

OWNERS MANUAL

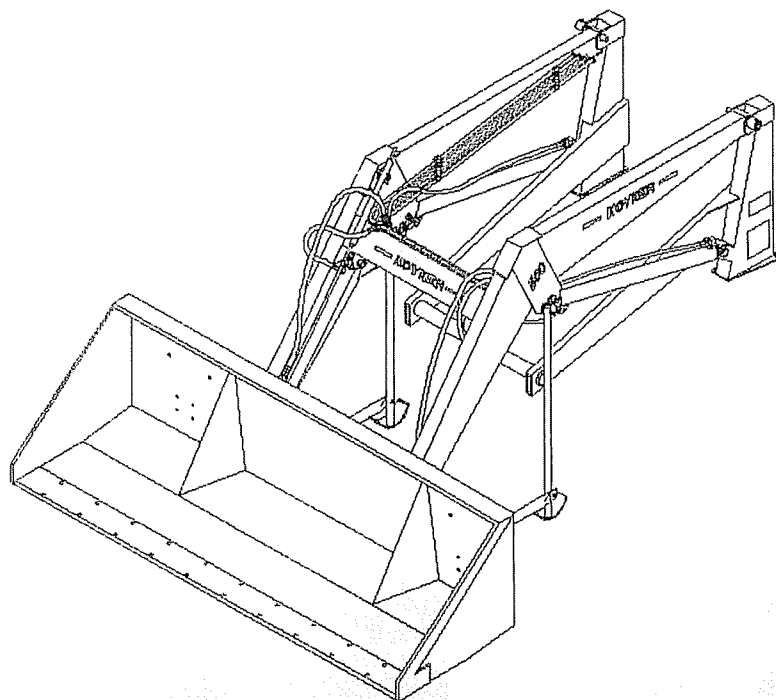
MANUAL NO. 655125

12/16/98

KOYKER[®]

500

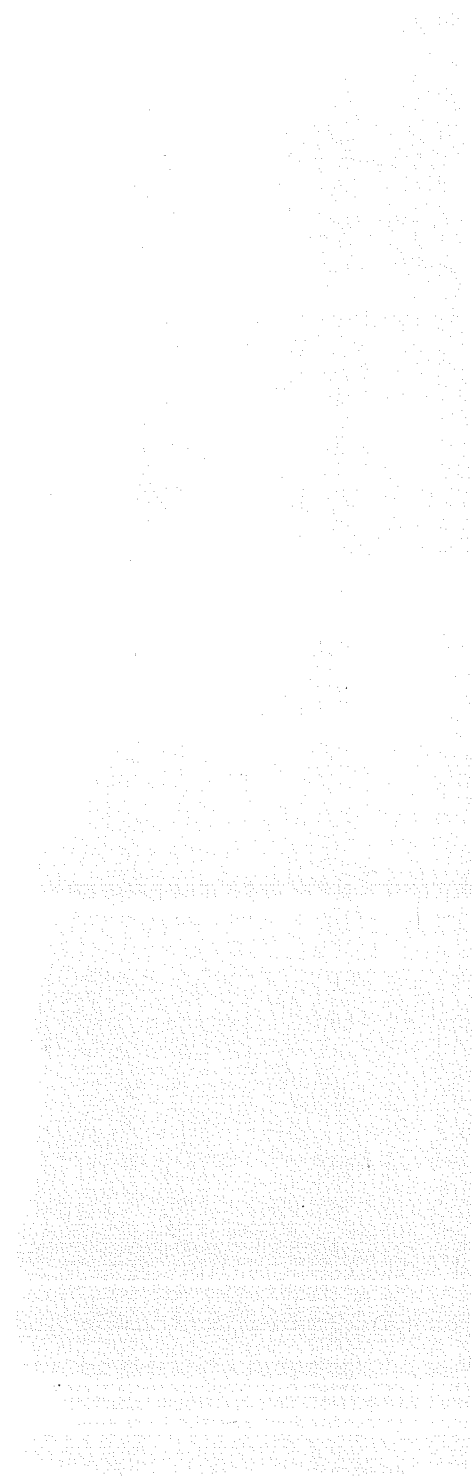
LOADER



IMPORTANT-KOYKER DEALER
BE SURE THIS MANUAL IS GIVEN TO THE
PURCHASER FOR FUTURE REFERENCE
KOYKER MANUFACTURING CO., P.O. BOX 409
LENNOX, SD 57039

CONTENTS

CONTENTS	PAGE
Introduction.....	1
Safety Alert Symbol.....	2
Specifications.....	3 - 4
Safety Information	5 - 7
Safety Labels.....	8
Description.....	9
Tractor & Safety Pointers	10
Controls.....	11
Operation, Detaching & Attaching Loader.....	12
Loader Inspection, Lubrication, and Maintenance	13
Adjustable Loader Valve Mounting Kit	14
Hydraulic System Parts List.....	15
Hydraulic System Parts Diagram.....	16
500 Loader Diagram	17
Parts List	18 -20
Warranty	21
Cylinder Warranty	22
Cylinder Information	23
Hydraulics Information.....	24
2 1/2" Cylinder Service Kit.....	25
3" Cylinder Service Kit.....	26
Hydraulic Cylinder Parts List	27
Hydraulic Cylinder Parts Diagram.....	28
Piston and Gland Diagram	29



INTRODUCTION

During a considerable period of time, the Koyker Manufacturing Company of Lennox, South Dakota, made a study of the farm loader industry and concluded that the farmer needs a loader that provides fast attachment, quality, dependability, few parts, ruggedness, good delivery, and ease of maintenance, all at a fair price. The fast attaching "500" Farm Loader has achieved these goals. With proper care and handling, it will give many years of good service in normal farm operations.

Please be sure to follow the manual and give it proper care.

TO THE PURCHASER

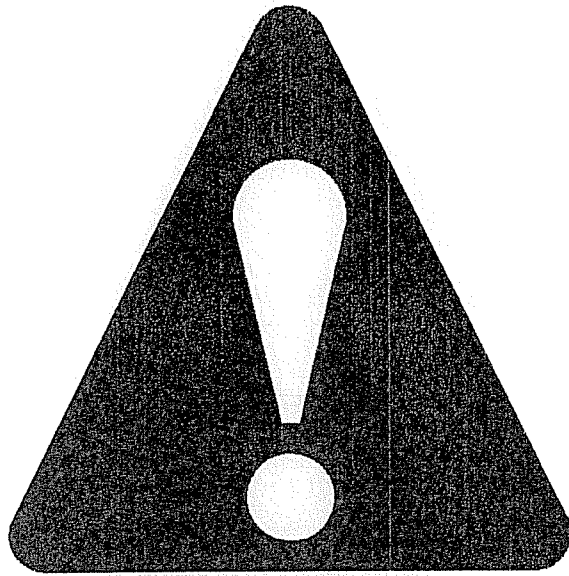
You have purchased an excellent product. With proper care and use, it will give you years of good safe service. Use only **KOYKER** or **KOYKER** approved parts in the general maintenance and repair of your equipment. **Please fill out ownership registration card as soon as possible.**

We care about your safety!

SAFETY ALERT SYMBOL

The symbol shown below is used to call your attention to instructions concerning your personal safety. Watch this symbol it points out important safety precautions. It means **ATTENTION! Become Alert! Your Personal Safety Is Involved!**

Read the message that follows and be alert to the possibility of personal injury or death.



WARNING!

Anyone who will operate or work around a front-end loader shall first read this manual.

SPECIFICATIONS

500 Loader

Standard Cylinder	Hi-Lift Cylinder
11' 1"	12' 8"
8' 1"	10' 6"
38"	26"
40°	23°
35°	35°
17"	8"
72"	72"

Maximum Lift Height (A)
 Clearance W/Bucket Dumped (B)
 Reach at Maximum Height (C)
 Maximum Dump Angle (D)
 Bucket Rollback
 Digging Depth
 Overall Height In Carry Position (F)
 *Lift Capacity (Load Tested)
 *Breakaway Capacity (Load Tested)
 **Lift Capacity (Load Tested)
 **Breakaway Capacity (Load Tested)
 Hydraulic Control Valve Requirements

2850lbs

4530lbs

4000lbs

6150lbs

Two Selective Control
 Valve required for Loader and
 Hydraulic controlled Bucket Cylinders.

Double Acting

Hydraulic Twin Cylinders

6, 7 & 8ft. Material

7ft. Material

6, 7 & 8ft. Material

2 1/2" Bore x 18" Stroke

2 1/2" Bore x 37" Stroke

** 3" Bore x 39 1/4" Stroke

1760lbs.

Tractor System

Tractor System

Minimum flow of 12 gallons/minute 1500
 P.S.I. Maximum pressure 2500 P.S.I. varies
 with tractor oil reservoir and system
 capacity approximately 5 gallons

Lift and Bucket Cylinders
 Bucket Control
 Standard Bucket
 Deluxe Bucket
 Fast Attaching Bucket
 Bucket Cylinder Size (Twin)
 Lift Cylinder Size

*Total Weight W/Twin Cylinder Material Bucket (Less Valve & Pump)

Hydraulic System Capacity

Pump Capacity (Gallons/Minute, RPM)

Tractor Pressure Requirements

*Dependent upon make, size, and model of tractor and safety of operation.

**With high lift cylinder package

SPECIFICATIONS CONTINUED



NEVER ATTEMPT FULL ROLLBACK IN RAISED POSITION WITH BUCKET FULL.



DO NOT USE LOADER ON TRACTORS WITH HYDRAULIC SYSTEM
OUTPUT OF MORE THAN 2,500 P.S.I. FAILURE TO HEED MAY RESULT IN
SERIOUS INJURY OR DEATH.

SAFETY

Improper use of a loader can cause serious injury or death. The following safety precautions, and those given on the tractor mount installation instructions, should be thoroughly understood before attempting to operate this machine.

BEFORE OPERATING:

Carefully study and understand this manual, the specific tractor mount instructions, and the attachment (s) manual (s).

Prior to operation, inspect the loader for system leaks and damaged, missing, or malfunctioning components in an effort to avoid the possibility of a dangerous failure involving structural members or hydraulic system components.

Be certain any repairs necessary are completed prior to loader operation.

Follow recommended maintenance procedures and precautions on Page 13.

Completely familiarize yourself and others involved with the operation of the hydraulic control valve before operating the loader.

Be certain all bystanders are clear of the machine and operation area prior to operation.

It may be necessary to add wheel ballast or rear weights as recommended by the tractor manufacturer to maintain stability of the machine to prevent tipping or upset which could result in serious injury or death. See mounting instructions for specific information.

It is recommended that both front and rear wheel treads be set to the widest recommended width to prevent tipping or upset which could result in serious injury or death.

This loader is designed for farm type operations such as snow removal, barn and feedlot cleaning or light grading and digging. It's design is **NOT** intended for commercial and /or industrial use.

DURING OPERATION:

Never operate the machine other than from the tractor operator's seat.

Be sure operating area is clear of others during machine operations.

Never lift, hoist, or carry humans in the bucket or on any portion of the loader or loader attachments. Failure to heed, may result in serious injury or death.

SAFETY CONTINUED

Transport the machine load at the slowest speed possible and with the loader boom at the lowest transport position to avoid tipping or upsetting, which may result in serious injury or death.

Be extremely careful when working on inclines or near loose fill, rocks, and holes as they can cause tipping or upsetting which may result in serious injury or death.

Be certain to avoid overhead electrical wires when operating loader. Contact with power lines may cause serious injury or death.

Avoid sudden stops when lowering or lifting the loader boom to prevent loss of control over the machine and/or load, which may result in serious injury or death.

Use maximum ballast and the widest recommended wheel setting on your tractor when handling large shiftable loads.

Never attempt to ram with the bucket at high speed or full tractor power. Sudden impact may result in structural failure and possible serious injury or death.

Never adjust or perform maintenance on the loader or tractor with the unit in motion, or without power source locked out.

Never get under bucket or lift arms or reach through the lift arms or bucket linkage when the loader is in operation. Inadvertent movement may cause serious injury or death.

FOLLOWING OPERATION:

Whenever machine is not in operation, lower the loader boom and set the tractor brakes, disengage drive, shut the engine off, and remove the ignition key before dismounting the tractor.

If loader is to be disengaged from tractor, be sure that loader is securely supported on a hard, level surface and that the stand is securely engaged. Be certain all connections between tractor and loader are free before disengaging.

TRANSPORTING:

Use safety lights and SMV emblem in addition to whatever local codes require when equipment is being transported on the road or highway. Check with proper authorities for legal limitations.

Transport all loads at a slow and safe speed.

Carry the load as low as possible and maintain adequate visibility and good round clearance at all times.

SAFETY CONTINUED

PERFORMING MAINTENANCE:

Carefully review, understand, and follow the “maintenance” section in this owners manual before attempting to service loader.

Lower the bucket or attachment to the ground, shut off tractor engine, and relieve pressure in the hydraulic system before adjusting, lubricating, or servicing the loader.

Escaping hydraulic oil under pressure can penetrate the skin. Never use body to check for hydraulic leaks. Use cardboard when checking for leaks. See Fig. 1-1. Relieve hydraulic pressure before disconnecting any hydraulic line. Failure to heed may result in serious injury or death.

Before disconnecting hydraulic lines, lower the loader and attachments. Lock out the hydraulic supply and relieve all hydraulic pressure.

Replace any damaged or painted-over decals. See Page 8 for replacement decals.

REMEMBER:

1. Move Slowly!
2. Always use care and common sense!
3. Be careful for your own sake and for that of others!

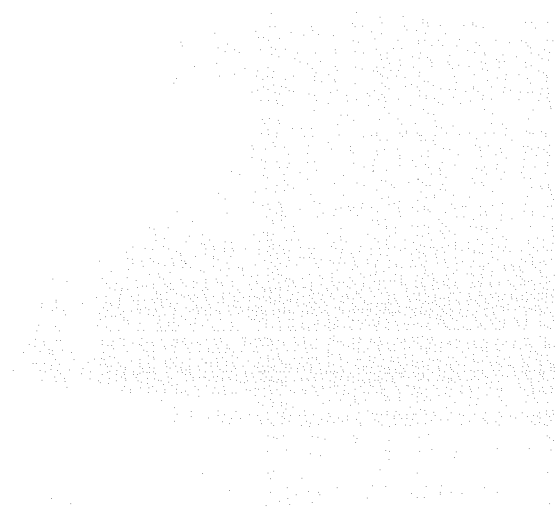


FIG. 1-1

SAFETY DECALS



CAUTION

Serial Number _____

DO NOT OPERATE LOADER WITHOUT FIRST READING OPERATORS MANUAL.

OPERATE LOADER FROM TRACTOR SEAT ONLY.

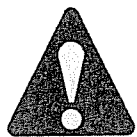
MOVE AND TURN TRACTOR AT LOW SPEEDS.

LOWER LOADER ARMS WHEN PARKING OR SERVICING.

CARRY LOADER ARMS AT A LOW POSITION DURING TRANSPORT.

ADD RECOMMENDED WHEEL BALLAST OR REAR WEIGHT FOR STABILITY.

MOVE WHEELS TO WIDEST SETTING RECOMMENDED FOR STABILITY.



This symbol means caution! Stay Alert! Watch for it!

ASAE R355

KOYKER MANUFACTURING CO.
P.O. BOX 409, 200 N. CLEVELAND
LENNOX, SD 57039



WARNING

**HYDRAULIC OIL UNDER PRESSURE
CAN PENETRATE THE SKIN!**

- NEVER USE ANY PART OF YOUR BODY TO CHECK FOR LEAKS IN HYDRAULIC LINES.
- IF YOU SUSPECT YOU HAVE A LEAK IN YOUR LINES ALWAYS USE CARDBOARD TO CHECK.
- BE SURE TO ALWAYS RELIEVE HYDRAULIC PRESSURE BEFORE DISCONNECTING LINES.

**FAILURE TO HEED WILL RESULT
IN SERIOUS INJURY OR DEATH!**

85505

02-0360

DESCRIPTION

The **KOYKER** 500 Farm Loader is operated by hydraulics. Both the lifting boom and the materials bucket have hydraulic cylinders. The loader is designed to operate with your existing tractor hydraulic system provided it will deliver the proper flows and pressure.

Be sure to check with your tractor dealer to make certain that your existing hydraulic system is adequate and designed for the constant operation required. On some makes of tractors, it is necessary to make setting adjustments on the control valves and the hydraulic system. Refer to your tractor manual or consult your dealer for the correct parts to use.

The **KOYKER** 500 Farm Loader is designed expressly for normal farm usage and not for jobs requiring industrial or construction grade equipment.

TRACTOR & SAFETY POINTERS

The use of good judgment and common sense is necessary by the operator in using this loader. The front and rear wheels should be set for the widest wheel tread to assure best stability. Use extra caution when rear wheel weights and tire ballast are added to a loader-equipped tractor. DO NOT ram into frozen dirt piles, frozen manure piles, ice, etc., with great momentum where sudden shock loads are encountered. Serious and costly damage may result to both the loader and the tractor.

Do not use a bucket to scrape or as a dozer blade, unless the bucket is tilted so that the bucket stops are in contact with the boom. A limited amount of leveling may be done, when the loader valving is arranged with a float control. This will prevent damage to cylinder rods. Never ride the bucket.

Before operating the loader, be sure no one is standing near it. Only one person, the operator, should be on the tractor. Remain at the controls and under no circumstances leave the tractor unattended with the bucket in a raised position.

Never lift a person in the bucket or walk under a raised bucket.

Never drive your loader-equipped tractor down a hill that is steeper than 15 degrees. Carry all loads low and use care on side hills.

Always keep unused PTO shaft clutch levers disengaged.

Keep hands, feet, and clothing away from all moving parts.

Hydraulic oil, under pressure, can cause injury. Be sure that all connections are tight and that all pressure is relieved before disconnecting any lines.

Care must be taken with your loader cylinders. Nicks, scratches, rust, or other shaft damage can result in worn packing causing cylinder leakage and subnormal performance.

MOVE SLOWLY

USE COMMON SENSE

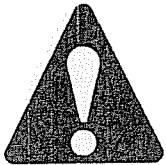
BE CAREFUL FOR YOUR OWN SAKE AND THAT OF OTHER PEOPLE

CONTROLS

The **KOYKER** 500 Farm Loader is designed to operate from the tractor hydraulic system. The tractor hydraulic system must have dual control valves to operate both the bucket cylinders and the lift cylinders. If only one valve is present, then optional control vales may be ordered.

FILLING AND DUMPING THE BUCKET: When manure is piled on a slope, it is best to drive tractor up the slope straight into the pile. Operating sideways on a slope has a tendency to tip the loading unit. Drive tractor straight into the pile, raise the bucket about six inches, then drop bucket and drive forward until the bucket is filled. Tilt bucket completely back, raise main frame and back away form manure pile.

When dumping, bring the bucket to proper dumping height which is just high enough so it will not strike the spreader as the load is being dumped. With the bucket tipped, drive tractor forward and raise the bucket at the same time to distribute the load evenly into spreader or conveyance.

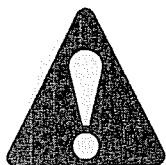


If this loader is equipped with a Grapple Fork, be sure Grapple teeth are closed before leaving seat of tractor.

OPERATION

MOUNTING: The **KOYKER** 500 Farm Loader mounts to the tractor using the special mounting plate which is bolted to the tractor frame.

HOSE ATTACHMENTS: Turn to page 16 for the illustration of the tubing and hoses for the hookup of the hydraulic system. If you are using the tractor's hydraulic pump or valves, please refer to your tractor manual for proper port selection.



Make sure you keep all lines, cylinders, and complete hydraulic system free of all sand, dirt, and foreign matter. Use only clean oil in the hydraulic system. When removing the loader from the tractor, be sure to plug all open ports. If the loader will be out of service for several days or longer, grease the exposed polished piston shafts on the bucket and the lift cylinders.

DETACHING - ATTACHING

1. For best results, drive tractor with 500 Loader mounted to reasonably level area. Raise loader up slightly and attach resting stands to the extra hole in the mainframe knee and at the point where the mainframe attaches to the bucket.
2. Remove two bolts from beneath each mounting frame upright platform. Rescrew the bolts back in the top of the hole to avoid losing the bolt.
3. Use the tractor hydraulics to lift the loader mainframe sufficiently so it will clear any tractor obstructions. Flatten bucket against the ground. Then uncouple hydraulic hoses and back out of the 500 Loader. Store the hydraulic couplings properly to prevent dirt from getting into system.
4. To attach, enter and hookup merely by reversing the process. As in any other piece of equipment, care should be used until the operator becomes familiar with the mounting and dismounting procedure.

LOADER INSPECTION, LUBRICATION, AND MAINTENANCE

Lower the bucket to the ground, shut off tractor engine, and relieve the pressure in the hydraulic system before adjusting, lubricating, or servicing the loader.

Inspect all pins and grease fittings before each use and lubricate with heavy duty grease as indicated in this manual.

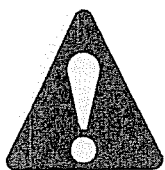
Periodically check all bolts for looseness and retorque if necessary

Before storage, be certain all hydraulic cylinders are fully collapsed so that the rod will not be exposed to the elements or damaged.

Be certain hydraulic system remains sealed at all times to prevent contamination.

Check and maintain an adequate fluid level in the tractor reservoir prior to use.

Inspect all hydraulic system hoses and fittings. Replace prior to further operation if damaged.

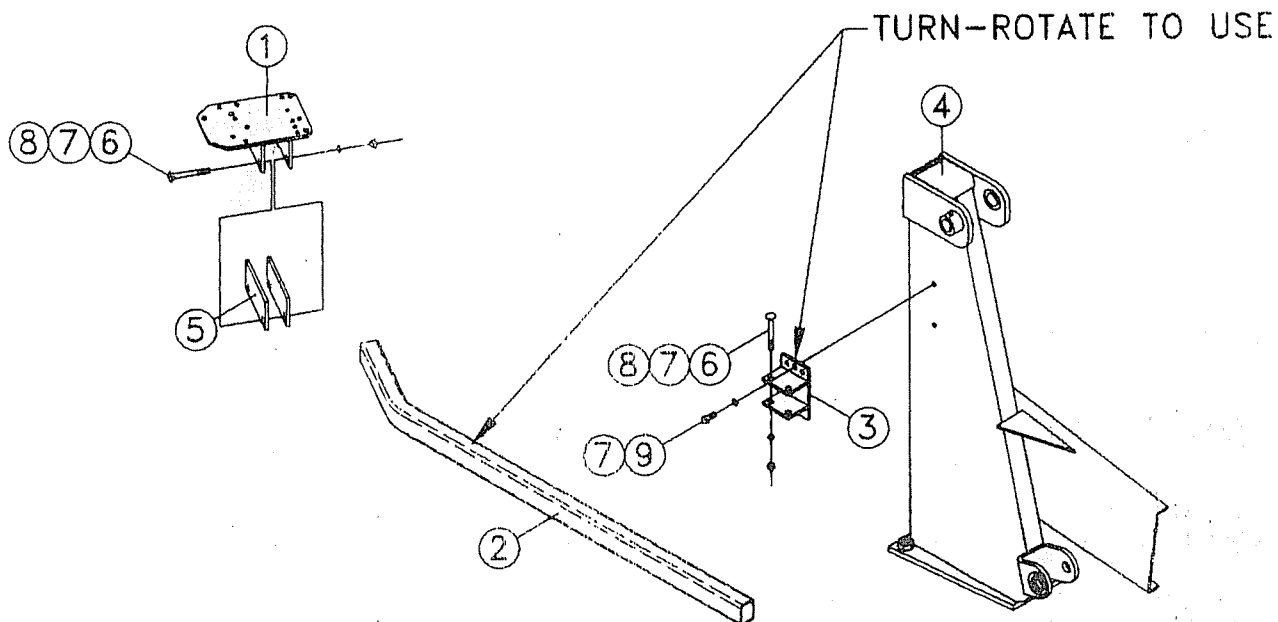


WARNING!

Escaping hydraulic oil under pressure can penetrate the skin. Never use body to check for hydraulic leaks. Use cardboard when checking for leaks. See Fig. 1-1. Relieve hydraulic pressure before disconnecting any hydraulic line. Failure to heed may result in serious injury or death.

FIG. 1-1

ADJUSTABLE LOADER VALVE MOUNTING KIT



KEY	PART NO.	DESCRIPTION	QUANTITY
1	651740	Valve Bracket	1
2	651744	Valve Bracket Tube	1
3	651743	Upright Clamp	1
4	654676	Upright	1
	#489	Hardware Bag	1
5	651739	Strap	2
6	651843	Carriage Bolt; 3/8" x 3"	4
7	640153	Lockwasher; 3/8"	9
8	640132	Hexnut; 3/8"	7
9	79142	Thread Cutting Screw; 3/8" x 1"	2
Extra Fasteners for Valve Control			
	640037	Hex Bolt; 3/8" x 2"	3
	640014	Hex Bolt; 5/16" x 3/4"	4
	640151	Lockwasher; 5/16"	4
	651703	Hex Bolt; 1/4" x 2"	2
	640149	Lockwasher; 1/4"	2
	640127	Hexnut; 1/4"	2

WARNING! Do not cover up warning decals!

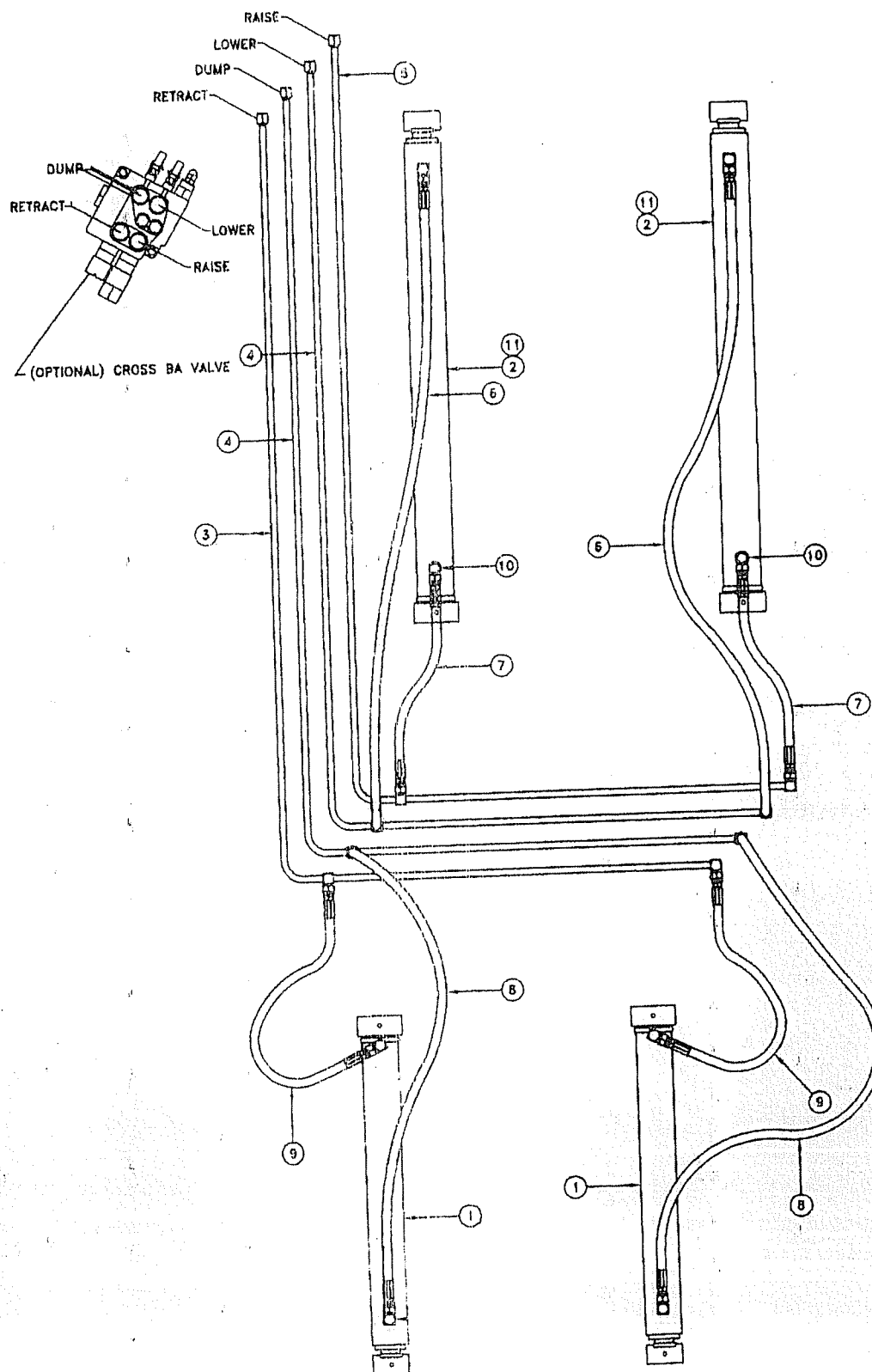
HYDRAULIC SYSTEM PARTS LIST

KEY	PART NUMBER	DESCRIPTION	QUANTITY
1.....	10135.....	2 1/2" Bucket Cylinder x 18" Stroke	2
2.....	654663.....	2 1/2" Lift Cylinder x 37" Stroke.....	2
3.....	76171.....	1st Oil Line	1
4.....	76172.....	2nd Oil Line	2
5.....	76173.....	3rd Oil Line.....	1
6.....	659306.....	57" Hydraulic Hose.....	2
7.....	7414.....	18" Hydraulic Hose.....	2
8.....	659305.....	42" Hydraulic Hose.....	2
9.....	659307.....	26" Hydraulic Hose.....	2
10.....	641429.....	Fitting	2

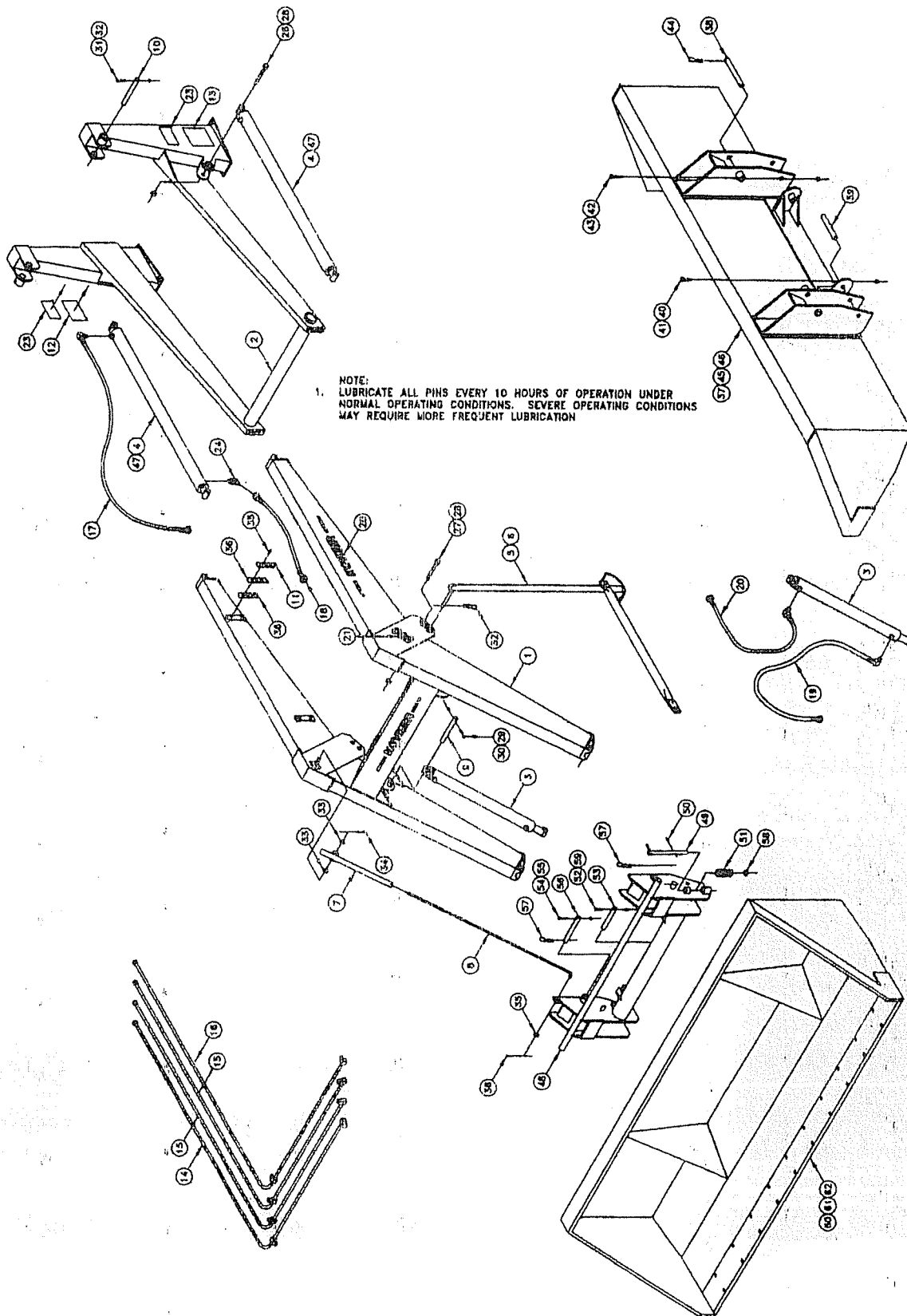
OPTIONAL LIFT CYLINDER

11.....	654658.....	3" Lift Cylinder x 39 1/4" Stroke (Hi-Lift).....	2
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HYDRAULIC SYSTEM PARTS DIAGRAM



KOYKER "500" LOADER PARTS DIAGRAM



PARTS IDENTIFICATION SCHEDULE

KEY	PART NUMBER	DESCRIPTION	QUANTITY
1.....	654672.....	Main Frame.....	1
2.....	654672.....	Upright.....	1
3.....	10135.....	2 1/2" Bucket Cylinder x 18" Stroke.....	2
4.....	654663.....	2 1/2" Lift Cylinder x 37" Stroke.....	2
5.....	7605L.....	LH Loader Stand.....	1
6.....	7605R.....	RH Loader Stand.....	1
7.....	7631.....	Sleeve W/Pivot.....	1
8.....	7658.....	Indicator Rod.....	1
9.....	7637-5.....	Bucket Cylinder Pivot Pin; 1" x 7".....	2
10.....	6505.....	Main Frame Pivot Pin; 1 1/8" x 6 1/2".....	2
11.....	7739.....	Wavey Oil Line Clamp.....	4
12.....	85505.....	Decal "Warning Hydraulic Oil Pressure.....	1
13.....	651874.....	Serial No. Plate.....	1
14.....	76171.....	1st Oil Line.....	1
15.....	76172.....	2nd Oil Line.....	2
16.....	76173.....	3rd Oil Line.....	1
17.....	659306.....	57" Hydraulic Hose.....	2
18.....	7414.....	18" Hydraulic Hose.....	2
19.....	659305.....	42" Hydraulic Hose.....	2
20.....	659307.....	26" Hydraulic Hose.....	2
21.....	654639.....	Decal "500" Logo.....	2
22.....	654631.....	Decal "KOYKER".....	3
23.....	654629.....	Decal "American Made".....	2
24.....	641429.....	Fitting.....	2
25.....	640246.....	#6 Hitch Pin.....	2
26.....	653171.....	HH Cap Screw; 7/8" x 4 1/2".....	2
27.....	654755.....	HH Cap Screw; 7/8" x 6".....	2
28.....	654753.....	Hexnut; 7/8" W/Nylon.....	4
29.....	651703.....	HH Cap Screw; 1/4" x 2".....	2
30.....	640126.....	Locknut; 1/4".....	2
31.....	640020.....	HH Cap Screw; 5/16" x 2".....	2
32.....	640128.....	Locknut; 5/16".....	2
33.....	640161.....	Flatwasher; 5/8".....	3
34.....	640236.....	Cotter Pin; 3/16" x 1 1/2".....	2
35.....	7971.....	Socket Head Screw; 1/4" x 1 1/4".....	8
36.....	7903.....	Oil Line Insulator.....	8

PARTS IDENTIFICATION CONTINUED

Optional Hi-Lift Cylinder & Standard Buckets

KEY	PART NUMBER	DESCRIPTION	QUANTITY
	652700	72" Standard Bucket W/Pins	1
37	654821	72" Standard Bucket Weldment	1
38	7614	Loader Main Frame Pivot Pin; 1 1/8" x 8"	2
39	7637-5	Bucket Cylinder Pivot Pin; 1" x 7"	2
40	651703	HH Cap Screw; 1/4" x 2"	2
41	640126	Locknut; 1/4"	2
42	640021	HH Cap Screw; 5/16" x 2 1/4"	2
43	640128	Locknut; 5/16"	2
44	640246	#6 Hitch Pin	2
	7637	84" Standard Bucket W/Pins	1
45	654822	84" Bucket Weldment	1
38	7614	Loader Main Frame Pivot Pin; 1 1/8" x 8"	2
39	7637-5	Bucket Cylinder Pivot Pin; 1" x 7"	2
40	651703	HH Cap Screw; 1/4" x 2"	2
41	640126	Locknut; 1/4"	2
42	640021	HH Cap Screw; 5/16" x 2 1/4"	2
43	640128	Locknut; 5/16"	2
44	640246	#6 Hitch Pin	2
	7655	96" Standard Bucket W/Pins	1
46	654823	96" Bucket Weldment	1
38	7614	Loader Main Frame Pivot Pin; 1 1/8" x 8"	2
37	7637-5	Bucket Cylinder Pivot Pin; 1" x 7"	2
40	651703	HH Cap Screw; 1/4" x 2"	2
41	640126	Locknut; 1/4"	2
42	640021	HH Cap Screw; 5/16" x 2 1/4"	2
43	640128	Locknut; 5/16"	2
44	640246	#6 Hitch Pin	2
47	654658	3" Lift Cylinder x 39 1/4" Stroke	2

PARTS IDENTIFICATION CONTINUED

Optional Bucket Adapter & Quick Attach Buckets

KEY	PART NUMBER	DESCRIPTION	QUANTITY
	651319.....	Fast Attach Bucket Adapter Bundle	1
48.....	650375.....	Bucket Adapter Weldment.....	1
49.....	654699.....	Spear Latch Pin	2
50.....	650389.....	Spring Pin; 1/4" x 1 1/2"	2
51.....	650388.....	Spring.....	2
52.....	651703.....	HH Cap Screw; 1/4" x 2"	2
53.....	7637-5.....	Bucket Cylinder Pivot Pin; 1" x 7"	2
54.....	640020.....	HH Cap Screw; 5/16" x 2"	2
55.....	640128.....	Locknut; 5/16"	2
56.....	7614.....	Loader Main Frame Pivot Pin; 1 1/8" x 8"	2
57.....	640246.....	#6 Hitch Pin	4
58.....	650390.....	Latch & Bucket Pin Washer	2
59.....	640126.....	Locknut; 1/4"	2
60.....	650345.....	72" Fast Attach Bucket	1
61.....	650346.....	84" Fast Attach Bucket	1
62.....	650347.....	96" Fast Attach Bucket	1

WARRANTY

Koyker Manufacturing Company (Koyker) warrants to the original purchaser only that the goods manufactured by Koyker are free from defects in material and workmanship under normal use and service and when properly installed for a period of one (1) year from the date of purchase. Any defective part or component must be returned to the factory at the purchaser's expense for inspection by Koyker. The obligation on Koyker is limited to repairing or replacing at its factory any part or component determined to its satisfaction to be defective. **KOYKER SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.** All transportation charges shall be paid by purchaser. Purchaser must notify Koyker of a claim by registered or certified mail, return receipt requested, within thirty (30) days after discovery or the claim shall be deemed waived.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No warranty is given by Koyker for parts, components, or trade accessories furnished by Koyker but not manufactured by it. They are covered by the warranty of their manufacturer, if any. No person, firm, or corporation including the selling dealer is authorized to assume for Koyker any other liability in connection with the sale of these goods.

User shall notify KOYKER in writing within 30 days, of any accident or occurrence involving KOYKER products resulting in personal injury or property damage and shall cooperate fully with KOYKER in investigating and determining the cause of such accident or occurrence. In the event that user fails to give such notice to KOYKER and so cooperate, user agrees to indemnify and waive KOYKER harmless from all loss or damage arising from such accident or occurrence.

CYLINDER WARRANTY

All cylinder claims shall be handled by Koyker Dealers or Distributors. All hydraulic cylinders are thoroughly inspected before shipment from factory. Therefore, no claim can be granted where a cylinder has been damaged or abused (including, but not limited to, bent tubes, dents, nicks, abused threads, attempted alterations, or welding), nor unless made to Koyker within one (1) year from sale to original purchaser.

Any defective cylinder reported to Koyker within one (1) year from sale by dealer to original purchaser will be replaced after properly inspected by Koyker. In such case, notify your Koyker Dealer and he will give you proper instructions.

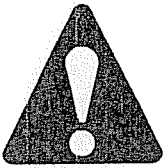
If inspection proves cylinder is not defective and has been abused or otherwise damaged, any charges will be paid by original purchaser immediately after he has been notified of the result of Koyker's inspection of the cylinder sent in for inspection.

Cylinders requiring factory repair more than one (1) year after sale to original purchaser, can be given to Dealer for return to Koyker with transportation charges prepaid. Leaks around the shaft seal and internal bypass leaks can be field repaired. Service kits are available for this repair.

CYLINDERS

IMPORTANT: Read these service tips before beginning assembly of cylinder gland or piston.

1. Keep seals clean from the time they are removed from package until they are installed.
2. Clean the groove or bore into which the seal is to be fitted before installing the seal.
3. Never touch the seal lip in handling. Always pick up the seal by its outer member.
4. Inspect each seal lip carefully for nicks, scratches, and dirt at time of installation. If dirty use a soft, clean cloth and carefully wipe off seal. **DO NOT wipe seal with fingers, this only imbeds dirt in the seal.**



NEVER clean rubber related seals with a mineral based solvent! Clean rubber seals in denatured alcohol or non-mineral based solvents only.

NOTE: Seals can be made more pliable and easier to install, if first heated in hydraulic oil to 160°F. Never use direct heat on any seals.

HYDRAULIC

The hoses from the tractor valves are attached to the oil lines which are on the inside of the loader main frame.

Re-check all joints to prevent leakage after loader is mounted and in operation.

KEEP SYSTEM CLEAN - USE ONLY CLEAN OIL



CAUTION! It is of utmost importance that the hydraulic system of this loader be kept free from dirt and foreign matter.

All internal parts to the hydraulic system of your loader have been carefully cleaned, inspected, and plugged with protective caps before shipment. All protective caps should be kept in place until the hydraulic system is connected.

NOTE: Over 75 percent of all hydraulic failure and service is caused by dirt, etc.. in the system.

REMEMBER - CLEAN OIL MEANS LONGER LIFE!

2 1/2" CYLINDER SERVICE KITS

KIT NO. 1A:

Complete kit with all seals needed to service one (1) 2 1/2" Cylinder. Consists of:

1 each	2 1/2" Gland "O" Ring	640865
1 each	2 1/2" Backup Ring	640381
1 each	1 1/2" EZ Squeeze Seal	640383
1 each	1 1/2" Rod Wiper	640386
2 each	2 1/2" EZ Squeeze Seal	640384
1 each	1" Rod "O" Ring	640301

KIT NO. 2A:

Complete assembled 2 1/2" Cylinder Gland with all seals. Consists of:

1 each	2 1/2" Aluminum Gland	10034
1 each	2 1/2" Gland "O" Ring	640865
1 each	2 1/2" Backup Ring	640381
1 each	1 1/2" EZ Squeeze Seal	640383
1 each	1 1/2" Rod Wiper	640386

KIT NO. 3A:

Complete assembled 2 1/2" Cylinder Piston with all seals. Consists of:

1 each	2 1/2" Aluminum Piston	10035
2 each	2 1/2" EZ Squeeze Seal	640384
1 each	1" Rod "O" Ring	640301

KIT NO. 4A:

All seals needed to service one (1) 2 1/2" Cylinder Gland. Consists of:

1 each	2 1/2" Gland "O" Ring	640865
1 each	2 1/2" Backup Ring	640381
1 each	1 1/2" EZ Squeeze Seal	640383
1 each	1 1/2" Rod Wiper	640386

KIT NO. 5A:

All seals needed to service one (1) 2 1/2" Cylinder Piston. Consists of:

2 each	2 1/2" EZ Squeeze Seal	640384
1 each	1" Rod "O" Ring	640301

3" CYLINDER SERVICE KITS WITH 1 3/4" SHAFT

KIT NO. 1C:

Complete kit with all seals needed to service one (1) 3" Cylinder. Consists of:

1 each	3" Gland "O" Ring	640866
1 each	3" Backup Ring	640382
1 each	1 3/4" EZ Squeeze Seal	85488
1 each	1 3/4" Rod Wiper	85487
2 each	3" EZ Squeeze Seal	840385
1 each	1" Rod "O" Ring	640301

KIT NO. 2C:

Complete assembled 3" Cylinder Gland with all seals. Consists of:

1 each	3" Aluminum Gland	10899
1 each	3" Gland "O" Ring	640866
1 each	3" Backup Ring	640382
1 each	1 3/4" EZ Squeeze Seal	85488
1 each	1 3/4" Rod Wiper	64847

KIT NO. 3C:

Complete assembled 3" Cylinder Piston with all seals. Consists of:

1 each	3" Aluminum Piston	10057
2 each	3" EZ Squeeze Seal	640385
1 each	1" Rod "O" Ring	640301

KIT NO. 4C:

All seals needed to service one (1) 3" Cylinder Gland. Consists of:

1 each	3" Gland "O" Ring	640866
1 each	3" Backup Ring	640382
1 each	1 3/4" EZ Squeeze Seal	85488
1 each	1 3/4" Rod Wiper	85487

KIT NO. 5C:

All seals needed to service one (1) 3" Cylinder Piston. Consists of:

2 each	3" EZ Squeeze Seal	640385
1 each	1" Rod "O" Ring	640301

HYDRAULIC CYLINDER PARTS LIST

KEY	PART NO.	DESCRIPTION	QUANTITY
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2 1/2" Cylinder Parts

1	654665	Lift Tube Weldment	1
1	10136	Bucket Tube Weldment	1
2	79138-1	Lock Nut	1
3	651458	Piston	1
4	640301	"O" Ring Seal	1
5	651457	Gland	1
6	10010	Lift Rod Weldment	1
6	10137	Bucket Rod Weldment	1
	640605	Drive Zerk	2

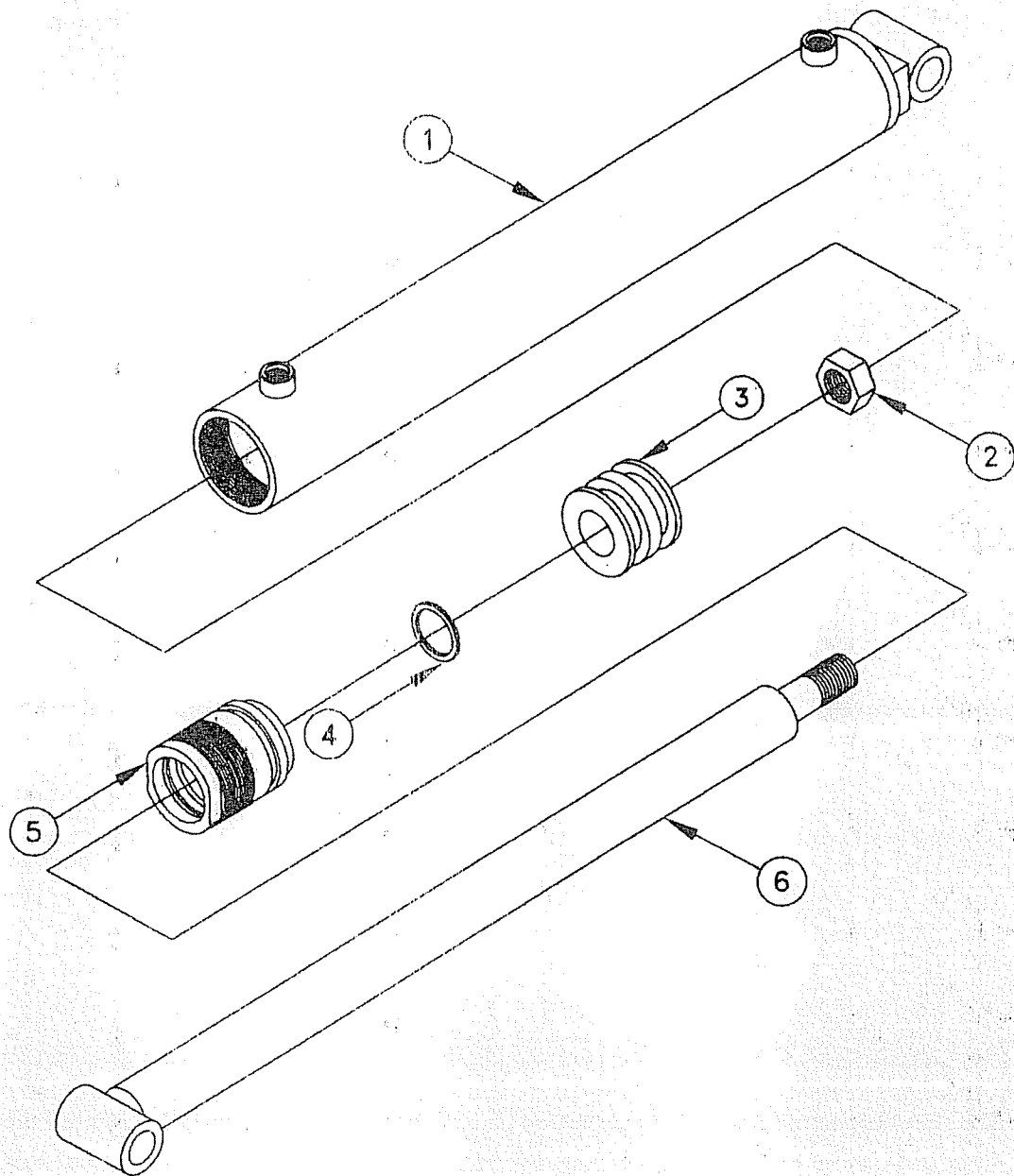
3" Highlift Cylinder Parts

1	654662	Tube Weldment	1
2	79138-1	Jam Nut	1
3	10057	3" Piston	1
4	640301	Rod "O" Ring	1
5	10899	3" Gland	1
6	650840	Rod Weldment	1

Complete Cylinder Part Numbers for 500 Loader

10135	2 1/2" Bucket Cylinder x 18" Stroke
654663	2 1/2" Lift Cylinder x 37" Stroke
654658	3" Hi Lift Cylinder x 39 1/4" Stroke

HYDRAULIC CYLINDER PARTS DIAGRAM



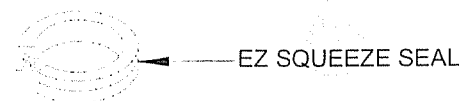
CYLINDER GLAND SERVICE DIAGRAM

All gland seals shown with a section removed to facilitate correct installation.

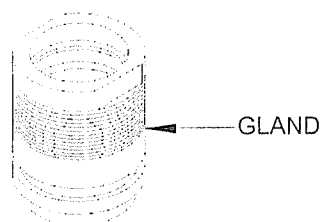
Note: To install rod wiper and EZ-squeeze seal, fold similar to shape shown below, slip into gland bore and locate each in its respective groove. Tools are used to fold seals, take care not to damage sealing surfaces.



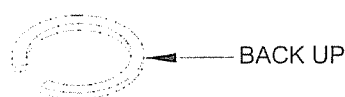
ROD WIPER



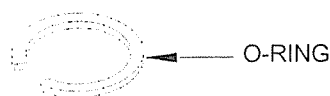
EZ SQUEEZE SEAL



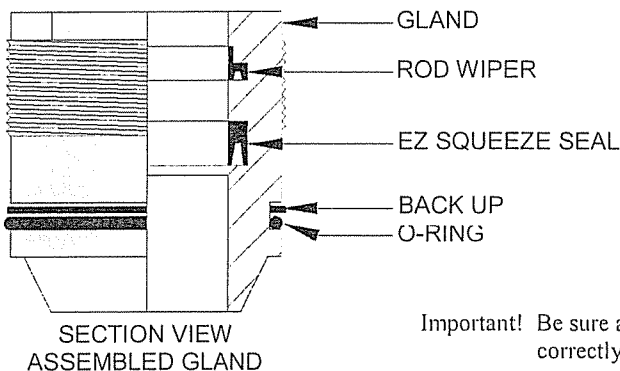
GLAND



BACK UP



O-RING



SECTION VIEW
ASSEMBLED GLAND

Important! Be sure all gland and piston seals have been installed correctly before cylinder is assembled!

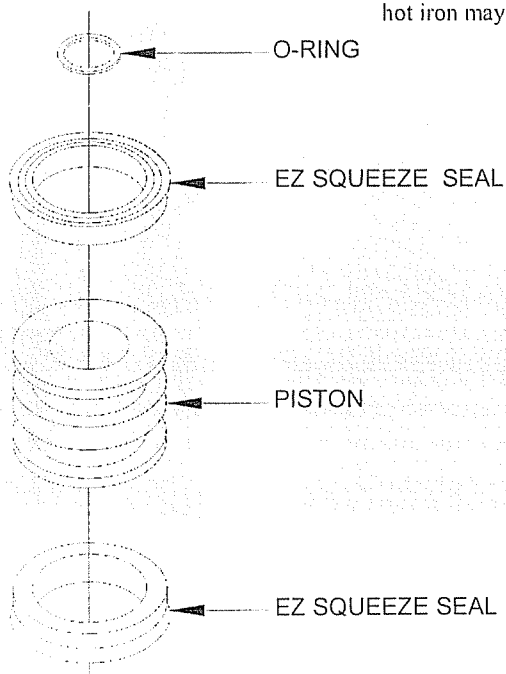
CYLINDER PISTON SERVICE DIAGRAM

To remove seals

Carefully cut across each seal with a sharp knife. Be sure not to scratch sealing surfaces of aluminum piston. If a sharp knife is not available. An electric soldering gun or hot iron may be used to melt throughout seals

To Install Seals:

1. Thoroughly clean piston sealing surface of all foreign matter.
2. Heat new seals in hydraulic oil to 160° F. Never use a direct flame or heated water on hydraulic seals.
3. Remove seals from oil, wipe dry and install in piston grooves as shown in illustration at left. Be sure seals have completely seated in piston grooves before allowed to cool.
4. Replace piston on cylinder shaft and assemble cylinder when seals have cooled to room temperature.

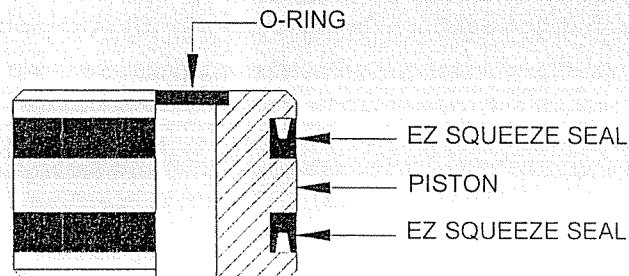


O-RING

EZ SQUEEZE SEAL

PISTON

EZ SQUEEZE SEAL



SECTION VIEW
ASSEMBLED PISTON