

Product: Kubota LA714AU-C Service Manual

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# WSM

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WORKSHOP MANUAL  
**FRONT LOADER**

**LA714AU-C**

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**Kubota**

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## TO THE READER

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

### ■ Information

This section primarily contains information below.

- Safety First
- Safety Decal
- Specifications
- 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.

July, 2012

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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

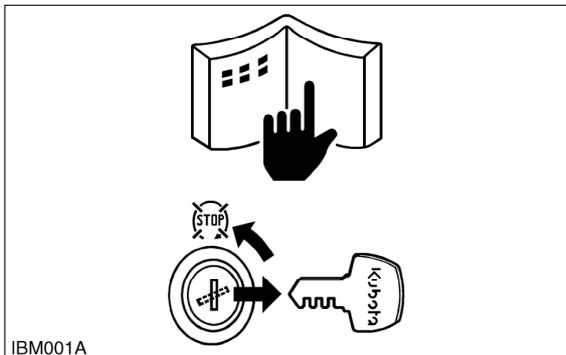
- Gives helpful information.

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### 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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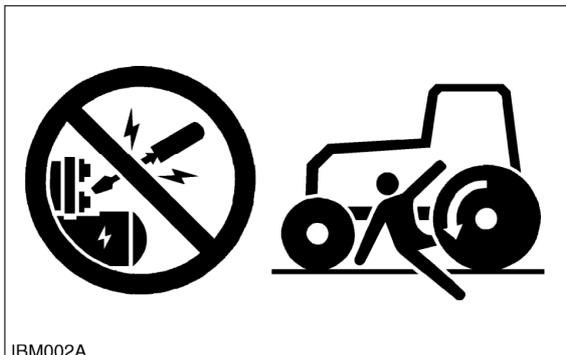


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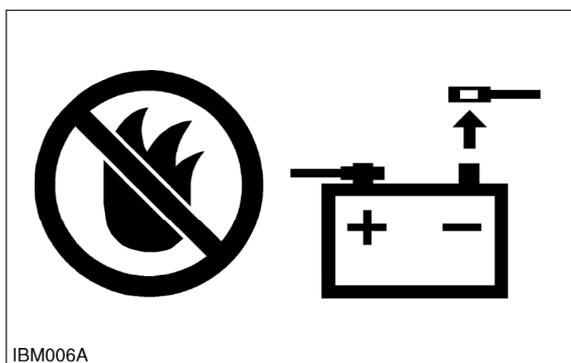
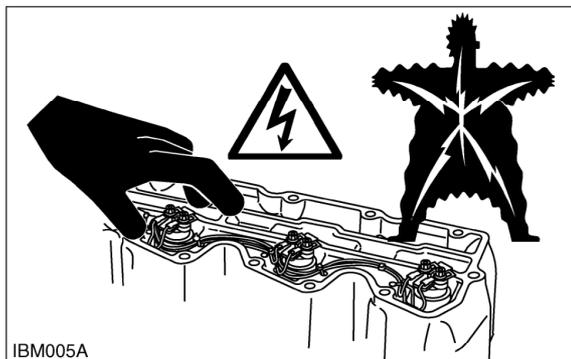
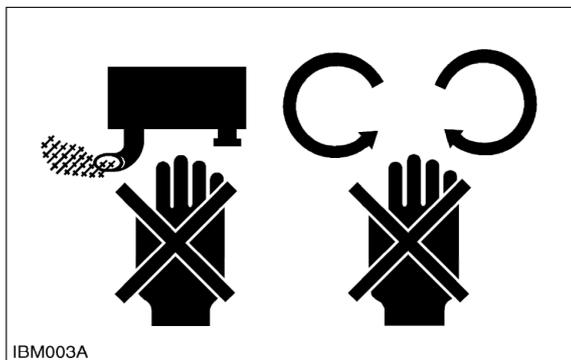
### START SAFELY

- 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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**OPERATE SAFELY**

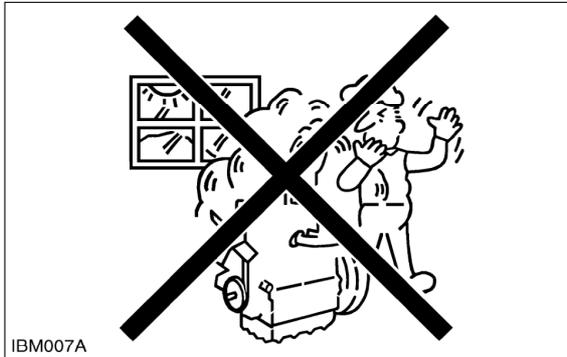
- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below 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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**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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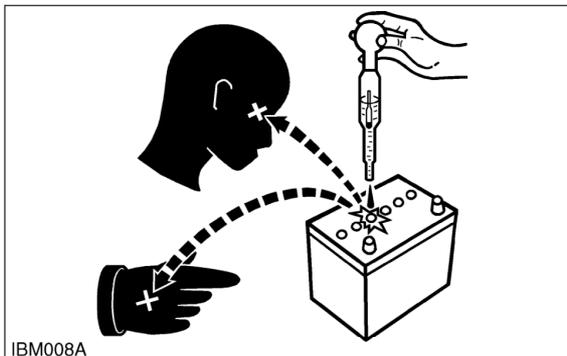


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**DISCARD FLUIDS CORRECTLY**

- 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.

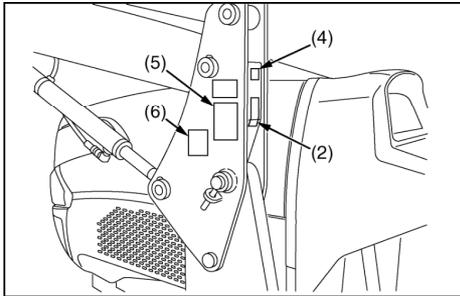
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## 2. SAFETY DECALS

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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### LA714AU-C

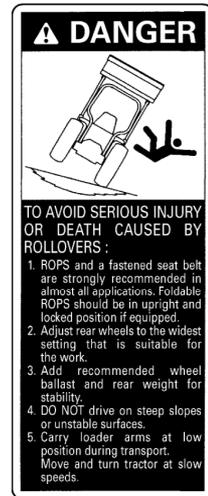


(1) Part No. 7J246-5643-1

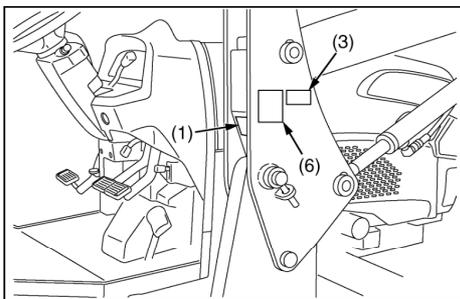
(2) Part No. 7J246-5641-1



1A1ABAHAP016A



1A1ABAHAP017A



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

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

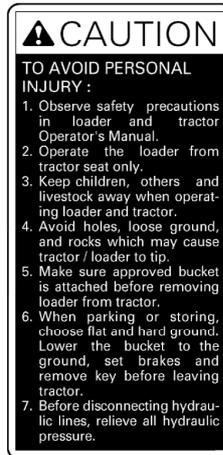


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(5) Part No. 7J246-5645-1



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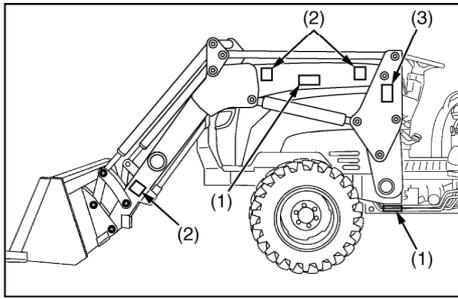
(6) Part No. 7J246-5644-2 (Both sides)



1A1ABAHAP020A

9Y1210780ICI001US

9Y1210780INI0001US0



(3) Part No. 7J286-5637-1

Tractor Model:	L4600
Rated Operating Load (ROL):	530kg
Counterweight Required:	500kg
Date Of Supply:	/ / 20
<b>⚠ WARNING</b>	
-DO NOT EXCEED ROL. -DO NOT OPERATE LOADER WITHOUT COUNTERWEIGHT. -DO NOT EXCEED 10KM/H WHEN TRAVELLING WITH LOAD. -ROL IS CALCULATED WITH STANDARD BUCKET OPTIONAL ATTACHMENTS (4IN1 BUCKET ETC) WILL REDUCE THE ROL.	

(1) Part No. 7J802-5848-1

	<b>⚠ WARNING</b>
	Install cylinder locks before performing maintenance under raised loader arms. Failure to comply could result in death or serious injury. <ul style="list-style-type: none"> <li>• Empty loader bucket and place in dump position, raise boom until boom lock channel can be positioned on cylinder rod, then stop engine.</li> <li>• Pull pin and lower boom lock onto the cylinder rod, then insert pin into the hole of lower right corner of boom lock.</li> <li>• Slowly lower boom until boom is stopped.</li> </ul>

1HNADAAAP0120

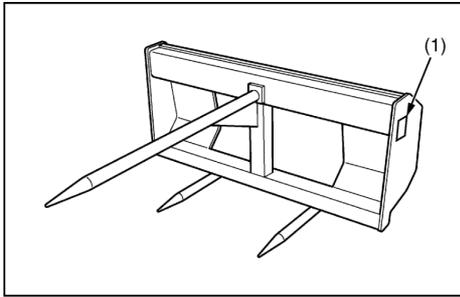
1AIABEJAP011B

(2) Part No. 7J615-5633-1

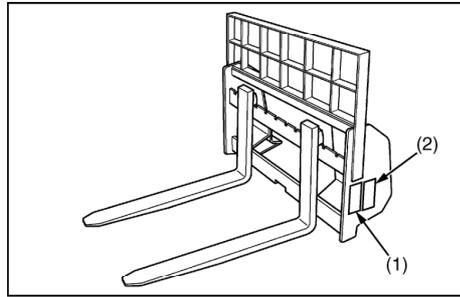
<b>⚠ WARNING</b>
TO AVOID PERSONAL INJURY: KEEP HANDS AWAY FROM CRUSH ZONE.

9Y1210780IC1002US

9Y1210780INI0002US0



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



(2) Part No. 7J266-3923-9

**⚠ DANGER**

**TO AVOID SERIOUS INJURY OR DEATH CAUSED BY FALLING LOADS :**

1. Load on raised bucket or fork can fall or roll back onto operator causing serious injury or death.
2. Use approved clamping and / or guard attachments for handling large, loose or shiftable loads such as bales, posts, sheets of plywood etc.
3. Carry loads as low as possible.

1A1ABACAP075A

**⚠ DANGER**

**PALLET FORK SPECIFICATION**

- Rated capacity
 

LA853, LA854, LA844	: 1300 LBS. (590 kg)
LA703A, LA723, LA724, LA714, LA764	: 1000 LBS. (454 kg)
LA754N	: 925 LBS. (420 kg)
LA513, LA514, TL500	: 800 LBS. (363 kg)
LA463, LA524	: 710 LBS. (322 kg)
- The distance to its center of gravity from the attachment face
 

LA853, LA854, LA844	: 22.6in (575 mm)
LA703A, LA723, LA724, LA714, LA764, LA754N, LA513, LA514, TL500, LA463, LA524	: 19.6in (498 mm)
- The weight of the attachment (not including tynes) : 203 LBS. (92 kg)

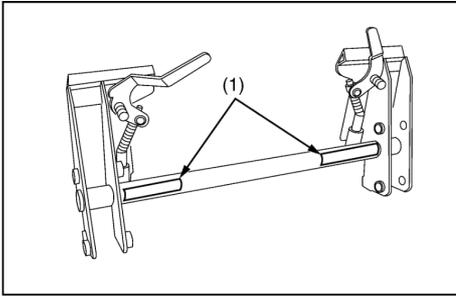
**TO AVOID PERSONAL INJURY OR DEATH CAUSED BY ROLLOVER**

- Do not exceed rated load listed above.
- Use rear implement and tire ballast recommended in loader operator's manual.
- Operate tractor slowly taking special care when turning.

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9Y1210780IC1003US

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

<b>⚠ DANGER</b>			
TO AVOID PERSONAL INJURY OR DEATH			
1. Make sure both handles (LH, RH) (A) contact the ear plates (B) at the * points and are all the way down.	2. Make sure both lock pins (LH, RH) (C) protrude through the pin slots (D).	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.
(A) HANDLE (B) EAR PLATE (C) LOCK PIN (D) PIN SLOT		For information contact your Kubota Dealer	

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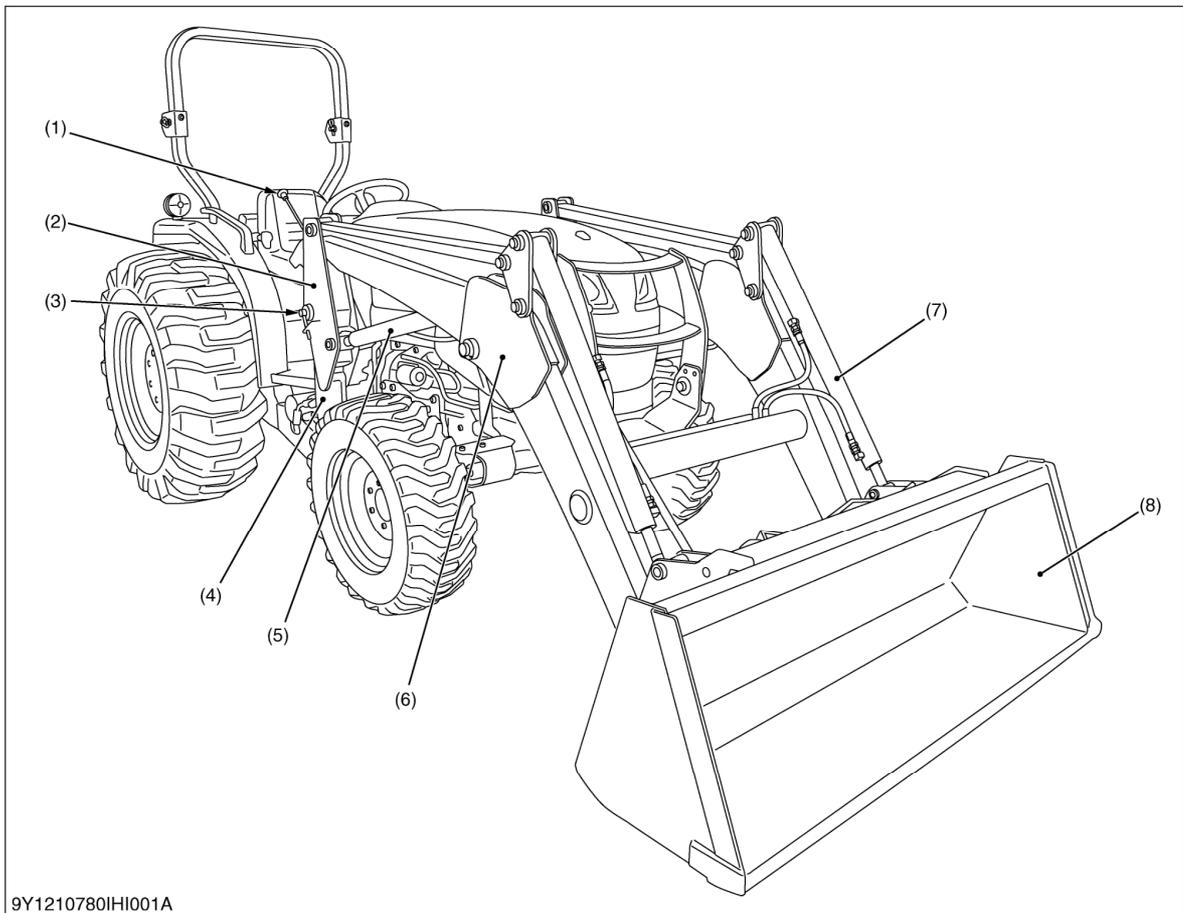
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**CARE OF DANGER, WARNING AND CAUTION LABELS**

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 from your local KUBOTA dealer.
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 replace component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressure any bubbles to outside edge.

9Y1210780INI0005US0

### 3. LOADER TERMINOLOGY



9Y1210780IH1001A

(1) Loader Control Lever  
(2) Side Frame  
(3) Mounting Pin

(4) Main Frame  
(5) Boom Cylinder

(6) Boom  
(7) Bucket Cylinder

(8) Bucket

9Y1210780INI0006US0

# 4. SPECIFICATIONS

## ■ Suitable Tractor

Loader Model	LA714AU-C
Tractor Model	L4600

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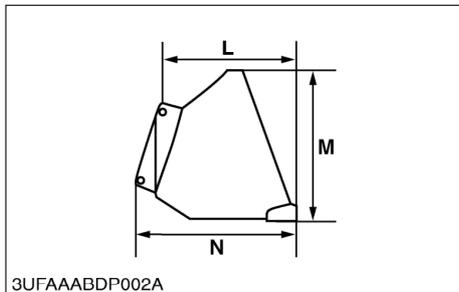
### [1] LOADER SPECIFICATIONS

Loader Model		LA714AU-C
Tractor Model		L4600
Wheel Base		1845 mm (72.64 in.)
Front Tires		8.3 - 16
Rear Tires		14.9 - 24
Boom Cylinder	Bore	50.0 mm (1.97 in.)
	Stroke	520 mm (20.5 in.)
Bucket Cylinder	Bore	50.0 mm (1.97 in.)
	Stroke	480.5 mm (18.92 in.)
Control Valve		3 position bucket control valve type
Rated Flow		29.4 L/min. 7.77 U.S.gals/min. 6.47 Imp.gals/min.
Maximum Pressure		18.1 MPa 185 kgf/cm <sup>2</sup> 2630 psi
Net Weight (Approximate)		*560 kg (1230 lbs)

\* Include the main frame, quick attach coupler, quick bucket 66", front guard and control valve.

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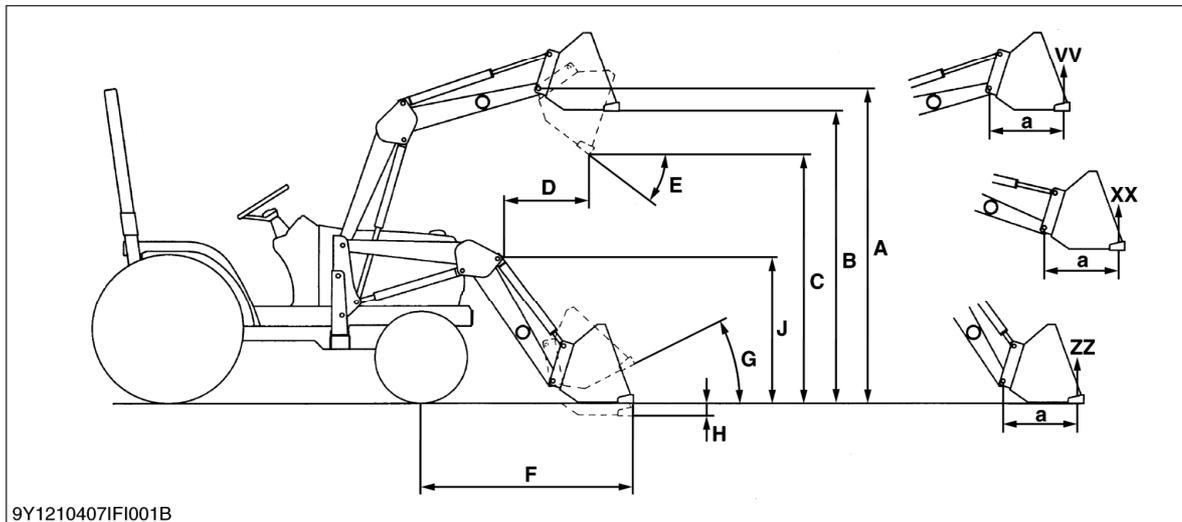
### [2] BUCKET SPECIFICATIONS



Loader Model		LA714AU-C
Model		Square 66"
Type		Quick attach
Width		1675 mm (65.94 in.)
Depth (L)		458 mm (18 in.)
Height (M)		562 mm (22.1 in.)
Length (N)		544 mm (21.4 in.)
Capacity	Struck	0.23 m <sup>3</sup> (8.1 cu.ft)
	Heaped	0.28 m <sup>3</sup> (9.9 cu.ft)
Weight		120 kg (265 lbs)

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### [3] DIMENSIONAL AND OPERATIONAL SPECIFICATIONS



9Y12104071FI001B

**■ Dimensional Specifications**

Loader Model		LA714AU-C
Tractor Model		L4600
<b>A</b>	Maximum lift height (To bucket pivot pin)	2604 mm (102.5 in.)
<b>B</b>	Maximum lift height under level bucket	2412 mm (94.96 in.)
<b>C</b>	Clearance with bucket dumped	2011 mm (79.17 in.)
<b>D</b>	Reach at maximum lift height (Dumping reach)	638 mm (25.1 in.)
<b>E</b>	Maximum dump angle	44 deg. (0.77 rad)
<b>F</b>	Reach with bucket on ground	1756 mm (69.13 in.)
<b>G</b>	Bucket roll-back angle	47.5 deg. (0.829 rad)
<b>H</b>	Digging depth	104 mm (4.09 in.)
<b>J</b>	Overall height in carry position	1518 mm (59.76 in.)
<b>a</b>	Length	500 mm (19.7 in.)

**■ Operational Specifications**

Loader Model		LA714AU-C
Tractor Model		L4600
Lift capacity to maximum height (Bucket bottom mid point)		500 kg (1100 lbs)
<b>VV</b>	Bucket roll-back force at Maximum height	8686 N (1953 lbf)
<b>XX</b>	Bucket roll-back force at 1.5 m (59 in.) lift height	12435 N (2795.5 lbf)
<b>ZZ</b>	Bucket roll-back force at ground level	12551 N (2821.6 lbf)
Raising time		3.4 sec.
Lowering time		2.1 sec.
Bucket dumping time		1.2 sec.
Bucket roll-back time		1.6 sec.

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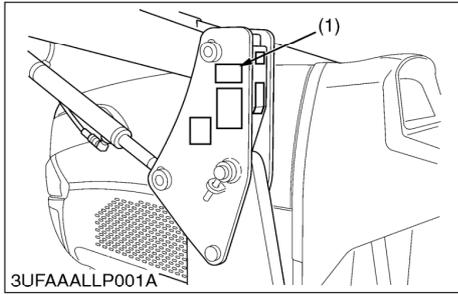
# **G GENERAL**

# GENERAL

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# 1. LOADER IDENTIFICATION

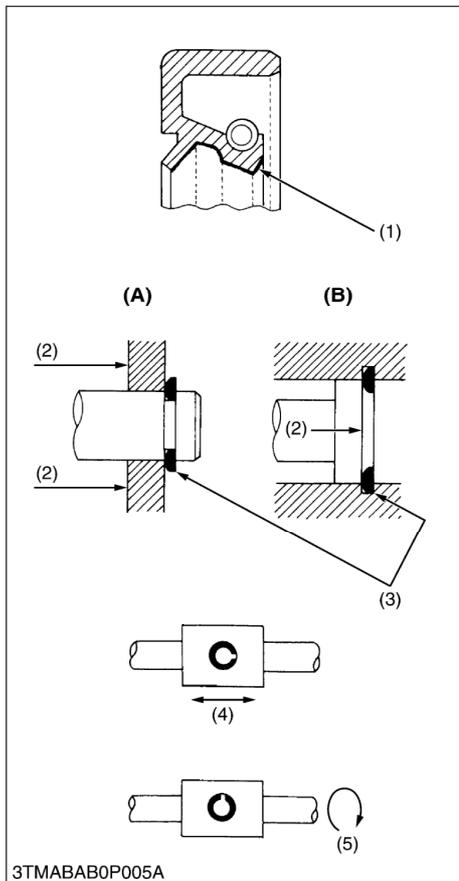


When contacting your local KUBOTA distributor, always specify front loader's serial number (1).

(1) Serial Number

9Y1210780GEG0001US0

## 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 tapers 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
	L4600	
	4WD HST	
Transmission case	40.0 L 10.6 U.S.gals 8.80 Imp.gals	KUBOTA UDT or SUPER UDT fluid*
Grease fitting	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)

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	  4 No-grade or 4T						  7T or Property class 8.8						 9  10.9 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
M8	24 to 27	2.4 to 2.8	18 to 20	30 to 34	3.0 to 3.5	22 to 25
M10	48 to 55	4.9 to 5.7	36 to 41	61 to 70	6.2 to 7.2	45 to 52
M12	78 to 90	7.9 to 9.2	58 to 66	103 to 117	10.5 to 12.0	76.0 to 86.7
M14	124 to 147	12.6 to 15.0	91.2 to 108	167 to 196	17.0 to 20.0	123 to 144
M16	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
1/4	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
5/16	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
3/8	48 to 56	4.9 to 5.7	36 to 41	61 to 73	6.3 to 7.4	45 to 53
1/2	110 to 130	11.3 to 13.2	81.2 to 95.8	150 to 178	15.3 to 18.1	111 to 131
9/16	150 to 178	15.3 to 18.1	111 to 131	217 to 260	22.2 to 26.5	160 to 191
5/8	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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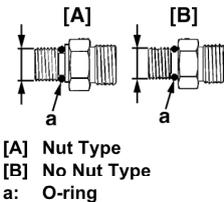
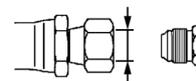
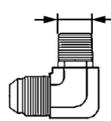
### [5] PLUGS

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

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## [6] HYDRAULIC FITTINGS

### (1) Adapters, Elbows and Others

Item	Shape	Thread size	Tightening torque		
			N·m	kgf·m	lbf·ft
Adjustable elbow, Adapter (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
Adapter (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 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 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 fitting	G-8
	Lubricate joints of control lever linkage	G-8
Every 50 hours	Check main frame bolt torque	G-9

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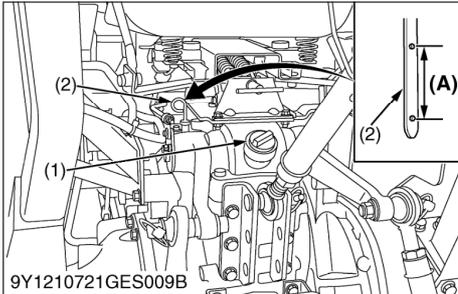
## 6. CHECK AND MAINTENANCE

### 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 DAILY



#### 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.

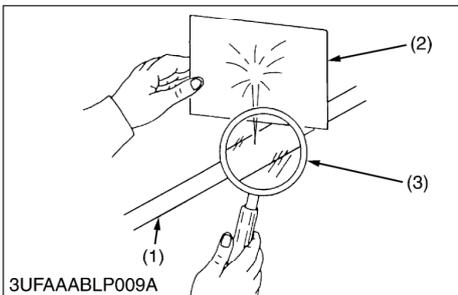
#### ■ IMPORTANT

- Use only KUBOTA UDT or SUPER UDT fluid.  
Use of other oils may damage the transmission or hydraulic system. (See page G-3.)

- (1) Oil Filling Plug  
(2) Gauge

(A) Oil level is acceptable within this range.

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#### Checking Hydraulic Hoses

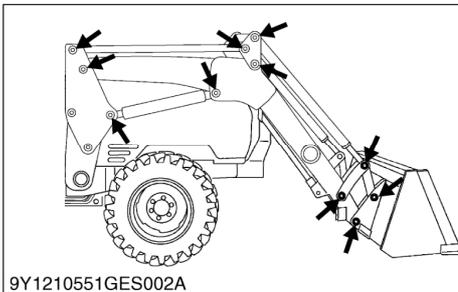
1. With the engine off and bucket on the ground, check all hydraulic hoses (1) for cuts or wear.
2. Check for signs of leaks and make sure all fittings are tight.
3. If defects are found, replace them.

- (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.

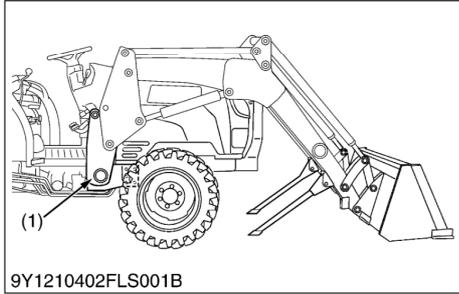
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#### Lubricating

1. Lubricate joints of control lever linkage.

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### [3] CHECK POINTS OF EVERY 50 HOURS



#### 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 23.0 kgf·m 167 lbf·ft
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(1) Main Frame Bolt

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# 1 FRONT LOADER

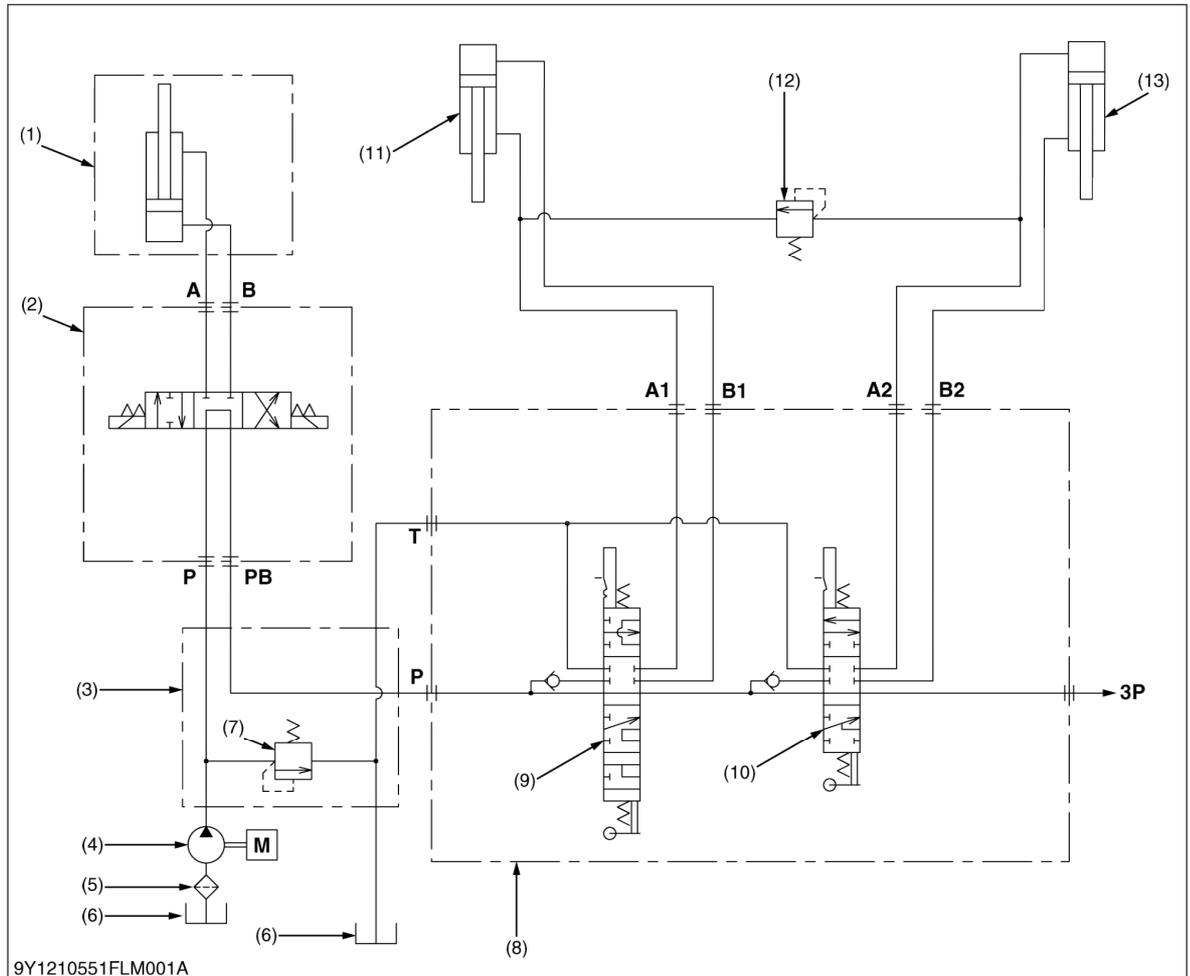
# MECHANISM

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# 1. HYDRAULIC CIRCUIT

## LA714AU-C



- |  |                           |   |  |
|--|---------------------------|---|--|
| (1) Hydraulic Cylinder(s) and Hydraulic Hose(s) (Pipes) (Option) | (7) Relief Valve          | <b>P:</b> Pump Port                               | <b>A:</b> Third Function Cylinder A Port |
| (2) Third Function Valve (Option)                                | (8) Loader Control Valve  | <b>PB:</b> Power Beyond Port                      | <b>B:</b> Third Function Cylinder B Port |
| (3) Hydraulic Block  | (9) Boom Control Valve    | <b>T:</b> Tank Port                               | <b>A1:</b> Boom Cylinder A1 Port         |
| (4) Hydraulic Pump   | (10) Bucket Control Valve | <b>3P:</b> Tractor Three Point Hydraulic Cylinder | <b>B1:</b> Boom Cylinder B1 Port         |
| (5) Oil Filter   | (11) Boom Cylinder(s)     |   | <b>A2:</b> Bucket Cylinder A2 Port       |
| (6) Transmission Case  | (12) Port Relief Valve    |   | <b>B2:</b> Bucket Cylinder B2 Port       |
|  | (13) Bucket Cylinder(s)   |   |  |

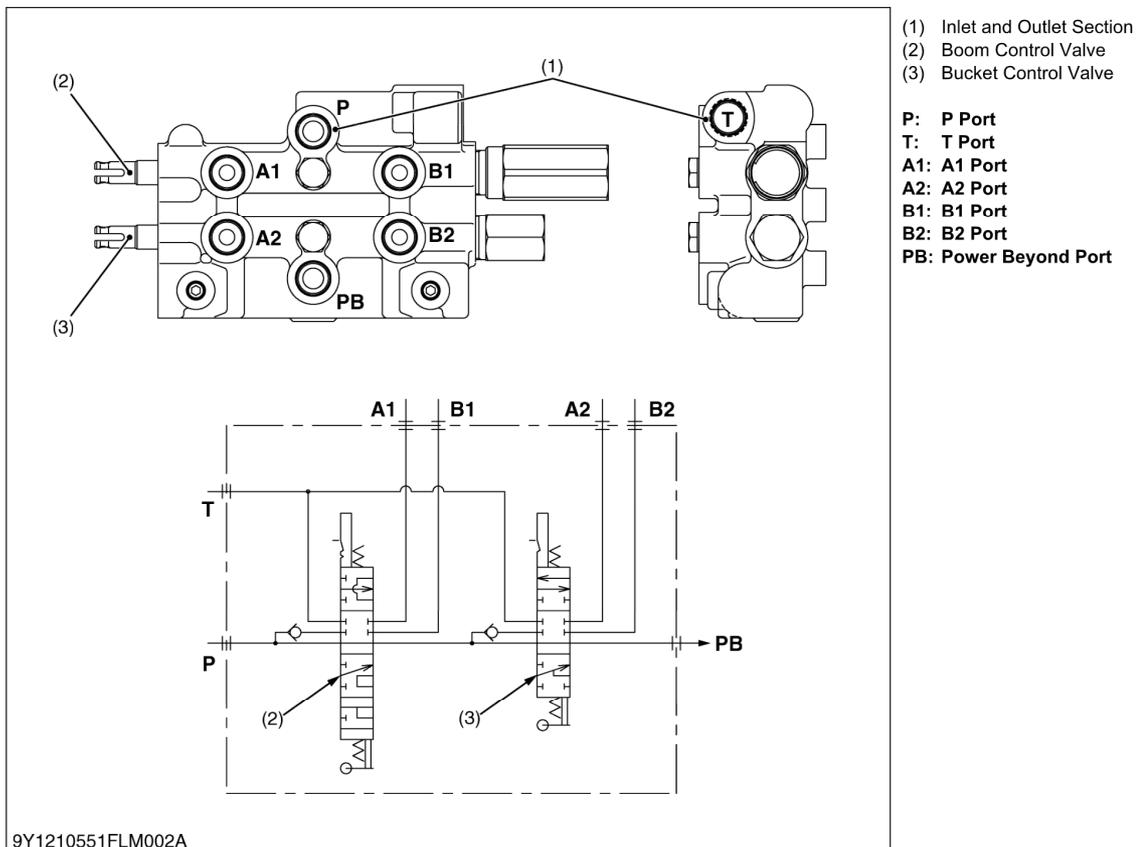
The hydraulic cylinders and the hydraulic hoses (pipes) (1), and the third function valve are option parts.  
The hydraulic oil flow is controlled by the loader control valve (8).

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## 2. CONTROL VALVE ASSEMBLY

### [1] STRUCTURE

LA714AU-C



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

#### (1) Inlet and Outlet Section

P port and T port are in this section.

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, detente, spring center type spool, consisting of a mono block valve housing, load check valve, etc. This valve connects to **A1** and **B1** ports and controls oil flow to the boom cylinder.

#### (3) Bucket Control Section

The bucket control valve is of 3-position, 6-connection, no detente, spring center type spool, consisting of a mono block valve housing, load check valve, etc. This valve connects to **A2** and **B2** ports and controls oil flow to the bucket cylinder.

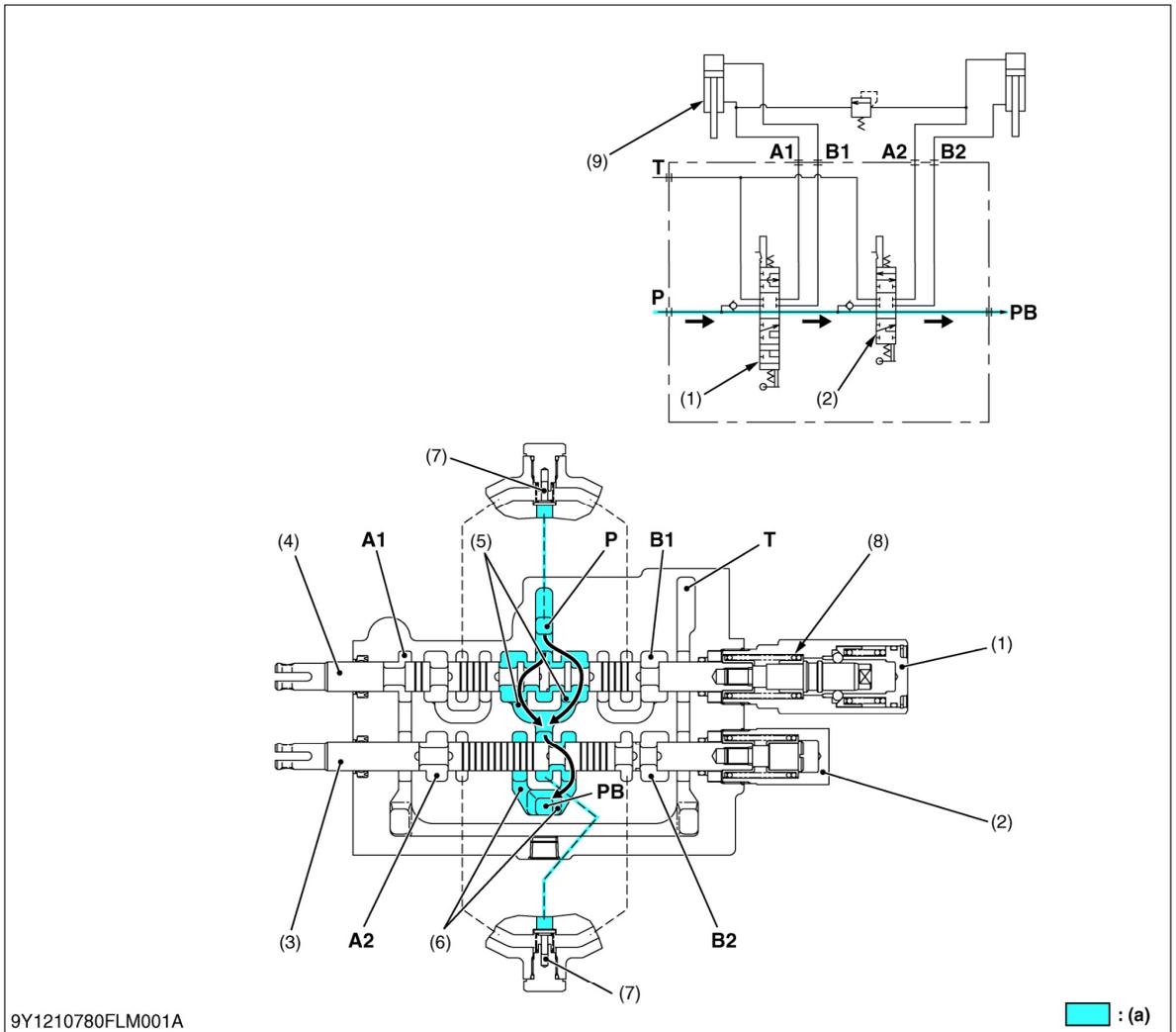
#### (4) Power Beyond

This section includes **PB** port which is connected to the **INLET** port of hydraulic block by the hydraulic hose, and feeds oil to the 3P hydraulic control valve.

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# 121 BOOM CYLINDER CONTROL

## "NEUTRAL" Position



9Y1210780FLM001A

(a)

- (1) Boom Control Section
- (2) Bucket Control Section
- (3) Spool (Bucket)
- (4) Spool (Boom)
- (5) PB Passage 1

- (6) PB Passage 2
- (7) Load Check Valve
- (8) Neutral Spring
- (9) Boom Cylinder

- T: T Port
- P: P Port
- A1: A1 Port
- A2: A2 Port

- B1: B1 Port
- B2: B2 Port
- PB: Power Beyond Port
- (a) Low Pressure

When the operator releases the loader control lever, the spool (Boom) (4) is kept at the center of the loader hydraulic control valve by the neutral spring (8) in the boom control section (1).

In this condition, the hydraulic oil flows as shown in the figure.

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