

**OWNERS
MANUAL**

**Operation &
Maintenance**

for

LOADERS

**500# LIFT CAPACITY
750# LIFT CAPACITY
1000# LIFT CAPACITY**

brantly mfg. co.

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405-335-5593

TO OUR CUSTOMER

We would like to welcome you to the world-wide family of Brantly Equipment users and thank you for the confidence you have shown in our products.

This manual has been prepared to assist you in maintaining maximum performance and longevity from your Brantly Loader. Like all machines, Brantly Loaders require periodic service and maintenance to continue to perform at maximum capacity. In this Owner's Manual, we at Brantly Mfg. Company have tried to explain all basic owner-performed maintenance and service.

A few minutes invested here . . .

. . . may save many hours and dollars later!


- Don't wait until everything else has failed . . . read your manual **FIRST**.
- Don't try to re-invent the wheel . . . This is not our first one. If it won't fit, won't work, or won't quit . . . call your dealer.
- You are our best source for needed improvements; if you have such a suggestion, call or write us.

We at Brantly Manufacturing Company want to continue to supply what YOU want.

Due to continuous design improvements, some photographs and illustrations in this manual may differ in minor detail for some models.

INTRODUCTION

Your Owners Manual will provide you with complete operating instructions, maintenance and parts information, specifications, and important safety precautions to be observed when operating your tractor equipped with your Brantly front end loader.

Read this manual carefully taking special note of information identified with this symbol  Pay strict attention to the safety and maintenance sections of this manual.

Throughout this manual, right-hand (R.H.) and left hand (L.H.) references are determined by reflecting the operators right or left when seated on the tractor seat facing the direction of forward travel (front of tractor)

We would like to welcome you to the world-wide family of Brantly Equipment users and thank you for the confidence you have shown in our products.

This manual has been prepared to assist you in obtaining maximum performance and longevity from your Brantly Loader. Like all machines Brantly Loaders require periodic service and maintenance to continue to perform in the best manner possible. We at Brantly

Mfg. Company have tried to explain in simple terms the types of maintenance and service

A few minutes invested here and there will save many hours and dollars later. Don't wait until everything else is broken before you start your maintenance program.

* Don't try to re-invent the wheel. If you are not sure of a procedure, call your dealer. You see, we just want to help you get the most out of your loader.

* We at Brantly Manufacturer would like to continue to serve you better. If you have any suggestions or comments, please write to us.

Due to continuous design improvements, some procedures and illustrations in this manual may differ in minor details for some models.

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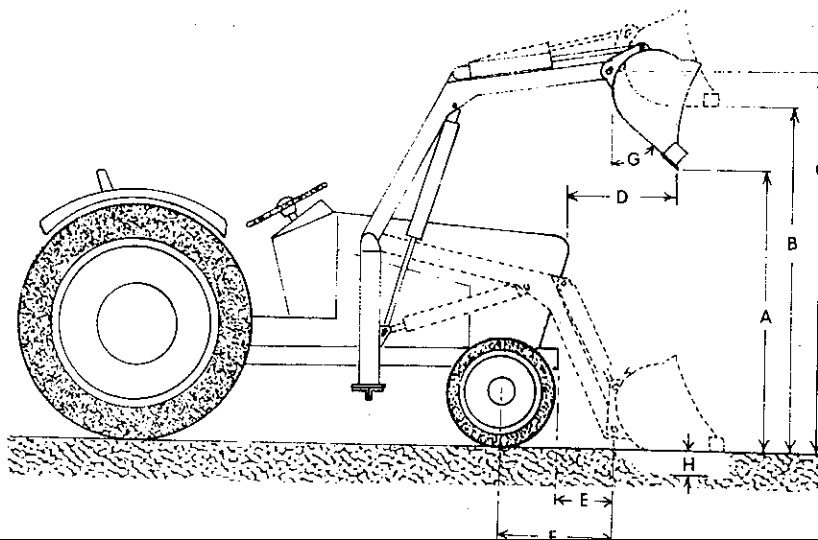
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SPECIFICATIONS

FRONT END LOADERS

[TRACTOR MOUNTED]

<u>ITEM</u>	<u>SL SERIES</u>	<u>ML SERIES</u>	<u>LL SERIES</u>		
<u>CONTROLS:</u>	Two-Spool Monobloc with Float Position 7 GPM	Two-Spool Monobloc with Float Position 7 GPM	Two-Spool Monobloc with Float Position 30 GPM		
<u>LIFT CAPACITY:</u>					
BREAKAWAY:	750 LBS. (337.5 kg)	900 LBS. (405 kg)	1850 LBS. (832.5 kg)		
BUCKET CAPACITY:	500 LBS. (225 kg)	750 LBS. (337.5 kg)	1000 LBS. (450 kg)		
<u>HYDRAULIC SYSTEM:</u>	[REFERENCE TABLE II FOR HYDRAULIC SYSTEM DETAILS]				
HYDRAULIC OIL:	AUTOMOTIVE TYPE "F" TRANSMISSION FLUID				
OPERATING PRESSURE:	700 P.S.I.	900 P.S.I.	1000 P.S.I.		
<u>CYLINDERS:</u>					
BOOM:	2 x 17 3/8 x 1 1/8 (5.08 x 44.13 x 2.86 cm)	2 x 22 1/2 x 1 1/4 (5.08 x 55.88 x 3.13 cm)	2 x 22 1/2 x 1 1/4 (5.08 x 55.88 x 3.13 cm)		
BUCKET:	2 x 10 1/2 x 1 1/8 (5.08 x 26.67 x 2.86 cm)	2 x 16 x 1 1/4 (5.08 x 40.64 x 3.13 cm)	2 x 16 x 1 1/4 (5.08 x 40.64 x 3.13 cm)		
<u>*CYCLE TIMES:</u>					
		TRACTOR HYD.	PUMP KIT	TRACTOR HYD.	PUMP KIT
BOOM UP:	7.5 Sec.	9.5 Sec.	4.5 Sec.	9.5 Sec.	4.5 Sec.
BOOM DOWN:	4.5 Sec.	7.5 Sec.	3.5 Sec.	7.5 Sec.	3.5 Sec.
BUCKET OPEN:	4.5 Sec.	6.0 Sec.	3.5 Sec.	6.0 Sec.	3.5 Sec.
BUCKET CLOSED:	4.0 Sec.	5.0 Sec.	2.5 Sec.	5.0 Sec.	2.5 Sec.
<u>*DIMENSIONAL DATA:</u>					
"A" - Fully Dumped	51.0" (129.5 cm)	71.0" (180.34 cm)	80.0 (203.20 cm)		
"B" - Fully Raised	62.0" (157.5 cm)	89.0" (226.03 cm)	99.0 (251.40 cm)		
"C" - Pivot, Fully Raised	66.0" (167.6 cm)	89.0" (226.03 cm)	99.0 (251.40 cm)		
"D" - Reach (Dumped)	12.0" (30.48 cm)	22.0" (55.88 cm)	19.0 (48.26 cm)		
"E" - Grill-To-Bucket	9.0" (22.86 cm)	16.0" (40.64 cm)	13.0 (33.02 cm)		
"F" - Axle-To-Bucket	18.0" (45.72 cm)	28.0" (71.12 cm)	28.0 (71.12 cm)		
"G" - Dumping Angle	55 Degrees	55 Degrees	54. Degrees		
"H" - Digging Depth	6.0" (15.24 cm)	6.0" (15.24 cm)	6.0 (15.24 cm)		
<u>WEIGHT [SHIPPING]:</u>	350 LBS (157.5 kg)	600 LBS (270 kg)	600 LBS (270 kg)		



TRACTOR - LOADER - PUMP CROSS DIRECTORY

TABLE II

TRACTOR	LOADER	LIFT CAPACITY	BRANTLY'S PART NUMBER			MANUFACTURER'S
			Pump Coupler Comp.	Old Pump No.	New Pump No.	Part No.
ALLIS CHALMERS						
620	530	(750)	MB30-001	416-1	AD25-P1L	H25AA1B
720	530	(750)	MB30-001	416-1	AD25-P1L	H25AA1B
5020	537	(1000)	MB44-001	*416-1	AD25-P1L	H25AA1B
5030	544	(1000)	MB44-001	*416-1	AD25-P1L	H25AA1B
ARIENS						
S-14-S-17	525	(500)	MB25-001	410-1	AD43-W2L	43yB001102-2LB
S-16-S-18	525	(500)	MB25-001	410-1	AD43-W2L	43yB001102-2LB
BOLENS						
Ht-20/23	505-A	(500)	MB05-001	416-1	AD25-P1L	H25AA1B
Qt-17	506	(500)	MB06-001	416-1	AD25-P1L	H25AA1B
G174	536	(500)	Mb36-001	416-1	AD25-P1L	H25AA1B
G179	546	(750)	MB46-001	416-1	AD25-P1L	H25AA1B
FORD						
125	531	(500)	MB31-001	410-1	AD43-W2L	43yB001102-2LB
145	531	(500)	MB31-001	410-1	AD43-W2L	43yB001102-2LB
165	531	(500)	MB31-001	410-1	AD43-W2L	43yB001102-2LB
1600	543	(1000)		**		
195	548	(500)	MB48-001	516-1	AD43-W2R	43yB001102-2RB
1500	556	(750)		**		
1900	547	(1000)		**		
3600	552	(1000)		**		
JACOBSEN						
1250	531	(500)	MB31-001	410-1	AD43-W2L	43yB001102-2LB
1450	531	(500)	MB31-001	410-1	AD43-W2L	43yB001102-2LB
1650	531	(500)	MB31-001	410-1	AD43-W2L	43yB001102-2LB
53500	548	(500)	MB48-001	516-1	AD43-W2R	43yB001102-2RB
JOHN DEERE						
300, 314,	532	(500)	MB32-001	516-1	AD43-W2R	43yB001102-2RB
316, 317,	532	(500)	MB32-001	516-1	AD43-W2R	43yB001102-2RB
400,	540	(500)	MB40-001	667-1	AD25-P1R	H25AA2B
850	541	(1000)		**		
950	541	(1000)	MB41-001	*675-1	AD39-P1L	H39AA1B
KUBOTA						
B-6000,						
B-7100	529	(500)		**		
185, 185Dt	570	(750)	MB70-001	*675-1	AD39-P1L	H39AA1B
245, 245Dt	574	(750)	MB74-001	*675-1	AD39-P1L	H39AA1B
295Dt	572	(1000)	MB72-001	*675-1	AD39-P1L	H39AA1B
MASSEY, FERGUSON						
210	544	(1000)	MB44-001	*416-1	AD25-P1L	H25AA1B
220	544	(1000)	MB44-001	*416-1	AD25-P1L	H25AA1B
SATOH/MITSUBESHI						
S-370,						
Beaver	533	(500)		**		
9 Buck	539	(500)		**		
S-630, Bull	534	(1000)		**		
9 Stallion	550	(1000)		**		
SIMPLICITY						
9020, 4040,						
4041	530	(750)	MB30-001	416-1	AD25-P1L	H25AA1B
9523	544	(1000)	MB44-001	*416-1	AD25-P1L	H25AA1B
9528	544	(1000)	MB44-001	*416-1	AD25-P1L	H25AA1B
YANMAR						
135, 155,						
155-D	555	(500)		**		
240	524	(750)		*416-1	AD25-P1L	H25AA1B
240-D	520	(750)		*416-1	AD25-P1L	H25AA1B
330	541	(1000)		*675-1	AD39-P1L	H39AA1B
330-D	503	(1000)		*675-1	Ad39-P1L	H39AA1B

* Pump Kit Optional — Loader Supplied To Operate From Tractor Hydraulics.

** Loader Operates From Tractor Hydraulics Only.

SHIPPING/CRATING INFORMATION

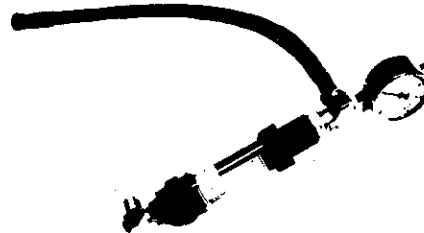
All loaders are shipped disassembled, with bucket, boom, and box of parts as separate pieces. The box of parts is skid mounted while boom & bucket are shipped loose. Shipping weight are as follows:

SERIES	BOX PARTS	BOOM	BUCKET
SL Series (500 Lb.)	190	135	40 Inch — 126
ML Series (750 Lb.)	275	225	48 Inch — 148
LL Series (1000 Lb.)	300	250	60 Inch — 165

All loaders are shipped with mounting instructions and operator/parts manual. Upon completion of mounting, mounting instructions should be inserted in operator's manual since parts unique to a particular loader model are shown only on mounting instructions.

HYDRAULIC TEST KIT

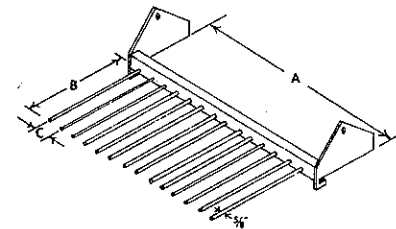
Available for setting/checking hydraulic flow and pressure, which is required to validate warranty. Accuracy is $\pm 5\%$. Unit is rugged and can be used anywhere on systems with less than 3000 P.S.I. pressure and 15 GAM flow rating.



MANURE FORK ATTACHMENT

Available for all bucket sizes. Quick attach for easy conversion from material to manure bucket. Order by bucket size.

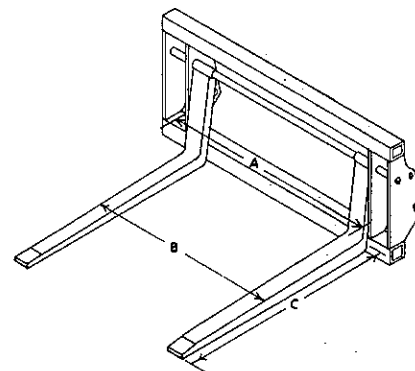
	DIM. "A"	DIM. "B"	DIM. "C"
512-1 (40 Inch)	40"	20"	4"
512-2 (48 Inch)	48"	20"	4"
512-3 (60 Inch)	60"	20"	4"



PALLET FORK ATTACHMENT

Available for all loader models. Attach in place of loader bucket. Order by loader series (size).

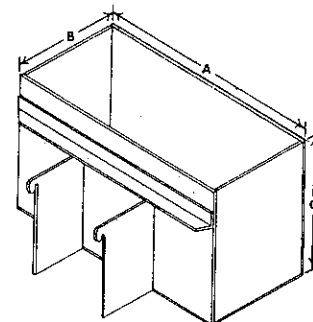
	DIM "A"	DIM. "B"	DIM. "C"
430-1 (SL)	35 $\frac{3}{4}$ "	35 $\frac{1}{8}$ "	26"
430-2 (ML)	28 $\frac{1}{8}$ "	27 $\frac{3}{4}$ "	36"
430-3 (LL)	37 $\frac{5}{8}$ "	37"	36"



BALLAST BOX ATTACHMENT

Available for four 500-lb. Series Loaders this attachment is to be used for rear end ballast with 525, 505, 532, and 540 loaders where tractor wheel weights or other rear end ballast is not used.

	DIM "A"	DIM "B"	DIM "C"
NC25	35 $\frac{1}{2}$ "	12 $\frac{1}{2}$ "	19 $\frac{3}{4}$ "
NC05	35 $\frac{1}{2}$ "	12 $\frac{1}{2}$ "	19 $\frac{3}{4}$ "
NC32	35 $\frac{1}{2}$ "	12 $\frac{1}{2}$ "	19 $\frac{3}{4}$ "
NC40	35 $\frac{1}{2}$ "	12 $\frac{1}{2}$ "	19 $\frac{3}{4}$ "



SAFETY PRECAUTIONS

IMPROPER USE OF TRACTOR EQUIPMENT CAN RESULT IN SERIOUS INJURY

Pay close and strict attention to the job at hand.

Keep all other persons clear of work area.

Know your equipment and its controls.

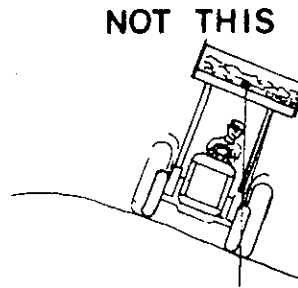
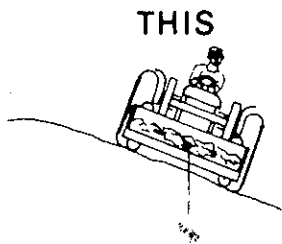
Always check the area around you to assure safe operation before moving equipment.

This equipment is not a toy. Do not allow children on, or near, equipment during operations.

Never drive tractor and loader down a hill steeper than 15 degrees.

Never exceed 3 MPH (1.8642 km/hr) when loaded.

Carry bucket low except when loading or unloading.



Always remain on tractor, at the controls, when tractor engine is running. Lower bucket, stop engine and remove ignition key when not on tractor.

Never use loader as a battering ram.

Never operate loader without necessary rear ballast.

Practice smooth, even transfer of loads. Sudden, jerky movements are dangerous to equipment and personnel.

Check hydraulic system before each use for signs of wear or leakage. Escaping liquids under pressure can be dangerous.

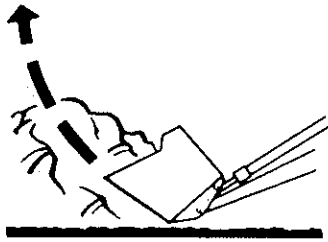
Keep hands, gloves, clothing away from moving parts.

DO NOT HURRY!

These instructions are intended to be general in nature. Since specific work situations will vary greatly, specific precautions and procedures must be developed by user to assure safe, efficient operation in his specific work environment.

OPERATION

The lift and rollback of the bucket will increase efficiency because



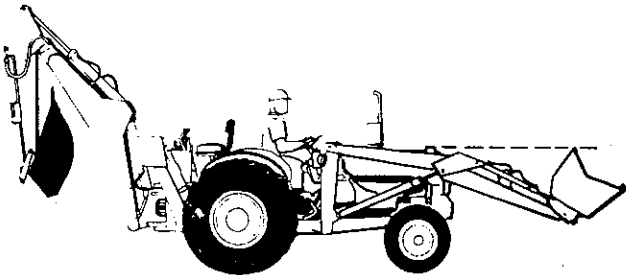
a level bucket throughout the lifting cycle resists bucket lift or breakaway.



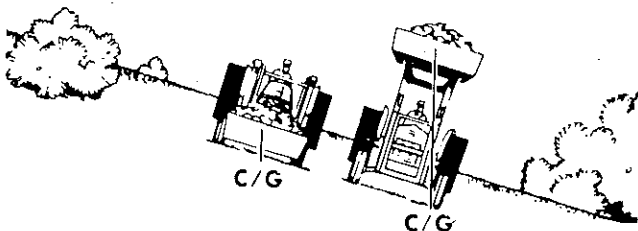
NOTE: If the bucket is not completely filled, do not waste time by trying to load additional material in the bucket. Maximum productivity is determined by the amount of material loaded in a given period of time. Time is lost if two or more attempts are made to fill the bucket on each pass.

CARRYING THE LOAD

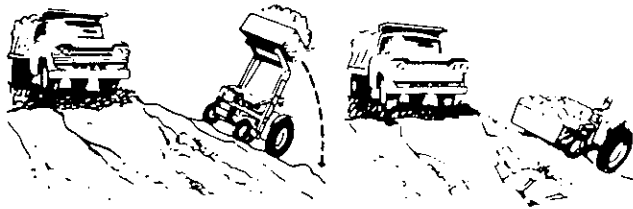
Position the bucket just below the level of the tractor hood, for maximum stability and visibility, whether the bucket is loaded or empty.



When operating the loader on a hill or slope, keep the bucket as low as possible. This keeps the bucket center of gravity as low as possible. This will give you maximum tractor stability.

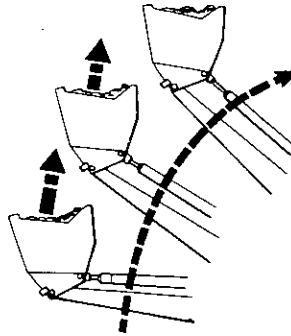


When transporting the load, keep the bucket as low as possible to resist tipping, in case a wheel drops in a rut.



LIFTING THE LOAD

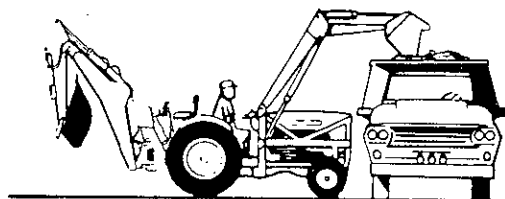
When lifting the load, keep the bucket positioned so as to avoid spillage. On self-leveling loaders, pull the selector valve knob "OUT". The self-leveling action of the loader automatically positions the bucket to retain the full load as the loader lift arms are raised.



NOTE: Do not attempt to lift bucket loads in excess of the loader capacity.

DUMPING THE BUCKET

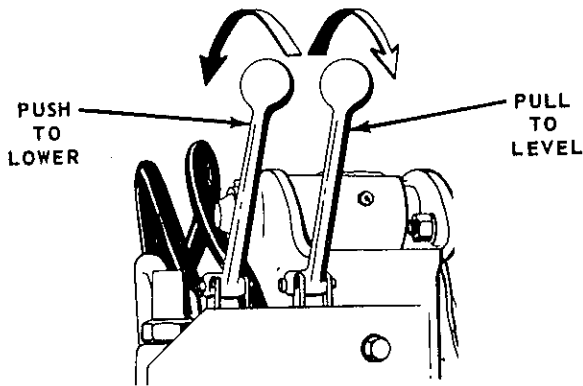
Lift the bucket high enough to clear the side of the vehicle. Move the tractor in as close to the side of the vehicle as possible, then dump the bucket.



OPERATION

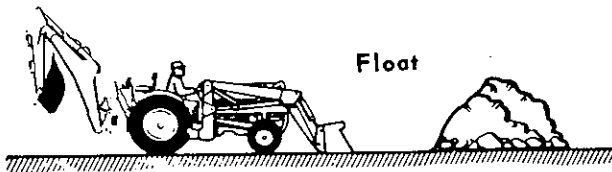
LOWERING THE BUCKET

After the bucket is dumped, back away from the vehicle while lowering and leveling the bucket.

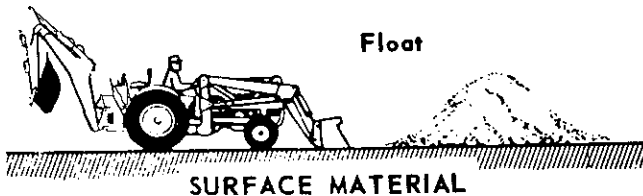


OPERATING WITH FLOAT CONTROL (COMPONENTS 19-513 AND 19-516)

During hard surface operation, keep the bucket level and put the lift lever in the float position to permit the bucket to float on the working surface. If hydraulic down pressure is exerted on the bucket it will wear faster than normal.



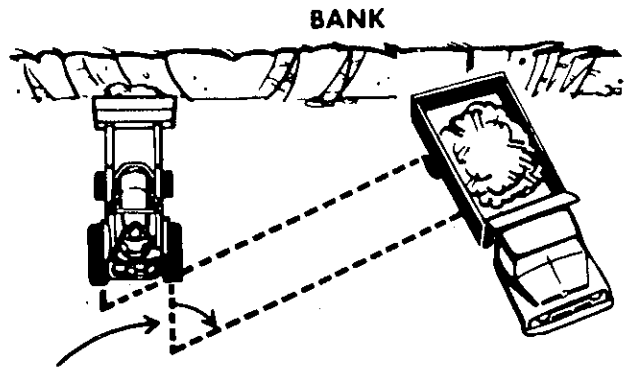
The float position will also prevent the mixing of surface material with stockpile material. The float position will reduce the chance of surface gouging when removing snow or other material, or when working with a blade or broom.



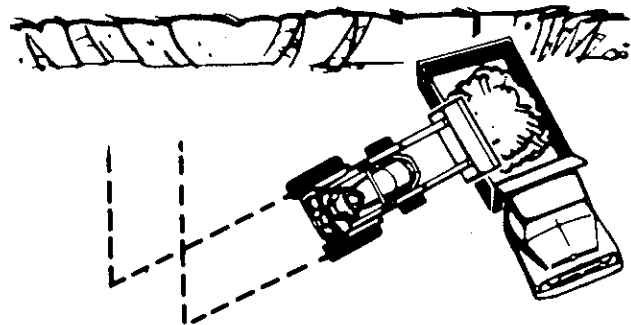
LOADING FROM A BANK

Choose a forward gear that provides sufficient ground speed for loading.

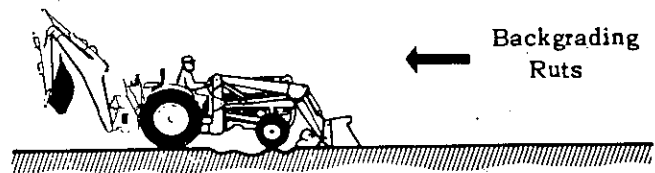
For faster loading, maintain a 45° turn angle, and work as close to the truck as possible.



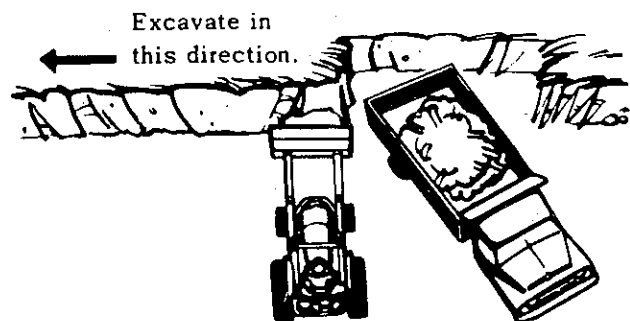
Keep the surface from the bank to the truck free of ruts and holes.



Backgrade with the bucket occasionally, and approach the back with the bucket flat. Slight down pressure with the bucket level helps keep the working area smooth. Use the heel or lower rear edge of the bucket for backgrading ruts, etc.

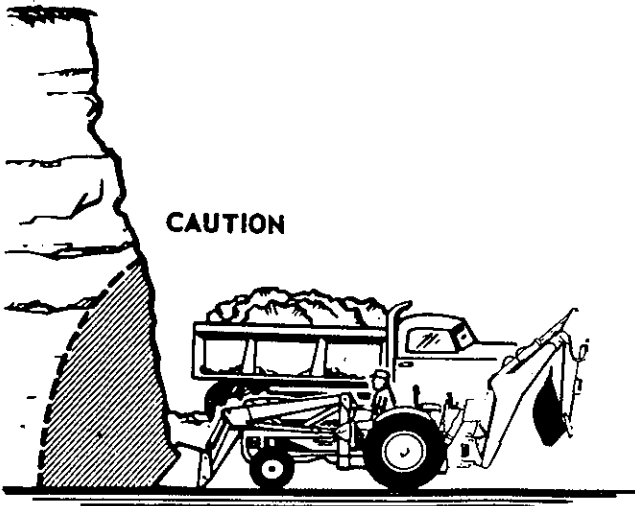


Always keep the truck close to the operation and keep the cutting depth about half the length of the truck bed.



OPERATION

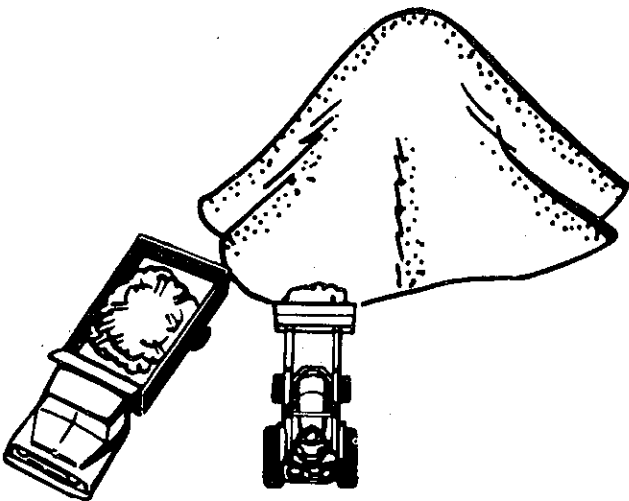
Exercise caution when undercutting high banks. Soil slides can be dangerous. Load from the bank as low as possible for maximum efficiency.



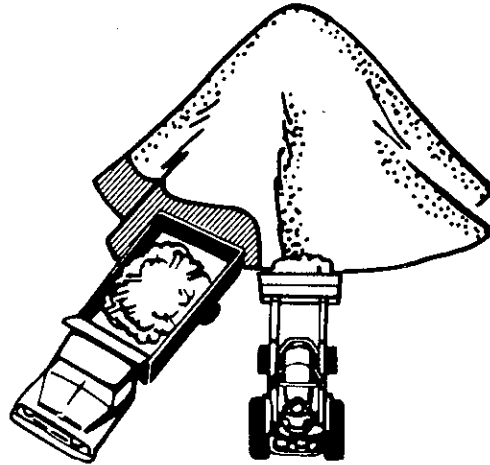
Remember that the loader lift and breakaway capacities diminish rapidly as loading height is increased.

LOADING FROM A STOCKPILE

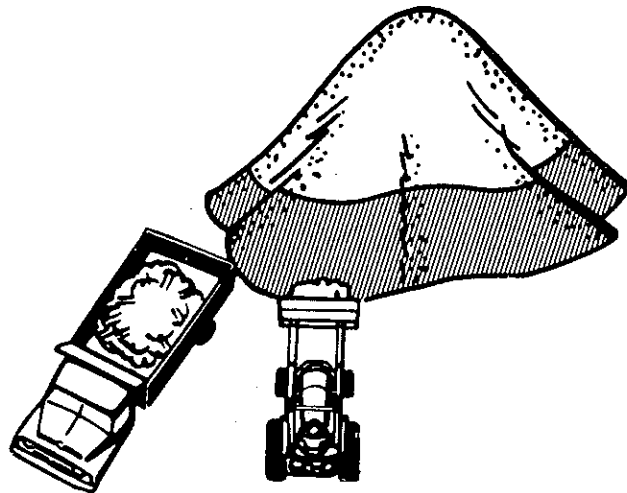
Initially approach the stockpile with the bucket approximately two feet off of the ground. The bucket may be operated at a lower position when the stockpile height has been reduced so the bucket will break out easily at ground level.



Keep an area clean for the truck to back into, as close to the work area as needed. This will minimize the travel distance from the pile to the truck.



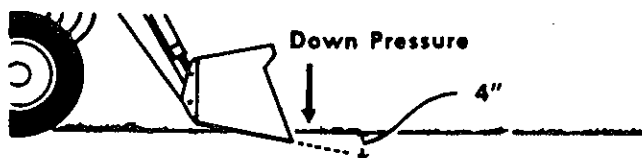
Keep the truck in close and work around the pile.



PEELING AND SCRAPING

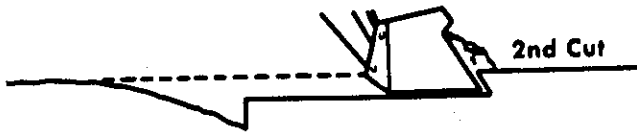
Push the selector valve knob "IN" on self-leveling loaders to prevent the self-leveling action of the control valve from operating during peeling and scraping operations.

Use down pressure and a slight bucket angle to start long cuts. Make a short angle cut and break out cleanly.

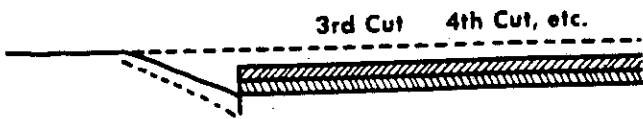


OPERATION

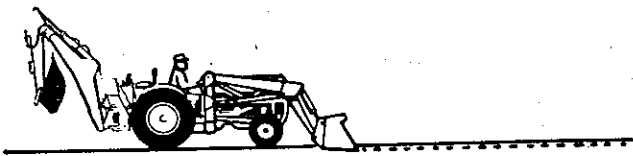
With the bucket level, start a cut at the notch approximately two inches deep. Hold the depth by feathering the bucket lever to adjust the cutting lip up or down. When the front tires enter the notch, adjust the lift and bucket lever to maintain proper depth.



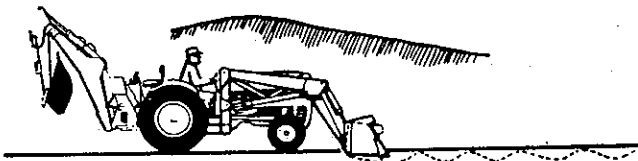
Make additional cuts until the desired depth is reached.



During peeling operations, use lift cylinder down pressure and a slight bucket angle for penetration to the desired working depth. After reaching the desired working depth, use only the bucket lever, leaving the lift lever in either the float or neutral position. This allows the operator to control the bucket angle and maintain a precise cut.



If the lift lever is used without controlling the bucket angle, the bucket will gouge and leave a series of ruts in the surface.

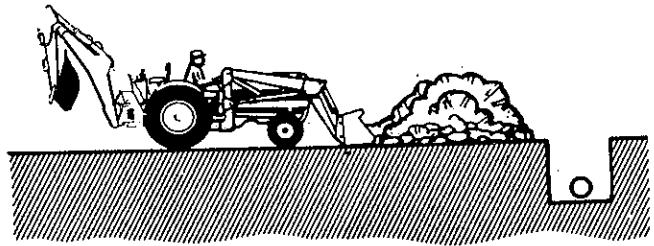


BACKFILLING

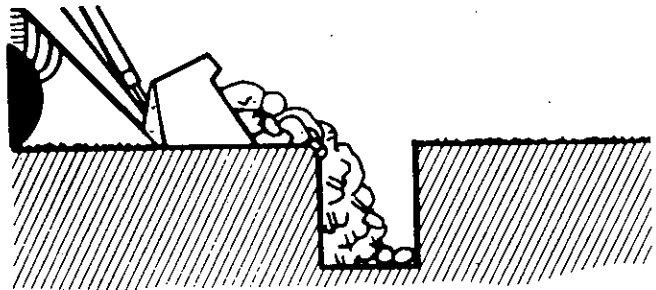
On self-leveling loaders, push the selector valve knob "IN" to bypass the self-leveling action of the control valve during backfilling operations.

Efficient backfilling occurs when the tractor pushes the maximum amount of soil without losing speed or traction. If the tractor slows, reduce the width of cut. If the tractor is not working at capacity, increase the width of cut.

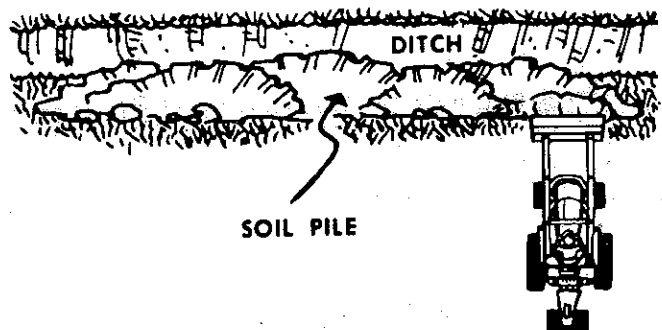
Approach the pile with a level bucket. When adjusting the cut to a load that the tractor can push, actuate the lift lever and maintain a level bucket.



Leave the soil in the bucket because dumping on each pass wastes time. Lift and level the bucket for the next pass while backing from the excavation.

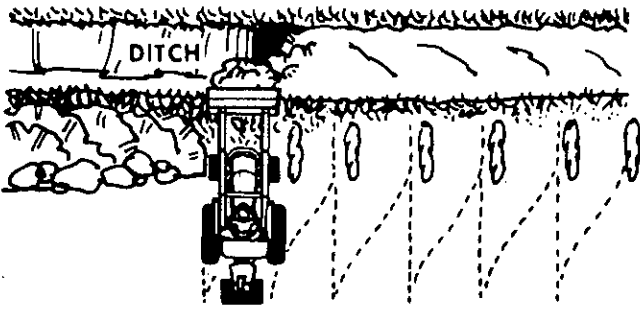


Operate at right angles to the ditch. Take as big a bite as the tractor can handle without lugging the engine.

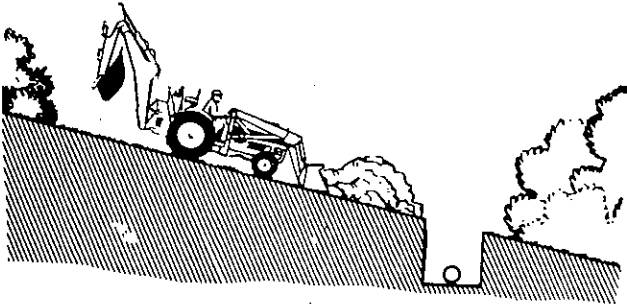


OPERATION

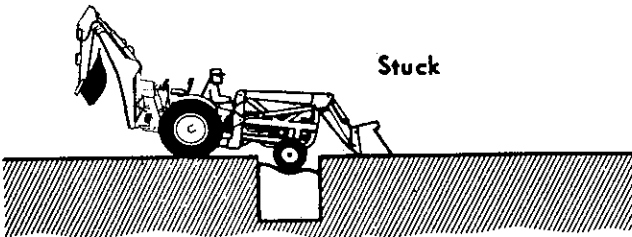
Leave the soil which drifts over the side of the bucket for final cleanup.



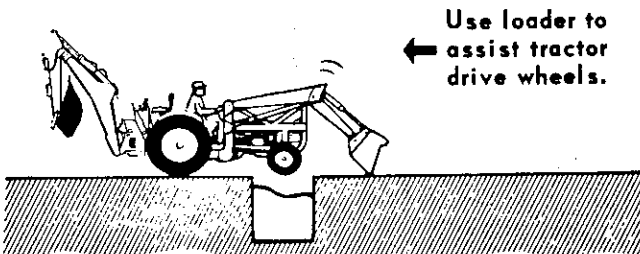
When backfilling on a slope, have the soil piled on the high side for easier backfilling.



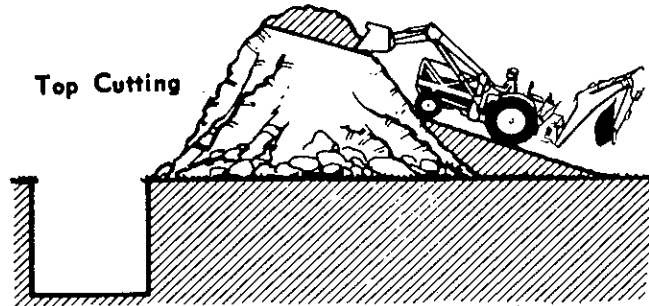
If stuck in the ditch . . .



. . . dump the bucket and apply down pressure to lift the front wheels out of the ditch. To move the tractor backward, operate the bucket lever as tractor power is applied.

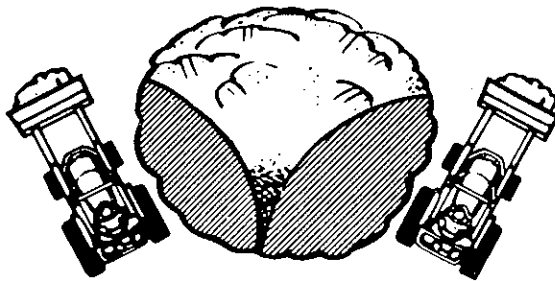


When backfilling from a large pile, shovel off the top of the pile, pushing toward the excavation. Drag some soil backward to form a work ramp of convenient grade.

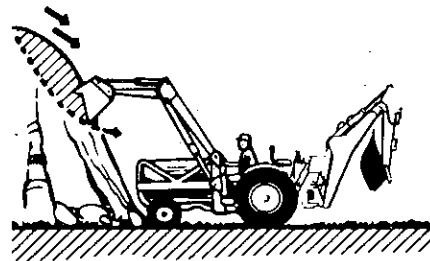


BREAKING AND SPREADING LARGE PILES

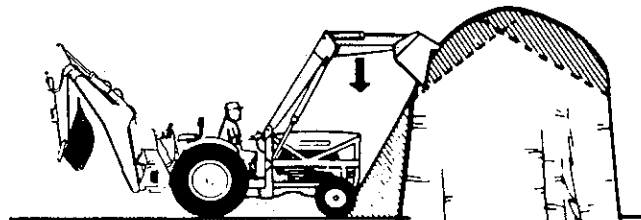
Sidecutting is a good technique for cutting down a large stockpile.



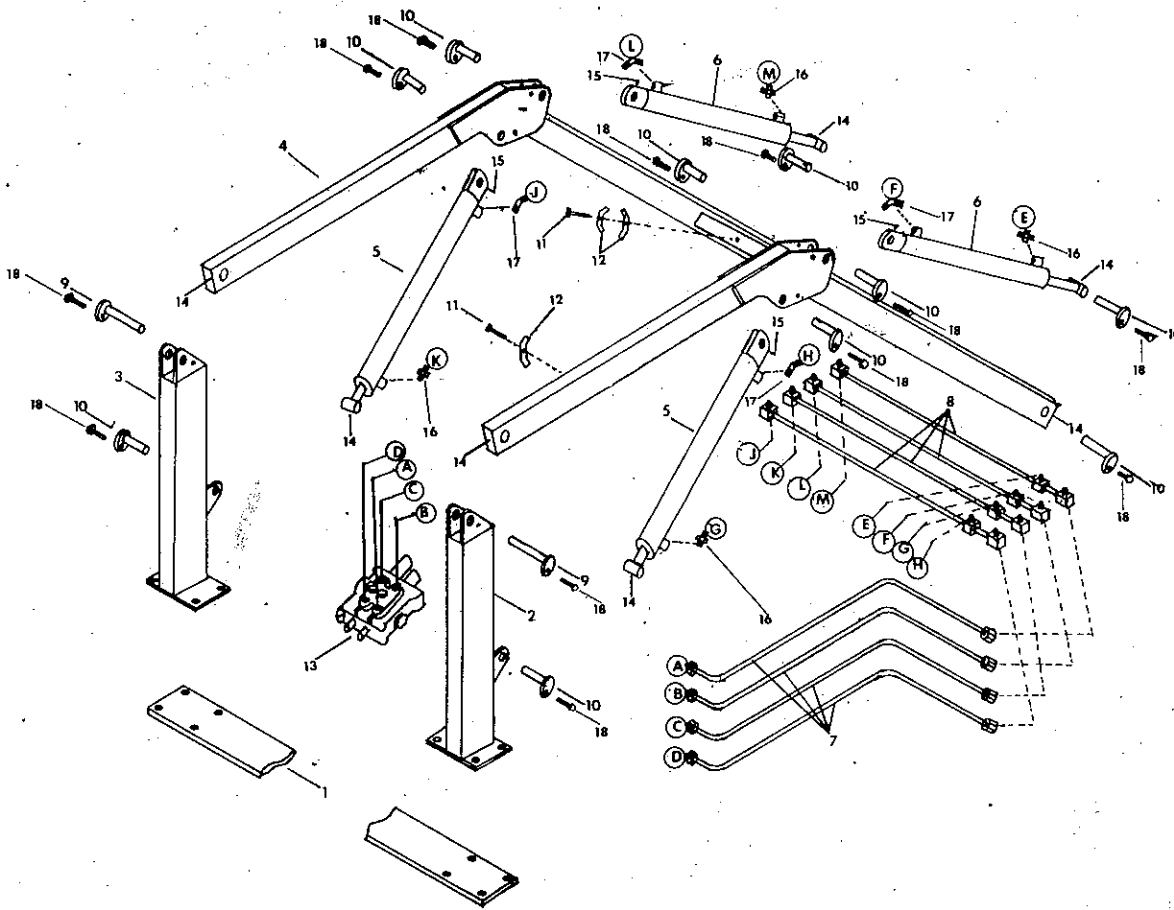
If the sides of the pile are too high, use the loader to pull down the sides and to reduce the possibility of stockpile slides.



Then, build a ramp by shovel-loading material off the top, until a work area is cut through the pile.



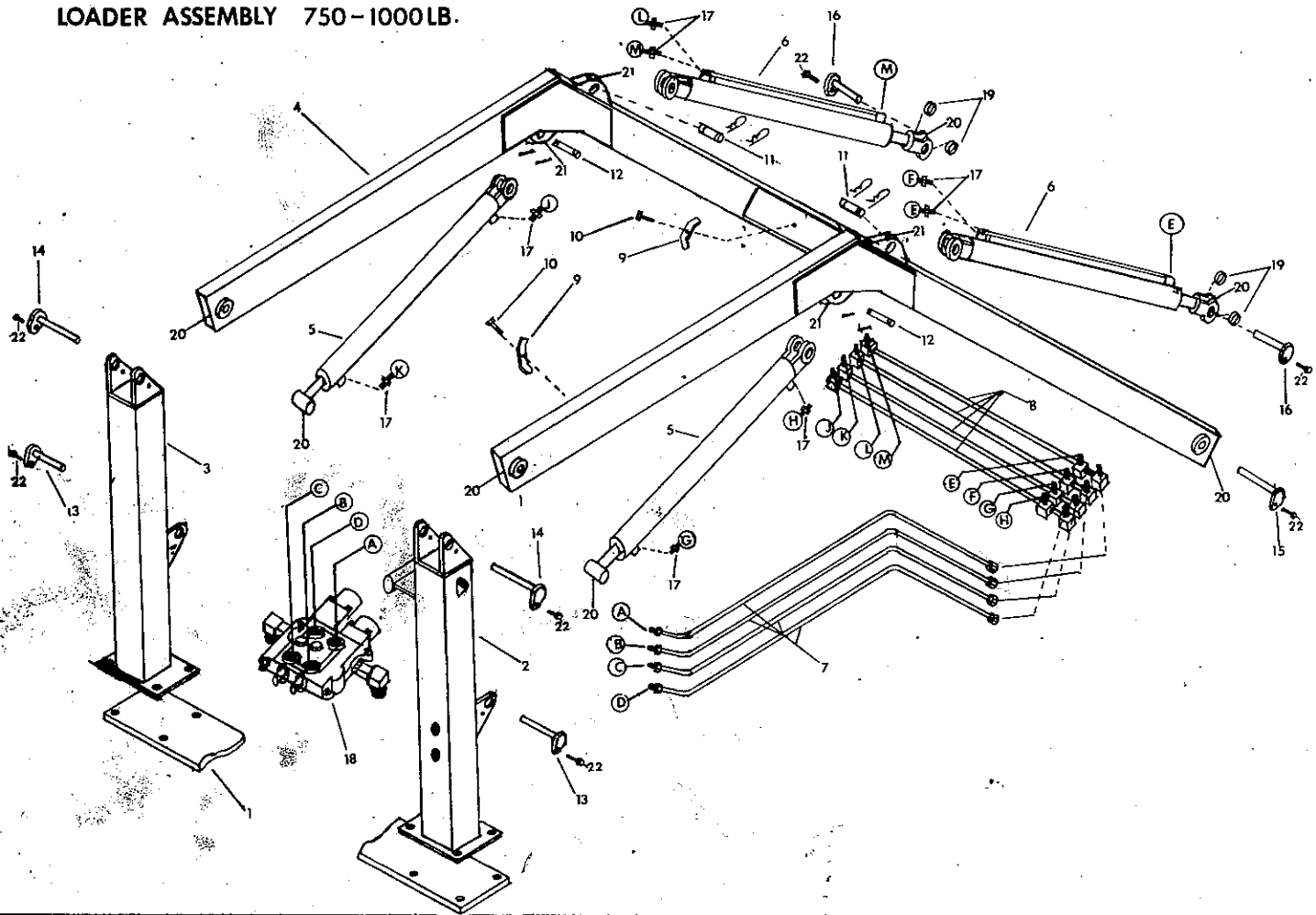
LOADER ASSEMBLY 500 LB.



COMMON LOADER PARTS LIST			500 LBS.	
ITEM NO.	DESCRIPTION	QUANTITY	OLD PART NO.	NEW PART NO.
1	Crossframe	1	REF.	REF.
2	Right-hand Upright	1	REF.	REF.
3	Left-hand Upright	1	REF.	REF.
4	Main Boom Assy	1	511-2	EBSL-001
5	Boom Cylinder (Hyd)	2	523-2	AC00-100
6	Bucket Cylinder (Hyd)	2	522-2	AC00-140
7	Tubing, Side	4	533-6	AE00-002
8	Tubing, Front	4	533-4	AE00-001
9	Pin, Boom	2	538-2	HA00-007
10	Pin, Cylinder	10	539-2	HA00-008
11	Hex, Bolt	3	¼ x 1 ¼	¼ x 1 ¼
12	Tubing, Clamp	5	524-1	HH00-001
13	Valve	1	501-2	AA00-021
14	Grease, Fitting Straight	8	648-1	HG00-004
15	Grease, Fitting 90°	4	648-2	HG00-003
16	Adaptor, Fitting Straight	4	531-1/740-3	LA-EF000/LA-KF000
17	Adaptor, Fitting 90°	4	665-1/737-1	LA-EF000/LA-KF000
18	Hex, Bolt	12	5/16" x 3/4	5/16" x 3/4"

REF. REFER TO INDIVIDUAL MOUNTING INSTRUCTIONS FOR SPECIFIC PART NUMBERS

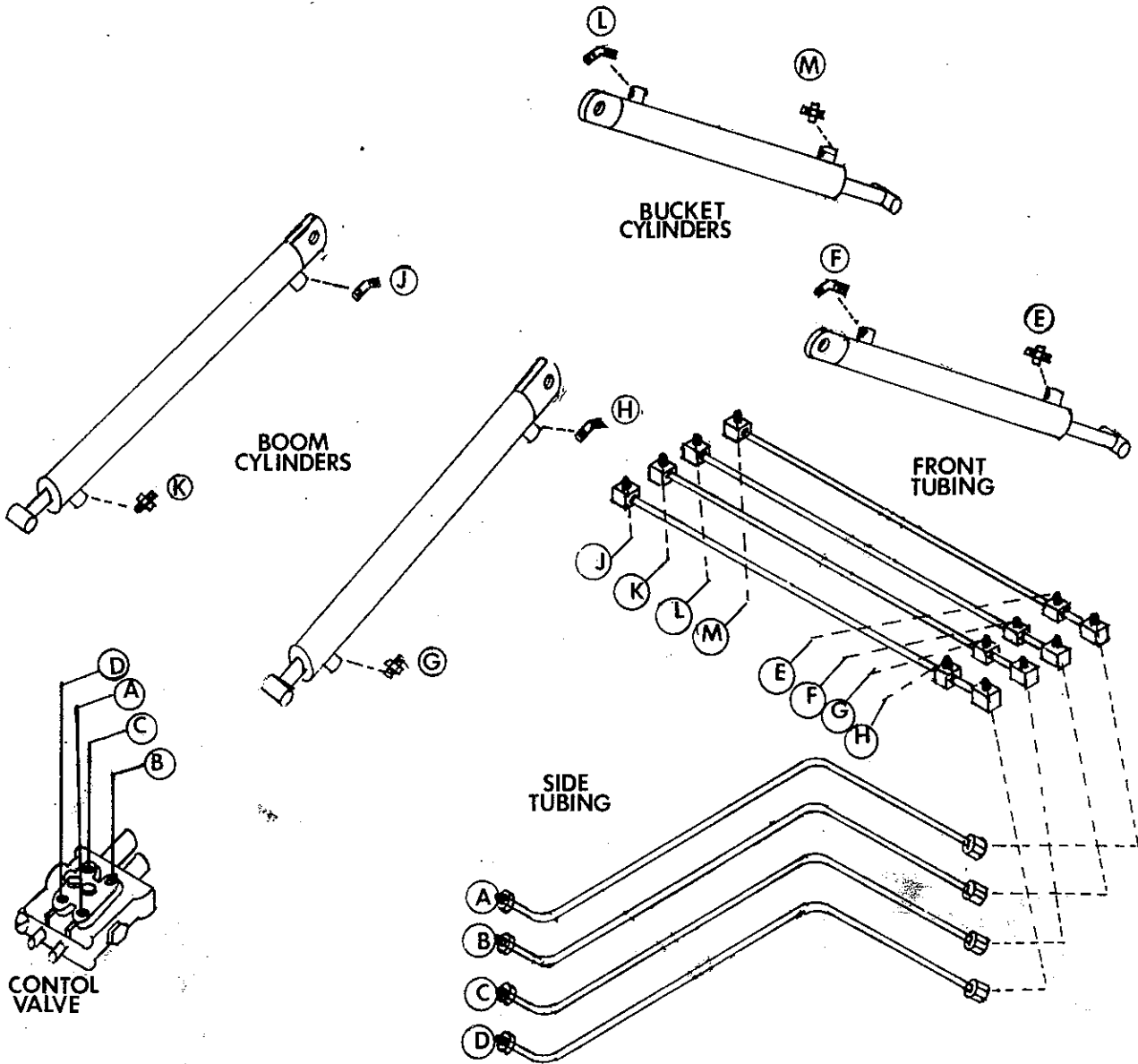
LOADER ASSEMBLY 750-1000LB.



COMMON LOADER PARTS LIST			750 LBS.		1000 LBS.	
ITEM NO.	DESCRIPTION	QUANTITY	OLD PART NO.	NEW PART NO.	OLD PART NO.	NEW PART NO.
1.	Crossframe	1	REF.	REF.	REF.	REF.
2.	Right-Hand Upright	1	REF.	REF.	REF.	REF.
3.	Left-Hand Upright	1	REF.	REF.	REF.	REF.
4.	Main Boom Assembly	1	536-2	EBLM-001	542-1	EBLL-001
5.	Boom Cylinder (Hyd.)	2	608-2	AC00-150	608-2	AC00-150
6.	Bucket Cylinder (Hyd.)	2	607-2	AC00-111	607-2	AC00-111
7.	Tubing, side	3	554-1	AE00-005	433-7	AE00-004
8.	Tubing, front	4	-	-	433-8	AE00-003
9.	Tubing, clamps	3	524-1	HH00-001	524-1	HH00-001
10.	Hex, bolts	3	1/4 x 1 1/4	1/4" x 1 1/4"	1/4 x 1 1/4	1/4" x 1 1/4"
11.	Pin	2	650-3	HA00-003	650-3	HA00-003
	Bobby Pin, clip	4	785-1	HA00-005	785-1	HA00-005
12.	Pin	2	653-1	HA00-006	653-1	HA00-006
	Cotter Keys	4	1/8 x 1 1/2	1/8 x 1 1/2	1/8 x 1 1/2	1/8 x 1 1/2
13.	Pin	2	539-2	HAMD-003	539-2	HAMD-003
14.	Pin, Boom	2	538-2	HA00-009	538-2	HA00-009
15.	Pin, Bucket Swivel	2	540-2	HA00-011	540-2	HA00-011
16.	Pin, Bucket Cylinder	2	541-2	HA00-010	541-2	HA00-010
17.	Fittings, Adaptor, Straight	8	531-1	LA-EF000	531-1	LA-EF000
18.	Valve, assy.	1	501-1	AA00-021	422-1	AA00-004
19.	Spacer, bushings	4	-	HF00-001	-	HF00-001
20.	Grease Zert-straight	10	648-1	HG00-001	648-1	HG00-001
21.	Grease Zert - 90°	2	648-2	HG00-002	648-2	HG00-002
22.	Hex, bolts	8	5/16 x 3/4	5/16 x 3/4	5/16 x 3/16	5/16 x 3/4

[REF.] REFER TO INDIVIDUAL MOUNTING INSTRUCTIONS FOR SPECIFIC PART NUMBERS

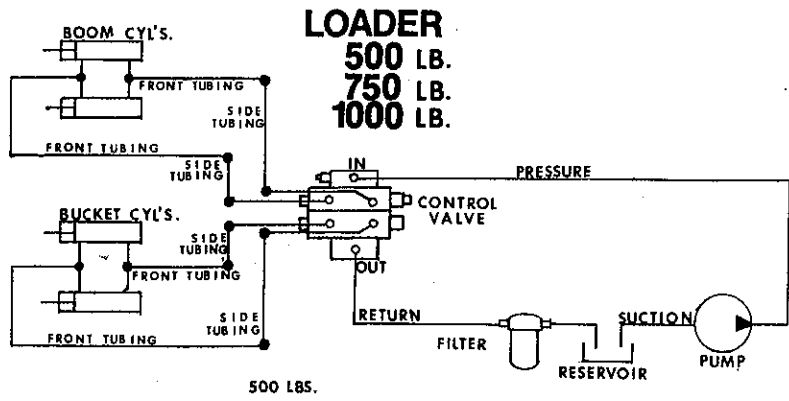
HOSE AND VALVE ASSEMBLY



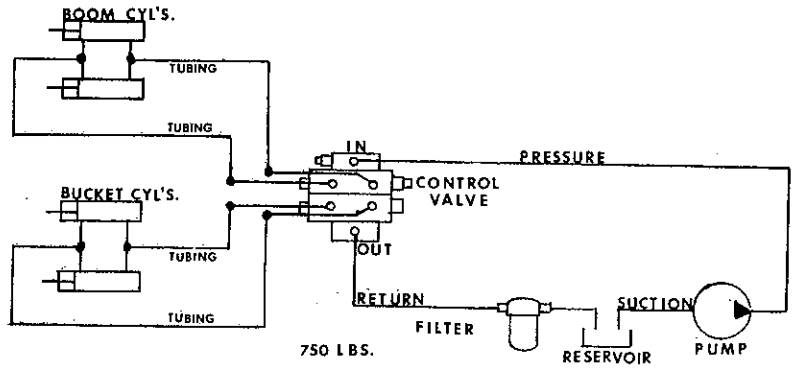
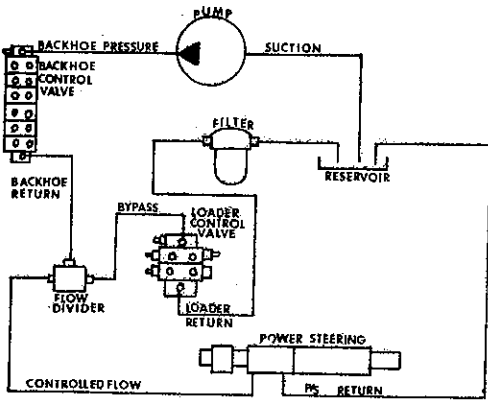
HOSE CONNECTIONS

	DESCRIPTION	500 LB.	QTY.	750 LB.	QTY.	1000 LB.	QTY.
AA	Hose Bucket Closed (R & L)	LCFF024	LCFF024 6	LCFE024	LCFE024 8	LCFG024	LCFG024 4
BB	Hose Bucket Open (R & L)	LCFF024	LCFF036 2	LCFE024	LCFE018 2	LCFG024	LCFF024 4
CC	Hose Boom Down (R & L)	LCFF024	LCFF016 2	LCFE024	LCFE044 2	LCFG024	LCFF018 2
DD	Hose Boom Up (R & L)	LCFF024	LCFF021 2	LCFE024		LCFG024	LCFF044 2
EE	Hose Bucket Closed Right	LCFF024		LCFE024		LCFF024	
FF	Hose Bucket Open Right	LCFF021		LCFE024		LCFF024	
GG	Hose Boom Down Right	LCFF036		LCFE044		LCFF044	
HH	Hose Boom Up Right	LCFF016		LCFE018		LCFF018	
JJ	Hose Boom Up Left	LCFF016		LCFE018		LCFF018	
KK	Hose Boom Down Left	LCFF036		LCFE044		LCFF044	
LL	Hose Bucket Open Left	LCFF021		LCFE024		LCFF024	
MM	Hose Bucket Closed Left	LCFF024		LCFE024		LCFF024	

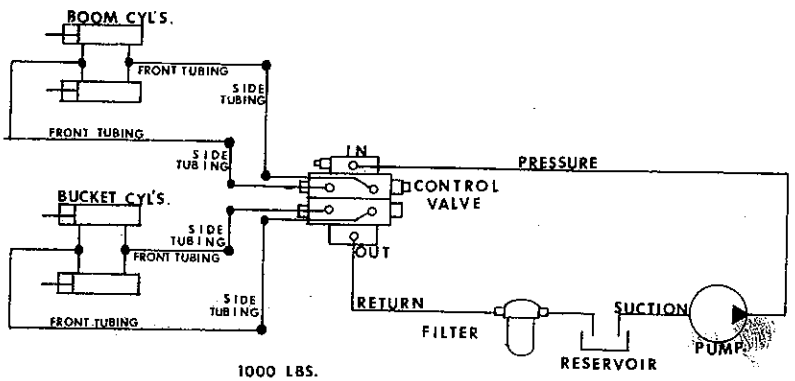
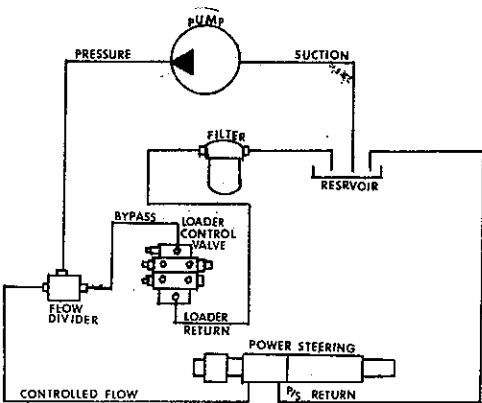
SIMPLIFIED HOSE DIAGRAMS



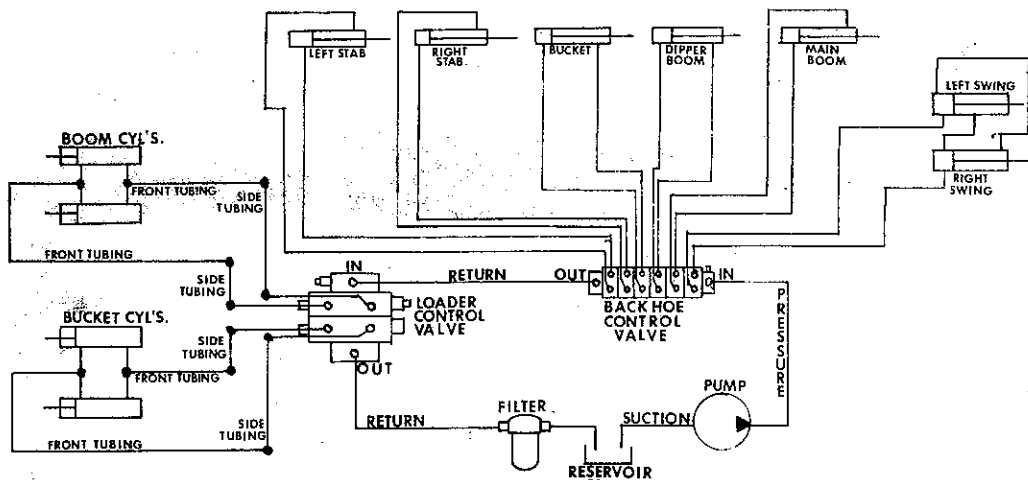
BACKHOE LOADER AND POWERSTEERING



LOADER AND POWER STEERING



BACKHOE AND LOADER

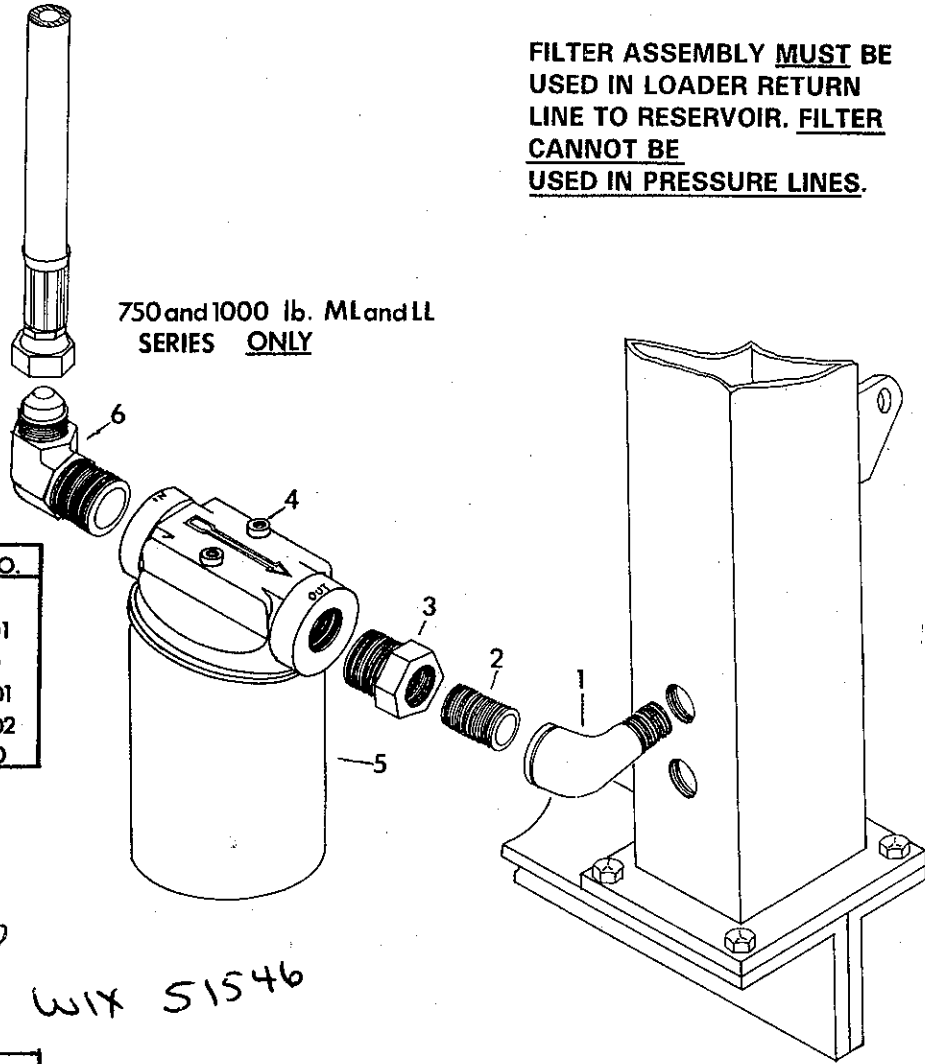


IN LINE FILTER ASSEMBLY

FILTER ASSEMBLY MUST BE USED IN LOADER RETURN LINE TO RESERVOIR. FILTER CANNOT BE USED IN PRESSURE LINES.

750 and 1000 lb. M and LL SERIES ONLY

ITEM	DESCRIPTION	PART NO.
1	STREET ELL	1/2 IN.
2	NIPPLE	LA1P0001
3	ADAPTER	LATY000
4	CANISTER	AH00-001
5	FILTER ELEMENT	AH00-002
6	ADAPTER	LATH 090

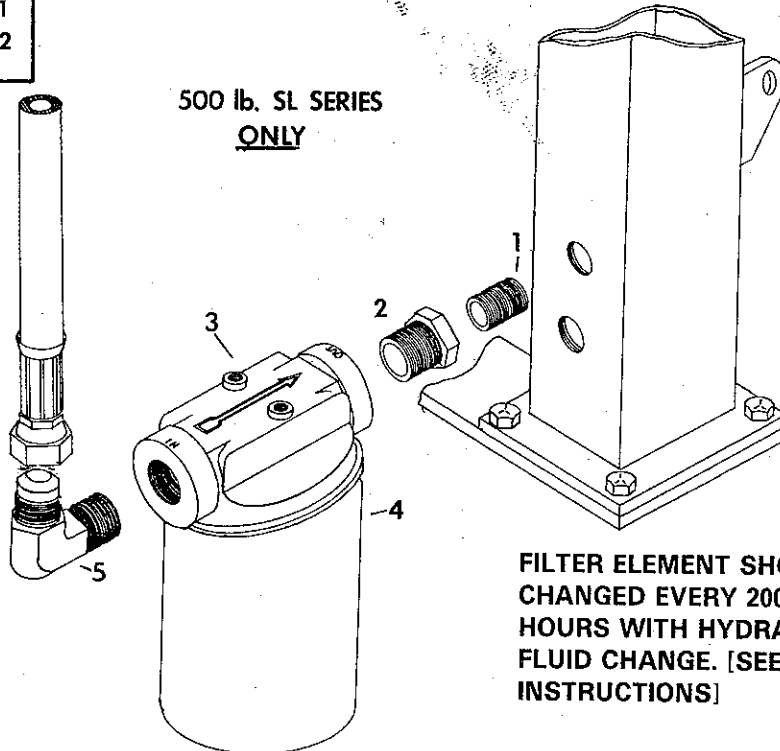


*FILTER ELEMENT:
CAN FLO # RSE 35-10*

WIX 51546

ITEM	DESCRIPTION	PART NO.
1	NIPPLE	LA1P0001
2	ADAPTER	LATY000
3	CANISTER	AH00-001
4	FILTER ELEMENT	AH00-002
5	ADAPTER	LATH 090

500 lb. SL SERIES ONLY



FILTER ELEMENT SHOULD BE CHANGED EVERY 200 OPERATING HOURS WITH HYDRAULIC FLUID CHANGE. [SEE MAINTENANCE INSTRUCTIONS]

MAINTENANCE

FILLING SYSTEM WITH HYDRAULIC FLUID

ALL-WEATHER HYDROSTATIC FLUID OR AN EQUIVALENT TYPE "F" AUTOMOTIVE AUTOMATIC TRANSMISSION FLUID MUST BE USED. HEAVIER WEIGHT FLUID CAN CAUSE SEAL DAMAGE AND ERRATIC OPERATION. USE OF HEAVIER FLUIDS WILL VOID WARRANTIES.

Where loader does not operate from tractor hydraulics (equipped with its own reservoir), To fill loader hydraulic system with oil (see note above) remove hydraulic/breather cap (located at top, outside face of 508 upright). Then with cylinders fully retracted fill hydraulic reservoir to within approximately two (2) inches of fill port. Start tractor, check for leaks. Operate bucket control lever, then operate boom control lever allowing cylinders to completely open and close several times, rechecking oil level and refilling reservoir as required, always refilling with cylinders fully collapsed (closed). Work both boom and bucket a number of times to allow all air in system to evacuate into reservoir. Final oil level should be approximately two (2) inches below fill port. When tractor hydraulic system is used, and hydraulic fluid per specifications (system requirements).

LUBRICATION OF LOADER

The front loader require lubrication (both sides) at the points where boom swivel on uprights, where boom cylinder attaches to uprights, at points where bucket cylinder attaches to bucket, and where bucket attaches to boom. (10 places) Lubrication should be accomplished in accordance with maintenance instructions.

EVERY 8 HOURS OF OPERATION

- A. Grease all swivel points (Ram and base end of all cylinders.) thoroughly. Excessive wear and even mechanical damage to pins and cylinders can result from inadequate points. Only an S.A.E. multi-purpose type grease
- B. Make a thorough check (Prior to start of work each day) for obvious signs of wear, leakage, loose fitting/pins, etc. Careful, routing visual checks can provide valuable forwarning of impending failures allowing sufficient time to acquire replacement parts and thus reducing down time to a minimum.

EVERY 40 HOURS OF OPERATION

- A. Check hydraulic reservoir fluid level. If oil is low, check all lines, fittings, and control valve for signs of leakage. Refil in accordance with instructions

Note: Escaping hydraulic fluid, under pressure, can be dangerous. Hydraulic fluid escaping under pressure can have enough force to penetrate the skin or destroy eye-sight. Hydraulic fluid may also infect a minor cut or opening in the skin. If injured by hydraulic fluid, seek medical attention at once. Make sure all connections are tight and that hoses are in good condition before applying pressure to system. Relieve all pressure to system [Stop Engine] before disconnecting lines or attempting to perform other work on the system. To locate small leaks, use a small piece of cardboard, paper, or wood... never use your hands.

- B. Physically check all pins, cotter pins, nuts, etc., for signs of wear or loose fit. Tighten as required, replacing where necessary. (Bolts, pins, may vibrate loose during operation). Clean equipment of all dirt, oil, and excess grease. This will assist you in making usual inspection and help avoid dangerous slips.

EVERY 200 HOURS OF OPERATION

Hydraulic oil should be drained out of system and replaced with clean Fluid per filling instructions above Pressure relief valve operation should be checked to assure operation at designated level.

NOTE

FILTER ELEMENT SHOULD BE CHANGED EVERY 200 OPERATING HOURS WITH HYDRAULIC FLUID CHANGE.

CHECKING RELIEF VALVE OPERATION

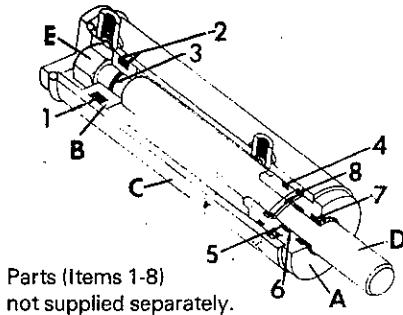
An In-Line type pressure meter should be used (One which measures pressure while allowing fluid to flow on thru for system operation). Insert pressure meter in input pressure line between pump pressure output and loader input. With pressure meter in-line, "Bottom out" either bucket or boom cylinders (fully extended or fully retracted) to force relief valve operation (A slight squealing sound can usually be heard when relief valve operates). Pressure should rise as cylinders are actuated and should peak out between 850 and 950 pounds per square inch (PSI). If pressure level is too low or high adjust relief valve setting as required to bring within these limits. (Reference page 12 for details on control valve).

Note: Do not attempt to increase pressure to obtain greater lift [Bucket] capacity. Serious damage to loader or tractor front axle can occur and warranties voided. It is the owner's Responsibility to maintain designated fluid levels and pressure relief settings.

CYLINDER MAINTENANCE

ITEM DESCRIPTION PART NO

ITEM	DESCRIPTION	Old		New		Old		New	
		Part No	Part No	Part No	Part No	Part No	Part No		
A.	Gland, Cylinder	523	AC00-100	608-2	AC00-150	522	AC00-140		
B.	Piston, Cylinder	1043	AF00-119	1119	AF00-118	1043	AF00-119		
C.	Barrel, Cylinder	1044	AF00-115	1120	AF00-114	1044	AF00-115		
D.	Rod, Cylinder	1169	AF00-160	1040	AF00-110	1168	AF00-159		
E.	Locknut	1171	AF00-162	1122	AF00-104	1170	AF00-161		
F.	Seal Kit, Consisting of:	1172	AF00-163	1114	AF00-101	1172	AF00-163		
	1. Piston Seal	1017	AG00-008	1118	AG00-007	1017	AG00-008		
	2. Piston Back-up Seal								
	3. Rod Static Seal								
	4. Gland Static Seal								
	5. Rod Seal								
	6. Rod Back-up Seal								
	7. Rod Wiper								
	8. Lockwire								



All seals, wipers, lockwire should be replaced whenever a cylinder is disassembled.

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.



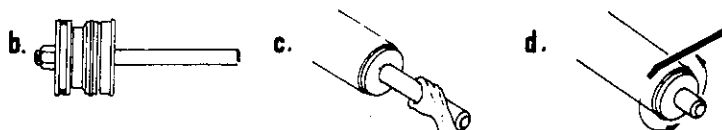
2. (a) Pull on rod to remove the piston and gland.
- (b) Remove nut from end of rod.
- (c) Remember, all seals must be replaced once cylinder is disassembled.

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.)

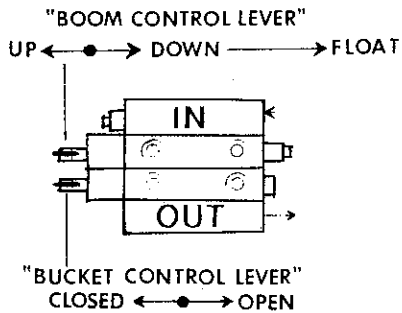
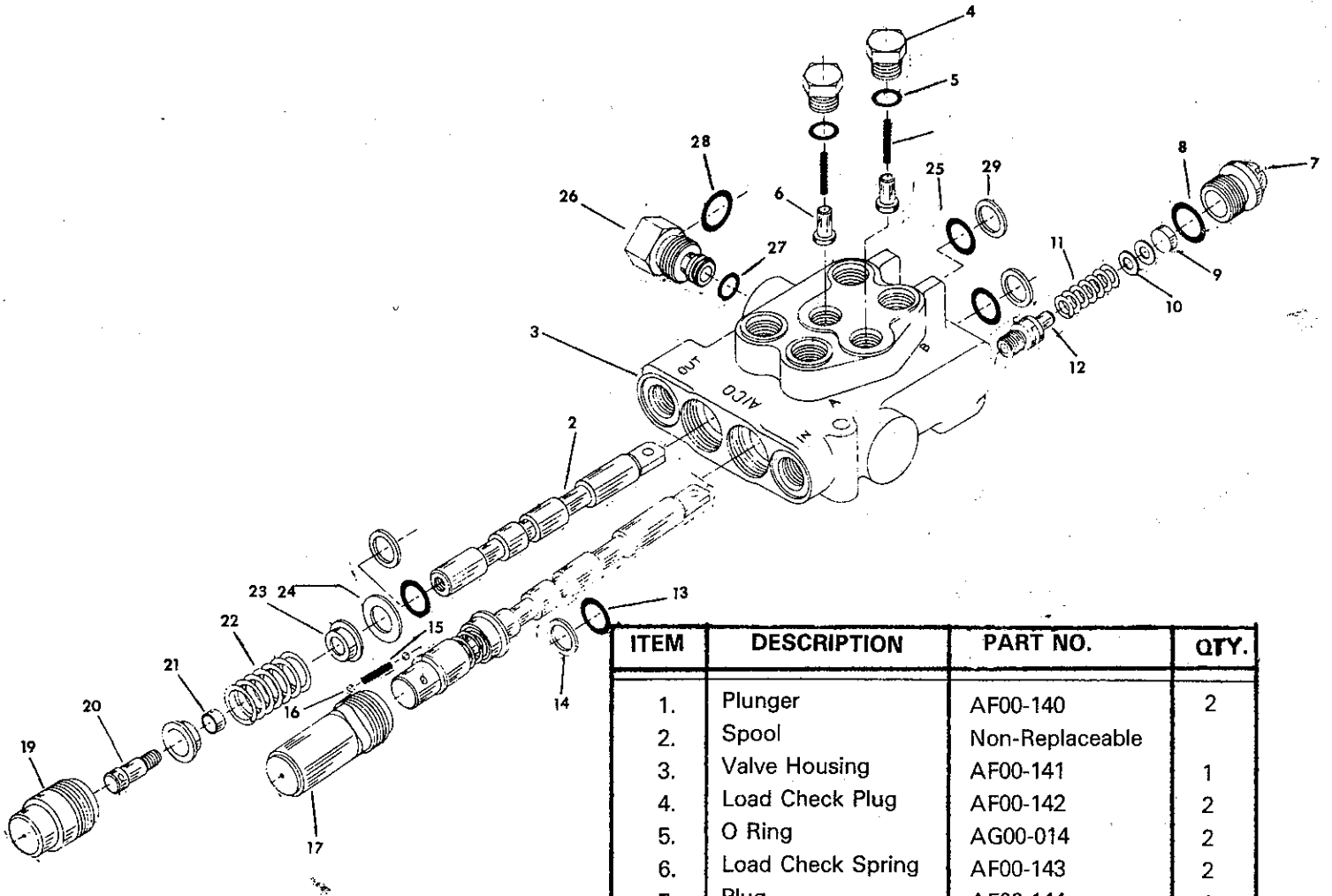
C. ASSEMBLY

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 cylinder bore with a steady, even pressure.
- (c) Push gland into bore until shoulder or gland butts up against barrel.



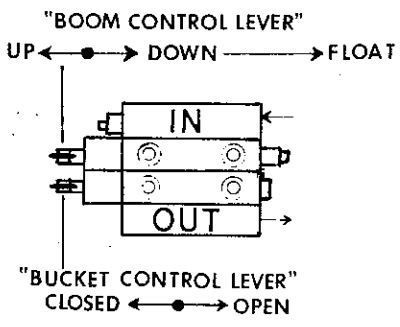
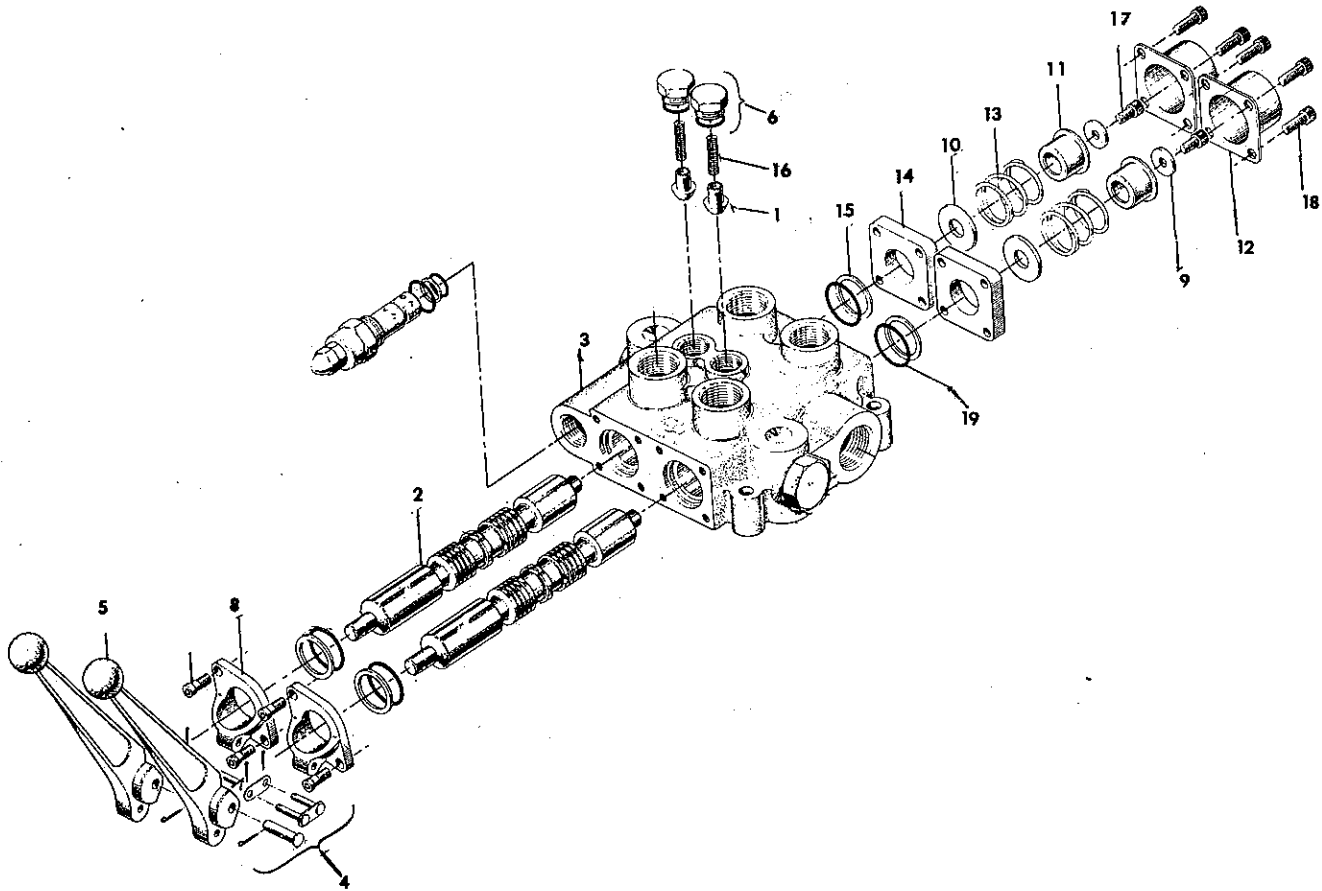
- (d) Locate drilled hole in gland through milled slot in the barrel and insert lockwire. Rotate the gland 360 degrees to "feed" lockwire into "lock" position.

AA00-022 AICO VALVE



ITEM	DESCRIPTION	PART NO.	QTY.
1.	Plunger	AF00-140	2
2.	Spool	Non-Replaceable	
3.	Valve Housing	AF00-141	1
4.	Load Check Plug	AF00-142	2
5.	O Ring	AG00-014	2
6.	Load Check Spring	AF00-143	2
7.	Plug	AF00-144	1
8.	O Ring	AG00-015	1
9.	Spacer	AF00-145	1
10.	Slim	AF00-146	1
11.	Spring	AF00-147	1
12.	Seat Assy. & Poppet	AF00-148	1
13.	Quad Ring	AG00-016	2
14.	Back Up Ring	AG00-017	2
15.	Spring	AF00-149	1
16.	Ball	AF00-150	2
17.	End Cap Assembly	AF00-151	1
18.	Spool Sub-Assembly	Non-Replaceable	
19.	End Cap	AF00-152	1
20.	Spool Stem	AF00-153	1
21.	Spool Stop	AF00-154	1
22.	Spring	AF00-155	1
23.	Spring Seat	AF00-156	2
24.	Washer	AF00-157	2
25.	O Ring	AG00-018	2
26.	Plug	AF00-158	1
27.	O Ring	AG00-019	1
28.	O Ring	AG00-020	1
29.	Back Up Ring	AG00-021	2

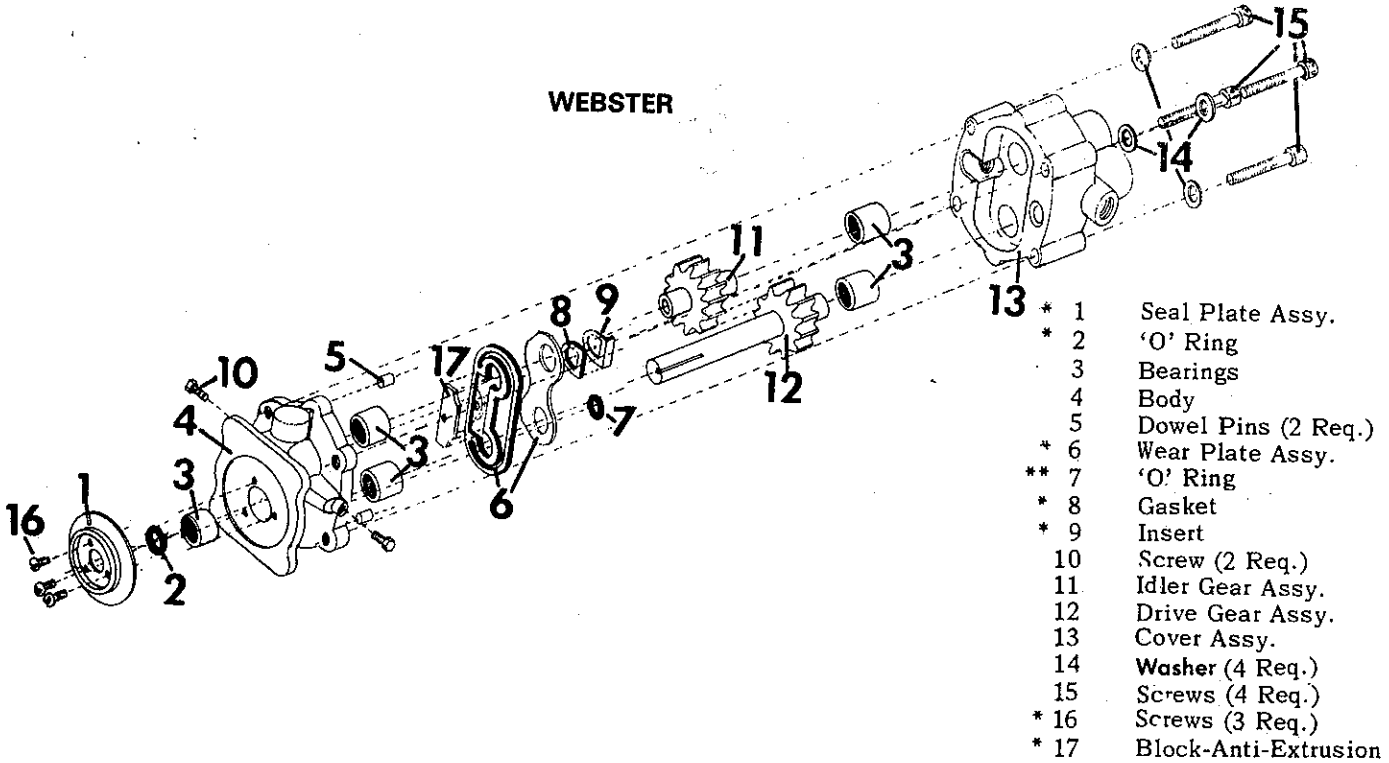
AA00-004 CROSS VALVE



ITEM	DESCRIPTION	PART NO.	QTY.
1.	Load Check Poppet	AF00-125	2
2.	4 Way Spool	AF00-126	2
3.	Valve Housing	AF00-127	1
4.	Pin Kit	HA00-017	2
5.	Handle	HD00-002	2
6.	Load Check Plug	AF00-128	2
7.	Relief Assy. (500-1500) (Std.)	AF00-129	1
8.	Handle Bracket	AF00-130	2
9.	Centering Spring Washer	AF00-131	2
10.	Stop Washer	AF00-132	2
11.	Stop Coiler	AF00-133	2
12.	End Cap	AF00-134	2
13.	Centering Spring	AF00-135	2
14.	End Spacer	AF00-136	2
15.	O-Ring Spool Washer	AG00-012	4
16.	Load Check Spring	AF00-137	2
17.	Cap Screw	AF00-138	6
18.	Cap Screw	AF00-139	9
19.	Spool Seal	AG00-013	4

PUMP MAINTENANCE

WEBSTER



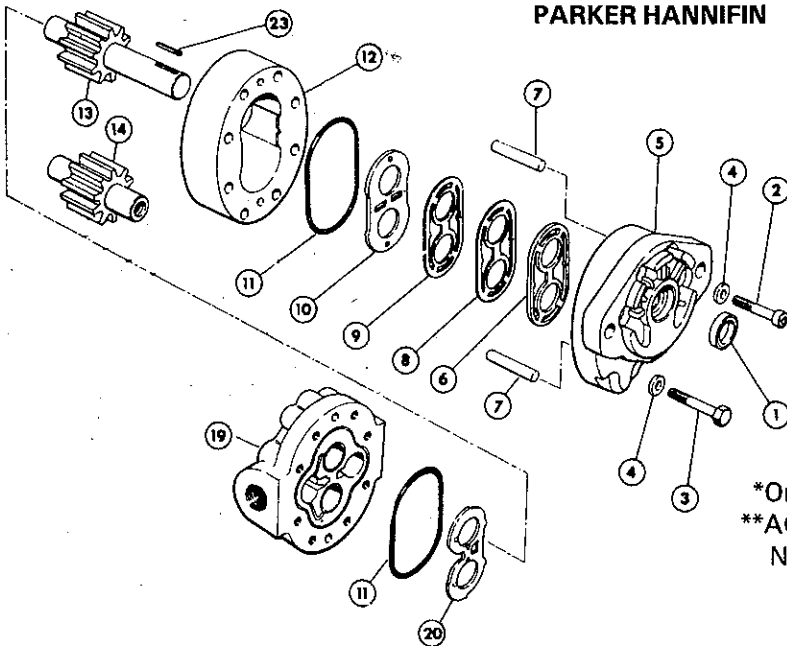
- * 1 Seal Plate Assy.
- * 2 'O' Ring
- 3 Bearings
- 4 Body
- 5 Dowel Pins (2 Req.)
- * 6 Wear Plate Assy.
- ** 7 'O' Ring
- * 8 Gasket
- * 9 Insert
- 10 Screw (2 Req.)
- 11 Idler Gear Assy.
- 12 Drive Gear Assy.
- 13 Cover Assy.
- 14 Washer (4 Req.)
- 15 Screws (4 Req.)
- * 16 Screws (3 Req.)
- * 17 Block-Anti-Extrusion

**AG00-024 Pressure Seal Only

*AG00-025 Seal Kit

All other parts are not filed Repairable/Replaceable.

PARKER HANNIFIN



- **1. Shaft Seal
- 2. Cap Screws
- 3. Hex Screws
- 4. Washers
- 5. Front Cover
- * 6. V-Seal
- 7. Dowel Pins
- * 8. Gasket
- * 9. Heat Shield
- *10. Wear Plate
- *11. "O" Rings
- 12. Center Section
- 13. Drive Gear Assembly
- 14. Driven Gear Assembly (includes 15, 16, 17, 18)
- 19. Back Cover
- 20. Thrust Plate (H&M only)
- 21. Key (Where Required)

*Order AG00-022 Seal Kit (Includes AG00-023 Shaft Seal)

**AG00-023 Shaft Seal (Only)

Note: Balance of parts not filed Repairable/Replaceable

NEW PART NO.	OLD PART NO.	MFG. PART NO.	MANUFACTURER
AD25-PIR	667-1	H25AA2B	PARKER HANNIFIN
AD25-PIL	416-1	H25AA1B	PARKER HANNIFIN
AD39-PIL	675-1	H39AA1B	PARKER HANNIFIN
AD43-W2R	516-2	43YB001102-2RB	WEBSTER
AD43-W2L	410-2	43YB001102-2LB	WEBSTER

PUMP TROUBLE SHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY	TROUBLE	PROBABLE CAUSE	REMEDY
1. Noisy Pump	a. Low oil supply b. Oil too heavy, (i.e. viscous) c. Air leak in inlet line d. Partly blocked inlet line	a. Fill reservoir b. Change to proper viscosity c. Check plumbing d. Check for foreign object and/or clean	4. Low Flow	a. Pump cavitating b. Foaming oil c. Relief valve leaks or set too low d. Speed too low e. Oil too hot	a. See 1a, 1b, 1c, 1d b. See 2a, 2b c. Check relief valve for foreign particles d. Check prime mover speed e. Check temperature (see 3a, 3b, 3c, 3d, & 3e)
2. Foaming Oil	a. Pump cavitating b. Water in the oil	a. See 1a, 1b, 1c, 1d b. Check reservoir and/or heat exchange		5. Failure to build pressure	a. Defective Relief Valve b. Low oil supply
3. Pump or oil overheating	a. Oil supply too thin b. Oil supply contaminated c. Pump cavitating d. Pump drive shaft excessively misaligned with pump driven shaft e. Pump drive shaft axially loaded by driving shaft (Prime Mover) f. System relief valve bypassing	a. Drain & fill with proper viscosity oil b. Drain, clean filter, & fill with clean oil c. See 1a, 1b, 1c, 1d d. Check alignment e. Check for clearance at ends of shafts, for shaft misalignment or worn driving keys, keyways or splines. If pulley drive check for belt alignment f. Check relief valve setting (see 4c)			

SYSTEM TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
A. Loader 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. Loader 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 10 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 900 P.S.I. (one turn equals approximately 700 P.S.I.)</p>

SERVICE RECORD:

LIMITED WARRANTY:

FOR 90 DAYS FROM DATE OF DELIVERY TO ORIGINAL PURCHASER, BRAATHEN MFG. CO. WILL REPAIR OR REPLACE, AT ITS OPTION, ANY PART OR PARTS THAT FAIL TO PERFORM AS INTENDED BY THE ORIGINAL PURCHASER, FREE OF CHARGE, PROVIDED THAT THE FAILURE IS DUE TO DEFECTIVE MATERIAL OR WORKMANSHIP OF PARTS.

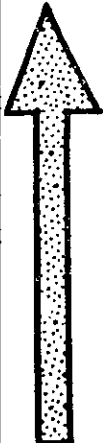
ALL TRAVEL AND TRANSPORTATION CHARGES INCURRED IN PROVIDING REPAIR SERVICE SHALL BE PAID BY THE ORIGINAL PURCHASER. REPAIRS WILL BE PROVIDED AT THE FACTORY AUTHORIZED SERVICE CENTER NEAREST TO THE LOCATION OF THE EQUIPMENT.

THIS WARRANTY IS NOT A SERVICE CONTRACT. IT IS A LIMITED WARRANTY. IT DOES NOT COVER CONSUMABLES, WEAR PARTS, OR PARTS THAT ARE SUBJECT TO NORMAL WEAR AND TEAR. IT DOES NOT COVER DAMAGE TO THE EQUIPMENT CAUSED BY ACCIDENT, MISUSE, OR NEGLIGENCE. THE ORIGINAL PURCHASER WILL BE RESPONSIBLE FOR THE PROTECTION OF THE EQUIPMENT.

THIS WARRANTY IS VOID SHOULD THE EQUIPMENT BE REPAIRED OR MAINTAINED BY ANY OTHER THAN AN AUTHORIZED BRAATHEN MFG. CO. SERVICE CENTER.

THERE ARE OTHER EXCLUSIVE WARRANTIES, IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND LIMITED TO 90 DAYS FROM DELIVERY TO THE ORIGINAL PURCHASER. TO THE EXTENT PERMITTED BY LAW, ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED AND THE ORIGINAL PURCHASER AGREES TO WAIVE ANY AND ALL WARRANTIES, EXCLUSIVE REMEDY, AND LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW.

Serial number required on ALL parts orders; record it before you forget!



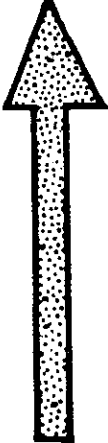
Serial Number:

Dealer's Name:

Dealer's Address:

Date Purchased:

Telephone No.:



LIMITED WARRANTY

FOR 90 DAYS FROM DATE of delivery to original purchaser, BRANTLY MFG. CO. will replace for that original purchaser, free of charge, any part or parts found upon examination by a Factory Authorized Service Center and /or the Factory at Frederick, Oklahoma to be defective in material or workmanship of both.

All travel and transportation charges incurred in providing warranty service, and on parts or complete assemblies submitted for replacement under this warranty, must be borne by the purchaser.

This warranty is not a service guarantee, nor is it any assurance that the product is perfectly designed or perfectly built; neither is it an expression of any belief that the product cannot be improved. Further, this warranty is not a guarantee against hazards such as wear, tear, misuse or misfortune nor against problems arising from incorrect set-up or servicing and it is not a guarantee that the performance will meet the expectations of the purchaser.

This warranty is void should the product be repaired or modified in any way not authorized by BRANTLY MFG. CO.

There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to 90 days from delivery to the original purchaser, and to the extent permitted by law any and all implied warranties are excluded. This is the exclusive remedy, and liability for consequential damages under any and all warranties are excluded to the extent exclusion is permitted by law.