WSM

WORKSHOP MANUAL
FRONT LOADER

LA1301,LA1301S-1,
LA1601,LA1601S

Kubota

KiSC issued 05, 2006 A

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MECHANISM

CONTENTS

1. FEATURES M-1
2. HYDRAULIC CIRCUIT M-2
3. CONTROL VALVE ASSEMBLY AND RELIEF VALVE M-3
4. BOOM CYLINDER AND BUCKET CYLINDER M-4
5. RELIEF VALVE M-5
   [1] MAIN RELIEF VALVE M-5
   [2] PORT RELIEF VALVE [SERIAL NUMBER ABOVE 10219] M-7

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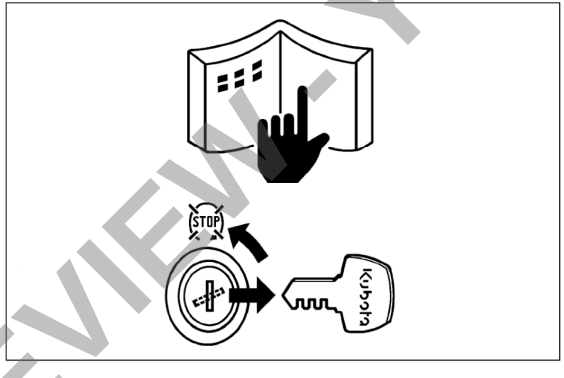
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SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully.

It is essential that you read the instructions and safety regulations before you attempt to repair or use this unit.

DANGER	**: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**
WARNING	**: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**
CAUTION	**: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**
■ IMPORTANT	**: Indicates that equipment or property damage could result if instructions are not followed.**
■ NOTE	**: Gives helpful information.**



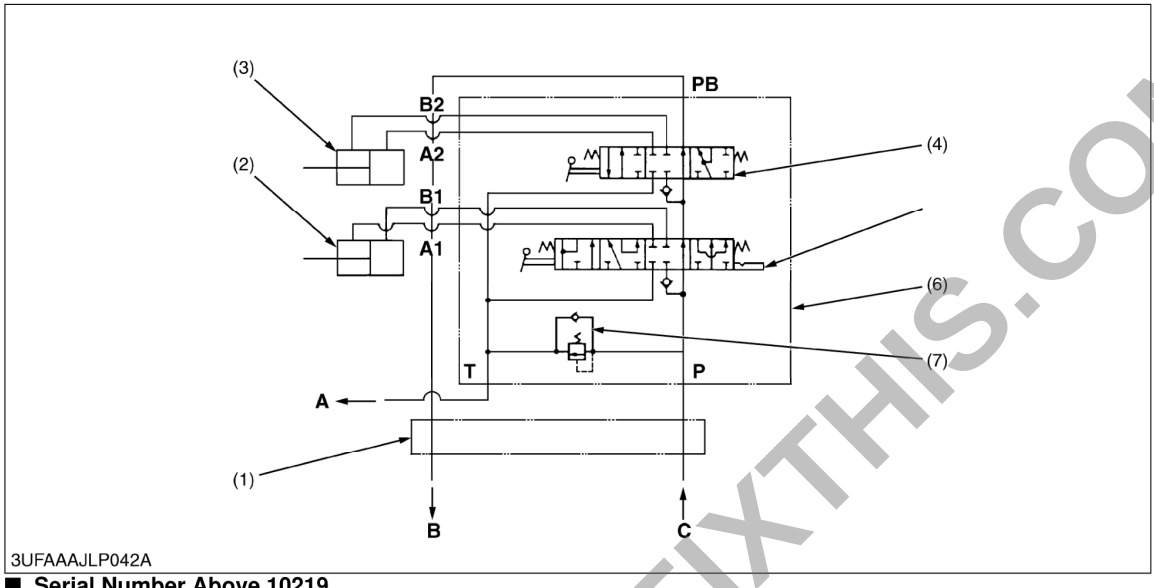
BEFORE SERVICING AND REPAIRING

- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a firm and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, and remove the key.
- Disconnect the battery negative cable.
- Hang a "**DO NOT OPERATE**" tag in operator station.

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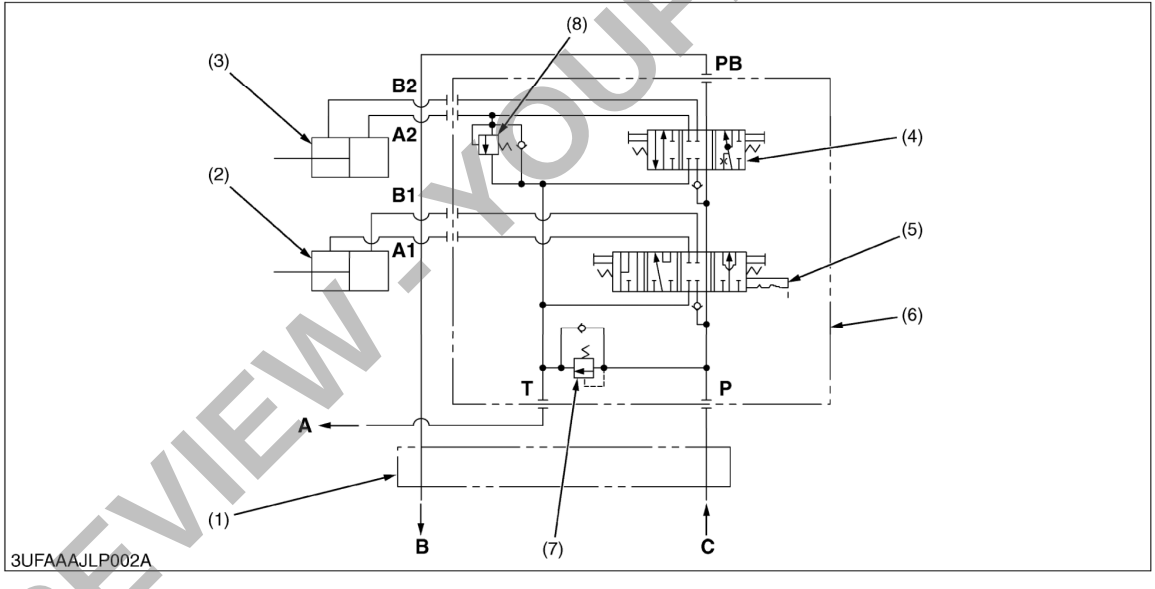
2. HYDRAULIC CIRCUIT

■ **Serial Number Below 10218**



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■ **Serial Number Above 10219**



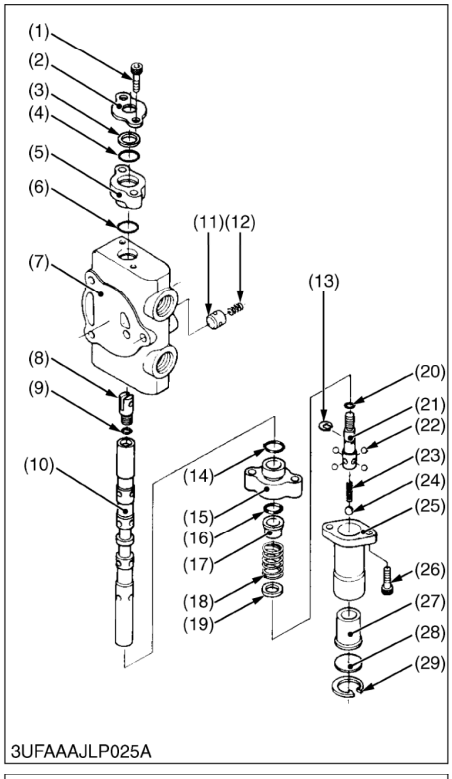
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(1) Hydraulic Block
(2) Boom Cylinder
(3) Bucket Cylinder
(4) Bucket Control Valve
(5) Boom Control Valve
(6) Control Valve Assembly
(7) Relief Valve
(8) Port Relief Valve

A : To PTO Gear Case
B : To 3-point Hydraulic System
C : From Hydraulic Pump

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Disassembling Boom Control Valve

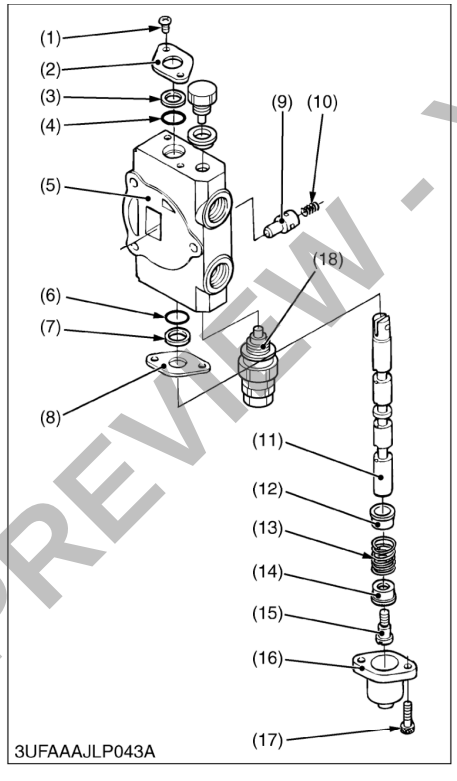
1. Remove the spring (12) and load check valve (11).
2. Remove the seal plate (2), wiper ring (3) and spacer (5) from the valve housing 1 (7).
3. Remove the cap (25) and spacer (15), and draw out the spool (10) from the valve housing 1 (7).

(When reassembling)

- Clean all parts with a suitable solvent, and dry with a lint-free cloth or air.
- Visually inspect all parts for signs of scoring or damage.
- Install the spool and spacer to the valve housing 1, using care not to damage the O-rings.

(1) Screw
(2) Seal Plate
(3) Wiper Ring
(4) O-ring
(5) Spacer
(6) O-ring
(7) Valve Housing 1
(8) Spool Head
(9) O-ring
(10) Spool
(11) Load Check Valve
(12) Spring
(13) Snap Ring
(14) O-ring
(15) Spacer
(16) O-ring
(17) Spring Seat
(18) Return Spring
(19) Spring Seat
(20) O-ring
(21) Detent Pin
(22) Detent Ball
(23) Detent Spring
(24) Detent Ball
(25) Cap
(26) Screw
(27) Detent Sleeve
(28) Spacer Washer
(29) Internal Snap Ring

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Disassembling Bucket Control Valve

1. Remove the spring (10) and load check valve (9).
2. Remove the seal plate (2) and wiper ring (3) form valve housing 2 (5).
3. Remove the cap (16), seal plate (8) and wiper ring (7), and draw out the spool (11) from the valve housing 2 (5).

(When reassembling)

- Clean all parts with a suitable solvent, and dry with a lint-free cloth or air.
- Visually inspect all parts for signs of scoring or damage.
- Install the spool and seal plate to the valve housing 2, using care not to damage the O-rings.

(1) Screw
(2) Seal Plate
(3) Wiper Ring
(4) O-ring
(5) Valve Housing 2
(6) O-ring
(7) Wiper Ring
(8) Seal Plate
(9) Load Check Valve
(10) Spring
(11) Spool
(12) Spring Seat
(13) Return Spring
(14) Spring Seat
(15) Cap Screw
(16) Cap
(17) Screw
(18) Port Relief Valve (Serial Number above 10219)

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[3] TIGHTENING TORQUES OF SCREWS, BOLTS AND NUTS ON THE TABLE BELOW ARE ESPECIALLY SPECIFIED

Item	N·m	kgf·m	ft-lbs
Control valve stay mounting bolt	37 to 43	3.7 to 4.4	27 to 32
Mounting nut (Tie rod : 9.5 mm dia. (3/8 in. dia.))	45	4.6	33
Mounting nut (Tie rod : 7.9 mm dia. (5/16 in. dia.))	19	1.9	14
Relief valve assembly	40.0 to 49.5	4.1 to 5.0	29.5 to 36.5
3/8” lock nut (controller stand 2)	15 to 20	1.5 to 2.1	11 to 15
Boom cylinder piston mounting nut (LA1301, LA1301S-1)	271 to 298	27.7 to 30.4	200 to 220
Boom cylinder piston mounting nut (LA1601, LA1601S)	427 to 441	43.6 to 44.9	315 to 325
Bucket cylinder piston mounting nut	427 to 441	43.6 to 44.9	315 to 325
M16 lock nut	50 to 58	5.1 to 5.9	37 to 43
Top connector mounting nut (9/16”)	176	18.0	130
Bottom connector mounting bolt (M18)	319	32.5	235
Bottom connector mounting nut (5/8”)	210	21.5	155
Main frame mounting bolt and nut (clutch housing)	366	37.5	270
Main frame and front guard mounting bolt (front axle frame)	319	32.5	235

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SPECIFICATIONS

■ **Suitable Tractor**

LA1301 : M-110 (2WD), M-120 (2WD)
LA1601 : M-110 (4WD), M-120 (4WD)
LA1301S-1 : M95S, M105S, M95X, M105X
LA1601S : M-110 (4WD), M-120 (4WD), M125X

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LOADER SPECIFICATIONS

Model		LA1301	LA1601
ASAE Rated Lift Capacity		1300 kg (2865 lbs)	1600 kg (3525 lbs)
ASAE Rated Brakeout Force		17670 N (3975 lbs)	21890 N (4920 lbs)
Boom Cylinder	Bore	64.0 mm (2.50 in.)	70.0 mm (2.75 in.)
	Stroke	652 mm (25.67 in.)	
Bucket Cylinder	Bore	70.0 mm (2.75 in.)	76.0 mm (3.00 in.)
	Stroke	532 mm (20.94 in.)	
Control Valve	Remote valve type	One Detent Float Position, Regenerative Bucket Dump, Power Steering Circuit	
Net Weight (Approximate)		1030 kg (2270 lbs)	1060 kg (2337 lbs)

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LOADER SPECIFICATIONS

Model		LA1301S-1		LA1601S
Tractor Model		M95S, M105S	M95X, M105X	M125X
Wheel Base (WB)		2435 mm (95.9 in.)		2690 mm (105.9 in.)
Front Tires		13.6-24		14.9-24
Rear Tires		18.4R34		18.4R38
Boom Cylinder	Bore	65 mm (2.56 in.)		70 mm (2.76 in.)
	Stroke	652 mm (25.7 in.)		
Bucket Cylinder	Bore	70 mm (2.76 in.)		75 mm (3.00 in.)
	Stroke	532 mm (20.9 in.)		
Control Valve	Remote valve type	One Detent Float Position, Power Beyond Circuit		
Rated Flow		65 L/m (17.2 GPM)	68 L/m (18 GPM)	76 L/m (20 GPM)
Maximum Pressure		20.7 MPa (211 kgf/cm^2, 3002 psi)		
Net Weight (Approximate)		990 kg (2183 lbs)		1060 kg (2337 lbs)

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[4] MAINTENANCE CHECK LIST

To keep the machine working in good condition as well as to avoid any accident and trouble, carry out periodic inspection and maintenance. Check the following points before use.

Service Internal	Check Points	Reference Page
Daily (Each use)	Check the transmission fluid level	S-2
	Check the hydraulic hoses	S-2
Every 10 hours	Grease all grease fittings	S-3
	Lubricate joints of control lever linkage	S-3

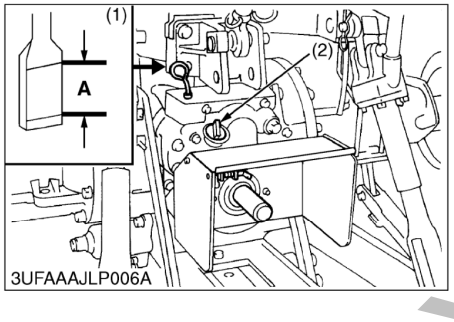
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[5] CHECK AND MAINTENANCE

CAUTION

- **When checking and repairing, park the tractor on flat ground and apply the parking brake.**
- **When checking and repairing, lower the bucket and stop the engine.**

(1) Check Points of Each Use or Daily



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Checking Transmission Fluid Level

1. Check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level lies between the two notches.
2. If the level is too low, add new oil to the prescribed level at the oil inlet.

■ **IMPORTANT**

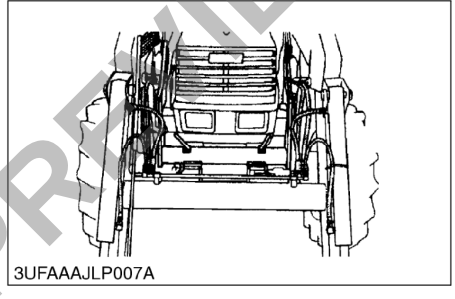
- **If oil level is low, do not run engine.**

Transmission fluid capacity (Front loader is not attached)	M-110	55.0 L 58.1 U.S.qts 48.4 Imp.qts
	M-120	58.0 L 61.3 U.S.qts 51.0 Imp.qts
	M95S, M105S M95X, M105X, M125X	60 L 63.4 U.S.qts 52.8 Imp.qts

(1) Dipstick
(2) Oil Filling Plug

A : Oil level is acceptable within this range.

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Checking Hydraulic Hoses

1. Checking all hydraulic hoses for cuts or wear.
2. If defects are found, replace them.

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