SAFETY PRECAUTIONS

THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES WITHIN THIS MANUAL. CAREFULLY READ THE MESSAGE THAT FOLLOWS THE SYMBOL. FAILURE TO UNDERSTAND AND OBEY A SAFETY WARNING, OR RECOGNIZE A SAFETY HAZARD, COULD RESULT IN AN INJURY TO YOU OR OTHERS AROUND YOU. THE OPERATOR IS ULTIMATELY RESPONSIBLE FOR THE SAFETY OF HIMSELF, AS WELL AS OTHERS, DIRECTLY RELATED TO HIS JOB IN THE WORK AREA.

KUBOTA BACKHOES ARE DESIGNED TO GIVE SAFE, DEPENDABLE SERVICE IF IT IS OPERATED ACCORDING TO INTRUCTIONS. READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THE BACKHOE. FAILURE TO DO SO COULD RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.

IF YOU HAVE ANY QUESTIONS, CONSULT YOUR KUBOTA DEALER.

Kubota recommends the use of a ROPS (Roll Over Protective Structure) and seat belt when operating the tractor and in almost all applications. Never fasten the seat belt without a ROPS. Do not modify a ROPS in any way. Welding, bending, drilling or cutting any portion of the ROPS may weaken the structure. Do not repair a damaged ROPS. A damaged ROPS structure must be replaced, not repaired or revised. If any structural member of the ROPS is damaged, replace the entire structure at your local Kubota dealership. Check the seat belt daily and replace it if damaged or frayed.

Allow only trained personnel to operate or service this equipment. Know and understand all precautions **before** service or operation. Also read and understand all precautions found in the Tractor and Loader Manuals.

For safe operation, check the main attaching wedge bolts and nuts for tightness **before** each day's operation. Also observe all maintenance and lubrication procedures, and inspect all hoses, cylinders, and general fasteners, daily.

Do not allow passengers on the tractor at any time. The operator MUST sit in the seat.

Use the hand rail and mounting steps while getting on and off the backhoe. Keep the steps and operator's platform clean and free of mud, grease or oil, and other debris.

NEVER raise or lower a stabilizer, when mounting or dismounting, unless the **swing is locked.**

For all excavation work, operate the backhoe from the backhoe operator's seat only.

A complete front loader, including lift arms and bucket, is required for backhoe stability, **at all times.**

Make sure the stabilizers and loader bucket are on solid footing and the unit is level before backhoe operation.

When excavating on a uneven terrain, dig with the backhoe uphill.

When you must work on uneven terrain, one stabilizer will be lower than the other. Use extreme care during excavation, as risk of overturn will be increased.

Use care when operating on uneven terrain to avoid an overturn. Travel at speeds compatible with safe operation, especially when operating in uneven terrain, crossing ditches and while turning.

Keep all bystanders away from the swing arc, from under the boom and dipper, and well clear of the backhoe, **at all times.**

NEVER attempt to lift loads in excess of backhoe capacity. See the Specifications within this manual before lifting.

Be sure the lifting chain is correctly and securely fastened to the backhoe bucket before craning. Avoid sudden boom and swing movement.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

		L3350	L3750	L4150
A.	DIGGING DEPTH	125″ / 3175mm	123″ / 3125mm	123″ / 3125mm
B.	SWING ARC	180°	180°	180°
C.	LOADING HEIGHT	98″ / 2490mm	100″ / 2540mm	99″ / 2515mm
	@ Max. Stab. Lift	111″ / 2820mm	113″ / 2870mm	112″ / 2845mm
D.	REACH FROM ℄ SWING PIVOT	167″ / 4242mm	167″ / 4242mm	167″ / 4242mm
E.	TRANSPORT HEIGHT	104″ / 2642mm	105″ / 2667mm	105″ / 2667mm
F.	BUCKET ROTATION	190°	190°	190°
G.	REACH FROM ℄ OF REAR AXLE	211″ / 5360mm	211″ / 5360mm	211″ / 5360mm
H.	OVERHANG FROM ℄ OF SWING PIVOT	60″ / 1524mm	60″ / 1524mm	60″ / 1524mm
I.	MINIMUM GROUND CLEARANCE	7″ / 178mm	8″ / 203mm	9″ / 229mm
J.	UNDERCUT FROM ℄ OF SWING PIVOT	32″/ 813mm	32″ / 813mm	32″ / 813mm
K.	STABILIZER SPREAD — FULL DOWN	103″ / 2616mm	103″ / 2616mm	103″ / 2616mm
L.	STABILIZER SPREAD — FULL UP	74″ / 1880mm	74″ / 1880mm	74″ / 1880mm

DIGGING FORCE — CURL CYLINDER	3980 lbs. / 1805 kg.
DIGGING FORCE — CROWD CYLINDER	2045 lbs. / 928 kg.
DIPPERSTICK LIFT ABILITY	1675 lbs. / 760 kg.
BOOM LIFT ABILITY — CRANING	745 lbs. / 338 kg.
BOOM LIFT ABILITY — FULL REACH	690 lbs. / 313 kg.

SWING TIME — FULL ARC	5.0 seconds
LIFTING TIME — CROWD CYLINDER	1.7 seconds
LIFTING TIME — BOOM CYLINDER	2.4 seconds
ROTATION TIME — BUCKET CURL	2.5 seconds

Lifting capacities and cycle times taken on an L4150 Tractor with the PTO in 540 RPM position, at rated engine RPM.

* Specifications based on the following tires sizes.

	TRACTOR	FRONT	REAR
*1	L3350	9.5 × 16	14.9 × 24
*2	L3750	9.5 × 16	13.6 × 28
*3	L4150	9.5 × 20	14.9 × 28

Kubota Tractor specifically reserves the right to change, modify, or eliminate from time to time, for technical or other reasons, certain or all data, specifications, or equipment of the product or the products themselves, without any liability or obligation.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SERVICE PROCEDURES

Before attempting to troubleshoot the 4540 Backhoe hydraulic circuit, insure the tractor power take-off is engaged in the 540 RPM position, is operating properly, and the engine is operating at a minimum of 2250 RPM. Consult the necessary KUBOTA Workshop Manual if the tractor PTO is not functioning properly.

IMPORTANT: THE 4540 BACKHOE HAS BEEN DESIGNED TO OPERATE IN THE 540 PTO/RPM POSITION ONLY! DO NOT OPERATE IN THE 750 POSITION, OR BACKHOE HYDRAULIC SYSTEM DAMAGE MAY RESULT.

The following troubleshooting guide is for backhoe hydraulics only, and assumes the tractor is operating at prescribed specifications.

HYDRAULIC TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	SUGGESTED REMEDY
ALL BACKHOE FUNCTIONS TOO SLOW, OR LACK POWER.	1. Oil too cold. 2. Engine RPM too slow. 3. Low oil level. 4. Improper system oil. 5. System contaminated. 6. Restricted pressure line. 7. Restricted suction line. 8. Oil Filter plugged. 9. Hydraulic Pump worn. 10. Main Relief set wrong or malfunctioning.	1. Allow oil to warm up. 2. Operate at recommended RPM. 3. Fill oil reservoir. 4. Use approved hydraulic oil. 5. Change oil & filter. 6. Repair or replace kinked or damaged line. 7. Repair or replace kinked or damaged line. 8. Replace filter cartridge. 9. Rebuild or replace pump. 10. Clean, repair, or replace main system cartridge.
NO POWER IN **ONE** CIRCUIT ONLY.	1. Work Relief set wrong or malfunctioning. 2. Cylinder Seals worn or damaged. 3. Anti-Cavitation Restrictor plugged or damaged. 4. Centering Spring broken or fastener loose. 5. Valve Tie Bolts too tight. 6. Worn Valve Spool.	1. Clean, repair, or replace work relief valve. 2. Rebuild or replace necessary cylinder. 3. Clean or replace anti-cavitation fitting w/restrictor. 4. Repair or replace centering spring. 5. Torque tie bolts to correct specification. 6. Replace valve section.
SWING "DRIFTS" OR CYLINDER(S) SETTLE, WITH VALVE IN NEUTRAL	1. Work Relief set wrong or malfunctioning. 2. Cylinder Seals worn or damaged. 3. Anti-Cavitation Restrictor plugged or damaged. 4. Valve spool not returning to neutral. 5. Worn Valve Spool(s). 6. Cylinder bypassing oil internally. 7. Cylinder Hose or Fitting leaking oil.	1. Clean, repair, or replace work relief valve. 2. Rebuild or replace necessary cylinder. 3. Clean or replace anti-cavitation fitting w/restrictor. 4. Repair or replace centering spring. 5. Replace valve section(s). 6. Rebuild or replace necessary cylinder. 7. Repair or replace hose or fitting.
BOOM "CHATTERS", LOWERING, OR STABILIZER(S) CHATTER WHEN RAISING.	1. Oil too cold. 2. Engine RPM too slow. 3. Air in cylinder(s). 4. Cylinder bypassing oil internally.	1. Allow oil to warm up. 2. Operate at recommended RPM. 3. Bleed air by operating control, full stroke, several times. 4. Rebuild or replace necessary cylinder.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Complete Flow Meter test procedures for backhoes is covered in the KUBOTA Service Training Handbook. If you have a flow meter, the hydraulic system should be tested using the flow meter.

The following test procedures assume that no flow meter is available for diagnostic testing.

1. Before proceeding with this series of tests, lower the backhoe to full ground contact and shut off the engine. Relieve cylinder pressure by cycling all control functions several times in all directions.

CAUTION: MAKE SURE THE BACKHOE BOOM, DIPPER, OR BUCKET LINKAGES ARE SUPPORTED, **BEFORE** REMOVING ANY CYLINDER.

2. Remove the pivot pin from the **rod end** of the cylinder to be tested. Do not remove the hoses. Prop the cylinder in such a way to allow it to stroke without interference.

3. Check the EXTEND function as follows:

   a. Start the engine and extend the suspect cylinder to its full stroke. Shut off the engine.

CAUTION: BEFORE DISCONNECTING THE HYDRAULIC HOSE, RELIEVE PRESSURE USING ITS CONTROL LEVER.

   b. Disconnect the hose from the rod end of the suspect cylinder.

CAUTION: DO NOT MOVE THE CONTROL LEVER TO THE RETRACT POSITION WHILE THE ROD END IS DISCONNECTED.

   c. Start the engine and run at low idle in the 540 PTO position. Move the control to **EXTEND** the cylinder while observing the open cylinder port for oil flow. There should be **no oil flow.** Slowly raise the throttle to 2250 RPM, holding the control lever in extend. There still should be **no oil flow.**

NOTE: If oil flows out of the cylinder port, the piston seal is damaged and the cylinder should be rebuilt.

   d. Shut off the engine and reconnect the removed hose. Restart the engine and cycle the suspect cylinder several times to bleed out air.

4. Check the **RETRACT** position on the suspect cylinder, following steps 3a thru 3d, **BUT** with the cylinder fully retracted, and the hose removed from the base end of the suspect cylinder.

CAUTION: DO NOT MOVE THE CONTROL LEVER TO THE EXTEND POSITION WITH THE BASE END HOSE DISCONNECTED.

5. After testing, or rebuilding, reinstall the cylinder to its mount. Start the tractor engine and cycle all backhoe controls to bleed any injested air back to the oil reservoir vent.

6. Check and refill the backhoe hydraulic system reservoir and add necessary KUBOTA recommended oil to bring the level to full.

BACKHOE CYLINDER REBUILDING PROCEDURES:

The same general service instructions apply to all backhoe cylinders, even though they are different and require a specific cylinder seal kit. See the Parts List for the applicable seal kit part numbers, and different individual parts, for the cylinder being rebuilt.

CAUTION: MAKE SURE THE BACKHOE BOOM, DIPPER, OR BUCKET LINKAGES ARE SUPPORTED, **BEFORE** REMOVING ANY CYLINDER.

DISASSEMBLY:

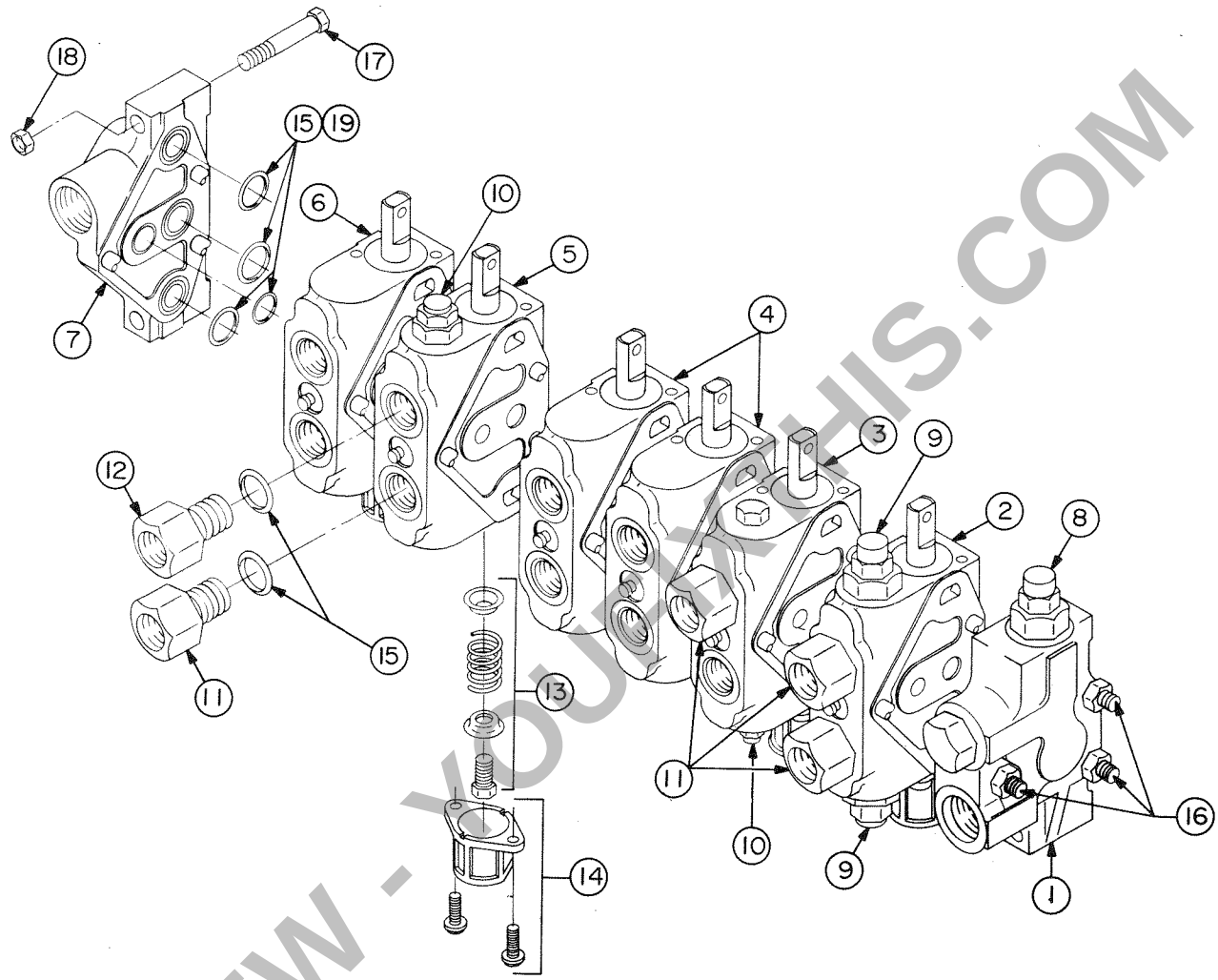
IMPORTANT: **NEVER** clamp the cylinder barrel or rod directly into a bench vise! **NEVER** use pliers of any kind on the cylinder rod.

IMPORTANT: Thoroughly clean the exterior of the cylinder being rebuilt. Before disassembly, prepare a **CLEAN** work area. Contamination introduced during repair can quickly damage the cylinders, control valve, or PTO hydraulic pump.

1. Clamp a piece of pipe or steel rod, of the appropriate diameter for the cylinder being rebuilt, into a large bench vise. Slip the base end eye over the pipe or rod.

PREVIEW YOUFIXTHIS.COM
Download full manual at youfixthis.com

BACKHOE CONTROL VALVE



REF.	PART NUMBER	DESCRIPTION	QTY.
+	70050-02332	Control Valve, Complete, less Handles	1
1.	70050-02333	Inlet Section*	1
2.	70050-02334	Swing Section*	1
3.	70050-02335	Boom Section*	1
4.	70050-02336	Stabilizer Section*	2
5.	70050-02337	Crowd Section*	1
6.	70050-02338	Curl Section*	1
7.	70050-02339	Return Section	1
8.	70050-02340	System Relief Cartridge	1
9.	70050-02341	Work Relief, w/res.	2
10.	70050-02342	Work Relief Only	2
11.	70050-02343	Anti-Cav., w/res.	4
12.	70050-02344	Spacer Fitting	1
13.	70050-02345	Spool Centering Kit	6
14.	70050-02346	End Cap, w/screws	6
15.	70050-02347	Seal Kit, Control Valve	1
16.	70050-02348	Tie Rod Kit, w/nuts	1
17.	O/L	Bolt, 3/8-16 x 2-1/2	3
18.	O/L	Locknut, 3/8-16	3
19.	70050-02589	Seal Kit, Between Section	1

* SECTIONS NOT SERVICE SEPARATELY! However, each section comes with its respective relief, anti-cavation valves, centering kit, end caps, etc.

O/L = Obtain locally. When replacing fasteners, always use Grade 5 or equivalent.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

NEVER allow anyone under the backhoe when lifting or craning.

Do not operate close to the edge of the excavation where the weight of the Tractor/Loader/Backhoe could cause a cave-in.

Do not dig under the stabilizers or tractor, especially in soft or sandy soil. Take extra precautions in wet or thawing ground. This soil can become unstable very quickly, and may collapse under the weight of the unit.

To reduce the risk of overturn on a uneven terrain, place the spoil on the high side of the excavation.

Keep the backhoe and loader **well clear** of electrical lines. If in doubt on safe distance, contact the local power company.

Be alert for buried electrical, telephone, gas and water lines. When in doubt, contact the local utility companies for the location of buried lines.

Before transporting the unit, raise and center the boom, close the bucket and dipper, engage the swing and boom locks and disengage the power takeoff.

Check local codes or regulations that may apply to tractor/loader/backhoe operation on public streets or highways, before transporting. Use slow moving vehicle (SMV) signs, lock brake pedals together and use the tractor flashing lights when traveling on public roads.

Park the unit on level ground whenever possible. Lower the backhoe bucket and both stabilizers to the ground, engage the swing lock, dismount and disengage the PTO. Lower the loader bucket, set the parking brake, shut off the engine, and **remove the key** before leaving the unit.

Before transporting, always securely fasten the tractor/loader/backhoe, with chains and chain binders, to the transport vehicle. Before transporting, determine and note the load height of the backhoe, for underpass clearance.

DO NOT change any backhoe control valve relief settings. They have been factory set for best backhoe performance and operator safety.

Never make any repairs, service, or adjustments, when the backhoe hydraulic system is under pressure, when the engine is running, or when any backhoe cylinder is under load.

After daily service, make sure handholds, control levers, steps, and your hands, are free of grease and oil.

Escaping hydraulic fluid under pressure has sufficient force to penetrate into skin, causing serious personal injury. Before applying pressure to the system, make sure all connections are tightened and that lines, pipes and hoses are not damaged.

Fluid escaping from pin holes may be invisible. Do not use hands to search for suspected leaks. Instead, use a piece of cardboard and wear protective eyewear such as safety goggles. If injured by escaping fluid, see a medical doctor at once. Serious infection or reaction may result if proper medical treatment is not administered immediately.

When installing or removing tight fitting pins or bolts, care should be taken to guard against injury from pieces that may chip off of pin, bolt, or object used in striking it. Always use a brass punch or lead hammer, and always **wear safety glasses.**

Replace any safety decal that becomes damaged, lost, or otherwise illegible. Replace all decals when repainting. If a part is replaced that has a decal on it, obtain a replacement from your Kubota dealer and install the decal in the same location.

PREVIEW YOUFIXTHIS.COM

Download full manual at youfixthis.com

b. Insert the spool, from the top, with the handle clevis up. Gently rotate it as it is installed, until it passes through the lower seal. Pull the spool far enough out of the bottom so the upper seal can be installed. Push and rotate the spool through the upper seal until it is in its approximate neutral position. Make sure the threaded hole in the bottom of the spool is cleansed of all oil, and is thoroughly dry.

c. Install the "dry" neutral centering spring items as shown. Apply thread adhesive, such as Loctite 242® to the threads of the spool screw and tighten. Insert a phillips screwdriver through the handle clevis hole in spool, so it will not turn, and torque the spool screw to 24 to 36 in. lbs. (2½-4 N•m). Make sure the shoulder on the screw goes through the washer and lower spring retainer.



FIGURE #5

d. Reinstall the check valve, with a new o-ring. Make sure the hole through the body of the check valve aligns with the tie rod hole.

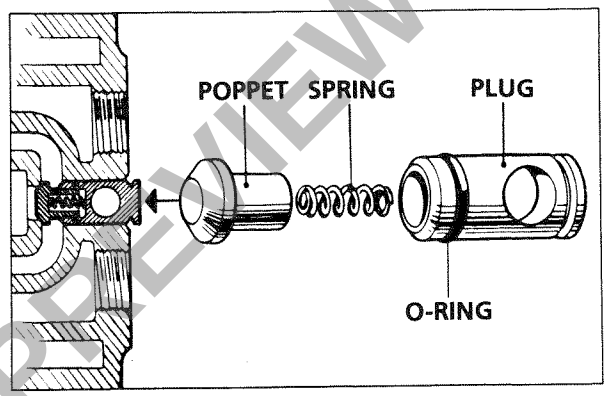


FIGURE #6

e. Reinstall workport reliefs, restrictors and anti-cavitation fittings, with new o-rings, in the ports from which they were removed.

IMPORTANT: The upper outlet port on the crowd section uses a dummy anti-cavitation fitting that has no restrictor. DO NOT mix these fittings or crowd cylinder damage may result.

f. Disassemble, clean, inspect and reassemble the other sections as necessary. See the Parts List illustrations for assistance while rebuilding the control valve.

SYSTEM RELIEF VALVES

Located in the top of the inlet cover, the Main Relief Valve protects the backhoe hydraulic components from damage by preventing excessive pressures in the system when the control valve spools are activated. When a spool is activated, and the cylinder reaches the end of its stroke, or is physically prevented from moving, the system relief valve opens and directs oil flow through the neutral passages and the return cover, to the backhoe reservoir.

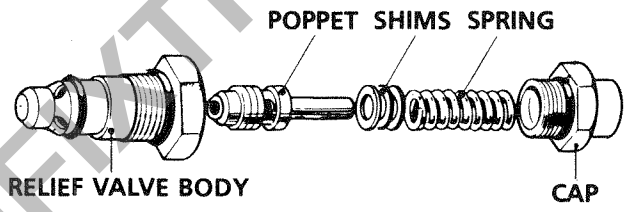


FIGURE #7

System relief pressure is maintained by a series of shims pre-selected to relieve at 2000 psi. Do not change or alter the preselected relief setting, or backhoe component damage could result. The main system relief valve is serviced only as an assembly and includes the o-ring seals. O-rings alone for the relief valve, are included in the control valve seal kit.

Workport Relief Valves, with and without oil flow restrictors, are used in this control valve. Service procedures are similar to those for the main relief valve, limited to cleaning and inspection only. Workport reliefs are serviced as assemblies and include their o-ring seals. O-rings alone are included in the control valve seal kit.

See the illustrated Parts List for specific workport relief valve locations.

The installation torque on all relief valves and anti-cavitation fittings is 10 to 15 ft. lbs. (13-20 N•m).

CONTROL VALVE REASSEMBLY & REINSTALLATION

1. Insert all three tie rods, with a nut and lockwasher on one end, through one of the end covers. Stand the end cover on its side so the tie rods are vertical.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

PARTS LIST

ILLUSTRATIONS: All parts are shown in their normal relationship to each other, whenever possible. Reference numbers used on each illustration closely correspond with those numbers found in the 4540 Operator's Manual.

PARTS CHANGES: Changes to the backhoe may make it necessary to revise the Parts List. All revised pages must be added to this parts list as soon as they are received.

CONTENTS:

Mainframe, Stabilizers & Related Components 26
Swing Frame, Boom & Related Components 28
Dipper, Bucket & Related Components 29
Operator's Platform 30
Swing & Boom Locks 31
Control Valve 32
Control Valve Handles 33
PTO Hydraulic Pump 34
Swing & Stabilizer Hydraulics 35
Boom & Dipper Hydraulics 36
Lift, Crowd, Curl & Stabilizer Cylinders 37
Swing Cylinder 38

PARTS ORDERS: All orders must have a complete part number, description, quantity needed, method of shipment, your dealer number, or a shipping address.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 8 of 40 pages

The full manual includes:

- All 40 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Kubota 4540 Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual