

INTRODUCTION

This Manual provides maintenance, lubrication instructions for your 619B or 629 Backhoe.

The 619B/629 Backhoe has been designed to give you many years of satisfactory service. Although the backhoe has been manufactured to meet rugged, tough work conditions, its successful operation and long life depends, of course, on proper operation and the care given it. This manual is designed to provide the necessary information for you to care for your new backhoe. Please read it carefully prior to mounting the equipment on your tractor and before operation.

To assure that the information will be readily available in case it is necessary to order spare parts, for repair (especially for warranty purposes), fill in the information on the back cover before you forget:

SAFETY PRECAUTIONS

BACKHOES, IF NOT USED PROPERLY, CAN BE DANGEROUS. THE OPERATOR, THEREFORE, SHOULD DEVELOP SAFE AND EFFICIENT WORKING HABITS ALWAYS BEING AWARE OF HAZARDOUS CONDITIONS. A CAREFUL AND WELL TRAINED OPERATOR IS THE BEST INSURANCE AGAINST ACCIDENTS.

PAY CLOSE AND STRICT ATTENTION TO THE JOB AT HAND.

KEEP ALL OTHER PERSONS CLEAR OF WORK AREA.

KNOW YOUR EQUIPMENT AND ITS CONTROLS.

ALWAYS CHECK THE AREA AROUND YOU TO ASSURE SAFE OPERATION BEFORE MOVING EQUIPMENT.

DO NOT ALLOW OTHERS ON, OR NEAR, THE EQUIPMENT WHEN IN OPERATION.

TO PREVENT UPSETS, BE CAREFUL WHEN SWINGING A LOADED BUCKET ON A HILLSIDE.

ALWAYS REMAIN ON THE TRACTOR, AT THE CONTROLS, WHEN TRACTOR ENGINE IS RUNNING. LOWER BUCKET AND BOOM, STOP ENGINE, REMOVE IGNITION KEY WHEN NOT ON THE TRACTOR.

NEVER DRIVE A TRACTOR EQUIPPED WITH BACKHOE OR LOADER DOWN A HILL STEEPER THAN FIFTEEN (15) DEGREES.

NEVER USE HYDRAULIC POWER OF BOOM OR DIPPER AS A PULLING OR LIFTING DEVICE.

NEVER USE ANY PART OF THE BACKHOE ASSEMBLY AS A TIE POINT FOR PULLING OR LIFTING.

AVOID SUDDEN STARTS, EXCESSIVE SPEED, AND SUDDEN STOPS.

PRACTICE SMOOTH, EVEN TRANSFER OF LOADS AND OF OPERATION. SUDDEN JERKY MOVEMENTS ARE DANGEROUS TO EQUIPMENT AND PERSONNEL.

CHECK HYDRAULIC SYSTEM BEFORE EACH USE FOR SIGNS OF LEAKS OR WEAR. ESCAPING HYDRAULIC FLUID, UNDER PRESSURE, CAN BE DANGEROUS. (Hydraulic fluid escaping under pressure can have enough force to penetrate the skin or to destroy eye-sight. Hydraulic fluid may also infect a minor cut or opening in the skin. If injured by escaping fluid, get medical attention at once.) MAKE SURE ALL CONNECTIONS ARE TIGHT AND THAT HOSES ARE IN GOOD CONDITION BEFORE APPLYING PRESSURE TO THE SYSTEM. RELIEVE ALL PRESSURE BEFORE DISCONNECTING THE LINES OR PERFORMING OTHER WORK ON THE HYDRAULIC SYSTEM. TO LOCATE SMALL LEAKS, USE A SMALL PIECE OF PAPER, CARDBOARD, OR WOOD.....NEVER USE YOUR HANDS.

USE EXTREME CARE WHEN WORKING CLOSE TO FENCES, DITCHES, OR ON HILLSIDES.

CHECK CLEARANCE CAREFULLY BEFORE DRIVING UNDER ELECTRIC LINES, BRIDGES, OR BEFORE ENTERING OR LEAVING A BUILDING.

KEEP EQUIPMENT CLEAN. THIS WILL NOT ONLY ALLOW YOU TO MORE READILY OBSERVE ANY SIGNS OF EQUIPMENT WEAR OR IMPENDING FAILURE, BUT WILL ALSO HELP IN AVOIDING FALLS DUE TO SLIPPING ON GREASE OR OIL.

NEVER EXCEED THREE (3) MILES PER HOUR (1.8642 Km/Hr) EXCEPT WHEN TRAVELING OVER GOOD, SMOOTH ROADS WITH EQUIPMENT IN ROAD-TRAVEL CONDITIONS.

KEEP HANDS, GLOVES, CLOTHING AWAY FROM MOVING PARTS. AVOID LOOSE-FITTING CLOTHING.

— Do Not Hurry! —

SPECIFICATIONS

Operating Criteria:

Digging Depth: 6.0 ft. (182.9 cm)
Digging Radius: 9.0 ft. (274.3 cm)
Bucket Clearance: 6.0 ft. (182.9 cm)
Swing Radius: 135 Degrees

Hydraulic System:

Type: P.T.O. Driven Pump

Operating Pressure: 1800 P.S.I.

* Boom Cylinder: 22 1/2" (55.88 cm) by 2.0" (5.08 cm) with 1 1/4" (3.18 cm) Piston Rod

* Crowd Cylinder: 16" (40.64 cm) by 2.0" (5.08 cm) with 1 1/4" (3.18 cm) Piston Rod

Bucket Cylinder: 10" (25.4 cm) by 2.0" (5.08 cm) with 1 1/8" (2.86 cm) Piston Rod

Swing Cylinder: 6" (15.24 cm) by 2 1/2" (6.35 cm) with 1 1/8" (2.86 cm) Piston Rod

Stabilizer Cylinder:

Serial No. A2800 and Below: 10" (25.4 cm) by 1 1/2" (3.81 cm) with 3/4" (1.91 cm) Piston Rod

All Backhoes Above A2800 Ser. No.: 10" (25.4 cm) by 2.0" (5.08 cm) with 1 1/8" (2.86 cm) Piston Rod

Control Valve:

Stacked, 6 Handle, Bi-directional (4 Handle, Optional.)

Cycle Times:

Bucket Open: 3.5 sec.
Bucket Closed: 4.5 sec.
Dipper Open: 2.5 sec.
Dipper Closed: 3.0 sec.
Boom Up: 6.0 sec.
Boom Down: 4.5 sec.
Boom Right: 3.0 sec.
Boom Left: 3.0 sec.

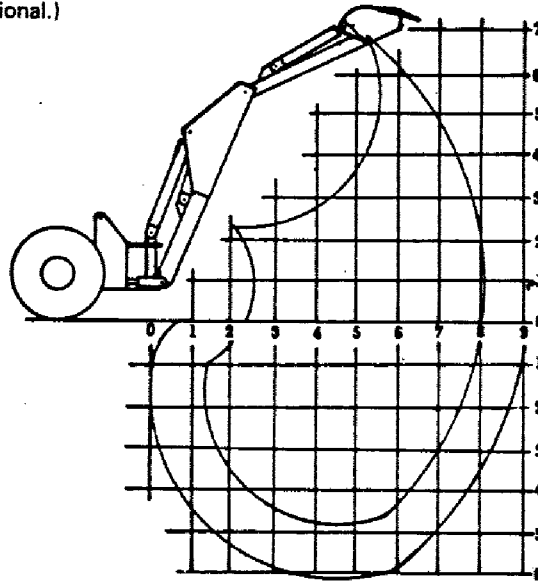
Weights:

619B/629 Backhoe	490 lbs. (222.5 kg)
P619/P629 Pump Kit:	32 lbs. (14.5 kg)
615 8" Bucket:	21 lbs. (9.5 kg)
615A 13" Bucket:	30 lbs. (13.6 kg)
615B 16" Bucket:	35 lbs. (15.9 kg)
780-1 13" Excavating Bucket:	30 lbs. (13.6 kg)
780-2 19" Excavating Bucket:	40 lbs. (18.13 kg)

Optional Equipment:

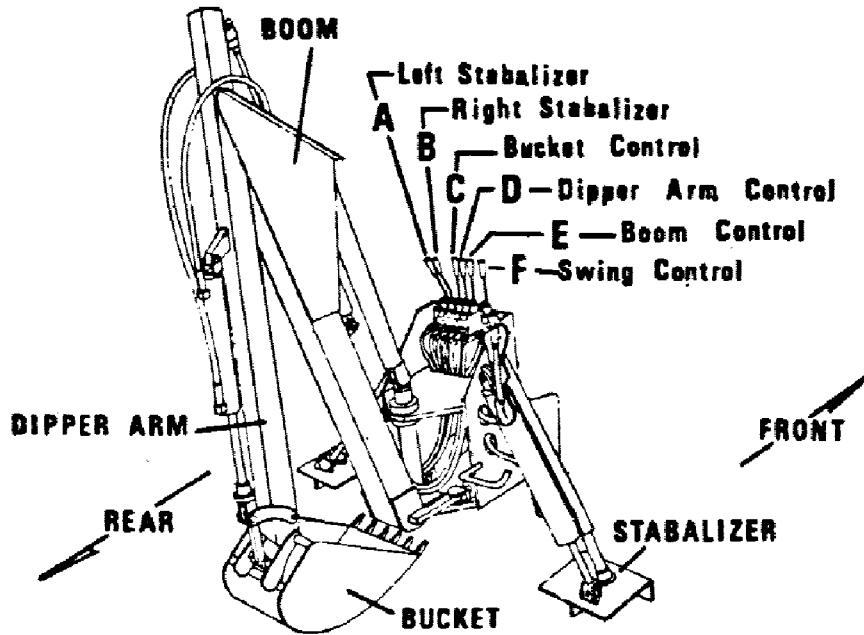
8 Inch Bucket
13 Inch Bucket
16 Inch Bucket
4 Handle Control Valve Assembly (Two Bi-directional, Two Quadra-directional) Special Order Only.

* Serial numbers prior to A2800 are equipped with cylinders having 1 1/8" (2.86 cm) rods.



(Design and Specifications subject to change without notice.)

STANDARD 6-LEVER CONTROL OPERATING INSTRUCTIONS



!! KNOW YOUR CONTROLS !!

LEVER DESCRIPTION	REF.	OPERATING HANDLE	
		TOWARD FRONT	TOWARD REAR
Left Stabilizer	A	Raises Left Stabilizer	Lowers Left Stabilizer
Right Stabilizer	B	Raises Right Stabilizer	Lowers Right Stabilizer
Bucket Control	C	Opens Bucket	Closes Bucket
Dipper Arm Control	D	Closes (Crowds) Dipper Arm	Opens (Extends) Dipper Arm
Main Boom Control	E	Raises Main Boom	Lowers Main Boom
Boom Swing Control	F	Swings Boom Right	Swings Boom Left

Any Equipment, Improperly Used, Can Be Dangerous!

KUBOTA TRACTOR
629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
Figure: 5 - STANDARD 6-LEVER CONTROL OPERATING INSTRUCTIONS

NOTE:

SAFE AND EFFICIENT OPERATION OF YOUR NEW BACKHOE WILL DEPEND, FOR THE MOST PART, ON BECOMING PROFICIENT WITH ITS OPERATION. TIME SPENT, IN BECOMING FAMILIAR WITH ITS CONTROLS, WILL PAY BIG DIVIDENDS IN LONGER EQUIPMENT LIFE, FASTER WORK PERFORMANCE, AND POSSIBLY, AVOIDING INJURY.

Operation of the Backhoe is straight forward, following natural tendencies. (Forward to raise or close, backward to lower or open.) Practice with the equipment so that operation is performed as smoothly, as quickly, and with as little wasted motion as possible. It is in avoiding wasted motion that you will save in equipment wear and time lost in job performance.

For maximum power, it is best to shift the tractor speed shift lever (if tractor is so equipped) into the low speed range. **DO NOT OPERATE TRACTOR IN THIRD GEAR OR HIGH SPEED POSITION.**

The tractor throttle should be initially set at approximately 30% of full range. Due to the efficiency of the hydraulic pump, it is not necessary to "race" the engine to assure proper performance. The type of work load, soil conditions, etc., may require raising the speed slightly or may allow decreasing the speed slightly.

General operation of the control levers is recapped in the table on Page 4 and should be carefully studied, and practiced, prior to actual use of the equipment in a work situation.

For initial set-up of the equipment, back tractor into position with the center of the tractor and backhoe along a line in the general direction in which you wish to dig. Stop the tractor with the mainframe of the backhoe approximately five to seven feet (1.52 to 2.13 meters) from the point you wish to start digging. Keep in mind that the edges of the hole you wish to dig will slope toward the center at both front and rear so that deepest part of the hole will be slightly forward, depending on depth, from the point at which you start digging.

Operate control levers (A) and (B) toward the rear to lower stabilizers. Stabilizers should be lowered until they "lift" the tractor clear of ground contact by three or four inches. (the weight of the tractor will assure that stabilizers stay firmly seated.) Next, lower loader bucket (in dump position) or front blade until front wheels are also clear. (This will prevent "rolling" and preclude stabilizer damage.)

To begin digging, operate control lever (D) toward the rear to open the dipper arm until bucket is poised over the point at which you wish to start digging. (It may be necessary to operate lever (E) toward rear to lower main boom for adequate "reach".) Now operate control lever (C) to position bucket almost parallel to the ground, but tilted slightly so that it will "dig". (Too little "tilt" will cause the bucket to "skate" across the top of the ground; too much "tilt" will cause it to drag or "bog" down.)

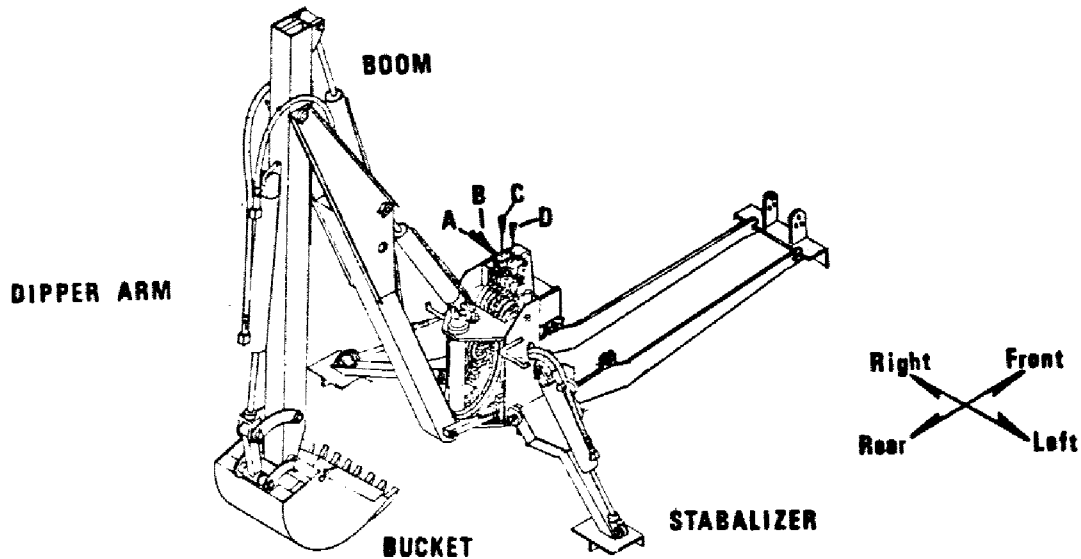
Now operate lever (D) forward slowly (adjusting lever "E" to raise or lower boom thus adjusting digging depth) and operating lever (C) to control "tilt" of bucket. Gradually bring bucket toward you until full. Proper interaction of levers (C) and (D) is critical to efficient filling of the bucket with the least amount of effort and time. Close bucket by pushing lever (C) full toward the rear.

Operate lever (E) forward to raise the main boom until bucket is clear of ground obstacles (sides of trench, piles of dirt, etc.). It may be necessary to extend dipper arm to achieve necessary clearance. Normally the dipper arm will need to be extended, anyhow, to allow for deposit of material well away from the digging area.

Operate lever (F) to "swing" main boom right or left, depending on the area selected for deposit of material, until main boom is in line with the deposit area. Now, fully extend the dipper arm, for maximum reach or until bucket is positioned over deposit area. Open bucket and "dump" material.

Swing main boom in reverse direction to bring back in line with digging area, close dipper arm, and position bucket for best digging position. Lower main boom and repeat the process already performed in initially filling the bucket.

OPTIONAL 4-LEVER CONTROL OPERATING INSTRUCTIONS



!! KNOW YOUR CONTROLS !!

EQUIPMENT ITEM	FUNCTION	LEVER POSITION			
		LEVER A	LEVER B	LEVER C	LEVER D
Right Stabilizer	Raise Lower	Toward Front Toward Rear			
Left Stabilizer	Raise Lower		Toward Front Toward Rear		
Bucket	Open Close			Right Left	
Dipper Arm	Open Close			Toward Front Toward Rear	
Main Boom	Raise Lower				Toward Front Toward Rear
Swing (Main Boom)	Right Left				Left Right

Any Equipment Improperly Used, Can Be Dangerous!

KUBOTA TRACTOR
629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
Figure: 7 - OPTIONAL 4-LEVER CONTROL OPERATING INSTRUCTIONS

General operation of the control levers is recapped in the table on Page 6 and should be carefully studied, and practiced, prior to actual use of the equipment in a work situation. Practice with the equipment so that operation is performed as smoothly, as quickly, and with as little wasted motion as possible. It is in avoiding wasted motion that you will save in equipment wear and time lost in job performance.

For maximum power, it is best to shift the tractor speed shift lever (if tractor is so equipped) into the low speed range. **DO NOT OPERATE TRACTOR IN THIRD GEAR OR HIGH SPEED POSITION.**

The tractor throttle should be initially set at approximately 30% of full range. Throttle setting should only be high enough to assure proper performance. The type of work load, soil conditions, etc., may require raising the speed slightly or may allow decreasing the speed slightly.

For initial set-up of the equipment, back tractor into position with the center line of the tractor and backhoe along a line in the general direction in which you wish to dig. Stop the tractor with the mainframe of the backhoe approximately five to seven feet (1.52 to 2.13 meters) from the point you wish to start digging. Keep in mind that the edges of the hole you wish to dig will slope toward the center at both front and rear so that deepest part of the hole will be slightly forward, depending on depth, from the point at which you start digging.

Operate control levers (A) and (B) toward the rear to lower stabilizers. Stabilizers should be lowered until they "lift" the tractor clear of ground contact by three or four inches. (The weight of the tractor will assure that stabilizers stay firmly seated.) Next, lower loader bucket (in dump position) or front blade until front wheels are also clear. (This will prevent "rolling" and preclude stabilizer damage.)

To begin digging, operate control lever (C) toward the rear to open the dipper arm until bucket is poised over the point at which you wish to start digging. (It may be necessary to operate lever (D) toward rear to lower main boom for adequate "reach".) Now operate control lever (C) (right or left) to position bucket almost parallel to the ground, but tilted slightly so that it will "dig". (Too little "tilt" will cause the bucket to "skate" across the top of the ground; too much "tilt" will cause it to drag or "bog" down.)

Now operate lever (C) forward slowly (adjusting lever "D" to raise or lower boom thus adjusting digging depth) and operating lever (C) to control "tilt" of bucket. Gradually bring bucket toward you until full. Proper interaction of lever (C) (forward, backward, or right, left) is critical to efficient filling of the bucket with the least amount of effort and time. Close bucket by pushing lever (C) full left.

Operate lever (D) forward to raise the main boom until bucket is clear of ground obstacles (sides of trench, piles of dirt, etc.). It may be necessary to extend dipper arm to achieve necessary clearance. Normally the dipper arm will need to be extended, anyhow, to allow for deposit of material well away from the digging area.

Operate lever (D) (left or right) to "swing" main boom right or left, depending on the area selected for deposit of material, until main boom is in line with the deposit area. Now, fully extend the dipper arm, for maximum reach or until bucket is positioned over deposit area. Open bucket and "dump" material.

Swing main boom in reverse direction to bring back in line with digging area, close dipper arm, and position bucket for best digging position. Lower main boom and repeat the process already performed in initially fill the bucket.

SPECIAL SAFETY PRECAUTIONS

When finished, close bucket, close dipper arm, raise main boom to full height, raise stabilizers to full height, and the backhoe is ready for road travel. Swing (or swivel) seat so that you are in position to safely operate the tractor and drive away from work area. It should be noted that no attempt should be made to operate the backhoe from the ground or from the tractor seat facing forward. Steps are provided as an integral part of the backhoe so that the operator can adequately brace himself during operation of the backhoe.

Again, be especially careful when operating on a slope or hillside, close to fences, buildings, telephone or power lines, or in any other tight situation. Remember that the raised boom projects well above your eye level when seated on the tractor and special precautions should be taken when entering or leaving a building or driving under any overhead obstruction.

It is assumed that the operation of the tractor will have been mastered prior to attempts to use the tractor in conjunction with any other item of equipment. Careful study of the Tractor Manufacturer's Operator's Manual will assure not only safe, efficient operation of the tractor but will offer pointers to time and fuel savings when used in conjunction with the backhoe or other items of equipment.

TROUBLE SHOOTING

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>POSSIBLE REMEDY</u>
A. Backhoe Will Not Operate	<ol style="list-style-type: none">1. Bucket overloaded, hooked on underground obstruction.2. Jammed linkage.3. Bent piston rod.4. Low hydraulic fluid level.5. Hoses assembled incorrectly.6. Broken or blocked lines.7. Low fluid flow; low pressure.	<p>Clear obstruction.</p> <p>Clear obstruction. Replace rod/seals. Add oil; check for leaks. Ref. page 13 and 24. Replace. Pump damaged or PTO coupling broken. Replace damaged part.</p>
B. Backhoe Operates Erratically	<ol style="list-style-type: none">1. Pump slipping.2. Hydraulic oil level low.3. Air in hydraulic system.	<p>Replace pump or PTO coupling. Add oil. Evacuate system of air.</p>
C. Oil Overheating.	<ol style="list-style-type: none">1. Tractor r.p.m. too high.2. Obstruction in system.	<p>1200-1600 r.p.m. normal. By-pass suspected components to determine cause, then clean or replace restricting unit.</p>
D. Cylinder Leaking.	<ol style="list-style-type: none">1. Damaged seals.	<p>Install new seal kit. NOTE: Improper operation can cause damage to seals.</p>
E. Operation Slow	<ol style="list-style-type: none">1. Low pressure.2. Internal seals leaking.3. Obstruction in system.	<p>Check relief valve setting and pump performance. Install new seal kit. See C.2. above.</p>
F. Valve Sticking.	<ol style="list-style-type: none">1. Control valve tie bolts too tight.2. Dirty valve.3. Valve spring binding or broken.	<p>Loosen tie bolts slightly, watch for leakage. Clean valve, change oil. Replace spring or valve section.</p>
G. Excessive Wear.	<ol style="list-style-type: none">1. Improper lubrication.2. Misalignment.	<p>Ref. page 9 for proper lubrication procedures. Check for binding or bent parts, replace or repair as required.</p>
H. Excess Wear Or Breakage.	<ol style="list-style-type: none">1. Pressure too high.	<p>Check relief valve. Set for 1850 P.S.I. (one turn equals approximately 700 P.S.I.)</p>

MAINTENANCE

REGULAR MAINTENANCE IS THE KEY TO LONG EQUIPMENT LIFE AND SAFE OPERATION.

Every Eight (8) Hours Of Operation:

Regular lubrication of the backhoe is a must. Reference is made to the Lubrication Diagram below and to Detail Assembly Drawing for location of all points requiring lubrication. There are two on the Bucket Assembly (page 15); nine on the Boom Assembly (page 16); seven on the Lower Mainframe Assembly (page 17). Control handles (item ① below) should be oiled. Only S.A.E. approved multi-purpose lubricants should be used.

If oil is low, refill in accordance with Tractor Instruction Manual. (Backhoe cylinder should be in retracted position when refilling.)

Make a thorough check, prior to start of work each day, for obvious signs of wear, leaks, loose fittings, etc. Careful, routine, visual checks can provide valuable forwarning of impending failures allowing sufficient time to acquire replacement parts and thus eliminating costly down time.

Every Twenty-Five (25) Hours Of Operation:

Check Hydraulic Reservoir Fluid level. If oil is low, check all lines for signs of leakage, make sure that all connections are tight. (Use a piece of cardboard or wood for checking for small leaks....don't use your hands...See Safety Precautions.) Oil level should be no lower than 2 inches (5.08 cm) below oil "Fill" cap. If low, refill with S.A.E. Type "F" Automotive Transmission Fluid.

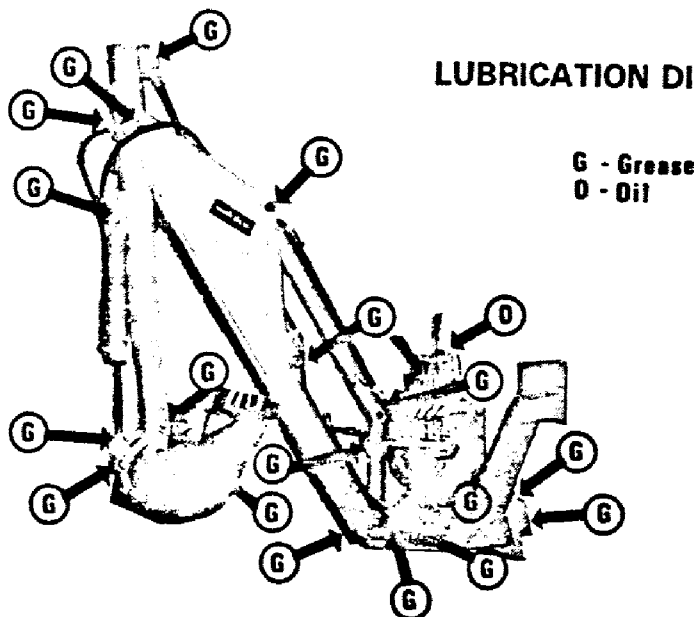
Every Forty (40) Hours Of Operation:

Physically check all pins, cotter pins, nuts, etc., for signs of wear or loose fit. Tighten as required, replacing any item that is badly worn. (Bolts, pins may vibrate loose during operation.) Clean equipment of all loose dirt, oil, and grease. This will assist you in visual checks for signs of wear and will help avoid costly slips.

Every Two Hundred (200) Hours Of Operation:

Hydraulic oil should be drained out of system and replaced with clean Type "F" Automotive Transmission Fluid. DO NOT CHECK OR ATTEMPT TO REPLACE LINES OR FLUID WHILE EQUIPMENT IS RUNNING OR UNDER PRESSURE.

REMEMBER.....DIRT IS DEATH TO HYDRAULICS!!



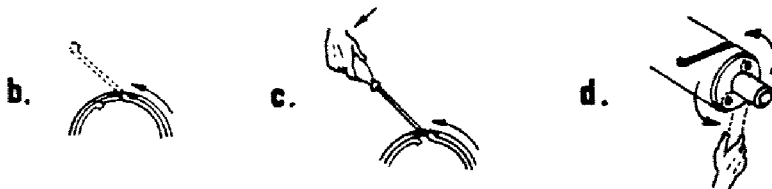
HYDRAULIC CYLINDER MAINTENANCE

GENERAL INFORMATION - Prior to attempting to repair (or disassemble) any hydraulic unit, prepare a clean work area. **REMEMBER: DIRT IS DEATH TO HYDRAULICS!** Seal Kits (for cylinders), when received, may contain two complete sets of seals since different cylinders were employed in manufacturing. Comparison of parts removed from your old cylinder with new parts included in Seal Kit will quickly indicate which kit is applicable. Procedures for repair that follow are applicable to either type as are associated drawings and parts list contained herein.

I. CYLINDERS (Ref. Assembly Drawing, Page 11)

A. DISASSEMBLY - PROCEDURES SHOULD BE FOLLOWED STEP-BY-STEP BEGINNING WITH:

1. (a) Protect chrome finish on rod at all times.
- (b) Note: Direction of rotation for removal of lockwire depends on prior installation. Check lockwire position for correct rotation.
- (c) A sharp object, such as a small screwdriver must be used to get under the lockwire to start it out of the cylinder.
- (d) Locate spanner wrench in drilled holes in gland and rotate 360 degrees.



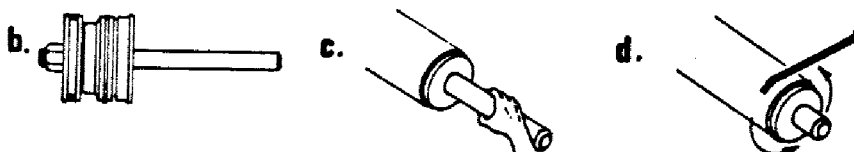
2. (a) Pull on rod to remove the piston and gland.
- (b) Remove nut from end of rod.
- (c) Remember, all seals must be replaced once cylinder is disassembled.

B. CLEANING AND INSPECTION

1. Check rod and barrel bore for nicks, burrs, scratches, or rust. Slight defects may be removed with fine sand paper. Badly pitted barrel bore or rod may indicate replacement of the damaged part.
2. All parts should be thoroughly cleaned using clean solvent. Be sure to carefully clean all cavities and grooves thoroughly prior to reassembly. (Only a cleaning solvent should be used.)

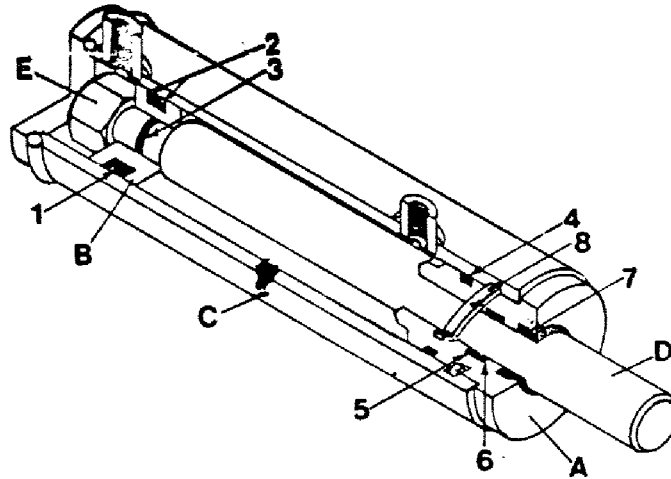
C. ASSEMBLY

1. (a) Install all seals. Do not over stretch seals to facilitate easier installation.
- (b) Make sure all seals are not twisted or distorted in grooves.
- (c) Be careful not to nick or damage seals with fingernails or tools.
2. (a) Install gland on rod.
- (b) Install piston on rod "turn down".
- (c) Install locknut and torque to 150 ft. lbs.
3. (a) Lubricate all parts and inside of cylinder with hydraulic oil
- (b) Push the piston into the cylinder bore with a steady, even pressure.
- (c) Push gland into bore until shoulder or gland butts up against barrel.



- (d) Locate drilled hole in gland through milled slot in the barrel and insert lockwire. Rotate the gland 360 degrees to "feed" lockwire into "lock" position.

KUBOTA TRACTOR
629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
Figure: 11 - CYLINDER ASSEMBLY



CYLINDER ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER				QUANTITY PER CYLINDER
		2.00 DIA. 1.25 ROD	2.50 DIA. 1.125 ROD	2.00 DIA. 1.125 ROD	1.50 DIA. 0.75 ROD	
1.	Piston Seal	1010	1001	1010	1018	1
2.	Piston Back-up Seal	1011	1002	1011	1019	2
3.	Rod Static Seal	1113	1003	1003	1020	1
4.	Gland Static Seal	1012	1004	1012	1021	1
5.	Rod Seal	1115	1005	1013	1022	1
6.	Rod Back-up Seal	1116	1006	1014	1023	1
7.	Rod Wiper	1117	1007	1015	1024	1
8.	Lock Wire	1016	1008	1016	1025	1
9.	Seal Kit (Not Shown) Includes Items 1-8 Above	1118	1009	1017	1026	Seal Kit Required Depends On Cylinder Dia. And Rod Dia.

ITEM	DESCRIPTION	CYLINDER PART NUMBER							
		603	605	606	607		608		609
					A	B*	A	B*	
A	Gland	1027	1032	1032	1043	1119	1043	1119	1043
B	Piston	1028	1033	1033	1044	1120	1044	1120	1044
C	Barrel Assembly	1029	1034	1037	1045	1045	1040	1040	1050
D	Rod	1030	1035	1035	1046	1121	1041	1122	1051
E	Locknut	1031	1047	1047	1047	1114	1047	1114	1047
	Uses Seal Kit	1026	1009	1009	1017	1118	1017	1118	1017

*All backhoes after Serial No. A2800 use 607B, 608B.

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

HYDRAULIC VALVE MAINTENANCE

1. CONTROL VALVES (Ref. Assy. Drawing, Page 13)

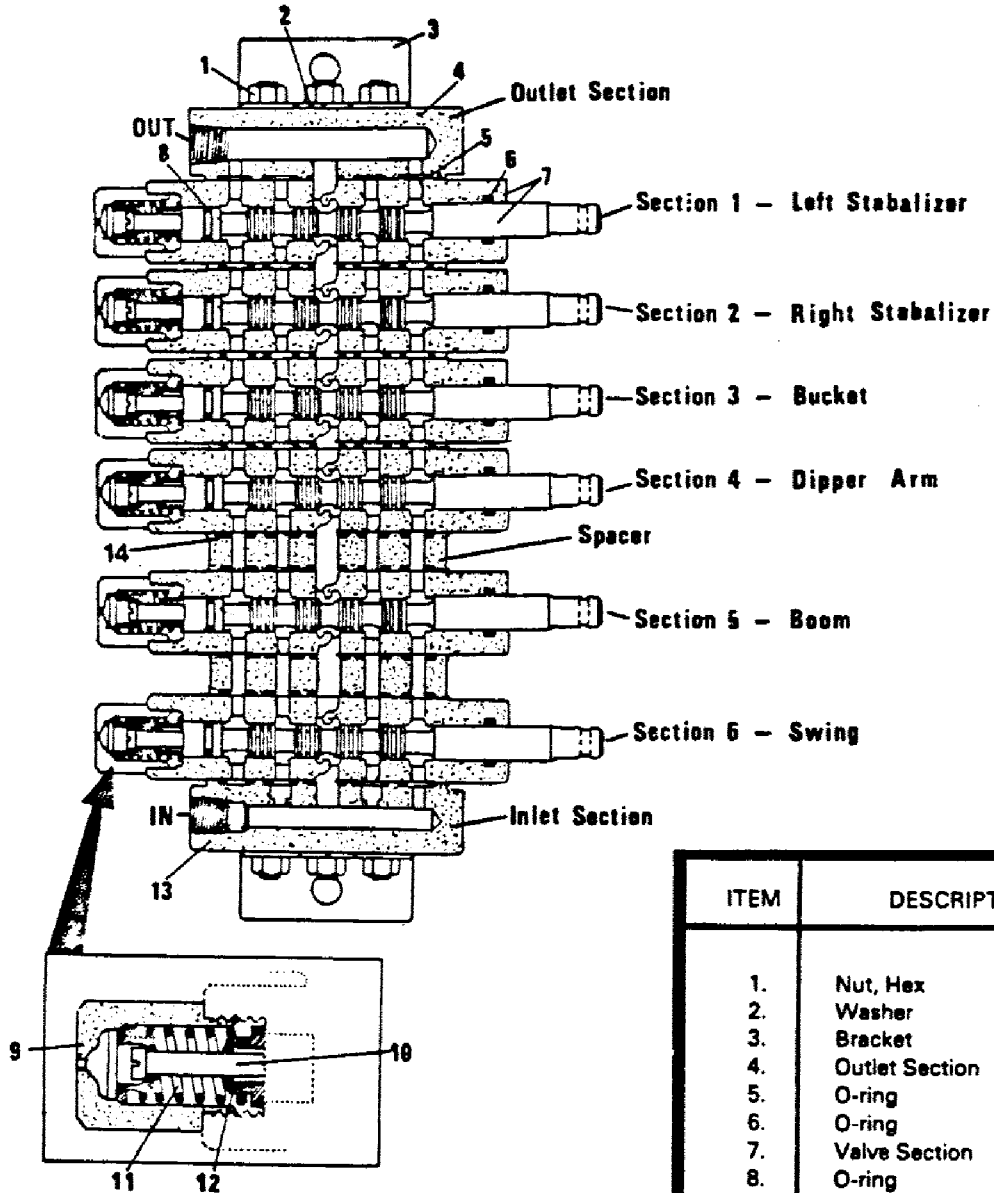
A. DISASSEMBLY

1. Remove nuts (1), mounting bracket (3), washer (2) from inlet end of valve bank.
2. Remove inlet section (13). (Note: In between the inlet, each center valve section, and outlet are three mylar shims, one over each tie rod. Keep these shims, as they will be required during reassembly.)
3. Remove valve sections (7), one at a time, removing o-rings (5) and mylar shims (14) from between each section.
4. Remove spring cap (9) from valve section (7).
5. Remove inner spool from valve body (7) by pushing on handle end, removing from spring end. (Note: Keep body and spool together; they are a matched set.)
6. Remove o-ring (6) from inside bore on handle end of valve body (7).
7. Remove o-ring (8) by removing spring centering assembly from spool.
8. Wash all parts in clean solvent; dry with low pressure air hose.

B. ASSEMBLY

1. Inspect all parts for nicks, burrs, cracks, etc. Clean pipe dope or tape from ports.
2. Lubricate all parts, especially o-ring, with hydraulic oil.
3. Replace o-ring (6) in bore of body using spool in body to guide o-ring into groove.
4. Replace o-ring (8) on spool. (Note: Always make sure o-rings are not twisted in grooves.)
5. Replace spring centering assembly on end of spool. Torque to 30.0 inch pounds.
6. Replace lubricated spool in body (7) using slight twisting motion to avoid unseating or shearing o-rings (6) and (8).
7. Replace spring centering cap.
8. Install one nut on each tie rod. Place two tie rods thru the mounting bracket. Place one flat washer on third tie rod. Push all three rods thru outlet section (4). Place one mylar shim (14) over each tie rod pushing them down onto the outlet section.
9. Install a valve section (7) over tie rods. Replace the o-rings (5) and mylar shims (14) on this section.
10. Repeat step nine as required for valve assemblies having more than one valve.
11. Install the inlet section (13). Place mounting bracket over lower tie rods and install hex nuts (1). Place flat washer (2) over top tie rod and install hex nut (1).
12. Torque tie rods in three steps of 75 inch lbs., 100 inch lbs., and finally 125 inch lbs.

CONTROL VALVE ASSEMBLY



ITEM	DESCRIPTION	PART NO.
1.	Nut, Hex	1053
2.	Washer	1054
3.	Bracket	1056
4.	Outlet Section	1057
5.	O-ring	1058
6.	O-ring	1059
7.	Valve Section	721
8.	O-ring	1058
9.	Spring Cap	1061
10.	Spring Shaft	1062
11.	Spring	1063
12.	Spring Guide	1064
13.	Inlet Section	1065
14.	Mylar Shim	1079
15.	Seal Kit, Control Valve	1060

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

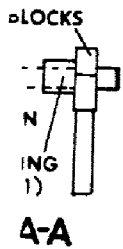
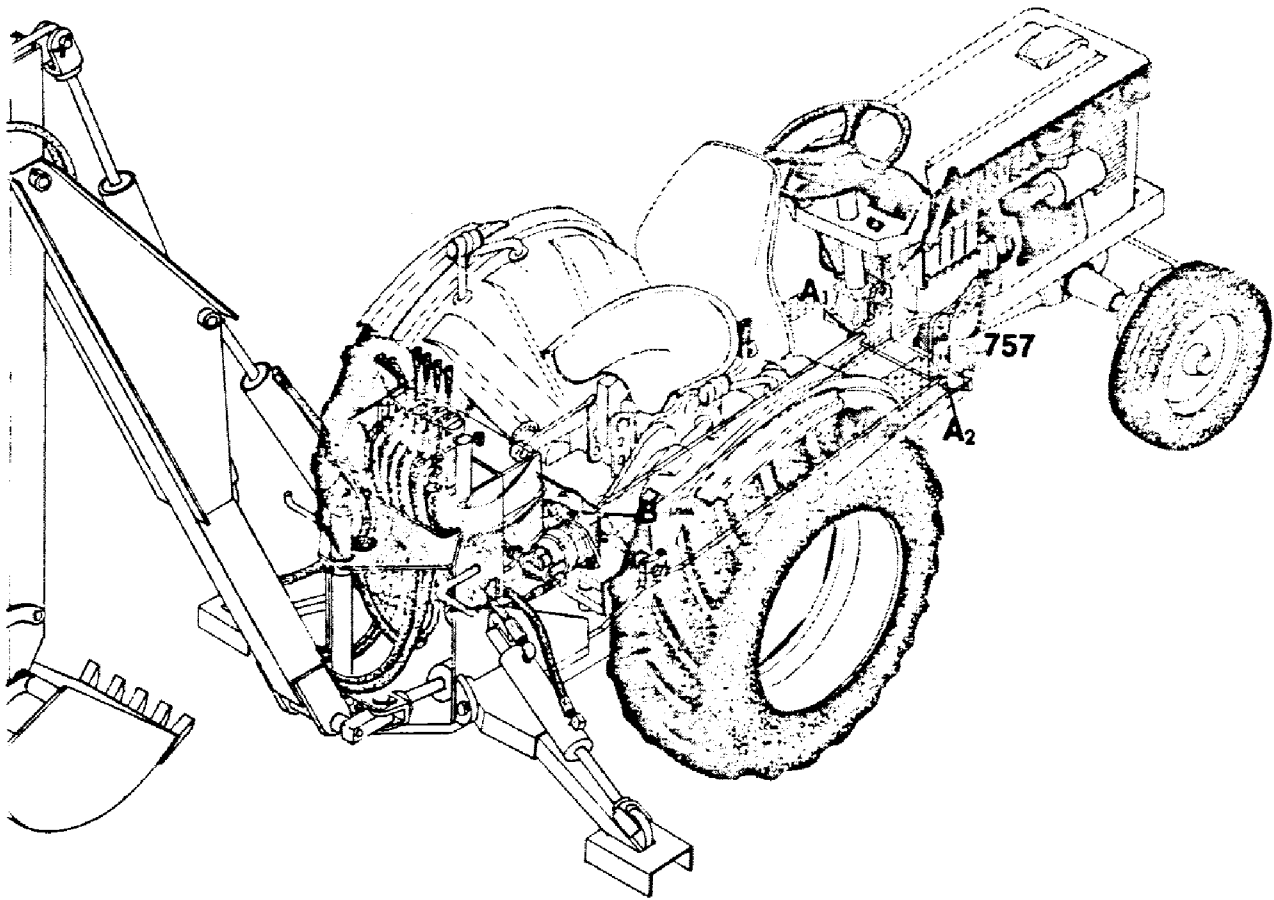
MOUNTING INSTRUCTIONS

- NOTES:** (1) Right or left designations refer to right or left side of tractor when seated on tractor facing forward.
(2) It is recommended that a front end loader be used in conjunction with backhoe.

- 1 — Remove 2" x 6" cross-pieces from shipping pad. Remove bolts holding 629 backhoe to shipping pad. (Located inside mainframe, about the center of the pad.) (NOTE: Keep 2 x 6 cross-pieces to be fitted into stabilizer channels when digging in soft soil, see "Helpful Hints," Item D, page 27)
- 2 — Cut wire holding control handles into place; raise each one into place and insert pin, fastening with C-ring provided. (Pins and C-rings are shipped inserted in appropriate holes.)
- 3 — Back tractor into place over extended arms of Model 629 Backhoe, manually raise arms so that notched ends fasten around 757 belly bracket at points A-1, A-2. Cut engine, set brake so tractor cannot roll. (Remove ignition key.)
- 4 — Using blocks or small jack, manually raise backhoe mainframe saddle blocks B align with tractor hitch pin located on rear of tractor on sides of hitch. Bolt top section of saddle block over hitch pins and tighten securely. (See Insert A-A)
- 5 — 675 pump, 782 coupling, and 783 pump mounting plate for B7100 are shipped pre-assembled (or 667 pump, 670 coupling, and 673 retaining arm for B6000). (Ref. page 16 for pump details.) Slide P.T.O. coupling over tractor P.T.O. shaft depressing spring pin until firmly seated (tighten set screw if on B6000). Release pin and check pump to be assured that connection is seated properly. Connect hose 669 from pump return to reservoir. Connect hose 672 from pressure port on pump to input on backhoe valve bank (Ref. page 22). Connect backhoe return hose 671 from valve bank (Ref. page 22) to reservoir.
- 6 — Stabilizers are shipped separately boxed. Mount right side stabilizer 601. Insert 758 pin and fasten with cotter keys. Fasten stabilizer cylinder to mounting ear on backhoe mainframe using 604 pin and cotter pins. (Ref. Stabilizer Assembly Drawing, page 23 for details.) Connect short hose (638) to top of cylinder routing around front of mainframe as shown. Repeat process for left side stabilizer 602, connecting hoses 634 and 629 respectively to top and bottom of left cylinder. (See Hose Assembly, page 26 and Page 28)
- 7 — Reference page 17 for seat swivel mounting details.
- 8 — Fill reservoir: Start tractor and extend stabilizer cylinders approximately three-quarters of full stroke on pistons. Refill reservoir. Repeat process being careful not to run pump dry on hydraulic oil as this can seriously damage pump. (Be sure and replace reservoir cap each time prior to operation.) Do not fill reservoir more than two inches (5.08 cm) from top. Work cylinders, after filling to evacuate system of any trapped air.
- 9 — The Brantly 625 Backhoe should now be fully mounted and ready for use. Re-check all hoses, bolts, pins to assure secure mounting. (Some bolts, pins, etc. may vibrate loose during shipping.)

KUBOTA TRACTOR
629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
Figure: 15 - KUBOTA K629 BACKHOE

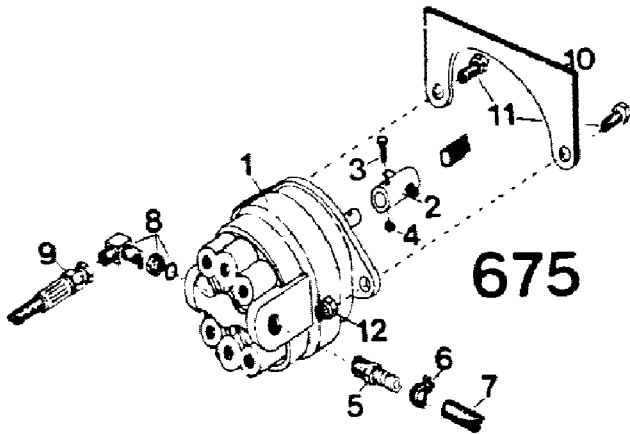
NOTE: Mounting details are same for mounting 619B backhoe on Kubota B6000 tractor.



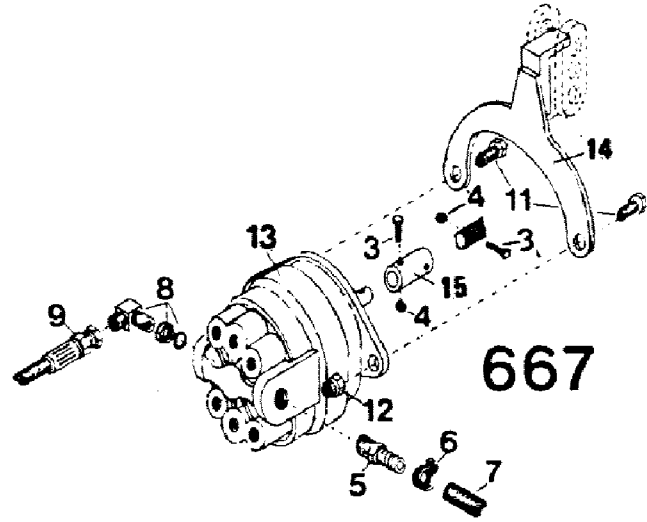
KUBOTA K629 BACKHOE

MOUNTED ON KUBOTA MODEL B7100 TRACTOR

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 16 - PUMP ASSEMBLY



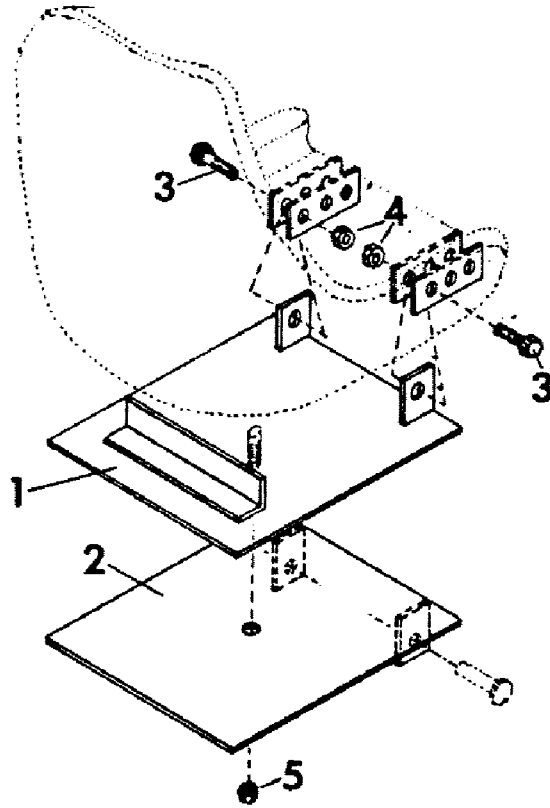
PUMP ASSEMBLY



ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Pump, Hydraulic for 629 Backhoe	675-1	1
2.	Coupling, P.T.O., 629 Backhoe	782-1	1
3.	Bolt, Machine	1/4 x 2 1/2	(1-629) (2-619B)
4.	Nut, Hex	1/4	(1-629) (2-619B)
5.	Adapter, Hose	741-3	1
6.	Clamp, Hose	714-1	1
7.	Hose, Hydraulic	669-1	1
8.	Adapter, 90°	738-1	1
9.	Hose, Hydraulic	672-1	1
10.	Plate, Pump Mounting	783-1	1
11.	Bolt, Machine	5/16 x 1	2
12.	Nut, Hex, Self-Locking	5/16	2
13.	Pump, Hydraulic for 619B Backhoe	667-1	1
14.	Bracket, Pump Mounting	673-1	1
15.	Coupling, P.T.O., 619B Backhoe	670-1	1

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 17 - SEAT SWIVEL ASSEMBLY

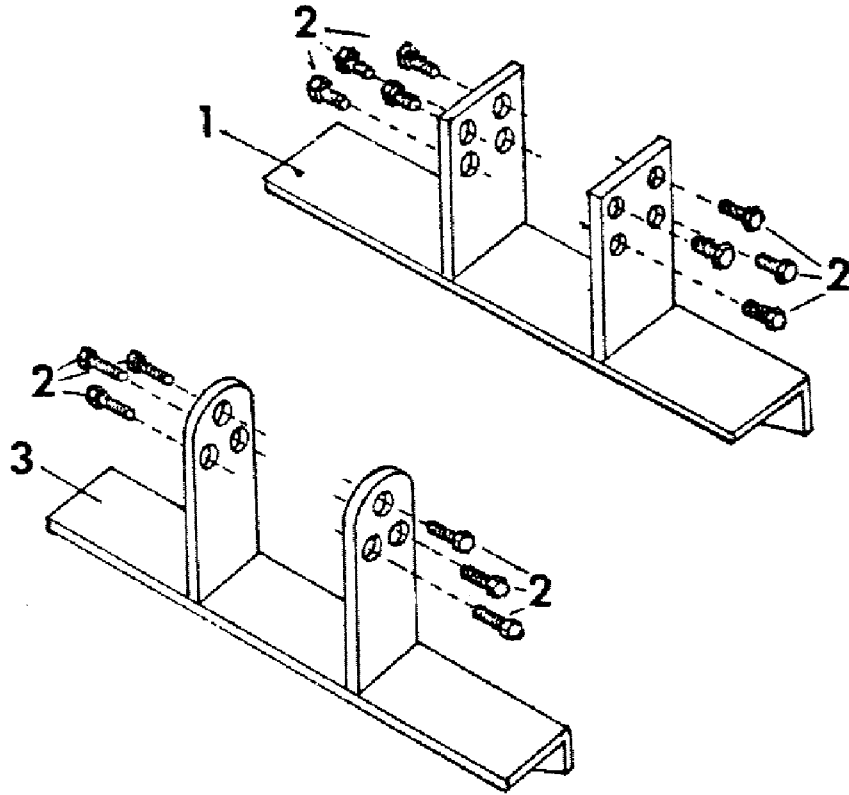


SEAT SWIVEL ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Plate, Seat Upper 619B	2283-1	1
		629	
2.	Plate, Seat, Lower 619B	2283-2	1
		629	
3.	Bolt, Machine	2284-1	2
4.	Nut, Hex	2284-2	
5.	Nut, Hex, Self-Locking	3/8 x 1 1/2	2
6.	Assembly, Seat Swivel, complete	3/8	1
		3/8	Ref. Only
		753-1	
		787-1	

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 18 - BELLY BRACKET ASSEMBLY

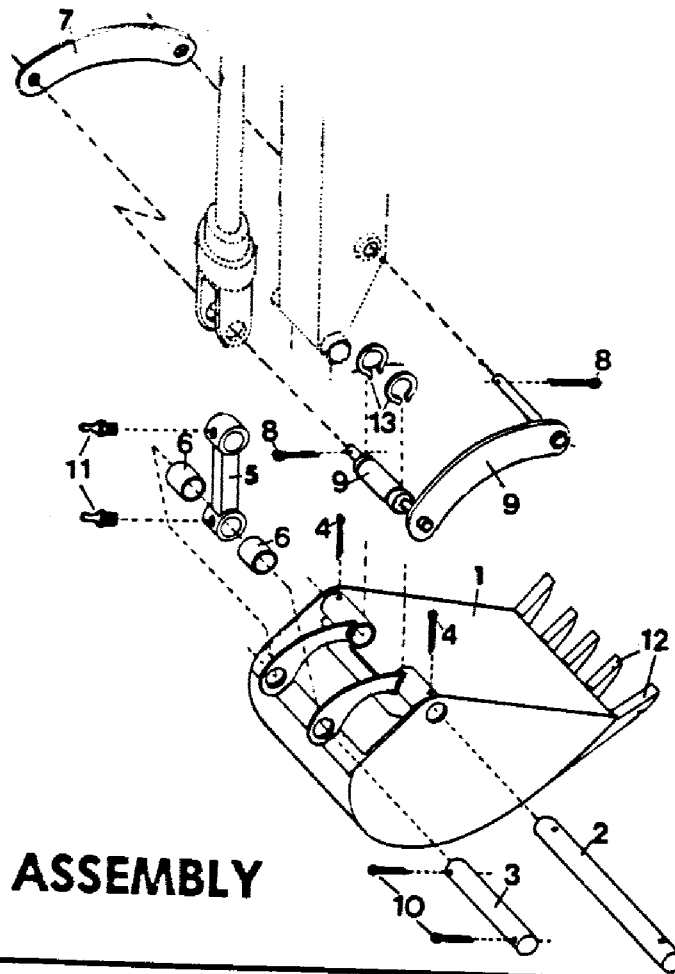


BELLY BRACKET ASSEMBLY

ITEM	DESCRIPTION	PART NO.	QUANTITY
1.	Bracket, Belly	757-1	1
2.	Bolt, Metric	8 x 1.25 x 25mm	619B(8) 629(6)
3.	Bracket, Belly	761-1	1

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

KUBOTA TRACTOR
629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
Figure: 19 - BUCKET ASSEMBLY

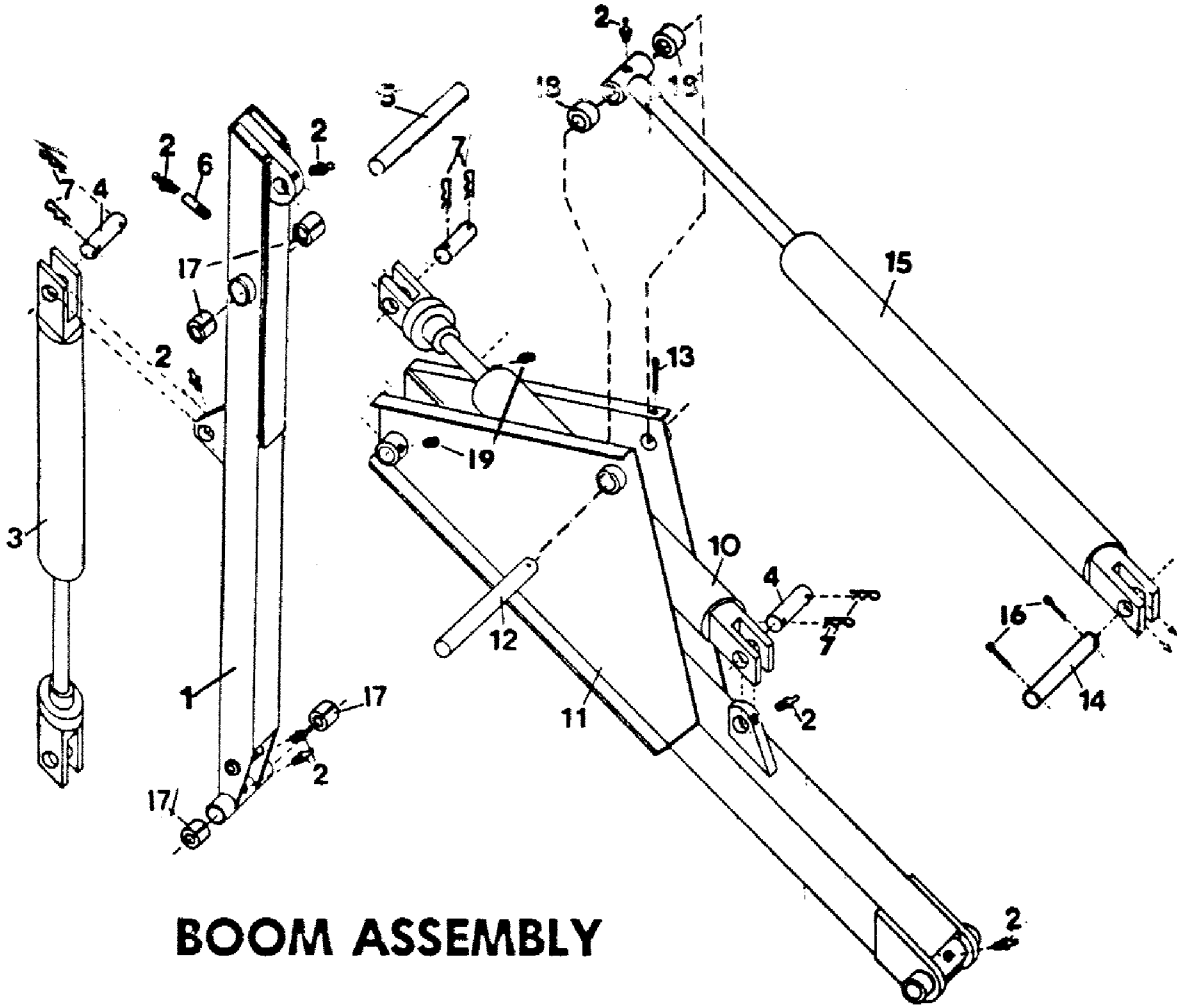


BUCKET ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Bucket, 8 inch Bucket, 13 inch (optional) Bucket, 16 inch (optional)	615 615A 615B	1
2.	Pin, Bucket Swivel, 8 inch Pin, Bucket Swivel, 13 inch (optional) Pin, Bucket Swivel, 16 inch (optional)	645-1 645-2 645-3	1
3.	Pin, Link, Lower Bucket	622	1
4.	Pin Cotter	3/16 x 2	2
5.	Link, Bucket	614	1
6.	Bushing, Link, Lower, 13 inch 16 inch	646-1 646-2	2
7.	Arm, Toggle Link	613-2	1
8.	Pin Cotter	3/16 x 1 1/2	2
9.	Toggle Arm	702-2	1
10.	Pin, Cotter	3/16 x 2 1/2	2
11.	Zert, Grease	648	2
12.	Tooth, Bucket	620	3 (8") 6 (13") 7 (16")
13.	Clip, C-Ring	649	2

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 20 - BOOM ASSEMBLY



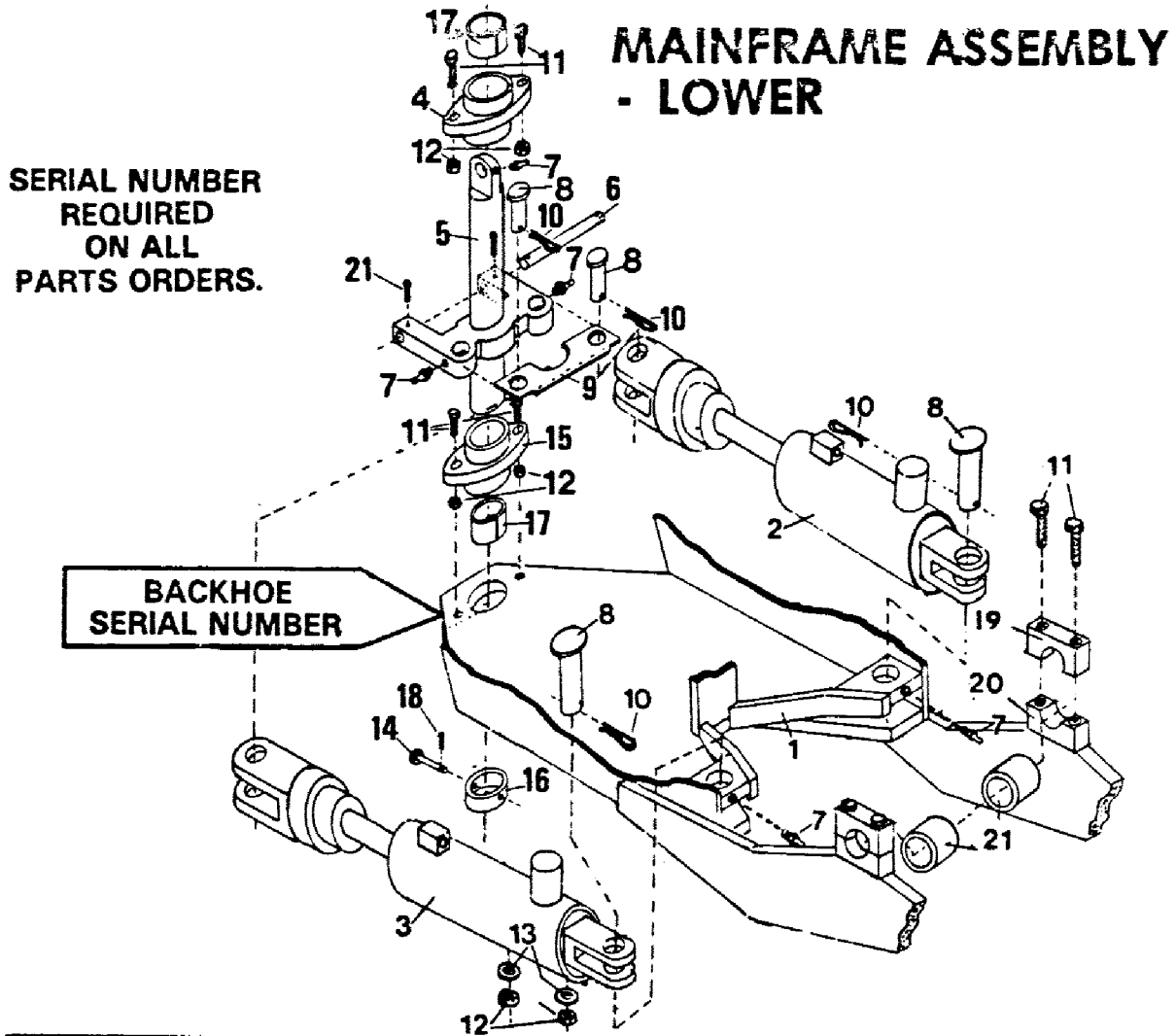
BOOM ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Boom, Dipper	612	1
2.	Zert, Grease	648	9
3.	Cylinder, Hydraulic, Bucket	609	1
4.	Pin, Cylinder	650	3
5.	Pin, Dipper Swivel	651	1
6.	Tube, Grease	1/4 Pipe	1
7.	Clip Hairpin	785	6
8.	Washer, Flat	1/4	1
9.	Nut, Hex	1/4	1
10.	Cylinder, Hydraulic, Dipper	*607A,B	1
11.	Boom, Main	611	1
12.	Pin, Boom Cylinder	652	1
13.	Pin, Cotter	3/16 x 2 1/2	1
14.	Pin, Main Boom Swivel	653	1
15.	Cylinder, Hydraulic, Boom	*608A,B	1
16.	Pin, Cotter	1/8 x 1 1/2	2
17.	Bushing, Hardened Steel	750	4
18.	Bushing	749	2
19.	Set Screw	5/16 x 1/2	2

*All Backhoes After Serial No. A2800 use 607B and 608B.

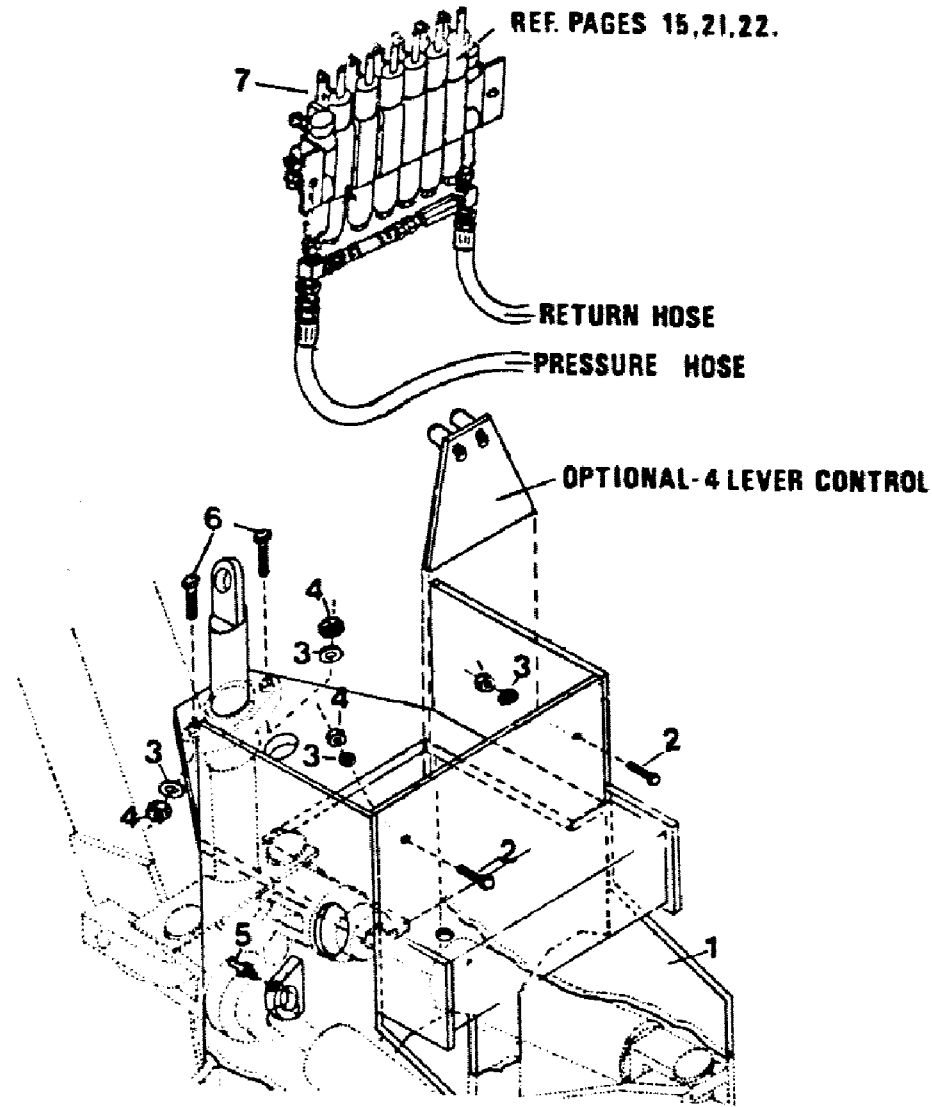
BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 21 - MAINFRAME ASSEMBLY - LOWER



ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Housing, Main frame	610-10	1
2.	Cylinder, Hydraulic, Left	606	1
3.	Cylinder, Hydraulic, Right	605	1
4.	Bearing, Swing Shaft, Upper	617-1	2
5.	Assembly, Swing Shaft	654	1
6.	Pin, Boom Swivel	655	1
7.	Zert, Grease	648	2
8.	Pin, Cylinder	650	4
9.	Plate, Pin Bearing	656	1
10.	Clip, Hairpin	785	4
11.	Bolt, Machine	3/16 x 1 1/2	2
12.	Nut, Hex	5/16	2
13.	Washer, Lock	5/16	2
14.	Pin, Clevis	5/16 x 3	1
15.	Bearing, Swing Shaft, Lower	617-2	1
16.	Ring, Pressure	2011-1	1
17.	Bushing, Hardened Steel	748	1
18.	Pin, Cotter	1/8 x 1	1
19.	Hanger, Top	2051-1	1
20.	Hanger, Bottom	2051-2	1
21.	Bushing	786-1	2

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 22 - MAINFRAME ASSEMBLY - UPPER

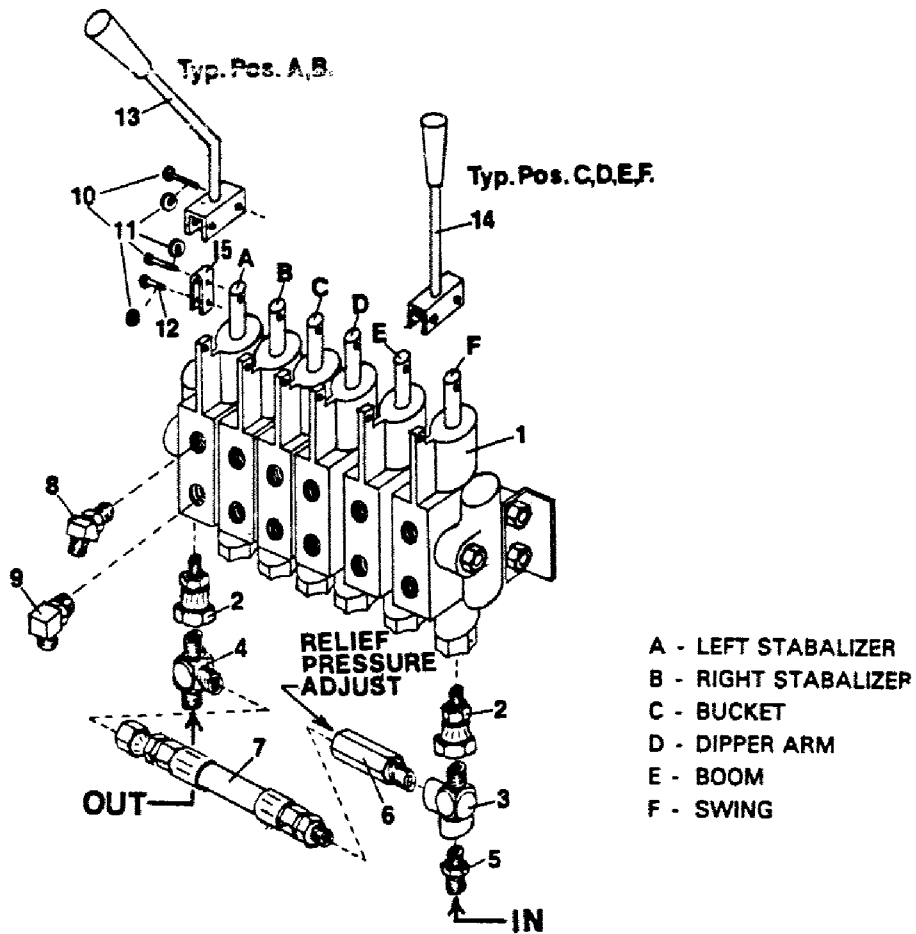


MAINFRAME ASSEMBLY - UPPER

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Housing, Mainframe (REF.)	610	1
2.	Bolt, Machine	5/16 x 1	2
3.	Washer, Lock	5/16	4
4.	Nut, Hex	5/16	4
5.	Zert, Grease	648	2
6.	Bolt, Machine	5/16 x 1 1/2	2
7.	Valve Assembly, Hydraulic	657	1

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

KUBOTA TRACTOR
629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
Figure: 23 - CONTROL SECTION ASSEMBLY - 6 LEVER CONTROL

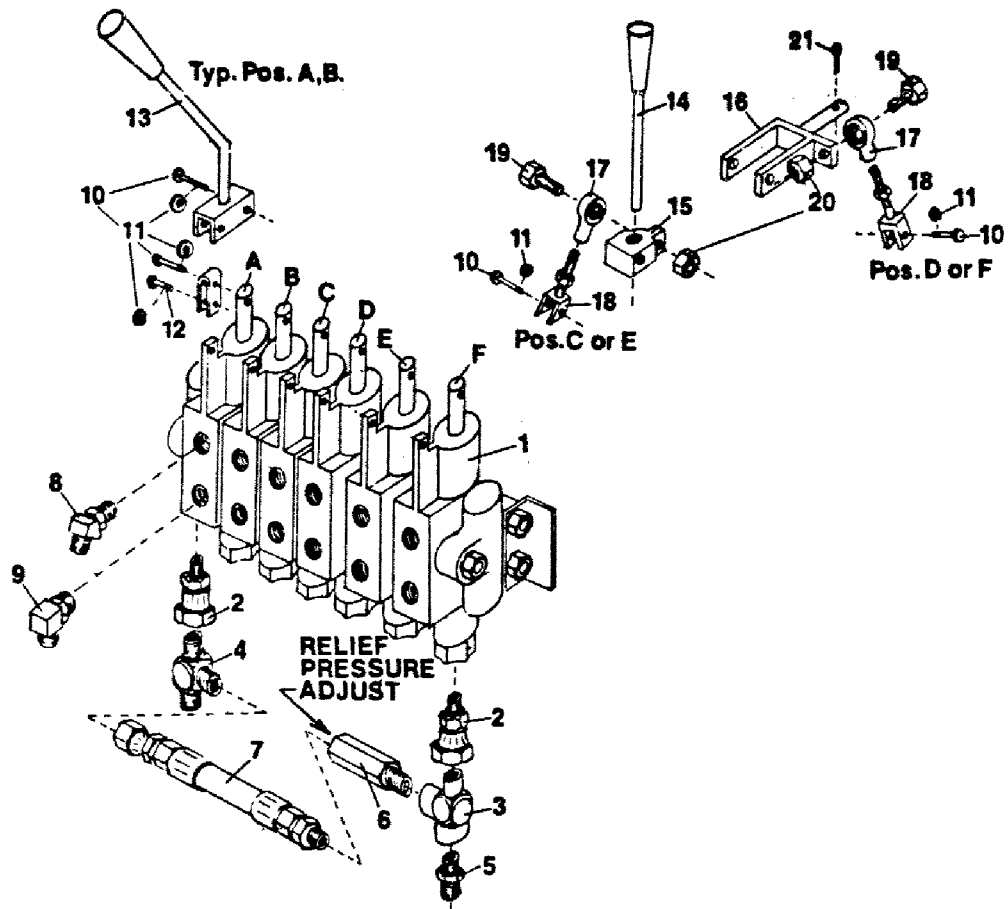


CONTROL SECTION ASSEMBLY - 6 LEVER CONTROL

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Valve Assembly, Hydraulic	657	(Ref.)
2.	Adapter, Connector	659	2
3.	Connector, Tee, M-F-F	658	2
4.	Connector, Tee, M-M-M	660	2
5.	Adapter, Connector	531	1
6.	Valve, Relief	661	1
7.	Hose, Crossover	639	1
8.	Connector, 45 Degree	737	6
9.	Connector, 90 Degree	738	6
10.	Pin, Handle, C-Ring	662-1	12
11.	Clip, C-Ring	663	18
12.	Pin, Handle, C-Ring	662-2	6
13.	Handle, Control, Stabilizer	642	2
14.	Handle, Control, Standard	644	4
15.	Link, Handle	664	6

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

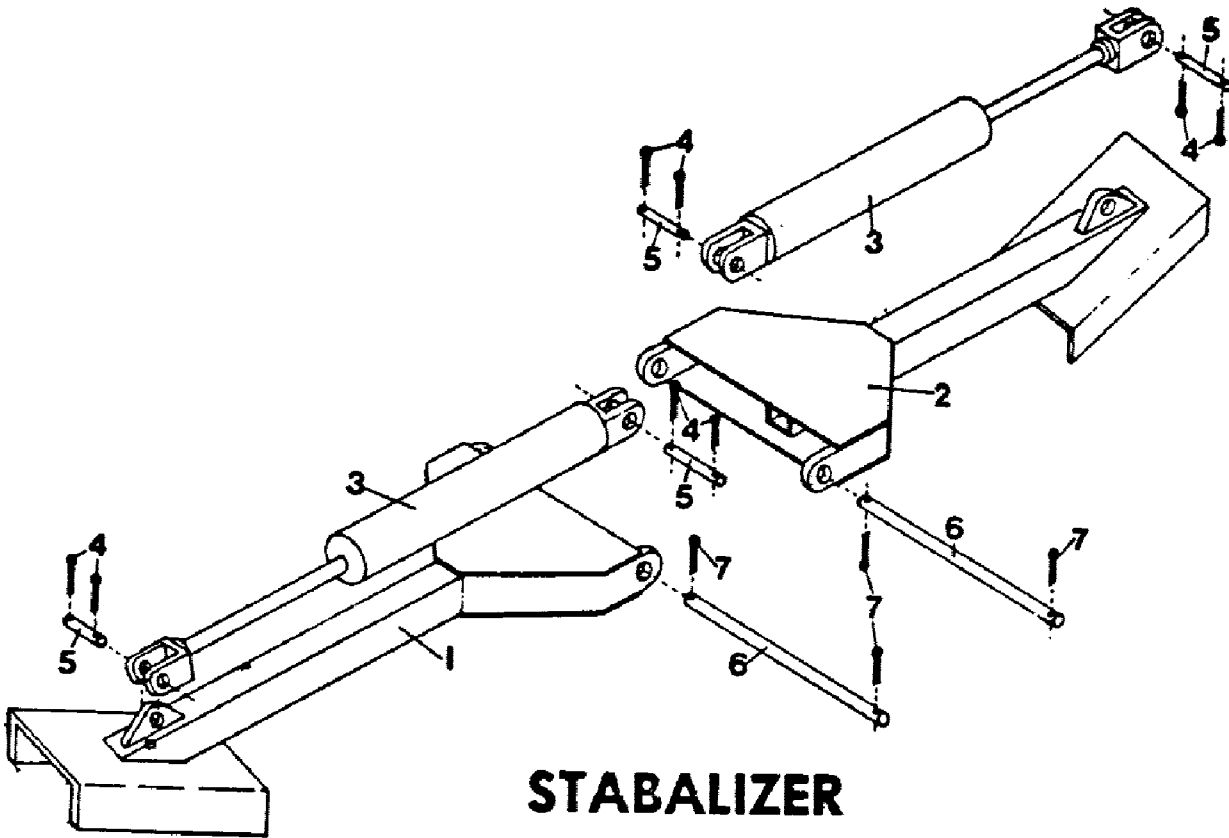
KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 24 - CONTROL SECTION ASSEMBLY - 4 LEVER CONTROL



CONTROL SECTION ASSEMBLY - 4 LEVER CONTROL

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Valve Assembly, Hydraulic	657	(Ref.)
2.	Adapter, Connector	659	2
3.	Connector, Tee, M-F-F	658	2
4.	Connector, Tee, M-M-M	660	2
5.	Adapter, Connector	531	1
6.	Valve, Relief	661	1
7.	Hose, Crossover	639	1
8.	Connector, 45 Degree	737	6
9.	Connector, 90 Degree	738	6
10.	Pin, Handle, C-Ring	662-1	12
11.	Clip, C-Ring	663	18
12.	Pin, Handle, C-Ring	662-2	6
13.	Handle, Control, Stabilizer	642	2
14.	Handle, Control, Standard	644	4
15.	Base, Handle Swivel	2243-1	2
16.	Swivel, Four-Lever Control	2244-1	2
17.	Bearing, End	2278-1	4
18.	Link, Handle, Adjustable	2279-1	4
19.	Bolt, Machine	1/4 x 1	4
20.	Nut, Hex, Self-Locking	1/4	4
21.	Pin, Cotter	1/8 x 1	2
22.	Link, Handle	664	2

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 25 - STABILIZER ASSEMBLY

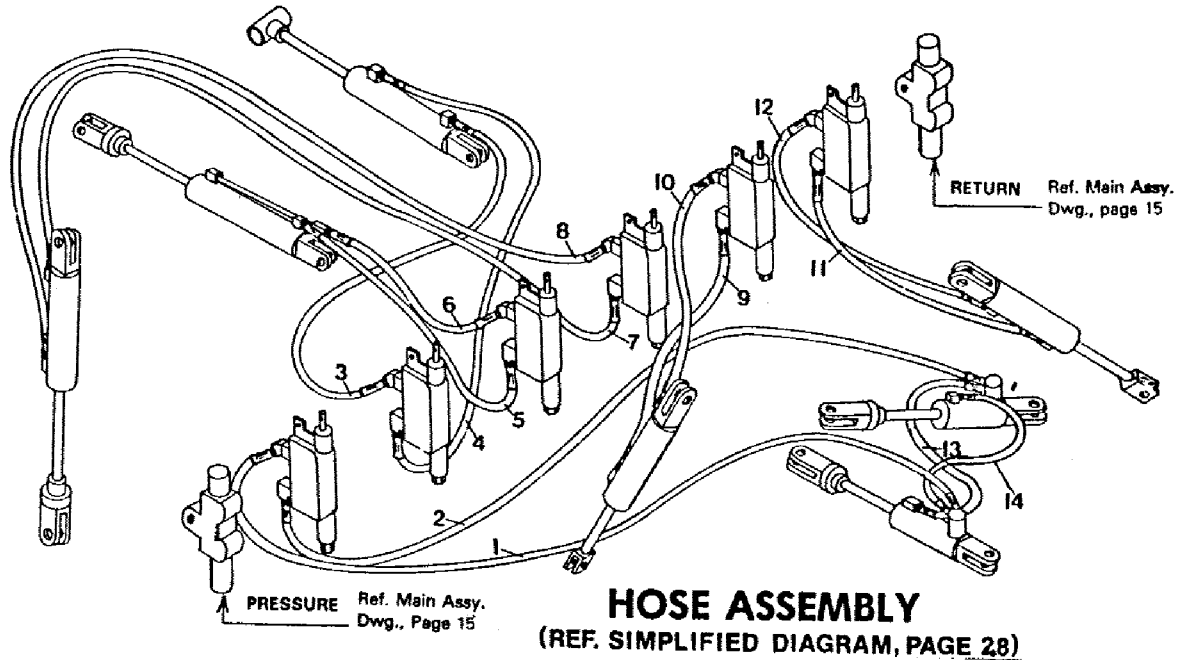


**STABILIZER
 ASSEMBLY**

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
1.	Stabalizer, Right	601	1
2.	Stabalizer, Left	602	1
3.	Cylinder, Hydraulic, Stabalizer		2
	Serial No. A2799 or Below	603	
	Serial No. A2800 and Above and All 629 Backhoes	609	
4.	Pin, Cotter	1/8 x 1	8
5.	Pin, Cylinder	604	4
6.	Pin, Stabalizer	709	2
7.	Pin, Cotter	3/16 x 1 1/2	4

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

KUBOTA TRACTOR
629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
Figure: 26 - HOSE ASSEMBLY



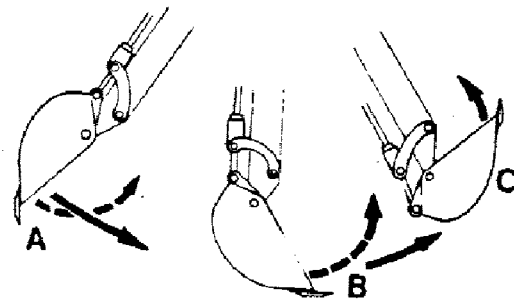
ITEM	DESCRIPTION	PART NUMBER	LENGTH	QUANTITY
1.	Hose, Left Swing	631	21 inches (53.34 cm)	1
2.	Hose, Right Swing	624	19 inches (48.26 cm)	1
3.	Hose, Boom Down	632	24 inches (60.96 cm)	1
4.	Hose, Boom Up	625	49 inches (124.46 cm)	1
5.	Hose, Dipper Up	626	49 inches (124.46 cm)	1
6.	Hose, Dipper Down	633	49 inches (124.46 cm)	1
7.	Hose, Bucket Open	628	117 inches (297.18 cm)	1
8.	Hose, Bucket Closed	635	103 inches (261.62 cm)	1
9.	Hose, Right Stabalizer Up	627-4	39 inches (99.06 cm)	1
10.	Hose, Right Stabalizer Down	638-2	26 inches (66.09 cm)	1
11.	Hose, Left Stabalizer Up	629-4	26 inches (66.08 cm)	1
12.	Hose, Left Stabalizer Down	634-2	20 inches (50.80 cm)	1
13.	Hose, Left Swing Cylinder	640	15 inches (38.70 cm)	1
14.	Hose, Right Swing Cylinder	641	15 inches (38.70 cm)	1

BACKHOE SERIAL NUMBER REQUIRED ON ALL PARTS ORDERS.

HELPFUL HINTS

A. DIGGING HINTS:

The most common error made by new (and sometimes, experienced) operators is in regard to dipper (crowd) arm and bucket interaction in digging. Although the greatest source of digging power is in the bucket (weight of tractor/backhoe, leverage, etc.) the added force of the crowd arm and proper "curl" of the bucket can greatly add to backhoe efficiency. Basically the digging force must be kept directed along the longitudinal axis of the bucket teeth. Initially (position A) the bucket is fully open and the force of the dipper (crowd) boom (and weight of equipment) is used. The bucket is then "curled" to fill bucket. As the bucket is "curled" the dipper (crowd) arm is brought forward to position B. At this point the bucket should be full of material. Continue to curl bucket to prevent spillage of material as dipper (crowd) arm moves to position "C". Raise boom, extend crowd arm, swing to clear trench and empty (uncurl) bucket. **NOTE:** Distance of travel (arc) of dipper (crowd) arm from position "A" to "C" will vary with soil & digging conditions. However, curl of bucket from position "A" thru "C" will remain unchanged.



B. HOSE DAMAGE:

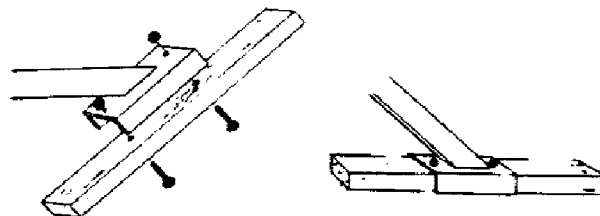
Hoses constitute one of the most critical areas on any item of moving hydraulic equipment. Careful inspection of hoses on a routine basis can give valuable forewarning of impending failure. Also inspection will assure that hoses have not vibrated into areas where movement can cause pinching or cutting of the hose. Particular attention should be given to hoses in the area around the swing shaft and swing cylinders as well as those associated with the stabilizers.

C. PUMP CARE:

Care should be taken to assure that the pump is not run without adequate fluid supply as a few minutes without fluid can seriously damage pump. The hydraulic line from the reservoir to the pump input (suction hose) should be kept lower than the bottom of the reservoir as the pump is gravity fed. Care must also be taken to assure that the oil reservoir is kept full (with 2 inches of top).

D. SOFT SOIL CONDITIONS:

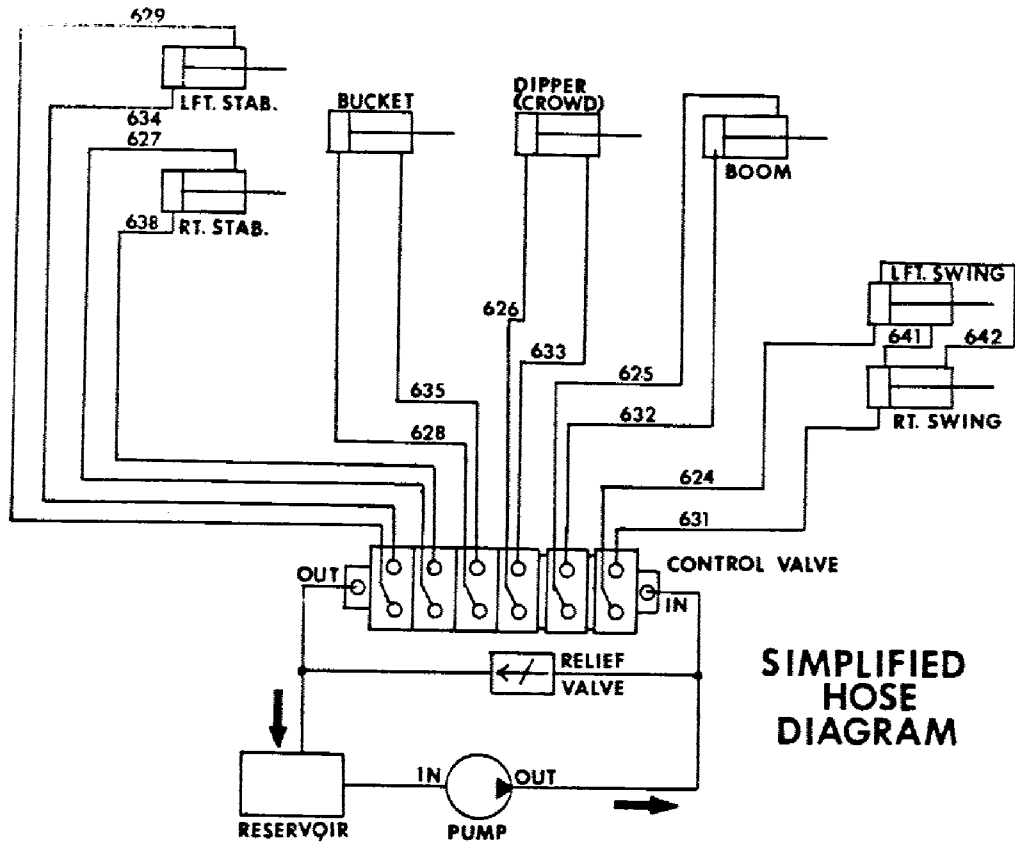
When digging in sandy or soft soil, use of 2" x 6" "pads" will greatly increase stabilizer footage and stability. Length of 2" x 6" is not critical but 20" to 24" is recommended (cross-pieces off shipping pad work quite well). The 2" x 6" should be bolted to stabilizer foot using stove bolts (head down) as shown below. These should, of course, be removed for hard soil conditions.



E. WHEN IN DOUBT:

Study your manual carefully and if your question isn't answered there (or if you are not sure) get in touch with your dealer. If he can't answer your question he will know who to contact at the factory for the answer.

KUBOTA TRACTOR
 629 BACKHOE FOR B7100 TRACTOR & 619B BACKHOE FOR B6000 TRACTOR
 Figure: 28 - SIMPLIFIED HOSE DIAGRAM



SERVICE RECORD: