

Product: Kubota M95X M105X M125X Service Manual

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# WSM

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WORKSHOP MANUAL  
**TRACTOR**

**M95X, M105X, M125X**

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**Kubota**

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KiSC issued 10, 2017 A

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## TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of M95X, M105X and M125X. It is divided into three parts, "General", "Mechanism" and "Servicing".

### ■ General

Information on the tractor identification, the general precautions, maintenance check list, check and maintenance and special tools are described.

### ■ Mechanism

Information on the construction and function are included. This part should be understood before proceeding with troubleshooting, disassembling and servicing.

Refer to Diesel Engine / Tractor Mechanism Workshop Manual (Code No. 97897-01872 / 97897-18200) for the one which has not been described to this workshop manual.

### ■ Servicing

Information on the troubleshooting, servicing specification lists, tightening torque, checking and adjusting, disassembling and assembling, and servicing which cover procedures, precautions, factory specifications and allowable limits.

All information illustrations and specifications contained in this manual are based on the latest product information available at the time of publication.

The right is reserved to make changes in all information at any time without notice.

Due to covering many models of this manual, information or picture being used, have not been specified as one model.

August 2005

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**Record of Revisions**

For pdf, use search function {Search word} to find all the revised locations.

<b>Last digit of the Code No.</b>	<b>Issue month</b>	<b>Main Revised Point and Corrective Measures {Search word}</b>	<b>Reference Page</b>
<b>2</b>	2013.06	Adjusting Front Axle Pivot Adjustment Procedure is changed	6-S5, 6-S7
<b>3</b>	2017.07	Updated contents of parking brake case	3-S38, 5-S12
<b>4</b>	2017.10	• Additional information Changed the main shift clutch (H-L).	3-S26, 3-S40



## 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

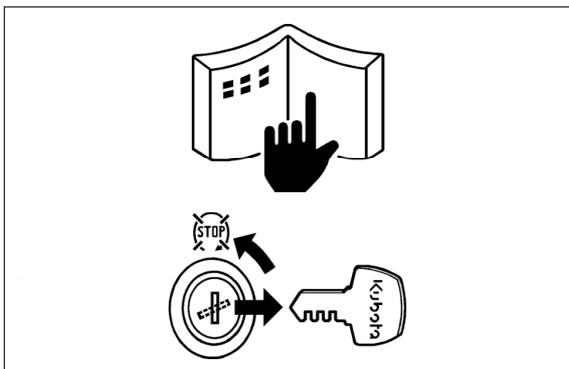
: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

### ■ IMPORTANT

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

### ■ NOTE

: Gives helpful information.



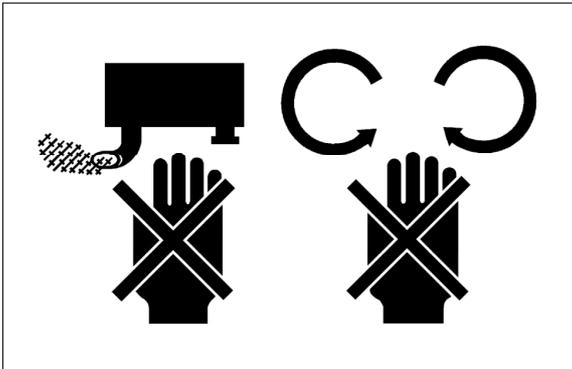
### BEFORE SERVICING AND REPAIRING

- 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.



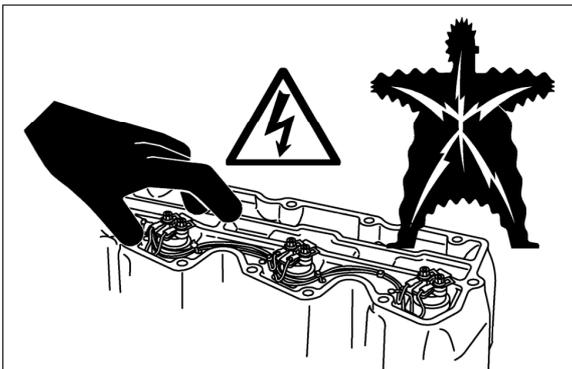
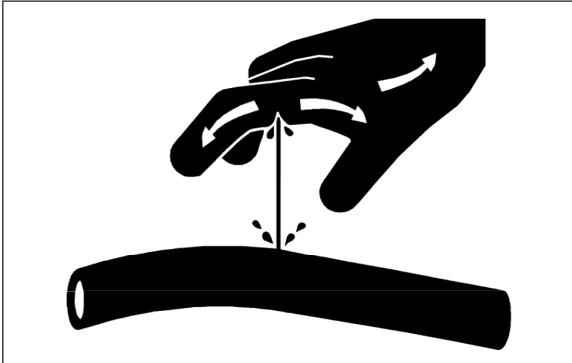
### SAFETY STARTING

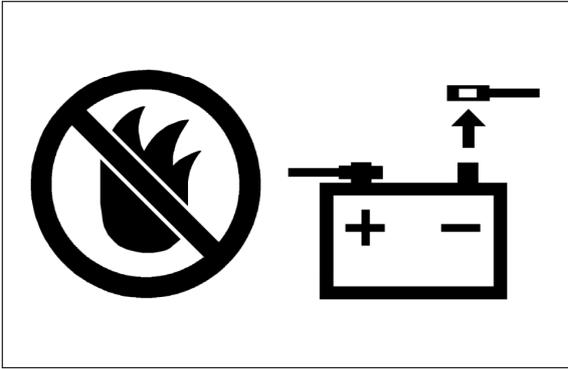
- Do not start the engine by shorting across starter terminals or bypassing the safety start switch.
- Do not alter or remove any part of machine safety system.
- Before starting the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Never start the engine while standing on ground. Start the engine only from operator's seat.



### SAFETY WORKING

- Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- Wear close fitting clothing and safety equipment appropriate to the job.
- Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Do not work under the machine that is supported solely by a jack. Always support the machine by safety stands.
- Do not touch the rotating or hot parts while the engine is running.
- Never remove the radiator cap while the engine is running, or immediately after stopping. Otherwise, hot water will spout out from radiator. Only remove radiator cap when cool enough to touch with bare hands. Slowly loosen the cap to first stop to relieve pressure before removing completely.
- Escaping fluid (fuel or hydraulic oil) under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or fuel lines. Tighten all connections before applying pressure.
- Do not open high-pressure fuel system. High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt repair fuel lines, sensors, or any other components between the high-pressure fuel pump and injectors on engines with high pressure common rail fuel system.
- High voltage exceeding 100 V is generated in the ECU, and is applied to the injector. Pay sufficient caution to electric shock when performing work activities.





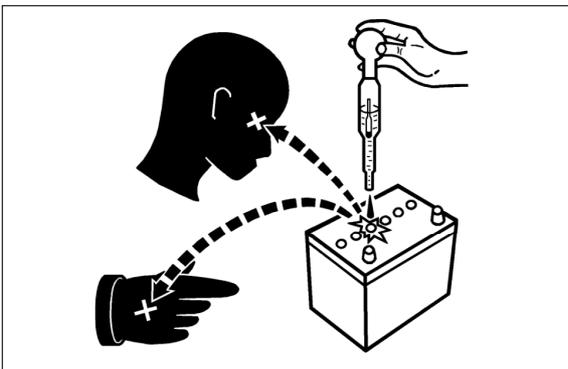
### AVOID FIRES

- Fuel is extremely flammable and explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.
- To avoid sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- Battery gas can explode. Keep sparks and open flame away from the top of battery, especially when charging the battery.
- Make sure that no fuel has been spilled on the engine.



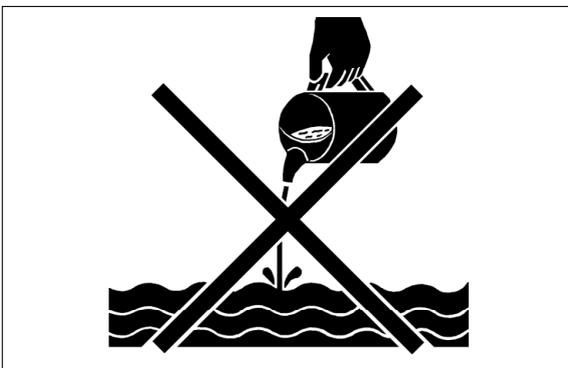
### VENTILATE WORK AREA

- If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.



### PREVENT ACID BURNS

- Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, clothing and cause blindness if splashed into eyes. Keep electrolyte away from eyes, hands and clothing. If you spill electrolyte on yourself, flush with water, and get medical attention immediately.



### DISPOSE OF FLUIDS PROPERLY

- Do not pour fluids into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, electrolyte and other harmful waste.



**PREPARE FOR EMERGENCIES**

- Keep a first aid kit and fire extinguisher handy at all times.
- Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

## SAFETY DECALS

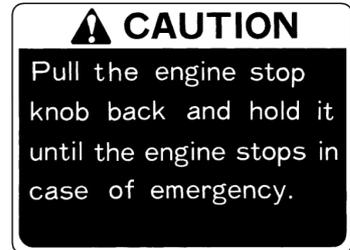
The following safety decals are installed on the machine.

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

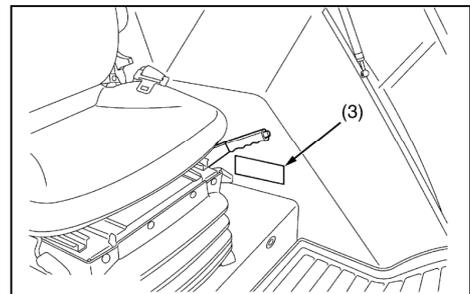
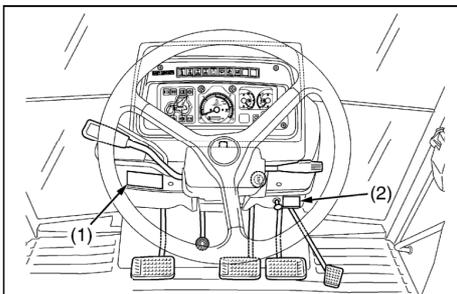
(1) Part No. 3F240-9857-1



(2) Part No. 35080-6528-2



(3) Part No. TA240-4933-2

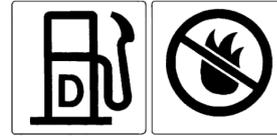


3TMACAJCP001A

(1) Part No. TA040-4965-2

	<p style="text-align: center;"><b>⚠ DANGER</b></p> <p><b>TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.</b></p> <p>1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.</p> <p>2. Start engine only from operator's seat with transmission and PTO OFF.</p> <p>Never start engine while standing on the ground.</p>
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(2) Part No. TA040-4956-2  
 Diesel fuel only No fire



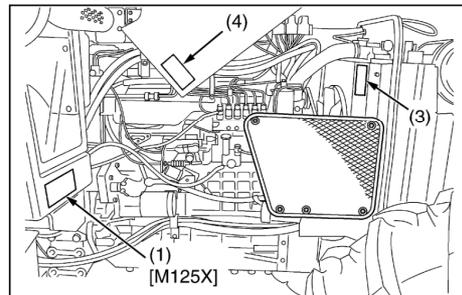
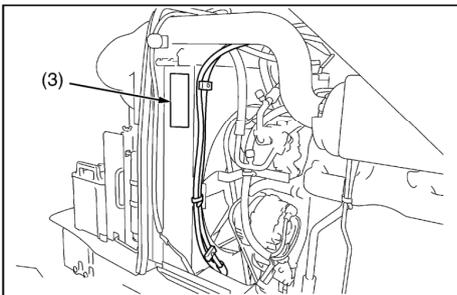
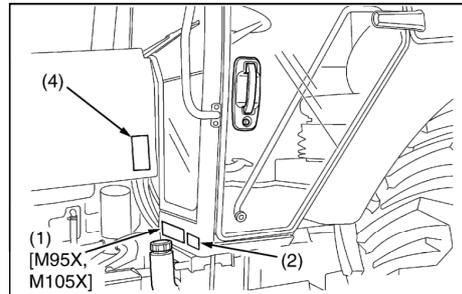
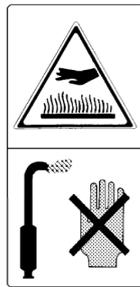
(3) Part No. TA040-4957-1

Stay clear of engine fan and fanbelt.



(4) Part No. 3N300-4958-1

Do not touch hot surface like muffler, etc.



3TMACAJCP002A

- (1) Part No. 3F240-9819-1  
Do not stand by IMPLEMENT or between implement and tractor while operating remote hitch switch.



- (2) Part No. 3P305-9856-1

**⚠ CAUTION**

**TO AVOID INJURY FROM SEPARATION:**

GROOVE

LH

**DO NOT EXTEND LIFT ROD BEYOND THE GROOVE ON THE THREADED ROD.**

GROOVE

RH

- (3) Part No. TA040-4935-1

**⚠ WARNING**

**TO AVOID PERSONAL INJURY:**

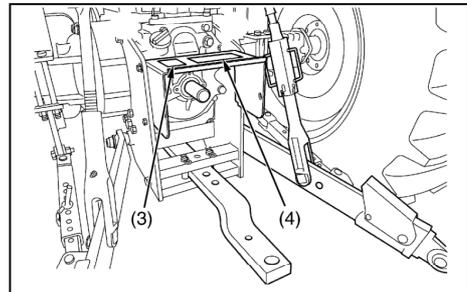
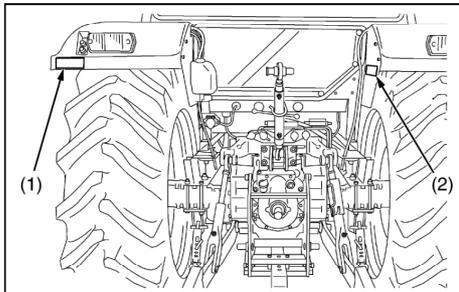
1. Attach pulled or towed loads to the drawbar only.
2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.

- (4) Part No. TA040-4959-3

**⚠ WARNING**

**TO AVOID PERSONAL INJURY.**

1. Keep PTO shield in place at all times.
2. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer.
3. For trailing PTO-driven implements, set drawbar at towing position. (see operator's manual)



3TMACAJCP003A

(1) Part No. 3F240-9836-2

**CAUTION****TO AVOID PERSONAL INJURY:**

1. Read and understand the operator's manual before operation.
2. Before starting the engine, make sure that everyone is at a safe distance from tractor and the PTO is off.
3. Do not allow passengers on the tractor at any time.
4. Before allowing other people to use the tractor, have them read the operator's manual.
5. Check the tightness of nuts and bolts regularly.
6. Keep all shields in place and stay away from all moving parts.
7. Lock the two brake pedals together before driving on the road.
8. Slow down for turns, or rough roads, or when applying individual brakes.
9. On public roads use SMV emblem and hazard lights, if required by local traffic and safety regulations.
10. Pull only from the drawbar.
11. Before dismantling, lower the implement to the ground, set the parking brake, stop the engine and remove the key.
12. Securely support tractor and implements before working underneath.

(2) Part No. TA040-4902-1

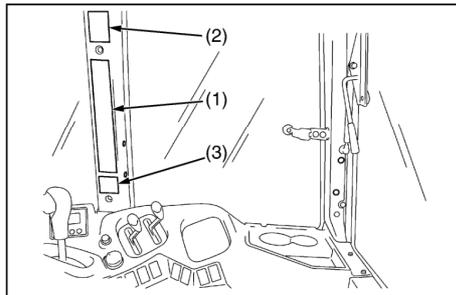
**WARNING**

**TO AVOID INJURY OR DEATH FROM ROLL-OVER:**  
Always use seat belt when driving.

(3) Part No. 3F240-9821-1

**WARNING****TO AVOID MACHINE RUNAWAY DUE TO 4WD BRAKING SYSTEM:**

Do not run engine with only rear wheels off ground.

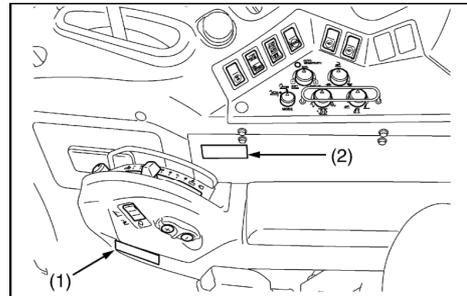


3TMACAJCP004A

(1) Part No. 3F240-4966-1



(2) Part No. 3F240-4905-2

**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 or 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 pressing any bubbles to outside edge.

3TMACAJCP005A

# SPECIFICATIONS

Model		M95X	M105X	M125X	
Engine	Model	V3800TE2	V3800TIE2	F5802TE2	
	Type	Direct injection, W/turbocharger, water-cooled, 4-cycle diesel			
	Number of cylinders	4		5	
	Total displacement	3769 cm <sup>3</sup> (230 cu.in.)		5832 cm <sup>3</sup> (356 cu.in.)	
	Bore and stroke	100 × 120 mm (3.94 × 4.72 in.)		109 × 125 mm (4.29 × 4.92 in.)	
	Net power	70.9 kW (95 HP)*	78.2 kW (105 HP)*	93.2 kW (125 HP)*	
	PTO power (factory observe)	59.7 kW (80 HP)* / 2600 min <sup>-1</sup> (rpm)	67.1 kW (90 HP)* / 2600 min <sup>-1</sup> (rpm)	76.8 kW (103 HP)* / 2400 min <sup>-1</sup> (rpm)	
	Maximum torque	323 N·m (33.0 kgf·m, 238 lbf·ft) / 1500 min <sup>-1</sup> (rpm)	363 N·m (37.1 kgf·m, 267 lbf·ft) / 1500 min <sup>-1</sup> (rpm)	475 N·m (48.5 kgf·m, 350 lbf·ft) / 1300 min <sup>-1</sup> (rpm)	
	Battery capacity	12 V, 100 Ah at 20 hours, 900CCA		12 V, 120 Ah at 5 hours, 1045CCA	
	Fuel	Diesel fuel No. 1 [below -10 °C (14 °F)], Diesel fuel No. 2-D [above -10 °C (14 °F)]			
	Fuel tank capacity	190 L (50.2 U.S.gal., 41.8 Imp.gals)			
	Engine oil capacity	10.5 L (11.1 U.S.qts., 9.2 Imp.qts.)		20.8 L (22.0 U.S.qts., 18.3 Imp.qts.)	
	Coolant capacity	9.0 L (9.5 U.S.qts., 7.9 Imp.qts.)		13.0 L (13.7 U.S.qts., 11.4 Imp.qts.)	
Dimensions	Overall length	4190 mm (165 in.)		4390 mm (172.8 in.)	
	Overall width (min. tread)	1825 mm (71.9 in.)	2125 mm (83.7 in.)		
	Overall height	2645 mm (104.1 in.)	2670 mm (105.1 in.)	2730 mm (107.5 in.)	
	Wheel base	2435 mm (95.9 in.)		2690 mm (105.9 in.)	
	Tread	Front	1430 to 1530 mm (56.3 to 60.2 in.)	1450 to 1550 mm (57.1 to 61.0 in.)	1640 to 1740 mm (64.6 to 68.5 in.)
		Rear	1530 to 2010 mm (60.2 to 79.1 in.)		
Crop clearance	480 mm (18.9 in.)	520 mm (20.5 in.)	580 mm (22.8 in.)		
Weight	3690 kg (8136 lbs)		3820 kg (8423 lbs)	4130 kg (9106 lbs)	
Travelling system	Standard tire size	Front	12.4R24	13.6R24	14.9R24
		Rear	16.9R34	18.4R34	18.4R38
	Clutch	Multiple wet disc, Electronic Hydraulically operated			
	Steering	Hydrostatic power steering			
	Braking system	Hydraulically operated wet disk			
Differential	Bevel gears with differential lock (Front, Rear)				
Hydraulic system	Hydraulic control system	Electronic draft control			
	Pump capacity	76.4 L (20.2 U.S.gals, 16.8 Imp.gals) / min.		75.9 L (20.1 U.S.gals, 16.7 Imp.gals) / min.	
	Three point hitch	SAE Category 2			
	Max. lifting force	At lift points**	3900 kg (8600 lbs) at lower link end with links horizontal	5000 kg (11025 lbs) at lower link end with links horizontal	
		24 in. behind lift points	3300 kg (7276 lbs)	4300 kg (9481 lbs)	
	Remote hydraulic control	Two remote valve with detent and self-canceling			
	System pressure	19.1 MPa (195 kgf/cm <sup>2</sup> , 2773 psi)			
Traction system	Swinging drawbar, adjustable in direction				
PTO	Live PTO (Independent)	Direction of turning	Clockwise, viewed from tractor rear		
		Standard PTO	540 min <sup>-1</sup> / 2205 min <sup>-1</sup> 1000 min <sup>-1</sup> / 2389 min <sup>-1</sup>	540 min <sup>-1</sup> / 2035 min <sup>-1</sup> 1000 min <sup>-1</sup> / 2210 min <sup>-1</sup>	

Note : \* Manufacturer's estimate

\*\* At lower link and with links horizontal.

The company reserves the right to change the specifications without notice.

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# TRAVELING SPEEDS

(At rated engine rpm)

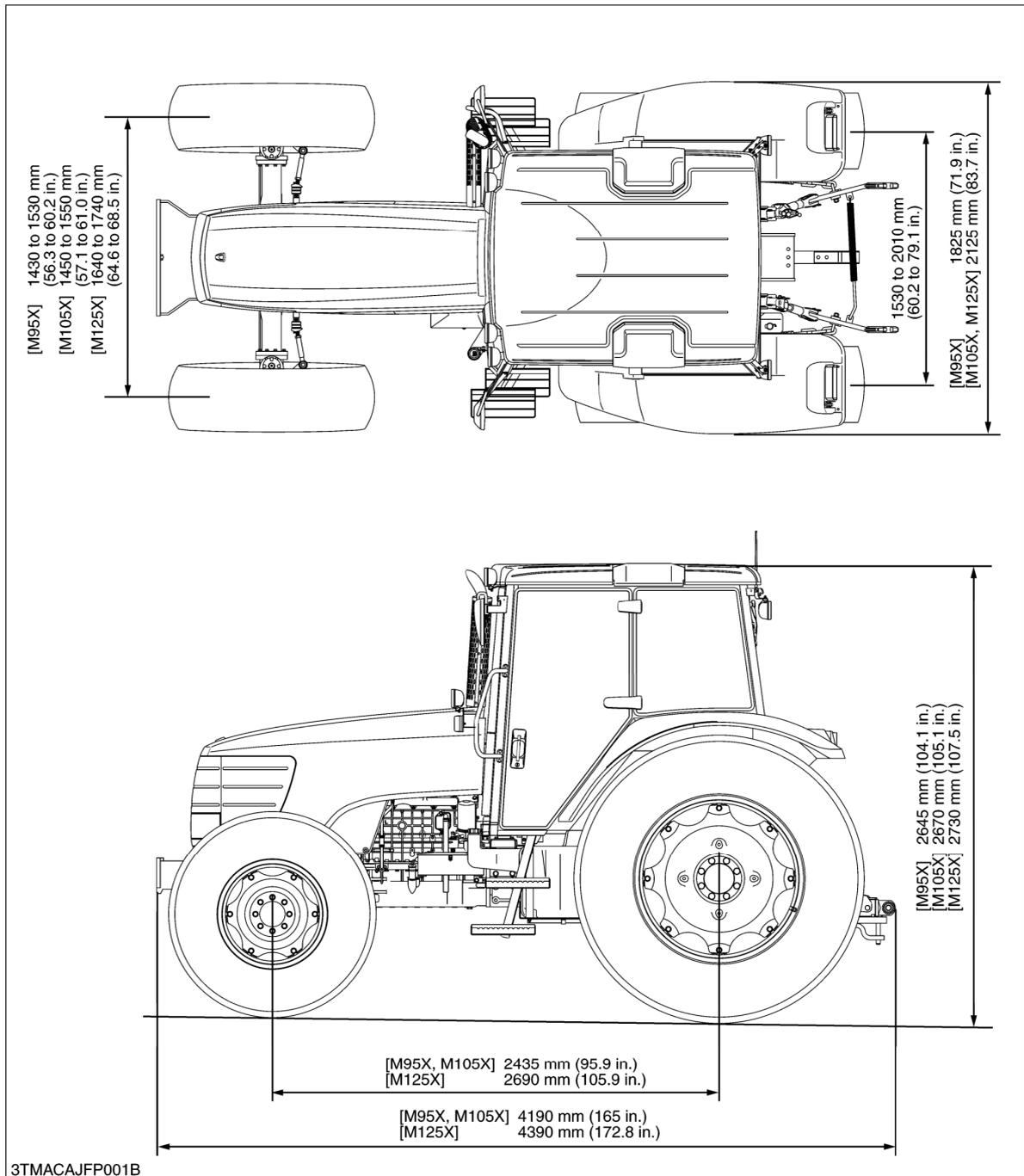
Model	M95X		M105X		M125X	
	16.9R34		18.4R34		18.4R38	
Tire size (Rear)	16.9R34		18.4R34		18.4R38	
Range	km/h	mph	km/h	mph	km/h	mph
C1	0.36	0.22	0.37	0.23	0.36	0.22
C2	0.45	0.28	0.46	0.29	0.45	0.28
C3	0.56	0.35	0.58	0.36	0.56	0.35
C4	0.66	0.41	0.68	0.42	0.70	0.44
C5	0.88	0.55	0.90	0.56	0.88	0.55
C6	1.10	0.68	1.13	0.70	1.09	0.68
C7	1.37	0.85	1.41	0.88	1.37	0.85
C8	1.61	1.00	1.66	1.03	1.72	1.07
1	2.01	1.25	2.06	1.28	2.00	1.24
2	2.50	1.55	2.57	1.60	2.49	1.55
3	3.13	1.94	3.21	1.99	3.12	1.94
4	3.68	2.29	3.78	2.35	3.92	2.43
5	4.92	3.06	5.04	3.13	4.90	3.05
6	6.12	3.80	6.28	3.90	6.11	3.79
7	7.66	4.76	7.86	4.88	7.64	4.75
8	9.01	5.60	9.24	5.74	9.59	5.96
9	7.02	4.36	7.20	4.47	7.00	4.35
10	8.74	5.43	8.97	5.57	8.72	5.42
11	10.93	6.79	11.22	6.97	10.90	6.77
12	12.86	7.99	13.19	8.20	13.69	8.51
13	17.18	10.68	17.63	10.96	17.13	10.64
14	21.40	13.30	21.96	13.65	21.34	13.26
15	26.76	16.63	27.46	17.06	26.68	16.58
16*	33.64	20.90	34.53	21.46	36.02	22.38

The company reserves the right to change the specifications without notice.

\* At maximum engine rpm.

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# DIMENSIONS



# **G GENERAL**

# GENERAL

## CONTENTS

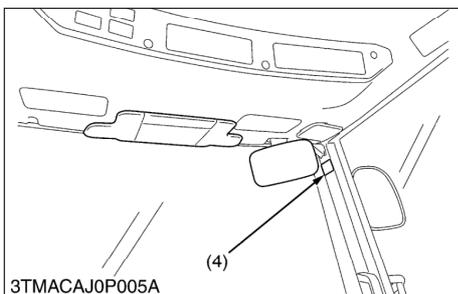
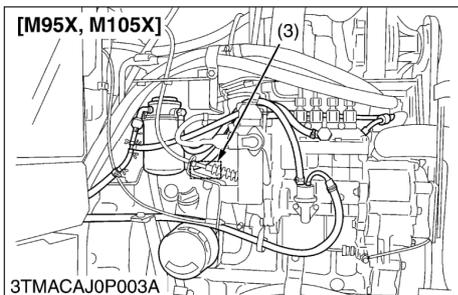
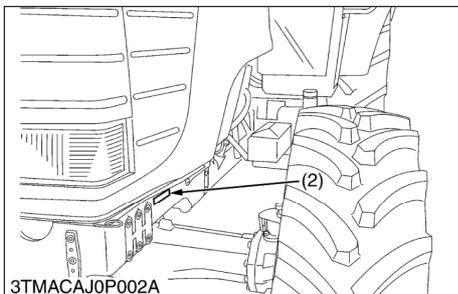
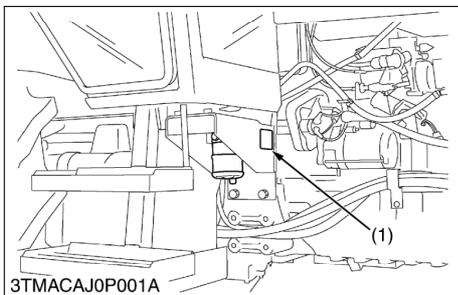
1. TRACTOR IDENTIFICATION .....	G-1
2. GENERAL PRECAUTIONS .....	G-2
3. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING ..	G-3
[1] WIRING .....	G-3
[2] BATTERY .....	G-5
[3] FUSE .....	G-5
[4] CONNECTOR .....	G-5
[5] HANDLING OF CIRCUIT TESTER .....	G-6
4. LUBRICANTS FUEL AND COOLANT .....	G-7
5. TIGHTENING TORQUES .....	G-9
[1] GENERAL USE SCREWS, BOLTS AND NUTS .....	G-9
[2] STUD BOLTS .....	G-9
[3] HYDRAULIC FITTINGS .....	G-10
6. MAINTENANCE .....	G-11
7. CHECK AND MAINTENANCE .....	G-14
[1] DAILY CHECK .....	G-14
[2] CHECK POINTS OF INITIAL 50 HOURS .....	G-15
[3] CHECK POINTS OF EVERY 50 HOURS .....	G-19
[4] CHECK POINTS OF EVERY 100 HOURS .....	G-21
[5] CHECK POINTS OF EVERY 200 HOURS .....	G-28
[6] CHECK POINTS OF EVERY 300 HOURS .....	G-32
[7] CHECK POINTS OF EVERY 400 HOURS .....	G-33
[8] CHECK POINTS OF EVERY 600 HOURS .....	G-34
[9] CHECK POINT OF EVERY 800 HOURS .....	G-34
[10]CHECK POINT OF EVERY 1500 HOURS .....	G-34
[11]CHECK POINTS OF EVERY 3000 HOURS .....	G-35
[12]CHECK POINTS OF EVERY 1 YEAR .....	G-35
[13]CHECK POINTS OF EVERY 2 YEARS .....	G-36
[14]OTHERS .....	G-40
8. SPECIAL TOOLS .....	G-45
[1] SPECIAL TOOLS FOR ENGINE .....	G-45
[2] SPECIAL TOOLS FOR TRACTOR .....	G-64
9. TIRES .....	G-75
[1] TYPE OF TIRES .....	G-75
[2] TREAD ADJUSTMENT .....	G-75
(1) Front Wheel .....	G-75
(2) Rear Wheel .....	G-77
[3] WHEEL HUB .....	G-78
[4] TIRE PRESSURE .....	G-78
[5] TIRE LIQUID INJECTION .....	G-79
10. IMPLEMENT LIMITATIONS .....	G-82

# 1. TRACTOR IDENTIFICATION

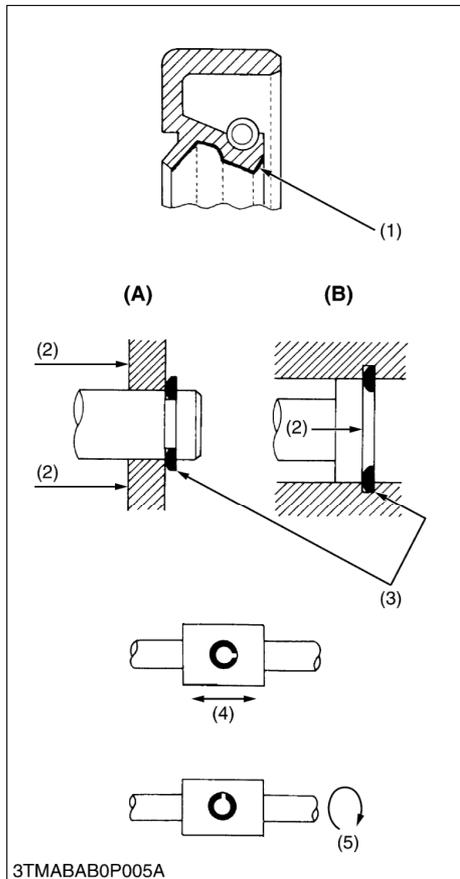
When contacting your local KUBOTA distributor, always specify engine serial number, tractor serial number and hourmeter reading.

- (1) Tractor Identification Plate
- (2) Tractor Serial Number
- (3) Engine Serial Number
- (4) Cabin Identification Plate (Cabin Serial Number)

W1010594



## 2. GENERAL PRECAUTIONS



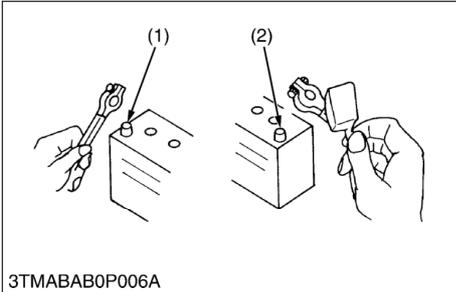
- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Screws, bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently used should be made according to the drawings provided.
- Before disassembling or servicing electrical wires, always disconnect the ground cable from the battery first.
- Remove oil and dirt from parts before measuring.
- Use only KUBOTA genuine parts for parts replacement to maintain machine performance and to assure safety.
- Gaskets and O-rings must be replaced during reassembly. Apply grease to new O-rings or oil seals before assembling. See the figure left side.
- When reassembling external snap rings or internal snap rings, they must be positioned so that sharp edge faces against the direction from which a force is applied. See the figure left side.
- 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.

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

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

W1010904

### 3. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING



3TMABAB0P006A

To ensure safety and prevent damage to the machine and surrounding equipment, heed the following precautions in handling electrical parts and wiring.

**■ IMPORTANT**

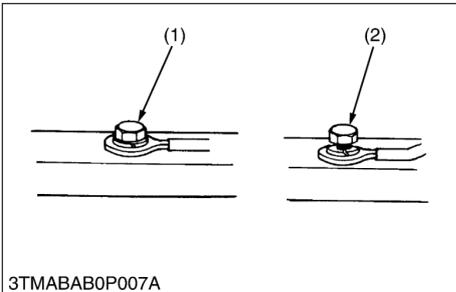
- Check electrical wiring for damage and loosened connection every year. To this end, educate the customer to do his or her own check and at the same time recommend the dealer to perform periodic check for a fee.
- Do not attempt to modify or remodel any electrical parts and wiring.
- When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.

(1) Negative Terminal

(2) Positive Terminal

W1011114

#### [1] WIRING



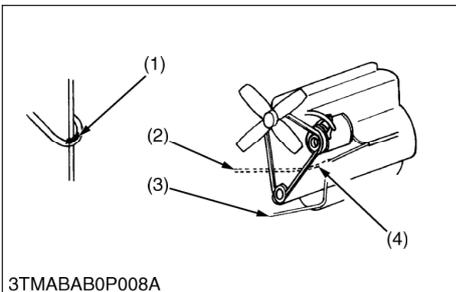
3TMABAB0P007A

- Securely tighten wiring terminals.

(1) Correct  
(Securely Tighten)

(2) Incorrect  
(Loosening Leads to Faulty Contact)

W1011216



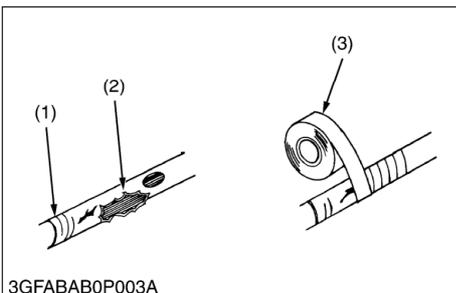
3TMABAB0P008A

- Do not let wiring contact dangerous part.

(1) Dangerous Part  
(2) Wiring (Incorrect)

(3) Wiring (Correct)  
(4) Dangerous Part

W1011313



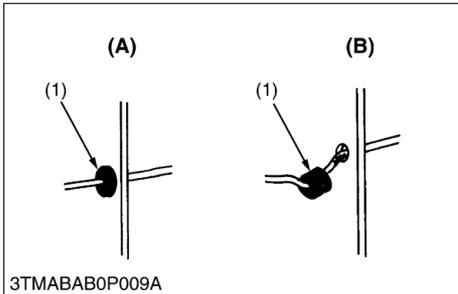
3GFABAB0P003A

- Repair or change torn or aged wiring immediately.

(1) Aged  
(2) Torn

(3) Insulating Vinyl Tape

W1012292

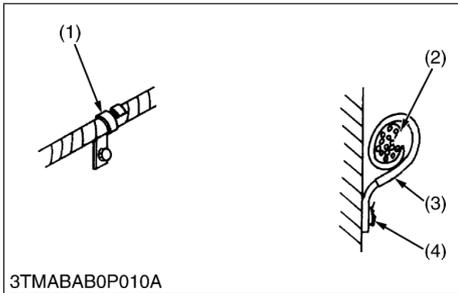


- Securely insert grommet.

(1) Grommet

(A) Correct  
(B) Incorrect

W1011388

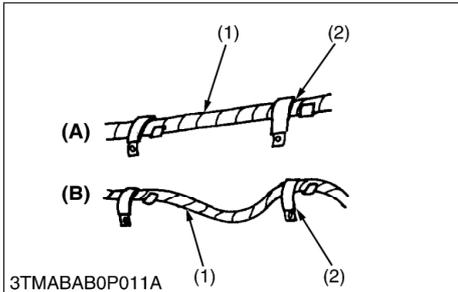


- Securely clamp, being careful not to damage wiring.

(1) Clamp  
• Wind Clamp Spirally  
(2) Wire Harness

(3) Clamp  
(4) Welding Dent

W1011458

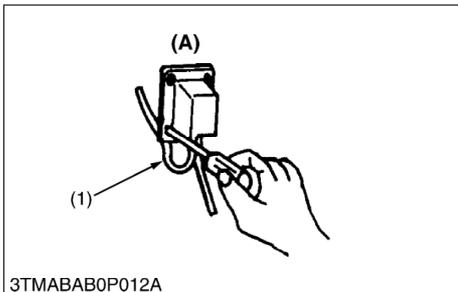


- Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

(1) Wiring  
(2) Clamp

(A) Correct  
(B) Incorrect

W1011587

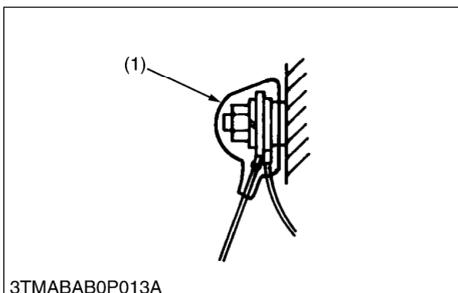


- In installing a part, take care not to get wiring caught by it.

(1) Wiring

(A) Incorrect

W1011670

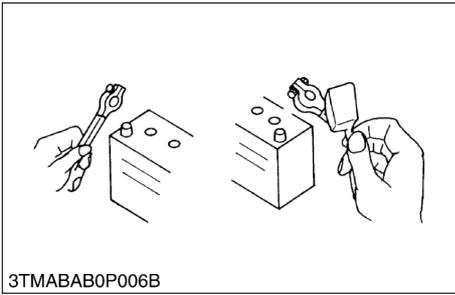


- After installing wiring, check protection of terminals and clamped condition of wiring, only connect battery.

(1) Cover  
• Securely Install Cover

W1011735

**[2] BATTERY**



3TMABAB0P006B

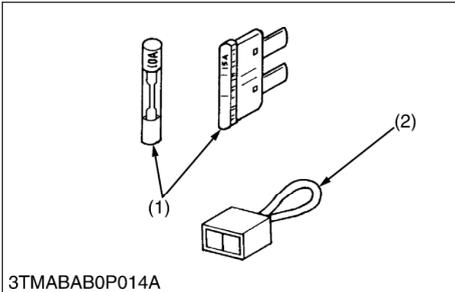
- Take care not to confuse positive and negative terminals.
- When removing battery cable, disconnect negative wire first. When installing battery cable, check for polarity and connect positive wire first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting cable to battery terminals, apply grease to them and securely install terminal covers on them.
- Do not allow dirt and dust to collect on battery.

**⚠ CAUTION**

- **Take care not to let battery liquid spill on your skin and clothes. If contaminated, wash it off with water immediately.**
- **Before recharging the battery, remove it from the machine.**
- **Before recharging, remove cell caps.**
- **Do recharging in a well-ventilated place where there is no open flame nearby, as hydrogen gas and oxygen are formed.**

W1011816

**[3] FUSE**



3TMABAB0P014A

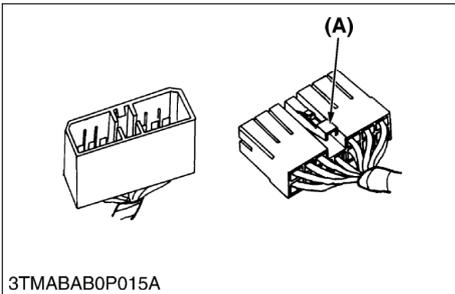
- Use fuses with specified capacity. Neither too large or small capacity fuse is acceptable.
- Never use steel or copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of reserve power supply is exceeded.

(1) Fuse

(2) Slow Blow Fuse

W1012092

**[4] CONNECTOR**

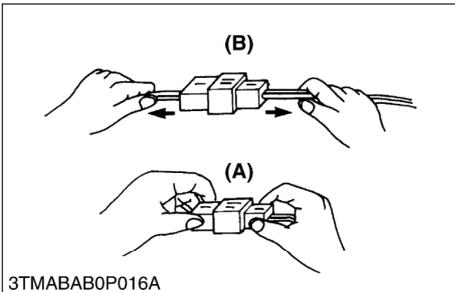


3TMABAB0P015A

- For connector with lock, push lock to separate.

(A) Push

W1012211



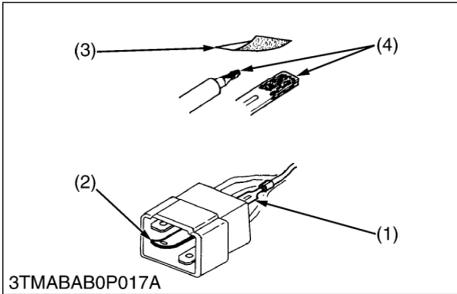
3TMABAB0P016A

- In separating connectors, do not pull wire harnesses.
- Hold connector bodies to separate.

(A) Correct

(B) Incorrect

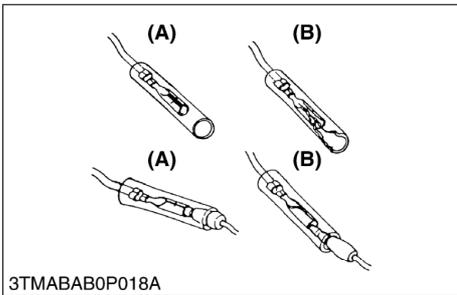
W1012272



- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make certain there is no terminal being exposed or displaced.

(1) Exposed Terminal (3) Sandpaper  
 (2) Deformed Terminal (4) Rust

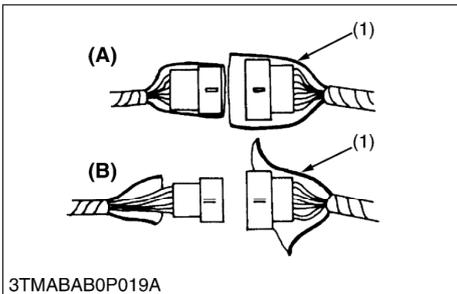
W1012346



- Make certain that there is no female connector being too open.

(A) Correct (B) Incorrect

W1012430

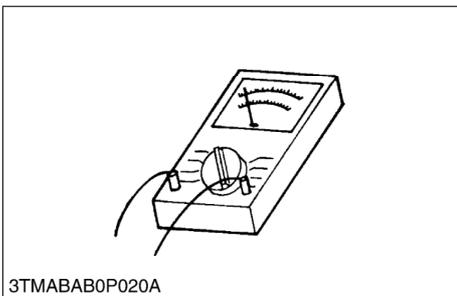


- Make certain plastic cover is large enough to cover whole connector.

(1) Cover (A) Correct (B) Incorrect

W1012519

**[5] HANDLING OF CIRCUIT TESTER**



- Use tester correctly following manual provided with tester.
- Check for polarity and range.

W1012684

## 4. LUBRICANTS FUEL AND COOLANT

	Place	Capacity			Lubricants, fuel and coolant
		M95X	M105X	M125X	
1	Fuel tank	190 L 50.2 U.S.gals 41.8 Imp.gals			No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below -10 °C (14 °F)
2	Coolant	9.0 L 9.5 U.S.qts. 7.9 Imp.qts.		13.0 L 13.7 U.S.qts. 11.4 Imp.qts.	Fresh clean water with anti-freeze
	Recovery tank	1.1 L 1.2 U.S.qts. 1.0 Imp.qts.		1.5 L 1.6 U.S.qts. 1.4 Imp.qts.	
3	Washer liquid	1.3 L 1.4 U.S.qts. 1.1 Imp.qts.			Automobile washer liquid
4	Engine crankcase (with filter)	10.5 L 11.1 U.S.qts. 9.2 Imp.qts.		20.8 L 22.0 U.S.qts. 18.3 Imp.qts.	API Service Classification CD, CE or CF Below 0 °C (32 °F): SAE10W, 10W-30 or 10W-40 0 to 25 °C (32 to 77 °F): SAE20, 10W-30 or 10W-40 Above 25 °C (77 °F): SAE30, 10W-30 or 10W-40
5	Transmission case	60 L 63.4 U.S.qts. 52.8 Imp.qts.			KUBOTA UDT or SUPER UDT fluid*
6	Brake oil (reservoir and lines)	0.3 L 0.3 U.S.qts. 0.3 Imp.qts.			KUBOTA UDT or SUPER UDT fluid* or Turbine oil 32 (See below) regular type, multipurpose straight mineral oil Mobil DTE Oil #32 TEXACO Regal Oil #32 CHEVRON -GST Oil #32 TERESSO OIL #32 Never use automotive brake oil.
7	Front differential case oil	6.0 L 6.3 U.S.qts. 5.3 Imp.qts.	7.0 L 7.4 U.S.qts. 6.2 Imp.qts.	12.0 L 12.7 U.S.qts. 10.6 Imp.qts.	KUBOTA UDT or SUPER UDT fluid* or SAE80, SAE90 gear oil
8	Front axle gear case oil	3.5 L 3.7 U.S.qts. 3.1 Imp.qts.		4.5 L 4.8 U.S.qts. 4.0 Imp.qts.	

\* KUBOTA original transmission hydraulic fluid.

Greasing				
	Place	No. of greasing point	Capacity	Type of grease
9	Top link	2	Until grease overflows	Multipurpose type grease
	Lift rod	3		
	Front wheel case support	2		
	Front axle support	2		
	Steering joint shaft	1		
	Assist cylinder (if equipped)	2		
	Battery terminal	2	A small amount	

\* KUBOTA original transmission hydraulic fluid.

#### ■ NOTE

- **Engine Oil** : Oil used in the engine should have an American Petroleum Institute (API) service classification and Proper SAE Engine Oil according to the ambient temperature as shown above.  
Do not mix different brands together.
- With the emission control now in effect, the CF-4 and CG-4 lubricating oils have been developed for use of a low-sulfur fuel on-road vehicle engines. When an off-road vehicle engine runs on a high-sulfur fuel, it is advisable to employ the CF, CD or CE lubricating oil with a high total base number. If the CF-4 or CG-4 lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals.
- Lubricating oil recommended when a low-sulfur or high-sulfur fuel is employed.

Lubricating oil class	Fuel		Remarks
	Low sulfur (0.5 % ≥)	High sulfur	
CF	○	○	TBN ≥ 10
CF-4	○	X	
CG-4	○	X	

○ : Recommendable X : Not recommendable

- **Transmission Oil** : The oil used to lubricate the transmission is also used as hydraulic fluid. To insure proper operation of the hydraulic system and complete lubrication of the transmission, it is important that a multi-grade transmission fluid be used in this system. We recommend the use of KUBOTA SUPER UDT fluid for optimum protection and performance.  
Do not mix different brands together.
- Indicated capacity of water and oil are manufacture's estimate.

## 5. TIGHTENING TORQUES

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

### [1] GENERAL USE SCREWS, BOLTS AND NUTS

Indication on top of bolt	4 No-grade or 4T						7 7T						9 9T		
Material of bolt	SS400, S20C						S43C, S48C						SCr435, SCM435		
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
Unit	N·m	kgf·m	lbf·ft												
Diameter															
M6 (6 mm, 0.24 in.)	7.85 to 9.31	0.80 to 0.95	5.79 to 6.87	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	12.3 to 14.2	1.25 to 1.45	9.05 to 10.5
M8 (8 mm, 0.31 in.)	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	16.7 to 19.6	1.7 to 2.0	12.3 to 14.4	23.6 to 27.4	2.4 to 2.8	17.4 to 20.2	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	29.5 to 34.3	3.0 to 3.5	21.7 to 25.3
M10 (10 mm, 0.39 in.)	39.3 to 45.1	4.0 to 4.6	29.0 to 33.2	31.4 to 34.3	3.2 to 3.5	23.2 to 25.3	48.1 to 55.8	4.9 to 5.7	35.5 to 41.2	39.3 to 44.1	4.0 to 4.5	29.0 to 32.5	60.9 to 70.6	6.2 to 7.2	44.9 to 52.1
M12 (12 mm, 0.47 in.)	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	–	–	–	77.5 to 90.1	7.9 to 9.2	57.2 to 66.5	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	103 to 117	10.5 to 12.0	76.0 to 86.8
M14 (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
M16 (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
M18 (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
M20 (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

W1034542

### [2] STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
Diameter						
M8 (8 mm, 0.31 in.)	11.8 to 15.6	1.2 to 1.6	8.68 to 11.5	8.82 to 11.8	0.90 to 1.2	6.51 to 8.67
M10 (10 mm, 0.39 in.)	24.6 to 31.3	2.5 to 3.2	18.1 to 23.1	19.7 to 25.4	2.0 to 2.6	14.5 to 18.8
M12 (12 mm, 0.47 in.)	29.5 to 49.0	3.0 to 5.0	21.7 to 36.1	31.4	3.2	23.1

W1048139

### [3] HYDRAULIC FITTINGS

#### ■ Hydraulic Hose Fittings

Hose size	Thread size	Tightening torque		
		N·m	kgf·m	lbf·ft
02	1/8	13.7 to 15.7	1.4 to 1.6	10.1 to 11.6
03	1/4	22.6 to 27.5	2.3 to 2.8	16.6 to 20.3
04				
05	3/8	45.1 to 53.0	4.6 to 5.4	33.3 to 39.0
06				

W1014711

#### ■ Hydraulic Pipe Cap Nuts

Pipe size	Tightening torque		
	N·m	kgf·m	lbf·ft
φ4 × t1.0	19.6 to 29.4	2.0 to 3.0	14.5 to 21.7
φ6 × t1.0	24.5 to 34.3	2.5 to 3.5	18.1 to 25.3
φ8 × t1.0	29.4 to 39.2	3.0 to 4.0	21.7 to 28.9
φ10 × t1.0	39.2 to 49.0	4.0 to 5.0	28.9 to 36.1
φ12 × t1.5	49.0 to 68.6	5.0 to 7.0	36.1 to 50.6
φ15 × t1.6	107.9 to 117.7	11.0 to 12.0	79.6 to 86.8
φ18 × t1.6	107.9 to 117.7	11.0 to 12.0	79.6 to 86.8

W1014848

#### ■ Adaptors, Elbows and Others

Item	Thread size	Tightening torque		
		N·m	kgf·m	lbf·ft
<b>POA-PF</b> (Nipple with O-ring)	PF 1/8	44.1 to 53.9	4.5 to 5.5	32.5 to 39.8
	PF 1/4	73.5 to 83.4	7.5 to 8.5	54.2 to 61.5
	PF 3/8	93.2 to 103.0	9.5 to 10.5	68.7 to 75.9
	PF 1/2	112.8 to 122.6	11.5 to 12.5	83.2 to 90.4
<b>POB-PF</b> (Elbow with O-ring and no nut)	PF 1/8	22.6 to 26.5	2.3 to 2.7	16.6 to 19.5
	PF 1/4	35.3 to 43.1	3.6 to 4.4	26.0 to 31.8
	PF 3/8	53.9 to 63.7	5.5 to 6.5	39.8 to 47.0
	PF 1/2	73.5 to 83.4	7.5 to 8.5	54.2 to 61.5
<b>Adaptor (NPT)</b>	PF 1/8	9.8 to 14.7	1.0 to 1.5	7.2 to 10.8
	PF 1/4	29.4 to 34.3	3.0 to 3.5	21.7 to 25.3
	PF 3/8	49.0 to 68.6	5.0 to 7.0	36.2 to 50.6
	PF 1/2	68.6 to 88.3	7.0 to 9.0	50.6 to 65.1

W1015484

## 6. MAINTENANCE

No.	Item		Service Interval													Since then	Important	Reference page			
			50	100	150	200	250	300	350	400	450	500	550	600	650				700		
1	Engine oil	Change	★						☆							☆		every 300 Hr			G-15
2	Engine oil filter	Replace	★													☆		every 600 Hr			G-16
3	Fuel filter	Replace									☆							every 400 Hr	@		G-33
4	In-line fuel filter [M125X]	Clean									☆							every 400 Hr			G-33
5	Transmission fluid	Change	★													☆		every 600 Hr			G-16
6	Front differential case oil	Change	★													☆		every 600 Hr			G-18
7	Front axle case oil	Change	★													☆		every 600 Hr			G-18
8	Hydraulic oil filter (suction side)	Replace	★			☆					☆					☆		every 200 Hr			G-17
9	Hydraulic oil filter (return side)	Replace	★			☆					☆					☆		every 200 Hr			G-17
10	Engine start system	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hr			G-19
11	Wheel bolt torque	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hr			G-20
12	Battery condition	Check		☆		☆		☆		☆		☆		☆		☆		every 100 Hr	*4		G-21
13	Greasing	–		☆		☆		☆		☆		☆		☆		☆		every 100 Hr			G-27
14	Fan belt	Adjust		☆		☆		☆		☆		☆		☆		☆		every 100 Hr			G-24
15	Brake pedal	Adjust		☆		☆		☆		☆		☆		☆		☆		every 100 Hr			G-25
16	Parking brake lever	Adjust		☆		☆		☆		☆		☆		☆		☆		every 100 Hr			G-25
17	Fuel line	Check		☆		☆		☆		☆		☆		☆		☆		every 100 Hr		@	G-26
		Replace																every 2 years			G-26
18	Air cleaner element [Double type]	Primary element	Clean		☆		☆		☆		☆		☆		☆		☆	every 100 Hr	*1		G-24
		Replace																every 1 year	*2	@	G-24
		Secondary element	Replace															every 1 year			G-24
19	Toe-in	Adjust				☆				☆					☆		every 200 Hr			G-31	
20	Oil cooler line	Check				☆				☆					☆		every 200 Hr			G-29	
		Replace															every 2 years			G-29	
21	Power steering oil line	Check				☆				☆					☆		every 200 Hr			G-30	
		Replace															every 2 years			G-30	

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No.	Item		Service Interval														Since then	Important	Reference page		
			50	100	150	200	250	300	350	400	450	500	550	600	650	700					
22	Radiator hose and clamp	Check				☆					☆					☆		every 200 Hr			G-28
		Replace																every 2 years			G-28
23	Intake air line	Check				☆					☆						☆	every 200 Hr		@	G-30
		Replace																every 2 years	*3		G-30
24	Fuel tank water	Drain				☆					☆						☆	every 200 Hr			G-41
25	Water separator [M95X, M105X]	Clean									☆							every 400 Hr			G-33
26	Brake oil	Change															☆	every 600 Hr	@		5-S5, S7
27	Front axle pivot	Adjust															☆	every 600 Hr	@		G-34
28	King-pin pivot	Adjust															☆	every 600 Hr			G-34
29	Engine valve clearance	Adjust																every 800 Hr			G-34
30	Fuel injection nozzle injection pressure	Check																every 1500 Hr	@		G-34
31	Turbocharger	Check																every 3000 Hr	@		G-35
32	Injection pump	Check																every 3000 Hr	@		G-35
33	Fuel injection timer [M125X]	Check																every 3000 Hr	@		G-35
34	Intake air heater	Check																every 3000 Hr			G-35
35	Cooling system	Flush																every 2 years			G-36, 37
36	Coolant	Change																every 2 years			G-36, 37
37	Parking brake cable	Replace																every 2 years			G-39
38	Brake hose / Brake tank hose	Replace																every 2 years			G-39
39	Clutch hose	Replace																every 2 years			G-39
40	Differential lock hose	Replace																every 2 years			G-39
41	Master cylinder kit	Replace																every 2 years			G-39
42	Equalizer kit	Replace																every 2 years			G-39
43	Brake seal 1 and 2	Replace																every 2 years			G-39
44	Assist cylinder hose	Replace																every 2 years			G-39

W1028983

No.	Item		Service Interval													Since then	Important	Reference page		
			50	100	150	200	250	300	350	400	450	500	550	600	650				700	
45	Fuel system	Bleed																Service as required		G-40, 41
46	Brake system	Bleed																		G-41
47	Clutch housing water	Drain																		G-41
48	Fuse	Replace																		G-42, 43
49	Light bulb	Replace																		G-43

W1020703

No.	Item		Service Interval													Since then	Important	Reference page		
			50	100	150	200	250	300	350	400	450	500	550	600	650				700	
1	Inner air filter	Clean				☆												every 200 Hr		G-31
2	Fresh air filter	Clean				☆												every 200 Hr		G-31
3	Air conditioner condenser	Clean				☆												every 200 Hr		G-32
4	Air conditioner drive belt	Adjust				☆												every 200 Hr		G-32
5	Air conditioner pipes and hoses	Check																every 1 year		G-35
6	Cabin isolation cushion	Check																every 1 year		G-35
7	Washer liquid	Add																Service as required		G-44
8	Refrigerant (gas)	Check																		G-44

■ IMPORTANT

- The jobs indicated by ☆ must be done after the first 50 hours of operation.
- \*1 : Air cleaner should be cleaned more often in dusty conditions than in normal conditions.
- \*2 : Every year or every 6 times of cleaning.
- \*3 : Replace only if necessary.
- \*4 : When the battery is used for less than 100 hours per year, check the battery condition by reading the indicator annually.
- The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in U.S.EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.

Please see the Warranty Statement in detail.

W1025390