

Product: Kubota LA714AU LA854AU Service Manual

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# WSM

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## WORKSHOP MANUAL FRONT LOADER

# LA714AU, LA854AU

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# Kubota

KiSC issued 03, 2010 A

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## TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of KUBOTA Front Loader LA714AU and LA854AU. It contains 4 parts: "**Information**", "**General**", "**Mechanism**" and "**Servicing**".

■ **Information**

This section primarily contains information below.

- Safety First
- Safety Decal
- Specification
- Dimension

■ **General**

This section primarily contains information below.

- Loader Identification
- General Precautions
- Maintenance Check List
- Check and Maintenance

■ **Mechanism**

This section contains information on the structure and the function of the unit. Before you continue with the subsequent sections, make sure that you read this section.

■ **Servicing**

This section primarily contains information below.

- Troubleshooting
- Servicing Specifications
- Tightening Torques
- Checking, Disassembling and Servicing

All illustrations, photographs and specifications contained in this manual are of the newest information available at the time of publication.

KUBOTA reserves the right to change all information at any time without notice.

Since this manual includes many models, information or illustrations and photographs can show more than one model.

March, 2010

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# I INFORMATION

# INFORMATION

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# 1. SAFETY FIRST

## 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.

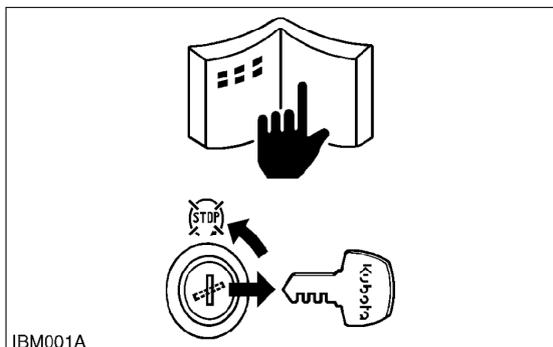
### IMPORTANT

- Indicates that equipment or property damage could result if instructions are not followed.

### NOTE

- Gives helpful information.

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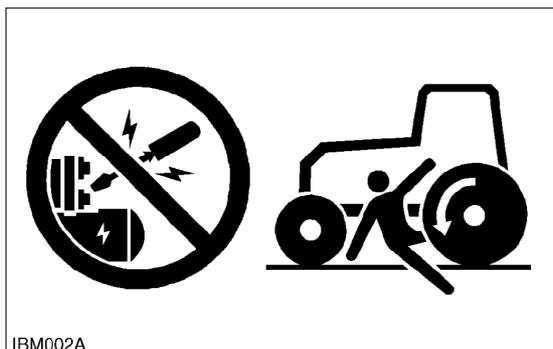


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## BEFORE YOU START SERVICE

- 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 stable and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, then remove the key.
- Disconnect the battery negative cable.
- Hang a "**DO NOT OPERATE**" tag in the operator station.

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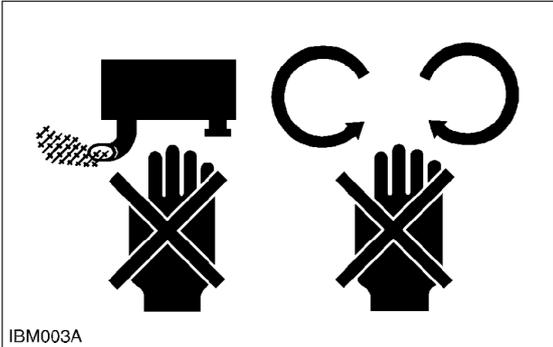


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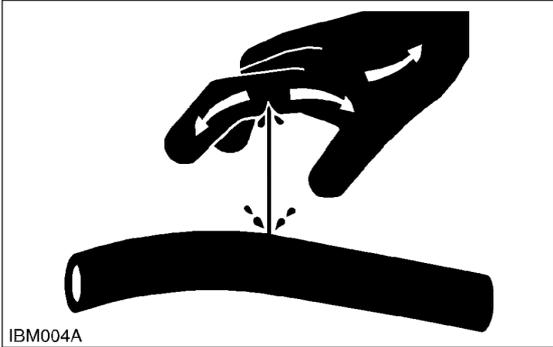
## START SAFELY

- Do not do the procedures below when you start the engine.
  - short across starter terminals
  - bypass the safety start switch
- Do not alter or remove any part of machine safety system.
- Before you start the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Do not start the engine when you stay on the ground. Start the engine only from operator's seat.

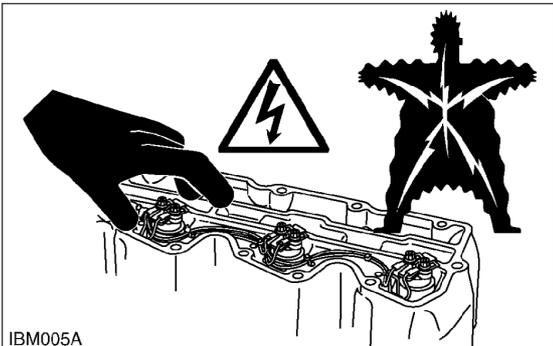
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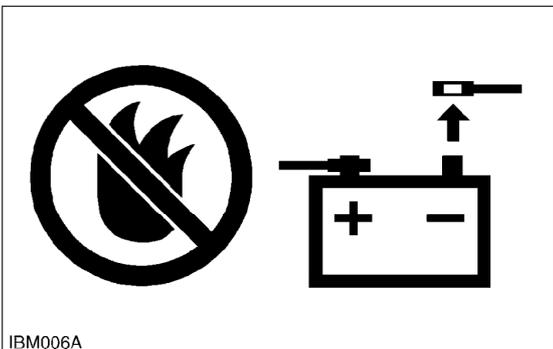
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**OPERATE SAFELY**

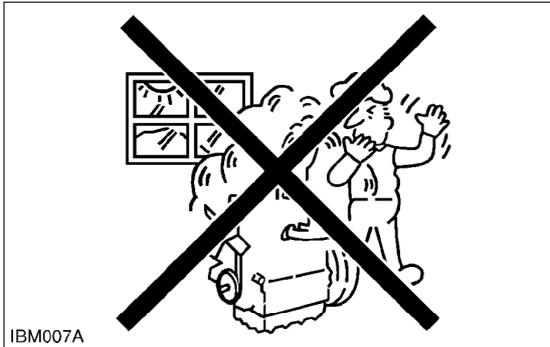
- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below the machine that only a jack holds. Always use a safety stand to hold the machine.
- Do not touch the hot parts or parts that turn when the engine operates.
- Do not remove the radiator cap when the engine operates, or immediately after it stops. If not, hot water can spout out from the radiator. Only remove the radiator cap when it is at a sufficiently low temperature to touch with bare hands. Slowly loosen the cap to release the pressure before you remove it fully.
- Released fluid (fuel or hydraulic oil) under pressure can cause damage to the skin and cause serious injury. Release the pressure before you disconnect hydraulic or fuel lines. Tighten all connections before you apply the pressure.
- Do not open a fuel system under high pressure. The fluid under high pressure that stays in fuel lines can cause serious injury. Do not disconnect or repair the fuel lines, sensors, or any other components between the fuel pump and injectors on engines with a common rail fuel system under high pressure.
- Put on an applicable ear protective device (earmuffs or earplugs) to prevent injury against loud noises.
- Be careful about electric shock. The engine generates a high voltage of more than DC100 V in the ECU and is applied to the injector.

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**PREVENT A FIRE**

- Fuel is very flammable and explosive under some conditions. Do not smoke or let flames or sparks in your work area.
- To prevent sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- The battery gas can cause an explosion. Keep the sparks and open flame away from the top of battery, especially when you charge the battery.
- Make sure that you do not spill fuel on the engine.

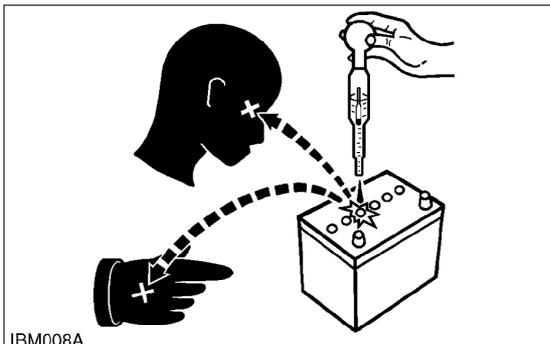
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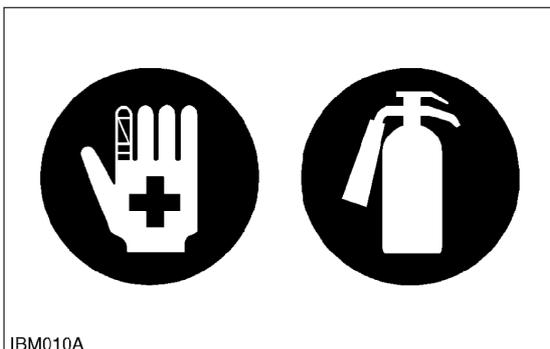
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### **KEEP A GOOD AIRFLOW IN THE WORK AREA**

- If the engine is in operation, make sure that the area has good airflow. Do not operate the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

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### **DISCARD FLUIDS CORRECTLY**

- Do not discard fluids on the ground, down the drain, into a stream, pond, or lake. Obey related environmental protection regulations when you discard oil, fuel, coolant, electrolyte and other dangerous waste.

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### **PREVENT ACID BURNS**

- Keep electrolyte away from your eyes, hands and clothing. Sulfuric acid in battery electrolyte is poisonous and it can burn your skin and clothing and cause blindness. If you spill electrolyte on yourself, clean yourself with water, and get medical aid immediately.

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### **PREPARE FOR EMERGENCIES**

- Keep a first aid kit and fire extinguisher ready at all times.
- Keep the emergency contact telephone numbers near your telephone at all times.

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## 2. SAFETY DECALS

The following safety decals are installed on the machine. If a decal becomes damaged, illegible or is not on the machine, replace it. The decal part number is listed in the parts list.

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(1) Part No. 7J246-5643-1



1A1ABAHAP016A

(2) Part No. 7J246-5644-2  
(Both sides)



1A1ABAHAP020A

(3) Part No. 7J266-5649-2



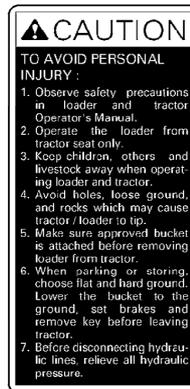
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(4) Part No. 7J246-5642-1



1A1ABAHAP016A

(5) Part No. 7J246-5645-1

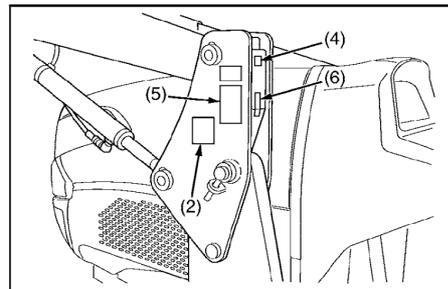
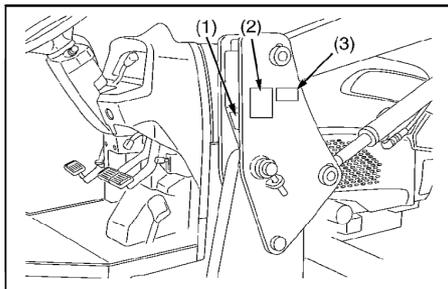


1A1ABAHAP016A

(6) Part No. 7J246-5641-1



1A1ABAHAP017A



9Y1210402IC1001A

9Y1210402INI0001US0

(1) Part No. 7J802-3648-5

<b>⚠ DANGER</b>			
TO AVOID PERSONAL INJURY OR DEATH			
1. Make sure both handles (H, RH) (A) contact the ear plates (B) at the X points and are all the way down.		2. Make sure both lock pins (L, RH) (C) protrude through the pin slots (D).	
(A) HANDLE (B) EAR PLATE (C) LOCK PIN (D) PIN SLOT		Kubota recommends the use of Kubota attachments on Kubota loaders. Non-Kubota attachments, if used, must comply with ISO 24410, first edition 2005-04-15.	
		Use of a non-Kubota attachment that does not comply with ISO 24410 or the improper positioning of handle(s) or non-protrusion of pin(s) may result in detachment of the attachment or deformation, causing loss of performance, personal injury or death.	
For information contact your Kubota Dealer			

1A/ABAAAP119A

(2) Part No. 7J246-5643-1

<b>⚠ DANGER</b>

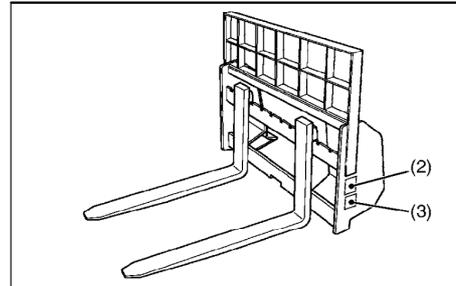
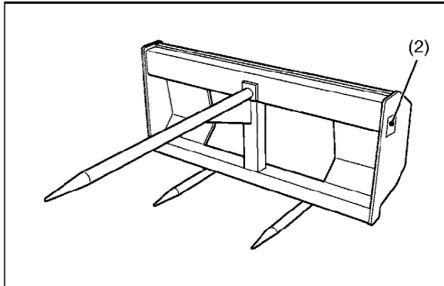
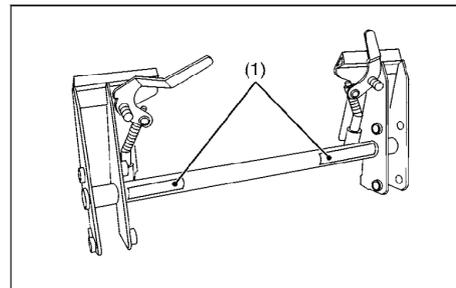
<b>TO AVOID SERIOUS INJURY OR DEATH CAUSED BY FALLING LOADS:</b> <ol style="list-style-type: none"> <li>1. Load on raised bucket or fork can fall or roll back onto operator causing serious injury or death.</li> <li>2. Use approved clamping and / or guard attachments for handling large, loose or shiftable loads such as bales, posts, sheets of plywood etc.</li> <li>3. Carry loads as low as possible.</li> </ol>

1A/ABACAP075A

(3) Part No. 7J266-3923-3

<b>⚠ DANGER</b>
<b>PALLET FORK RATED CAPACITY</b> LA853, LA854, LA844 1300 LBS. LA703A, LA723, LA854 1000 LBS. LA764N 925 LBS. LA513, LA514, TL500 800 LBS. LA463 710 LBS.
<b>TO AVOID PERSONAL INJURY OR DEATH CAUSED BY ROLLOVER</b> <ul style="list-style-type: none"> <li>• Do not exceed rated load listed above.</li> <li>• Use rear implement and tire ballast recommended in loader operator's manual.</li> <li>• Operate tractor slowly taking special care when turning.</li> </ul>

1A/ABACAP076C



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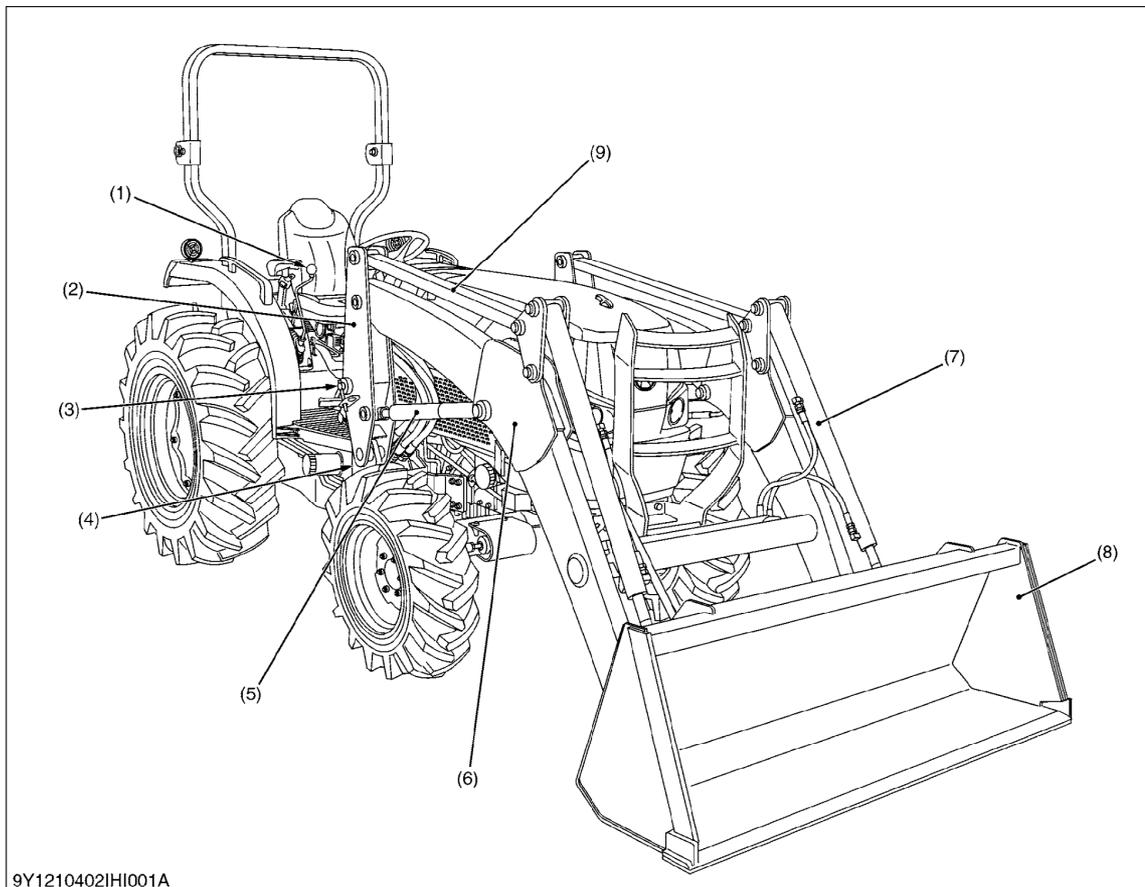
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**CARE OF DANGER, WARNING AND CAUTION LABELS**

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels.
4. If a component with danger, warning and caution label(s) affixed is replaced with new part, make sure new label(s) is (are) attached in the same location(s) as the replaced component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressure any bubbles to outside edge.

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### 3. LOADER TERMINOLOGY



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- |                             |                   |                     |                   |
|-----------------------------|-------------------|---------------------|-------------------|
| (1) Hydraulic Control Lever | (4) Main Frame    | (6) Boom            | (8) Bucket        |
| (2) Side Frame              | (5) Boom Cylinder | (7) Bucket Cylinder | (9) Parallel Link |
| (3) Mounting Pin            |                   |                     |                   |

9Y1210402INI0004US0

## 4. SPECIFICATIONS

### ■ Suitable Tractor

Loader Model	LA714	LA854
Tractor Model	L3240, L3540, L4240	L5240, L5740

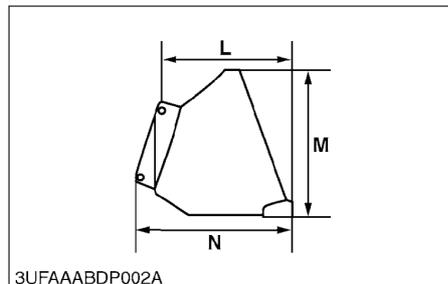
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### [1] LOADER SPECIFICATIONS

Loader Model		LA714	LA854
Tractor Model		L4240	L5740
Wheel Base		1895 mm (74.6 in.)	1915 mm (75.4 in.)
Front Tires		8.3 - 16	9.5 - 16
Rear Tires		14.9 - 24	14.9 - 26
Boom Cylinder	Bore	50.0 mm (1.97 in.)	60.0 mm (2.36 in.)
	Stroke	502 mm (19.8 in.)	496 mm (19.5 in.)
Bucket Cylinder	Bore	50.0 mm (1.97 in.)	55.0 mm (2.17 in.)
	Stroke	425 mm (16.7 in.)	469 mm (18.5 in.)
Control Valve	4 position bucket control type	One Detent Float Position, Two Stage Bucket Dump, Power Beyond Circuit	
Rated Flow		37.0 L/min. 9.8 U.S.gals/min. 8.1 Imp.gals/min.	
Maximum Pressure		18.1 MPa 185 kgf/cm <sup>2</sup> 2630 psi	
Net Weight (Approximate)		550 kg (1210 lbs)	650 kg (1430 lbs)

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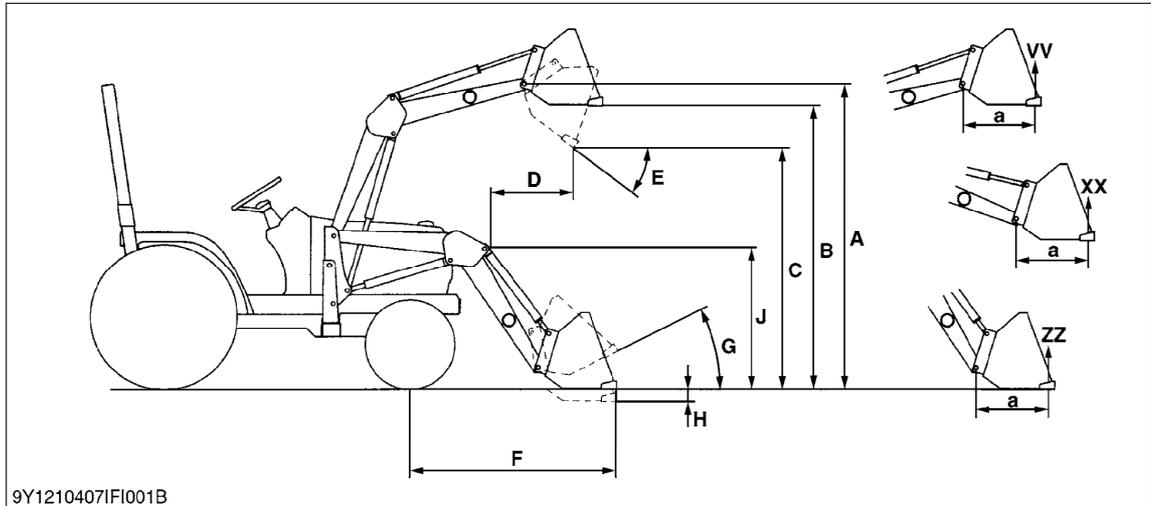
### [2] BUCKET SPECIFICATIONS



Loader Model		LA714	LA854
Model		Square 66"	Square 72"
Type		Quick attach	Quick attach
Width		1675 mm (65.94 in.)	1830 mm (72.05 in.)
Depth (L)		458 mm (18 in.)	547 mm (21.5 in.)
Height (M)		562 mm (22.1 in.)	570 mm (22.4 in.)
Length (N)		544 mm (21.4 in.)	630 mm (24.8 in.)
Capacity	Struck	0.23 m <sup>3</sup> (8.1 cu.ft)	0.31 m <sup>3</sup> (10.9 cu.ft)
	Heaped	0.28 m <sup>3</sup> (9.9 cu.ft)	0.37 m <sup>3</sup> (13.1 cu.ft)
Weight		120 kg (265 lbs)	150 kg (331 lbs)

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### [3] DIMENSIONAL AND OPERATIONAL SPECIFICATIONS



9Y1210407IFI001B

#### ■ Dimensional Specifications

Loader Model		LA714	LA854
Tractor Model		L4240	L5740
<b>A</b>	Maximum lift height (To bucket pivot pin)	2597 mm (102.2 in.)	2863 mm (112.7 in.)
<b>B</b>	Maximum lift height under level bucket	2395 mm (94.3 in.)	2659 mm (104.7 in.)
<b>C</b>	Clearance with bucket dumped	1995 mm (78.5 in.)	2255 mm (88.8 in.)
<b>D</b>	Reach at maximum lift height (Dumping reach)	561 mm (22.1 in.)	570 mm (22.4 in.)
<b>E</b>	Maximum dump angle	45 deg. (0.79 rad)	45 deg. (0.79 rad)
<b>F</b>	Reach with bucket on ground	1763 mm (69.4 in.)	1919 mm (75.6 in.)
<b>G</b>	Bucket roll-back angle	43 deg. (0.75 rad)	43 deg. (0.75 rad)
<b>H</b>	Digging depth	122 mm (4.8 in.)	177 mm (7.0 in.)
<b>J</b>	Overall height in carry position	1380 mm (54.3 in.)	1410 mm (55.5 in.)
<b>a</b>	Length	500 mm (19.7 in.)	500 mm (19.7 in.)

#### ■ Operational Specifications

Loader Model		LA714	LA854
Tractor Model		L4240	L5740
Lift capacity to maximum height (Bucket bottom mid point)		600 kg (1320 lbs)	800 kg (1760 lbs)
<b>VV</b>	Bucket roll-back force at Maximum height	8686 N (1953 lbf)	14041 N (3156.5 lbf)
<b>XX</b>	Bucket roll-back force at 1.5 m (59 in.) lift height	12435 N (2795.5 lbf)	17021 N (3826.5 lbf)
<b>ZZ</b>	Bucket roll-back force at ground level	12551 N (2821.6 lbf)	14014 N (3150.5 lbf)
Raising time		3.4 sec.	4.4 sec.
Lowering time		2.1 sec.	2.8 sec.
Bucket dumping time		1.2 sec.	1.5 sec.
Bucket roll-back time		1.6 sec.	1.9 sec.

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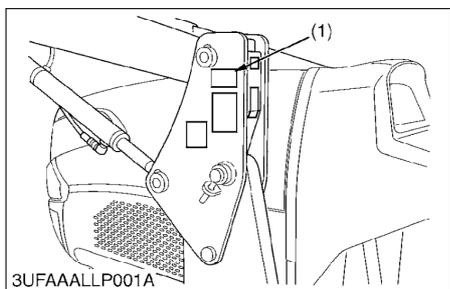
# **G GENERAL**

# GENERAL

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# 1. LOADER IDENTIFICATION

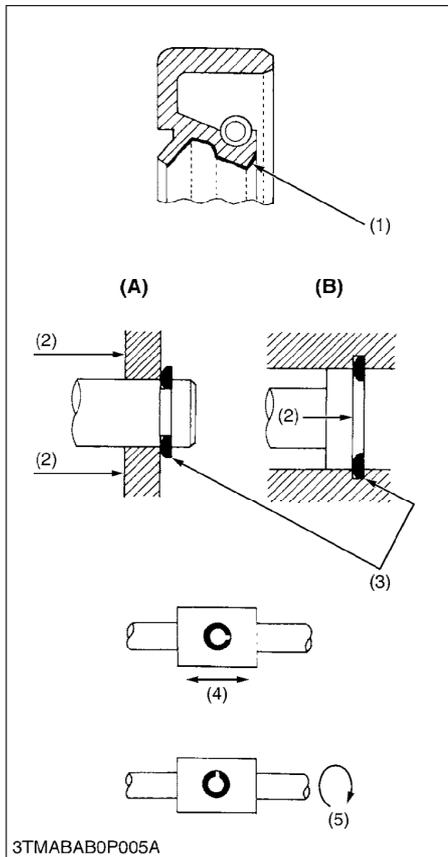


When contacting your local KUBOTA distributor, always specify front loader's serial number (1).

- (1) Serial Number

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## 2. GENERAL PRECAUTIONS



- When you disassemble, carefully put the parts in a clean area to make it easy to find the parts. You must install the screws, bolts and nuts in their initial position to prevent the reassembly errors.
- When it is necessary to use special tools, use KUBOTA special tools. Refer to the drawings when you make special tools that you do not use frequently.
- Before you disassemble or repair machine, make sure that you always disconnect the ground cable from the battery first.
- Remove oil and dirt from parts before you measure.
- Use only KUBOTA genuine parts for replacement to keep the machine performance and to make sure of safety.
- You must replace the gaskets and O-rings when you assemble again. Apply grease (1) to new O-rings or oil seals before you assemble.
- When you assemble the external or internal snap rings, make sure that the sharp edge (3) faces against the direction from which force (2) is applied.
- When inserting spring pins, their splits must face the direction from which a force is applied. See the figure left side.
- To prevent damage to the hydraulic system, use only specified fluid or equivalent.
- Clean the parts before you measure them.
- Tighten the nipples to the specified torque. Too much torque can cause damage to the hydraulic units or the nipples. Not sufficient torque can cause oil leakage.
- When you use a new hose or pipe, tighten the nuts to the specified torque. Then loosen (approx. by 45 °) and let them be stable before you tighten to the specified torque (This is not applied to the parts with seal tape).
- When you remove the two ends of a pipe, remove the lower end first.
- Use two pliers in removal and installation. One to hold the stable side, and the other to turn the side you remove to prevent twists.
- Make sure that the sleeves of flared connectors and taper sections of hoses are free of dust and scratches.
- After you tighten the nipples, clean the joint and apply the maximum operation pressure 2 to 3 times to examine oil leakage.

- (1) Grease
- (2) Force
- (3) Sharp Edge
- (4) Axial Force
- (5) Rotating Movement

- (A) External Snap Ring
- (B) Internal Snap Ring

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### 3. LUBRICANTS

Place	Capacity			Lubricants, type of grease
	L3240 L3540	L4240	L5240 L5740	
Transmission case	42 L 11.1 U.S.gals 9.2 Imp.gals	43 L 11.4 U.S.gals 9.5 Imp.gals	45 L 11.9 U.S.gals 9.9 Imp.gals	KUBOTA UDT or SUPER UDT fluid*
Grease nipples	Until grease overflows.			Moly Ep type grease**

■ **NOTE**

- \*KUBOTA original transmission hydraulic fluid.
- \*\* "Extreme pressure" and containing Molybdenum disulfide is recommended. This grease may specify "Moly Ep" on its label.

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# 4. TIGHTENING TORQUES

## [1] GENERAL USE SCREWS, BOLTS AND NUTS (FOR FRONT LOADER AND BACKHOE)

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

Indication on top of bolt	 No-grade or 4T						  7T or Property class 8.8						  9T or Property class 10.9		
	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
Unit	N-m	kgf-m	lbf-ft	N-m	kgf-m	lbf-ft	N-m	kgf-m	lbf-ft	N-m	kgf-m	lbf-ft	N-m	kgf-m	lbf-ft
<b>M6</b> (6 mm, 0.24 in.)	7.9 to 9.3	0.80 to 0.95	5.8 to 6.8	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
<b>M8</b> (8 mm, 0.31 in.)	18 to 20	1.8 to 2.1	13 to 15	17 to 19	1.7 to 2.0	13 to 14	24 to 27	2.4 to 2.8	18 to 20	18 to 20	1.8 to 2.1	13 to 15	30 to 34	3.0 to 3.5	22 to 25
<b>M10</b> (10 mm, 0.39 in.)	40 to 45	4.0 to 4.6	29 to 33	32 to 34	3.2 to 3.5	24 to 25	48 to 55	4.9 to 5.7	36 to 41	40 to 44	4.0 to 4.5	29 to 32	61 to 70	6.2 to 7.2	45 to 52
<b>M12</b> (12 mm, 0.47 in.)	63 to 72	6.4 to 7.4	47 to 53	-	-	-	78 to 90	7.9 to 9.2	58 to 66	63 to 72	6.4 to 7.4	47 to 53	103 to 117	10.5 to 12.0	76.0 to 86.7
<b>M14</b> (14 mm, 0.55 in.)	108 to 125	11.0 to 12.8	79.6 to 92.5	-	-	-	124 to 147	12.6 to 15.0	91.2 to 108	-	-	-	167 to 196	17.0 to 20.0	123 to 144
<b>M16</b> (16 mm, 0.63 in.)	167 to 191	17.0 to 19.5	123 to 141	-	-	-	197 to 225	20.0 to 23.0	145 to 166	-	-	-	260 to 304	26.5 to 31.0	192 to 224
<b>M18</b> (18 mm, 0.71 in.)	246 to 284	25.0 to 29.0	181 to 209	-	-	-	275 to 318	28.0 to 32.5	203 to 235	-	-	-	344 to 402	35.0 to 41.0	254 to 296
<b>M20</b> (20 mm, 0.79 in.)	334 to 392	34.0 to 40.0	246 to 289	-	-	-	368 to 431	37.5 to 44.0	272 to 318	-	-	-	491 to 568	50.0 to 58.0	362 to 419

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## [2] STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
	N-m	kgf-m	lbf-ft	N-m	kgf-m	lbf-ft
<b>M8</b> (8 mm, 0.31 in.)	12 to 15	1.2 to 1.6	8.7 to 11	8.9 to 11	0.90 to 1.2	6.5 to 8.6
<b>M10</b> (10 mm, 0.39 in.)	25 to 31	2.5 to 3.2	18 to 23	20 to 25	2.0 to 2.6	15 to 18
<b>M12</b> (12 mm, 0.47 in.)	30 to 49	3.0 to 5.0	22 to 36	31	3.2	23
<b>M14</b> (14 mm, 0.55 in.)	62 to 73	6.3 to 7.5	46 to 54	-	-	-
<b>M16</b> (16 mm, 0.63 in.)	98.1 to 112	10.0 to 11.5	72.4 to 83.1	-	-	-
<b>M18</b> (18 mm, 0.71 in.)	172 to 201	17.5 to 20.5	127 to 148	-	-	-

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### [3] METRIC SCREWS, BOLTS AND NUTS

Grade	 Property class 8.8			 Property class 10.9		
	Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m
<b>M8</b>	24 to 27	2.4 to 2.8	18 to 20	30 to 34	3.0 to 3.5	22 to 25
<b>M10</b>	48 to 55	4.9 to 5.7	36 to 41	61 to 70	6.2 to 7.2	45 to 52
<b>M12</b>	78 to 90	7.9 to 9.2	58 to 66	103 to 117	10.5 to 12.0	76.0 to 86.7
<b>M14</b>	124 to 147	12.6 to 15.0	91.2 to 108	167 to 196	17.0 to 20.0	123 to 144
<b>M16</b>	197 to 225	20.0 to 23.0	145 to 166	260 to 304	26.5 to 31.0	192 to 224

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### [4] AMERICAN STANDARD SCREWS, BOLTS AND NUTS WITH UNC OR UNF THREADS

Grade	 SAE GR.5			 SAE GR.8		
	Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m
<b>1/4</b>	11.7 to 15.7	1.20 to 1.60	8.63 to 11.5	16.3 to 19.7	1.67 to 2.00	12.0 to 14.6
<b>5/16</b>	23.1 to 27.7	2.36 to 2.82	17.0 to 20.5	33 to 39	3.4 to 3.9	25 to 28
<b>3/8</b>	48 to 56	4.9 to 5.7	36 to 41	61 to 73	6.3 to 7.4	45 to 53
<b>1/2</b>	110 to 130	11.3 to 13.2	81.2 to 95.8	150 to 178	15.3 to 18.1	111 to 131
<b>9/16</b>	150 to 178	15.3 to 18.1	111 to 131	217 to 260	22.2 to 26.5	160 to 191
<b>5/8</b>	204 to 244	20.8 to 24.8	151 to 179	299 to 357	30.5 to 36.4	221 to 263

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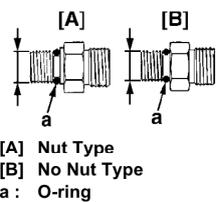
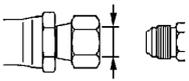
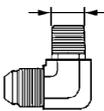
### [5] PLUGS

Shape	Size	Material of opponent part					
		Ordinariness			Aluminum		
		N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
<b>Tapered screw</b> 	<b>R1/8</b>	13 to 21	1.3 to 2.2	9.4 to 15	13 to 19	1.3 to 2.0	9.4 to 14
	<b>R1/4</b>	25 to 44	2.5 to 4.5	18 to 32	25 to 34	2.5 to 3.5	18 to 25
	<b>R3/8</b>	49 to 88	5.0 to 9.0	37 to 65	49 to 58	5.0 to 6.0	37 to 43
	<b>R1/2</b>	58.9 to 107	6.00 to 11.0	43.4 to 79.5	59 to 78	6.0 to 8.0	44 to 57
<b>Straight screw</b> 	<b>G1/4</b>	25 to 34	2.5 to 3.5	18 to 25	–	–	–
	<b>G3/8</b>	62 to 82	6.3 to 8.4	46 to 60	–	–	–
	<b>G1/2</b>	49 to 88	5.0 to 9.0	37 to 65	–	–	–

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# [6] HYDRAULIC FITTINGS

## (1) Adaptors, Elbows and Others

Item	Shape	Thread size	Tightening torque		
			N·m	kgf·m	lbf·ft
Adjustable elbow, Adaptor (O-ring port) (UNF)	 <p>[A] Nut Type [B] No Nut Type a : O-ring</p>	9/16	37 to 44	3.8 to 4.4	28 to 32
		3/4	48 to 54	4.9 to 5.5	36 to 39
		7/8	77 to 85	7.9 to 8.6	57 to 62
Hose fitting, Flare nut (UNF)		9/16	22 to 25	2.3 to 2.5	17 to 18
		3/4	36 to 40	3.7 to 4.0	27 to 29
		7/8	43 to 50	4.4 to 5.0	32 to 36
Adaptor (NPT)		1/4	30 to 50	3.1 to 5.0	23 to 36
		3/8	39 to 60	4.0 to 6.1	29 to 44
		1/2	49 to 58	5.0 to 5.9	37 to 42

■ NOTE

- When connecting a hose with flare nut, after tightening the nut with specified torque, return it approximately 45 degrees (0.79 rad) and re-tighten it to specified torque.

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## 5. MAINTENANCE CHEK 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 Interval	Check Points	Reference page
Daily (Each use)	Check the transmission fluid level	G-8
	Check the hydraulic hoses	G-8
Every 10 hours	Grease all grease nipples	G-8
	Lubricate joints of control level linkage	G-8
Every 50 hours	Check main frame bolt torque	G-9

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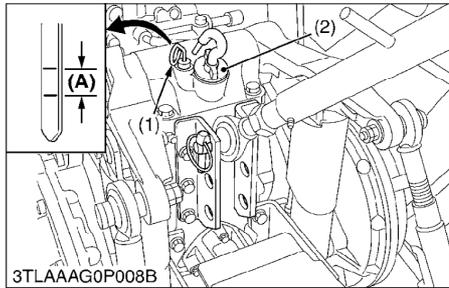
# 6. CHECK AND MAINTENANCE

## ⚠ 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.

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### [1] CHECK POINTS OF EACH USE OR ONLY



#### Checking Transmission Fluid Level

1. Check the oil level at the gauge (1).
2. If the level is too low, add new oil to the prescribed level at the oil.

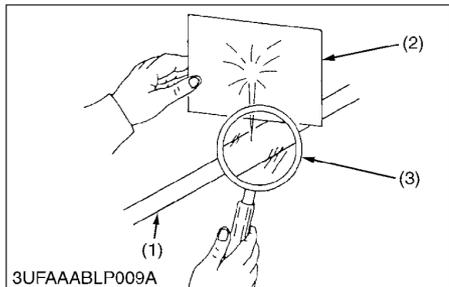
#### ■ IMPORTANT

- Use only KUBOTA UDT or SUPER UDT fluid. Use of other oils may damage the transmission or hydraulic system. Refer to "3. LUBRICANTS".

- (1) Gauge  
(2) Oil Filling Plug

(A) Oil level is acceptable within this range.

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#### Checking Hydraulic Hoses

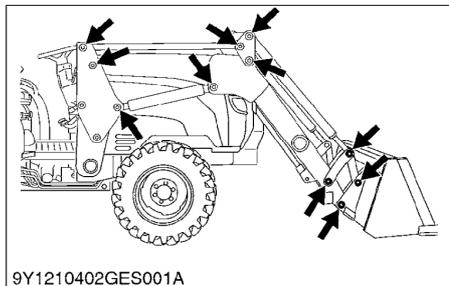
1. With the engine off and bucket on the ground, check all hydraulic hoses (1) for cuts or wear.
2. Check for signs of leaks and make sure all fittings are tight.
3. If defects are found, replace them.

- (1) Hydraulic Hose  
(2) Cardboard

(3) Magnifying Glass

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### [2] CHECK POINTS OF EVERY 10 HOURS



#### Greasing

1. Inject grease in all grease fitting with a hand grease gun.

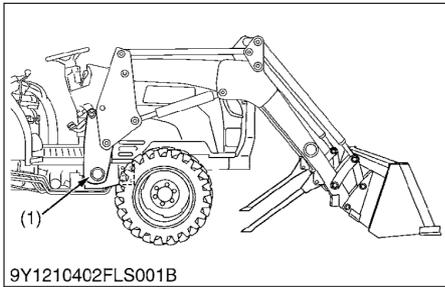
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#### Lubricating

1. Lubricate joints of control lever linkage.

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### [3] CHECK MAIN FRAME BOLT TORQUE



#### Checking Main Frame Bolt Torque

1. Check main frame bolt torque.
2. If they are loose, tighten them.

#### ■ IMPORTANT

- **Never operate front loader with a loose main frame.**

Tightening torque	Main frame bolt	226 N·m 23 kgf·m 166 lbf·ft
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- (1) Main Frame Bolt

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# 1 FRONT LOADER

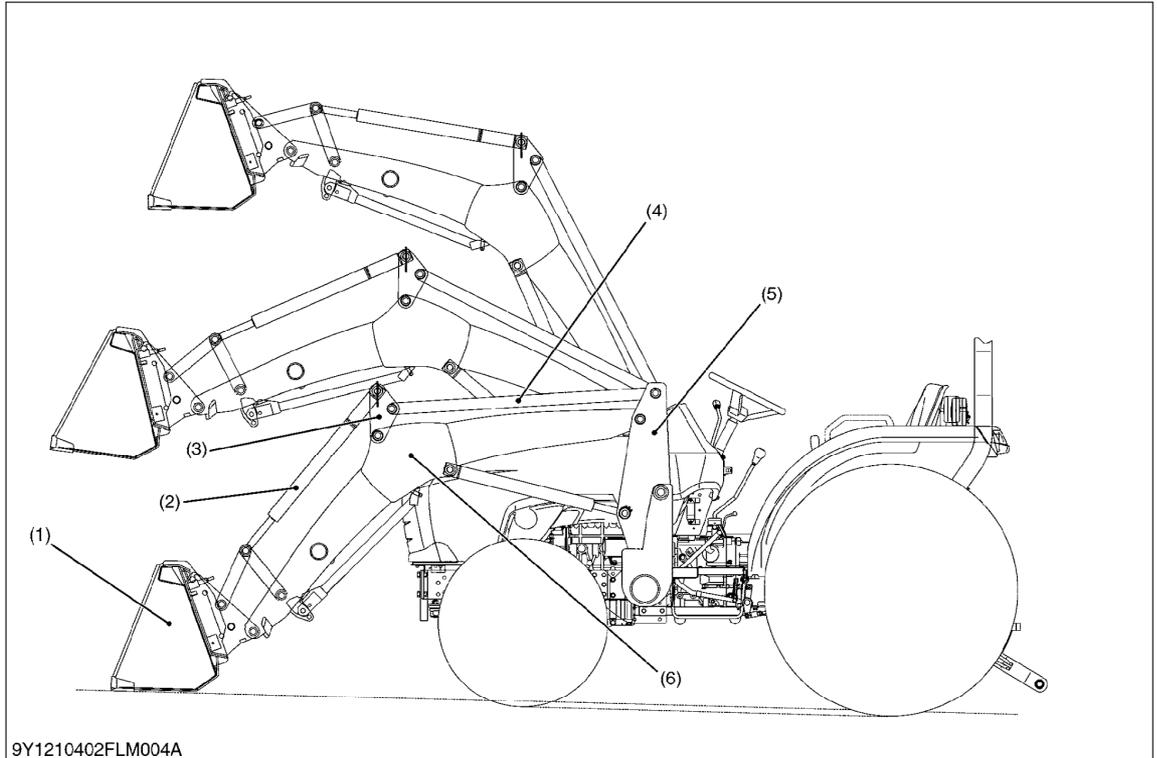
# MECHANISM

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# 1. SELF-LEVELING

## [1] PARALLEL LINKAGE TYPE



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- |                     |                     |                       |          |
|---------------------|---------------------|-----------------------|----------|
| (1) Bucket          | (3) Parallel Link 2 | (5) Loader Side Frame | (6) Boom |
| (2) Bucket Cylinder | (4) Parallel Link 1 |                       |          |

When the pallet fork etc. are installed to loader as option and operate the loader, it is necessary to maintain the angle of implements to same position even if the boom is at any position. This system helps the operation of the above-mentioned.

This mechanism maintains a level of bucket angle mechanically when the boom is raised or lowered. This is a structure that the side frame (5), boom (6), and bucket cylinder (2) are connected by the parallel links (3), (4).

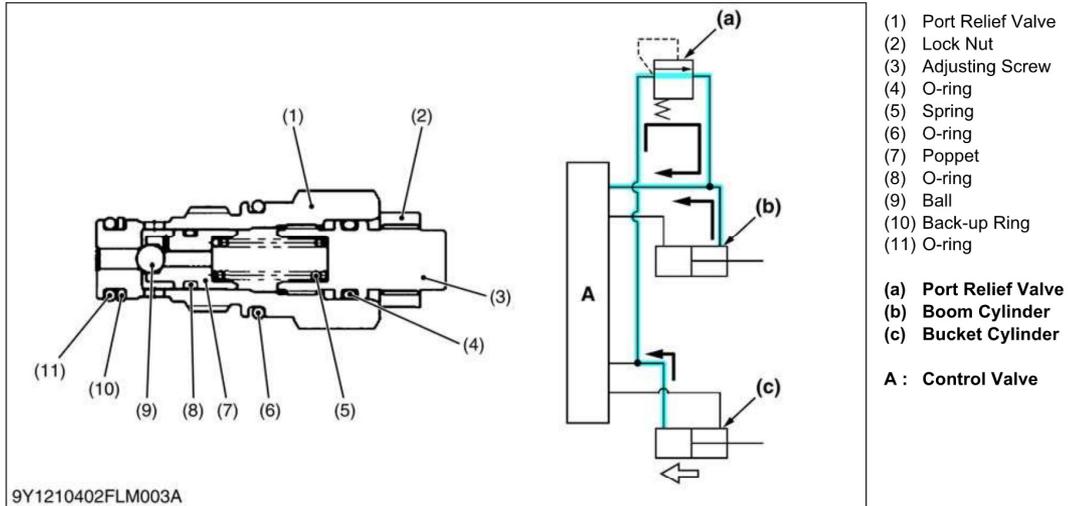
### ■ Operation

When the boom (6) is being raised (or lowered), the parallel link 1 and 2 (3), (4) are moved, and the bucket cylinder (2) which is connected with links (3), (4) also is moved simultaneously. The tilting angle of bucket is maintained by this cylinder movement related to the raising (or lowering) of the boom.

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## [2] PORT RELIEF VALVE

Up



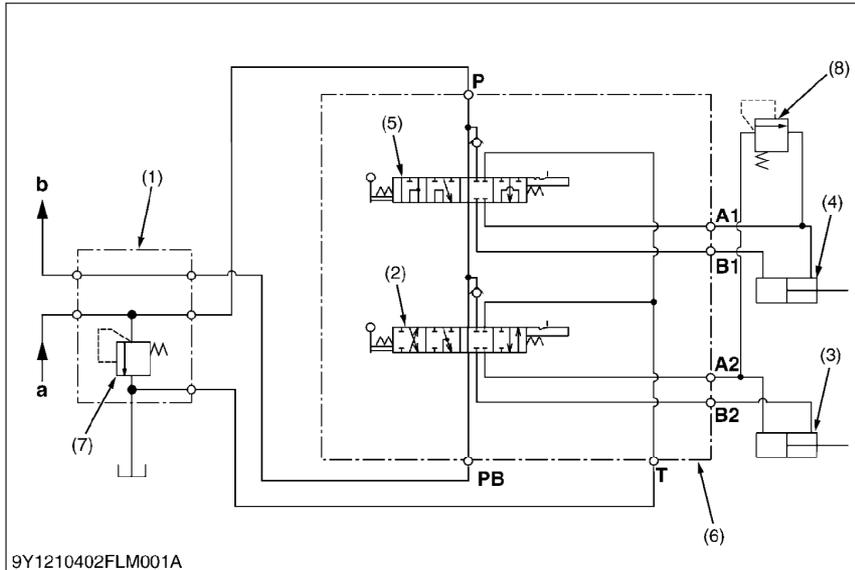
The port relief valve (a) operates to protect hydraulic components. When boom cylinders (b) raise up, then the port relief valve (a) relieves the pressure of bucket cylinder bottom side.

1. When boom cylinders (b) raise up, parallel links support bucket cylinders (c).
2. The pressure of bucket cylinder bottom side increase.
3. The port relief valve (a) opens to reduce the pressure because of preventing from damaging.
4. Hydraulic oil of bucket cylinders bottom side and boom cylinder rod side flow to 3-point hydraulic system.

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## 2. HYDRAULIC CIRCUIT

### [1] OIL FLOW



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

- P : P Port
- T : T Port
- A1 : A1 Port
- B1 : B1 Port
- A2 : A2 Port
- B2 : P Port
- PB : Power Beyond Port
- a : From Pump
- b : To 3-Point Hydraulic System

9Y1210402FLM001A

LA714, LA854 Loader attache parallel links.

When boom cylinders raise up, these loader operate self-leveling by mechanical.

The port relief valve (8) operates to protect hydraulic components.

When boom cylinders raise up, the port relief valve (8) relieves the pressure of bucket cylinder (3) bottom side.

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