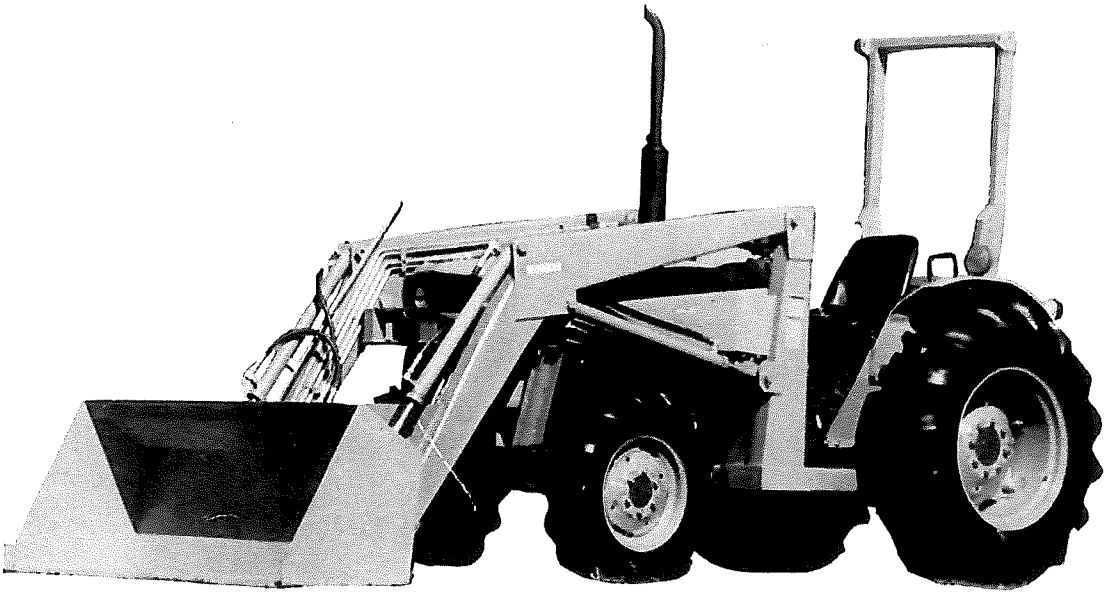
KUBOTA

OPERATORS MANUAL

MODEL L1720 LOADER

FOR TRACTOR MODELS: L305, L305DT L345, L345DT, L355SS



EFFECTIVE BEGINNING WITH SERIAL NO. 50000

THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES IN THIS MANUAL.

FORM 70000-70186 REV. B 4-1-82

CONTENTS

MR. PURCHASER

This manual consists of instructions and guides for installing, operating, and servicing your new KUBOTA MODEL L1720 Loader and attachments. Reasonable life and satisfactory performance of your unit can be expected if you will follow the instructions and safety guides in this manual. Pay particular attention to the Safety Precautions within this booklet. Any machinery can be dangerous if you don't understand and follow key safety points and use common sense at all times.

WATCH FOR THIS ALERT SYMBOL. IT INDICATES IMPORTANT SAFETY MESSAGES. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BECOME ALERT THAT YOUR SAFETY IS INVOLVED.

DIRECTIONAL REFERENCE

Reference in this manual to the right and left-hand side of your loader is determined by standing at the rear of the unit and facing the direction of forward travel.

PARTS AND SERVICE

When you need new parts or service, see your local Kubota Dealer. The serial number plate is located on the left central portion of your loader subframe. Record your loader serial number and the date of purchase in the space provided below. Your dealer will need the loader model and serial number to give you prompt, efficient service whenever you order additional attachments or replacement repair parts. A Parts and Service Manual is available for your L1720 Loader from your dealer.

KUBOTA

MODEL L1720 LOADER

Date Purchased_____ Loader Serial No._____

Kubota Authorized Dealer_____

Dealer Telephone_____

GENERAL SPECIFICATIONS

These specification apply to Kubota L345DT Tractor and loader equipped with external (open center-2000 PSI) hydrualic pump system; front tire size 9.5-16; rear tire size 13.6-28; and 66" material bucket less tines. Specifications will vary for tractors and loader equipped differently.

(A) MAXIMUM LIFT HEIGHT	113.5" (2883mm)
(B) CLEARANCE WITH ATTACHMENT DUMPED	89.75" (2280mm)
(C) REACH AT MAXIMUM HEIGHT	39" (991mm)
(D) MAXIMUM DUMP ANGLE	45°
(E) REACH WITH ATTACHMENT ON GROUND	72.25" (1835mm)
(F) ATTACHMENT ROLLBACK ANGLE	17°
(G) DIGGING DEPTH	7.5" (191mm)
(H) OVERALL HEIGHT TO CARRY POSITION	60.25" (1530mm)
BREAK-AWAY CAPACITY	2450 lbs. (1110Kg)
LIFT CAPACITY AT FULL HEIGHT	1495 lbs. (680Kg)
RAISING TIME	4.3 sec.*
LOWERING TIME	3.3 sec.*
ATTACHMENT DUMPING TIME	3 sec.*
ATTACHMENT ROLLBACK TIME	2.5 sec.*
APPROX. SHIPPING WEIGHT (WITH ATTACHMENT)	1433 lbs. (651Kg)

*Using External Hydraulic System@2800 RPM. Tractor system will be slower.

SAFETY

SAFETY RULES

Your safety and the safety of those around you is dependent upon the care and good judgement you exercise in the use of this equipment.

READ THIS MANUAL THOROUGHLY and make sure you understand its contents. All equipment has limitations.

The safey information presented in this manual is not intended to replace safety codes, insurance requirements, federal, state and local laws, rules and regulations. Know the regulations and laws that apply to your area and be sure that your loader is properly equipped to meet such laws and regulations.

We at Kubota are continuing to contribute to your safety by building loaders with an extra measure of protection, and passing on these suggestions for safer operation.

IMPORTANT: Always replace any safety decals whenever the old decals are destroyed, lost, painted over or illegible. Replace all safety decals when repainting.

OPERATION

WARNING Before starting tractor engine study Operator's Manual safety messages. Read all safety signs. Clear the area of other persons. Learn and practice safe use of controls before operating. It is your responsibility to understand and follow manufacturer's instructions on machine operation, service, and to observe pertinent laws and regulations. Operator Manuals may be obtained from your equipment dealer.

CAUTION Improper use of a loader can cause serious injury or death.

CAUTION Operate the loader from the tractor seat only.

CAUTION Move wheels to widest recommended settings to increase stability.

CAUTION Move, turn and operate tractor at slow ground speeds, especially on irregular ground to avoid tipping.

CAUTION Add recommended rear tire liquid weight, rear wheel weight or rear ballast for increased stability and traction.

CAUTION Do not stand, walk or work under a raised loader or attachment unless it is securely blocked or held in position. Accidental movement of control lever or leak in hydraulic system could cause mainframe to drop, causing severe injury.

CAUTION Do not lift or carry personnel on a loader or attachment; a slip or fall could cause bodily injury.

CAUTION For better stability, use a tractor with wide front axle rather than one with narrow front wheels.

CAUTION Visually check for hydraulic leaks and broken, missing or malfunctioning parts and make necessary repairs.

OPERATION

CAUTION Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.

CAUTION If the tractor is equipped with a Rollover-Protective Structure (ROPS), fasten seat belt prior to starting engine.

CAUTION Avoid loose fill, rocks and holes; they can be dangerous for loader operation or movement.

CAUTION It is the loader owner's responsibility to be certain anyone operating the loader is aware of safe operating practices and potential hazards.

CAUTION Stop the tractor engine before checking oil level in tractor oil reservoir.

CAUTION Operating sideways on a hill tends to tip the unit.

CAUTION Be extra careful when working on inclines.

CAUTION If tractor is ROPS equipped, do not exceed the manufacturers rating for maximum gross vehicle weight. When adding counter weight to the rear refer to ROPS serial number plate.

CAUTION Stop the loader arms gradually when lowering or lifting.

CAUTION Use caution when handling loose or shiftable loads.

WARNING Load on raised bucket or for can roll back onto operator area, causing serious injury or death. Use recommended clamping attachments for handling large objects such as bales, posts, etc. Carry load as low as possible.

CAUTION Increased rear wheel weight is recommended when using the boom to provide more traction and better tractor stability.

TRANSPORT

CAUTION A loaded bucket should be transported in a low position at slow ground speeds, especially if the ground is irregular. Make turns slowly and use the tractor brakes cautiously. A full bucket in the raised position significantly alters the center of gravity location of the unit and increases the possibility of mishaps.

CAUTION Avoid overhead wires or obstacles when loader is raised, to avoid damage or possible shock.

CAUTION Allow for the loader length when making turns.

STORAGE

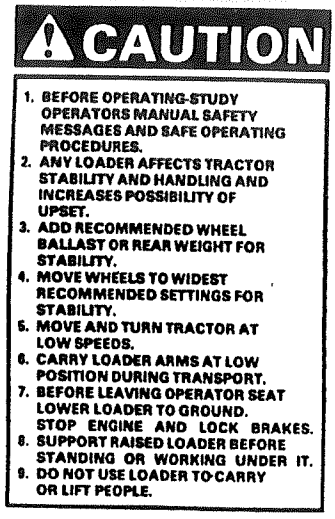
CAUTION Lower mainframe when parking or servicing. Accidental movement of control lever or leak in hydraulic system could cause mainframe to drop, causing damage to loader or tractor or injury to personnel.

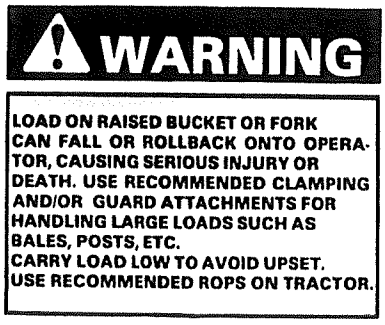
CAUTION Before disconnecting hydraulic lines, relieve all hydraulic pressure. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious personal injury.

CAUTION If injured by escaping fluid, obtain medical treatment immediately.

CAUTION Make sure all parked loaders on stands are on a hard level surface with all safety devices engaged to prevent loader from falling and being damaged or injuring someone.

WARNING Lower or block elevated components before servicing or when leaving the machine. Elevated components can fall and cause serious injury.





NOTE: These decals are conspicuously placed on your loader and serve as a constant safety reminder. Replace safety decals if they become worn or difficult to read, especially when repainting.

LOADER SET-UP & INSTALLATION

TRACTOR PREPARATION

FRONT TIRES AND WHEELS

Use front tires of equal size and maintain equal pressure in each tire. The pressure of the front tractor tires must be increased to the maximum approved pressure recommended by the tire manufacturer. See your Tractor Operators Manual. Use at least 4-ply front tires and adjust the front tires on adjustable models for maximum stability. DO NOT reverse front wheel rims.

IMPORTANT: Do not use front end weights or front tire liquid wheel weight while loader is mounted on tractor.

CAUTION For safe and satisfactory loader operation, the tractor's front tires, wheels, spindles and axles must be adequate to carry load!

CAUTION For better stability, use a tractor with wide front axle rather than one with narrow front wheels.

REAR TIRES AND WHEELS

Maintain equal pressure in each of the rear tires and do not vary the size of the rear tires. Use the widest rear wheel setting possible for maximum stability.
The rear tractor tires of the Kubota L305, L305DT, L345,L345DT, or L355SS may be set to minimum tread width (when received from the factory) and may require adjustment outward to provide clearance for the loader. Rear tractor tires must be positioned to have a minimum width of 36" (915mm) between INSIDE faces of tires [approx. 50-1/8" (1275mm) or more tread setting]. This can be easily obtained by removing the wheel rim bolts and relocating the right and left discs to the inside of the rims, reversing the discs, or exchanging right and left tires with one another. Refer to Kubota Tractor Manual section "Changing Rear Wheel Tread" for additional instruction.

REAR WHEEL WEIGHTS

Rear end weight is necessary to counter-balance the loader and its load. Three pieces of Kubota rear wheel weights must be installed to each of the rear wheels and/or liquid weight added to both rear tires. In addition, approx. 500 lbs. of implement or equivalent counter-balance weight should be installed on the tractor 3-point hitch.

CAUTION Add recommended rear tire liquid weight or rear wheel weights or rear ballast for increased stability and traction.

MUFFLER RELOCATION

A muffler relocation (extension) pipe must be installed to provide adequate clearance for the loader. Necessary components are included with the Kubota L1720 Loader Kit and instructions are provided later within this section.

LOADER PREPARATION

In order to minimize your assembly and installation we have assembled your new loader as completely as possible at the factory. It is of UTMOST IMPORTANCE THAT YOU CAREFULLY READ AND FOLLOW THE STEP BY STEP INSTRUCTIONS OUTLINED IN THIS MANUAL.

Position the loader in front of the tractor. Allow ample working space in front of and around the loader. Remove Mounting Bracket components and hydraulic kits from the carton and set aside near the tractor. Carefully check the assemblies, subassemblies and parts against the Packing List for completeness and possible shipping damage. Similarly, check other kits, attachments and accessories.

REMEMBER:

1. Left and right side of loader or tractor is determined by locating yourself in the tractor seat facing the front of the tractor.
2. DO NOT tighten (loader to bracket) bolts until the basic loader installation is complete.
3. A "Loctite" type of bolt securing compound is recommended to assure bolts staying tight.

In the proper sequence within these instruction, all bolts should be tightened to the recommended torques shown in the "General Torque Specification Table".

GENERAL TORQUE SPECIFICATION TABLE (Revised 2-74)

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

NOTE: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

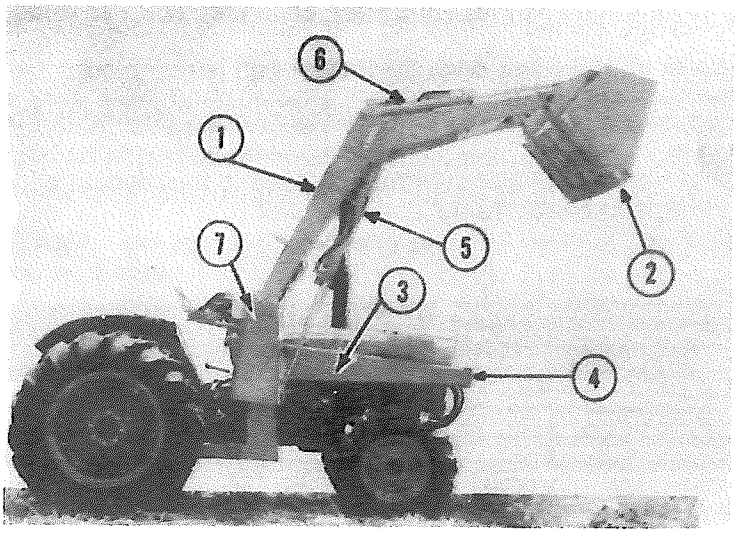
SAE Grade No		2				5				8 *			
Bolt head identification marks as per grade NOTE: Manufacturing Marks Will Vary													
		Torque				Torque				Torque			
Bolt Size		Foot Pounds		Newton-Meters		Foot Pounds		Newton-Meters		Foot Pounds		Newton-Meters	
Inches	Millimeters	Min	Max.	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1/4	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	20.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	30	35	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2	12.70	45	52	61.0	70.5	80	96	108.5	130.2	110	132	149.2	179.0
9/16	14.29	65	75	88.1	101.6	110	132	149.2	179.0	160	192	217.0	260.4
5/8	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1-1/8	25.58					800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1-1/4	31.75					1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1-3/8	34.93					1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1-1/2	38.10					1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

* Thick nuts must be used with Grade 8 bolts

NOTE: When hardware is plated, reduce torque values by 25%.

LOADER INSTALLATION INSTRUCTIONS

Model L1720 Loader for Kubota L305, L305DT, L345, L345DT or L355SS Tractors.

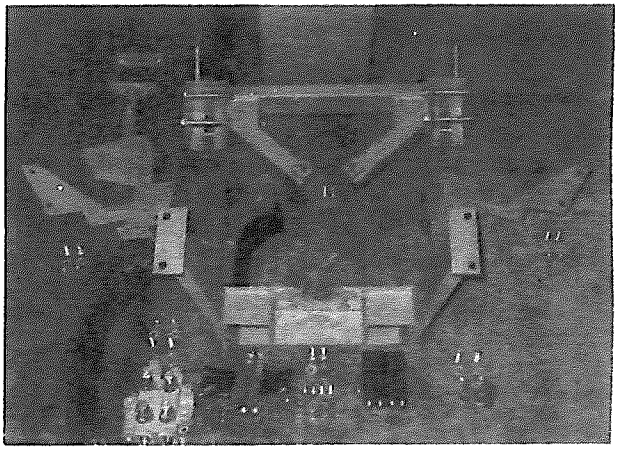


1 - Mainframe Assembly
2 - Bucket
3 - Subframe
4 - Bumper
5 - Lift Cylinders
6 - Attachment Cylinders
7 - External Reservoir
(Optional External Hydraulic Kit)

FIG. 1

1. Uncrate and identify mounting kit, valve and miscellaneous parts, Figure 2.

FIG. 2



2. Open hydraulic kit box and identify as either tractor hydraulic kit (figure 3) or external hydraulic (pump) kit (figure 4).

FIG. 3

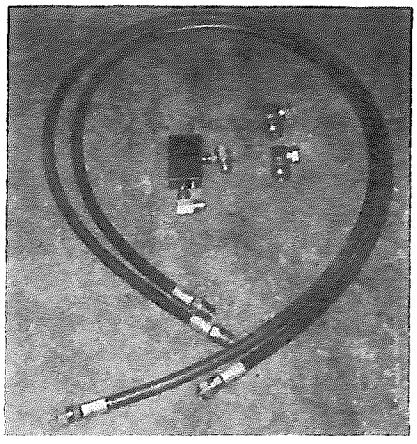
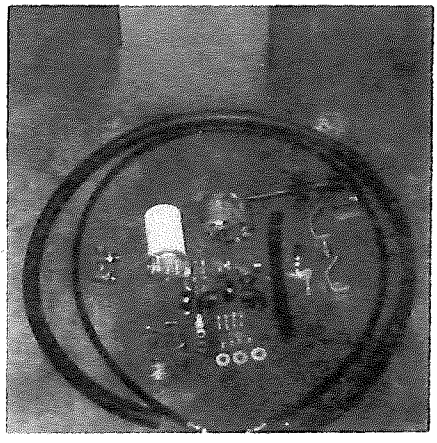


FIG. 4

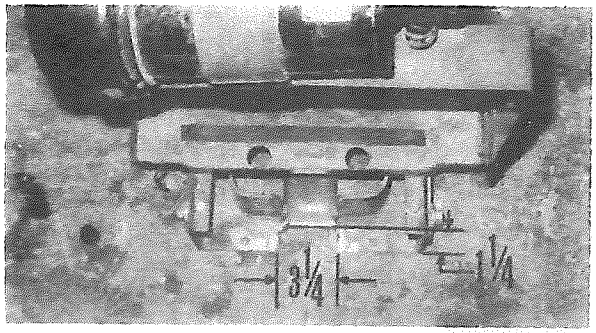


NOTE: If loader is ordered to utilize the tractor hydraulic system, go on to step #6. (Disregard steps 3, 4, and 5 as they only apply to the external hydraulic kit.)

3. (External hydraulic pump installation only): Remove the tractor hood, battery and battery support.

4. (External hydraulic pump installation only): Check tractor serial number. If your L345 tractor serial number is from 10001 through 10617 a dealer modification is required to the battery support. (Tractors thereafter will accommodate pump drive components.) Refer to Figure 5 where the required 1-¼" deep x 3¼" (32 x 83mm) wide notch is shown to assist you.

FIG. 5



5. (External Hydraulic Pump Installation Only): On loaders prior to S/N 51705, the pump mount is a part of the front bracket assembly. After Loader S/N 51704, the front bracket assembly will not provide the front pump mount. If the Loader S/N is after 51704 and the external hydraulic kit does not contain a pump mount assembly, this assembly and mounting hardware can be ordered. Refer to Figure 7 and Page 28. Install fittings into the pump (thread sealing compound or similar sealant required on "male pipe" fittings only. See WARNING below.) Install shaft couplers together with chain, install master link half way thru chains, insert 2 link halves between chains, push master link completely thru chains, install remaining link half and lock master link retainer into place. Remove excess paint from tractor crankshaft spline. DO NOT DRIVE THESE INTO PLACE. See Figure 6.

⚠ WARNING Apply thread sealing compound to male threads only. When applying any liquid, paste or Teflon tape thread sealents MAKE SURE at least one clean thread is left exposed at the end. Failure to follow this instruction will permit sealing material contaminants to enter the oil and can result in serious damage to components within the hydraulic system.

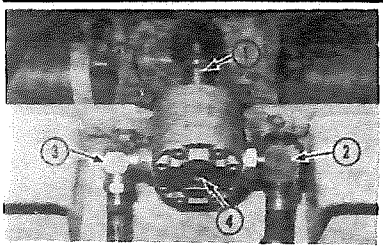


FIG. 6

1 - Chain and Shaft Assemblies
2 - Fitting, 1-1/16" O-ring to ¾" pipe
3 - Fitting, 7/8" O-ring to ½" pipe
4 - Pump
After Loader S/N 51704
5 - Pump Mount Assembly
6 - 12mm x 1.25 pitch x 79.5mm Stud, Lockwasher, & Nut, Typical 4 places

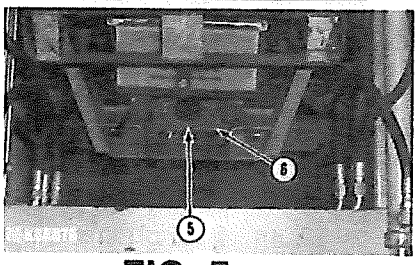


FIG. 7

6. Mount front bracket to tractor and bolt into place. After loader S/N 51704 studs, lockwashers, & nuts will be supplied in place of bolts to secure the front bracket. (DO NOT TIGHTEN.) When installing a front pump on loaders after S/N 51704, 12mm x 72.8 studs are supplied with the external hydraulic kit to hold the pump mount assembly and front bracket. The 3/8" x 1-¼" bolts should be placed in the top set of holes on the pump mount assembly before placing the pump mount assembly over the 12mm x 79.5mm studs. Install the front bracket and pump into place while maintaining alignment. True drive shaft alignment is very critical to the life of the pump and drive and MUST be properly adjusted at this time. See Figure 8 (Fittings are not installed in Figure 8 so bolts can be clearly shown.). Tighten Set Screws in the Drive Shaft.

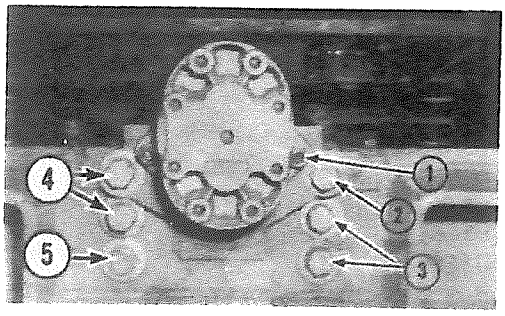


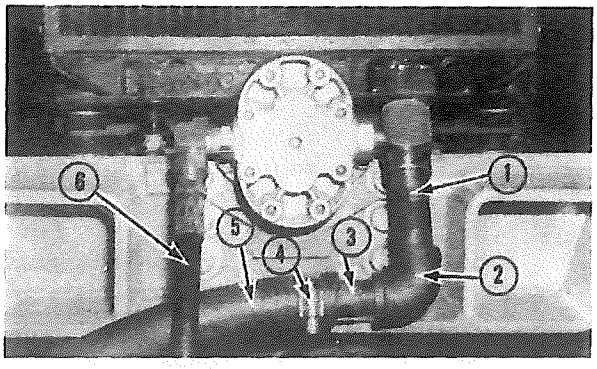
FIG. 8

1 - 3/8" x 1-¼" bolt, lockwasher and nut
Typical 2 places
2 - 12mm x 1.25 pitch x 50mm bolt, lockwasher and flatwasher
Typical 2 places
3 - 12mm x 1.25 pitch x 35mm bolt, lockwasher and flatwasher
Typical 2 places
After Loader S/N 51704
4 - 12mm x 1.25 pitch x 79.5mm Stud, Lockwasher, & Nut
Typical 4 places
5*- 12mm x 1.25 pitch x 60.8mm Stud, Lockwasher, & Nut
Typical 2 places

*Typical 6 places when using tractor hydraulics

CAUTION Failure to accurately align the pump drive parts will reduce the life of the drive and pump. Check shaft runout with a dial indicator or equal spacing between coupler halfs with a feeler gauge to obtain alignment.

7. Install fittings as shown in Figure 9. (Thread sealing compound or similar sealant is required on "male pipe" fittings only. See WARNING in step 5.) Adjust hoses and fittings from pump to clear all tractor hood and bracket components. DO NOT PERMIT RUBBING.



1 - Nipple, ¾" x 3"
2 - Elbow, ¾" x 90°
3 - Nipple, ¾" x 2-½" special cut
4 - Hose clamp
5 - 1" x 103" suction hose
6 - 3/8" x 96" pressure hose

FIG. 9

8. Install 5/8" x 5-½" bolts in rear bracket saddles (DO NOT TIGHTEN). Install rear bracket as shown in Figure 10 and Figure 11 under the tractor rear end.

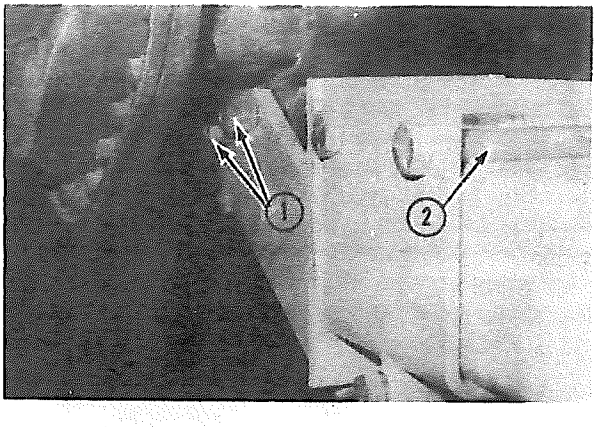


FIG. 10

1 - 12mm x 1.25 pitch x 50mm bolt double nutted
2 - 5/8" x 5-½" bolts, lockwasher and nut
Typical 6 places

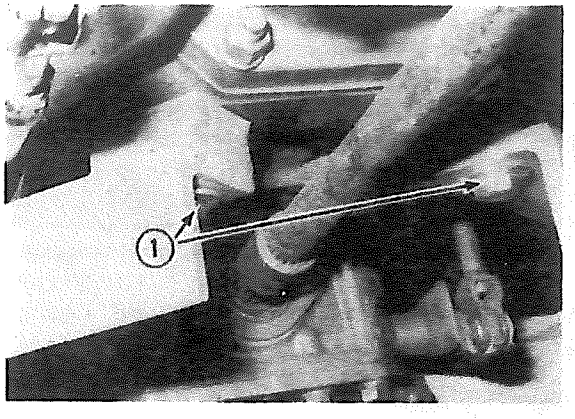
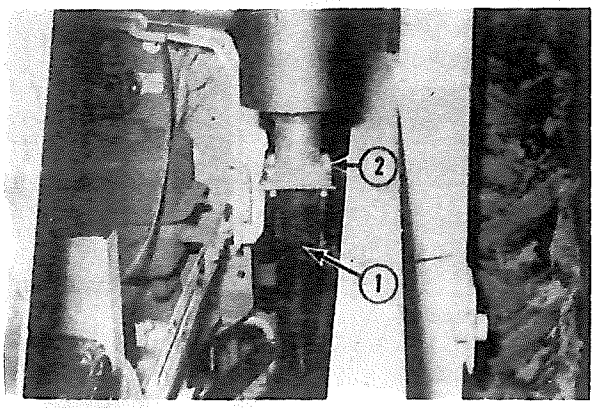


FIG. 11

1 - 12mm x 1.25 pitch x 60mm bolt, lockwasher and flatwasher
Typical 2 places

9. Remove the tractor exhaust pipe and muffler. Install the relocator pipe, exhaust gasket and muffler. See Page 27 for L305 and L305DT application and for L345, L345DT, and L355SS application see Figure 12 and Page 27.



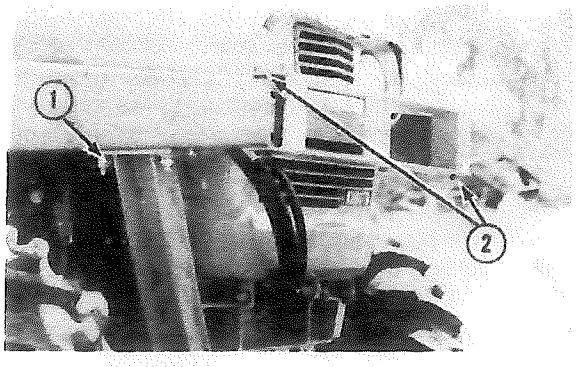
1 - Exhaust relocator
2 - 5/16" x 1" bolt, lockwasher and flatwasher
Typical 4 places

FIG. 12

10. Reinstall battery support, battery, battery connections and tractor hood.

11. Tighten all mounting bracket bolts to the tractor frame at this time. NOTE: Do not tighten any loader to bracket bolts until basic loader installation is complete.

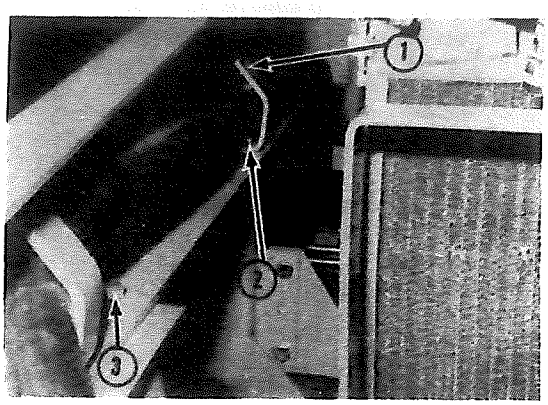
12. Unpin subframes from the mainframe arms (not required if overhead hoist is available) and install left and right subframes on the mounting brackets. See Figure 10 and Figure 13. (Go on to step #14 if installing tractor hydraulic system.



1 - 5/8" x 2" bolt, 2 flatwashers, lockwasher and nut
Typical 4 places
2 - ½" x 6" clevis with hairpin
Typical 2 places

FIG. 13

13. (External hydraulic pump installation only): Install (2) hose clamp bars, Figure 14. Note that hoses may be installed as shown.

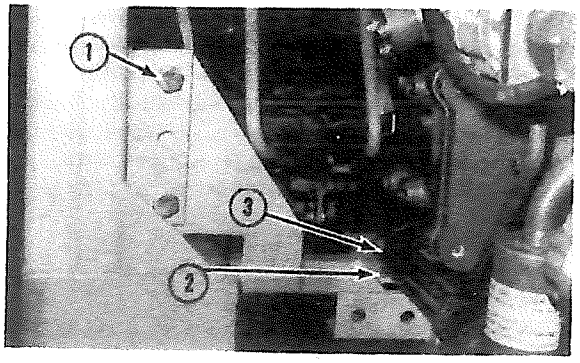


1 - Hose clamp bar
2 - 5/8" x 1-½" bracket bolt, lockwasher and nut
3 - Use bracket bolt

FIG. 14

14. Install front bumper, Figure 13, using the ½" x 6" clevis with hairpin, typical 2 places.

15. Install the lower crossbrace assemblies, Figure 15.



1 - 5/8" x 1-½" bolt, lockwasher, nut
Typical 4 places
2 - 12mm x 1.25 pitch x 30mm bolt, lockwasher and flatwasher
Typical 2 places
3 - 12mm x 1.25 pitch x 30mm bolt, lockwasher
Typical 2 places

FIG. 15

16. Pin the mainframe arm assembly and cylinders into position on subframes. With mainframe arms in the down position, adjust loader arms so there is equal spacing between the loader subframe and mainframe. TIGHTEN ALL BOLTS to hold correct centered alignment. (General Torque Specification Table is provided on page 7.)

17. Reference picture below for valve identification.

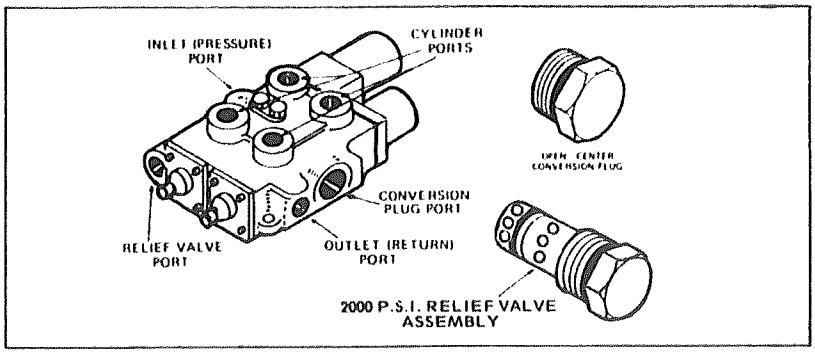
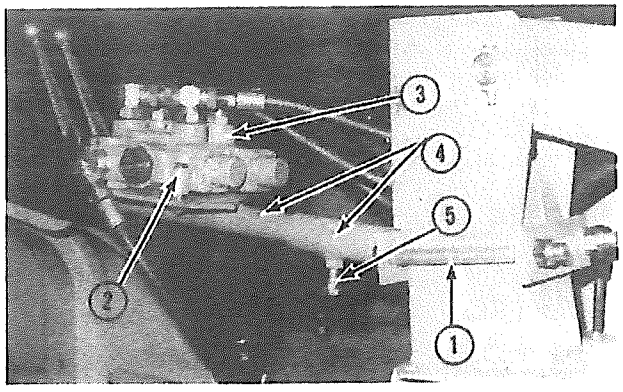


FIG. 16

The Kubota control valve can be easily identified as the correct valve if conversion plug and relief valve assembly are removed and compared to above pictures. The Kubota L305 system requires a 1800 P.S.I. relief as referenced. The Kubota L345 and L355SS system requires a 2000 P.S.I. relief as referenced. The relief pressure identification is stamped on the end of the assembly. Do not use teflon tape.

CAUTION The external control valve must be an open center type and contain a relief valve or serious damage to the pump will result.

18. Attach valve mount to subframe and valve to valve mount. See Figure 17. Install top fittings if not already installed by factory. (NOTE: Orfice with 1/8" dia. hole goes in "B" port with groove up. Orfice with 1/16" dia. hole goes in "D" port with groove up as shown in Figure 22.

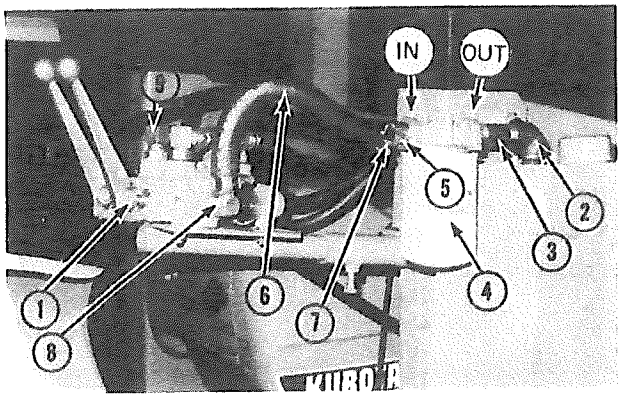


1 - 5/8" x 7" bolt, lockwasher and nut Typical 2 places
2 - 3/8" x 2" bolt, lockwasher and nut Typical 3 places
3 - Valve
4 - Valve mounts
5 - ½" x 1-¼" bolt

NOTE: DO NOT UNEVENLY TIGHTEN VALVE MOUNT BOLTS.

FIG. 17

19. (External hydraulic pump installation only): Mount the reservoir to the right hand subframe using 3/8" x 1-¼" bolts, flatwashers, lockwashers, and nuts. Install elbow, nipple, filter assembly and hose barb. Use thread sealing compound or similar sealant on threads. See WARNING in step 5. (NOTE filter "OUT" port goes toward reservoir.) Install fittings in valve "IN" and "OUT" ports. Install ¾" return hose as shown in Figure 18 and secure with hose clamps.

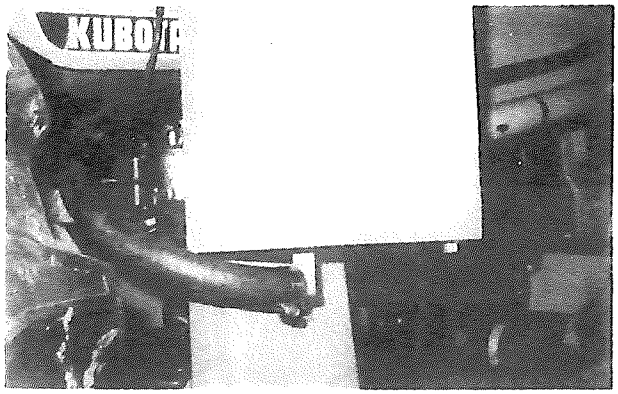


1 - Valve handles
2 - Elbow, ¾" x 90°
3 - Nipple, ¾" x 3"
4 - Filter assembly
5 - Hose barb, straight
6 - ¾" x 12" hose
7 - Hose clamp (2 required)
8 - Hose barb, 90°
9 - 7/8" - 90 fitting, opposite side valve - "In" port. Connect 3/8" pressure hose (from pump) to this fitting.

FIG. 18

20. (External hydraulic pump installation only): Install 1" suction hose to reservoir. Figure 19. Secure with clamp. (If suction hose is too close to the tire or brake, use tie straps to secure hose from interfering.)

FIG. 19



21. See Figure 20 for tractor hydraulic hookup. Install 90° fittings into the hydraulic block supplied with the loader. Remove the tractor hydraulic block cover plate. Make sure o-rings remain in their seats on the tractor block. Using the tractor bolts, install the loader block on the tractor block and tighten. Install hoses between the block fittings and the valve (as shown). See Figure 21.

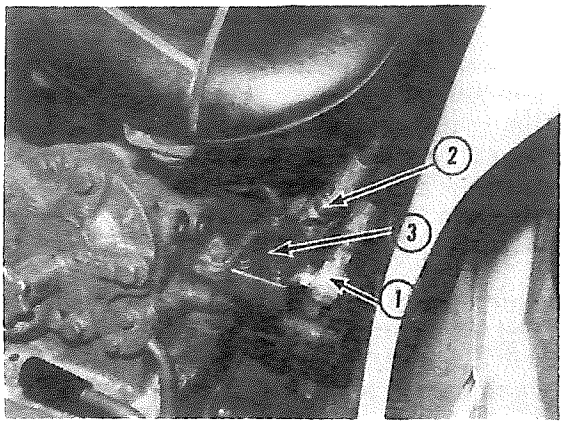


FIG. 20

1 - 90° fitting, hose goes to "IN" port of valve
2 - 90° fitting, hose goes to "OUT" port of valve
3 - Hydraulic block

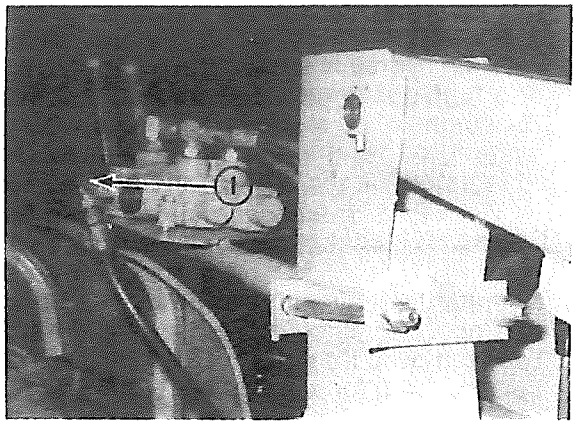
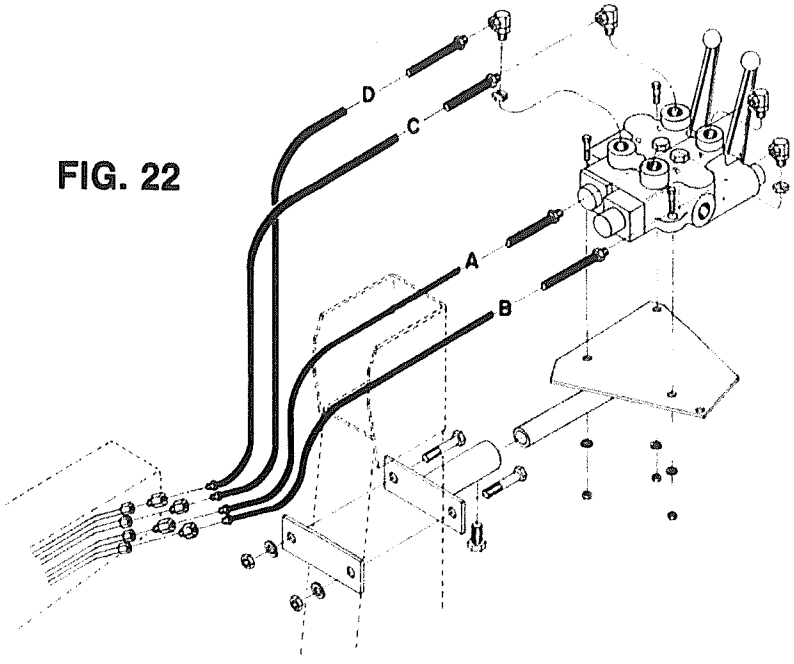


FIG. 21

1 - 90° fitting, 7/8" O-ring "IN" and "OUT" ports

22. Install 3/8" x 28" hoses from valve to loader tubes. Refer to Figure 22 for proper valve hookup. Refer to Figure 23 for valve decal mounting. (We suggest connecting hose ends to adaptors first. Then install adaptors onto loader tubes and finally connect other end of hoses to valve fittings.) DO NOT twist hoses when tightening or permit hoses to rub against bolts or other sharp components.

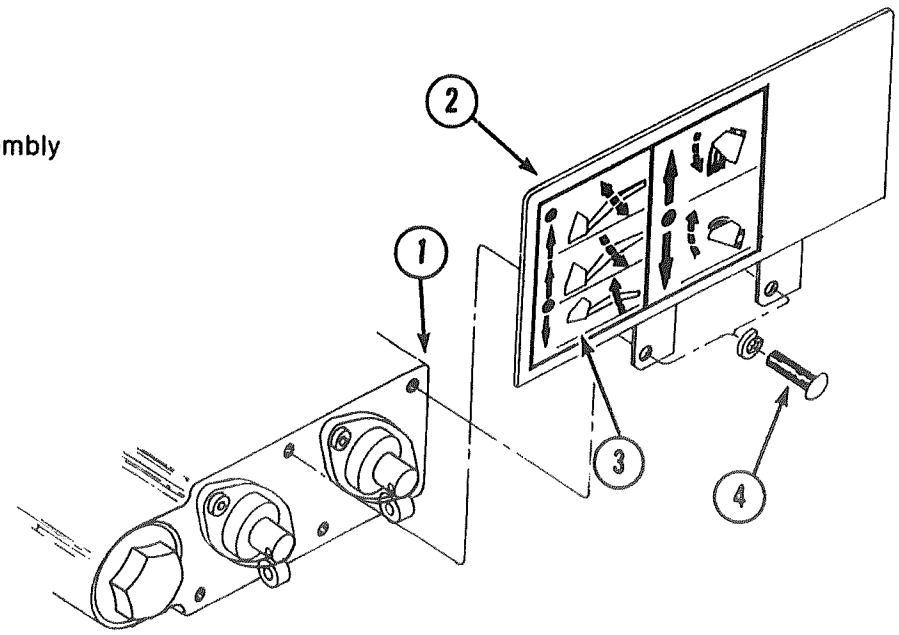
FIG. 22



23. Check ALL fittings and hose connections for tightness.

1 - Valve Assembly
2 - Decal Mount Assembly
3 - Valve Decal
4 - Cap Screw

FIG. 23



24. Attach the bucket or other attachment to the mainframe. See Figure 26 on page 20. (Go on to step 26 if installing tractor hydraulic system.)

25. (External hydraulic pump installation only): Fill the reservoir with oil recommended by Kubota or a high-quality non-detergent hydraulic oil obtained locally. Fill so that at least 3" - 4" (75-100mm) of oil registers on the cap dipstick. (After initial start up and charging the loader system, oil level will lower. Refill as required so oil registers so at least 1" (25mm) of oil registers on the dipstick thereafter.

26. Grease all loader and cylinder pivot points, 12 total. See figure 30, page 22.

27. Operate the loader lift and attachment cylinders until all air is removed from the system and unit operates smoothly. Check for leaks throughout the hydraulic system. After all air has been removed from the hydraulic system, continue to cycle the lift circuit and the bucket circuit (no load) for a period of 15 minutes each to warm up and allow initial break in of seals.

28. Refer to page 21 for instructions regarding bucket level indicator and other accessories.

CAUTION DO NOT DEPLETE HYDRAULIC OIL LEVEL. Add recommended oil to the tractor reservoir as instructed in the Tractor Operators Manual or to the external loader reservoir per instruction in step 25 above.

CAUTION Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.

WARNING Lower or block elevated components before servicing or when leaving the machine. Elevated components can fall and cause serious injury.

CAUTION It is the loader owner's responsibility to be certain anyone operating the loader is aware of safe operating practices and potential hazards.

CAUTION Do not mount or operate loader with tractor front weights installed or damage to tractor may occur.

CAUTION Before using loader first time, cycle lift and bucket cylinder to purge air from cylinders and hydraulic system. Air in hydraulic system can cause unexpected fall of mainframe, causing injury and damage to the loader.

PRE-DELIVERY INSPECTION AND ORIENTATION

DEALER INSPECTION

1. Tractor:
   - ____Tire pressure
   - ____Wheel thread settings and clearance to the loader
   - ____Rear weight added
   - ____No front weights
   - ____Wheel bolts and lug nuts torqued

2. Loader:
   - ____Loader completely assembled and installed per instructions
   - ____Loader cleanliness
   - ____Decals in place
   - ____Mounting hardware torqued
   - ____All pivot pins secured with clevis pin and cotter key
   - ____All hydraulic connections tight
   - ____Hydraulic oil level full
   - ____Control valve handles (direction of operation matches operating decal)
   - ____Break-in cycling accomplished
   - ____Loader and bucket cycle smoothly
   - ____Loader performing to specifications
   - ____Enter loader Serial No. and date on page 2 of operators manual

DEALER - OWNER ORIENTATION:

Review and explain the following items with the customer and answer all questions regarding the same:

- ____Explain implement warranty policy and give a copy to customer
- ____Review the Operators Manual

  Instruct the customer of proper and safe operating methods
  - ____Operators safety precautions
  - ____Tractor wheel thread-tire and inflation recommendations
  - ____Rear ballast requirements
  - ____Tractor and loader hydraulic system
  - ____Loader control levers
  - ____Hydraulic system oil level
  - ____Proper loader operation
  - ____Loader removal
  - ____Loader installation
  - ____Proper use of loader attachments
  - ____Lubrication and maintenance care
  - ____Storage

Give the customer this operators manual.

OPERATION

IMPORTANT: If this machine is used by an employee or is loaned or rented, make certain that the operator(s), prior to operating: 1. Is instructed in safe and proper use.
2. Reviews and understands the manual(s), pertaining to the machine.

2 SPOOL CONTROL VALVE

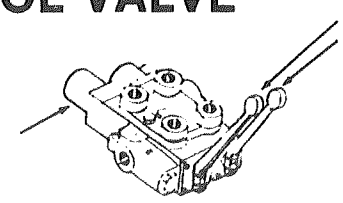


FIG. 24

A 2 spool control valve is provided as standard equipment with the loader and provides several benefits which are convenient for the operator. The valve is normally located in front of and to the right of the operator so his line of vision to his work is not impaired and his attention is not distracted by having to turn his head or look down. This is for the operators safety. The control valve contains a spring loaded Neutral position on both spools and a Float position on the first spool. The valve also contains a pre-set hydraulic safety relief valve for the added protection of your tractor system.

⚠ CAUTION Never remove, disassemble or attempt to adjust the relief valve mechanism; serious damage or injury could result!

NEUTRAL POSITION

The control valve has a "neutral position" which prevents movement of the loader or attachment. When the handle is released from the work positions, except when the spool is in float position, the valve spool will automatically return to neutral.

FLOAT POSITION

The control valve has a "float position" incorporated in the left spool. Normally the lift cylinder circuit is coupled to this spool allowing the loader to float. Should a need ever arise for the attachment to float rather than the lift cylinders, special attention must be given to properly change the valve orifice as well as the hoses. The loader and attachment cannot float simultaneously. This float feature is important for satisfactory operation when scraping, sweeping, leveling, or any job where it is necessary to follow the contour on the surface.

To activate the float position lower the attachment and push the control handle all the way forward into detent. The valve will stay in float detent until the operator manually pulls the control handle out of detent to deactivate float.

VALVE CIRCUITS

When properly installed, the control valve handles will control the loader hydraulic circuits in the following manner: The hydraulic hose from valve to lift and attachment cylinders must be installed as shown in Figure 22 to obtain the results shown in Figure 25.

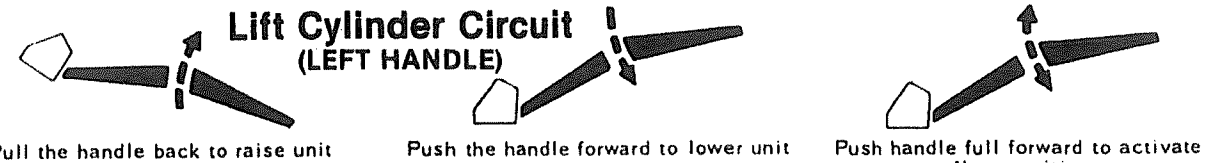


FIG. 25

NOTE: LUBRICATE ALL MOVING PARTS AND GREASE POINTS BEFORE OPERATING THE LOADER (SEE LUBRICATION AND MAINTENANCE SECTION).

Before operating the loader, raise and lower the mainframe, then raise the attachment approximately 4 feet (1 meter) above the ground and activate the bucket cylinders two or three cycles, by means of the R.H. control lever.

IMPORTANT: Operate only one circuit at a time. Simultaneous operation can result in hydraulic component damage when handles are quickly released to neutral position.

IMPORTANT: Always keep the cylinders in a retracted position when the loader is not in use to guard against rust and contamination which may cause damage to the cylinder rods, seals, or hydraulic system.

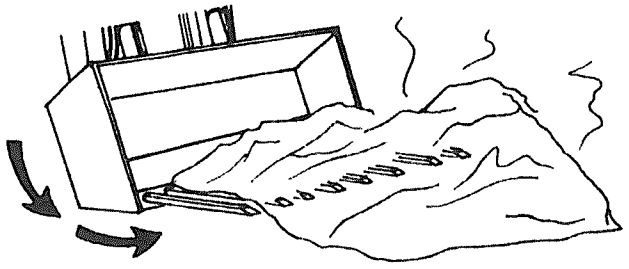
CAUTION Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin. See a doctor at once.

COLD WEATHER OPERATION

To assure smooth operation in cold weather, allow tractor to warm up. SLOWLY cycle the loader and attachment several times to warm the oil in the hydraulic system. The loader may operate erratically until the hydraulic oil has warmed to operating temperatures.

LOADING THE ATTACHMENT

For the most effective loading, slowly drive the tractor straight into the material to be loaded and accelerate only after contact has been made. Slightly roll the attachment back and slowly lift to break away the material. As the load increases, continue rolling the attachment back so as to accumulate the maximum load. Repeat this cycle as necessary until the attachment is full.



When material is piled on a slope, approach the pile uphill, and back away downhill.

CAUTION Operating sideways on a hill is dangerous and could tip the unit.

CAUTION When loading material from a large pile, remove the top level first.

CAUTION Do not roll buckets or forks forward and use for dozing purposes. This applies to both forward and reverse directions. Failure to comply with this instruction will cause hydraulic pressures to exceed design limits and cause possible damage or injury.

RAISING THE LOAD

Operate the lift control lever to lift the load. Throttle the tractor engine for best control. The operator must slowly roll the attachment forward as the loader is being raised to hold the load in the attachment. BE CAUTIOUS, particularly if the attachment is higher than 4 feet above the ground.

WARNING Load on raised bucket or fork can fall or roll back onto operator causing serious injury or death. Use recommended clamping and/or guard attachments for handling large loads such as bales, posts, etc. Carry load low to avoid upset. Use recommended ROPS for tractor.

UNLOADING THE ATTACHMENT

Approach the vehicle, stack or pile with the loaded attachment in transport position. Before reaching the unloading area reduce speed and raise the load only high enough to clear the top of the equipment or stack. Drive tractor slowly forward until load is over the intended unloading point and slowly empty attachment.

HANDLING THE LOAD

Transport the load in the lowest possible position to prevent tipping. As the load is raised the center of gravity of the unit moves forward and higher. These factors increase the possibility of tipping. When transporting in this position avoid bouncing the tractor as this can cause instantaneous pressure peaks beyond the hydraulic systems capability. This sudden shock can induce undesirable stresses and strains on the tractor, loader, and hydraulic system resulting in failure, damage, or worse: PERSONAL INJURY.

Observe the following safety messages when transporting a loaded bucket or attachment.

CAUTION A loaded bucket should be transported in a low position at slow ground speeds, especially if the ground is irregular. Make turns slowly and use the tractor brakes cautiously. A full bucket in the raised position significantly alters the center of gravity location of the unit and increases the possibility of mishaps.

CAUTION Operate at slow ground speeds, especially on irregular ground to avoid tipping.

CAUTION Avoid overhead wires or obstacles when loader is raised, to avoid damage or possible shock.

CAUTION Do not lift or carry personnel on an attachment, a slip or fall could cause bodily injury.

CAUTION The attachment should be eased down slowly to avoid sudden shock force on hydraulic system and frame.

CAUTION Allow for the loader length when making turns.

GENERAL LOADER OPERATION HINTS

Do not drop the edge of an attachment too low for loading. Keep the bottom of the attachment level with the ground when loading.

IMPORTANT: Do not use an attachment for pushing down material with the cylinders extended. Damage to the cylinders may result.

Operation with the front tractor wheels off the ground is not recommended and should be held to a minimum.

Position vehicles to be loaded as near the pile as possible and in such a direction as to minimize the amount of tractor turning required to dump.

Always block up a tractor front end if loader cylinders are used to raise front wheels for servicing.

Do not lower the loader with the tractor engine shut off.

Keep the unit clean and perform regular service. Observe safety pointers whenever cleaning, servicing or lubricating.

CAUTION When lowering a heavy load, ease it downward slowly. Never drop a loaded attachment and "catch" hydraulically. Stopping a load after it has gained downward momentum places undue strain on the unit and may cause unnecessary damage to the loader or tractor or even worse: personal injury.

CAUTION Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.

CAUTION Before disconnecting hydraulic lines, relieve all hydraulic pressure. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious personal injury. If injured by escaping hydraulic oil, consult a physician immediately.

We urge you to follow this advice:

1. Read and understand this manual as well as the tractor operators manual.
2. Remember and observe the safety precautions (particularly the "Don'ts") brought to your attention in this book, the tractor book and on the machinery itself.
3. Use good common sense in the everyday operation of this unit. Safety recommendations can never be all-inclusive and you are responsible for watching out for and avoiding unsafe conditions.
4. Select the attachment that has been designed and recommended for the job.
5. Never exceed the limits of a piece of machinery. If its ability to do a job or to do so safely is in question - Don't Try It.
6. Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with yor new loader and tractor.
7. Engine speed should be maintained at a minimum of 1200 R.P.M. for maximum control sensitivity when dumping and lowering loader.

ATTACHMENTS AND OPTIONS

MATERIAL HANDLERS

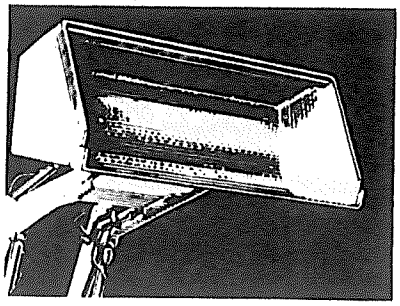
SELECT THE PROPER TOOL FOR THE JOB! Needless damage and accidents could occur if any attachment is used to pick up something it wasn't designed for.
FOLLOW THE PROCEDURE IN THIS MANUAL FOR LOADING AND UNLOADING ATTACHMENTS FOR MAXIMUM PERFORMANCE, PAGES 16-19.
DO NOT ROLL THESE ATTACHMENTS FORWARD AND USE FOR DOZING PURPOSES. THIS APPLIES TO BOTH FORWARD AND REVERSE DIRECTIONS.

CAUTION A loaded bucket should be transported in a low position at slow ground speeds, especially if the ground is irregular. Make turns slowly and use the tractor brakes cautiously. A full bucket in the raised position significantly alters the center of gravity location of the unit and increases the possibility of mishaps.

CAUTION: Add recommended rear tire liquid weight, rear wheel or rear ballast for increased stability.

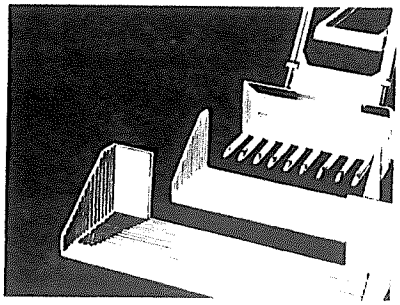
WARNING Load on raised bucket or fork can roll back onto operator area, causing serious injury or death. Use recommended clamping attachments for handling large objects such as bales, posts, etc. Carry load as low as possible.

MATERIAL BUCKETS



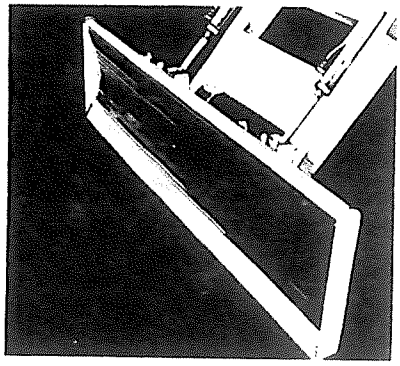
The Kubota material buckets are designed and built for normal agricultural usage. The rated heaped capacities for the available buckets are: 60"-18 cu. ft., 66"-19 cu. ft., 72"-¾ cu. yd. (light material only). Tines are available-see page 21. Kubota does not recommend using a bucket larger than 72".

★ 3-JOB COMBINATION



The Kubota 3-job combo can be used as a (1) manure fork (2) material bucket or (3) snow bucket by just adding the appropriate units as depicted above. The rated heaped capacities are: 48" M.F.-13 cu. ft., 60" M.F.-16 cu. ft., 48" Mtl. Bkt.-16 cu. ft., 60" Mtl. Bkt.-¾ cu. yd., 72" Sn. Bkt.-7/8 cu. yd. **The material bucket option fits on top of the tines with the tines wedging into the front portion of the plate. This unit is secured to the manure fork with 6 bolts.**

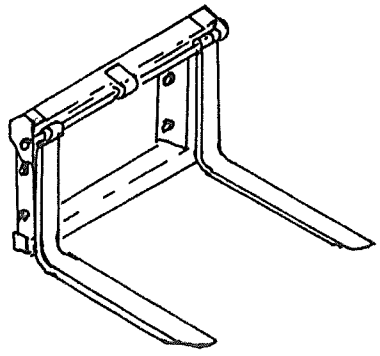
★ DOZER



The 6 foot wide Dozer Blade is designed for light duty dozing application.

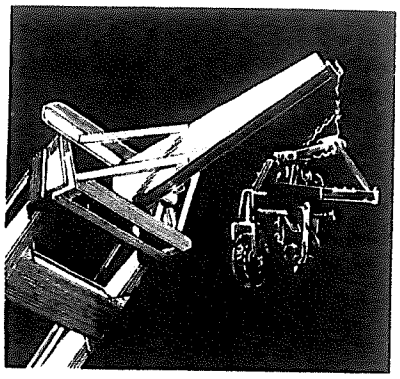
Also extremely useful for cleaning trench silo and leveling ensilage.

★ FORK LIFT ATTACHMENT



The fork lift attachment has two high strength tines, 44" long, adjustable from 12" to 50" width, to handle most pallatized operations. The operator must keep the load centered and as far back on the forks as possible. Operator must also keep load level as it is being raised or stationary.

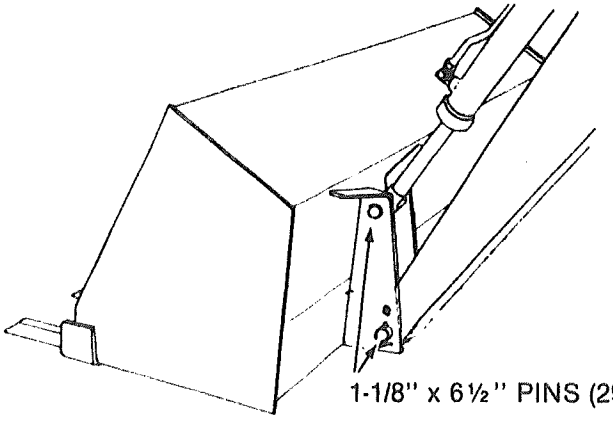
★ BOOM



The Heavy Duty Boom enables the operator to use the loader for lifting purposes. The unit should be used only as shown in the above picture. Use of rear wheel weights is recommended to stabilize tractor when lifting heavy loads.

★ Special order item available upon request.

Material buckets & forks are attached to the loader mainframe with 6½" (165mm) pins, as shown in Figure 26. Secure attaching pins with headed pins and cotters.



1-1/8" x 6½" PINS (29 x 165mm)

FIG. 26

BUCKET LEVEL INDICATOR

The Kubota bucket level indicator is standard equipment on the L1720 Loader. The bucket level indicator is designed to show the operator a level bucket in the down position. When the painted end of the rod is flush with the rod guide, the bucket is level.

1. The Kubota material bucket will be pre-drilled with a 9/16" (14mm) hole in the right inside bucket gusset. (Position shown in Figure 27.)
2. Attach the rod guide tube to the pre-threaded mounting pin (upper pin of right attachment cylinder). 12" rod guide dimension positioned as shown.
3. Insert straight end of rod through the lower end of the rod guide tube.
4. Insert right angled end of rod in bucket gusset (position flatwashers as shown) and secure with cotter pin.
5. Level attachment. Suggest painting tip of rod to indicate the level position.

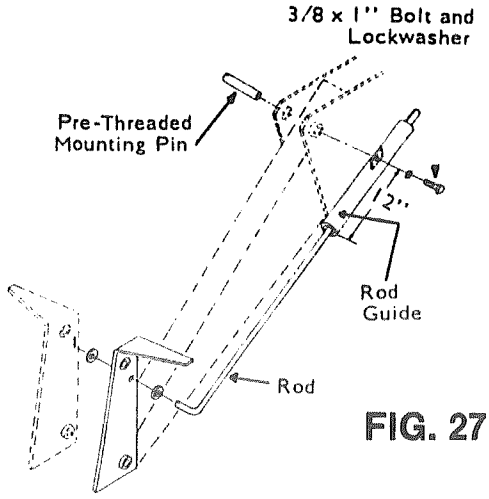


FIG. 27

OPTIONS

TINE OPTION

Optional 1" x 1-½" (25 x 38mm) hi-strength tines are available for increased penetration. Holes for the tines can be drilled in the field if the procedure below is followed. Figure 28.

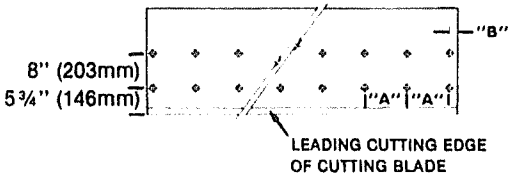
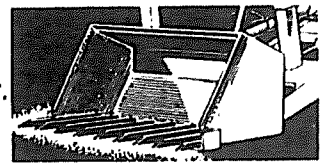


FIG. 28

1. Mark and center punch.
2. Drill pilot hole.
3. Drill to 7/16" (11mm) diameter.



Dimension A & B varies with bucket size. Reference chart below for specific bucket.

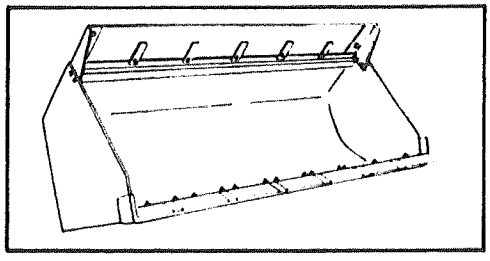
Size	Dim.A.	Dim.B	# of Teeth
60"(1524mm)	8-¼"(210mm)	7/8"(22mm)	8
66"(1676mm)	9"(229mm)	1-½"(38mm)	8
72"(1829mm)	10"(254mm)	¾"(19mm)	8

SPILL GUARD OPTION

FIG. 29

Available in 60", 66" or 72" sizes.
Installation of the spill guard is as follows:

1. Position corner bracket of spill guard in inside upper corner of bucket. Using the holes in bracket drill holes in bucket.
2. Install plate using 3/8" x 1" bolt. (DO NOT TIGHTEN.)
3. Bolt spill plate to end plate with 3/8" x 1" bolts.
4. Bolt clamp to spill plate with end of clamps overlapping top edge of bucket as shown in Figure 29.
5. Tighten all bolts evenly.



LUBRICATION AND MAINTENANCE

CAUTION Always lower loader arms to ground, stop engine and lock brakes before leaving operator seat.

CAUTION Operate control valve handles back and forth to relieve pressure in system.

CAUTION Wait for all movement to stop before servicing a machine.

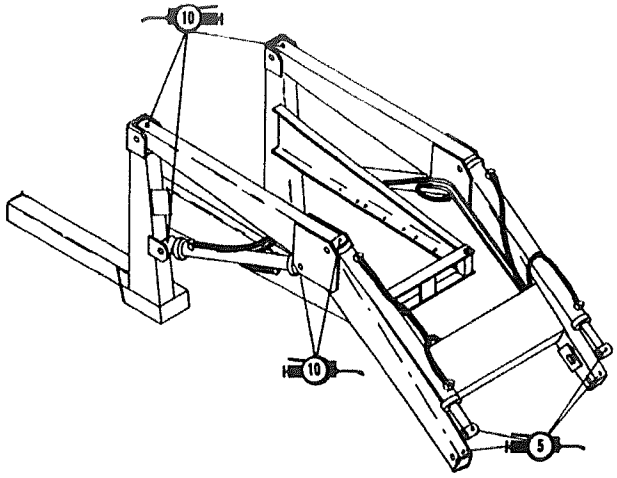
CAUTION If it is necessary to keep loader in raised position be sure to block the loader in place.

LUBRICATION

Careful and regular attention to lubrication will greatly increase the life of the loader. For economical and efficient operation, the proper lubrication of the mainframe and cylinders is essential.

Be sure the pressure fittings are clean of dirt or paint before using the pressure gun. Replace missing or damaged fittings. Use a good grade of No. 2 non-fluid or S.A.E. multi-purpose pressure gun grease.

FIG. 30



LUBRICATION CODE

5 — **GREASE TWICE DAILY or EVERY 5 HOURS**

10 — **GREASE DAILY or EVERY 10 HOURS**

Oil the front pump drive chain coupler (if equipped with option) DAILY or EVERY 10 HOURS.

LOOK FOR TROUBLE

On a regular basis you should give the loader a general inspection, looking for leaks, damages, and severely worn parts. Pay particular attention to checking all hardware for tightness. Visually check front pump drive components.

CAUTION Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.

OIL LEVEL CHECK

⚠ CAUTION Stop the tractor engine before checking oil level in oil reservoir.

Check, DAILY, the hydraulic oil level of the tractor or the external reservoir, whichever applies to your loader. (Loader should be operated to ensure that the entire hydraulic system is full and at a normal operating temperature.) Park the tractor in a level position, LOWER ATTACHMENT TO GROUND and SHUT OFF TRACTOR ENGINE. Then check oil level. Full line capacity of reservoir is 7.25 gallons (27.5 liters).

Reference the Kubota L305, L345, or L355SS tractor operators manual for instructions regarding checking the tractor (transmission) hydraulic oil level. Add only oil recommended by Kubota.

The loader external oil reservoir is checked by removing the filler cap and maintaining at least 1" (25mm) oil registering on the dipstick. Add oil recommended by Kubota or use high-quality non-detergent hydraulic oil available locally. Avoid mixing oil brands or types.

OIL CHANGE

The hydraulic oil and filter should be changed as recommended below.
1. After the first 30 hours of use.
2. Every 150 hours thereafter or once every season whichever comes first.
3. Whenever hydraulic system is exposed to possible contamination.

OIL CHANGE PROCEDURE

Internal Hydraulic System

If the loader is operating on oil from the tractor internal reservoir, change oil as described in tractor operators manual.

External Hydraulic System

If the loader is operating on oil from a Kubota external reservoir follow the procedure below.

1. Unscrew drain plug and oil filter element.
2. Allow oil to drain completely.
3. Replace drain plug and new filter element (pre-oil filter seal).
4. Add oil, recommended by Kubota or use high-quality non-detergent hydraulic oil available locally. Avoid mixing oil brands or types. Fill so that the oil registers at least 1"(25mm) on the filler cap dipstick. Replace cap.
5. Start tractor and idle for several minutes. Cycle both lift and attachment circuits. Check for leaks. Stop engine recheck oil level dipstick.

CYLINDER

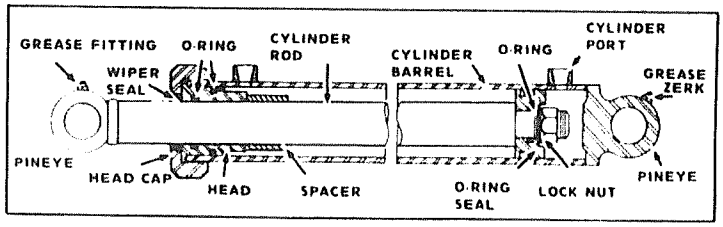


FIG. 31

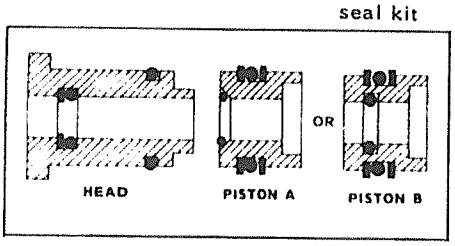


FIG. 32

The loader cylinders are designed for hi-pressure hydraulic systems. The seals are easily replaced by removing head cap and pulling rod assembly from cylinder tube. Refer to Parts and Service Manual for replacement part numbers and instructions. Clean the cylinder with a good solvent as often as necessary to prevent foreign matter from entering the hydraulic system.

Cylinder seals will need to be replaced because of the normal friction wear and deterioration. Replacement of the seals is not set to a definite time period, therefore reference the "Trouble Shooting" section in this manual as a guideline for possible seal replacement.

⚠ CAUTION Before disconnecting hydraulic lines, relieve all hydraulic pressure. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious personal injury.

TUBING, HOSES AND FITTINGS

Be careful not to bend or damage tubing in any way as weak points will result, causing tubing to burst at pressure below normal operating pressures. Replace tubing if damaged, or if oil leaks result around fittings. Replace fittings if they begin leaking.

Since hoses are exposed, they are more susceptible to possible damage. Replace hoses that become worn, cut, damaged, or begin leaking oil. Refer to Parts and Service Manual for replacement part numbers.

CAUTION Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.

VALVE

Orifice plates are installed in the top valve ports, identified as "B" & "D" on the valve, to slow down the lowering and dumping time of the loader. The machined-in groove side of the orifice should face upward in the port and should be clearly visible when looking into the port prior to fitting installation. DO NO REMOVE THE ORIFICES, INSTALL UPSIDE DOWN OR CHANGE THE LOCATION FROM THE "B" & "D" PORTS AS DAMAGE COULD RESULT. The orifices are different; DO NOT INTERCHANGE.

Refer to Figure 25 on page 16 for information regarding normal valve handle operation. Service on the valve should be performed by an authorized Kubota dealer.

The loader control valve is equipped with hard chrome plated spools for maximum wear that have been select-fit honed for maximum load holding ability. Built in load-checks are standard and prevent load drop when shifting spools. The relief cartridge is a differential poppet-type that is non-adjustable. The float position built into the first spool has a detent feature to hold it in position. None of these features require unusual maintenance other than normal oil and filter changes to assure their continued service. NEVER tamper with the relief cartridge.

PUMP

Service on the pump should be performed by an authorized Kubota dealer. To insure long hydraulic component life throughout the system, keep the hydraulic oil clean by observing recommended oil and filter change procedures in either this or your tractor operators manual.

CAUTION Before disconnecting hydraulic lines, relieve all hydraulic pressure. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious personal injury.

PUMP:
Your new front hydraulic pump (if loader is equipped with this option) will give many hours of carefree service in a clean, properly operating system. Suggested maintenance to assure continued performance is maintaining proper oil level in reservoir, regular oil and filter change, regular tightening of the pump mounting bolts, maintaining true shaft alignment, inspection of the pump drive shaft and chain coupler, oiling the pump drive chain coupler every 10 hours and replacement of worn parts.

NOTE: True drive shaft alignment is critical to the life of the pump and drive and MUST be kept in proper alignment.

TROUBLE SHOOTING

This section is a condensed chart to help you if unsatisfactory operation of the Kubota Model L1720 Loader occurs.
1) Identify the "Symptom" that best applies.
2) Check the "Possible Causes".
3) Perform the recommended "Remedy".
If you are unable to determine and correct the trouble, consult your authorized Kubota Dealer.

A. LOADER OPERATION

SYMPTOM	POSSIBLE CAUSE	REMEDY
Jerky	Cold oil or air in system	Operate loader several times with tractor at half throttle.
	Low oil supply	Add oil.
	Poor oil circulation	Check oil filter in tractor or loader hydraulic system. Clean or replace as required.
	Hydraulic pump starvation	Check to see if suction hose to front pump has collapsed. If so, replace suction hose.
	Pump cavitation (ext. pump)	Oil filter installed in suction line. Relocate in return line between valve and reservoir.
	Leak in suction hose (ext. pump)	Replace suction hose.
Slow	Defective or worn lift cylinder seals	Replace lift cylinder seal kits.
	Orifice (to slow speed of lowering) installed incorrectly	Orifice must be in top valve port marked "B" with groove up.
	Orifice (to slow speed of dumping) installed incorrectly.	Orifice must be in top valve port marked "D" with groove up.
	Reduced rate of flow through selective control valve in tractor	Adjust rate of flow per tractor operators manual.
	Worn, damaged or insufficient hydraulic pump	See Kubota dealer. Request flow (GPM) and pressure (PSI) check.
	Dirty or clogged oil filter	Check oil filter in tractor or loader hydraulic system. Clean or replace as required.
	Oil filter installed incorrectly (ext. pump system)	Inspect oil flow direction on filter. Oil flow must be from valve to reservoir in return line. Relocate if installed incorrectly.
	Defective or worn remote outlet(s) or male tip(s)	Check for obstructions or malfunctions. Replace if necessary.
	Inadequate hydraulic pump capacity	Consult your Kubota Dealer. Request flow (GPM) and pressure (PSI) check.
	Defective or worn control valve spool out of phase	Replace control valve.
Erratic cylinder operation	Cylinder piston loose or stripped off rod.	Replace damaged parts. Review and observe operational practices. (1) Avoid dragging operation with cylinders fully extended. (2) Avoid extending cylinders to end of stroke at maximum speed and high engine R.P.M.
Cylinders extend or settle with valve in neutral position	Defective or worn cylinder seals	Replace cylinder seal kits.
Hydraulic cylinders inoperative	Hoses improperly installed	Re-install hose connections properly.
	Damaged or defective cylinder	Inspect internal parts. Replace necessary parts.
	Insufficient oil in system	Add oil.
	Cylinder piston loose or stripped off rod	(See erratic cylinder operation above.)

SYMPTOM	POSSIBLE CAUSE	REMEDY
Insufficient lift capacity	Defective or worn lift cylinder seals Worn, damaged, insufficient or inadequate hydraulic pump Defective relief valve in tractor system or external selective control valve Excessive load	Replace lift cylinder seal kits. Consult your Kubota dealer. Request pressure (PSI) check. Consult your Kubota tractor dealer. Check relief pressure. Replace relief valve if necessary. Reduce the weight load. Load exceeds the capacity of loader and hydraulic system.
Wrong Direction	Hoses improperly connected.	Re-install hose connections properly.
System squeals	Relief valve stuck open Incorrect external control valve installed Excessive load	Replace relief valve. Inspect control valve conversion plug. Replace with correct plug. Reduce load weight. Load exceeds capacity of loader and hydraulic system.
Valve spools bind or stick	External valve bolts may be too tight or unevenly tightened, placing valve body in twist.	Slightly loosen valve bolts to relieve twist. Shim if required.
Noisy front pump drive	Misalignment Lack of lubrication on drive chain coupler	Check drive shaft alignment and realign as required. Oil chain coupler.

B. OIL LEAKS

Cylinder	Worn or damaged o-ring seals at rod end of cylinders	Replace cylinder seal kit.
Valve	Spool seals in valve worn or damaged.	Replace spool seals in valve.
Pump	Worn or damaged housing seals Loose fitting or hoses	See Kubota dealer for replacement of seal. Tighten or replace as required.
Fittings, hoses, and tubing	Loose or damaged Improperly matched threaded connections.	Tighten or replace as required.

C. DAMAGE

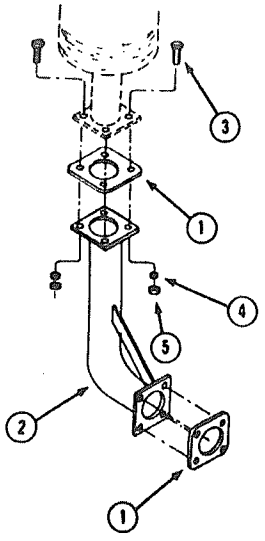
Lift cylinder rods bend and break when cylinders extended	Transporting heavy loads at full or nearly full height. Excessive shock load.	Replace damaged parts. Review and observe recommended operational practices.
Attachment cylinder rods bend and break when cylinders extended	Back dragging or dozing with cylinders extended. Worn dump stops on loader arms.	Replace damaged parts. Review and observe recommended operational practices Replace or build up worn stop plates as required.
Bucket tines bend or break	Only a few bucket tines were under load	Always be sure that majority of tines are under load before using full lift pressure.
Bottom of bucket or attachment show excessive wear	Float position not used while operating loader Excessive down pressure on attachment used while loading on hard abrasive surface	Use float position provided on valve. Do not use excessive down-pressure on lift cylinders when loading.

REFERENCE DRAWINGS

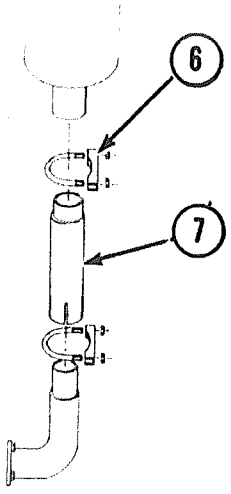
MUFFLER RELOCATOR

REF NO.	QTY.	DESCRIPTION
L345 - L345DT - L355SS		
1	2	Gasket
2	1	Muffler Relocator
3	4	Bolt 5/16"-18NC x 1" Grade 5
4	4	Lockwasher, 5/16"
5	4	Nut, 5/16"-18NC
L305 & L305DT		
6	1	Muffler Relocator
7	2	Muffler Clamp

MUFFLER RELOCATOR L345-L345DT-L355SS



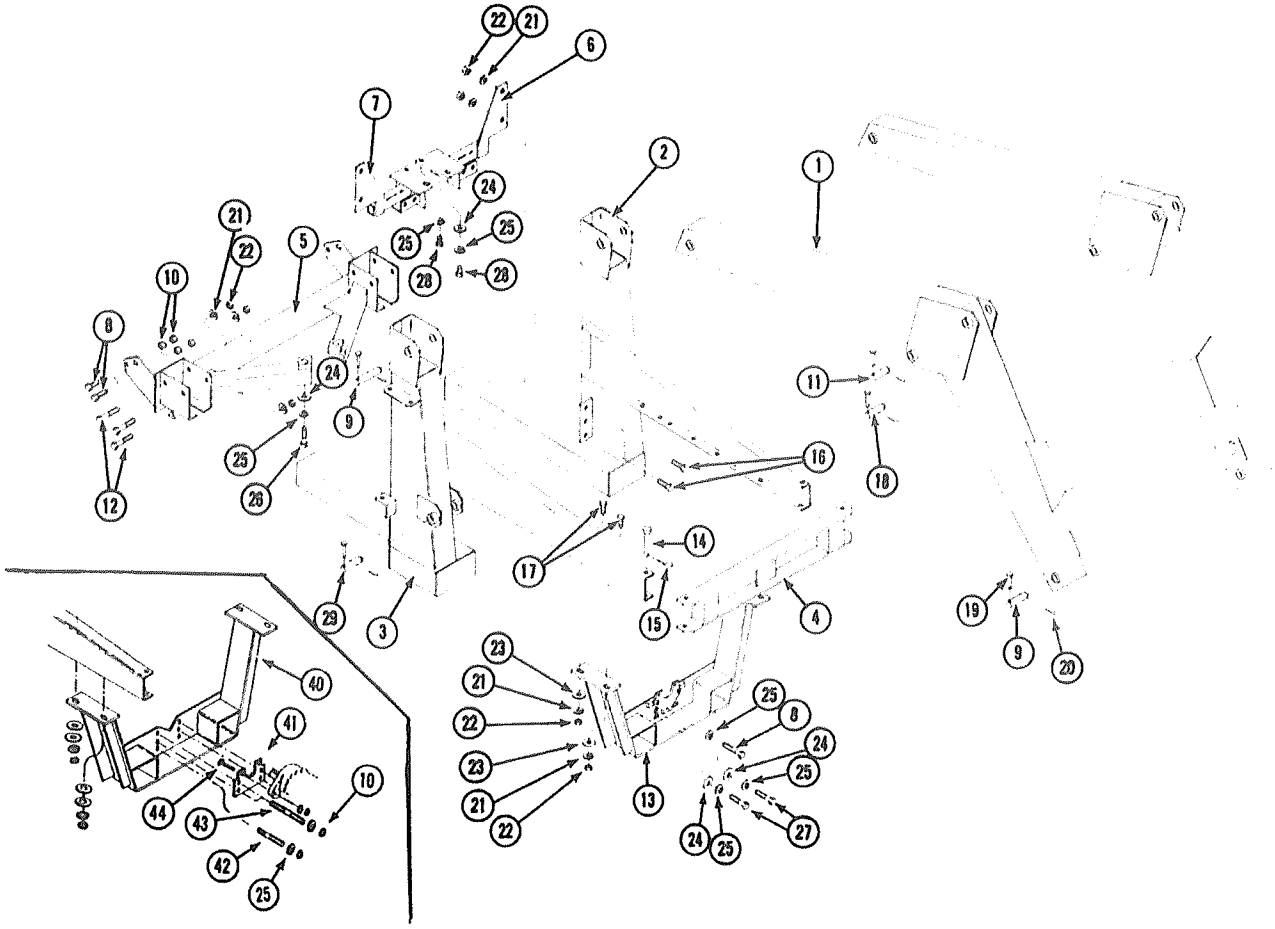
MUFFLER RELOCATOR L305-L305DT



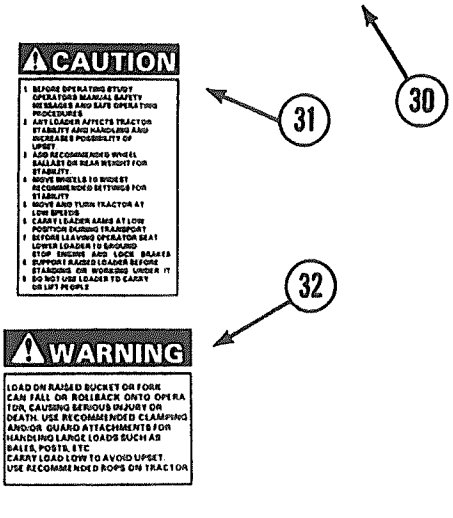
MATERIAL BUCKETS/MANURE FORK

PART NO.	QTY.	DESCRIPTION	
L1725		Material Bucket, 60"	CONTACT "WHOLEGOODS"
L1726		Material Bucket, 66"	
L1727		Material Bucket, 72"	
L1728		Manure Fork, 48"	
L1729		Manure Fork, 60"	
70050-01137	1	Manure Fork Tine	
O/L	2 per Tine	Manure Fork Bolt, Hex 3/8"-16NC x 2-¼" Grade 5	
O/L	2 per Tine	Manure Fork Nut, Hex 3/8"-16NC	
O/L	2 per Tine	Manure Fork Lockwasher 3/8"	

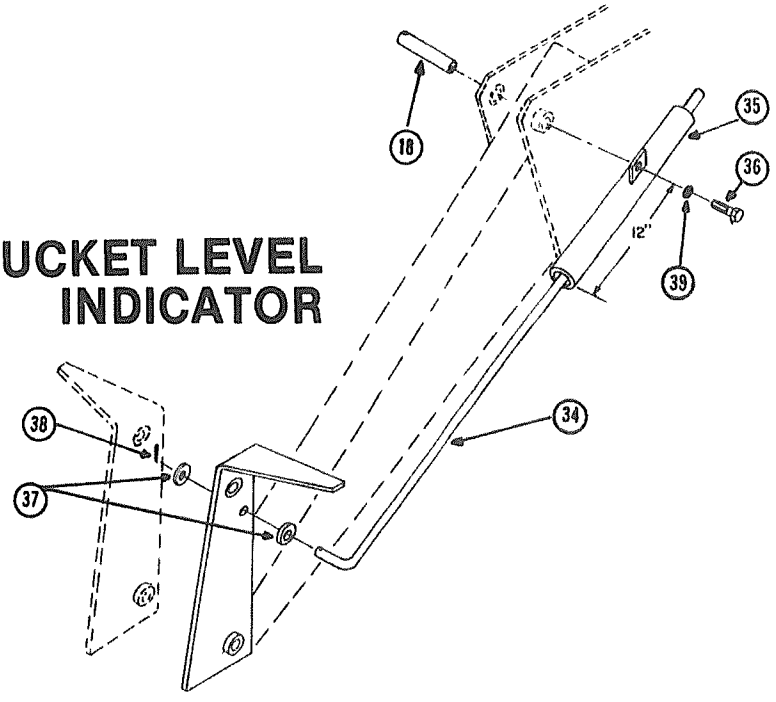
MAIN FRAME/SUB-FRAMES/MOUNTING BRACKETS



KUBOTA



BUCKET LEVEL INDICATOR

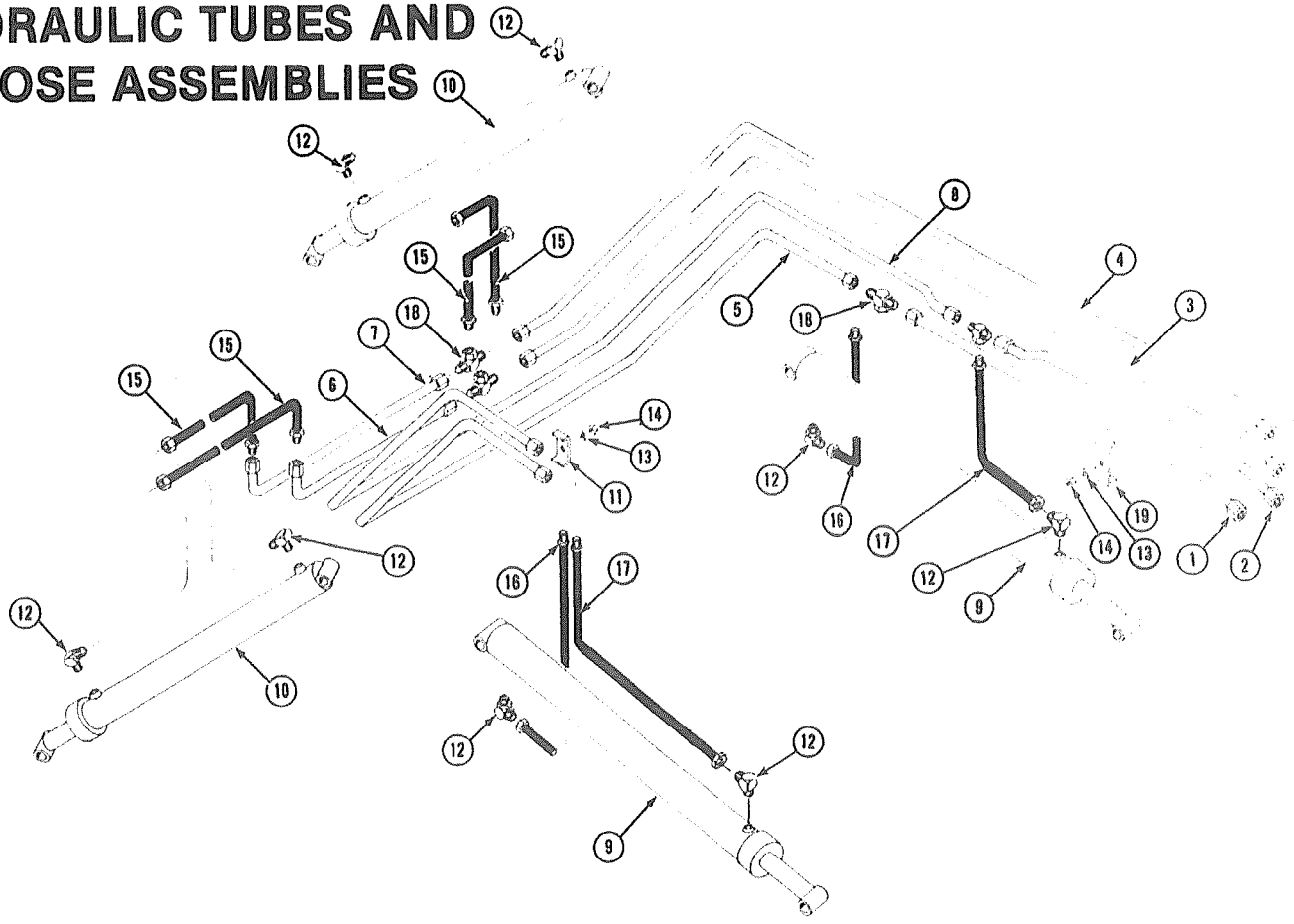


MAIN FRAME/SUB-FRAMES/MOUNTING BRACKETS AND BUCKET LEVEL INDICATOR

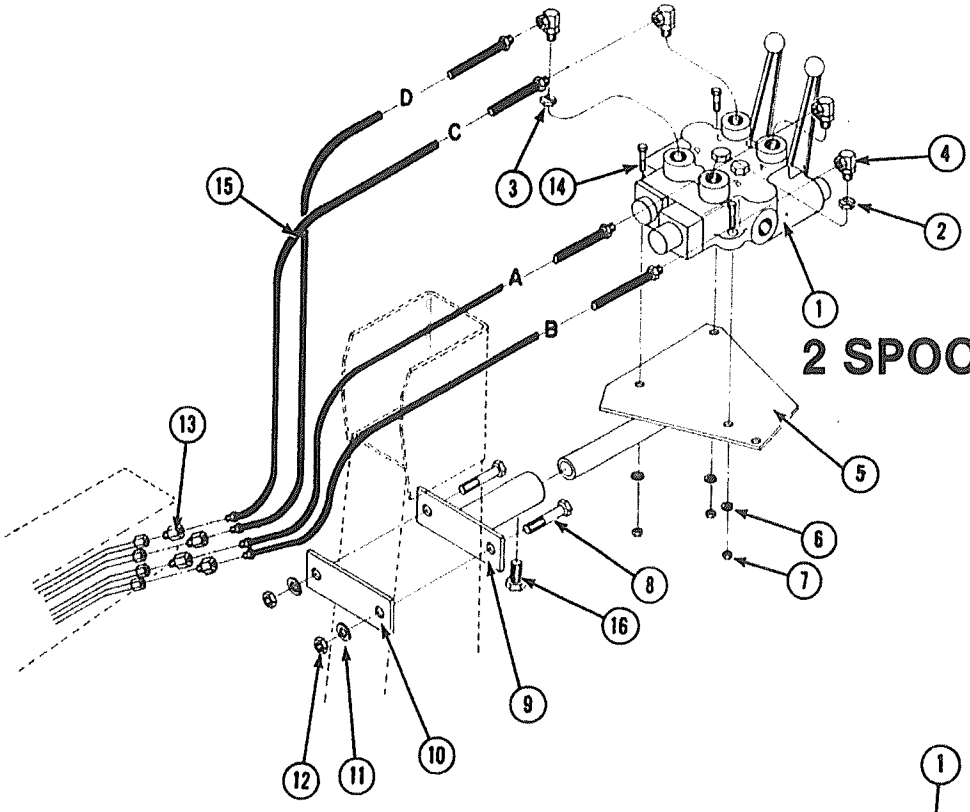
REF. NO.	QTY.	DESCRIPTION
1	1	Mainframe Assembly
2	1	Subframe L.H. Assembly
3	1	Subframe R.H. Assembly
4	1	Bumper Assembly
5	1	Bracket, Rear Assembly
6	1	Crossbrace Assembly, L.H.
7	1	Crossbrace Assembly, R.H.
8	6	Bolt, 12mm x 1.25 Pitch x 50mm
9	6	Pin - Also used to attach bucket
10	14	Nut, 12mm x 1.25 Pitch
11	2	Pin
12	6	Bolt, Hex 5/8"-11NC x 5-½" Grade 5
13	1	Bracket, Front Assembly
14	2	Pin, Clevis
15	2	Hairpin, Cotter
16	4	Bolt, Hex 5/8"-11NC x 1-½" Grade 5
17	4	Bolt, Hex 5/8"-11NC x 2" Grade 5
18	1	Pin
19	12	Pin, Clevis
20	12	Pin, Cotter 1/8" x 1"
21	14	Lockwasher 5/8"
22	14	Nut, Hex 5/8"-11NC
23	8	Flatwasher 5/8"
24	8	Flatwasher ½"
25	12	Lockwasher ½"
26	2	Bolt, 12mm x 1.25 Pitch x 60mm
27	4	Bolt, 12mm x 1.25 Pitch x 35mm
28	4	Bolt, 12mm x 1.25 Pitch x 30mm
29	3	Pin
30	3	Kubota Decal
31	1	Decal, Caution
32	1	Decal, Warning
18	1	Mounting Pin
34	1	Rod
35	1	Rod Guide Tube
36	1	Bolt 3/8"-16NC x 1"
37	2	Flatwasher ½"
38	1	Cotter, 1/8" x 1"
39	1	3/8" Lockwasher
	After Loader S/N 51604	
40	1	Bracket, Front Assembly
41*	1	Pump Mount Assembly
42	6	Stud, 12mm x 60.8mm
42*	2	Stud, 12mm x 60.8mm
43*	4	Stud, 12mm x 79.5mm
44*	2	Bolt, Hex 3/8" - 16NC x 1¼" Grade 5
45	2	Lockwasher, 3/8"
46	2	Nut, Hex 3/8-16NC.

*External Hydraulic Kit

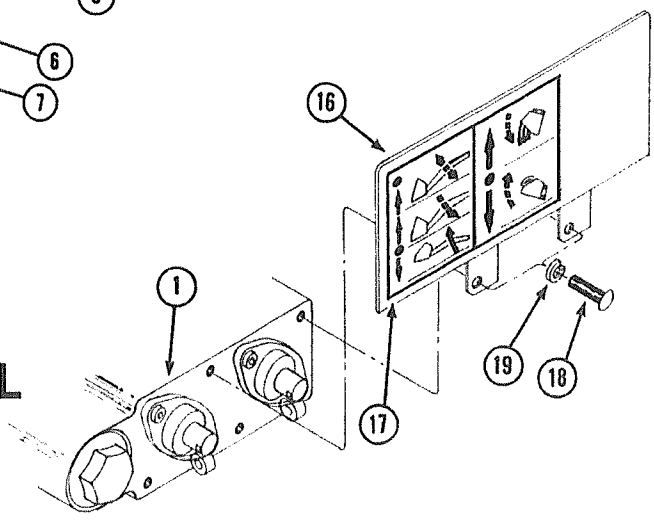
HYDRAULIC TUBES AND HOSE ASSEMBLIES



2 SPOOL CONTROL VALVE AND HOSES



VALVE DECAL



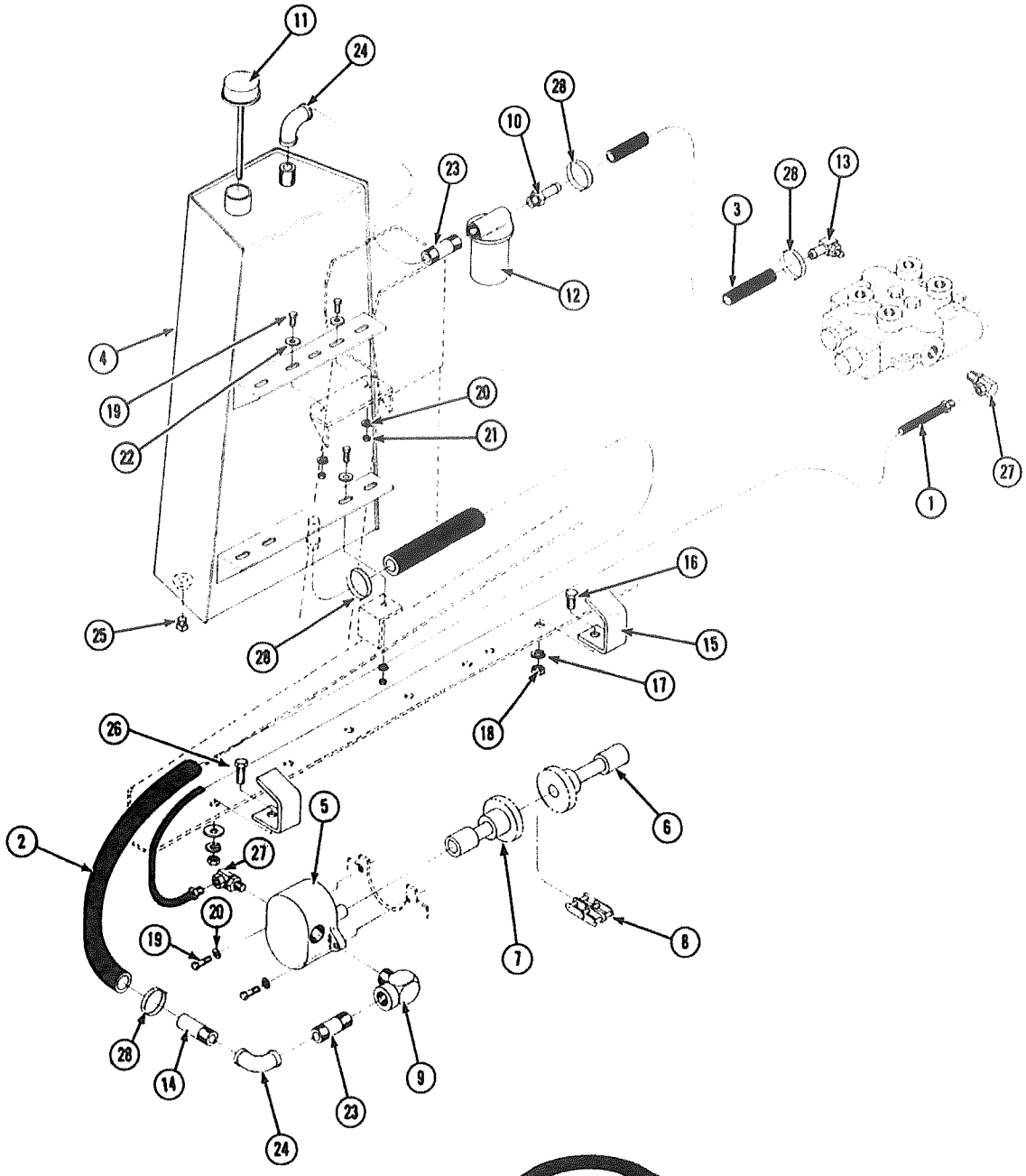
HYDRAULIC TUBES AND HOSE ASSEMBLIES

REF. NO.	QTY.	DESCRIPTION
1	1	Tube, Hydraulic
2	1	Tube, Hydraulic
3	1	Tube, Hydraulic
4	1	Tube, Hydraulic
5	1	Tube, Hydraulic
6	1	Tube, Hydraulic
7	1	Tube, Hydraulic
8	1	Tube, Hydraulic
9	2	Cylinder, Lift (See Page 32)
10	2	Cylinder, Attachment (See Page 32)
11	1	Clamp, Tube
12	8	Fitting, 90°
13	5	Lockwasher 3/8"
14	5	Nut, Hex 3/8"-16NC
15	4	Hose, ½" x 26"
16	2	Hose, ½" x 18"
17	2	Hose, ½" x 27"
18	4	Fitting, T
19	4	Clamp, Tube

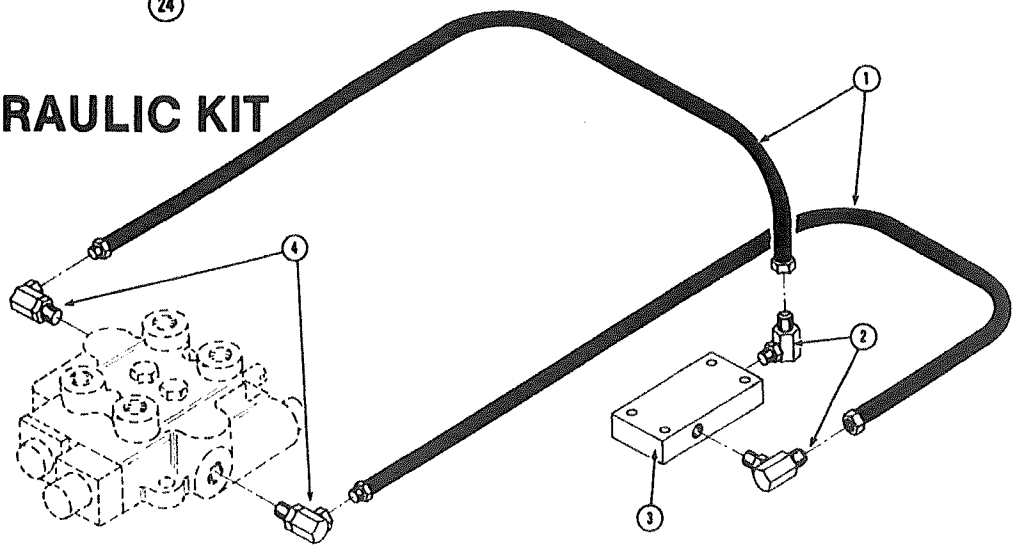
2 SPOOL CONTROL VALVE, VALVE DECAL, AND HOSES

REF. NO.	QTY.	DESCRIPTION
1	1	Valve, 2 Spool (Refer Page 34)
2	1	Orifice, Lift Circuit
3	1	Orifice, Attachment Circuit
4	4	Fitting, 90° 7/8" O-ring to ½" Pipe
5	1	Valve, Mount Upper Assembly
6	3	Lockwasher 3/8"
7	3	Nut, Hex 3/8"-16NC
8	2	Bolt, Hex 5/8"-11NC x 7" Grade 5
9	1	Valve, Mount Lower Assembly
10	1	Clamp, Plate
11	2	Lockwasher 5/8"
12	2	Nut, Hex 5/8"-11NC
13	4	Fitting, Straight Adaptor
14	3	Bolt, Hex 3/8"-16NC x 2" Grade 5
15	4	Hose 3/8" x 28"
16	1	Decal, Plate Mounting
17	1	Decal, Operation
18	2	Capscrew
19	2	Lockwasher

EXTERNAL HYDRAULIC KIT
FRONT MOUNTED PUMP



TRACTOR HYDRAULIC KIT



EXTERNAL HYDRAULIC KIT
FRONT MOUNTED PUMP

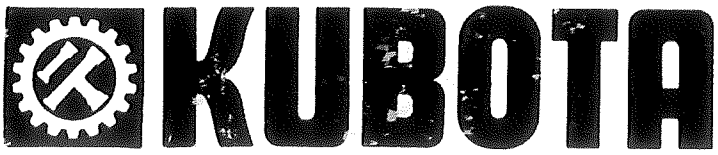
REF.NO.	QTY.	DESCRIPTION
1	1	Hose 3/8" x 96" (Pressure)
2	1	Hose 1" x 103" (Suction)
3	1	Hose ¾" x 12" (Return)
4	1	Reservoir Assembly
5	1	Pump, Front (See Page 34)
6*	1	Shaft Assembly
7	1	Shaft Assembly
8	1	Chain, Double
9	1	Fitting, 1-1/16" O-ring to ¾" Pipe
10	1	Hose Barb, ¾" Pipe to ¾" Stem
11	1	Cap, Reservoir
12	1	Filter Assembly (See Page 34)
13	1	Hose Barb, 7/8" O-ring to ½" Pipe
14	1	Nipple ¾" x 2-½" Special
15	2	Bar, Hose Clamp
16	1	Bolt, Hex 5/8"-11NC x 1-½" Grade 5
17	1	Lockwasher, 5/8"
18	1	Nut, Hex 5/8"-11NC
19	5	Bolt, Hex 3/8"-16NC x 1-¼" Grade 5
20	5	Lockwasher, 3/8"
21	5	Nut, Hex 3/8"-16NC
22	3	Flatwasher, 3/8"
23	2	Nipple, ¾" x 3"
24	2	Elbow, ¾" x 90°
25	1	Plug, ½"
26	-	Bracket Bolt (See Page 28)
27	2	Fitting, 7/8" O-ring to ½" Pipe
28	4	Clamp, Hose

*REFERENCE NO. 6 IS DIFFERENT DEPENDING ON WHETHER THE TRACTOR IS EQUIPPED WITH A FLANGE BOLTED TO THE FRONT PULLEY OR A SPLINE SHAFT AS PART OF THE CRANKSHAFT EXPOSED.

TRACTOR HYDRAULIC KIT

REF. NO.	QTY.	DESCRIPTION
1	2	Hose, 72"
2	2	Fitting, 90°
3	1	Hydraulic Block
4	2	Fitting, 90°

NOTES



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