WSM

WORKSHOP MANUAL

T1880,T2080,T2380

Kubota

KiSC issued 02, 2016 A

TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of KUBOTA T1880, T2080 and T2380. It is divided into two parts, “Mechanism” and “Servicing” for each section.

As for section 1, 2 and 3 of engines and HST, we attach detail manuals as sections of P, Q and R in the end respectively.

Section 1 and P are for the single cylinder engine GH540V of T1880.

Section 1 and Q are for the twin cylinder engines GH710V and GH720V of T2080 and T2380 respectively.

This WSM is revised and issued due to 4 reasons.

1. Engine HP denotation change by SAE J1940.
2. Kohler model change. New 2 kinds of manuals are added.
   a) For T1880A2* with engine SV541, refer to the manual SV470-SV620 after section P.
   b) For T2080A2* and T2380A2* with engines KT715 and KT725, refer to the manual KT715-KT745 after section Q.
3. Revision of ANSI safety regulation.
4. The content of supplement T1880A,T2080A,T2380A(9Y121-04961) is added.

Model Name: T1880A, T2080A, T2380A [**Serial No.**: 20001~]
Model Name: T1880A2, T2080A2, T2380A2 [**Serial No.**: 30001~]

■ **General**

Information on the product 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.

■ **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.

April 2008

KiSC issued 02, 2016 A

Record of Revisions

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

Last digit of the Code No.	Issue month	Main Revised Point and Corrective Measures {Search word}	Reference Page
4	2014.07	1. New Kohler manuals are added due to Kohler model change. a) Manual SV470-SV620 b) Manual KT715 and KT725 Design changes of engines for T2080A2, T2380A2. 1) Shape of fan and fan shroud. 2) Oil gauge position 3) Position of connecting port of evaporative hose 2. ANSI change. 1) Front guard added. 2) Muffler tail cover added. 3. Content of supplement T1880A,T2080A,T2380A(9Y121-04961) is added. 4. Engine HP value changed. 5. Correction of Disassembling procedure in FRONT AXLE. We removed the removal procedure of fuel hose.	Section P Section Q 1-S8, S9 and others. 1-S15, S16 8 4-S5
5	2015.11	Revised maintenance interval. {service intervals} Fuel Line Check: 100 hrs or annually → 1 year, Replace: 2 years → 4 years	G-13
6	2016.02	Added Safety Label for ear and eye protection	5

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.

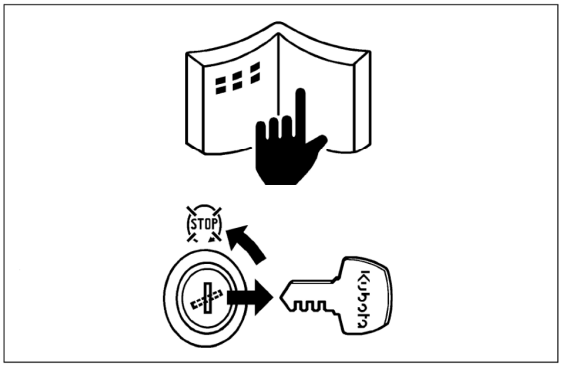
DANGER : Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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.

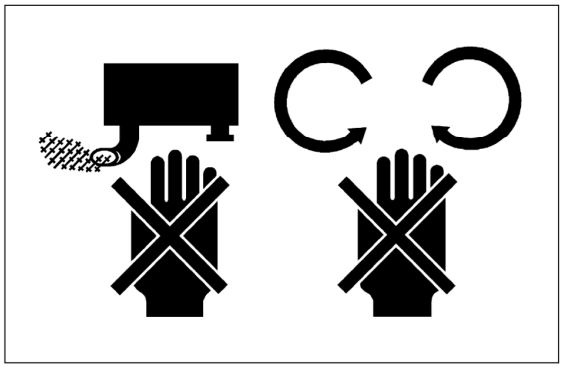


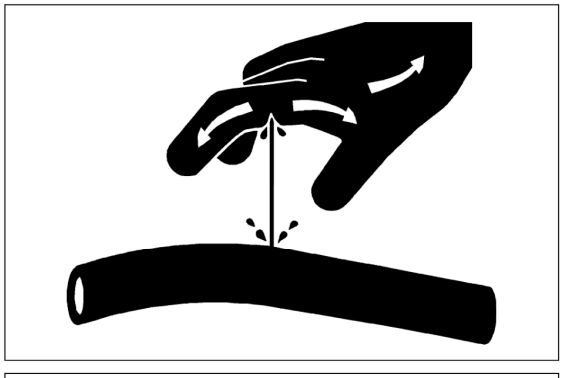
BEFORE SERVICING AND REPAIRING

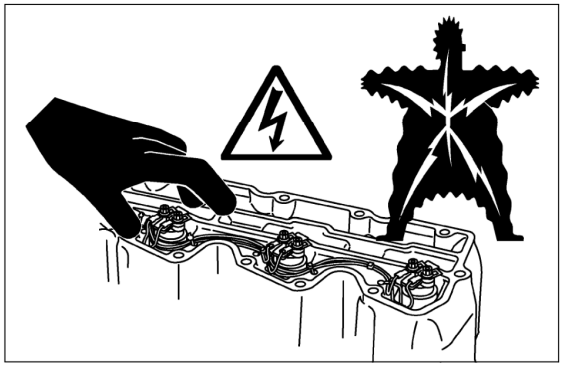
- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a firm and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, and remove the key.
- Disconnect the battery 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.

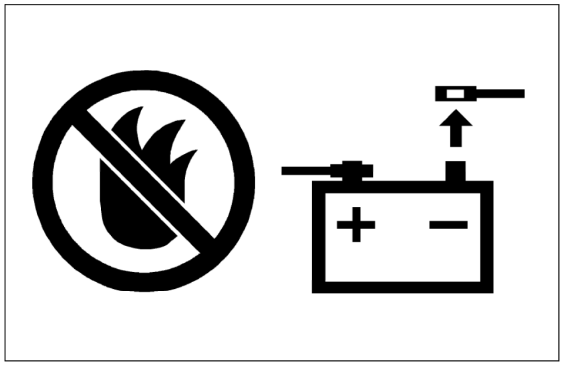






SAFETY WORKING

- 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.

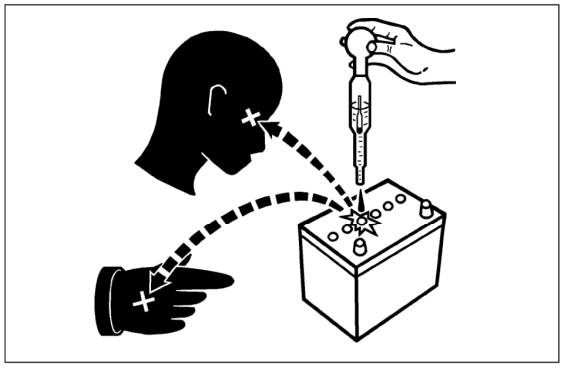


AVOID FIRES

- 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.

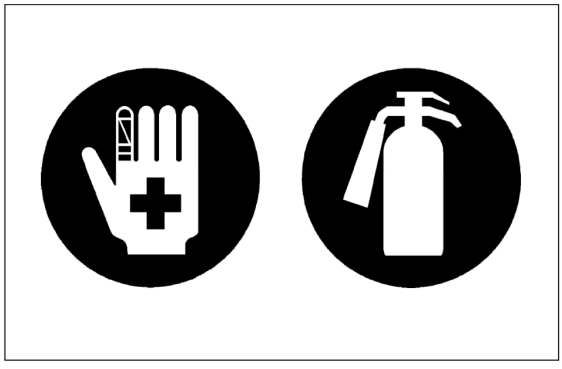


PREVENT ACID BURNS

- 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.

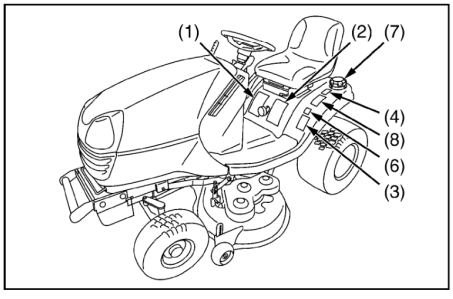


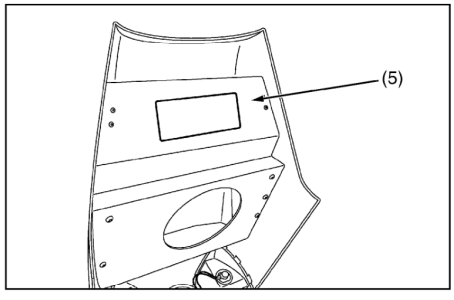
PREPARE FOR EMERGENCIES

- 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. K1122-6581-1

1BDADAFAP0510

(2) Part No. K1042-6534-1

1BDADAFAP129A

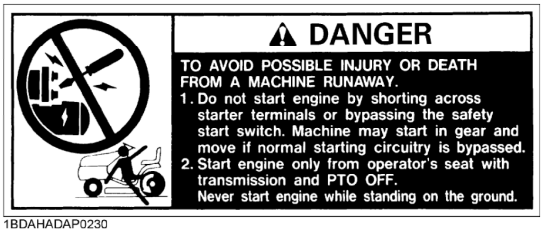
(3) Part No. K1122-6584-2

1BDADAFAP0530

(4) Part No. K2651-6568-1

1BDABBSAP0060

(5) Part No. K1162-6583-1



1BDAHADAP0230

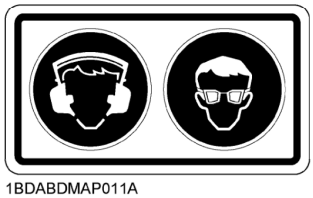
(6) Part No. K1042-6585-1

1AYAACAAP1000

(7) Part No. K1032-3412-1

1BDAHAMAP005A

(8) Part No. K3284-6569-1

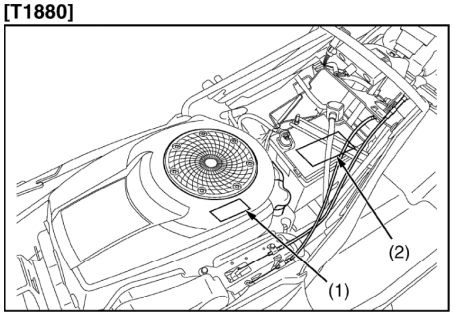


1BDABDMAP011A

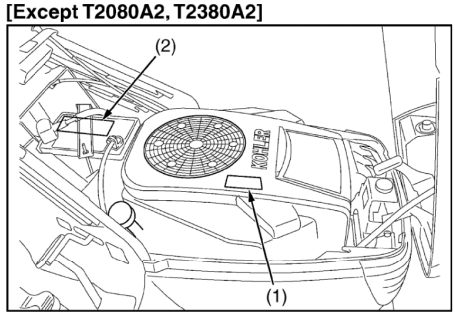
- Use ear protection to avoid damage to hearing.
- Always wear protective glasses.

9Y1210110ICI002US

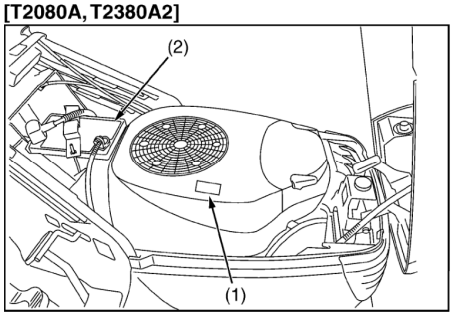
[T1880]



[Except T2080A2, T2380A2]



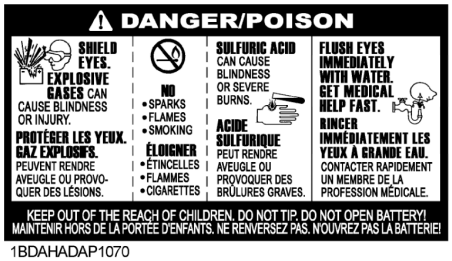
[T2080A, T2380A2]



(1) Part No. E7194-4719-1

1BDADAFAP0540

(2) Part No. K1221-6117-2



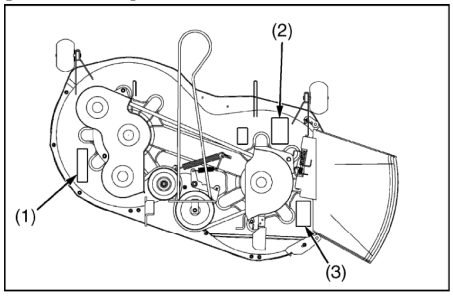
1BDAHADAP1070

(2) Part No. K1221-6118-1

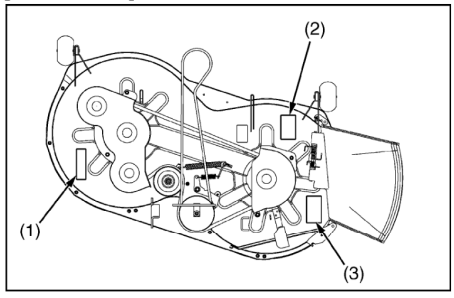
1BDAFAIAP136A

9Y1210110ICI003US

[RCK42-LT20]



[RCK48-LT23]



(1) Part No. K5617-7311-1

1BDABBSAP0030

(2) Part No. K5617-7312-1

1BDABBSAP0020

(3) Part No. K5184-7317-2

1BDADAFAP0780

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 replace with new part, make sure new label(s) is (are) attached in the same locations(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.

3GLAAAMCP003A

SPECIFICATIONS

<table>
<tr><th colspan="3">Model</th><th>T1880</th><th>T2080</th><th>T2380</th></tr>
<tr><td rowspan="12">Engine</td><td colspan="2">Model</td><td>GH540V</td><td>[T2080, T2080A] GH710V
[T2080A2] GH737V</td><td>[T2380, T2380A] GH720V
[T2380A2] GH738V</td></tr>
<tr><td colspan="2">Type</td><td colspan="3">OHV air cooled gasoline engine</td></tr>
<tr><td colspan="2">Number of cylinders</td><td>1</td><td colspan="2">2</td></tr>
<tr><td colspan="2" rowspan="2">Total displacement</td><td>[T1880A,A2]
597 cm^3 (36.4 cu.in.)</td><td colspan="2">725 cm^3 (44.2 cu.in.)</td></tr>
<tr><td>[T1880]
• SN. ≥ 3831112033
597 cm^3 (36.4 cu.in.
• SN. ≤ 3831112032
535 cm^3 (32.6 cu.in.)</td><td colspan="2">725 cm^3 (44.2 cu.in.)</td></tr>
<tr><td colspan="2">Max. horse power</td><td>13.4 kW (18 HP)</td><td>14.9 kW (20 HP)</td><td>[Except T1880A2, T2080A2, T2380A2]
17.2 kW (23 HP)
[T1880A2, T2080A2, T2380A2]
16.4 kW (22 HP)</td></tr>
<tr><td colspan="2" rowspan="2">Bore and stroke</td><td>[T1880A, A2]
• 94 × 86 mm
(3.70 × 3.38 in.)</td><td colspan="2">83 x 67 mm (3.27 x 2.64 in.)</td></tr>
<tr><td>[T1880]
• SN. ≥ 3831112033
94 × 86 mm
(3.70 × 3.38 in.)
• SN. ≤ 3831112032
89 × 86 mm
(3.50 × 3.38 in.)</td><td colspan="2">83 x 67 mm (3.27 x 2.64 in.)</td></tr>
<tr><td colspan="2">Fuel</td><td colspan="3">Automobile unleaded or regular gasoline</td></tr>
<tr><td colspan="2">Starter</td><td colspan="3">Electric starter with battery</td></tr>
<tr><td colspan="2">Lubrication</td><td colspan="3">Full pressure lubrication</td></tr>
<tr><td colspan="2">Cooling</td><td colspan="3">Forced air cooled</td></tr>
<tr><td colspan="2">Battery type</td><td colspan="3">U1L-9 (12 V, 300CCA)</td></tr>
<tr><td colspan="2">Spark plug</td><td colspan="3">Champion RC12YC</td></tr>
<tr><td rowspan="3">Capacities</td><td colspan="2">Fuel tank</td><td colspan="3">[T1880A, A2, T2080A, A2, T2380A, A2] 13.5 L (3.57 U.S.gals, 2.97 Imp.gals)
[T1880, T2080, T2380] 15 L (3.9 U.S.gals, 3.2 Imp.gals)</td></tr>
<tr><td colspan="2">Engine crankcase</td><td>1.5 L
(1.6 U.S.qts, 1.3 Imp.qts)</td><td colspan="2">1.8 L (1.9 U.S.qts, 1.5 Imp.qts)</td></tr>
<tr><td colspan="2">Hydrostatic transmission case</td><td colspan="3">2.70 to 2.75 L (2.85 to 2.90 U.S.qts, 2.38 to 2.41 Imp.qts)</td></tr>
<tr><td rowspan="9">Machine</td><td colspan="2">PTO</td><td colspan="3">Belt</td></tr>
<tr><td colspan="2">Direction of revolution</td><td colspan="3">Clockwise viewed from top</td></tr>
<tr><td colspan="2">Revolution (PTO speed)</td><td colspan="3">3200 min^{-1} (rpm)</td></tr>
<tr><td colspan="2">PTO clutch</td><td colspan="3">Belt tension</td></tr>
<tr><td colspan="2">Transmission</td><td colspan="3">Hydrostatic transmission</td></tr>
<tr><td rowspan="2">Traveling speed</td><td>Forward</td><td colspan="3">0.0 to 9.0 km/h (0.0 to 5.6 mph)</td></tr>
<tr><td>Reverse</td><td colspan="3">0.0 to 5.0 km/h (0.0 to 3.1 mph)</td></tr>
<tr><td colspan="2">Brake</td><td colspan="3">External disk type</td></tr>
<tr><td rowspan="2">Tires</td><td>Front</td><td colspan="3">15 × 6.00-6</td></tr>
<tr><td>Rear</td><td colspan="3">22 × 11.00-10</td></tr>
</table>

NOTE: *Manufacture's estimate
The company reserves the right to change the specifications without notice.

W1028280

Model			T1880	T2080	T2380
Dimensions	Overall length		**[Except T1880A2, T2080A2, T2380A2]** 1850 mm (72.8 in.) **[T1880A2, T2080A2, T2380A2]** 1955 mm (77.0 in.)		
	Overall width (with mower)		1392 mm (54.8 in.)		1544 mm (60.8 in.)
	Overall height		1090 mm (42.9 in.)	1125 mm (44.3 in.)	
	Wheel base		1290 mm (50.8 in.)		1380 mm (54.3 in.)
	Tread	Front	783 mm (30.8 in.)		
		Rear	727 mm (28.6 in.)		
	Weight (with mower)		**[T1880, T1880A]** 280 kg (617 lbs) **[T1880A2]** 290kg (639 lbs)	**[T2080, T2080A]** 280 kg (617 lbs) **[T2080A2]** 295 kg (650 lbs)	**[T2380,T2380 A]** 285 kg (628 lbs) **[T2380A2]** 300 kg (661 lbs)

NOTE: *Manufacture's estimate
The company reserves the right to change the specifications without notice.

W1031306

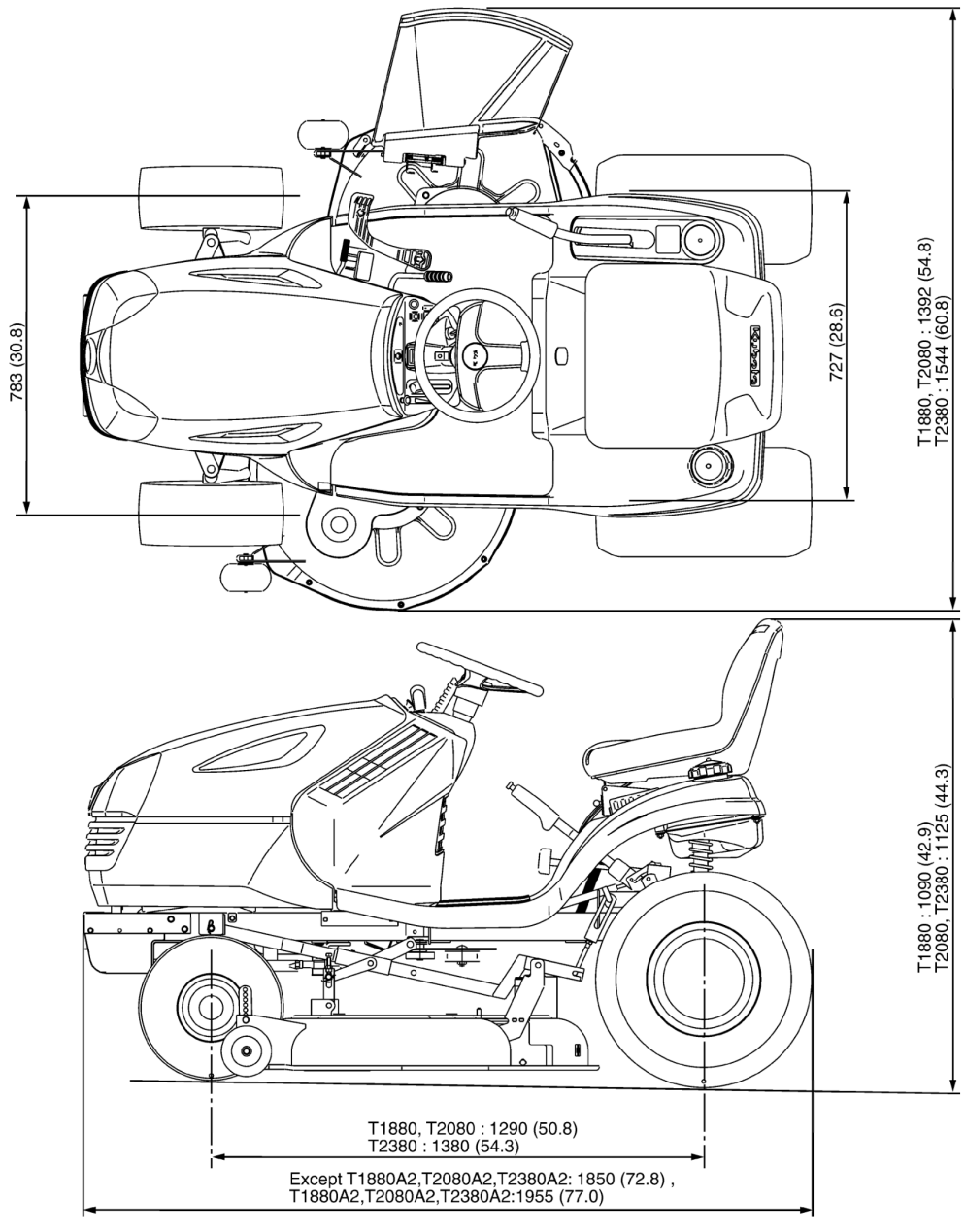
Model			T1880	T2080	T2380
Mower	**Type**		**RCK42-LT20**		**RCK48-LT23**
	Mounting method		Quick joint, Parallel linkage		
	Adjustment of cutting height		Dial gauge		
	Cutting width		1067 mm (42 in.)		1219 mm (48 in.)
	Cutting height		25 to 102 mm (1.0 to 4.0 in.)		
	Weight (Approx.)		51 kg (112.5 lbs)		58 kg (127.9 lbs)
	Number of blades		2		
	Dimensions	Total length	868 mm (34.2 in.)		957 mm (37.7 in.)
		Total width	1392 mm (54.8 in.)		1544 mm (60.8 in.)
		Total height	295 mm (11.6 in.)		
	Discharge direction		Right side		

NOTE: *Manufacture's estimate
The company reserves the right to change the specifications without notice.

W1039580

DIMENSIONS

mm (in.)



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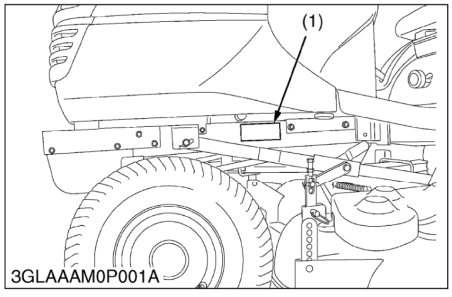
G GENERAL

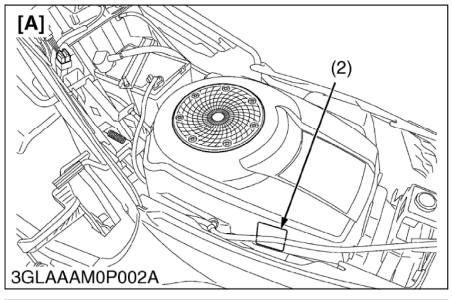
GENERAL

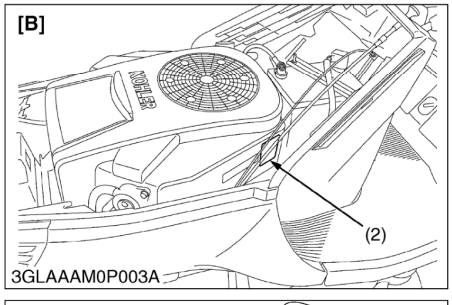
CONTENTS

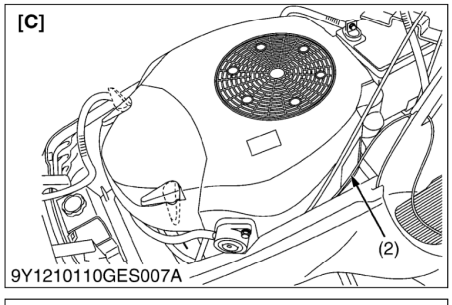
1. IDENTIFICATION

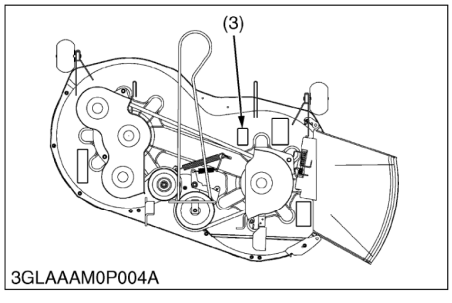
[1] SERIAL NUMBER











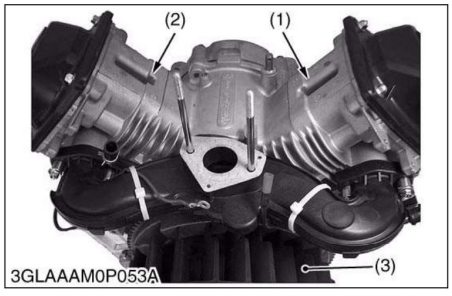
When contacting your local KUBOTA distributor, always specify engine serial number (2), machine serial number (1), mower serial number (3) and hour meter reading (if equipped).

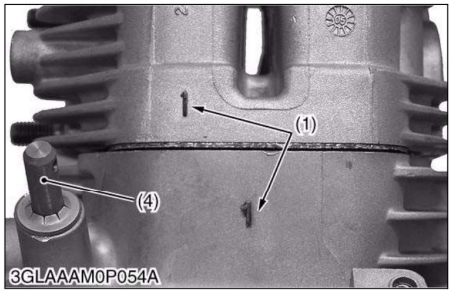
(1) Machine Serial Number
(2) Engine Serial Number
(3) Mower Identification Plate

[A] T1880
[B] Except T2080A2, T2380A2
[C] T2080A2, T2380A2

W1010714

[2] CYLINDER NUMBER





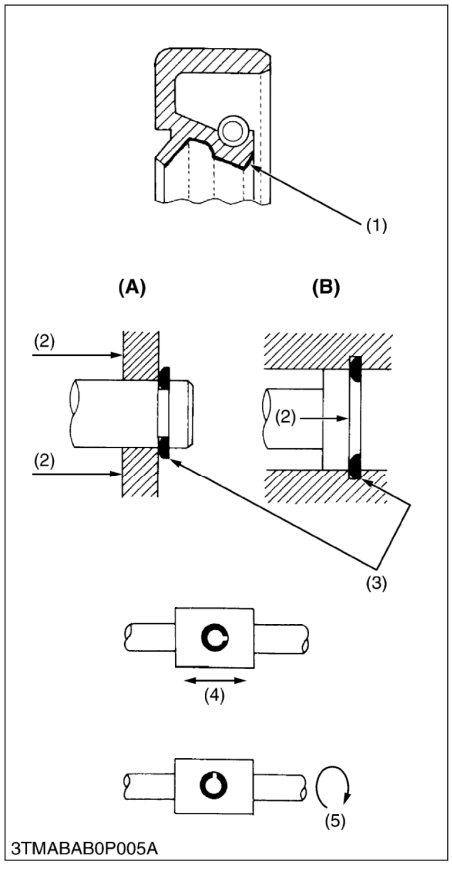
No. 1 Cylinder is on the right side of the tractor.

The match marks (1) (2) are on the cylinder heads and crankcase.

(1) Match Mark No. 1
(2) Match Mark No. 2
(3) Fan
(4) Governor shaft

W1030134

2. GENERAL PRECAUTIONS



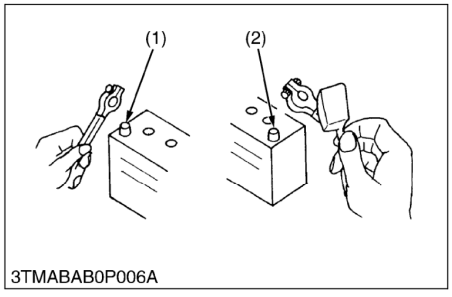
- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Screws, bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently 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.

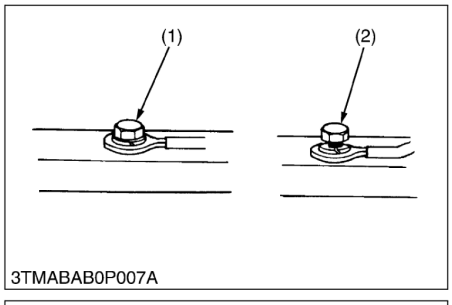
■ **IMPORTANT**

- **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

W1012221

[1] WIRING

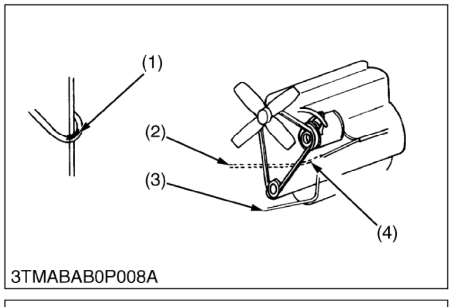


3TMABAB0P007A

- Securely tighten wiring terminals.

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

W1012391

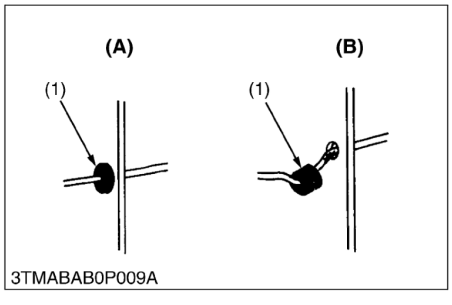


3TMABAB0P008A

- Do not let wiring contact dangerous part.

(1) Dangerous Part (3) Wiring (Correct)
(2) Wiring (Incorrect) (4) Dangerous Part

W1012525

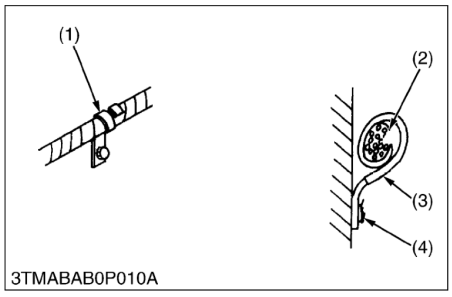


3TMABAB0P009A

- Securely insert grommet.

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

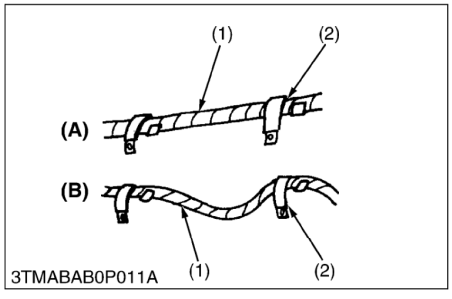
W1012644



- Securely clamp, being careful not to damage wiring.

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

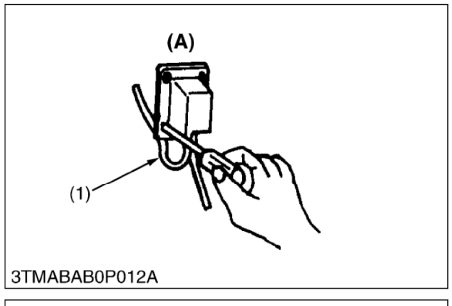
W1012764



- 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

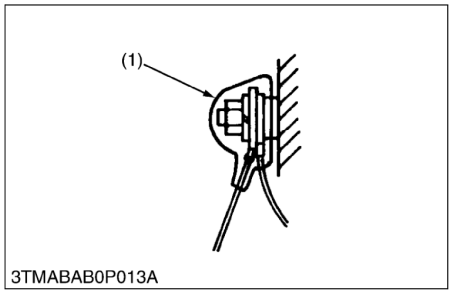
W1012924



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

(1) Wiring
(A) Incorrect

W1013028

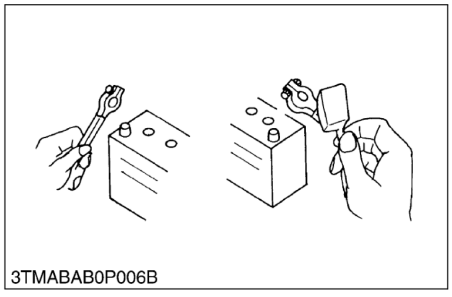


- After installing wiring, check protection of terminals and clamped condition of wiring, only connect battery.

(1) Cover
•Securely Install Cover

W1013126

[2] BATTERY


3TMABAB0P006B

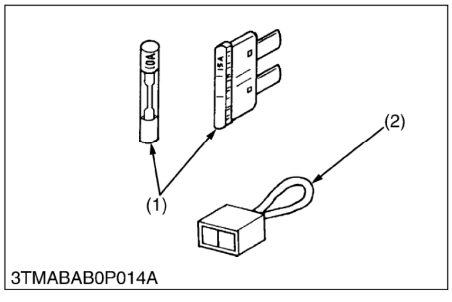
- Take care not to confuse positive and negative terminal posts.
- When removing battery cables, disconnect negative cable first. When installing battery cables, check for polarity and connect positive cable first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting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

W1013215

[3] FUSE



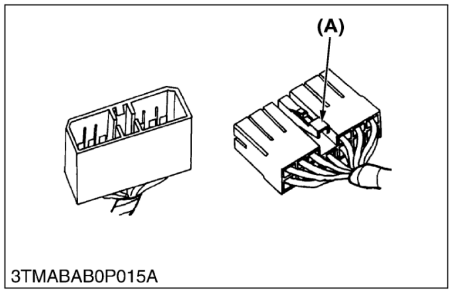
3TMABAB0P014A

- 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) Fusible Link

W1013444

[4] CONNECTOR

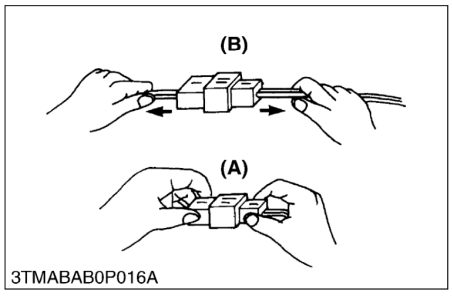


3TMABAB0P015A

- For connector with lock, push lock to separate.

(A) Push

W1013524

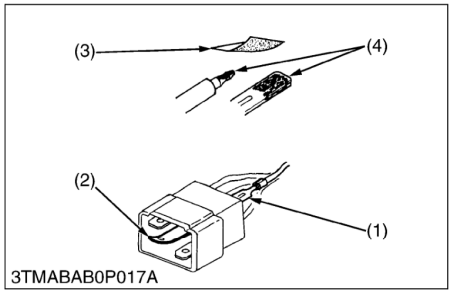


3TMABAB0P016A

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

(A) Correct **(B) Incorrect**

W1013712

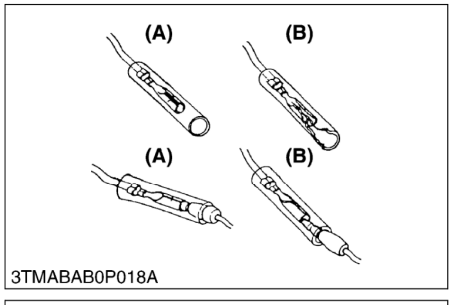


3TMABAB0P017A

- 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

W1013819

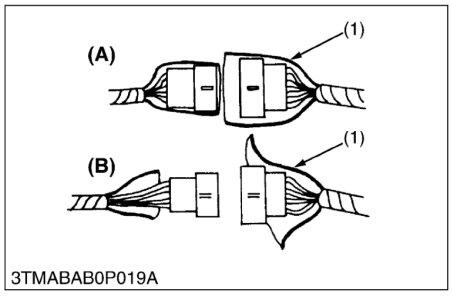


3TMABAB0P018A

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

(A) Correct **(B) Incorrect**

W1013985



3TMABAB0P019A

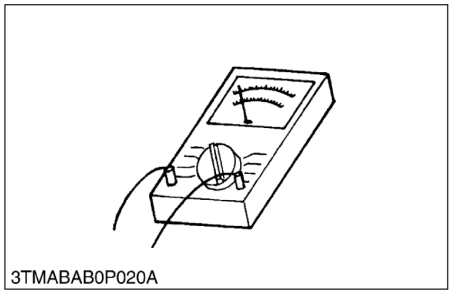
- Make certain plastic cover is large enough to cover whole connector.

(1) Cover

(A) Correct
(B) Incorrect

W1014110

[5] HANDLING OF CIRCUIT TESTER


3TMABAB0P020A

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

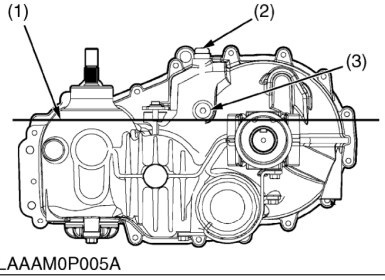
W1014209

4. LUBRICANTS AND FUEL

No.	Place	Capacity		Lubricants and fuel
		T1880	T2080, T2380	
1	Engine crankcase	1.5 L 1.6 U.S.qts 1.3 Imp.qts	–	Engine oil: API service classification SG, SH, SJ or higher Below 0 °C (32 °F): SAE 5W-20 or 5W-30 Above 0 °C (32 °F): SAE 10W-30
		–	1.6 to 1.8 L 1.7 to 1.9 U.S.qts 1.4 to 1.5 Imp.qts	Engine oil: API service classification SG, SH, SJ or higher Below 0 °C (32 °F): SAE 5W-20 or 5W-30 Above −18 °C (0 °F): SAE 10W-30
2	Hydrostatic transmission	2.70 to 2.75 L 2.85 to 2.90 U.S.qts 2.38 to 2.41 Imp.qts		Engine oil: API service classification SL SAE 20W-50
3	King pins	Until grease over flows		Multipurpose EP2 Grease (NLGI Grade No. 2)
4	Front axle pivot pin Brake pedal shaft Seat adjuster Speed control pedal shaft Throttle cable PTO clutch cable Mower brake cable Mower link	Moderate amount		Oil or spray type grease
5	Fuel tank	**[T1880A, A2, T2080A, A2, T2380A, A2]** 13.5 L 3.57 U.S.gals 2.97 Imp.gals		• Automobile unleaded or regular gasoline • Unleaded gasoline 87 octane or higher
		[T1880, T2080, T2380] 15 L 3.9 U.S.gals 3.2 Imp.gals		

■ **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.
- **Indicated capacity of oil are manufacture's estimate.**
- **Gasohol (up to 10 % ethyl alcohol, 90 % unleaded gasoline by volume) or Methyl Tertiary Butyl Ether (MTBE) and unleaded gasoline blends (up to a maximum of 15 % MTBE by volume) are approved for the engine. Other gasoline/ alcohol blends are not approved.**



3GLAAAM0P005A

Hydrostatic Transmission

Checking oil level :

Be sure to check the oil level (1) when the transmission is cold. Remove the oil level check port plug (3). The correct level should be even with the bottom of the port. If necessary to add oil, remove breather tube and add from top port plug. Be sure to use correct oil which is specified in the above LUBRICANTS table.

(1) Oil Level
(2) Top Port Plug
(3) Oil Level Check Port Plug

W1013193

5. TIGHTENING TORQUES

[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 / Diameter	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 to 9.3	0.80 to 0.95	5.8 to 6.8	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
M8 (8 mm, 0.31 in.)	18 to 20	1.8 to 2.1	13 to 15	17 to 19	1.7 to 2.0	13 to 14	24 to 27	2.4 to 2.8	18 to 20	18 to 20	1.8 to 2.1	13 to 15	30 to 34	3.0 to 3.5	22 to 25
M10 (10 mm, 0.39 in.)	40 to 45	4.0 to 4.6	29 to 33	32 to 34	3.2 to 3.5	24 to 25	48 to 55	4.9 to 5.7	36 to 41	40 to 44	4.0 to 4.5	29 to 32	61 to 70	6.2 to 7.2	45 to 52
M12 (12 mm, 0.47 in.)	63 to 72	6.4 to 7.4	47 to 53	–	–	–	78 to 90	7.9 to 9.2	58 to 66	63 to 72	6.4 to 7.4	47 to 53	103 to 117	10.5 to 12.0	76.0 to 86.7
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] METRIC SCREWS, BOLTS AND NUTS

Grade	Property class 8.8 ⬡ 8.8			Property class 10.9 ⬡ 10.9		
Unit / Nominal Diameter	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8	24 to 27	2.4 to 2.8	18 to 20	30 to 34	3.0 to 3.5	22 to 25
M10	48 to 55	4.9 to 5.7	36 to 41	61 to 70	6.2 to 7.2	45 to 52
M12	78 to 90	7.9 to 9.2	58 to 66	103 to 117	10.5 to 12.0	76 to 86.7
M14	124 to 147	12.6 to 15.0	91.2 to 108	167 to 196	17.0 to 20.0	123 to 144
M16	197 to 225	20.0 to 23.0	145 to 166	260 to 304	26.5 to 31.0	192 to 224

W1016172

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

Grade	SAE GR.5			SAE GR.8		
Unit / Nominal Diameter	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
5/16	23.1 to 27.7	2.35 to 2.83	17.0 to 20.5	32.6 to 39.3	3.32 to 4.00	24.0 to 29.0
3/ 8	48 to 56	4.9 to 5.8	35.0 to 42.0	61.1 to 73.2	6.23 to 7.46	45.0 to 54.0
1/ 2	109 to 130	11.1 to 13.2	80.0 to 96.0	149.2 to 178.9	15.21 to 18.24	110.0 to 132.0
9/16	149.2 to 178.9	15.21 to 18.24	110.0 to 132.0	217.0 to 260.3	22.12 to 26.54	160.0 to 192.0
5/ 8	203.4 to 244	20.74 to 24.88	150.0 to 180.0	298.3 to 357.9	30.42 to 36.49	220.0 to 264.0

W1022485

[4] PLUGS

Shape	Size	Material of opponent part					
		Ordinariness			Aluminum		
		N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
Tapered screw 	R1/8	13 to 21	1.3 to 2.2	9.4 to 15	13 to 21	1.3 to 2.0	9.4 to 15
	R1/4	25 to 44	2.5 to 4.5	18 to 32	25 to 34	2.5 to 3.5	18 to 25
	R3/8	49 to 88	5.0 to 9.0	37 to 65	49.0 to 58	5.0 to 6.0	37 to 43
	R1/2	59 to 107	6.0 to 11.0	44 to 79.5	59 to 78	6.0 to 8.0	44 to 57
Straight screw 	G1/4	25 to 34	2.5 to 3.5	18 to 25	–	–	–
	G3/8	62 to 82	6.3 to 8.4	46 to 60	–	–	–
	G1/2	49 to 88	5.0 to 9.0	37 to 65	–	–	–

0000001666E

6. MAINTENANCE CHECK LIST

The following servicing tasks No.1 to 20 should be carried out on the machine at the stated running-time intervals.

No.	Items			Used hours (Hr)													After since	Refe-rence page	
				25	50	100	150	200	250	300	350	400	450	500	550	600			
1	PTO Belt tension		Adjust	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hrs	G-27	*3
2	Mower brake		Check Adjust		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hrs	G-28	
3	Brake pedal play		Check	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hrs	G-22	*3
4	King pin		Greasing	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hrs	G-29	*3
5	Air cleaner (T1880)	Precleaner element	Clean	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 25 Hrs or 2 months	G-25	*1
		Air cleaner element	Replace			☆		☆		☆		☆		☆		☆	every 100 Hrs or annually	G-34	
	Air cleaner (T2080, T2380)	Precleaner element	Clean	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 25 Hrs	G-26	*1
			Replace			☆		☆		☆		☆		☆		☆	every 100 Hrs	G-35, 36	
		Air cleaner element	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 25 Hrs	G-27	*2
			Replace			☆		☆		☆		☆		☆		☆	every 100 Hrs	G-35, 36	
6	Carbon canister air filter [Except T1880, T2080, T2380]		Check		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hrs	G-29	*2
7	Tire pressure		Change			☆		☆		☆		☆		☆		☆	every 50 Hrs	G-16	
8	Engine oil		Change			☆		☆		☆		☆		☆		☆	every 100 Hrs or annually	G-30	
9	Engine shroud		Clean			☆		☆		☆		☆		☆		☆	every 100 Hrs	G-30	

W1037757

■ **IMPORTANT**

- **The jobs indicated by ★ must be done initially.**
  ***1 Precleaner element should be cleaned more often in dusty conditions than in normal conditions.**
  ***2 Clean or replace as necessary.**
  ***3 The initial 25 hours should not be a replacement cycle.**
  ***4 Replace if any deterioration (crack, hardening, scar, or deformation) or damage occurred.**
- **GASOLINE ENGINE EMISSION RELATED MAINTENANCE INSTRUCTIONS:**
  1. Non-warranty maintenance, repair, or replacement of the emission control devices and systems should be performed by a qualified repair establishment or individual which has the experience and equipment to perform such work.
  See the Emissions Warranty Statement.
  2. To ensure the best quality and reliability, use new KUBOTA Genuine parts or their equivalents for repair and replacement, whenever you have maintenance done.

No.	Items		Indication hour meter (Hr)													After since	Refe-rence page	
			25	50	100	150	200	250	300	350	400	450	500	550	600			
10	Spark plug condition and gap (T1880)	Check			☆		☆		☆		☆		☆		☆	every 100 Hrs	G-31 P-S37	
	Spark plug condition and gap (T2080, T2380)	Check			☆		☆		☆		☆		☆		☆	every 100 Hrs	G-31 Q-S38	
11	Engine oil filter	Replace			☆		☆		☆		☆		☆		☆	every 100 Hrs or annually	G-38, 39	
12	Fuel line	Check														annually	G-43, 44	*4
		Replace														every 4 years	G-43, 44	
13	Fuel filter	Replace			☆		☆		☆		☆		☆		☆	every 100 Hrs or annually	G-37	
14	Throttle cable	Check Adjust			☆		☆		☆		☆		☆		☆	every 100 Hrs	G-31	
15	Battery condition	Check			☆		☆		☆		☆		☆		☆	every 100 Hrs	G-32 to 33	
16	Bendix starter (T1880)	Clean					☆				☆				☆	every 200 Hrs	G-40	
	Solenoid shift starter (T2080, T2380)	Clean											☆			every 500 Hrs	G-41	
17	Intake and exhaust valve clearance (T1880)	Check					☆				☆				☆	every 200 Hrs	G-40 P-S85	
18	Valve clearance (T2080, T2380)	Check Adjust							☆						☆	every 300 Hrs	G-40, 41 Q-S92	
19	Transaxle fluid	Change													☆	every 600 Hrs	G-42	
20	Transaxle oil filter	Replace													☆	every 600 Hrs	G-42	
21	Fuse	Replace														Service as required	G-45	
22	Mower belt	Replace															G-21	
23	Mower blade	Replace															G-20	

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7. CHECK AND MAINTENANCE

WARNING

- **Be sure to check and service the machine on a flat place with engine shut off, the parking brake on and chock the wheels.**

[1] DAILY CHECK

To prevent trouble from occurring, it is important to know the condition of the machine. Check the following items before starting.

Checking

- Check areas where previous trouble was experienced.
- Walk around the machine.

1. Tire pressure, wear and damage
2. Fuel and oil leak
3. Engine oil level
4. Fuel level
5. Damage of machine body, tightness of all bolts and nuts
6. Cooling air intake screen
7. Oiling

- Mower

1. Make sure blade bolts are tight.
2. Blades for wear or damage.
3. Check all hardware.
4. Make sure all pins are in place.

- While sitting in the operator's seat

1. Speed control pedal and brake pedal
2. Parking brake

- Turning the key switch “**ON**”

1. Head lights.

- Starting the engine

1. Color of the exhaust fumes
2. Safety start switch, seat safety control and another safety devices.
3. Check for abnormal noise and vibration.
4. Check Easy Checker (TM).
5. Check the air cleaner.

- Others

1. Check the areas where previous troubles were experienced.


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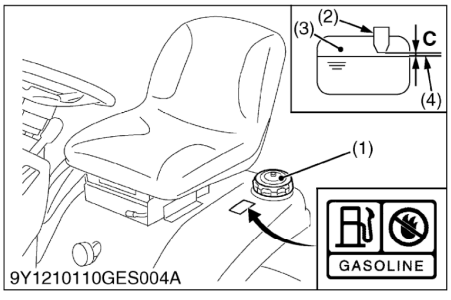

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Checking Amount of Fuel and Refueling (To be continued)

WARNING

To avoid serious injury:

- **Handle fuel carefully. If the engine is running, do not fill the fuel tank. If engine is hot, let engine cool several minutes before adding fuel. Do not smoke while filling the fuel tank or servicing the fuel system. Fill fuel tank only to bottom of filler neck. Do not fill completely full. The empty space in the tank allows gasoline to expand, when it heat up. Never remove the fuel tank cap or add fuel when fuel tank is hot.**

Check the fuel level. Take care that the fuel tank does not become empty.

Fuel tank capacity	T1880A, A2 T2080A, A2 T2380A, A2	13.5 L 3.57 U.S.gals 2.97 Imp.gals
	T1880 T2080 T2380	15 L 3.9 U.S.gals 3.2 Imp.gals

■ **IMPORTANT**

- **Do not mix oil with gasoline.**

Unleaded fuel is recommended. Regular leaded gasoline with an octane rating index of 87 or higher may be used. Avoid switching from unleaded to regular gasoline to prevent engine damage.

■ **NOTE**

- **Use fuel within approximately 30 days after purchase to avoid deterioration in fuel quality, or add fuel stabilizer to keep fuel fresh and stabilized.**
- **Fuel blend differs from season to season for the best seasonal engine performance. To prevent engine performance troubles such as vapor lock or hard starting, use fuel within the season in which the fuel is purchased.**
- **Infrequent use of the engine during a season can make fuel stale in the fuel tank of the machine. Stale fuel condition can cause engine performance troubles by varnish and plugged carburetor components.**
- **Seal the fuel storage container tightly and store it out of sunlight and heat to prevent fuel degradation.**
- **Condensation in the fuel tank may occur because of various operating or environmental conditions. To reduce condensation and avoid affecting machine operation, fill the fuel tank at the end of daily operation and store fuel in the plastic container.**

(1) Fuel Tank Cap
(2) Fuel Tank Filter Neck
(3) Empty Space
(4) Max, Fuel Level

C: Clearance
(Fuel level is under the filler neck.)

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