WSM

WORKSHOP MANUAL
FRONT LOADER

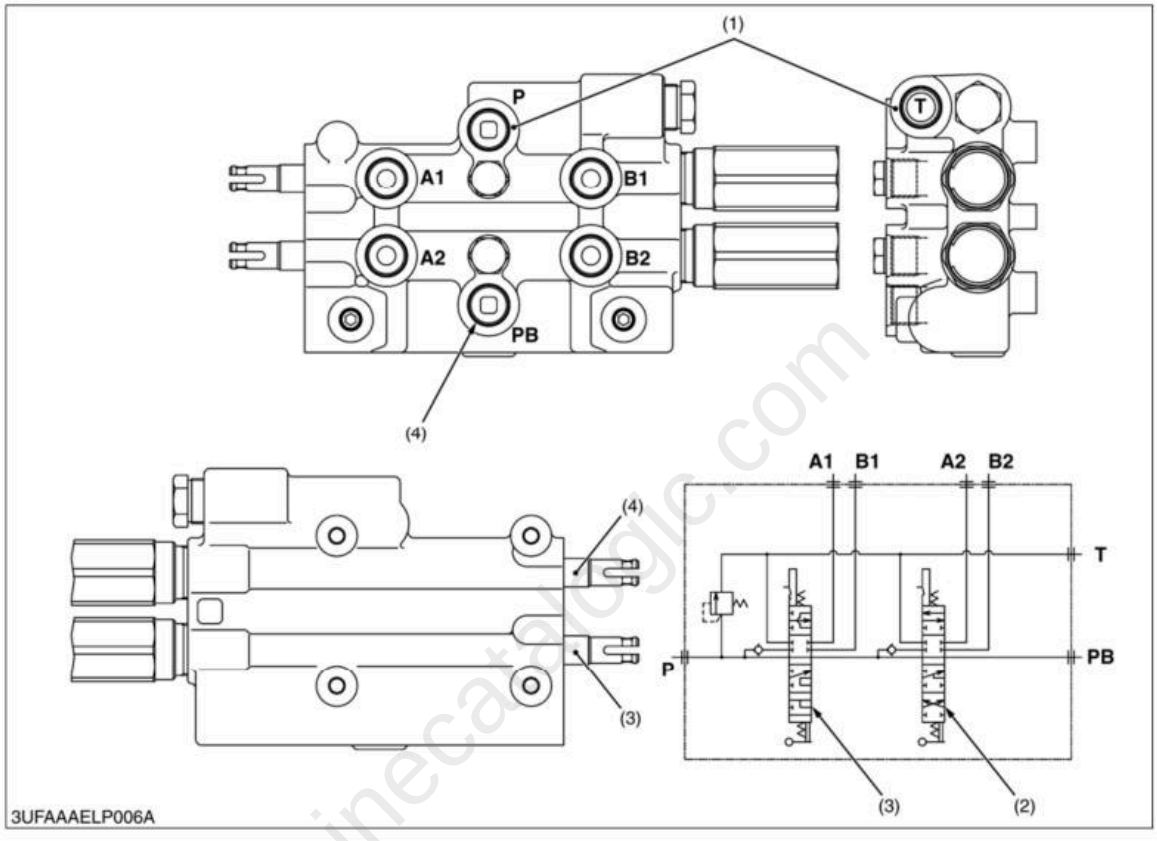
LA403

Kubota

KiSC issued 09, 2007 A

3. CONTROL VALVE ASSEMBLY

[1] STRUCTURE



(1) Inlet and Outlet Section
(2) Boom Control Valve
(3) Bucket Control Valve
(4) Power Beyond

P : P Port **T : T Port** **A1 : A1 Port** **A2 : A2 Port** **B1 : B1 Port** **B2 : B2 Port** **PB : PB Port**

The control valve assembly is composed of one casting block and four major section as shown above.

(1) Inlet and Outlet Section

This section has **P** and **T** ports.

The **P** port is connected to the **OUTLET** port of hydraulic block by the hydraulic hose.

The **T** port is connected to the **TANK** port of hydraulic block by the hydraulic hose.

(2) Boom Control Section

The boom control valve is of 4-position, 6-connection, detent, spring center type, consisting of a mono block valve housing, spool, load check valve, etc. This valve has **A1** and **B1** ports and controls oil flow to the boom cylinder.

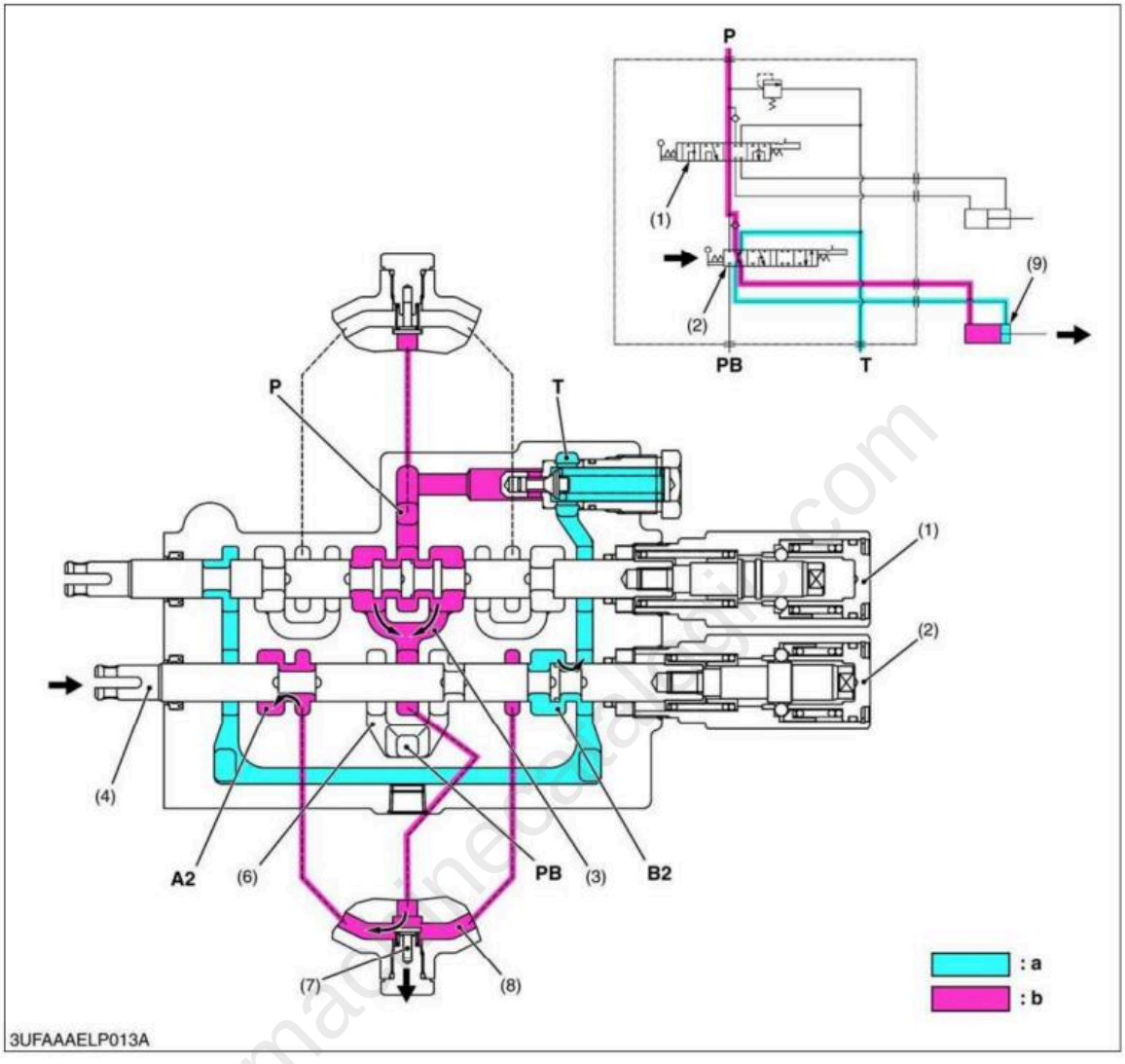
(3) Bucket Control Section

The bucket control valve is of 4-position, 6-connection, no detent, spring center type, consisting of a mono block valve housing, spool, load check valve, etc. This valve has **A2** and **B2** ports and controls oil flow to the bucket cylinder.

(4) Power Beyond

This section has **PB** port which is connected to the **INLET** port of hydraulic block by the hydraulic hose, and feeds oil to the three point hydraulic control valve.

Dump 2



(1) Boom Control Section
(2) Bucket Control Section
(3) **PB** Passage 1
(4) Spool
(5) Neutral Passage 2
(6) **PB** Passage 2
(7) Load Check Valve
(8) Passage 2
(9) Bucket Cylinder

P : P Port
T : T Port
PB :PB Port

A2 : A2 Port
(To Bucket Cylinder)
B2 : B2 Port
(From Bucket Cylinder)
a : Low Pressure
b : High Pressure

1. When the hydraulic control lever is set to the **"DUMP 2"** position, the spool (4) of the bucket control section (2) moves to the right of the bucket control section (2) moves further to the right from the **"DUMP 1"** position, which forms oil passages between passage 2 (8) and **A2** port, and between **B2** port and **T** port.
2. The pressure-fed oil from the **P** port flows to the neutral passage 2 (5) through the boom control section (1) and **PB** passage 1 (3). As the oil passage from the neutral passage 2 (5) to the **PB** passage 2 (6) is closed by the spool (4), this oil opens the load check valve (7) and flows through the notched section of the spool (4) and **B2** port to extend the bucket cylinder (9).
3. Return oil from the bucket cylinder (9) flows to the transmission case through the **B2** port and **T** port.

2. TROUBLESHOOTING

Symptom	Probable Cause	Solution	Reference Page
Boom Does Not Rise	Control valve malfunctioning	Repair or replace	S-10 to 14
	Boom cylinder defective	Repair or replace	S-17
	Control lever linkage defective	Repair or replace	S-11,12,15, 16
	Hydraulic pump malfunctioning	Repair or replace	–
	Oil filter clogged	Repair or replace	–
	Relief valve spring damaged	Replace	–
	Hydraulic hose damaged	Replace	–
	Relief valve dirty or stuck	Clean	–
Boom Does Not Lower	Control valve malfunctioning	Repair or replace	S-10 to 14
	Control lever linkage defective	Repair or replace	S-11,12,15, 16
Insufficient Boom Speed	Boom cylinder tube worn or damaged	Replace	S-18
	Boom cylinder piston ring (piston seal and O-ring) worn or damaged	Replace	S-18
	Oil leaks from tube joints	Repair	–
	Relief valve setting pressure too low	Adjust	–
	Insufficient transmission fluid	Refill	S-2
	Dirty relief valve	Clean	–
Bucket Does Not Move	Control valve malfunctioning	Repair or replace	S-10 to 14
	Bucket cylinder defective	Repair or replace	S-17
	Control lever linkage defective	Repair or replace	S-11,12,15, 16
	Hydraulic pump malfunctioning	Repair or replace	–
	Oil filter clogged	Clean or replace	–
	Relief valve spring damaged	Replace	–
	Hydraulic hose damaged	Replace	–
	Dirty relief valve	Clean	–
Insufficient Bucket Speed	Bucket cylinder tube worn or damaged	Replace	S-18
	Bucket cylinder piston ring (piston seal and O-ring) worn or damaged	Replace	S-19
	Oil leaks from tube joints	Repair	–
	Relief valve setting pressure too low	Adjust	–
	Insufficient transmission fluid	Refill	S-2
	Dirty relief valve	Clean	–
Front End Loader Drops by Its Weight	Boom cylinder tube worn or damaged	Replace	S-18
	Boom cylinder piston ring (piston seal and O-ring) worn or damaged	Replace	S-19
	Oil leaks from tube joints	Repair	–
	Control valve malfunctioning	Repair or replace	S-10 to 14

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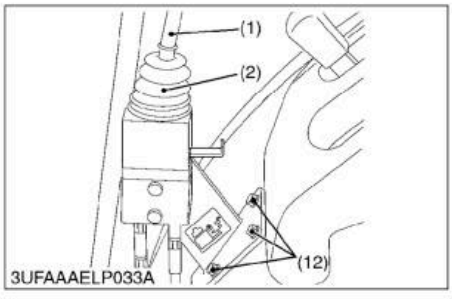
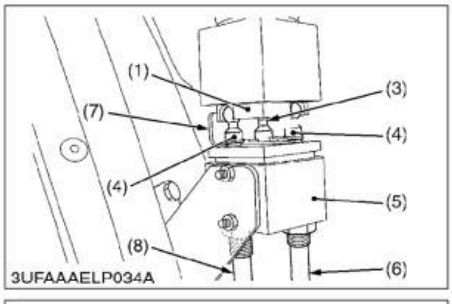
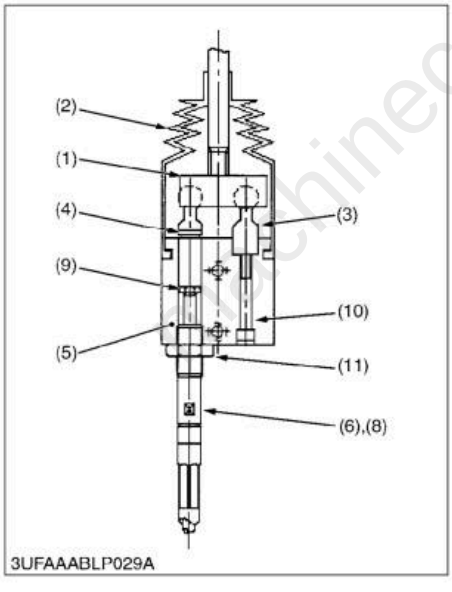
[2] CONTROLLER

(1) Disassembling and Assembling







Disconnecting Control Cable from Control Valve

1. Disconnect the control cables from control valve. (See page S-12.)

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Controller [Valve Kit Serial No.: below 20000]

1. Slide up the rubber boot (2) to expose the cable ends (4).
2. Loosen the hex. socket head screw (9) for the control lever pivot (3) and remove the lever pivot (3).
3. Remove the control lever assembly (1).
4. Loosen the cable control lock nut (M16) (11) of control cables (6), (8).
5. Screw out the control cables (6), (8) from controller (5).
6. Loosen the M6 lock nuts (9) and remove the cable ends (4) from cables.

(When reassembling)

- When installing the cable end (4) to the cable, screw the end of cable to the cable end (4) fully.
- Apply grease to the controller ends (slide portions and pivot portion).

NOTE

- **Adjust the length of each cables so that the bottom of the groove on the cable ends (4) align with the top surface of the controller (5). The lever lock (7) on the controller should lock the control lever in the neutral position when the cable ends are adjusted correctly.**

Tightening torque	Cable control lock nut (M16)	20.0 to 23.0 N·m 1.9 to 2.4 kgf·m 14 to 17 ft-lbs
	Control stay mounting bolt and nut	23.6 to 27.4 N·m 2.4 to 2.8 kgf·m 17.4 to 20.2 ft-lbs

(1) Control Lever Assembly
(2) Rubber Boot
(3) Control Lever Pivot
(4) Cable End
(5) Controller
(6) Cable for Boom Section (Blue Tape)
(7) Lever Lock
(8) Cable for Bucket Section (Red Tape)
(9) M6 Lock Nut
(10) Hex. Socket Head Screw
(11) Cable Control Lock Nut (M16)
(12) Controller Stay Mounting Bolt (M8)

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Full Version Available

Kubota LA403 Front Loader Workshop Manual

This is a short preview. The complete manual contains all chapters, wiring diagrams, torque specifications and full service procedures.