15"	15"
G - Digging Depth	7'-6"	10'-6"
K - Clearance Height	5'-7"	9'-6"
L - Loading Reach	7'-1"	9'-4"
M - Reach from Center of Swing Mast Pivot Point	11'-3"	13'-11"
N - Reach from Center line of Tire to Center line of Swing Pivot	3'-3"	3'-3"
P - Bucket Rotation	140°	140°
V - Digging Force (W/24" Bucket)	4500 lbs.	
V - Digging Force (W/36" Bucket)		5000 lbs.
Swing Arc	180°	180°
Stabilizer Spread		
Operation Position	10'-9"	10'-9"
Transport Position	5'-4"	5'-4"
*12" Trenching Bucket is self-cleaning. The 28" & 36" buckets have greater roll back for better straight wall digging.		
Hydraulic System		
System Relief Valve Setting	2000 PSI	2000 PSI
Swing Circuit Relief Valve Setting	2500 PSI	2500 PSI
Max. Hydraulic Flow	10 GPM	10 GPM

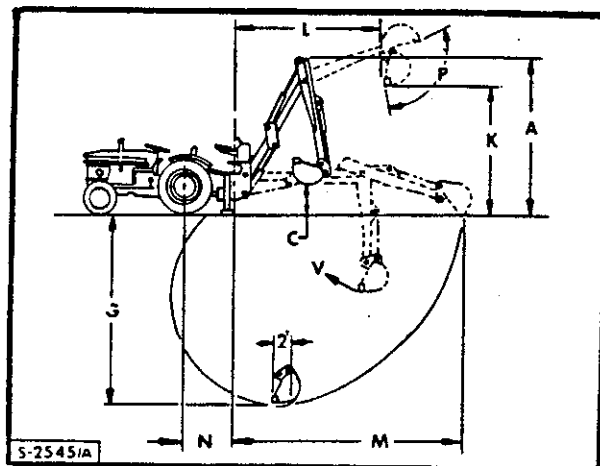


Fig. 1 — Specifications (Based on I.E.M.C. Definitions)

Optional PTO Gearbox Pump Kit	Gear Pump
Pump Type & Capacity	Rated
	10 GPM @ 540 or 1000 PTO
Hydraulic System Capacity	7.75 Gal.
Type Oil Filter	Suction line, Replacable Cartridge (33 Micron)

WARNING: ANY INCREASE IN HYDRAULIC FLOW (GREATER THAN 10 GPM) MAY RESULT IN AN UNSAFE OPERATING CONDITION DUE TO INCREASE IN RESPONSE TIME FOR GIVEN FUNCTIONS.

—All dimensions obtained with Backhoe mounted on a Long tractor (Mo. 610 with 7.50 x 16 front tires & 16.9 x 28 rear tires).

MOUNTING INSTRUCTIONS

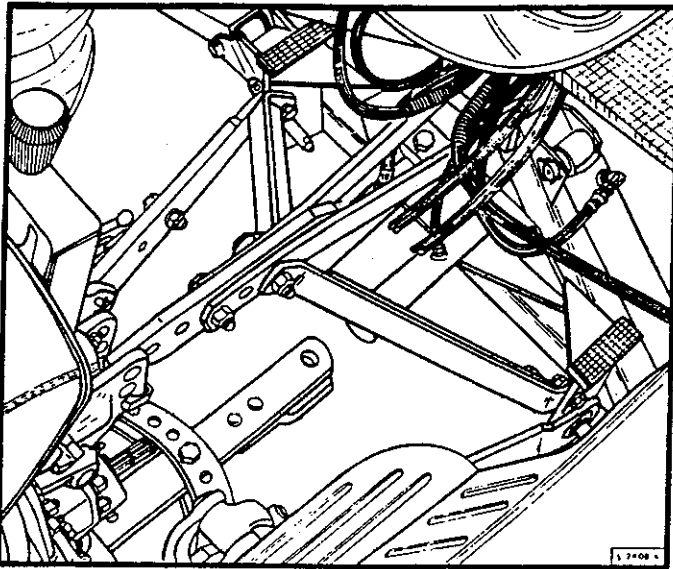


Fig. 2 — Mounting Backhoes to Three-Point Hitch.

The 3-point hitch mounted Backhoe can be installed on a variety of tractors by using the adjustment features of the Rigid Mount. With Figures 2, 3, and 4 as a guide, perform the following steps:

1. Back tractor up to backhoe.
2. Attach lower 3-point hitch bars to the pins on the Backhoe frame as in Figures 2 & 3.

3. Using spacers provided to match pin diameter, attach hitch plate assembly to upper mount of tractor 3-point hitch.
4. Raise Backhoe, using tractor lift mechanism, to obtain 6 to 15 inches clearance between bottom of Backhoe A-frame and ground level.
5. Bolt upper linkage bars (2) to upper hitch point on Backhoe's frame.
6. Bolt lower ends of left and right lower linkage assemblies to the lower mounting point on Backhoe frame.
7. Determine adjustment necessary to allow vertical positioning of the Backhoe on the tractor and set upper linkage bars on hitch plate assembly at the point. Bolt linkage bars to hitch plate assembly after positioning left and right lower linkage assemblies at the appropriate point on the upper linkage bars to retain vertical positioning of the Backhoe.

CAUTION:

The Backhoes can not be mounted to LONG Models 360, 460, 510, or 610 Tractors using the standard three-point hitch.

Special mounting kits available as outlined in this manual.

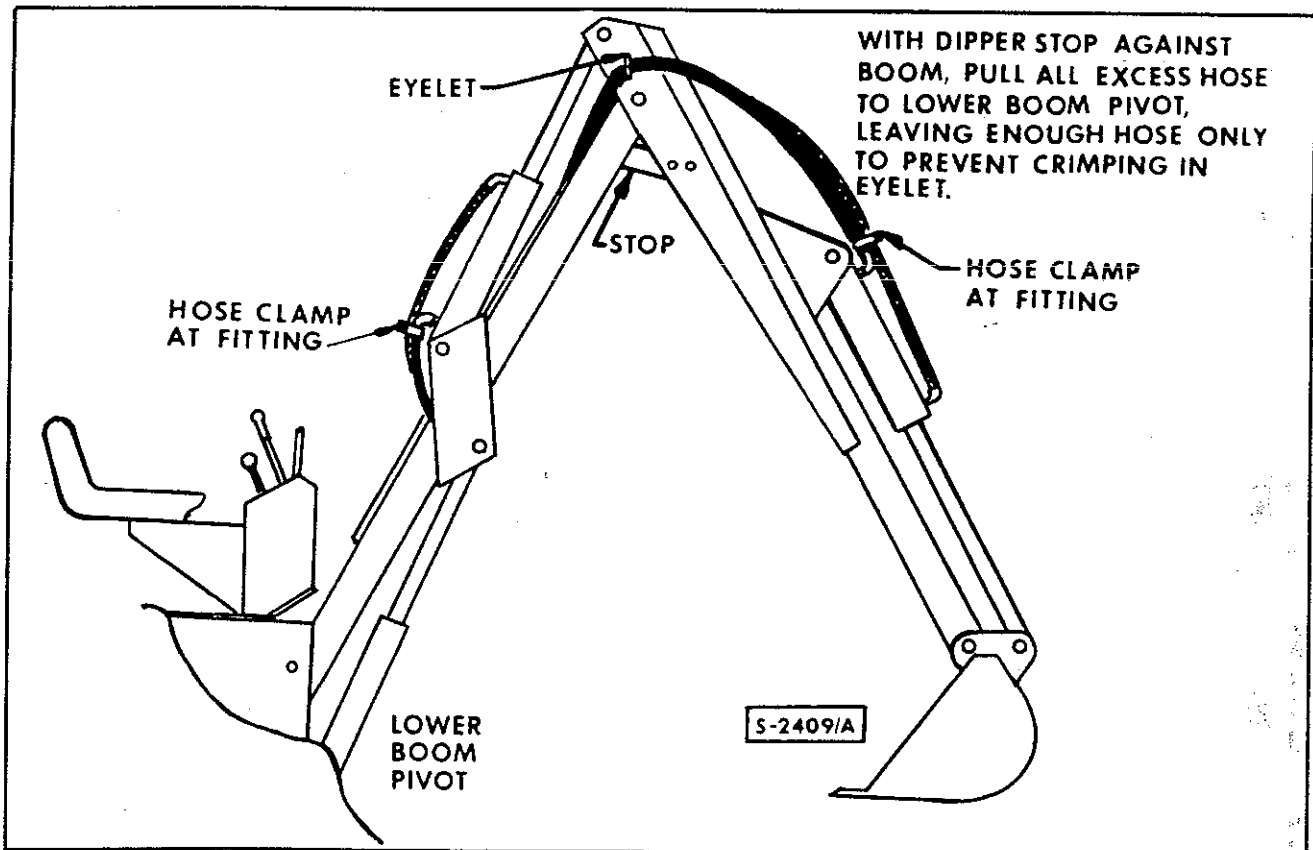
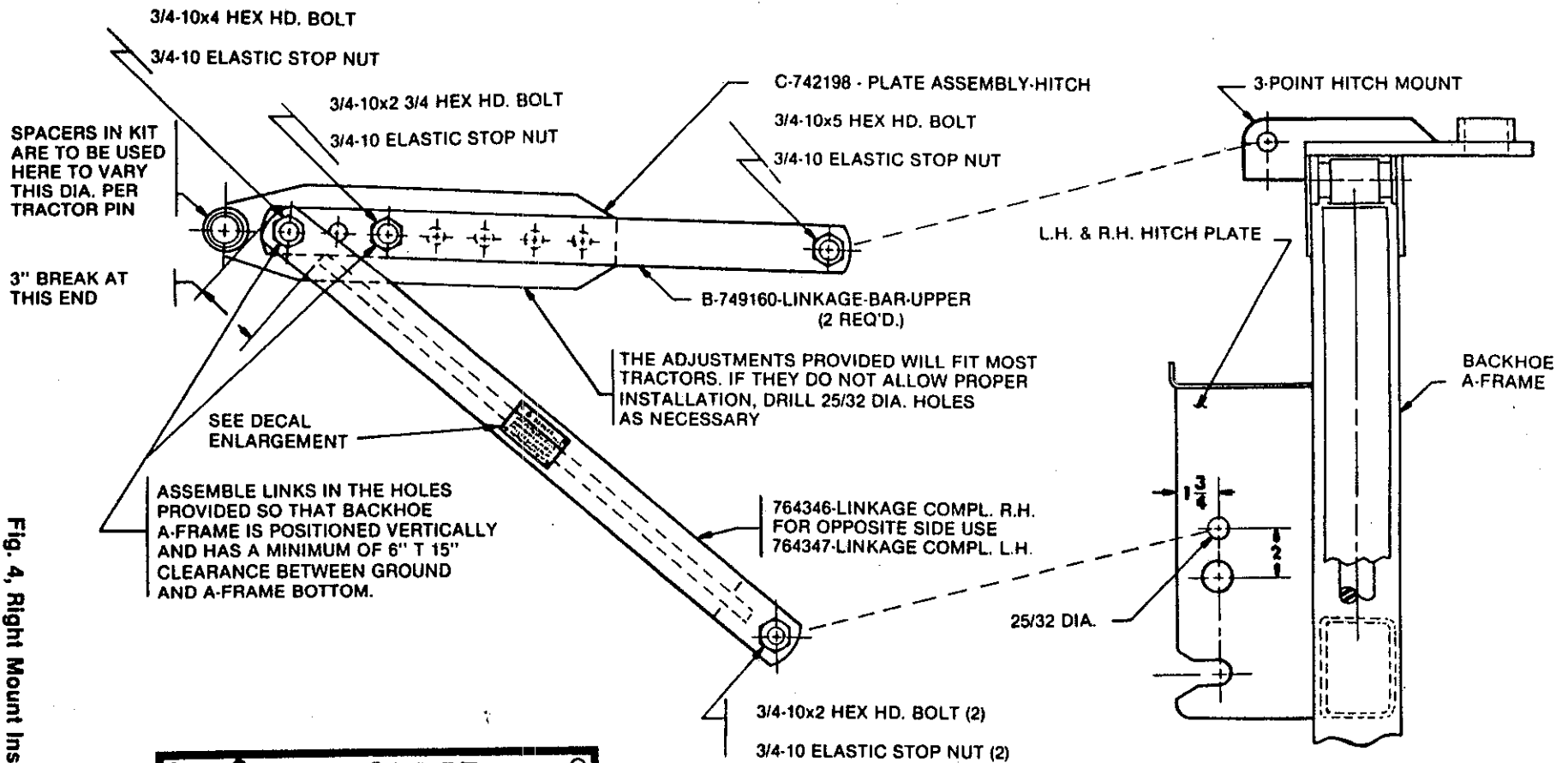


Fig. 3 — Hose Routing and Support (1199B)

Fig. 4, Right Mount Installation



⚠ DANGER 76433B
DO NOT OPERATE BACKHOE WITHOUT THIS MANDATORY RIGID MOUNT MAINTAIN 250 (FOOT POUNDS BOLT TORQUE)

DECAL ENLARGEMENT

S-2410/B

NOTE: TORQUE ALL 3/4 BOLTS TO 250 FT.-POUNDS

Attaching Backhoe to Tractor Hydraulics

Attach male disconnects to quick disconnects on tractor (Reference Figure 6).

Making sure there is ample room to operate all functions of the backhoe safely, slowly operate backhoe to fill all cylinders, hoses and valves with oil.

NOTE:

Tractor hydraulic oil supply must be maintained at proper level during initial operation. Do not overfill. Final check should be taken with the Backhoe in transport position.

Backhoe should be operated with a minimum oil supply of approximately 4 GPM and not more than approximately 10 GPM. Operating Backhoe above 10 GPM will produce a faster than normal cycle time and may endanger the operator.

Should backhoe fail to operate after connecting to tractors quick disconnect, reverse coupling.

If the optional gearbox and pump kit is used, the gearbox must be secured to the tractor with chains as shown in the instructions provided with the kit. See not below. This precaution will protect the gearbox from possible rotation as the internal pressure builds. The kit is installed as follows:

1. Mount gearbox on tractor PTO shaft. (Fig. 5).
2. Connect filter and hoses between gear pump and Backhoe as shown in Figure 6.

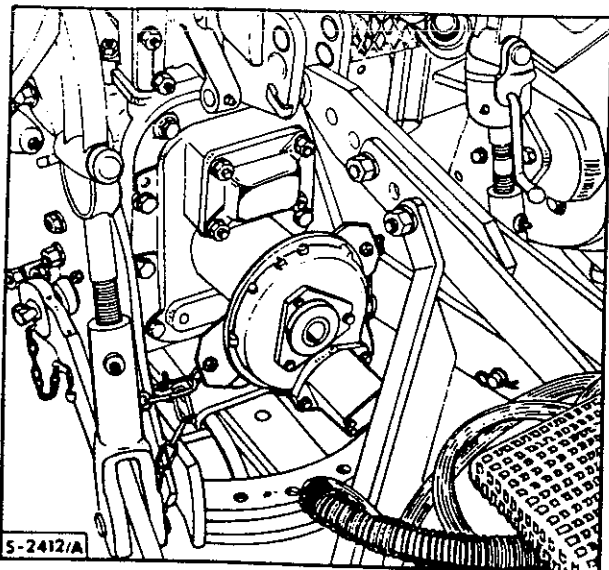


Fig. 5 — Attaching Gearbox and PTO Pump on P.T.O. shaft.

NOTE:

P.T.O. Gearbox Kit also comes with additional parts which must be installed on the Backhoe prior to operation. (Ref. Fig. 6, Schematic for Attaching PTO Pump Kit.

When mounting Backhoe to LONG 350, 360, 445, 460, 510 or 610 Tractors, using Kit 747042 and either the model 1528 or 1550 Loader, the following must be performed.

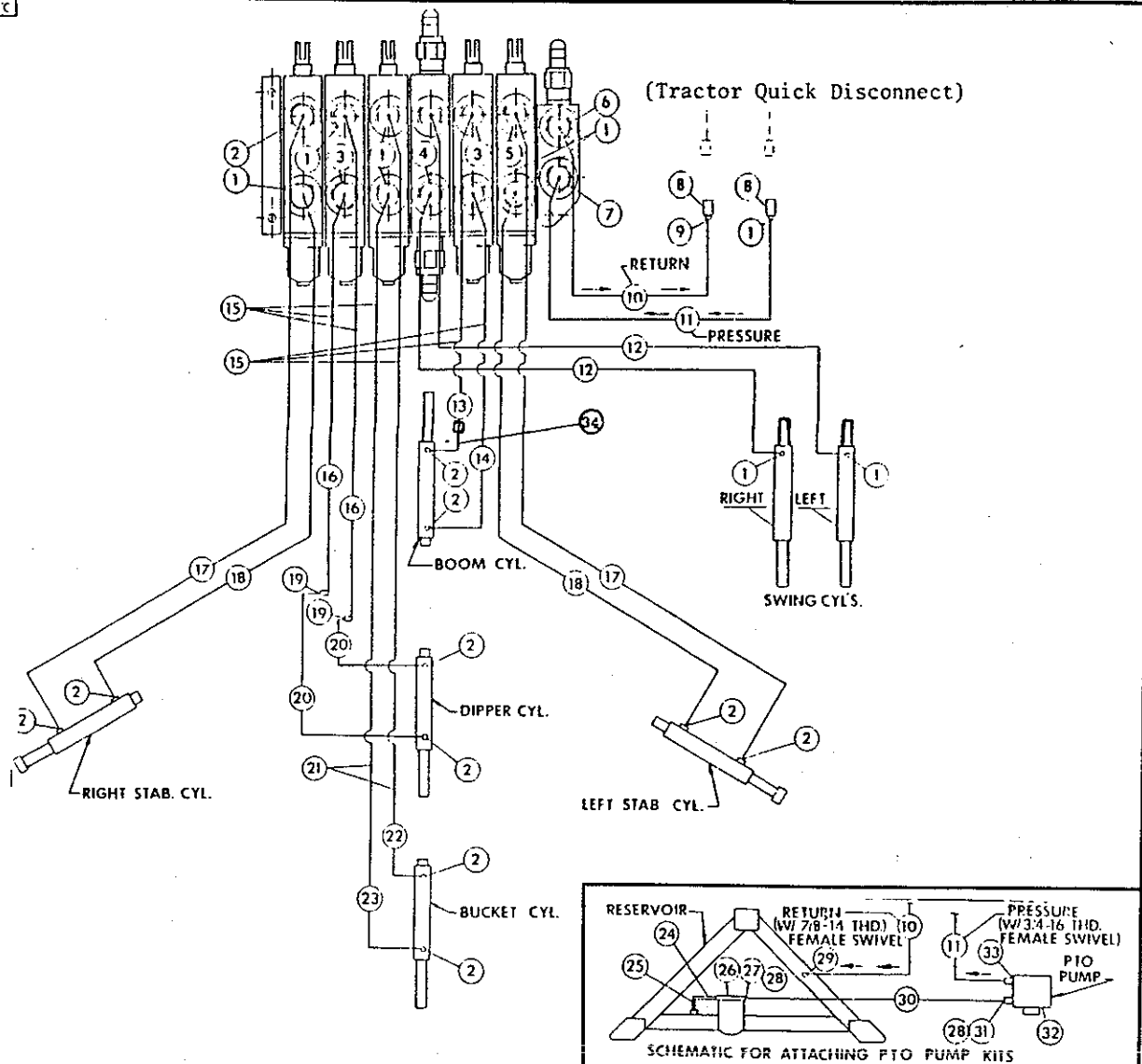
1. Pin support assemblies to Loader frame & Fig. 7)
2. Position brace assemblies on Loader frame and bolt in place.
3. Bolt support assemblies to Backhoe A-frame at lower 3-point hitch pin holes.
4. Align Backhoe upper mount hole with brace assemblies and bolt in place.
5. Bolt tie bar between brace assemblies.
6. Remove the power-beyond plug from the Loader valve and replace it with the power-beyond sleeve.
7. Attach Port Assembly to seat bracket on right hand side of tractor.
8. Remove cap from return line on Loader reservoir and attach Backhoe return line.
9. Connect remaining hoses as per Fig. 8. All steps in the hydraulic installation require assembly of fittings as called for in diagram.

Mounting Backhoe directly to the tractor can be accomplished by using 950586 & 950569 Kit, refer to Fig. 6c for assembly layout.

Should tractor be equipped with Long Model 1548 Front Loader, Kit *950569 will not be required.

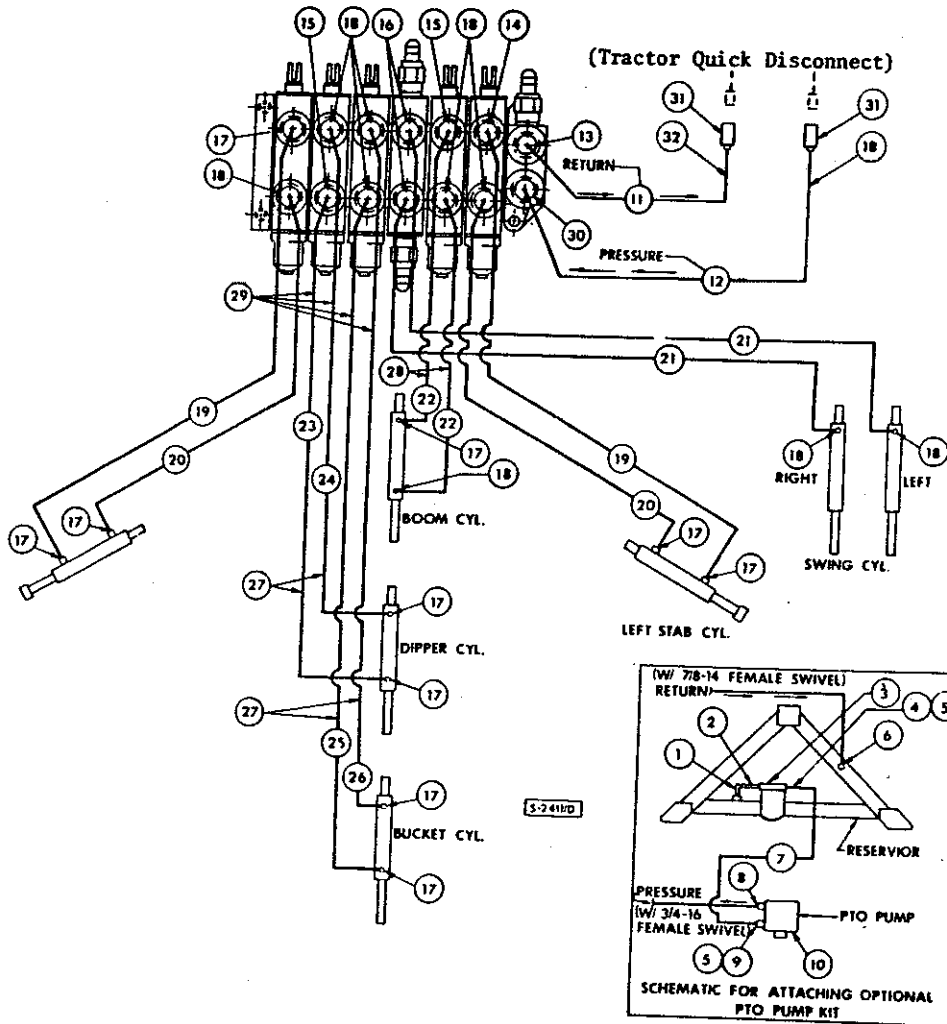
ACHEMATIC - HYDRAULIC MODEL 1198 BACKHOE

S-2676 C



Dia. NO.	Part No. Description	Qt. Req'd.	Dia. NO.	Part No. Description	Qt. Req'd.
1	730262 Connector (3/4-3/4)	9	18	753809 Hose Assembly-Stabilizer (Short)	2
2	735556 Elbow - 90° Adj (3/4-16)	11	19	775993 Bulkhead 90° #8	2
3	767497 Fitting Assy. .125 Restrictor	2	20	787406 Hose Assembly-Dipper	2
4	767496 Fitting Assy. #59 Restrictor	2	21	787499 Clamp-Adjustable	2
5	743742 Elbow - 45° (3/4-16)	1	22	787408 Hose Assembly-Bucket	1
6	786494 Fitting Assy. (Check Valve)	1	23	787407 Hose Assembly-Bucket	1
7	733559 Elbow 90° Adj. (7/8-14)	1	24	9-91196 Nipple-3/4 x 2 1/2	1
8	776868 Coupler-Male	2	25	9-91014 Elbow-90°-3/4 Pipe	1
9	735558 Connector-(7/8-14 to 3/4-16 W/O-Ring)	1	26	738521 Filter Assembly	1
10	786492 Hose Assembly-Return	1	27	729897 Nipple	1
11	786493 Hose Assembly-Pressure	1	28	731133 Clamp-Hose	2
12	753805 Hose Assembly-Swing	2	29	735834 Elbow-90°	1
13	787413 Hose Assembly-Boom	1	30	735832 Hose-Suction	1
14	787409 Hose Assembly-Boom (Long)	1	31	809181 Elbow - 90° Adj.	1
15	766648 Clamp (1 1/2")	2	32	754575 Pump-Hydraulic	1
16	787410 Hose Assembly-Dipper	2	33	730873 Connector - W/O-Ring	1
17	753804 Hose Assembly-Stabilizer (Long)	2	34	787458 Tube Assembly Cylinder	1

SCHEMATIC - HYDRAULIC MODEL 1199B BACKHOE



Dia. No. Part No.	Description	Qt. Req'd.	Dia. No. Part No.	Description	Qt. Req'd.
1 9-91014	*Elbow-90°-¾ Pipe	1	15 767497	Fitting Assembly-.125 Dia.	2
2 9-91196	*Nipple - ¾ x 2½	1	16 767496	Fitting Assembly-#59 Drill (.041)	2
3 738521	*Filter Assembly Complete	1	17 735556	Elbow - 90°	10
— 738523	*Filter Replacement Element	1	18 730262	Conn. W/O-Rings (¾-16)	10
4 729897	*Nipple	1	19 753804	Hose Assembly-Stabilizer	2
5 731133	*Clamp	2	20 753809	Hose Assembly-Stabilizer	2
6 738534	*Elbow-90°	1	21 753805	Hose Assembly-Swing	2
7 735832	*Hose Suction	1	22 753808	Hose Assembly-Boom	2
8 730873	*Connector-W/O-Ring	2	23 753810	Hose Assembly-Dipper	1
9 809181	*Elbow-90° Adj. (Use w/Pump 740687)	1	24 753811	Hose Assembly-Dipper	1
9 738520	*Elbow 90° (Use w/pump 754575 (Alt.))	1	25 753812	Hose Assembly-Bucket	1
10 754575	*Hyd. Pump Assy. (Warner)	1	26 753813	Hose Assembly-Bucket	1
10 740687	Hyd. Pump (Vickers) (Alt.)	1	27 767499	Clamp-Adjusting	2
11 786492	Hose Assembly-Return	1	28 766648	Clamp-1½"	1
12 786493	Hose Assembly-Pressure	1	29 733788	Clamp-2"	1
13 786494	Elbow-45°-(¾-14)	1	30 733559	Elbow-90° Adj. (¾-14)	1
14 743742	Elbow - 45° - (¾ - 16)	1	31 776868	Coupler-Male	2
			32 735558	Conn. ¾-14 To ¾-16 W/O Ring	1

*Indicates Parts That Are Part Of Optional Kits.

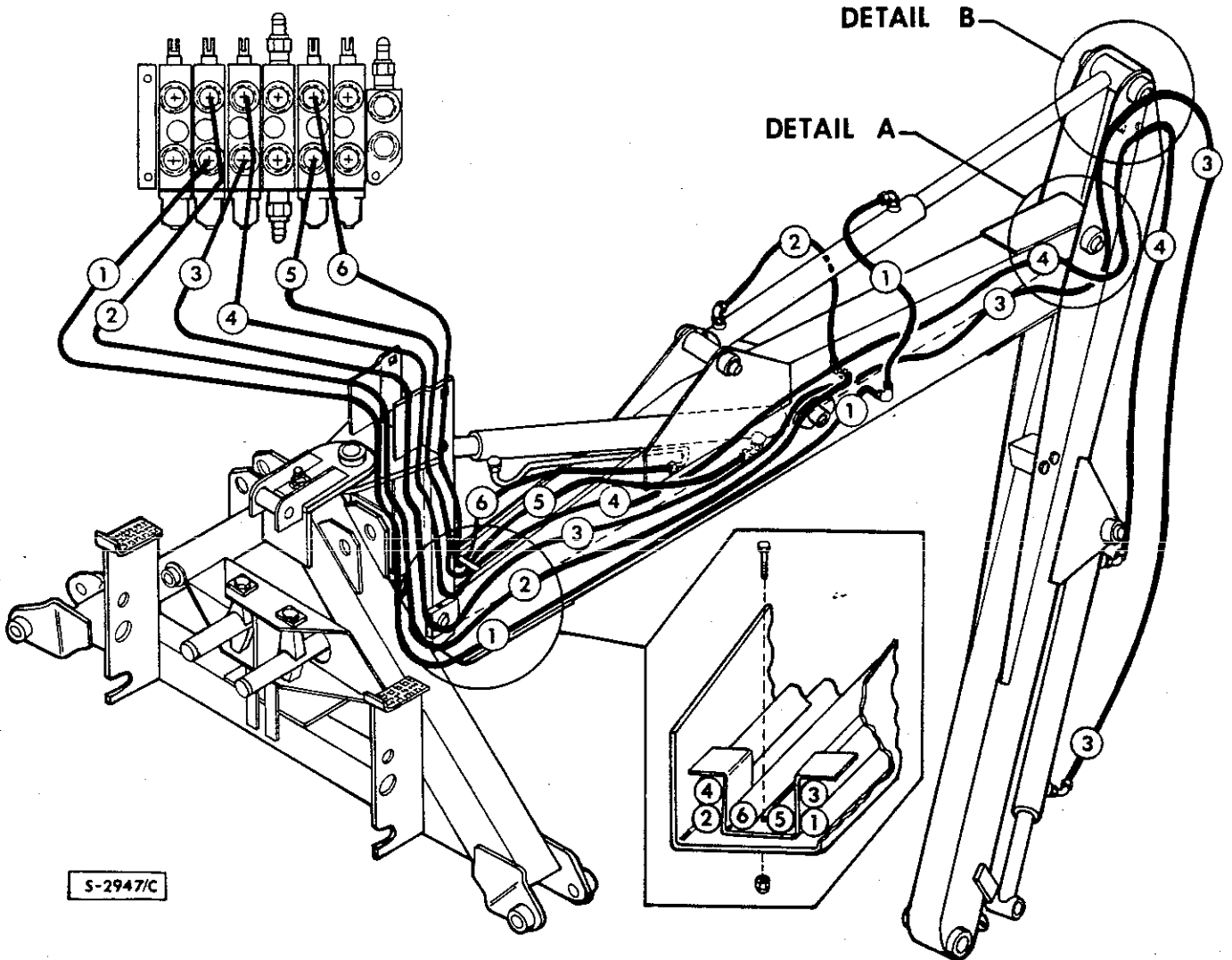
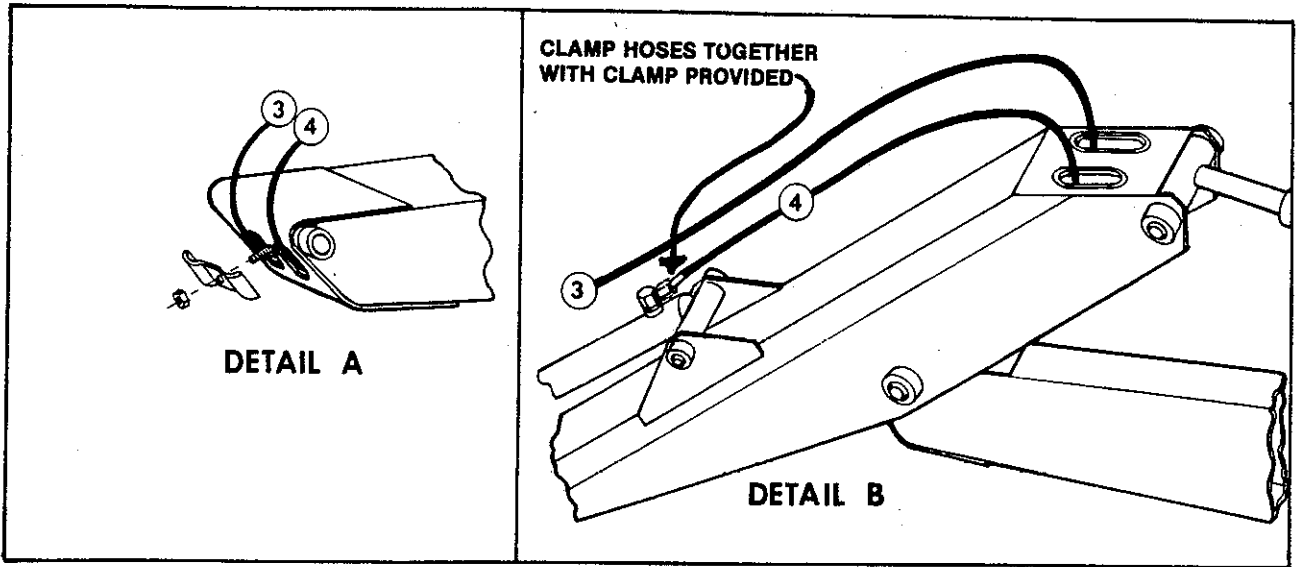


Fig. 6B — Hose Routing — 1198 Backhoe

DIAGRAM NO.	DESCRIPTION	QTY. REQ'D.
1	Bolt-Hex (1 - 8 x 3)	4
2	Pin Assembly	2
3	Bolt-Hex (5/8 - 11 x 9)	8
4	Support Assembly-Backhoe	2
5	Washer-Flat (3/4)	4
6	U-Bolt-Special	2
7 x	U-Bolt (3/4-10 x 4 1/4 x 5)	2
7a x	Pipe Assembly	1
8 x	Washer-Lock (5/8)	14
9 x	Bolt-Hex Head (M16-15 x 70 mm)	4
10 x	Bolt-Hex Head (M15-1.5 x 40 mm)	4
11 x	Mount Assembly-Tube	2
12 x	Washer-Flat (5/8)	5
13 x	Bushing (1 1/2 x 3/8 THK.)	4
14	U-Bolt-Square	2
15	Nut-Hex (3/4-10)	8
16	Washer-Lock (3/4)	8
17	Bracket Assembly-Backhoe Att.	2
18	Retaining Pin	2
19	Plate-Axle	2
20	Washers	8
21	Prevailing Torque Nut	8
22	Mount Assembly-Diag. Brace	2
23	Washer-Flat-(5/8)	4
24	Bolt-Hex (16 mm-1.5 x 40 mm)	4
25	Bolt-Hex (3/4-10 x 3)	2
26	Nut-Elastic Stop (3/4-10)	3
27	Diagonal Brace	2
28	Nut-Hex (5/8-11)	6
29	Bolt-Hex Head (3/4-10 x 6)	1
30	Tie Bar	1
31	Washer-Flat (1")	4
32	Washer Lock (1")	4
33	Nut-Hex (1"-8")	4
34	Bolt-Hex Head (5/8-11 x 1 1/2)	2

X - Indicates parts that are in Kit 950569.

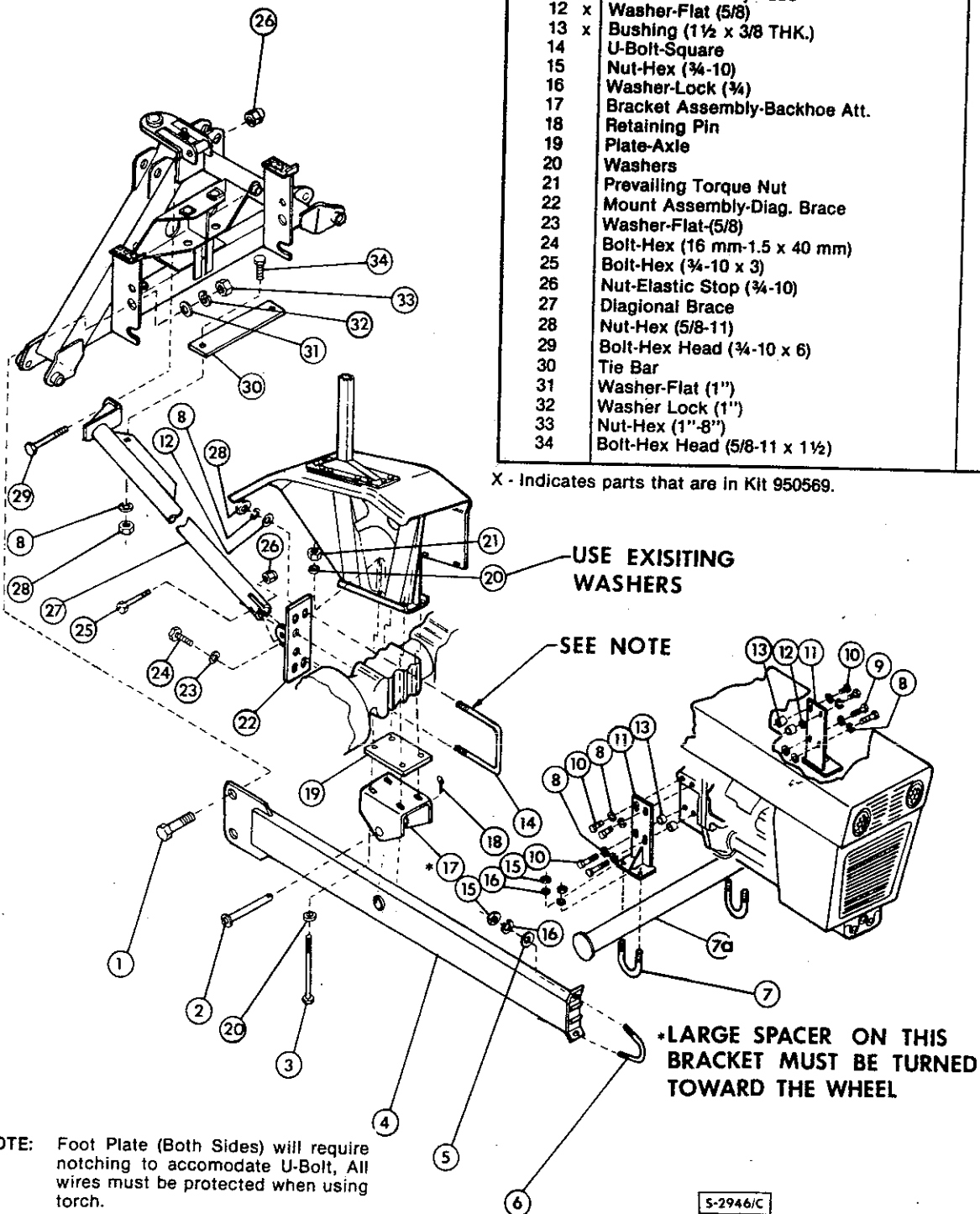


Fig. 6c — Backhoe Mounting — Long Tractors only
 Kits: 950569 — Mid Mount — 950568 — Mounting Kit (Rear)

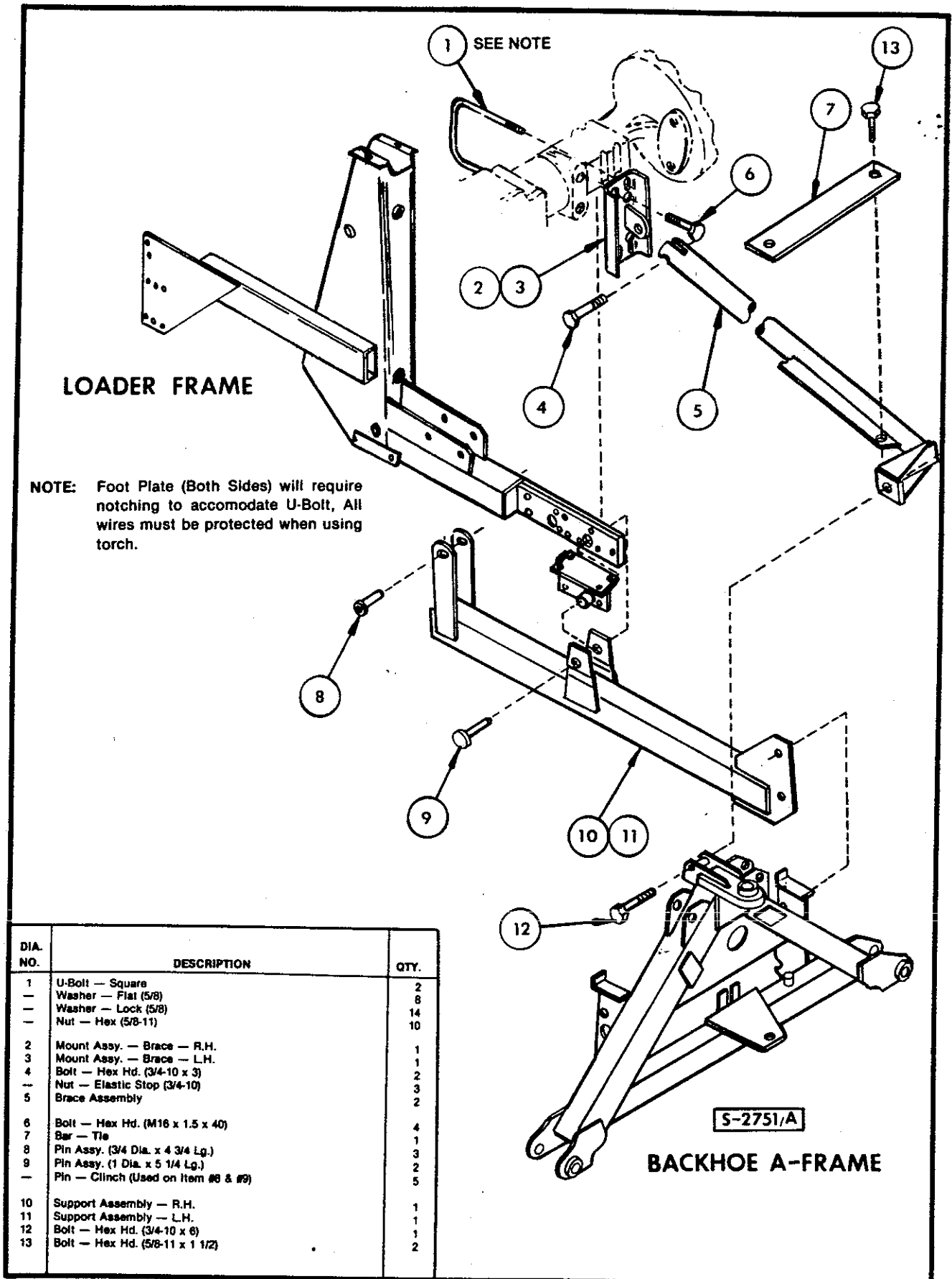
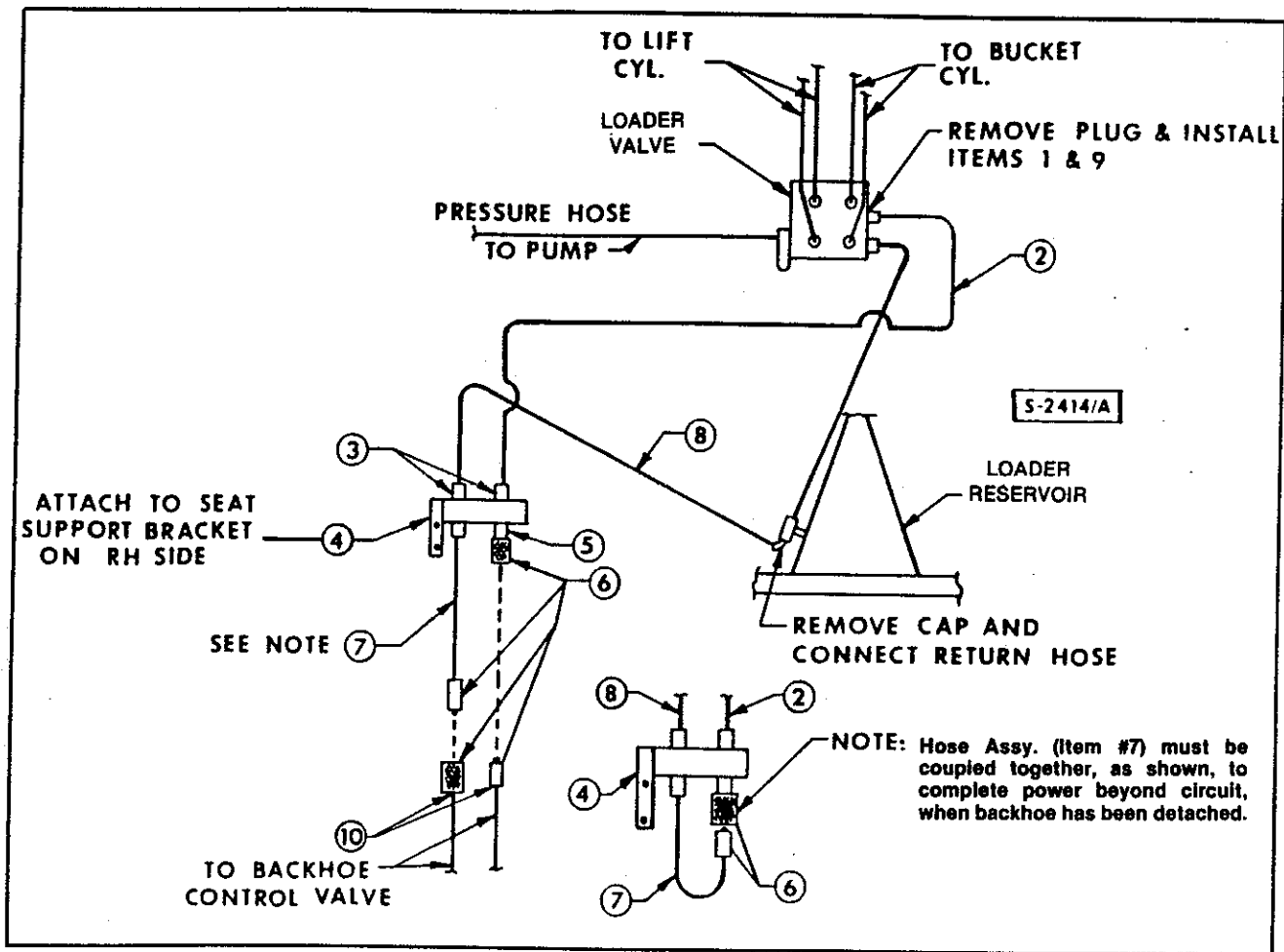


Fig. 7 — Backhoe Mounting — Long Tractor Only
747042 Mounting Kit (Must be Used in conjunction w/1550 loader subframes)



Item	Part No.	Description	Qty
1	749512	SLV.-POWER BEYOND	1
2	745932	HOE-POWER BEYOND 60½"	1
3	736583	CONNECTOR NPT/JIC	2
4	749481	BAR ASSY-PORT	1
5	734534	CONNECTOR NPT/JIC	1

Item	Part No.	Description	Qty
6	735542	QUICK DISCONNECT	2
7	745924	HOSE-RETURN 16"	1
8	749482	HOSE ASSY-RETURN 39"	1
9	745927	ELBOW NPT/JIC	1
10	735558	ADAPTER-ST.	2

*For cross valves only.
Use 775388 for commercial
sharing valve.

Fig. 8 — Hydraulic Diagram Utilizing Loader Hydraulics

CONTROL IDENTIFICATION

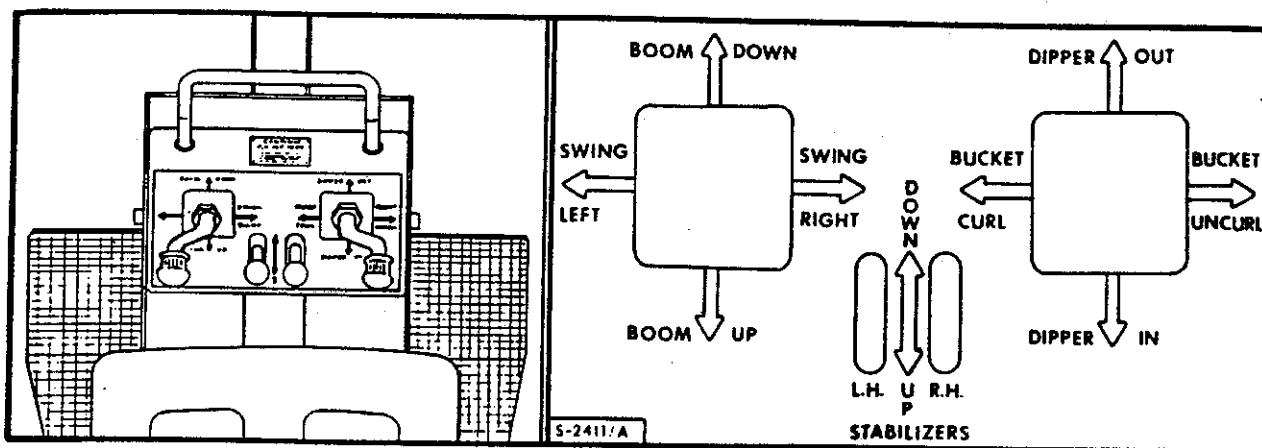


Fig. 9 — Console and Controls

All "right hand" and "left hand" backhoe operating references are determined by sitting in the operator's seat, facing the boom, dipper stick, and bucket.

Note: Before attempting to do any actual work with the backhoe, familiarize yourself with the controls. The most efficient use of these controls will be understood by the operator after a period of practice.

All hydraulic functions of the Three Point Hitch Backhoe are controlled by 4 levers. The operator swings with the digging components for the best possible view of the work.

Dipper Arm — moved out by pushing forward on the control lever that is located on the right side of the control panel. The dipper is moved in by pulling back on this same lever. (See Fig. 9)

Bucket — lever located on the right hand side of the control panel also actuates the bucket. Move this control lever to the left to curl the bucket, and to the right to uncurl the bucket.

Boom — raised by pulling back on the control lever that is located on the left hand side of the control panel. It is lowered by pushing forward on this same lever.

Swing — lever located on the left hand side of the control panel also regulates the swing of the boom. The boom can be swung to the right or to the left by moving this control lever in the respective direction.

Stabilizers — left and righthand are operated by the control levers in the middle of the console. Pull back to raise the stabilizers and push forward to lower them.

Seat Adjustment — The seat mount (See Fig. 10) has been designed with a slot which permits the seat to be adjusted toward the controls or further away to suit the operator. Adjust the seat until the reach for the controls feels comfortable.

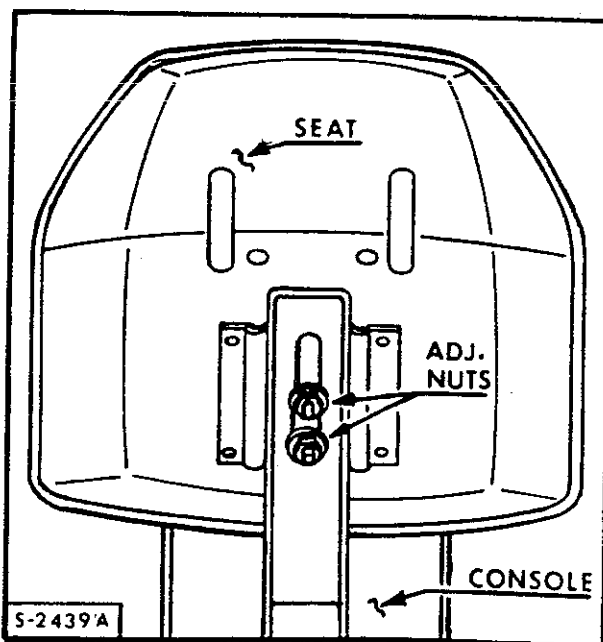


Fig. 10 — Seat Adjustment

OPERATION

STABILIZERS

The stabilizers on the backhoe extend beyond the rear tires to provide balance and stability while digging with the backhoe. They also enable the operator to level the backhoe on uneven ground. Each stabilizer is actuated by a hydraulic cylinder. (Reference Figures 11 & 12)

The stabilizers have a minimum transporting spread of 5'4", and a maximum spread of 10'9".

⚠ Caution: The stabilizers should be lowered to the ground before operating the backhoe.

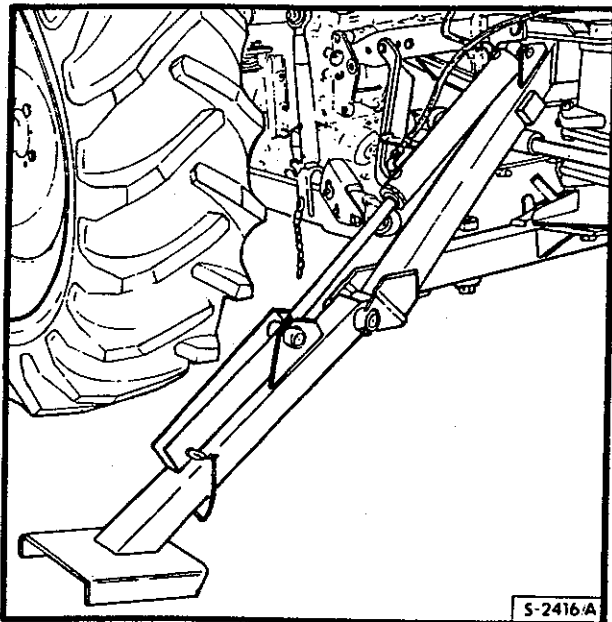


Fig. 11 — Stabilizers Lowered

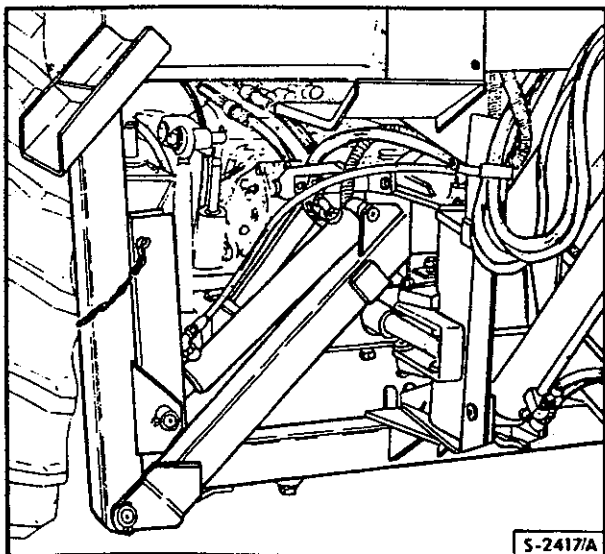


Fig. 12 — Stabilizers Raised

DIGGING

Follow the suggestions in this section of the manual to obtain the best performance from the Backhoe.

Due to the hydraulic power and weight of the backhoe, it may be desirable to place additional weight for stability on the front of the tractor.

To achieve the full efficiency of the backhoe, it is necessary to know the correct angle for digging. At initial contact with ground, the boom and dipper arm should be positioned at an angle for best penetration (See Fig. 13.) The boom and dipper should not be extended in a straight line. (See Fig. 14).

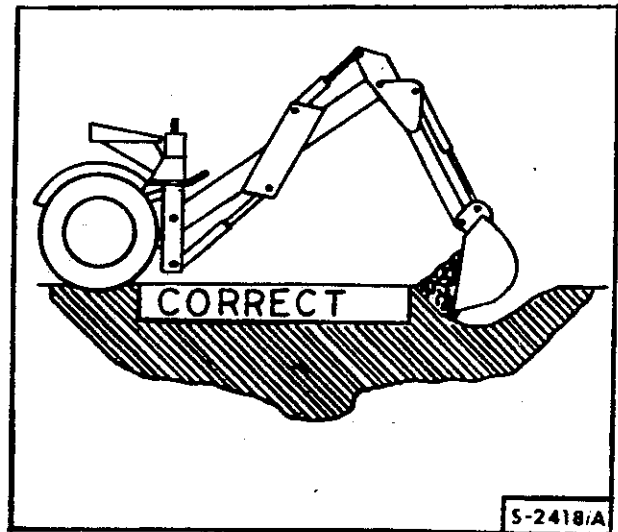


Fig. 13 — Correct Digging Angle

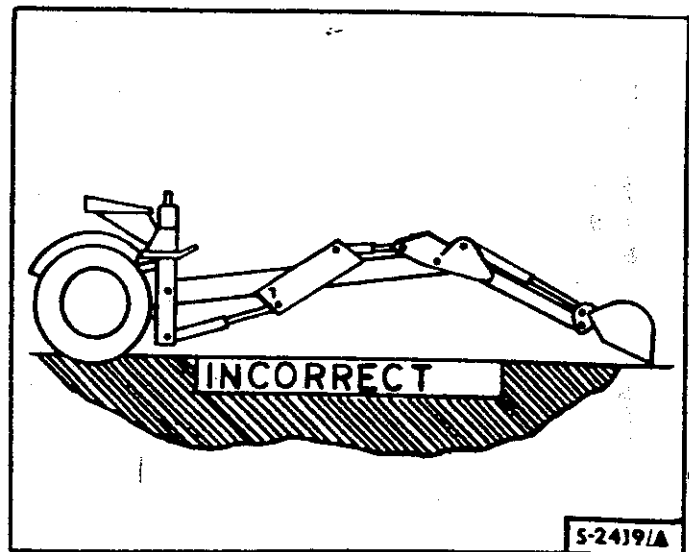


Fig. 14 — Incorrect Digging Angle

The backhoe operator should determine the length of his pass and judge the penetration so the bucket will be full at the end of each pass. The depth of penetration will depend upon the type of soil. The bucket should be raised from the hole with the boom cylinder as soon as the bucket is full. No work can be performed by dragging a full bucket. Any time the dipper arm cylinder can not move the dipper arm, it is then necessary to actuate the bucket. This will lessen the "bite" and ease the bucket so the dipper can be moved.

The bucket and dipper arm cylinders should be worked alternately and simultaneously.

The manner in which to obtain a full bucket every time is to work from the top down and taking a shallow enough "bite" to enable the operator to make a clean, smooth pass.

While performing digging operations, be sure the bucket teeth are at the correct angle for break-out and ease of filling the bucket (Fig. 15, 16, 17).

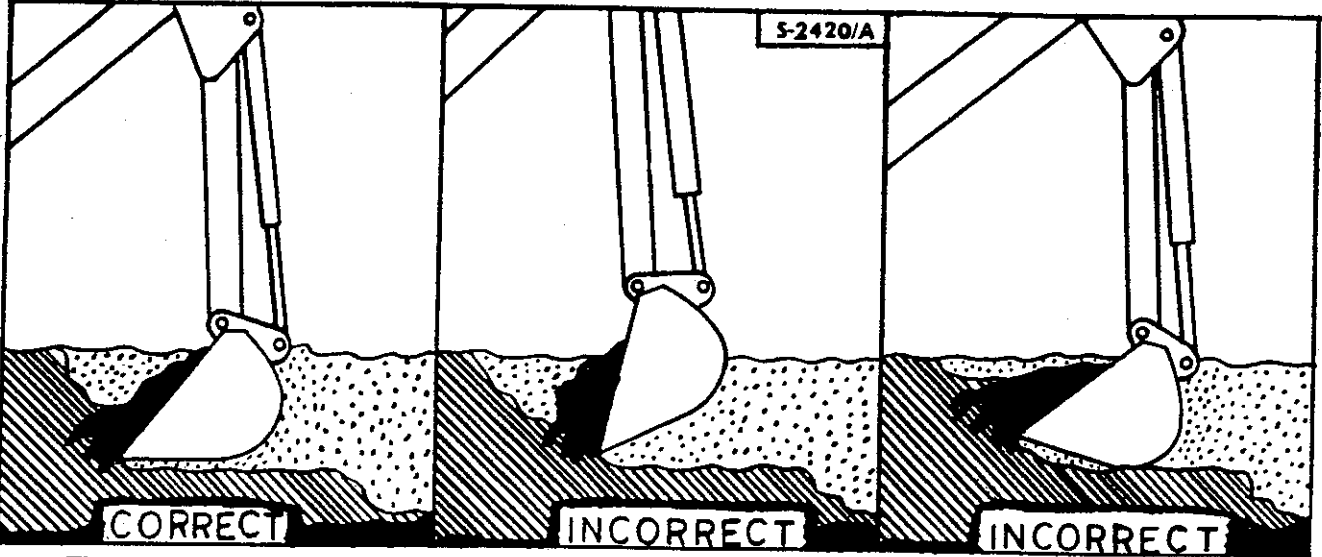


Fig. 15 — Correct Bucket Angle

Fig. 16 — Incorrect Bucket Angle

Fig. 17 — Incorrect Bucket Angle

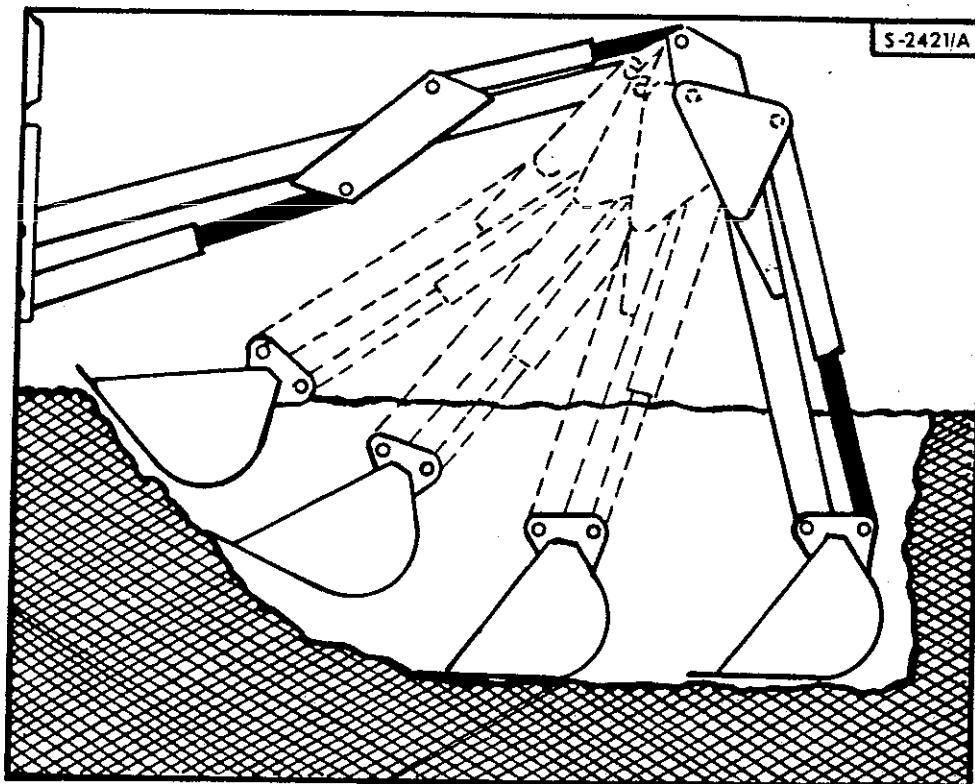


Fig. 18 — Correct Follow-through

When the filled bucket is being raised, do not pull the dipper arm closer to the boom than necessary to clear the hole (Fig. 19). This will eliminate the need for extending the dipper arm to dump the bucket on the spoil pile. All operations should be made smoothly for efficient operation. Yanking on the control levers and jamming the bucket will not do the work, but can result in heating of the oil and inefficient operation. Once the bucket is clear of the ditch or hole, it can be swung to the side for dumping. At the start of the work, dump the material far enough to the side so there will be ample room to pile the entire spoil.

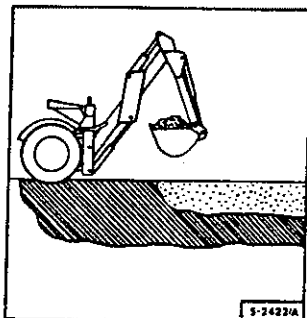


Fig. 19, Raising Bucket from Hole

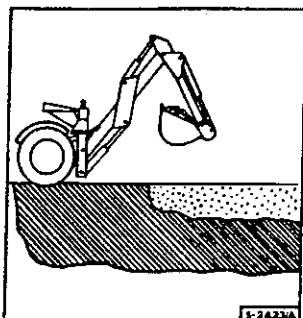


Fig. 20, Bucket close to Dipper Arm when loading truck

Loading trucks is performed satisfactorily with the backhoe by curling the bucket close to the dipper arm to prevent spillage from the bucket when it is raised. (Fig. 20).

When moving the backhoe, it may be preferable to push the tractor with the backhoe dipper arm rather than driving it. This can be done satisfactorily, provided it is done in the proper manner. The correct way in which to move the tractor is to have the dipper arm positioned forward of the dipper arm and boom pivot point. (See Fig. 21)

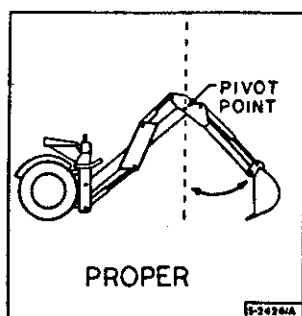


Fig. 21, Moving the tractor

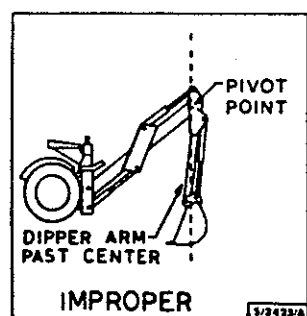


Fig. 22, Moving the tractor

Do not move the tractor with the backhoe dipper arm positioned back of the dipper arm and boom pivot point. The improper procedure allows the dipper arm to go back of the dipper arm and boom pivot point. This can place a severe shock load on the dipper arm cylinder that could result in severe damage to the cylinder, or related parts. (See Fig. 22)

With the 3 Point Hitch mounted Backhoes you can make a full 180° swing, so it is possible to dump on either side of the excavation as desired. The swing on the backhoe is completely hydraulic and needs no pin moving or other mechanical changes to make the 180° swing.

⚠ Caution: Before swinging the backhoe boom, make sure there is ample clearance for the swing and that all people are out of the way.

When digging trenches, usually it is important to obtain a level bottom. Inexperienced operators sometimes have difficulty in achieving this. Level bottoms are achieved by setting the bucket teeth on a slight angle and maintaining this angle by gradually uncurling the bucket as the dipper is drawn toward the operator. At the same time, pull back intermittently on the boom control lever. This will feather the boom and maintain a level bottom.

To dig a straight trench, it is best to lime a mark about one foot off center of the intended trench. Then, make a marking on the backhoe frame about one foot off center. The operator can maintain a straight line by keeping the mark on the backhoe directly over the lime marking on the ground.

When digging for a pipe leak, always dig along the line of pipe and never across it. Excavate around the leak to give ample room for the repair to be made.

When trenching on a slope, always start at the top and work down. When working across a slope, make full use of the stabilizers on the backhoe to level the machine. Always pile the dirt on the uphill side. Caution should be exercised when working on slopes. The rate of travel on slopes, hillsides, and curves should always be such that there is no danger of tipping.

TRANSPORTING

⚠ Caution: At no time should the machine be transported with the digging components extended. When transporting over rough or uneven ground, keep the travel speed within the limits necessary for safe operation.

⚠ Caution: The stabilizers should be set to the narrowest position when the backhoe is being transported on public roads.

To prevent the boom from drifting during transport, the swing-post can be locked in a stationary position. It locks in the center with the use of a square pin inserted between two stoplates which are located on the A-frame directly below the swing-cylinders (Fig. 23).

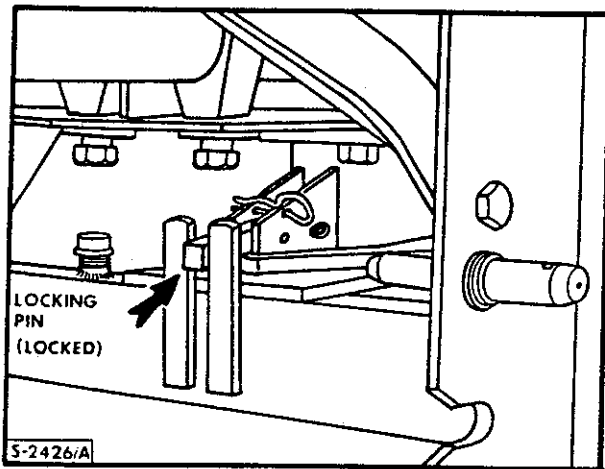


Fig. 23 — Swing locking Pin (Locked Position)

When the backhoe is to be placed into operation, temporarily remove the hairpin cotter which holds the square pin in place. Raise the square pin and insert the hairpin cotter back into position. Let the square pin rest on top of the hairpin cotter (Fig. 24).

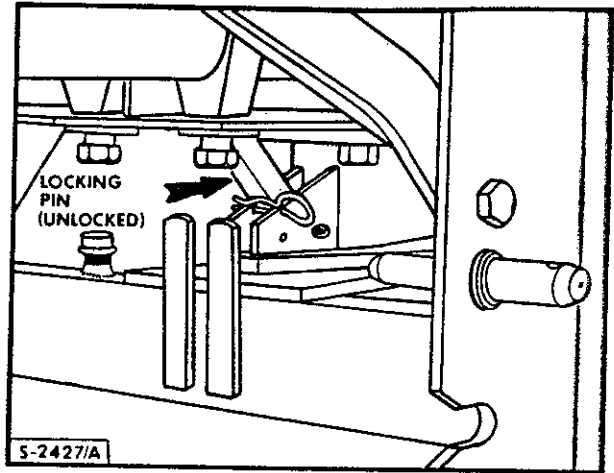


Fig. 24 — Swing Locking Pin (Unlocked)

When preparing the backhoe for transport, raise the boom to full height. Curl the bucket up to the dipper arm and retract the dipper arm close to the boom and lock swing-post in place.

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

MAINTENANCE

This section of the manual has been prepared as a guide for minor adjustments and repairs which are necessary from time to time. When a major overhaul or an adjustment (other than the ones described in this section) is necessary, call your authorized Long dealer.

The maintenance given the backhoe will be repaid by the performance and length of service life. The following items should be checked daily:

1. Check all mounting and fastening bolts.
2. Check all keeper pins and pivot pins.
3. Check hydraulic cylinders, the connections, and control valves for oil leakage.
4. Check hydraulic oil level in tractor or backhoe reservoir (see following text).
5. Check hydraulic cylinder piston rods for scratches and score marks. Also check for sharp practicles inbedded in the wiper ring.

Scratches and score marks should be polished out; or if excessively deep, have the piston rods replaced. Scratches and score marks can be removed by using a fine grit stone. Do not use coarse grit sandpaper or emery cloth.

If the hydraulic cylinder will not hold the load (when the control valve is in neutral), it could mean that the piston packing is worn. If it is determined that the leak is in the packing, the cylinder must be serviced.

If any weld repairs are to be made on the backhoe, use E-60 or E-70 series welding rod. This holds true for the entire backhoe with the exception of the cutter blade on the buckets. Use stainless steel welding rod on the cutter blade (Figs. 25 & 26).

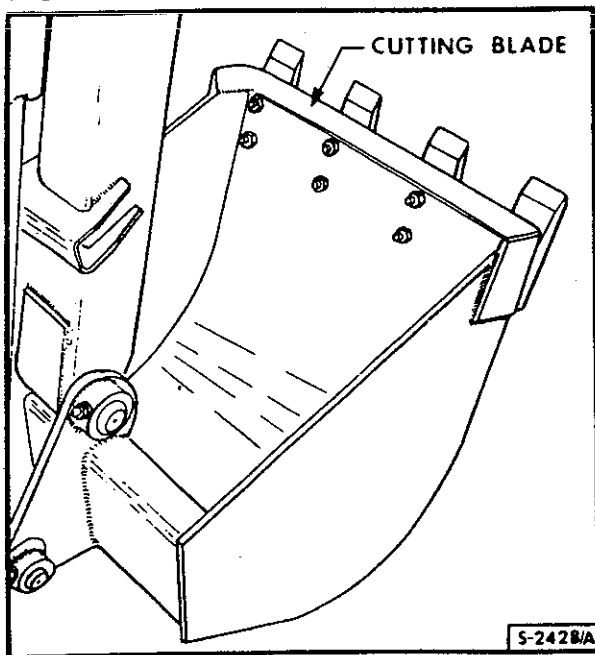


Fig. 25 — Cutter Blade on Bucket

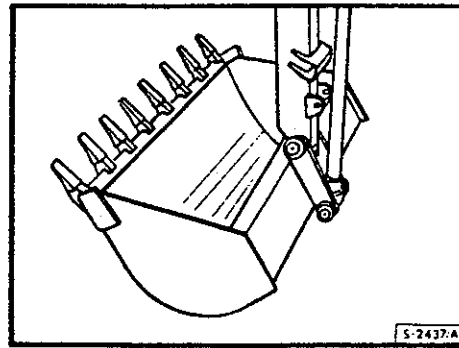


Fig. 26 — Cutter Blade on Bucket

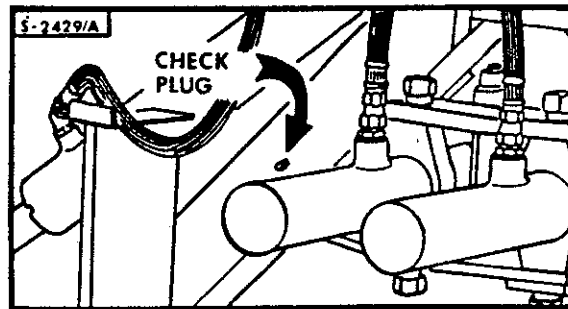


Fig. 27 — Check Plug on A-Frame Reservoir*

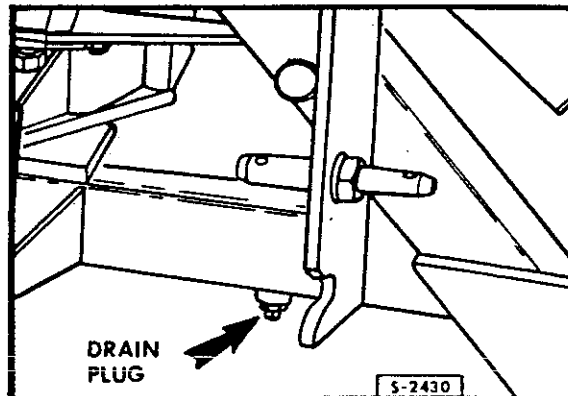


Fig. 28 — Drain Plug on A-Frame Reservoir*

Backhoe Reservoir*

The oil reservoir is built into the A-frame of the Backhoe. The oil level should be checked daily and kept at a constant level. This can be checked by removing the pipe plug on the side of the A-frame (Fig. 27). The drain plug for the reservoir is located underneath the A-frame as shown in Fig. 28.

*Applies to Backhoe Utilizing Optional PTO Pump.

In order to obtain an accurate measurement of the reservoir oil level, the tractor must be level. The oil level must be checked after filling the system and again after the machine has operated sufficiently to expel all air from the system. All checks are to be made with the backhoe in transport position and all cylinders retracted.

The breather and filler plug are located at the top of the A-frame (Fig. 29). Always keep this area clean.

RELIEF VALVE

The Backhoe is equipped with a main relief valve in the hydraulic circuit set at 2000 psi. The swing circuit relief is set at 2500 psi. This is a delicate precision-made part, and a very small piece of foreign material may sometimes be trapped in the relief valve causing it to stick in the open position. When this occurs, the backhoe loses most of its power and cannot be operated satisfactorily.

It is recommended that a spare relief valve be carried with the backhoe at all times.

These valves can be disassembled and cleaned without damaging the valve. **This must be done, however, under very clean conditions and all parts washed thoroughly before reassembling.** We, therefore, recommend that faulty valves be replaced in the field and the faulty valves repaired at a shop under proper conditions.

VALVE SERVICE INFORMATION

The design and construction of the Sectional Valve allows for easy service or replacement of the various sections, seals, and components. All parts are available (see parts manual) for replacement with the exception of furnishing separately either the plunger housing or the plunger. They are selectively fit and are available as a complete unit.

To perform service operations, it is recommended that the valve be removed from the machine. However, in some instances, it is only necessary to remove the parts or sections requiring service or replacement. In either case, the exterior of the valve must be thoroughly cleaned before disassembly.

MAINTENANCE PROCEDURE

Valve Disassembly*

Remove tie rod nuts from one side of valve and carefully slide valve sections across tie rods to avoid losing circuit check poppet and spring, which is enclosed between plunger sections. This poppet must be kept with respective plunger section and should be tagged. An O-ring is also present between the sections, and can be removed. When separating sections, extreme care must be exercised not to damage machined sealing surfaces. Place section on a clean surface.

(1) Plunger End Seals

An O-ring plunger seal, protected by a one-piece molded wiper, is used at each end of the plunger. To replace them, remove the seal plates and plunger control from the cap end. After seals are removed, inspect seal counterbores so that

surfaces are smooth and completely free of dirt, pits, rust, and metal particles. Select new seal and wiper and coat them with hydraulic oil. Thoroughly clean seal counterbore in housing and install O-ring, followed by wiper. Install seal plates and plunger controls.

If for some reason, it is necessary to remove plungers, they should be tagged for their respective plunger sections. Switching them will result in incorrect clearances, causing either binding and sticking or excessive leakage.

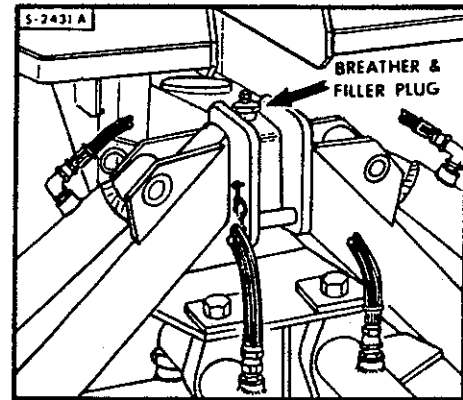


Fig. 29 — Breather and Filler Plug, Backhoe Reservoir.

(2) Circuit Relief Valves

The circuit relief valves are of the poppet type and are spring loaded. They are retained in one side of the machine surface of each plunger section and normally require very little service.

Check valve malfunctioning is usually the result of foreign matter lodging between the seat and the poppet. Examine seat for dirt or metal particles. Check seating face for nicks or scratches and, if present, they can be removed by lapping, using the lapping compound; however, care must be exercised to prevent lapping compound from entering or remaining in valve.

(3) Section Seal

All machined surfaces between inlet and outlet sections (which includes plunger sections) are ground and must be free of dirt or any raised burrs. If present, they must be removed by lapping on a perfectly smooth flat steel surface using fine lapping compound. Clean section very thoroughly to avoid lapping compound from remaining in any of the valve passages.

***REPAIRING VALVE SHOULD BE DONE AT YOUR LONG DEALER OR BY A QUALIFIED HYDRAULIC MECHANIC.**

Examine machined O-ring counterbore so that surfaces are smooth and completely free of dirt, pits, rust and metal particles. Select new O-ring and, after thoroughly cleaning counterbore, install it.

(4) Assembling Sections

Place the various sections in the proper order, making certain the circuit check poppet and spring are positioned properly in the lunger section, and install the tie rods. The top one is 3/8 dia. and the others 5/16 dia. Assemble the nuts and, using torque wrench, apply 33 ft. lbs. of torque to the top one and 14 ft. lbs. to the others.

(5) Cartridge Main Relief

The cartridge type main relief used in the valve is of the pilot poppet type with external adjustment. Any malfunctioning is usually the result of foreign matter lodging between the piston, relief valve poppet, and check valve.

To perform service, clean the surrounding area and remove the complete relief valve cartridge. Examine the seat in the main valve housing and if grooves or ridges are present, valve end (see parts manual) must be replaced.

The design of the pilot poppet and its seat provides positive seating and very seldom requires any maintenance. Therefore, the pilot section

can be removed from the cartridge housing without disturbing the setting. With it will come the check valve poppet and other internal parts. These are easily disassembled and should be examined for foreign matter. All seats and seating surfaces should be smooth and free of nicks, scratches or grooves. Examine O-rings and back up washers for any damage. Any parts found to be faulty must be replaced. All moving parts should slide freely, with only seal friction being present.

After inspecting and cleaning, immerse all parts in hydraulic oil and reassemble. Since pressure setting was not disturbed, unit can be tested for proper functioning under actual working conditions.

If operating difficulties indicate that the pilot poppet is leaking or sticking, remove internal parts of the pilot section, and follow same procedure as above.

If unit still does not function properly, replace the unit.

*RELIEF VALVE IS FACTORY SET AT 2000 PSI. DO NOT ATTEMPT TO OPERATE BACKHOE AT HIGHER PRESSURES, TO DO SO MAY DAMAGE YOUR BACKHOE.

TROUBLE SHOOTING — RELIEF VALVE

DIFFICULTY	PROBABLE CAUSE	REMEDY
Can't get pressure	Poppet D, E or K stuck open or dirt under seat of same.	Check for foreign matter between poppets D, E or K and their mating members. Members must slide freely.
Erratic pressure	Pilot poppet seat damaged Poppet C sticking in D.	Replace damaged parts. clean dirt and remove surface marks for free movement.
Pressure setting not correct	Wear due to dirt. Lock nut and adj. screw loose.	See Service Instructions for Setting Main Relief Valve.
Leaks	Damaged seats. Worn O-rings. Parts sticking due to dirt.	Replace worn or damaged parts. Inspect for free movement of components. Check seats for scratches, nicks or other marks.

A good pressure gauge must be installed in the inlet line. Then follow these steps:

Remove acorn nut and loosen jam nut, make sure several threads on adjusting screw are engaged in pilot section.

Use a screw driver and set adjusting screw as follows:

- Run engine at normal operating speed, so that pump is developing required flow.
- Operate one plunger of control valve at its extreme position long enough to get a pressure reading on the gauge.
- Turn adjusting screw, tighten jam nut and install and tighten acorn nut.
- Retest to check pressure setting.

NOTE: Results of the above settings will indicate a relatively constant relief valve setting across full engine R.P.M.

SERVICE INSTRUCTIONS FOR SETTING MAIN RELIEF VALVE

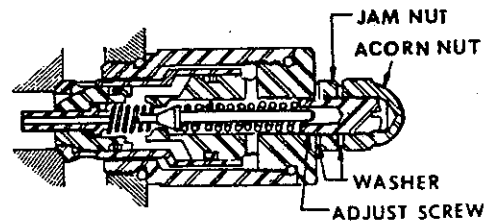


Fig. 30 — Main Relief Valve

PTO Gearbox Service & Maintenance

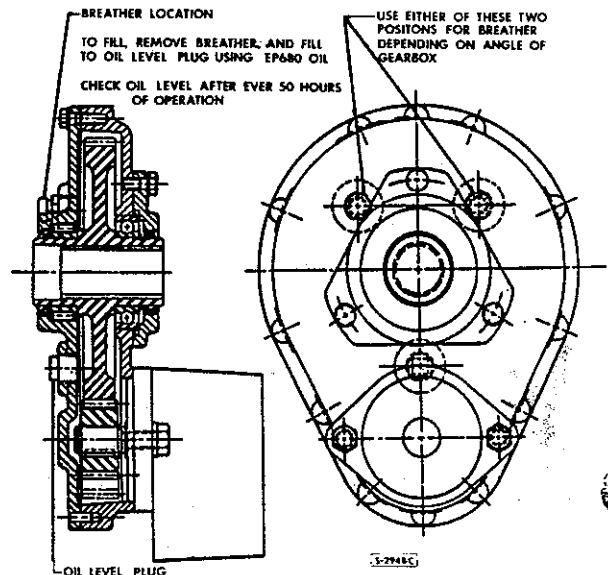


Fig. 30a — PTO Gearbox Service And Maintenance

LUBRICATION

The lubrication of the backhoe will require only a few minutes of regular daily attention and will greatly increase the life of the machine. Use only a high-grade multi-purpose type grease of unvarying specification in all lube fittings. Always buy lubricant from a reputable dealer who handles a reliable product.

Important: If the backhoe is operating in mud or water, lubricant immersed fittings several time daily.

Important: Clean all grease fittings before applying grease. Replace all lost or damaged fittings immediately. Long Multi-Purpose Grease (NLG1) or equivalent is recommended.

DAILY (Every 10 Hours) (Fig. 31)

1. Lower swing-post
2. Upper swing-post
3. Lower boom hinge pin
4. Dipper cylinder crosshead
5. Upper boom hinge pin
6. Bucket cylinder crosshead
7. Boom cylinder crosshead
8. Boom cylinder barrel end
9. Stabilizer leg pivot
10. Stabilizer cylinder ends

PERIODIC

Periodically, check level of tractors hydraulic oil as recommended by manufacturer's owner's manual.

*25 Hours.....Replace Oil and Filter

*200 Hours.....Replace Oil and Filter

*Each 200 Hours Thereafter. Replace Oil & Filter

*It is recommended that LONG Multi-Purpose Tractor Fluid or Equivalent be used in the hydraulic system. Cheap grades of oil are not suitable for use in the hydraulic system.

Dirt is an enemy of the hydraulic system. The best way to fight this enemy is to prevent its entry into the system. Therefore, complete cleanliness is necessary when servicing the hydraulics. Any part that is reassembled under dirty conditions could result in serious problems and costly repairs.

Clean containers must be used when draining the hydraulic system and must always be covered and protected from dust, sand, and other foreign material.

Any oil being returned to the system should be strained through a fine mesh screen or cloth.

*Always clean around the filler plug (Fig. 29) before removing the plug and filling the reservoir.

TROUBLESHOOTING

Troubleshooting primarily involves a failure point. This failure can be mechanical or hydraulic, and many things can be contributing to the cause of the failure. Isolation of the particular cause involves a systematic approach, to determine which components are functioning improperly.

As an initial step in the trouble shooting procedure, various preliminary checks should be made. These checks are important in that once performed they need no longer be considered as a possible cause of the immediate malfunction.

1. Check oil level.
2. Check for external oil leaks.
3. Check for external mechanical damage such as kinked hoses or tubes, damaged cylinders, bent or binding structural members.

After having performed the preliminary checks and failing to locate the cause of the malfunctioning, the following procedure should be used:

1. If possible, operate the backhoe making a note of the operating characteristics and failure. Cycle each control lever to operate each of the cylinders in both the extended and retracted positions.
2. Compare the operating characteristics observed in Step 1 with the problems covered in the Trouble Shooting Chart to determine the areas of failure (see page 23).

*PUMP SUCTION LEAKAGE TEST

A simple and yet effective test can be performed to help diagnose noisy pump operation. When air leakage is suspected as being the cause of the noisy pump, use a squirt-type oil can filled with light, hydraulic oil and squirt oil around:

1. the pump shaft
2. the pump housing
3. suction line

If air is entering the pump, the oil will provide a temporary seal and cause a distinct change in the sound made by the pump.

*Applies to Backhoes utilizing Optional PTO Pump.

TROUBLESHOOTING CHART

The following material on Troubleshooting is presented to aid the operator in quickly recognizing

operational problems, their general cause and the possible remedy.

Trouble	Cause	Remedy
Excessively slow operation	<ol style="list-style-type: none"> 1. Too slow engine speed 2. Improper oil. 3. Low oil supply. 4. Restriction in pressure line. 5. Restriction in suction line. 	<ol style="list-style-type: none"> 1. Use recommended engine speeds. 2. Use Long Multi-Purpose Tractor Fluid or equivalent 3. Fill to oil level 4. Check for kinked or damaged pressure hose. 5. Check for damaged or collapsed hose.
Apparent loss of power.	<ol style="list-style-type: none"> *1. Pump worn. 2. Loss of pressure. 3. Packing worn in cylinders. *4. Damaged pump Drive. 	<ol style="list-style-type: none"> 1. See your LONG Dealer for repairs. 2. See page 20. 3. See your LONG Dealer for repairs. 4. Check all pump drive connections.
Erratic motion.	<ol style="list-style-type: none"> 1. Improper oil. 2. Low oil supply. 3. Foaming oil. 4. Air in system Oil level is too low. 	<ol style="list-style-type: none"> 1. Use Long Multi-Purpose Tractor Fluid or Equivalent 2. Check oil level. 3. Use Long Multi-Purpose Tractor Fluid or Equivalent 4. Check all inlet connections to be sure they are tight. Operate all valves through their cycles to bleed the air from the system.
Pump and/or valves noisy.	<ol style="list-style-type: none"> *1. Pump drawing air because oil level is too low. *2. Pump drawing air because oil is foaming. *3. Suction line leaking. *4. Suction line fittings loose. 5. Oil too heavy. 	<ol style="list-style-type: none"> 1. Check for leaks in system and maintain full reservoir. 2. Use long Multi-Purpose Tractor Fluid or equivalent 3. Replace line. 4. Tighten line fittings. 5. Use Long Multi-Purpose Tractor Fluid or equivalent

⚠ Caution: No attempt should be made to solder or weld damaged tubing.

Note: When a major overhaul or an adjustment (other than those described in the section) is necessary, call your Authorized LONG Dealer.

⚠ Caution: Never disconnect a hose or tube that is under pressure. If in doubt, move the operating levers back and forth several times (tractor engine off).

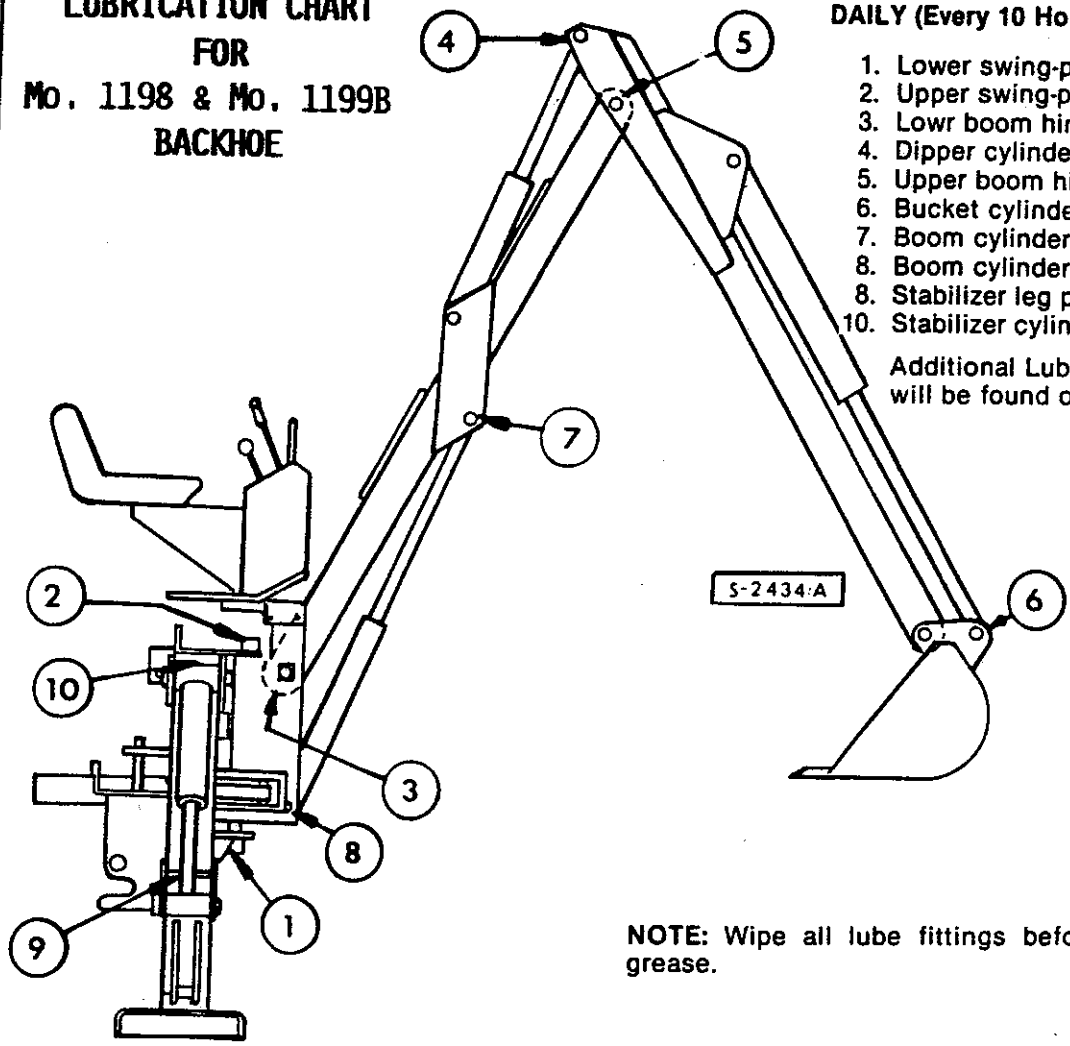
*Applies to Backhoes utilizing Optional PTO Pump.

**LUBRICATION CHART
FOR
Mo. 1198 & Mo. 1199B
BACKHOE**

DAILY (Every 10 Hours)

1. Lower swing-post
2. Upper swing-post
3. Lowr boom hinge pin
4. Dipper cylinder crosshead
5. Upper boom hinge pin
6. Bucket cylinder crosshead
7. Boom cylinder crosshead
8. Boom cylinder crosshead
8. Stabilizer leg pivot
10. Stabilizer cylinder ends

Additional Lube Fillings
will be found on stabilizer legs



NOTE: Wipe all lube fittings before applying grease.

Fig. 31 — Lubrication Points.

BACKHOE BUCKET TEETH

Periodically check the backhoe bucket for badly worn or broken teeth. Damaged or worn bucket teeth may be removed by heating (until cherry red) area "C" with a torch on both sides of tooth point and then hammering at location "A", Fig. 32.

Install new points by hammering at point "D" until "C" is over "E". Then heat area "C" as described above and peen the metal at "C" into the tooth shank recess at "E".

On some backhoe buckets, the teeth are bolted on. They can be easily replaced by removing the bolts (Fig. 33).

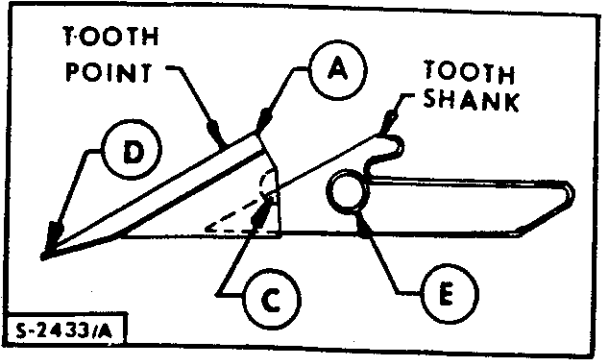


Fig. 32 — Bucket Teeth Replacement.

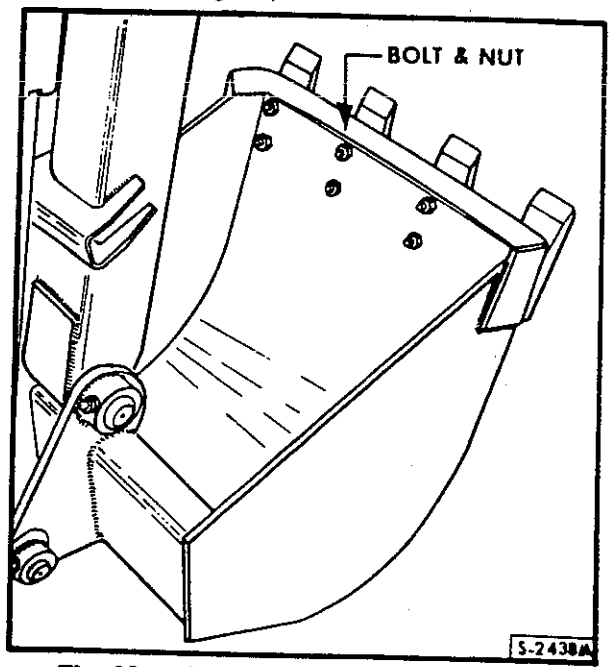


Fig. 33 — Bucket Teeth Replacement.

STORAGE

When storing the backhoe a few common sense practices should be observed.

1. The machine should be stored under a shelter or protective covering if possible.
2. All lubrication fittings should be wiped clean and fresh lubricant installed.
3. Stabilizer lock-out devices should be placed in lock positin.
4. All hydraulic lines should be checked to see that they are not pinched or crimped.

5. The complete hydraulic system should be checked to insure against possible entry of dirt into the system.

If stored properly, the backhoe will operate just as efficiently after storage as it did prior to storage.

Figure 34 shows stabilizer lock-out devices in position. When in position these devices prevent the cylinder from settling. The devices should be used when dismounting the backhoe from the tractor and/or for storage.

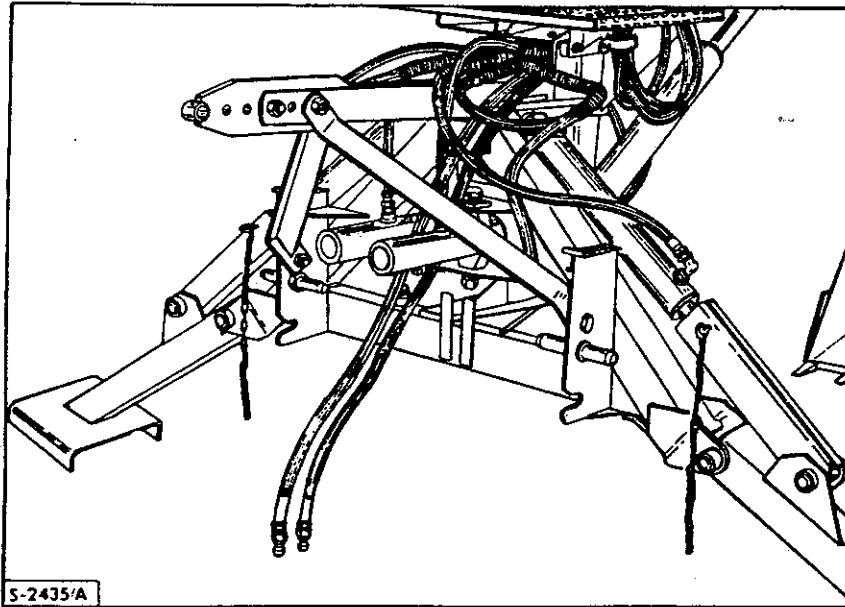


Fig. 34 — Stabilizer Lockout Device

OPTIONAL EQUIPMENT

To benefit the owner/operator a variety of buckets, mounting kits, and pump kits are available:

Group I — Buckets

Part No.	Description
R-733877	Bucket Assy. — 12"
R-734033	Bucket Assy. — 18"
R-734046	Bucket Assy. — 24"
730584	Bucket Assy. — 28"
R-734105	Bucket Assy. — 36"
A-730771	Trenching Bucket

Group II — Mounting and Pump Kits

Part No.	Description
738536	Kit — Pump (540 RPM P.T.O.)
738537	Kit — Pump (1000 RPM P.T.O.)
747042	Kit — Mount — Model 1199B to 360, 460, 560 w/Loader

TORQUE CHART

GENERAL TORQUES
(For plated or lubricated bolts)

Size	Value	Size	Value	Size	Value
4-40	6 in. lbs.	5/16-18	13 Ft. Lbs.	5/8-11	110 Ft. Lbs.
4-48	7 in. Lbs.	5/16-24	14 Ft. Lbs.	5/8-18	130 Ft. Lbs.
6-32	12 in. Lbs.	3/8-16	23 Ft. Lbs.	3/4-10	200 Ft. Lbs.
6-40	13 in. Lbs.	3/8-24	25 Ft. Lbs.	3/4-16	220 Ft. Lbs.
8-35	23 in. Lbs.	7/16-20	40 Ft. Lbs.	7/8-14	320 Ft. Lbs.
10-24	32 in. Lbs.	1/2-13	55 Ft. Lbs.	1-8	440 Ft. Lbs.
10-32	36 in. lbs.	1/2-12	65 ft. Lbs.	1-12	480 Ft. Lbs.
1/4-20	75 in. Lbs.	9/16-12	80 Ft. Lbs.		
1/4-28	86 in. Lbs.	9/16-18	90 Ft. Lbs.		

BOLT HEAD IDENTIFICATION



Grade 5

To The Owner:

The following items are available fro your LONG Dealer. They are approved and meet all warranty requirements.

ITEM	PART NO.
Filter (33 Micron).....	738523
Grease	
14½ oz. tube.....	782529
(50 Tubes/case)	
14½ oz. tube.....	782528
(10 tubes/case)	
Grease Gun.....	782848
Multi-Purpose Tractor Fluid	
Gallon (4 Gal./case).....	782531
55 Gallon Drum.....	782530
Parts Book.....	756128

PERSONAL ITEMS

ITEM	PART NO.
Caps, Adjustable	
Cold Weather.....	726021
Warm Weather.....	726022

PERSONAL ITEMS

ITEM	PART NO.
Belt Buckles	
Brass W/LONG Logo.....	775069
Brass W/LONG Equipment.....	726052
Shirts, Summer (S,M,L,XL)	
Golf Shirt.....	726016
Golf Shirt, Navy Blue.....	726041
T-Shirt.....	726015
Jackets	
Blue Nylon Unlined Coach.....	726017
Blue Nylon Flannel-Lined Coach's....	726029
Blue Nylon Fleece-Lined Coach's....	726040
Blue Nylon Team.....	726059
Blue Nylon Quilted.....	726058
Vest, Blue Nylon Quilted.....	726055
Tie, Dark Blue W/Tractor & LONG Logo..	726027

LOCTITE PRODUCTS



THREADLOCKER 242

Part Nr. 242-21
786425 10cc bottle 6.68

Part Nr. 242-31
786426 50cc bottle 17.60



THREADLOCKER 262

Part Nr. 262-21
786427 10cc bottle 6.68

Part Nr. 262-31
786428 50cc bottle 17.60



QUICK METAL PRESS FIT REPAIR

Part Nr. 660-10
786429 6cc tube 4.39

Part Nr. 660-40
786430 50cc tube 18.80



GASKET ELIMINATOR 515

Part Nr. 515-17
786431 6cc tube 2.61

Part Nr. 515-31
786432 50cc tube 7.70



SUPERFLEX RTV

Part Nr. 5983-45
786433 100ml tube 5.10



PST TEFLON SEALER

Part Nr. 567-07
786434 6cc tube 2.61

Part Nr. 567-47
786435 50cc tube 9.14



CHISEL GASKET REMOVER

part Nr. 790-40
786436 18 oz. aerosol 8.50

Recommended for service use on LONG Backhoes
Refer to instructions for proper applications.

LIMITED WARRANTY

THREE POINT HITCH BACKHOE

Long Mfg. N.C. Inc. warrants that each new Backhoe sold by it and its authorized dealers will be free from defects in material and workmanship under normal use and service for a period of ninety (90) days from date of purchase. Long's obligation under this warranty is limited to repairing or replacing at its option in an authorized Long Dealer's place of business any part or parts that, within the applicable period previously stated, are returned to its factory in Tarboro, North Carolina, with transportation charges prepaid. Long's examination must show that the returned part or parts were defective at time of manufacture. Replacements made pursuant to this warranty shall be warranted only for the remainder of the period applicable to the Backhoe.

This warranty is expressly limited to the replacement of defective parts as set forth herein, and is the only warranty given by the manufacturer or agent, distributor, dealer, or seller to the purchaser, and is in lieu of any and every warranty of every kind either expressed or implied, and this warranty cannot be changed, modified or added to except in writing by a duly elected officer of LONG MFG. NC. INC., and no dealer, distributor, agent, salesman or representative has any right or authority to change, modify or enlarge this warranty or to make any promise, stipulation and agreement inconsistent or in conflict therewith.

This warranty does not apply if the equipment has been subjected to misuse, negligence on the part of the owner or operator, or accident. This warranty does not extend to expendable items that within normal usage may be replaced within the warranty period including such items as hydraulic oil, oil filters. The warranty does not cover normal maintenance, services such as cleaning or minor adjustments.

No other warranty whether of merchantability, fitness or otherwise, expressed or implied, in fact or by law, is given by Long with respect to any new equipment or part and no other or further obligation or liability shall be incurred by Long by reason of the manufacture or sale of any new Backhoe or part whether for breach of any warranty, negligence of manufacture or otherwise.

The obligations of Long set forth in the first paragraph above shall be the exclusive remedy for any breach of warranty hereunder. In no event shall Long be liable for any general, consequential, or incidental damages including, without limitations, any damages for loss of use or loss of profits.

Long equipment sold through other than authorized dealers is not subject to standard Long warranty and service policies.

It is the policy of LONG MFG. N.C. INC. to improve its products whenever possible. We reserve the right to make changes or improvements at any time without incurring any obligations to make such changes on products sold previously.

This warranty becomes effective on the date of delivery to the owner as shown on the Pre-Delivery Inspection Report. This Report should be completed by an authorized LONG Dealer, forwarded within ten days of the date of sale to:

LONG MFG N.C. INC.
Customer Service / Warranty Administration
111 Fairview Street
P.O. Box 1139
Tarboro, N.C. 27886

WARRANTY DISCLAIMER

THE LIMITED WARRANTY OF THE MANUFACTURER FOR ITS PRODUCTS DOES NOT INCLUDE:

1. ANY WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR USE.
2. ANY IMPLIED WARRANTIES OF ANY KIND.
3. LIABILITY FOR CONSEQUENTIAL DAMAGES SUCH AS THOSE RESULTING FROM LOSS OF USE OF THE PRODUCT OR LOSS OF PROFITS OR DAMAGE TO CROPS.
4. LIABILITY OF ANY KIND WHERE THE PRODUCT HAS BEEN ALTERED, MISUSED, ABUSED, OR INVOLVED IN AN ACCIDENT.

765301

SEE OWNER'S MANUALS FOR FULL TEXT OF MANUFACTURER'S LIMITED WARRANTY