

Product: 2009 Kubota WSM M100X,M110X,M126X,M135X Tractor Service Repair Workshop Manual

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WSM

WORKSHOP MANUAL TRACTOR

M100X,M110X,M126X,M135X

Kubota

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TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the M100X, M110X, M126X and M135X. It contains 4 parts: "**Information**", "**General**", "**Mechanism**" and "**Servicing**".

■ **Information**

This section contains information below.

- Safety First
- Safety Label
- Specification
- Dimension

■ **General**

This section contains information below.

- Engine Identification
- Model Identification
- General Precautions
- Maintenance Check List
- Check and Maintenance
- Special Tools

■ **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.

Refer to the latest version of Workshop Manual (Code No. 9Y021-01870 / 9Y021-18200) for the diesel engine / tractor mechanism that this workshop manual does not include.

■ **Servicing**

This section 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, 2009

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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.

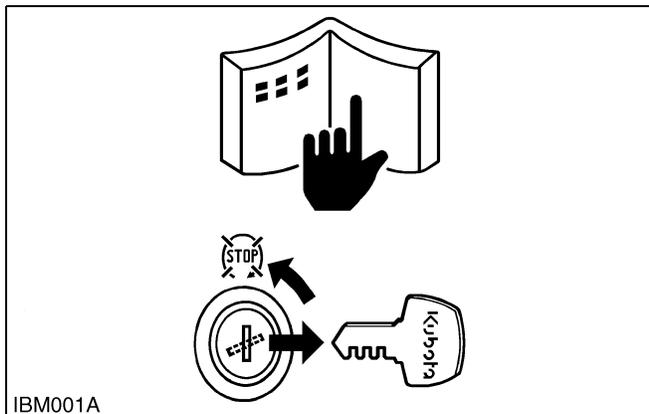
■ IMPORTANT

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

■ NOTE

- Gives helpful information.

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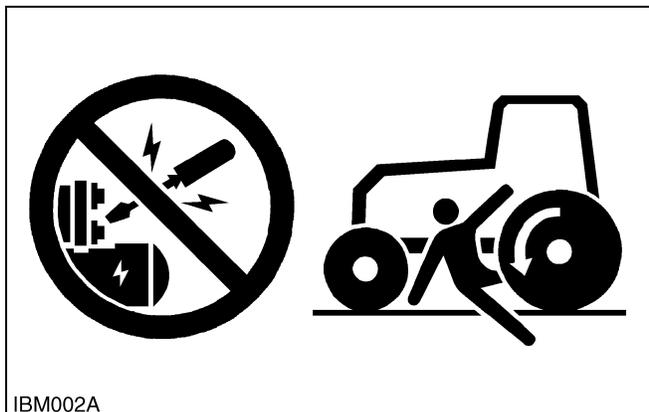


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BEFORE YOU START SERVICE

- 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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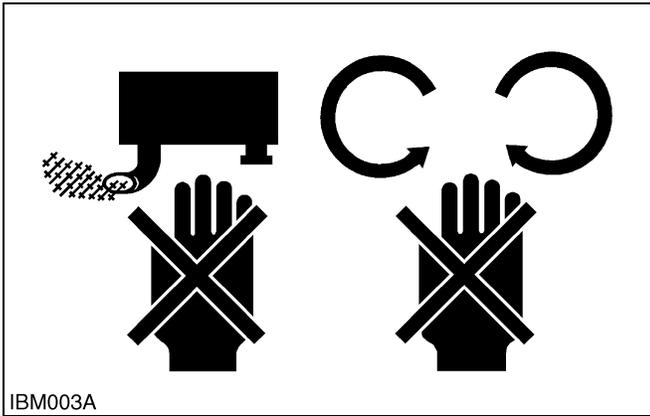


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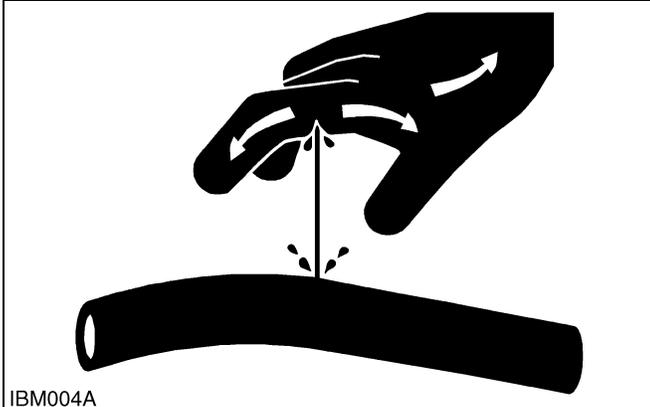
START SAFELY

- 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.

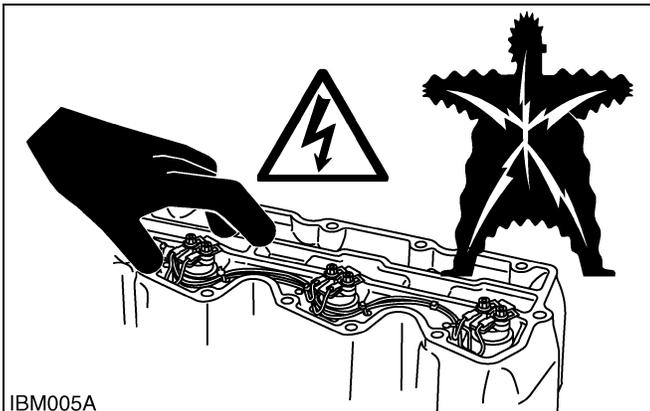
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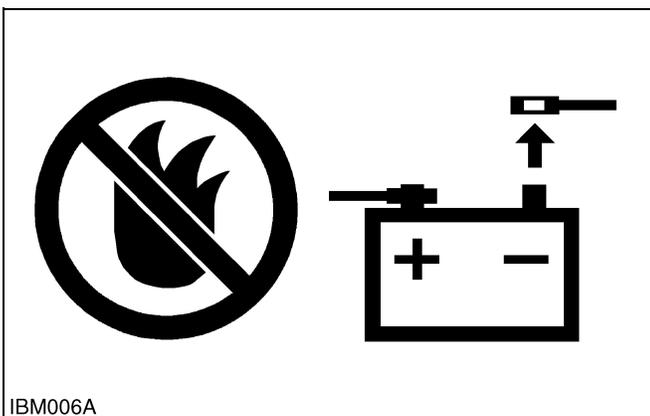
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OPERATE SAFELY

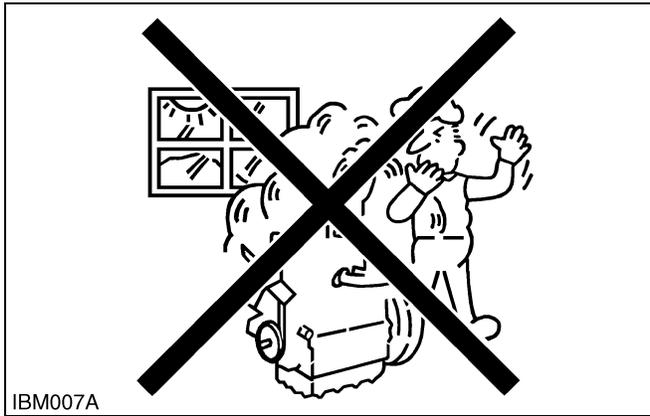
- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below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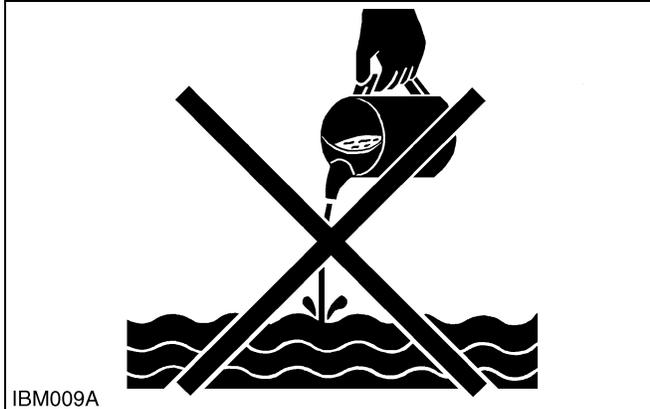
PREVENT A FIRE

- 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.

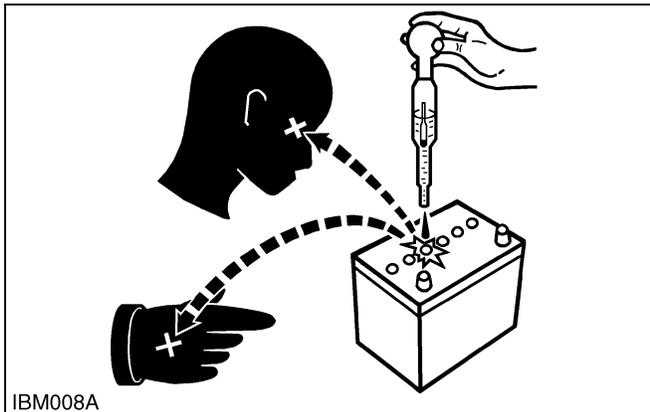
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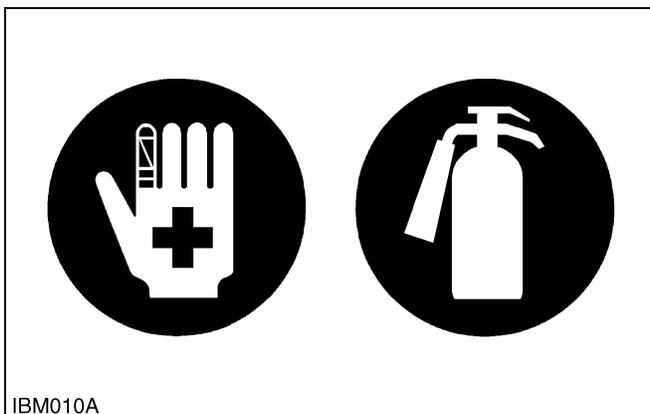
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KEEP A GOOD AIRFLOW IN THE WORK AREA

- 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

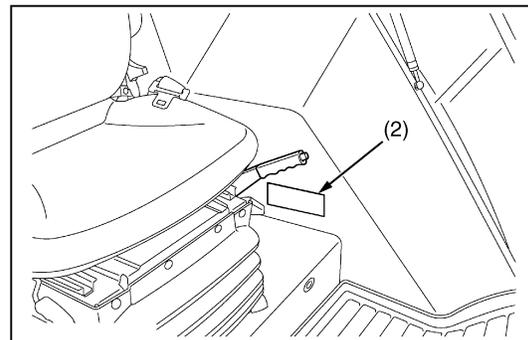
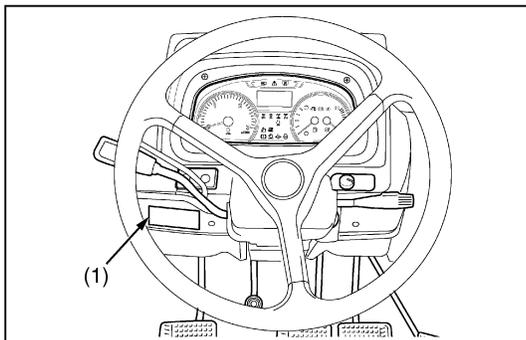
The following safety decals (pictorial safety labels) are installed on the machine. If a decal becomes damaged, illegible or is not on the machine, replace it. The decal part number is listed in the parts list.

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



(2) Part No. TA240-4933-2



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(1) Part No. TA040-4965-2



⚠ DANGER

TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.

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.
2. Start engine only from operator's seat with transmission and PTO OFF. Never start engine while standing on the ground.

(2) Part No. TC230-4956-1
Diesel fuel only No fire

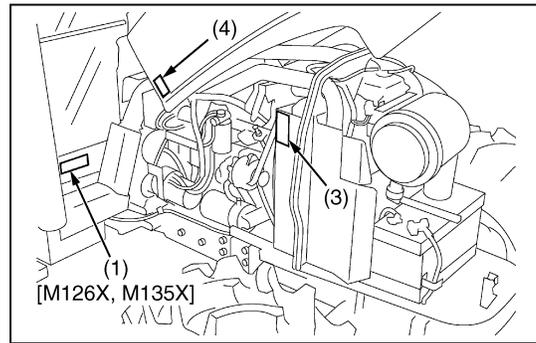
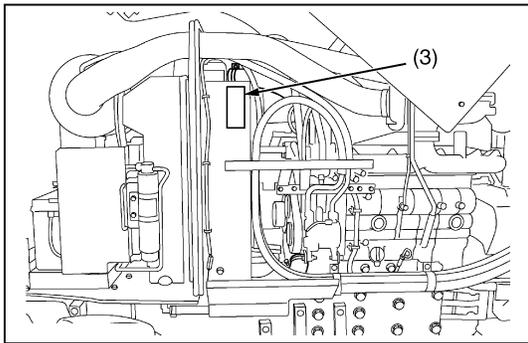
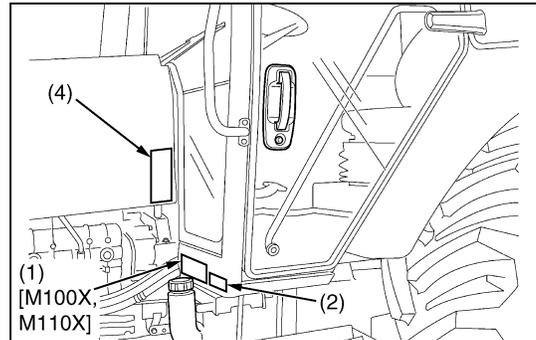
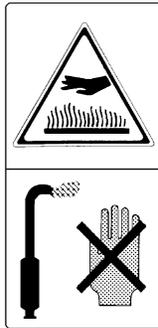


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(3) Part No. TA040-4957-1
Stay clear of engine fan and fanbelt.



(4) Part No. 3N300-4958-1
Do not touch hot surface like muffler, etc.



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9Y1210269INI0004US0

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



- (2) Part No. 3A111-9856-3

CAUTION

TO AVOID INJURY FROM SEPARATION:

RH.
DO NOT EXTEND LIFT ROD BEYOND THE POINT WHERE THREADS ARE EXPOSED.

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

GROOVE

THREAD EXPOSURE AREA

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- (3) Part No. 6C200-4959-1

WARNING

TO AVOID PERSONAL INJURY:

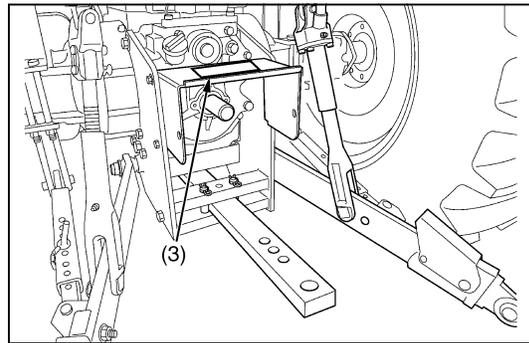
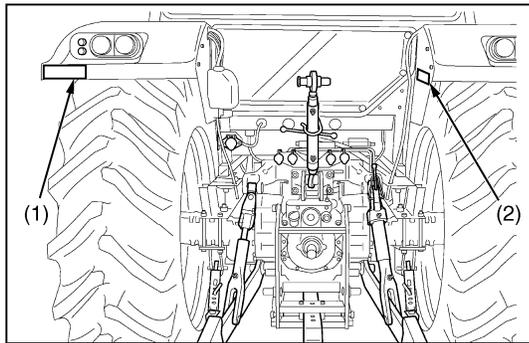
1. Attach pulled or towed loads to the drawbar only.
2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.

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)

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(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 dismounting, 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

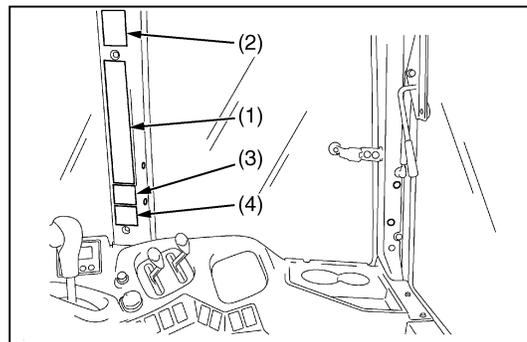
TO AVOID MACHINE RUNAWAY DUE TO 4WD BRAKING SYSTEM:
Do not run engine with only rear wheels off ground.

(4) Part No. 6C300-4744-1

⚠ WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

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(1) Part No. 3N300-9892-1

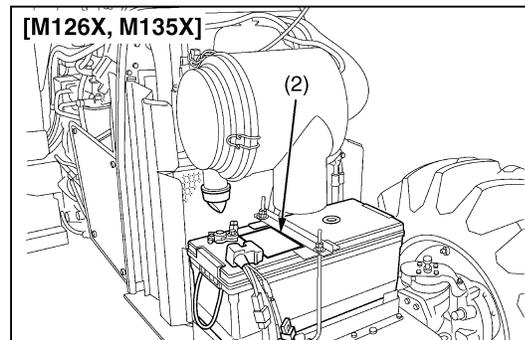
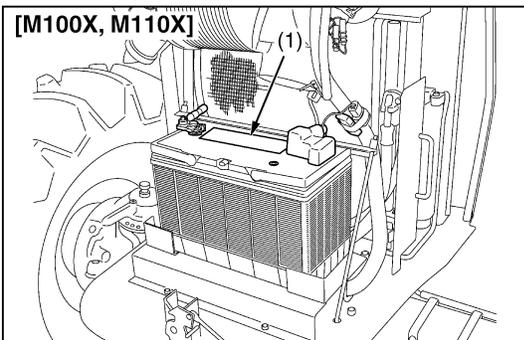
<p>⚠ DANGER/POISON</p>			<p>KEEP OUT OF REACH OF CHILDREN. DO NOT TIP. DO NOT OPEN BATTERY.</p>
<p>SHIELD EYES. EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.</p>	<p>NO SPARKS, FLAMES, SMOKING</p>	<p>SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.</p>	
<p>PROPOSITION 65 WARNING BATTERY POSTS, TERMINALS AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.</p>			<p>FLUSH EYES IMMEDIATELY WITH WATER. GET MEDICAL HELP FAST.</p>
<p>105E41R 12V</p> <p>RESERVE CAPACITY (MIN) 160 COLD CRANKING AMPS(-18°C) 900</p>		<p>HYDROMETER</p> <p>○ ●</p>	

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(2) Part No. 3P903-9892-2

<p>⚠ DANGER/POISON</p>			<p>KEEP OUT OF REACH OF CHILDREN. DO NOT TIP. DO NOT OPEN BATTERY.</p>
<p>SHIELD EYES. EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.</p>	<p>NO SPARKS, FLAMES, SMOKING</p>	<p>SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.</p>	
<p>PROPOSITION 65 WARNING BATTERY POSTS, TERMINALS, AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.</p>			
<p>180G51 12V (4D-1050)</p> <p>RESERVE CAPACITY (MIN) 300 COLD CRANKING AMPS(-18°C) 1090</p>	<p>S.O.C. INDICATOR</p> <p>○ ● ○</p> <p>OK CHARGE BATTERY REPLACE BATTERY</p> <p>DK 83549</p>		<p>FLUSH EYES IMMEDIATELY WITH WATER. GET MEDICAL HELP FAST.</p>

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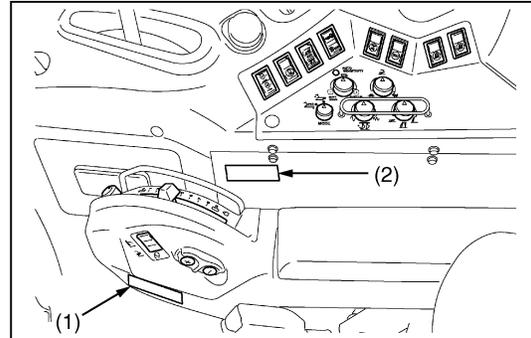
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(1) Part No. 3F240-4966-1



(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.

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3. SPECIFICATIONS

Model		M100X	M110X	M126X	M135X	
Engine	Model	V3800DICR-TIE3		V6108-TIE3		
	Type	Direct injection, W/turbocharger, water-cooled, 4-cycle diesel				
	Number of cylinder	4				
	Total displacement	3769 cm ³ (230 cu.in.)		6124 cm ³ (374 cu.in.)		
	Bore and stroke	100 × 120 mm (3.94 × 4.72 in.)		118 × 140 mm (4.65 × 5.51 in.)		
	Net power	72.9 kW (97.7 HP)*	80.2 kW (107.5 HP)*	93.2 kW (100 HP)*	100.7 kW (135 HP)*	
	PTO power (factory observe)	63.4 kW (85 HP)* / 2600 min ⁻¹ (rpm)	70.9 kW (95 HP)* / 2600 min ⁻¹ (rpm)	80.6 kW (108 HP)* / 2200 min ⁻¹ (rpm)	88.0 kW (118 HP)* / 2200 min ⁻¹ (rpm)	
	Maximum torque	323 N·m (33.0 kgf·m, 238 lbf·ft) / 1500 min ⁻¹ (rpm)	363 N·m (37.1 kgf·m, 267 lbf·ft) / 1500 min ⁻¹ (rpm)	475 N·m (48.5 kgf·m, 350 lbf·ft) / 1300 min ⁻¹ (rpm)	323 N·m (33.0 kgf·m, 238 lbf·ft) / 1500 min ⁻¹ (rpm)	
	Battery capacity	12 V, 100 Ah at 20 hours, 900CCA		12 V, 160 Ah at 20 hours, 1090CCA		
	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)		14.6 L (15.4 U.S.qts, 12.8 Imp.qts)		
	Coolant capacity	9.0 L (9.5 U.S.qts, 7.9 Imp.qts)		15.0 L (15.9 U.S.qts, 13.2 Imp.qts)		
	Dimensions	Overall length	4230 mm (166.5 in.)		4360 mm (171.7 in.)	
Overall width (min. tread)		2125 mm (83.7 in.)		2180 mm (85.8 in.)		
Overall height		2640 mm (103.9 in.)	2690 mm (105.9 in.)	2725 mm (107.3 in.)		
Wheel base		2435 mm (95.9 in.)		2690 mm (105.9 in.)		
Tread		Front	1580 to 1680 mm (62.2 to 66.1 in.)		1775 to 1875 mm (69.9 to 73.8 in.)	
		Rear	1500 to 2005 mm (59.1 to 78.9 in.)		1590 to 2085 mm (62.6 to 82.1 in.)	
Crop clearance	560 mm (22.0 in.)	590 mm (23.2 in.)	615 mm (24.2 in.)			
Weight	4020 kg (8862 lbs)		4105 kg (9050 lbs)	4660 kg (10273 lbs)		
Travelling system	Standard tire size	Front	12.4R24	13.6R24	14.9R24	
		Rear	18.4R30	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	68.4 L (18.1 U.S.gals, 15.0 Imp.gals) / min.		77.2 L (20.4 U.S.gals, 17.0 Imp.gals) / min.		
	Three point hitch	SAE Category 2				
	Max. lifting force	At lift points**	2635 kg (5809 lbs) at lower link end with links horizontal			
		24 in. behind lift points	2360 kg (5203 lbs)			
	Remote hydraulic control	Two remote valve with detent and self-canceling				
	System pressure	19.7 MPa (201 kgf/cm ² , 2857 psi)				
Traction system	Swinging drawbar, adjustable in direction					
PTO system	Live PTO (Indipen-dent)	Direction of turning	Clockwise, viewed from tractor rear			
		Standard PTO	6 spline : 540 min ⁻¹ / 2205 min ⁻¹ 21 spline : 1000 min ⁻¹ / 2389 min ⁻¹		6 spline : 540 min ⁻¹ / 1994 min ⁻¹ 21 spline : 1000 min ⁻¹ / 2050 min ⁻¹	

■ **NOTE**

- *Manufacture's estimate

** At lower link and with links horizontal.

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

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4. TRAVELING SPEED

Forward and Reverse

Model	M100X		M110X		M126X, M135X	
Tire size (Rear)	18.4R30		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	0.57	0.35
C4	0.66	0.41	0.68	0.42	0.76	0.48
C5	0.88	0.55	0.90	0.56	0.88	0.55
C6	1.10	0.68	1.13	0.70	1.11	0.69
C7	1.37	0.85	1.41	0.88	1.39	0.87
C8	1.61	1.00	1.66	1.03	1.87	1.16
1	2.01	1.25	2.06	1.28	2.00	1.24
2	2.50	1.55	2.57	1.60	2.53	1.57
3	3.13	1.94	3.21	1.99	3.18	1.97
4	3.68	2.29	3.78	2.35	4.26	2.65
5	4.92	3.06	5.04	3.13	4.89	3.04
6	6.12	3.80	6.28	3.90	6.19	3.85
7	7.66	4.76	7.86	4.88	7.78	4.83
8	9.01	5.60	9.24	5.74	10.43	6.48
9	7.02	4.36	7.20	4.47	7.0	4.3
10	8.74	5.43	8.97	5.57	8.8	5.5
11	10.93	6.79	11.22	6.97	11.1	6.9
12	12.86	7.99	13.19	8.20	14.9	9.3
13	17.18	10.68	17.63	10.96	17.1	10.6
14	21.40	13.30	21.96	13.65	21.6	13.5
15	26.76	16.63	27.46	17.06	27.2	16.9
16*	33.64	20.90	34.53	21.46	38.1	23.7

(At rated engine rpm)

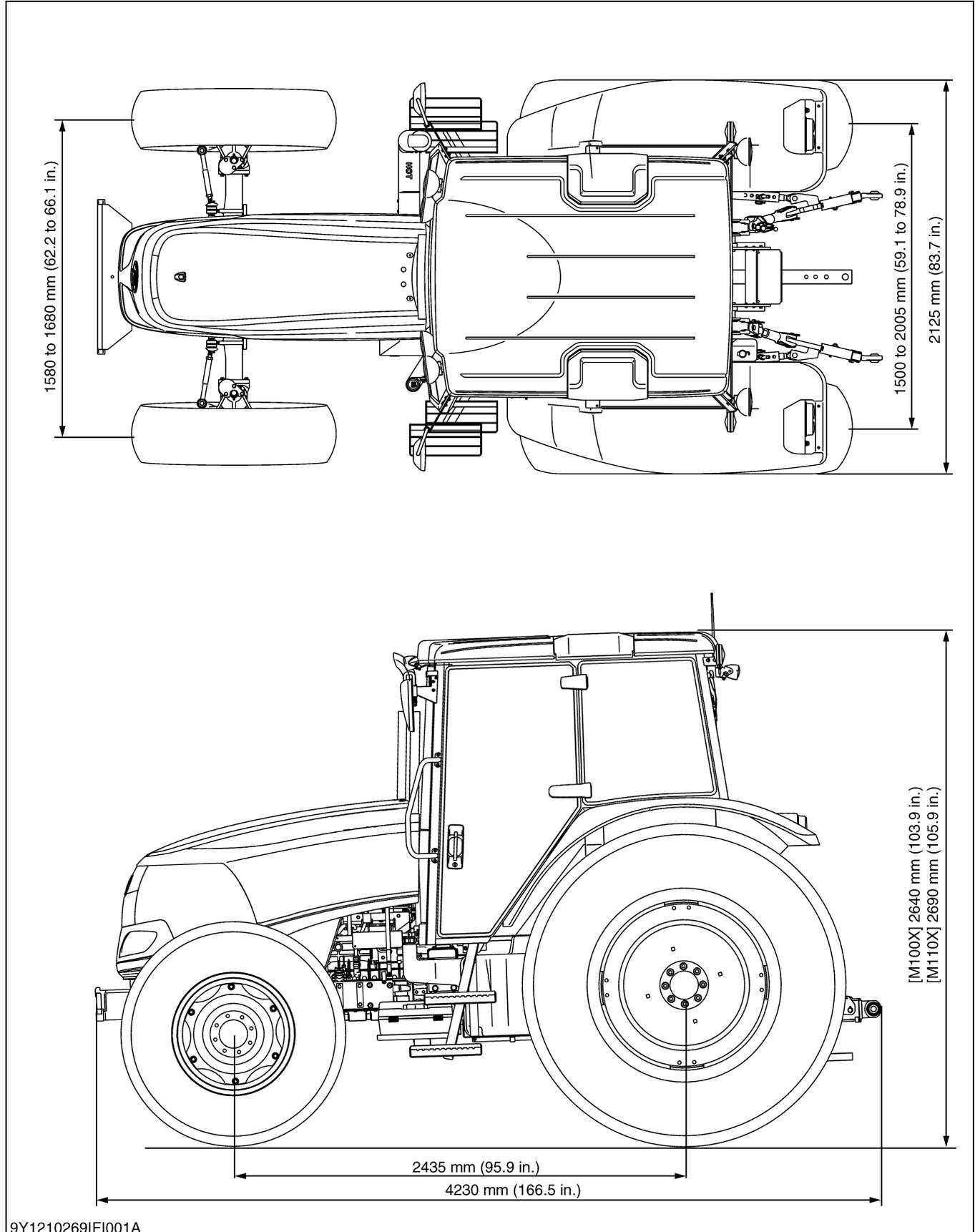
The company reserves the right to change the specifications without notice.

*At maximum engine rpm

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5. DIMENSIONS

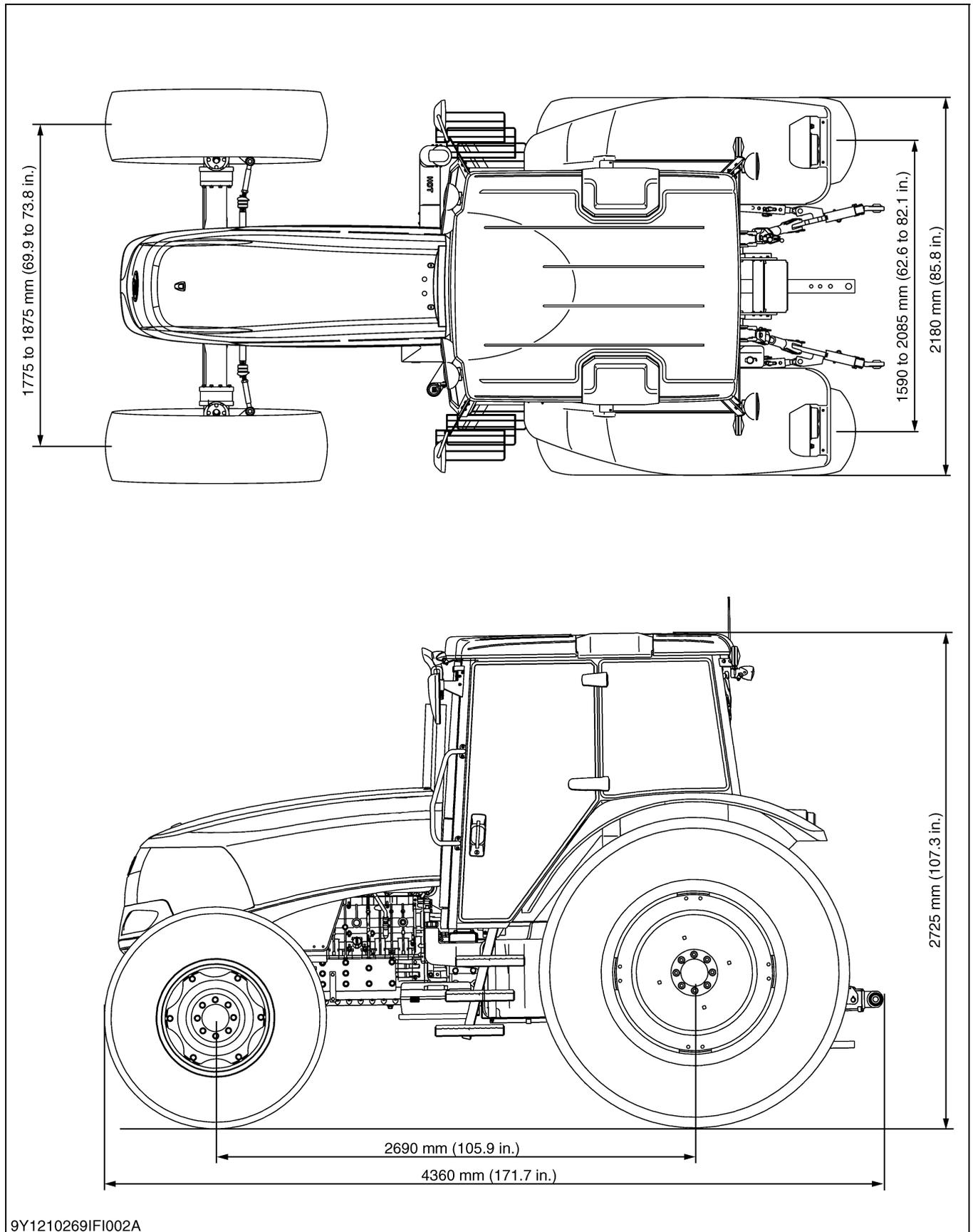
M100X, M110X



9Y1210269IFI001A

9Y1210269INI0009US0

M126X, M135X



9Y1210269IFI002A

9Y1210269INI0010US0

G GENERAL

GENERAL

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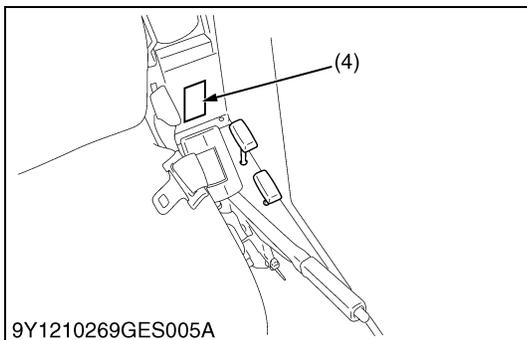
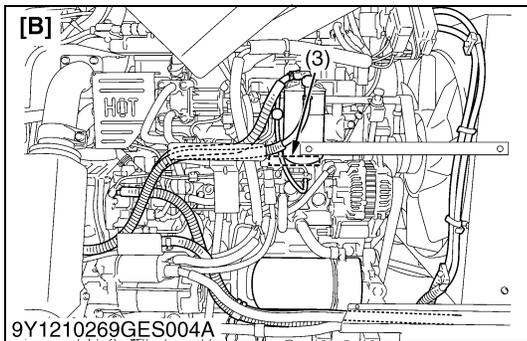
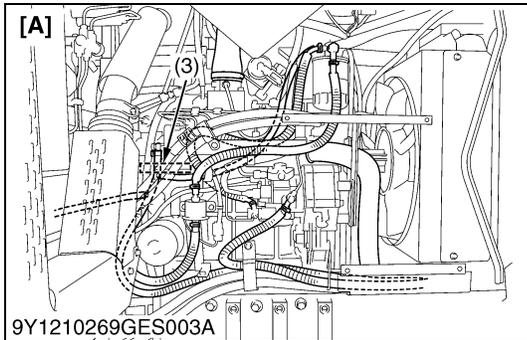
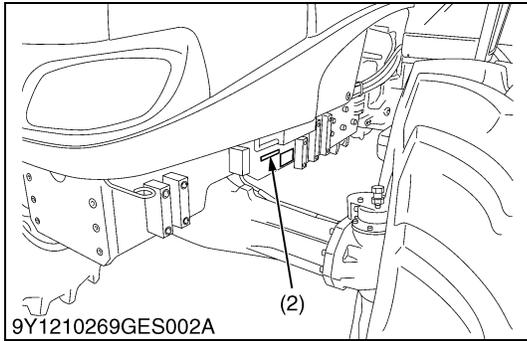
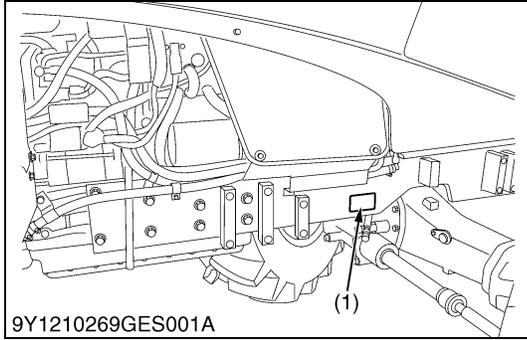
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1. TRACTOR IDENTIFICATION

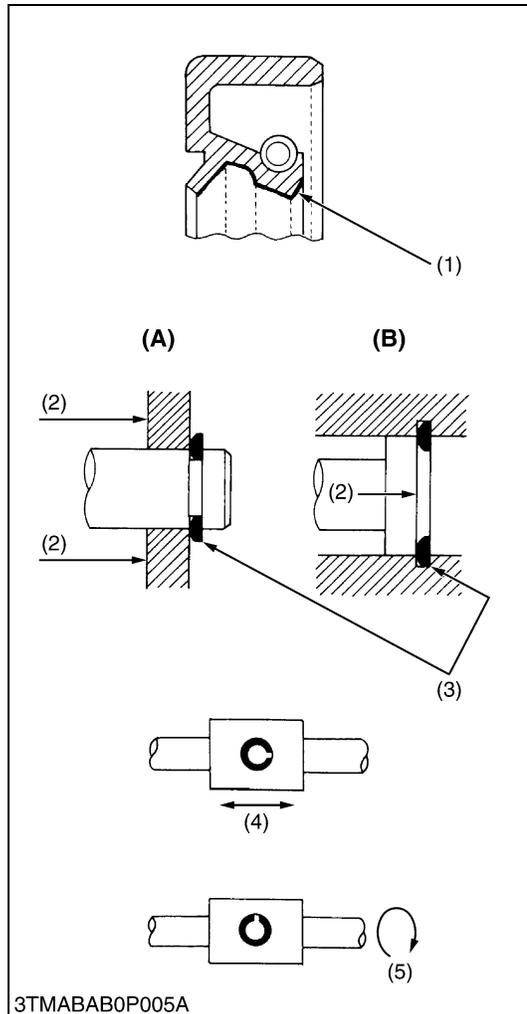
When contacting your local KUBOTA distributor, always specify engine serial number, tractor serial number and hourmeter reading.

- (1) Tractor Identification Plate **[A] M100X, M110X**
- (2) Tractor Serial Number **[B] M126X, M135X**
- (3) Engine Serial Number
- (4) Cabin Identification Plate
(Cabin Serial Number)

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2. GENERAL PRECAUTIONS



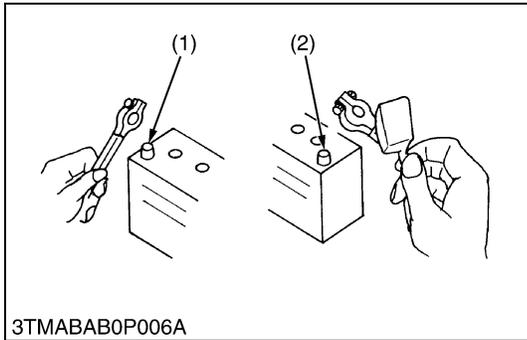
- When you disassemble, carefully put the parts in a clean area to make it easy to find the parts. You must install the screws, bolts and nuts in their initial position to prevent the reassembly errors.
- When it is necessary to use special tools, use KUBOTA special tools. Refer to the drawings when 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.

- (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. 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.

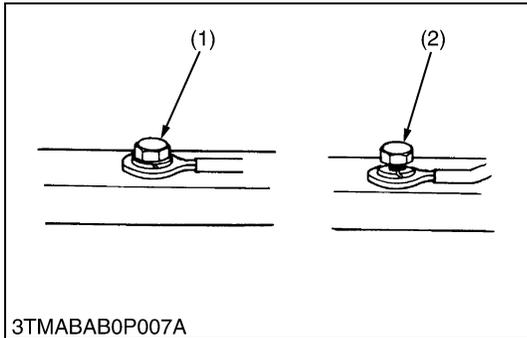
■ IMPORTANT

- 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

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[1] WIRING

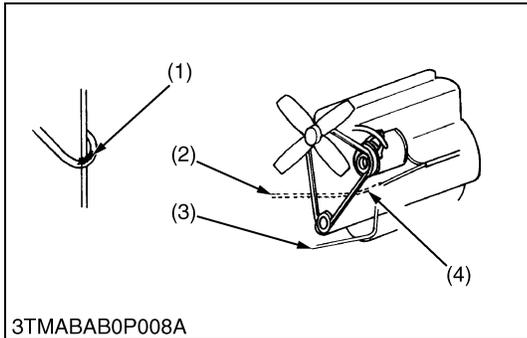


3TMABAB0P007A

- Securely tighten wiring terminals.

- (1) Correct (Securely Tighten) (2) Incorrect (Loosening Leads to Faulty Contact)

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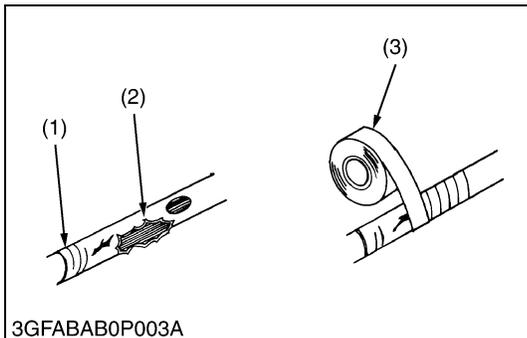


3TMABAB0P008A

- Do not let wiring contact dangerous part.

- (1) Dangerous Part (Sharp Edge) (2) Wiring (Incorrect) (3) Wiring (Correct) (4) Dangerous Part

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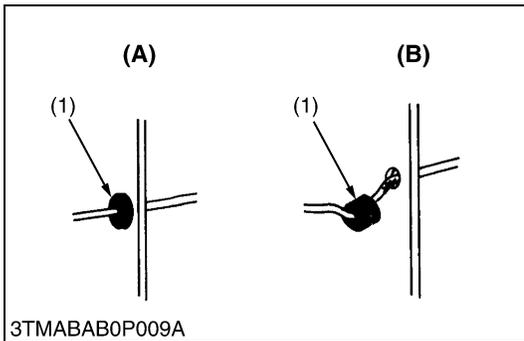


3GFABAB0P003A

- Repair or change torn or aged wiring immediately.

- (1) Aged (2) Torn (3) Insulating Vinyl Tape

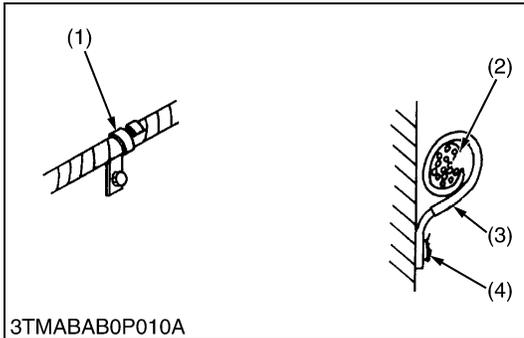
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• Securely insert grommet.

- (1) Grommet
- (A) Correct
- (B) Incorrect

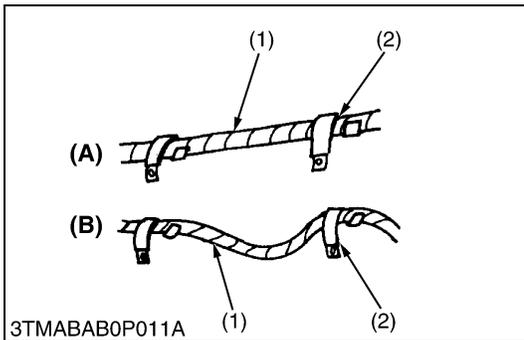
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• Securely clamp, being careful not to damage wiring.

- (1) Clamp (Wind Clamp Spirally)
- (2) Wire Harness
- (3) Clamp
- (4) Welding Dent

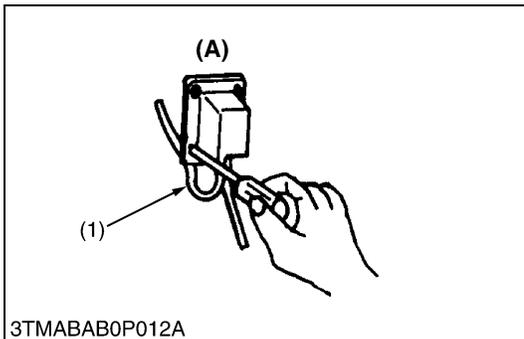
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• Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

- (1) Wiring
- (2) Clamp
- (A) Correct
- (B) Incorrect

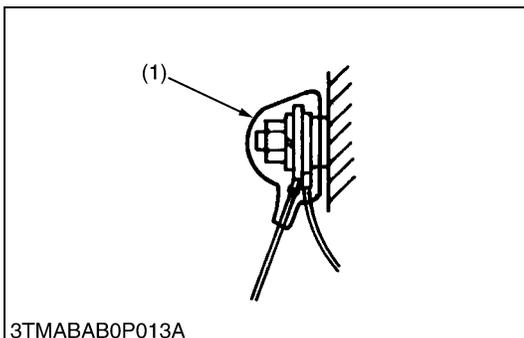
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• In installing a part, take care not to get wiring caught by it.

- (1) Wiring
- (A) Incorrect

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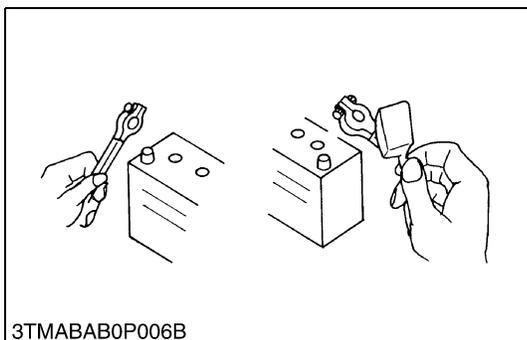


• After installing wiring, check protection of terminals and clamped condition of wiring, only connect battery.

- (1) Cover (Securely Install Cover)

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[2] BATTERY



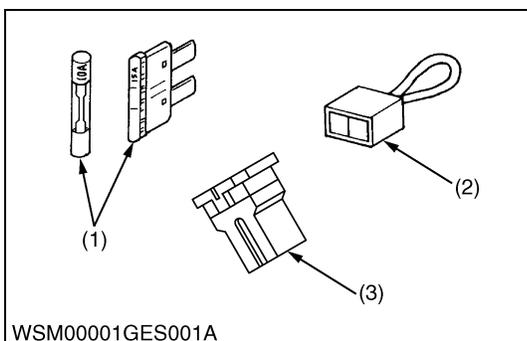
- Take care not to confuse positive and negative terminal posts.
- When removing battery cables, disconnect negative cable first. When installing battery cables, check for polarity and connect positive cable first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting cables to battery terminal posts, apply high temperature 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.

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[3] FUSE

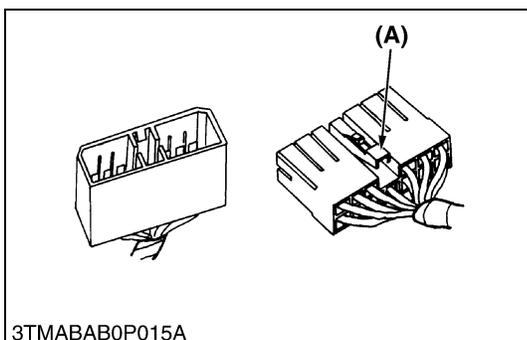


- Use fuses with specified capacity. Neither too large or small capacity fuse is acceptable.
- Never use steel or copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of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

- (1) Fuse (3) Slow Blow Fuse
 (2) Fusible Link

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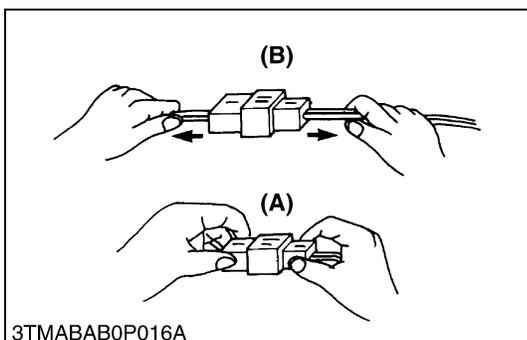
[4] CONNECTOR



- For connector with lock, push lock to separate.

(A) Push

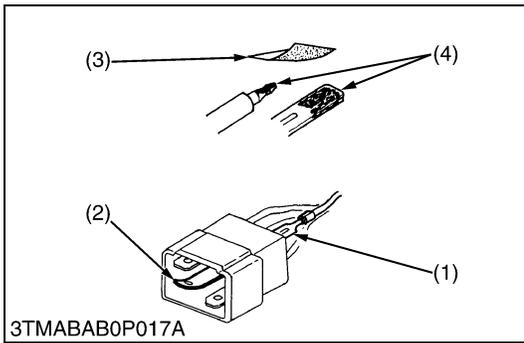
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- In separating connectors, do not pull wire harnesses.
- Hold connector bodies to separate.

(A) Correct (B) Incorrect

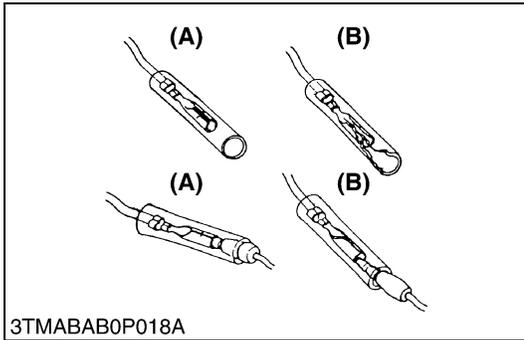
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- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make certain there is no terminal being exposed or displaced.

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

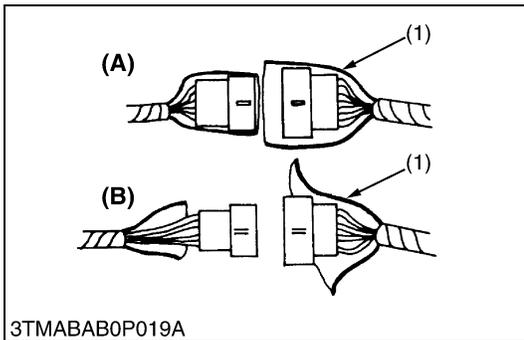
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- Make certain that there is no female connector being too open.

- (A) Correct
- (B) Incorrect

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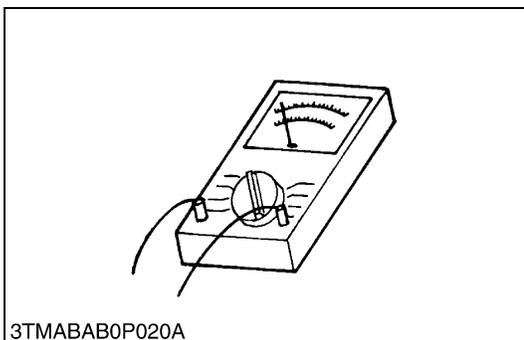


- Make certain plastic cover is large enough to cover whole connector.

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

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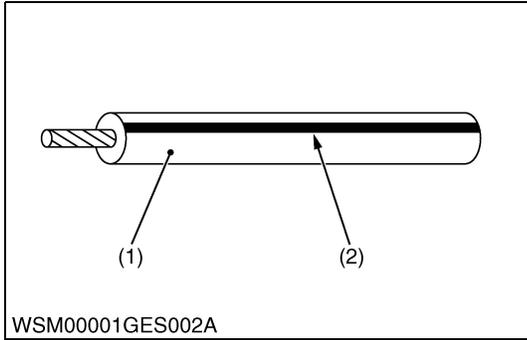
[5] HANDLING OF CIRCUIT TESTER



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

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[6] COLOR OF WIRING



- Colors of wire are specified to the color codes.
- This symbol of "/" shows color with stripe(s).

(An example)

Red stripe on white color : W/R

Color of wiring	Color code
Black	B
Brown	Br
Green	G
Gray	Gy or Gr
Blue	L
Light Green	Lg
Orange	Or
Pink	P
Purple	Pu or V
Red	R
Sky Blue	Sb
White	W
Yellow	Y

(1) Wire Color

(2) Stripe

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4. LUBRICANTS FUEL AND COOLANT

No.	Place	Capacity				Lubricants, fuel and coolant
		M100X	M110X	M126X	M135X	
1	Fuel	190 L 50.2 U.S.gals 41.8 Imp.gals				<ul style="list-style-type: none"> No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below -10°C (14°F)
2	Cooling system	9.0 L 9.5 U.S.qts 7.9 Imp.qts		14.6 L 15.4 U.S.qts 12.9 Imp.qts	Fresh clean soft 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		14.6 L 15.4 U.S.qts 12.8 Imp.qts	Engine oil API Service Classification: CF or CI-4 [External EGR type engine] <ul style="list-style-type: none"> Above 25°C (77°F) SAE30, SAE10W-30 or 15W-40 0 to 25°C (32 to 77°F) SAE20, SAE10W-30 or 15W-40 Below 0°C (32°F) SAE10W, SAE10W-30 or 15W-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	7.0 L 7.4 U.S.qts 6.2 Imp.qts		13.0 L 13.7 U.S.qts 11.4 Imp.qts	KUBOTA UDT or SUPER UDT fluid* or SAE80, SAE90 gear oil	
	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		

■ **NOTE**

- *KUBOTA original transmission hydraulic fluid.

Greasing, oiling (Machine)				
No.	Place	No. of greasing point	Capacity	Type of grease
8	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	

■ **NOTE**

- *KUBOTA original transmission hydraulic fluid.

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■ 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 temperatures as shown above :
- 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 on-road vehicle engines. When an off-road vehicle engine runs on a high-sulfur fuel, it is advisable to employ the "CF or better" lubricating oil with a high Total Base Number (TBN of 10 minimum).
- Refer to the following table for the suitable API classification engine oil according to the engine type (with internal EGR, external EGR or non-EGR) and the fuel (low-sulfur or high-sulfur fuel).

Fuel used	Engine oil classification (API classification)	
	Oil class of engines except external EGR	Oil class of engines with external EGR
High Sulfur Fuel (≥ 500 ppm)	CF (If the "CF-4, CG-4, CH-4, or CI-4" lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals. (approximately half))	—
Low Sulfur Fuel (< 500 ppm) or Ultra Low Sulfur Fuel (< 15 ppm)	CF, CF-4, CG-4, CH-4 or CI-4	CF or CI-4 (Class CF-4, CG-4 and CH-4 engine oils cannot be used on EGR type engines)

EGR : Exhaust Gas Re-circulation

- The **CJ-4** engine oil is intended for DPF (Diesel Particulate Filter) type engines, and cannot be used on this tractor.

Fuel

- Cetane number of 45 minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20 °C (-4 °F) or elevations above 1500 m (5000 ft).
- If diesel fuel with sulfur content greater than 0.5 % sulfur content in used, reduce the service interval for engine oil and filter by 50%.
- **DO NOT** use diesel fuel with sulfur content greater than 1.0 %.
- Diesel fuels specified to EN 590 or ASTM D975 are recommended.
- No.2-D is a distillate fuel of lower volatility for engine in industrial and heavy mobile service. (SAE J313 JUB87)
- Since this engine adopts EPA Tier 4 and Interim Tier 4 standards, the use of low sulfur fuel or ultra low sulfur fuel is mandatory in EPA regulated area (North America). Therefore, please use No.2-D S500 or S15 diesel fuel as an alternative to No.2-D, or use No.1-D S500 or S15 diesel fuel as an alternative to No.1-D if outside air temperature is below -10 °C (14 °F).

Transmission oil

- The oil used to lubricate the transmission is also used as hydraulic fluid. To insure proper operation of the hydraulic system and to complete lubrication of the transmission, it is important that a multi-grade transmission fluid is used in this system. We recommend the use of KUBOTA UDT or SUPER UDT fluid for optimum protection and performance.

Do not mix different brands together.

- Indicated capacities of water and oil are manufacturer's estimate.

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Product: 2009 Kubota WSM M100X M110X M126X M135X Tractor Service Repair Workshop Manual

Full Download: <https://www.arepairmanual.com/downloads/2009-kubota-wsm-m100xm110xm126xm135x-tractor-service-repair-workshop-manual/>[xm110xm126xm135x-tractor-service-repair-workshop-manual/](https://www.arepairmanual.com/downloads/2009-kubota-wsm-m100xm110xm126xm135x-tractor-service-repair-workshop-manual/)

[1] GENERAL USE SCREWS, BOLTS AND NUTS

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

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	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M6 (6 mm, 0.24 in.)	7.9	0.80	5.8	7.9	0.80	5.8	9.81	1.00	7.24	7.9	0.80	5.8	12.3	1.25	9.05
	to 9.3	to 0.95	to 6.8	to 8.8	to 0.90	to 6.5	to 11.2	to 1.15	to 8.31	to 8.8	to 0.90	to 6.5	to 14.2	to 1.45	to 10.4
M8 (8 mm, 0.31 in.)	18	1.8	13	17	1.7	13	24	2.4	18	18	1.8	13	30	3.0	22
	to 20	to 2.1	to 15	to 19	to 2.0	to 14	to 27	to 2.8	to 20	to 20	to 2.1	to 15	to 34	to 3.5	to 25
M10 (10 mm, 0.39 in.)	40	4.0	29	32	3.2	24	48	4.9	36	40	4.0	29	61	6.2	45
	to 45	to 4.6	to 33	to 34	to 3.5	to 25	to 55	to 5.7	to 41	to 44	to 4.5	to 32	to 70	to 7.2	to 52
M12 (12 mm, 0.47 in.)	63	6.4	47	-	-	-	78	7.9	58	63	6.4	47	103	10.5	76.0
	to 72	to 7.4	to 53	-	-	-	to 90	to 9.2	to 66	to 72	to 7.4	to 53	to 117	to 12.0	to 86.7
M14 (14 mm, 0.55 in.)	108	11.0	79.6	-	-	-	124	12.6	91.2	-	-	-	167	17.0	123
	to 125	to 12.8	to 92.5	-	-	-	to 147	to 15.0	to 108	-	-	-	to 196	to 20.0	to 144
M16 (16 mm, 0.63 in.)	167	17.0	123	-	-	-	197	20.0	145	-	-	-	260	26.5	192
	to 191	to 19.5	to 141	-	-	-	to 225	to 23.0	to 166	-	-	-	to 304	to 31.0	to 224
M18 (18 mm, 0.71 in.)	246	25.0	181	-	-	-	275	28.0	203	-	-	-	344	35.0	254
	to 284	to 29.0	to 209	-	-	-	to 318	to 32.5	to 235	-	-	-	to 402	to 41.0	to 296
M20 (20 mm, 0.79 in.)	334	34.0	246	-	-	-	368	37.5	272	-	-	-	491	50.0	362
	to 392	to 40.0	to 289	-	-	-	to 431	to 44.0	to 318	-	-	-	to 568	to 58.0	to 419

WSM000001GEG0001US0

[2] STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8 (8 mm, 0.31 in.)	12	1.2	8.7	8.9	0.90	6.5
	to 15	to 1.6	to 11	to 11	to 1.2	to 8.6
M10 (10 mm, 0.39 in.)	25	2.5	18	20	2.0	15
	to 31	to 3.2	to 23	to 25	to 2.6	to 18
M12 (12 mm, 0.47 in.)	29.5	3.0	21.7	31.4	3.2	23.1
	to 49.0	to 5.0	to 36.1			
M14 (14 mm, 0.55 in.)	62	6.3	46	-	-	-
	to 73	to 7.5	to 54	-	-	-
M16 (16 mm, 0.63 in.)	98.1	10.0	72.4	-	-	-
	to 112	to 11.5	to 83.1	-	-	-
M18 (18 mm, 0.71 in.)	172	17.5	127	-	-	-
	to 201	to 20.5	to 148	-	-	-

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