

Product: Kubota M5N-091 M5N-111 Service Manual

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WSM

WORKSHOP MANUAL

TRACTOR

M5N-091, M5N-111

Kubota

KiSC issued 01, 2022 A

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TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the *M5N-091 and M5N-111*. It contains 4 parts: "Information", "General", "Mechanism" and "Servicing".

Information

This section primarily contains information below.

- Safety First
- Safety Decal
- Specification
- Dimension

General

This section primarily contains information below.

- 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 mechanism / Tractor mechanism* that this Workshop Manual does not include.

Servicing

This section primarily contains information below.

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

Regarding the servicing of Common Rail System (CRS), refer to "Diagnosis Manual" (9Y120-03140).

Regarding the servicing of Diesel Particulate Filter (DPF), refer to "*Diesel particulate filter handling manual*" (9Y121-08130).

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.

August 2016

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RECORD OF REVISIONS

For pdf, use search function [Search word] to find all the revised locations.

Last digit of the code No.	Month of revision	Main revised point and corrective measure [Search word]	Reference page
1	2016 10	M5N-091-PC model is added.	—
2	2017 06	<ul style="list-style-type: none"> • Due to add the information of ROPS model. • Due to correct error. 	—
3	2019 01	<ul style="list-style-type: none"> • Wrong correction The procedure of disassembling and assembling of flywheel housing was corrected. 	3-37 3-110 3-112
		<ul style="list-style-type: none"> • Wrong correction Checking procedure of the intake throttle valve was corrected. 	10-134 10-134
4	2019 11	Changed the topic of "Removing control valve".	9-63
5	2020 07	Adding information how to handling DEF/AdBlue®.	2-21
		Adding information about outline of the SCR system	3-18
		Change the information about the DEF/AdBlue® fluid level warning indicator criteria. <ul style="list-style-type: none"> • Before: 15 % • Now: 40 % 	3-26 10-27
		Adding information about DEF header unit replacing tool	2-149
		Adding information about how to replace engine parts.	3-132
		Change and adding some maintenance items about DEF/AdBlue®.	2-35 2-38 2-41 2-70 2-70
6	2020 12	Changing the topic of "Safety decals".	1-7
		Correction of dimensional error and tightening torque of supply pump gear mounting nut.	3-37 3-99
7	2021 12	The procedure of "Changing front axle gear case oil and front differential case oil" was corrected.	2-60 2-102

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1. INFORMATION

SAFETY FIRST

1. 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 try 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.

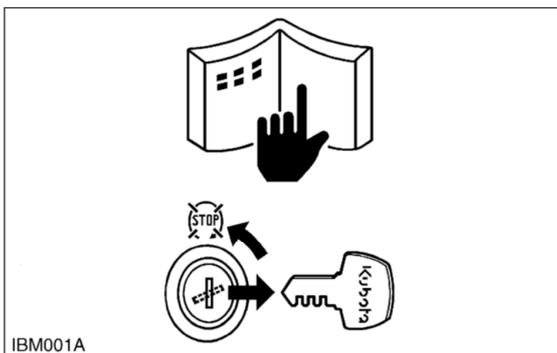
■ IMPORTANT

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

■ NOTE

- Gives helpful information.

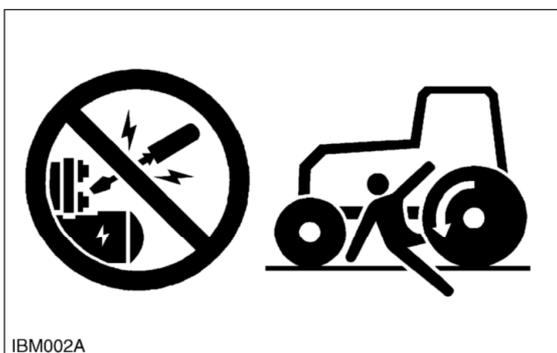
2. Before you start service



IBM001A

- 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.

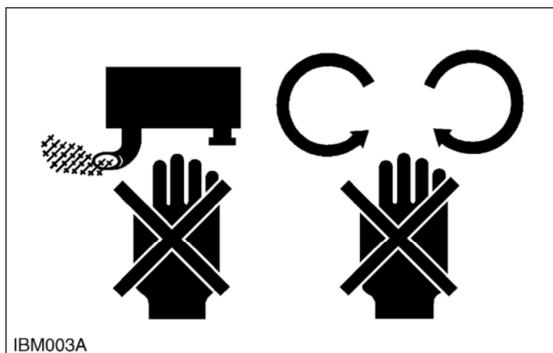
3. Start safely



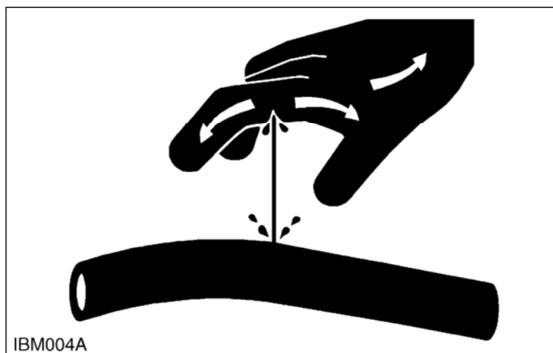
IBM002A

- Do not do the procedures below when you start the engine.
 1. Short across starter terminals.
 2. 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.

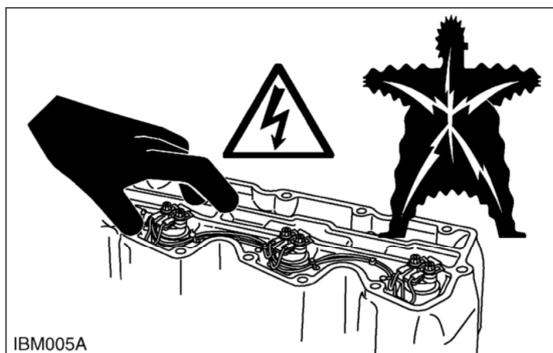
4. Operate safely



IBM003A



IBM004A



IBM005A

- 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 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

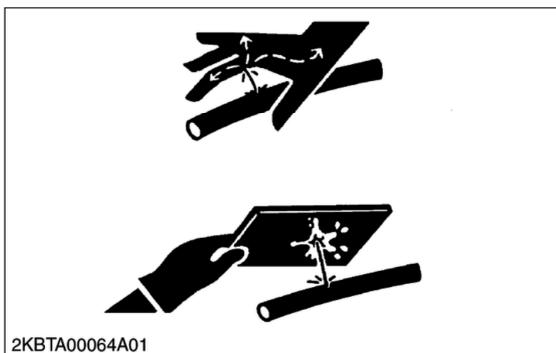
loosen the cap to release the pressure before you remove it fully.

- 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.

5. Avoiding high pressure fluid

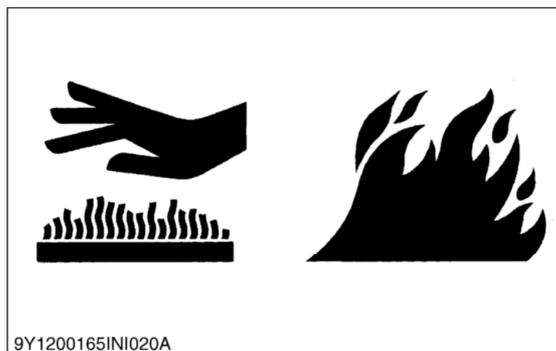


- Keep away from high pressure fluids bursting from a hose or pipe. The fluid can penetrate your skin and cause serious injuries.
- Get a medical aid immediately if an accident occurs.

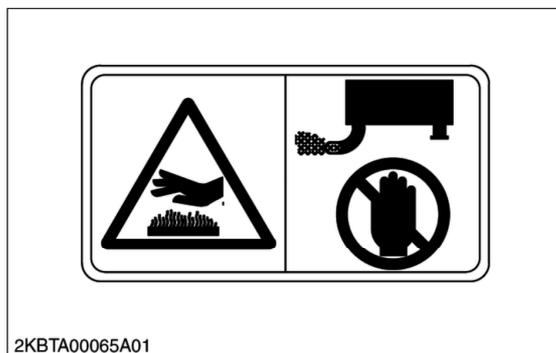


- Release residual pressure in the hydraulic circuit before removing the hydraulic components.
- Pay attention when releasing pressure in hydraulic circuit, because the machine or attachment might move unexpectedly.
- Check the coolant temperature and release the pressure before opening the radiator cap.

6. Avoiding hot exhaust



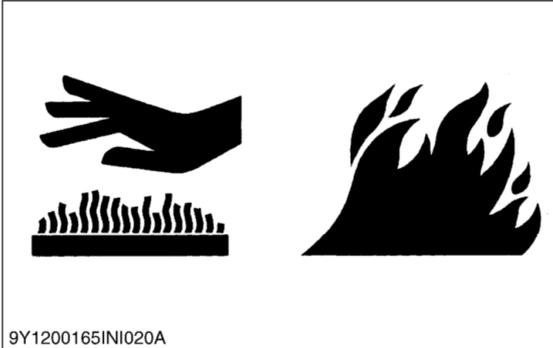
- Avoid skin exposure and contact with hot exhaust gas or components.
- Exhaust gas and components are extremely hot during operation.



- Do not work immediately after stopping the engine. The engine, muffler, radiator, and hydraulic components are extremely hot.
- Do not remove caps and plugs soon after stopping the engine. The temperature and pressure of the coolant, hydraulic oil, and fuel are still high.

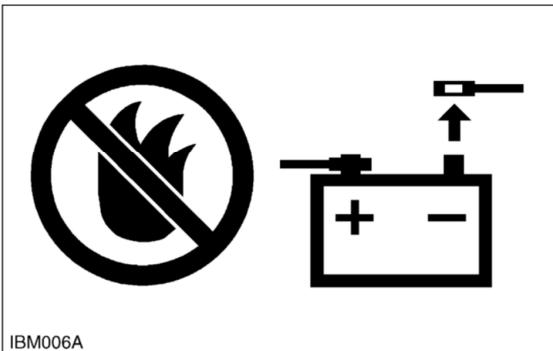
1. INFORMATION

7. Cleaning exhaust filter



- Avoid skin exposure and contact with hot exhaust gas or components. Exhaust gas and components are extremely hot during regeneration of the diesel particulate filter (DPF).

8. 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.

9. Keep a good airflow in the work area



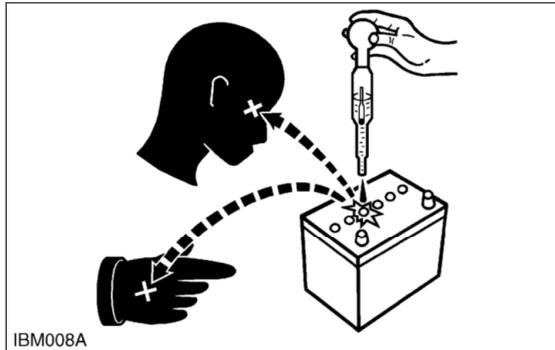
- If the engine is in operation, make sure that the area has good airflow. Do not operate the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

10. 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.

11. 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.

12. Preparing for emergencies



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

SAFETY DECALS

The 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.

ROPS model

(1) Part No. 6C090-4958-2

Do not get your hands close to engine fan and fan belt.



1AGAIAZAP110E

(2) Part No. 3B481-9849-1



1AGBDAAP091A

(4) Part No. 3J080-3822-1

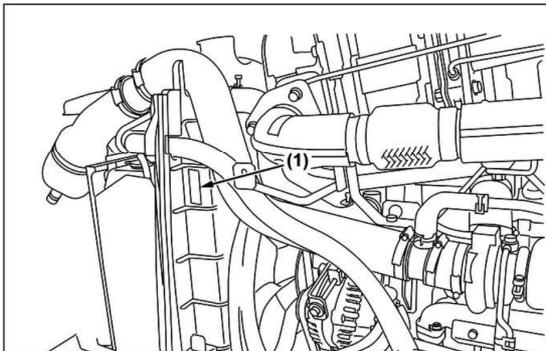


1AGBCAAP762A

(3) Part No. TC660-9861-1



1AGAHAKAP051A



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