WSM

WORKSHOP MANUAL
FRONT LOADER

LA181 • LA211

Kubota

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MECHANISM

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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.

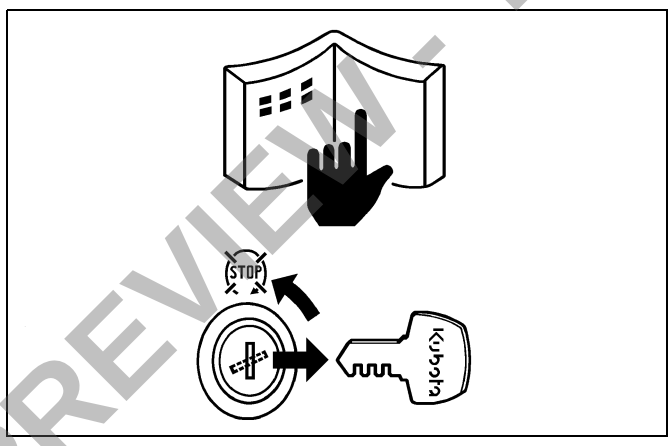
DANGER : Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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

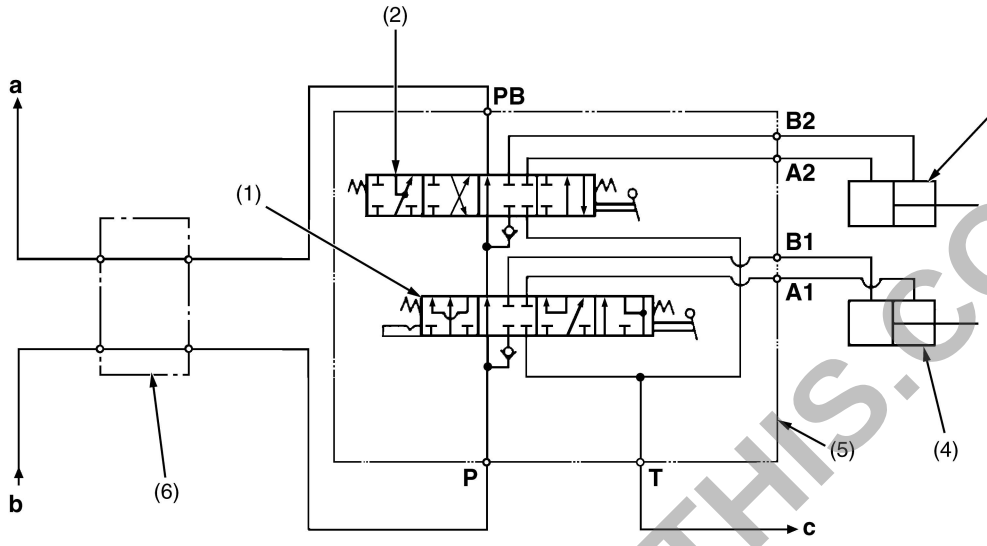
- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a firm and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, and remove the key.
- Disconnect the battery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

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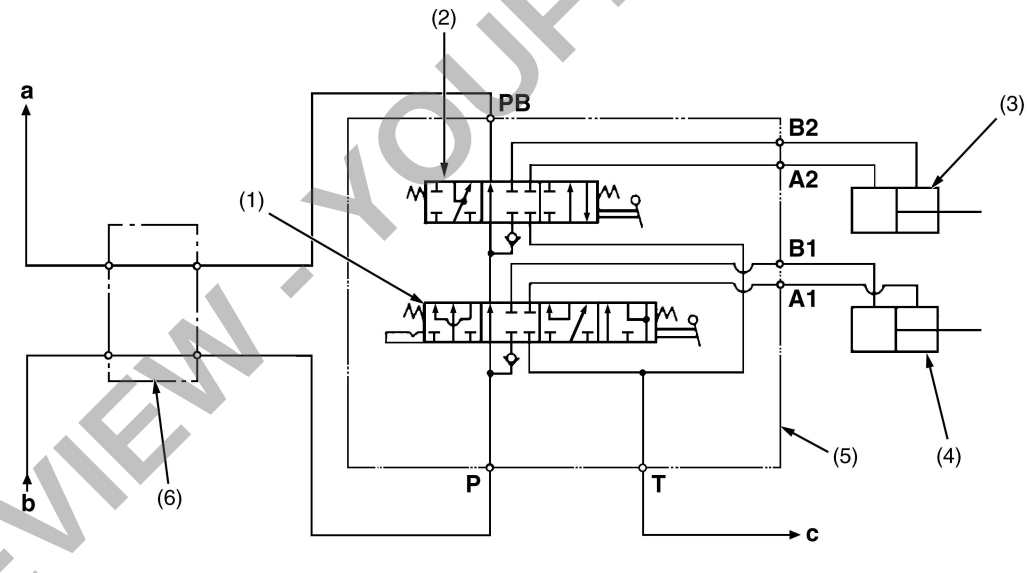
2. HYDRAULIC CIRCUIT

A



3UFAAACLP002A

B



3UFAAACLP003A

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

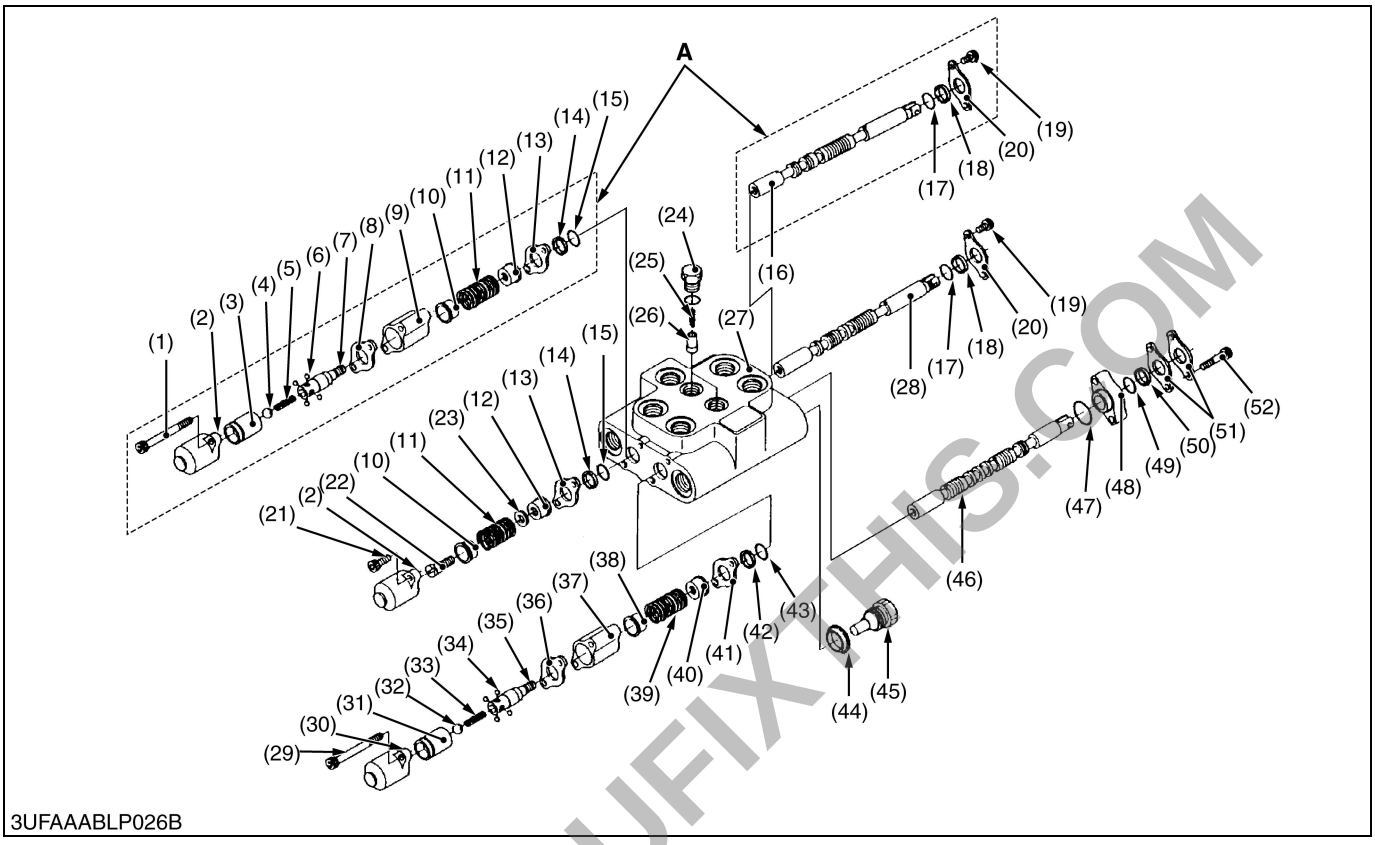
A : 4 Position Bucket Control
B : 3 Position Bucket Control

a : To 3-Point Hydraulic System
b : From Hydraulic Pump
c : To Transmission Case

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Disassembling Control Valve (4 Position Bucket Control)



3UFAAABLP026B

(1) Screw
(2) Cap
(3) Sleeve
(4) Ball
(5) Spring
(6) Ball
(7) Pin
(8) Seal Plate
(9) Spacer
(10) Spring Seat
(11) Spring
(12) Spring Seat
(13) Seal Plate
(14) Wiper Ring
(15) O-ring
(16) Spool for Bucket
(17) O-ring
(18) Wiper Ring
(19) Screw
(20) Seal Plate
(21) Screw
(22) Cap Screw
(23) Collar
(24) Plug
(25) Spring
(26) Load Check Valve
(27) Valve Housing
(28) Spool for Bucket
(29) Screw
(30) Cap
(31) Sleeve
(32) Ball
(33) Spring
(34) Ball
(35) Pin
(36) Seal Plate
(37) Spacer
(38) Spring Seat
(39) Spring
(40) Spring Seat
(41) Seal Plate
(42) Wiper Ring
(43) O-ring
(44) Seal Ring
(45) Relief Valve
(46) Spool for Boom
(47) O-ring
(48) Spacer
(49) O-ring
(50) Wiper Ring
(51) Seal Plate
(52) Screw
A : 4 Position Bucket Control Type

■ Boom Control Section

1. Remove the plug (24) and take out the spring (25) and load check valve (26).
2. Remove the seal plates (51), wiper ring (50) and spacer from the valve housing (27).
3. Remove the cap (30) and spacer (37), and draw out the spool (46) with other component parts from valve housing (27).

■ Bucket Control Section

1. Remove the plug (24) and take out the spring (25) and load check valve (26).
2. Remove the seal plate (20) and wiper ring (18) from the valve housing (27).

[3 Position Bucket Control Type]

3. Remove the cap (2), seal plate (13) and wiper ring (14), and draw out the spool (28) with other component parts from the valve housing (27).

[4 Position Bucket Control Type]

3. Remove the cap (2), seal plate (8), spacer (9), seal plate (13) and wiper ring (14), and draw out the spool (16) with other component parts from the valve housing (27).

(When reassembling)

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

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4. TIGHTENING TORQUES

[1] GENERAL USE SCREWS, BOLTS AND NUTS

Screws, bolts and nuts whose tightening torques are not specified in this Workshop Manual should be tightened according to the table below.

American standard cap screws with UNC or UNF Threads				Metric cap screws			
Grade	SAE 5 or 8			Grade	Property class 8.8 (Approx. SAE grade 5)		
Unit / Size	N·m	kgf·m	ft-lbs	Unit / Size	N·m	kgf·m	ft-lbs
1/4	9.8 to 11.7	1.0 to 1.2	7.2 to 8.6	M6	9.8 to 11.2	1.0 to 1.1	7.2 to 8.3
5/16	19.0 to 23.1	1.9 to 2.4	14 to 17	M8	23.6 to 27.4	2.4 to 2.8	17.4 to 20.2
3/8	33.9 to 40.7	3.5 to 4.2	25 to 30	M10	48.1 to 55.8	4.9 to 5.7	35.5 to 41.2
1/2	88.1 to 105.8	9.0 to 10.8	65 to 78	M12	77.5 to 90.1	7.9 to 9.2	57.2 to 66.5
9/16	122.0 to 146.4	12.4 to 14.9	90 to 108	M14	124 to 147	12.6 to 15.0	91.2 to 108
5/8	176.3 to 211.5	18.0 to 21.6	130 to 156	M16	196 to 225	20.0 to 23.0	145 to 166
–	–	–	–	M18	275 to 318	28.0 to 32.5	203 to 235

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[2] HYDRAULIC FITTINGS

Item	Thread size	Tightening torque		
		N·m	kgf·m	ft-lbs
Adjustable elbow and adapter	9/16	37 to 44	3.7 to 4.6	27 to 33
	3/4	47 to 54	4.8 to 5.5	35 to 40
Hose fitting and flare nut	9/16	22 to 25	2.2 to 2.6	16 to 19
	3/4	35 to 41	3.6 to 4.1	26 to 30
	7/8	65 to 71	6.6 to 7.2	48 to 52
	1/4	30 to 35	3.1 to 3.6	22 to 26
Adapter (NPT)	3/8	39 to 44	3.9 to 4.4	28 to 32
	1/2	49 to 58	5.0 to 5.9	36 to 43

■ **NOTE**

- **When connecting a hose with flare nut, after tightening the nut with specified torque, return it approximately 45 degrees and re-tighten it to specified torque.**

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[3] SPECIAL USE SCREWS, BOLTS AND NUTS

Item	N·m	kgf·m	ft-lbs
Control valve mounting bolt	12.2 to 13.6	1.2 to 1.4	9 to 10
Control valve stay mounting bolt and nut	33.7	3.5	25
Adaptor	47.5 to 54.2	4.8 to 5.5	35 to 40
Front guard mounting bolt and nut	83	8.5	61
Main frame mounting bolt (M14)	147	15.0	108
Boom cylinder piston mounting nut (LA181)	78 to 98	8.0 to 10.0	58 to 72
(LA211)	170 to 183	17.3 to 18.6	125 to 135
Bucket cylinder piston mounting nut (LA181)	216 to 245	22.0 to 25.0	159 to 180
(LA211)	170 to 183	17.3 to 18.6	125 to 135

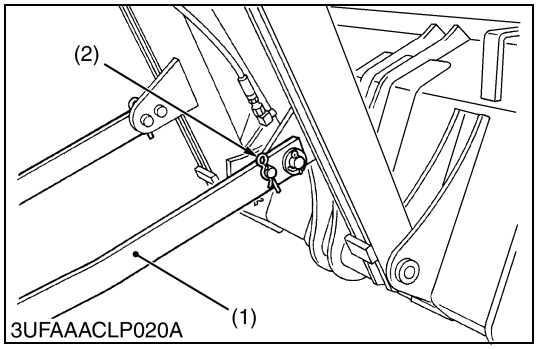
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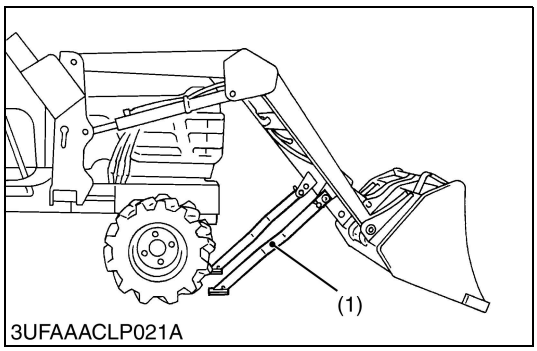
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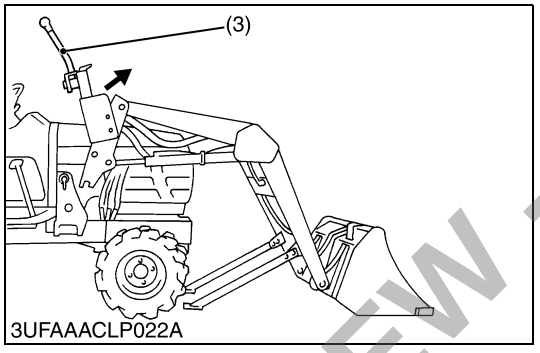
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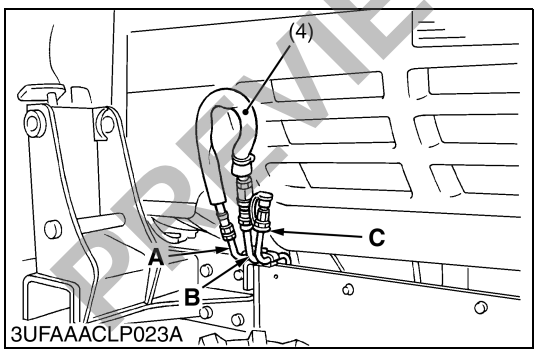
5. DISMOUNTING FRONT LOADER FROM TRACTOR

■ **IMPORTANT**
- **When dismounting the loader, park the tractor on flat and hard ground, apply the parking brake.**
- **When starting the engine or using the hydraulic control valve, always sit in the operator's seat.**









Side Frame

1. Raise the boom until the stands (1) can be rotated.
2. Stop the engine.
3. Remove the spring pins (2) holding the stands (1) to the boom.
4. Side the stands (1) outward and rotate them until the hole in the stand and pin on the boom are aligned. Then slide the stands (1) inward and insert the spring pin (2) as shown.
5. Start the engine.
6. Dump the bucket approximately 20 degrees.
7. Lower the boom and raise the front wheels slightly.
8. Stop the engine.
9. Remove the mounting pins from the loader side frames.
10. Start the engine and run at idle. Slowly move the hydraulic control lever (3) to rollback position to raise the loader side frames up and out of the receivers of the main frames as shown.
11. Stop the engine.
12. Slowly release all hydraulic pressure by moving the hydraulic control lever (3) in all directions.
13. Disconnect the three hoses with quick couplers on the right side of the tractor. Reconnect hose 4 (4) remaining on the tractor, to the hydraulic line with quick coupler as shown.
14. Place the protective caps and plugs on the quick coupler ends.

■ **IMPORTANT**
- **Before starting the engine, make sure hose 4 (4) is securely connected to the pump port.**

15. Start the engine and slowly back the tractor away from the loader.

(1) Stand
(2) Spring Pin
(3) Hydraulic Control Lever
(4) Hose 4

A : Power Beyond Port
B : Pump Port
C : Tank Port

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SPECIFICATIONS

LOADER SPECIFICATIONS

Model		LA181	LA211
ASAE Rated Lift Capacity		180 kg (400 lbs)	210 kg (460 lbs)
ASAE Rated Brakeout Force		3430 N (770 lbs)	4200 N (950 lbs)
Boom Cylinder	Bore	35 mm (1.38 in.)	38 mm (1.50 in.)
	Stroke	340 mm (13.39 in.)	325 mm (12.77 in.)
Bucket Cylinder	Bore	55 mm (2.17 in.)	57 mm (2.25 in.)
	Stroke	200 mm (7.96 in.)	
Control Valve	3 Position Bucket Control Valve Type	One Detent Float Position, Power Beyond Circuit	
	4 Position Bucket Control Valve Type	One Detent Float Position, Two Stage Bucket Dump, Power Beyond Circuit	
Relief Valve Setting Pressure		12.3 to 12.7 MPa, 125 to 130 kgf/cm^2, 1778 to 1849 psi	
Net Weight (Approx.)		185 kg (408 lbs)	195 kg (430 lbs)

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BUCKET SPECIFICATIONS

Model		LA181	LA211
Type		Square 48	
Width		1220 mm (48.0 in.)	
Length		455 mm (17.9 in.)	495 mm (19.5 in.)
Heigh		445 mm (17.5 in.)	165 mm (18.2 in.)
Capacity	Struck	0.12 m^3 (4.2 cu.ft)	0.14 m^3 (5.0 cu.ft)
	Heaped	0.14 m^3 (4.9 cu.ft)	0.17 m^3 (6.1 cu.ft)
Weight		56 kg (123 lbs)	60 kg (132 lbs)

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