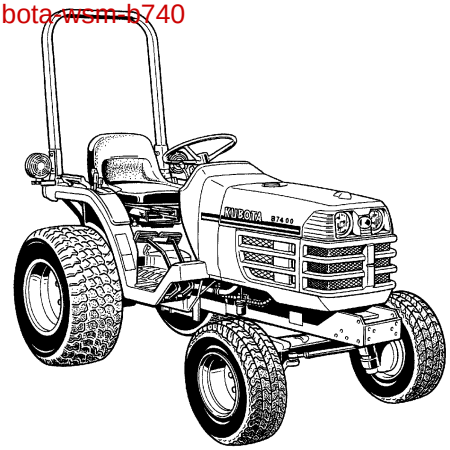
WSM

(B7400 · B7500)



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NOTE: · Please click the item to which you want to refer. When returning the index, click the arrow ⏮ on the tool bar which introduces to the first page.
· The code No. of these Workshop Manuals is as follows.
WSM for North America:No.97897-12490

September 2000

TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of KUBOTA Tractor B7400, B7500. It is divided into two parts, “Mechanism” and “Servicing” for each section.

■ Mechanism

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

■ Servicing

Under the heading “General” section comes general precautions, check and maintenance and special tools. Other section, there are troubleshooting, servicing specification lists, 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 production information available at the time of publication.

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

January 2000

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⚠ SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and decals 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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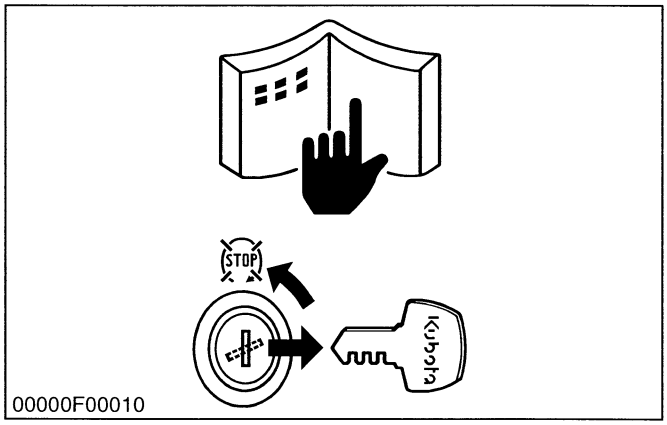

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BEFORE SERVICING AND REPAIRING

(1) Read all instructions and safety instructions in this manual and on your machine safety decals.
(2) Clean the work area and machine.
(3) Park the machine on a firm and level ground, and set the parking brake.
(4) Lower the implement to the ground.
(5) Stop the engine, and remove the key.
(6) Disconnect the battery negative cable.
(7) Hang a **"DO NOT OPERATE"** tag in operator station.

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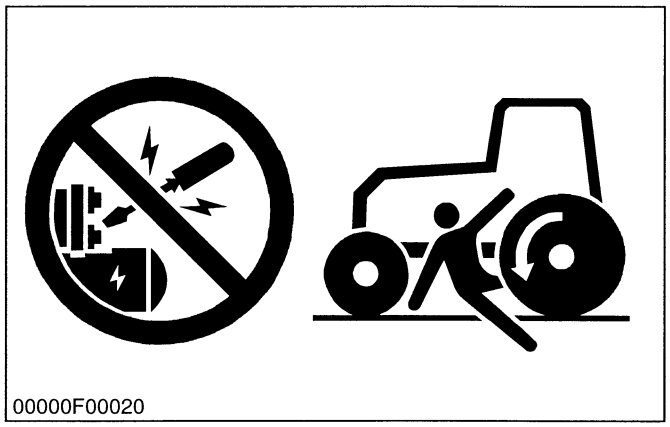
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SAFETY STARTING

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

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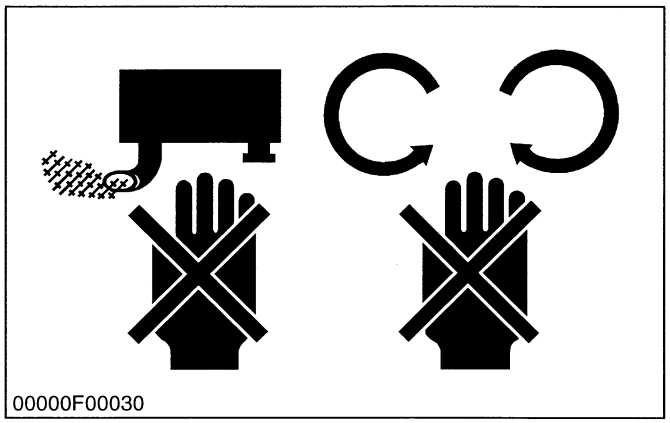
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SAFETY WORKING

(1) Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
(2) Wear close fitting clothing and safety equipment appropriate to the job.
(3) Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
(4) When servicing is performed together by two or more persons, take care to perform all work safely.
(5) Do not work under the machine that is supported solely by a jack. Always support the machine by safety stands.
(6) Do not touch the rotating or hot parts while the engine is running.
(7) 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.
(8) 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.

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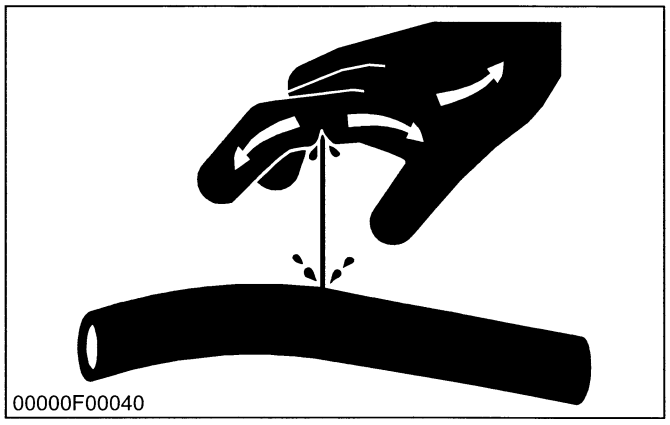
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AVOID FIRES

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

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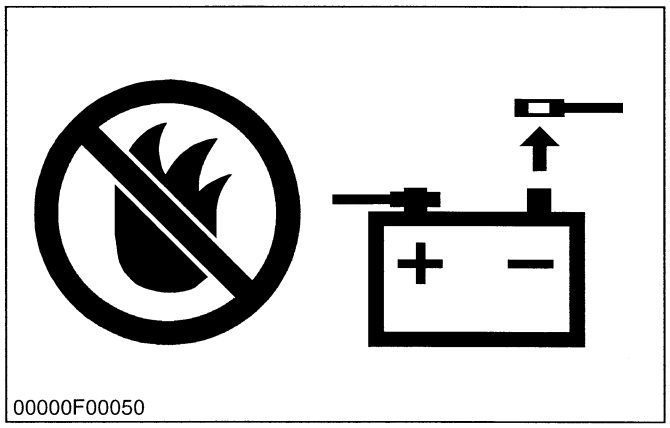
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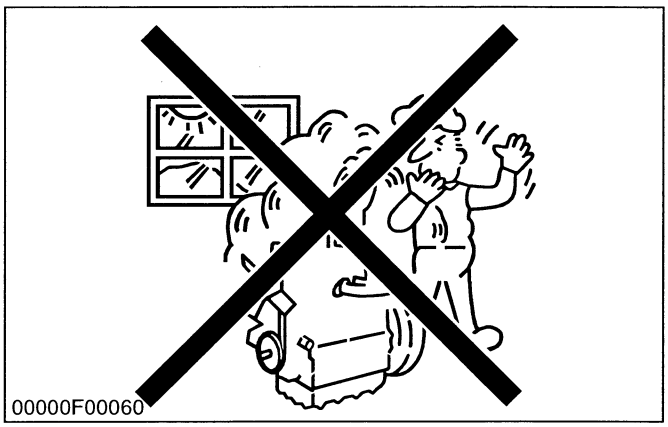
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VENTILATE WORK AREA

(1) 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.

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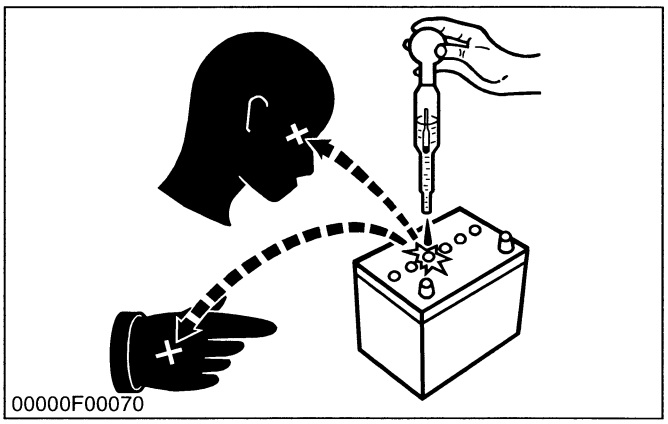
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PREVENT ACID BURNS

(1) 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.

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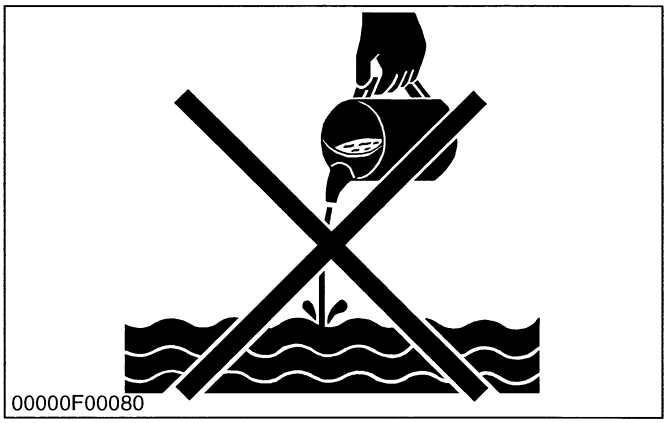
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DISPOSE OF FLUIDS PROPERLY

(1) 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.

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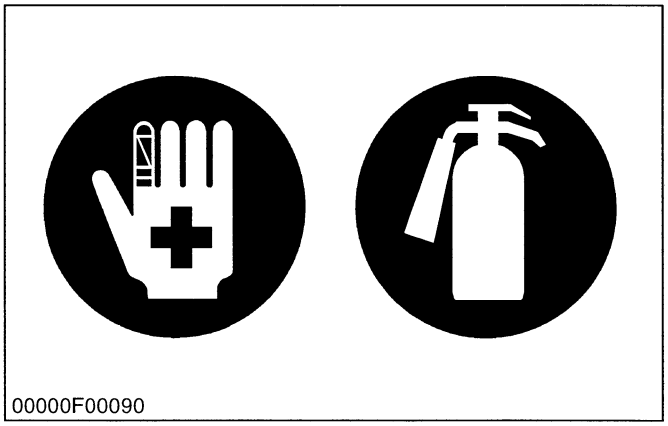
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PREPARE FOR EMERGENCIES

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

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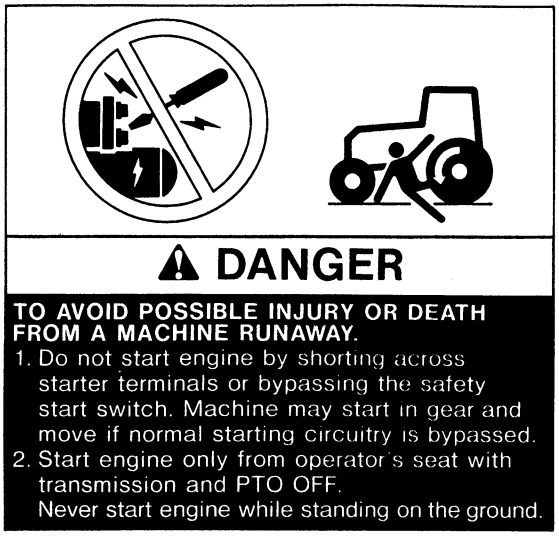
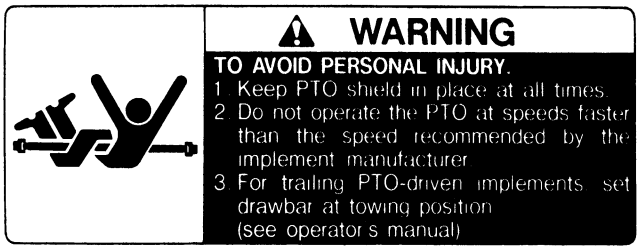
SAFETY DECALS

- **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. 6C090-4965-1



② Part No. TA040-4959-3



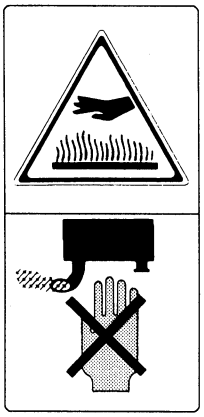
③ Part No. 6C150-4743-1【B7400HSD, B7500HSD】

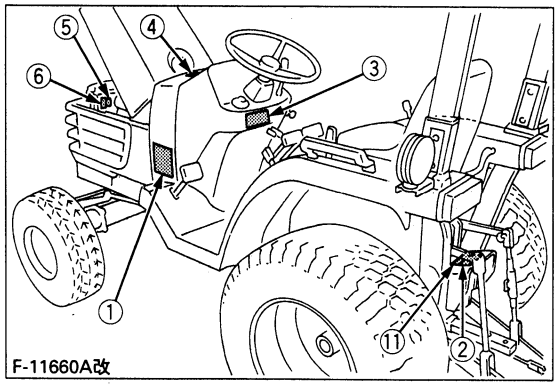
③ Part No. 6C140-4743-1【B7500D】

④ Part No. 6C040-4741-2
No fire

⑤ Part No. 6C090-4958-2
Stay clear of engine fan and fanbelt.

⑥ Part No. 6C090-4959-1
Do not touch hot surface like muffler, etc.





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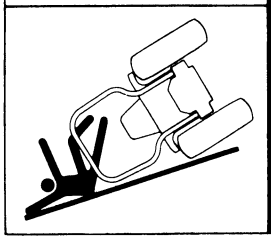
⑦ Part No. TA040-4932-2

⚠ WARNING



TO AVOID PERSONAL INJURY OR DEATH FROM ROLL-OVER:
1. Kubota recommends the use of a Roll-Over Protective Structures (ROPS) and seat belt in almost all applications
2. Remove the ROPS only when it substantially interferes with operation or itself presents a safety risk. (Examples include work in orchards and vineyards.) ALWAYS REINSTALL IT BEFORE USING THE TRACTOR IN OTHER APPLICATIONS.
3. Never use just the seat belt or just the ROPS. They must be used together. For further details, consult your Operator's Manual or your local dealer.

⑩ Part No. 6C040-5559-1

DANGER EXPLOSIVE GASES
Cigarettes, flames or sparks could cause battery to explode. Always shield eyes and face from battery. Do not charge or use booster cables or adjust post connections without proper instruction and training.
KEEP VENT CAPS TIGHT AND LEVEL
POISON CAUSES SEVERE BURNS
Contains sulfuric acid. Avoid contact with skin, eyes or clothing. In event of accident flush with water and call a physician immediately.
KEEP OUT OF REACH OF CHILDREN

⑧ Part No. 6C070-4742-1

⚠ 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 the tractor and that 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 all 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, set the parking brake, stop the engine and remove the key.

⑨ Part No. 6C120-4745-1

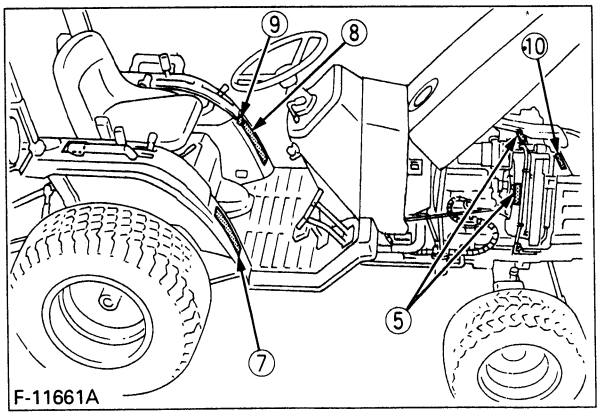
⚠ WARNING

TO AVOID PERSONAL INJURY:
1. Do not use the 2nd PTO speed with implements designed for 540rpm.
2. Use the 2nd PTO speed only when mid PTO or higher rpms are specifically recommended by the implement manufacturer.

⑪ Part No. 6C140-4744-1

⚠ 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.



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CARE OF DANGER, WARNING AND CAUTION LABELS

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels from your local KUBOTA Dealer.
4. If a component with danger, warning and caution label (s) affixed is replaced with new part, make sure new label (s) is (are) attached in the same location (s) as the 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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SPECIFICATIONS

Model			B7400HSD	B7500HSD	B7500D
PTO power			9.3 kW (12.5 HP)*	11.9 kW (16.0 HP)*	12.7 kW (17.0 HP)*
Engine	Maker		KUBOTA		
	Model		D722-E-D16	D1005-E-D16	
	Type		Indirect Injection. Vertical, water-cooled, 4-cycle diesel		
	Number of cylinders		3		
	Bore and stroke		67 × 68 mm (2.64 × 2.68 in.)	76 × 73.6 mm (2.99 × 2.90 in.)	
	Total displacement		719 cm^3 (43.9 cu.in.)	1001 cm^3 (61.1 cu.in.)	
	Engine net power (DIN)		11.9 kW (16.0 HP)*	15.7 kW (21.0 HP)*	
	Rated revolution (min^{-1})		2900 rpm	2600 rpm	
	Maximum torque		45 N·m (33 ft-lbs)	59 N·m (44 ft-lbs)	
	Battery		12 V, RC : 71 min, CCA : 390 A	12 V, RC : 79 min, CCA : 433 A	
	Starting system		Electric starting with cell starter 12 V, 1.4 kW		
	Lubricating system		Forced lubrication by trochoidal pump		
	Cooling system		Pressurized radiator, forced circulation with water pump		
	Fuel		Diesel fuel No. 2-D [above –10 °C (14 °F)], Diesel fuel No. 1 [below –10 °C (14 °F)]		
Capacities	Fuel tank		13 L (3.4 U.S.gals, 2.9 Imp.gals)	19 L (5.0 U.S.gals, 4.2 Imp.gals)	
	Engine crankcase (with filter)		2.4 L (2.5 U.S.qts, 2.1 Imp.qts)	3.0 L (3.2 U.S.qts, 2.6 Imp.qts)	
	Engine coolant		2.7 L (2.9 U.S.qts, 2.4 Imp.qts)	3.8 L (4.0 U.S.qts, 3.3 Imp.qts)	
	Transmission case		Front : 1.2 L (0.3 U.S.gals., 0.26 Imp.gals.) Rear : 11.2 L (2.96 U.S.gals. 2.46 Imp.gals.)	12.5 L (3.3 U.S.gals. 2.75 Imp.gals.)	11.5 L (3.04 U.S.gals. 2.53 Imp.gals.)
	Front axle case		3.2 L (3.4 U.S.qts, 2.8 Imp.qts)		
Dimensions	Overall length (without 3P)		2280 mm (89.8 in.)	2300 mm (90.6 in.)	
	Overall width		989 mm (38.9 in.)	1077 mm (42.4 in.)	
	Overall height (with ROPS)		1915 mm (75.4 in.)	1940 mm (76.4 in.)	
	Overall height (top of steering wheel)		1245 mm (49.0 in.)	1325 mm (52.2 in.)	
	Wheel base		1500 mm (59.0 in.)		
	Minimum ground clearance		295 mm (11.6 in.)	305 mm (12.0 in.)	
	Tread	Front	800 mm (31.5 in.)		
		Rear	778 to 948 mm (30.6 to 37.3 in.)	836 to 1006 mm (32.9 to 39.6 in.)	
Weight (with ROPS)			585 kg (1290 lbs)	620 kg (1367 lbs)	600 kg (1323 lbs)
Clutch			Dry single plate		
Travelling system	Tires	Front	6-12		
		Rear	8.3-16	9.5-16	
	Steering		Manual steering	Integral type power steering	
	Transmission		Main-hydrostatic transmission, high-Low gear shift (2 forward, 2 reverse)		Gear shift, 6 forward, 2 reverse
	Brake		Wet disk type		
	Min. turning radius (with brake)		2.0 m (6.6 feet)		
	Differential		Bevel gear		

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

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Model			B7400HSD	B7500HSD	B7500D
Hydraulic system	Hydraulic control system		Up, Down (without position control)		
	Pump capacity		14.6 L/min (3.9 U.S.gals./min., 3.2 Imp.gals./min.)	3P : 16.6 L/min (4.4 U.S.gals./min., 3.7 Imp.gals./min.) Power steering : 9.8 L/min (2.6 U.S.gals./min., 2.2 Imp.gals./min.)	
	Three point hitch		SAE Category I		
	Max. lift force	At lift points	615 kg (1356 lbs)		
		24 in. behind lift points	480 kg (1058 lbs)		
PTO system	Rear	PTO shaft	SAE 1-3/8, 6 splines		
		Revolution	2 speeds (540 rpm at 2972 engine rpm, 960 rpm at 2918 engine rpm)	2 speeds (540 rpm at 2600 engine rpm, 960 rpm at 2554 engine rpm)	
	Mid	PTO shaft	USA No. 5 (KUBOTA 10-tooth) involute spline		
		Revolution	1 speed (2500 rpm at 2964 engine rpm)	1 speed (2500 rpm at 2578 engine rpm)	

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TRAVELLING SPEED

[HST Type]

(At rated engine rpm)

Model		B7400				B7500			
Tire size (Rear)		8.3-16 Farm		29 × 12.5-15 Turf		9.5-16 Farm		33 × 12.5-15 Turf	
	Range gear shift lever	km/h	mph	km/h	mph	km/h	mph	km/h	mph
Forward	Low	0 to 6.0	0 to 3.7	0 to 5.6	0 to 3.5	0 to 6.3	0 to 3.9	0 to 6.3	0 to 3.9
	High	0 to 14.6	0 to 9.1	0 to 13.7	0 to 8.5	0 to 15.5	0 to 9.6	0 to 15.5	0 to 9.6
Reverse	Low	0 to 4.7	0 to 2.9	0 to 4.4	0 to 2.7	0 to 5.0	0 to 3.1	0 to 5.0	0 to 3.1
	High	0 to 11.7	0 to 7.3	0 to 11.0	0 to 6.8	0 to 12.4	0 to 7.7	0 to 12.4	0 to 7.7

[Manual Transmission Type]

(At rated engine rpm)

Model				B7500			
Tire size (Rear)				9.5-16 Farm		33 × 12.5-15 Turf	
		Range gear shift lever	Main gear shift lever	km/h	mph	km/h	mph
Forward	1	Low	1	1.0	0.6	1.0	0.6
	2		2	1.8	1.1	1.8	1.1
	3		3	3.3	2.1	3.3	2.1
	4	High	1	4.4	2.8	4.4	2.8
	5		2	7.8	4.9	7.8	4.9
	6		3	14.1	8.8	14.1	8.8
Reverse	1	Low	R	1.3	0.8	1.3	0.8
	2	High	R	5.5	3.5	5.5	3.5

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

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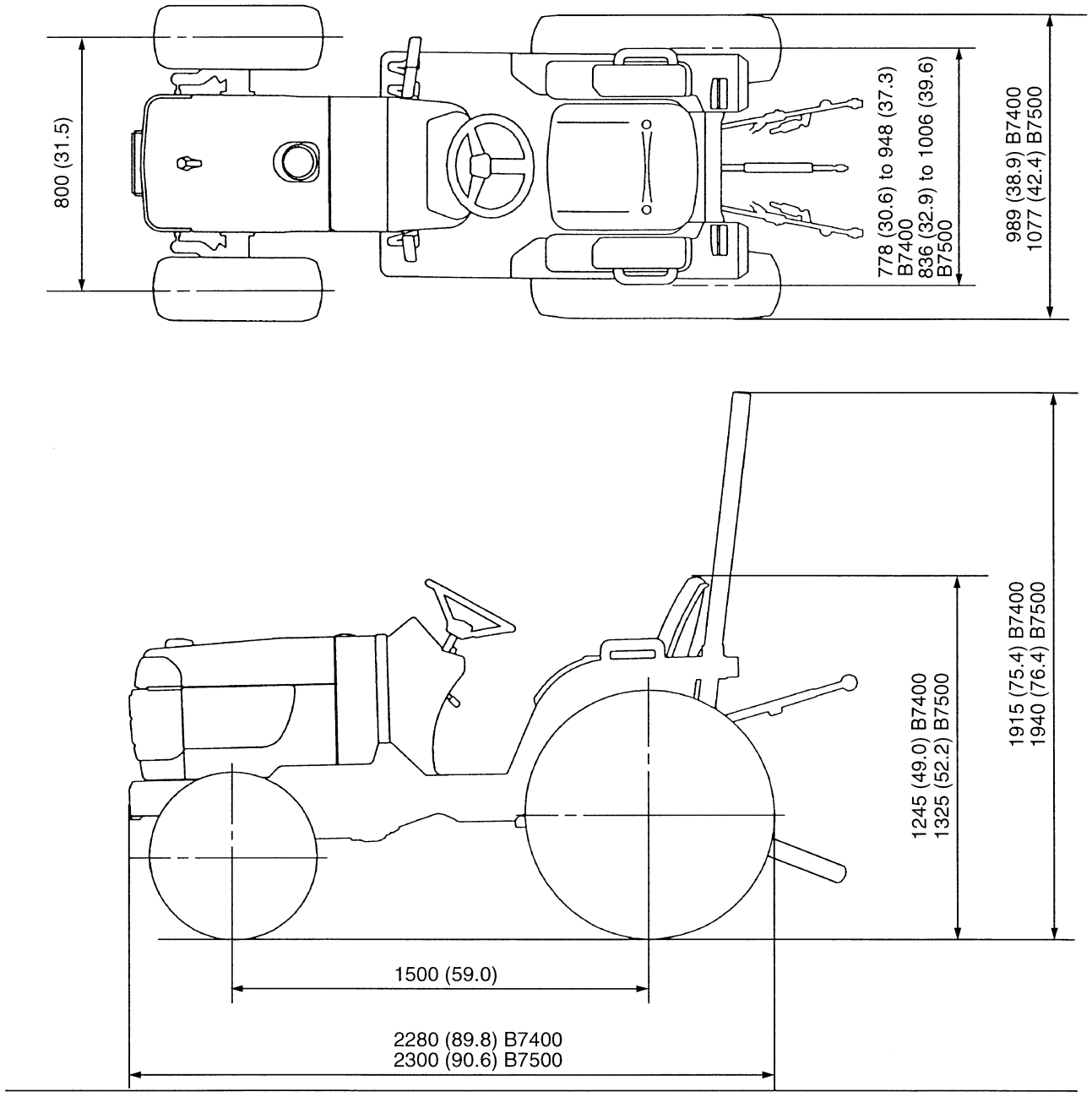
DIMENSIONS

Unit : mm (in.)



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GENERAL

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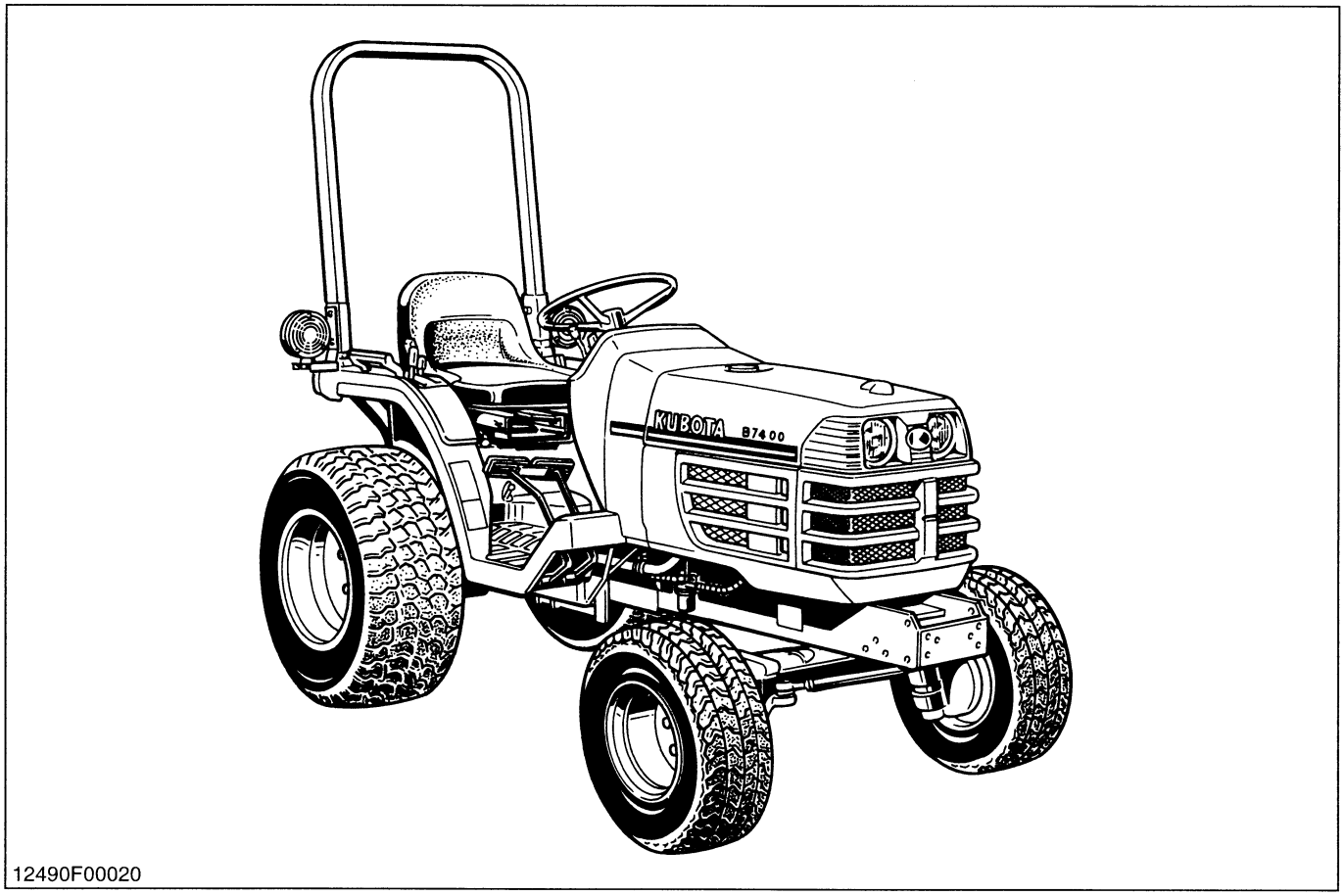
[1] FEATURES



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(1) Integral Power Steering (B7500 Only)
(2) E-TVCS (Three Vortex Combustion System) Diesel Engine
(3) Hydrostatic Transmission (HST)
(4) Wet Disc Brake
(5) Standard Mid-PTO
(6) Simultaneous Mounting of Both the Mid. Mount Mower and Front Loader
(7) Combination Panel of Easy Checker
(8) Hydraulic Block Type Outlet

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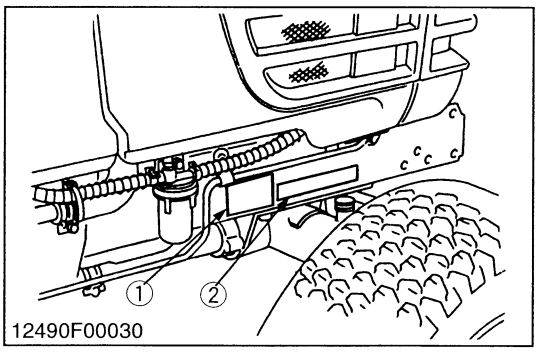
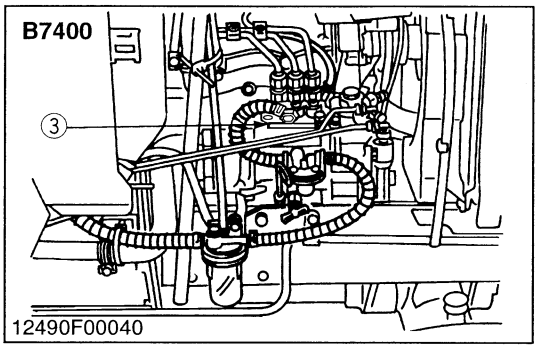
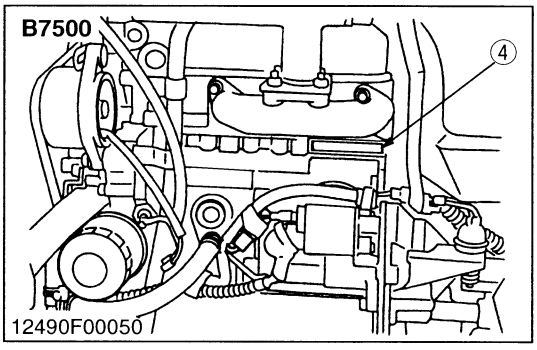
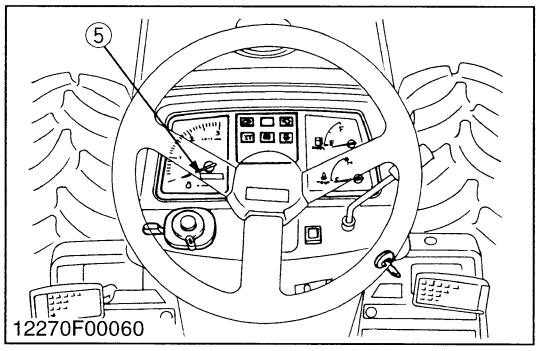
[2] TRACTOR IDENTIFICATION









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

(1) Tractor Identification Plate
(2) Tractor Serial Number
(3) Engine Serial Number (B7400)
(4) Engine Serial Number (B7500)
(5) Hour Meter

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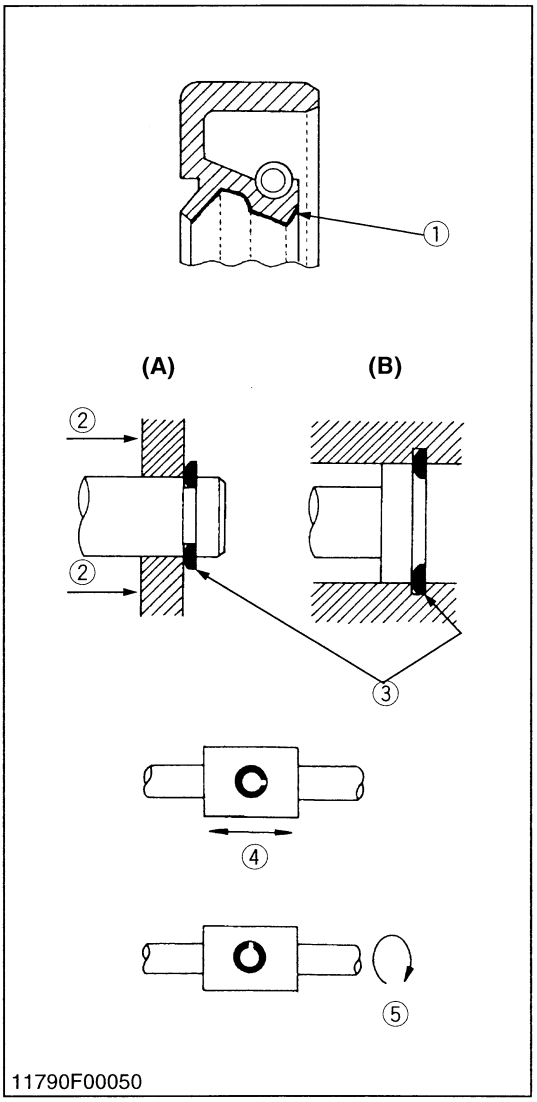
[3] GENERAL PRECAUTIONS



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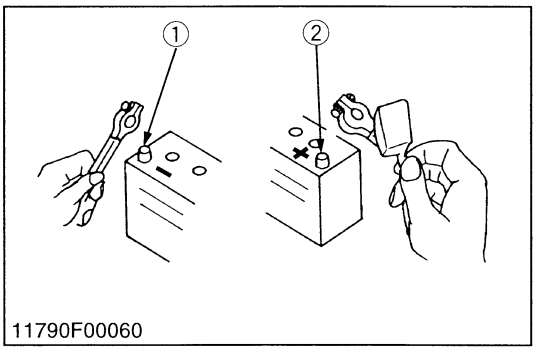
- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently used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

11790G00030

[4] HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING



11790F00060

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

■ IMPORTANT

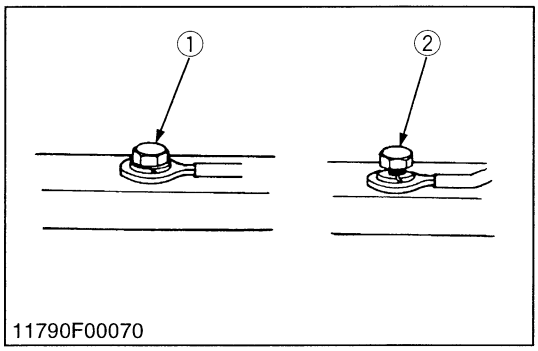
- **Check electrical wiring for damage and loosened connection every year. To this end, educate the customer to do his or her own check and at the same time recommend the dealer to perform periodic check for a fee.**
- **Do not attempt to modify or remodel any electrical parts and wiring.**
- **When 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

11790G00041

G CONTENTS

(1) Wiring

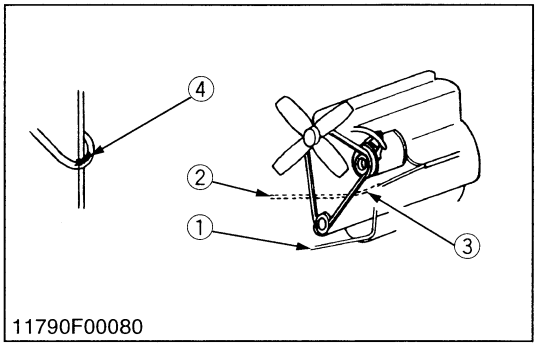


11790F00070

- Securely tighten wiring terminals.

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

11790G00050

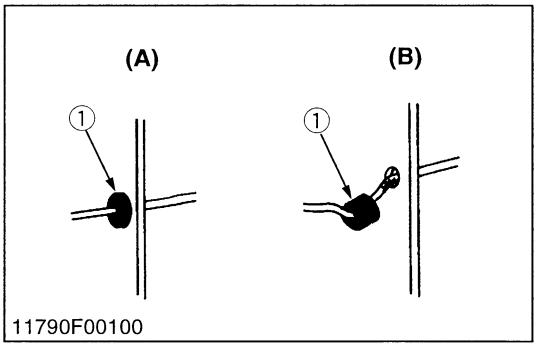


11790F00080

- Do not let wiring contact dangerous part.

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

11790G00060



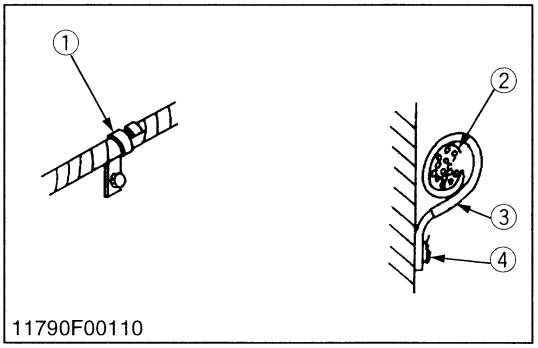
11790F00100

- Securely insert grommet.

(1) Grommet

(A) Correct
(B) Incorrect

11790G00080



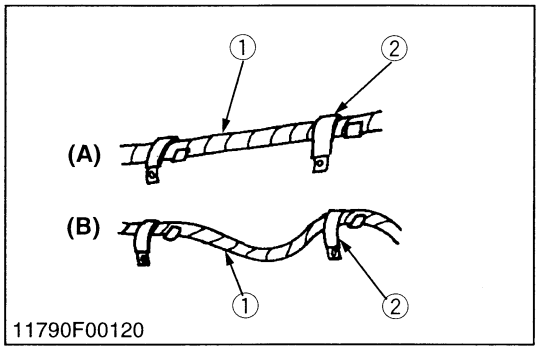
11790F00110

- Securely clamp, being careful not to damage wiring.

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

11790G00090

G CONTENTS



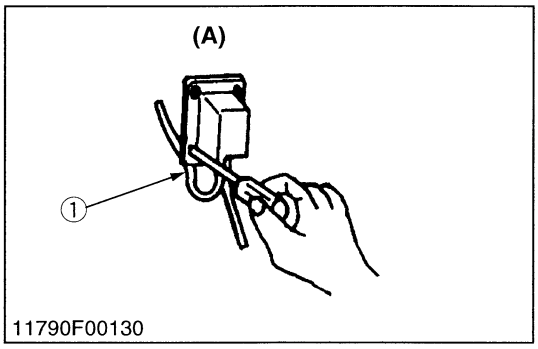
11790F00120

- 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

11790G00100



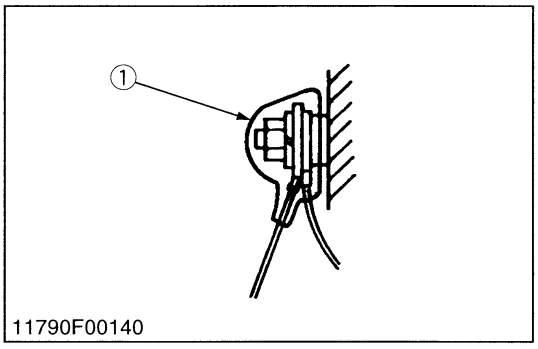
11790F00130

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

(1) Wiring

(A) Incorrect

11790G00110



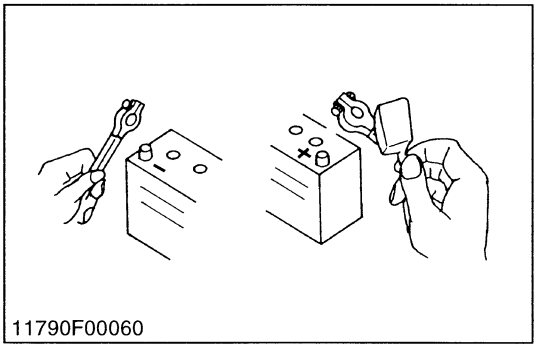
11790F00140

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

(1) Cover
- Securely Install Cover

11790G00120

(2) Battery


11790F00060

- 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 tempeture grease to them and securely install terminal covers on them.
- Do not allow dirt and dust to collect on battery.

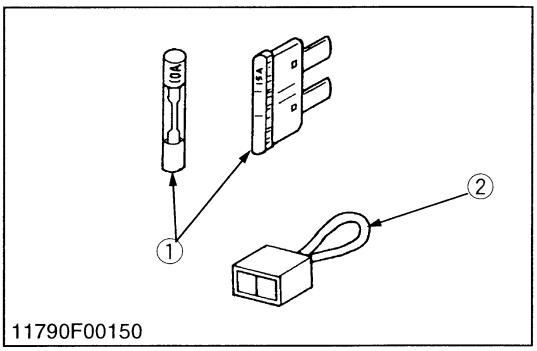
⚠ CAUTION

- **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.**

11790G00131

G CONTENTS

(3) Fuse



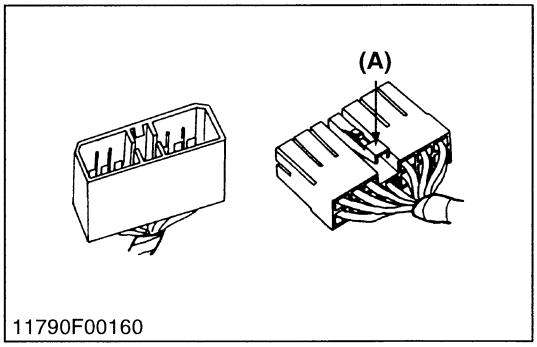
11790F00150

- 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

11790G00140

(4) Connector

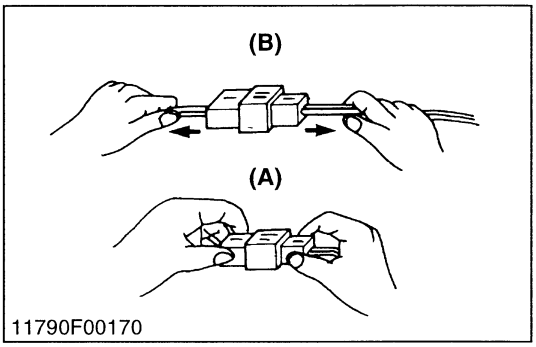


11790F00160

- For connector with lock, push lock to separate.

(A) Push

11790G00150

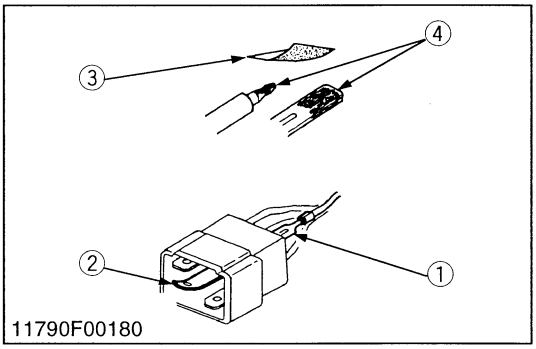


11790F00170

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

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

11790G00160



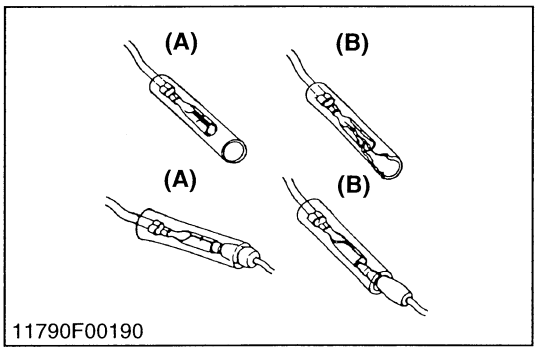
11790F00180

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

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

11790G00170

G CONTENTS

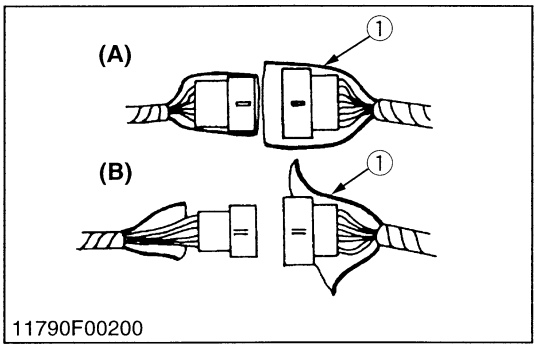


11790F00190

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

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

11790G00180



11790F00200

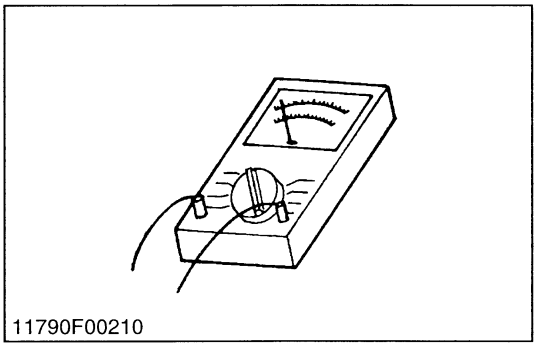
- Make certain plastic cover is large enough to cover whole connector.

(1) Cover

(A) Correct
(B) Incorrect

11790G00190

(5) Handling of Circuit Tester


11790F00210

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

11790G00200

G CONTENTS

[5] LUBRICANTS, FUEL AND COOLING WATER

	Place	Capacity			Lubricants, fuel and cooling water
		B7400HSD	B7500HSD	B7500D	
1	Fuel tank	13 L 3.4 U.S.gals. 2.9 Imp.gals.	19 L 5.0 U.S.gals. 4.2 Imp.gals.		No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below – 10 °C (14 °F)
2	Cooling system with recovery tank	2.7 L 2.9 U.S.qts. 2.4 Imp.qts.	3.8 L 4.0 U.S.qts. 3.3 Imp.qts.		Fresh clean water with anti-freeze
3	Engine crankcase	2.4 L 2.5 U.S.qts. 2.1 Imp.qts	3.0 L 3.2 U.S.qts. 2.6 Imp.qts		Engine oil : API Service CC or CD Below 0 °C (32 °F) ..... SAE10W, 10W-30 or 10W-40 0 to 25 °C (32 to 77 °F) .... SAE20, 10W-30 or 10W-40 Above 25 °C (77 °F) ..... SAE30, 10W-30 or 10W-40
4	Transmission case	Front case : 1.2 L 0.32 U.S.gals. 0.26 Imp.gals. Rear case : 11.2 L 2.96 U.S.gals. 2.46 Imp.gals.	12.5 L 3.3 U.S.gals 2.75 Imp.gals.	11.5 L 3.04 U.S.gals 2.53 Imp.gals.	KUBOTA SUPER UDT fluid *
5	Front axle case	3.2 L 3.4 U.S.qts. 2.8 Imp.qts			KUBOTA SUPER UDT fluid * or SAE80, 90 gear oil

Greasing

	Place	No. of greasing point	Capacity	Type of grease
6	Speed control pedal (HST pedal)	1	Until grease overflows	Multipurpose type grease
	Top link	1		
	Lift rod	1		
	Battery terminal	2	Moderate amount	

* KUBOTA original transmission hydraulic fluid.

12490G00030

G CONTENTS

[6] 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	ft-lbs	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs
M6 (6 mm, 0.24 in.)	7.85 to 9.31	0.80 to 0.95	5.79 to 6.87	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
M8 (8 mm, 0.31 in.)	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	16.7 to 19.6	1.7 to 2.0	12.3 to 14.4	23.6 to 27.4	2.4 to 2.8	17.4 to 20.2	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	29.5 to 34.3	3.0 to 3.5	21.7 to 25.3
M10 (10 mm, 0.39 in.)	39.3 to 45.1	4.0 to 4.6	29.0 to 33.2	31.4 to 34.3	3.2 to 3.5	23.2 to 25.3	48.1 to 55.8	4.9 to 5.7	35.5 to 41.2	39.3 to 44.1	4.0 to 4.5	29.0 to 32.5	60.9 to 70.6	6.2 to 7.2	44.9 to 52.0
M12 (12 mm, 0.47 in.)	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5				77.5 to 90.2	7.9 to 9.2	57.2 to 66.5	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	103 to 117	10.5 to 12.0	76.0 to 86.7
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

11790G00761

(2) Stud Bolts

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

11790G00762

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[7] MAINTENANCE

No.	Item \ Period		Indication on hour meter																	After purchase		Important		Reference page
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	1500	3000	1 year	2 years		
1	Engine oil	Change	★	☆		☆		☆		☆		☆		☆		☆		☆							G-12
2	Engine oil filter	Replace	★			☆				☆				☆				☆							G-12
3	Transmission fluid	Change	★					☆						☆											G-13
4	Hydraulic oil filter (for HST)	Replace	★					☆						☆											G-14
5	Hydraulic oil filter	Replace	★					☆						☆											G-14
6	Transmission Oil strainer	Clean	★					☆						☆											G-14
7	Front axle case oil	Change						☆						☆											G-23
8	Front axle pivot	Adjust								☆								☆							G-24
9	Engine start system	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆							G-17
10	Greasing	–	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆							G-16
11	Wheel bolt torque	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆							G-18
12	Battery condition	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆							G-18
13	Air cleaner element [Double type] Primary element	Clean		☆		☆		☆		☆		☆		☆		☆		☆					*		G-20
		Replace																			☆		**	@	G-20
	Secondary element	Replace																			☆				G-20
14	Fuel filter element	Clean		☆		☆		☆		☆		☆		☆		☆		☆						@	G-20
		Replace								☆								☆							G-20
15	Fan belt	Adjust		☆		☆		☆		☆		☆		☆		☆		☆							G-21
16	Clutch	Adjust	★	☆		☆		☆		☆		☆		☆		☆		☆							G-15
17	Brake	Adjust		☆		☆		☆		☆		☆		☆		☆		☆							G-21
18	Fuel line	Check		☆		☆		☆		☆		☆		☆		☆		☆						@	G-22
		Replace																				☆			G-22
19	Intake air line	Check				☆				☆				☆				☆						@	G-23
		Replace																				☆	***		G-23
20	Radiator hose and clamp	Check				☆				☆				☆				☆							G-22
		Replace																				☆			G-22
21	Engine valve clearance	Adjust																☆							G-24
22	Cooling system	Flush																				☆			G-25
23	Coolant	Change																				☆			G-25
24	Fuel injection nozzle injection pressure	Check																	☆					@	G-24
25	Injection pump	Check																		☆				@	G-25

12490G00040

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[7] MAINTENANCE (Continued)

No.	Item / Period		Indication on hour meter																	After purchase		Important		Reference page
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	1500	3000	1 year	2 years		
26	Fuel system	Bleed																			Service as required			G-26
27	Fuse	Replace																						G-27
28	Light bulb	Replace																						G-27

IMPORTANT :

The jobs indicated by ★ must be done after the first 50 hours of operation.

*** Air cleaner should be cleaned more often in dusty conditions than in normal conditions.**

**** Every year or every 6 times of cleaning.**

***** Replace only if necessary.**

- **The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in the U.S.EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction. Please see the Warranty Statement in detail.**

12490G00050

[8] CHECK AND MAINTENANCE

CAUTION

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

11790G00210

(1) Daily Check

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

Checking

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

1) Check the tire pressure, and check for wear and damage.
2) Check for oil and water leaks.
3) Check the engine oil level.
4) Check the transmission fluid level.
5) Check the coolant level.
6) Check the condition of seat belt and ROPS attaching hardware.
7) Check and clean the radiator screen and grill.
8) Check the bolts and nuts of the tires are tight.
9) Check the number plate or SMV emblem for damage and cleaner replace as necessary if equipped.
10) Care of danger, warning and caution labels.
11) Clean around the exhaust manifold and the muffler of the engine.

- While sitting in the operator's seat.

1) Check the HST pedal, brake pedals and clutch pedal.
2) Check the parking brake.
3) Check the steering wheel.

- Turning the key switch.

1) Check the performance of the easy checker lights.
2) Check head lights, tail lights and hazard lights. Clean if necessary.
3) Check the performance of the meters and gauges.

- Starting the engine.

1) Check to see that the lights on the Easy Checker go off.
2) Check the color of the exhaust gas.
3) Check the brakes for proper operation.

12270G00050

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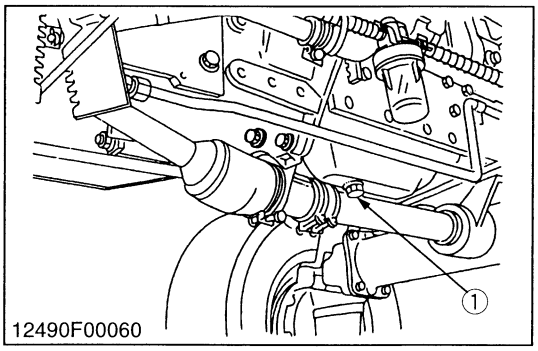
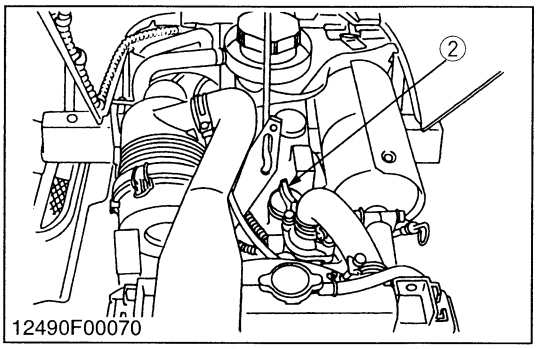
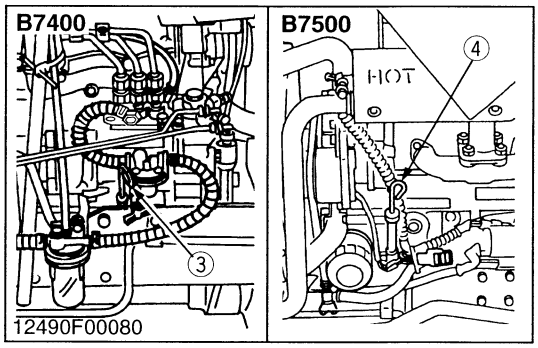
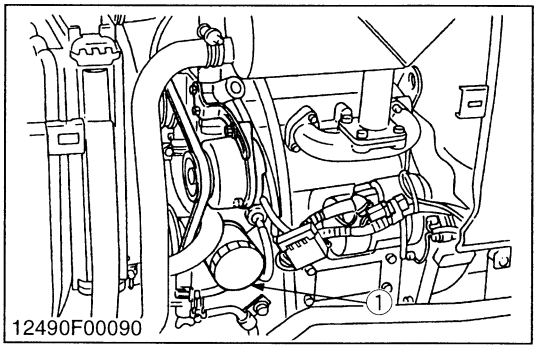
(2) Check Points of Initial 50 Hours









Changing Engine Oil

CAUTION

- **Before changing oil, be sure to stop the engine.**

1. Start and warm up the engine for approx. 5 minutes.
2. Place an oil pan underneath the engine.
3. To drain the used oil, remove the drain plug (1) at the bottom of the engine and drain the oil completely.
4. Screw in the drain plug (1).
5. Fill new oil up to upper line on the dipstick (3), (4).

IMPORTANT

- **When using an oil of different manufacture or viscosity from the previous one, remove all of the old oil.**
- **Never mix two different types of oil.**
- **Use the proper SAE Engine Oil according to ambient temperatures.**
- **Refer to "LUBRICANTS, FUEL AND COOLING WATER". (See page G-8.)**

Engine oil capacity	B7400	2.4 L 2.5 U.S.qts 2.1 Imp.qts
	B7500	3.0 L 3.2 U.S.qts 2.6 Imp.qts

(1) Drain Plug
(2) Oil Inlet
(3) Dipstick (B7400)
(4) Dipstick (B7500)

12490G00060

Replacing Engine Oil Filter Cartridge

CAUTION

- **Be sure to stop the engine before changing oil filter cartridge.**

1. Remove the oil filter cartridge with the filter wrench.
2. Apply a slight coat of oil onto the cartridge gasket.
3. To install the new cartridge, screw it in by hand. Over tightening may cause deformation of rubber gasket.
4. After the new cartridge has been replaced, the engine oil normally decrease a little. Thus see that the engine oil does not leak through the seal and be sure to read the oil level on the dipstick. Then, replenish the engine oil up to the specified level.

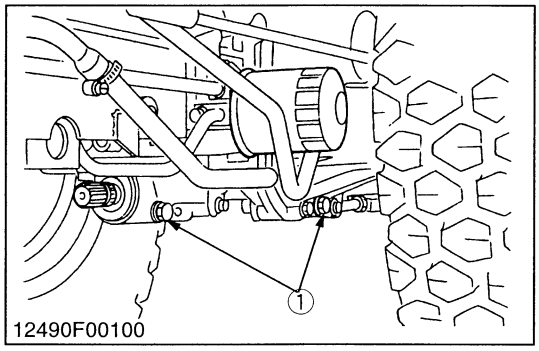
IMPORTANT

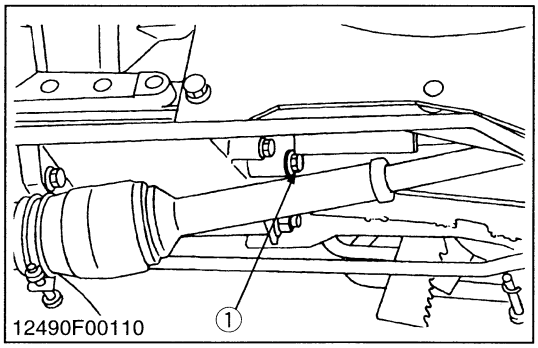
- **To prevent serious damage to the engine, replacement element must be highly efficient. Use only a KUBOTA genuine filter or its equivalent.**

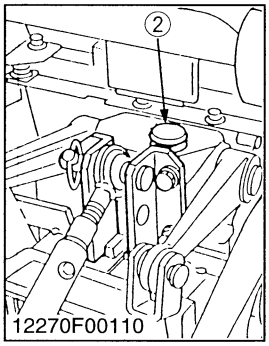
(1) Engine Oil Filter

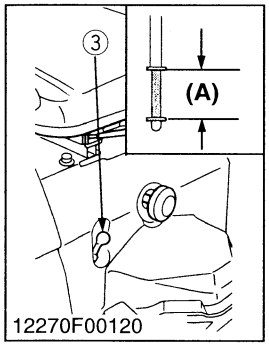
12490G00070

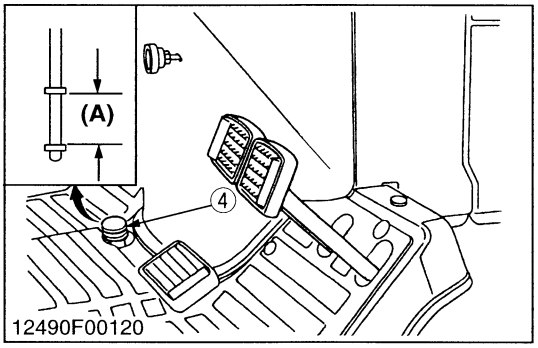
G CONTENTS











Changing Transmission Fluid

CAUTION

- **Be sure to stop the engine checking and changing the transmission fluid.**

1. Place an oil pan under the tractor.
2. Remove the drain plugs (1) at the bottom of the rear axle cases and oil tank.
3. Drain the transmission fluid.
4. After draining, screw in the three drain plugs.
5. Fill new oil from filling port after removing the filling plug (2) up to the upper notch on the dipstick.
6. After running the engine for a few minutes, stop it and check the oil level again, if low, add oil prescribed level.

IMPORTANT

- **Use only multi-grade transmission oil. Use of other oils may damage the transmission or hydraulic system. Refer to "LUBRICANTS AND FLUID" (See page G-8).**
- **Never work the tractor immediately after changing the transmission oil. Keeping the engine at medium speed for a few minutes to prevents damage to the transmission.**
- **Do not mix different blands oil together.**

Transmission fluid capacity	B7400	Front	1.2 L 0.32 U.S.gals. 0.26 Imp.gals.
		Rear	11.2 L 2.96 U.S.gals. 2.46 Imp.gals.
	B7500	HSD	12.5 L 3.3 U.S.gals. 2.75 Imp.gals.
		D	11.5 L 3.04 U.S.gals. 2.53 Imp.gals.

(1) Drain Plug
(2) Filling Plug
(3) Dipstick
(4) Filling Plug with Dipstick (B7400 Only)

(A) Oil level acceptable within this range.

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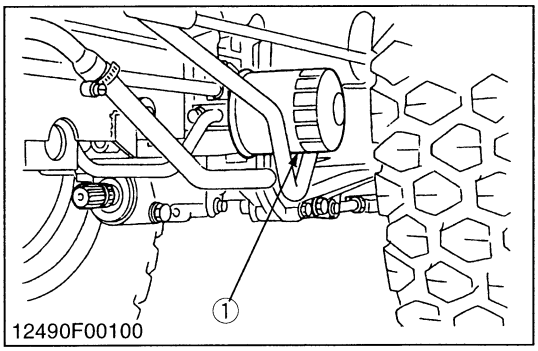

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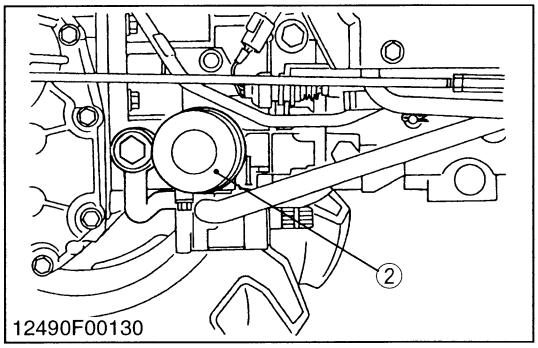

12490F00130

Replacing Hydraulic Oil Filter Cartridge

⚠ CAUTION

- **Be sure to stop the engine before changing the oil filters.**

1. Drain the transmission fluid.
2. Remove the oil filter cartridge by using a filter wrench.
3. Apply a slight coat of oil onto the cartridge gasket.
4. To install the new cartridge, screw it in by hand. Over tightening may cause deformation of rubber gasket.
5. After the new cartridge has been replaced, the transmission fluid level will normally decrease slightly. Make sure that the transmission fluid does not leak through the seal. Check the fluid level.

■ IMPORTANT

- **To prevent serious damage to the hydraulic system. Use only a genuine KUBOTA filter or its equivalents.**

(1) Hydraulic Oil Filter (for HST) (2) Hydraulic Oil Filter

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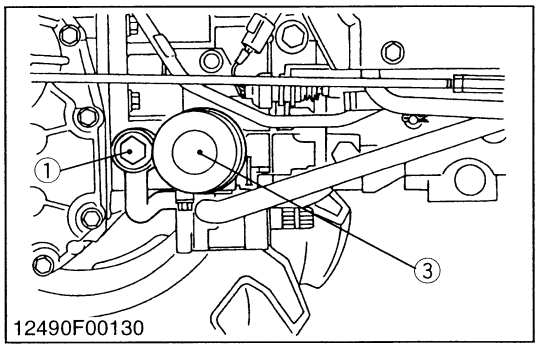

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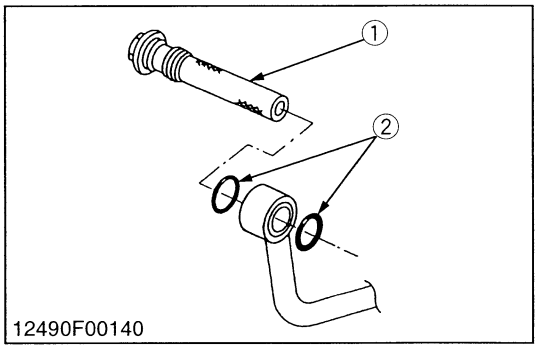
Cleaning Transmission Oil Strainer (HST Model Only)

1. Clean the strainer with nonflammable solvent.

■ NOTE

- **When changing the transmission fluid, disassemble and rinse the strainer with nonflammable solvent to completely clean off fillings.**
  When reassembling, be careful not to damage the parts.
- **Since the fine fillings in the oil could impair the component parts of the hydraulic system precision built to withstand high pressure, the suction line end is provided with an oil strainer.**
- **Please do the replacing oil filter cartridge (3) and the cleaning oil strainer (1) at the same time. And when replacing, reinstall the oil strainer first.**

(1) Strainer (3) Filter Cartridge
(2) O-ring



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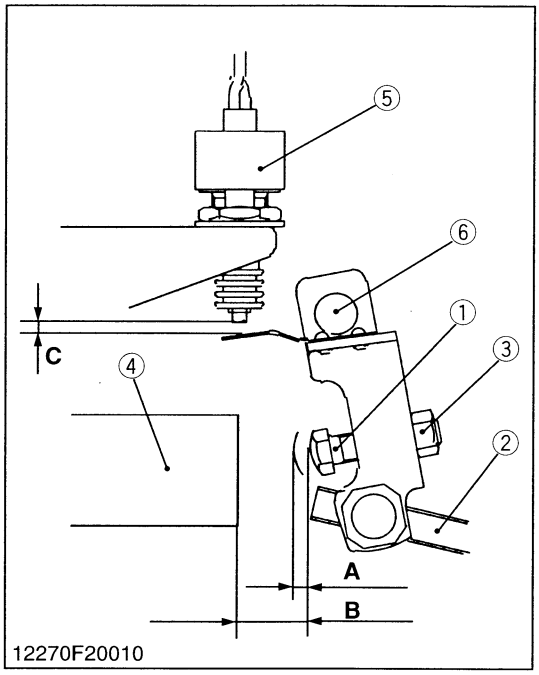

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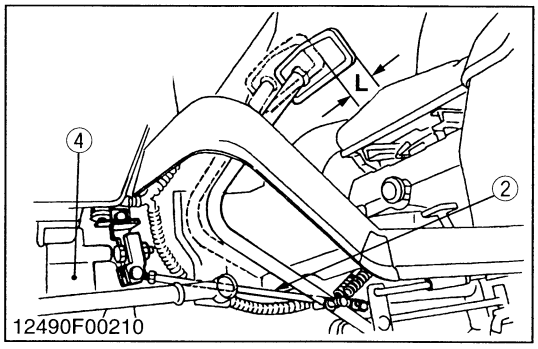

12490F00210

Checking Clutch Pedal Free Travel

CAUTION

- **When checking, park the tractor on flat ground, apply the parking brake, stop the engine and remove the key.**

1. Slightly depress the clutch pedal and measure stroke **"A"** at top of stopper bolt (1).
2. If the measurement is not within the factory specifications, loosen the lock nut and adjust the clutch pedal rod (2) length.
3. After adjusting it, measure total stroke **"B"** between stopper bolt (1) and clutch housing (4).
4. If the measurement not within the factory specifications, adjust it with the clutch pedal stopper bolt (1).
5. And at same time, adjust the clearance **"C"** between safety switch (5) and clutch rod (6).

NOTE

- **After adjustment, sure the stopper bolt with the lock nut (3).**

Clutch pedal free travel on stopper bolt stroke **"A"**	Factory spec.	1.0 to 1.5 mm 0.039 to 0.059 in.
Reference : Clutch pedal free travel **"L"** on top of clutch pedal		20 to 30 mm 0.78 to 1.18 in.
Clutch pedal total stroke **"B"**	Factory spec.	8.0 to 9.0 mm 0.31 to 0.35 in.
Clearance **"C"**	Factory spec.	1.5 to 2.5 mm 0.059 to 0.098 in.

(1) Stopper Bolt
(2) Clutch Pedal Rod
(3) Lock Nut for Stopper Bolt
(4) Clutch Housing
(5) Safety Switch
(6) Clutch Rod

12490G00160

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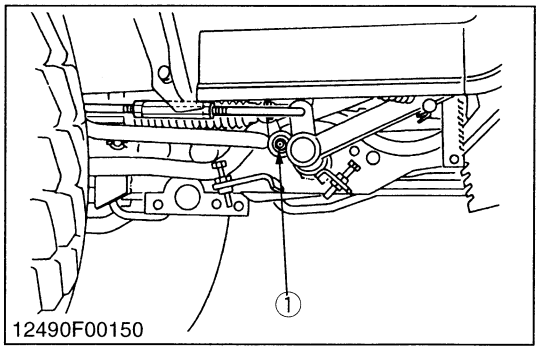
(3) Check Points of Every 50 Hours



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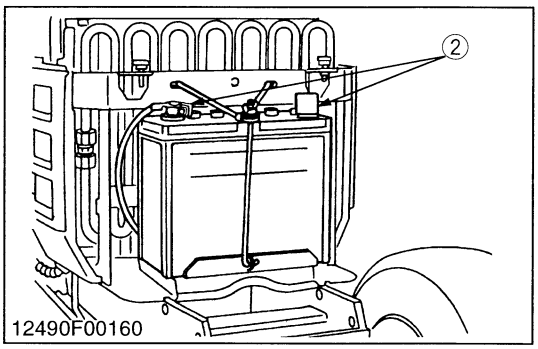

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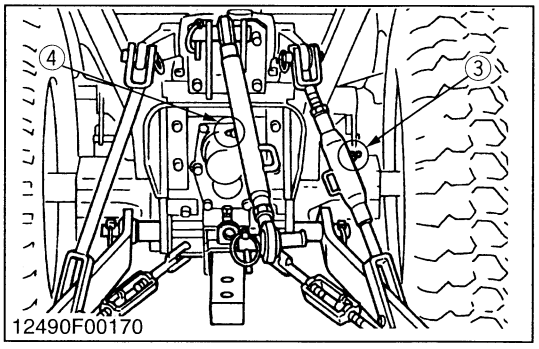

12490F00170

Greasing

1. Apply a grease to the following position as figures.

(1) Grease Fitting (HST Pedal)
(2) Battery Terminals
(3) Grease Fitting (Lifting Rod RH)
(4) Grease Fitting (Top Link)

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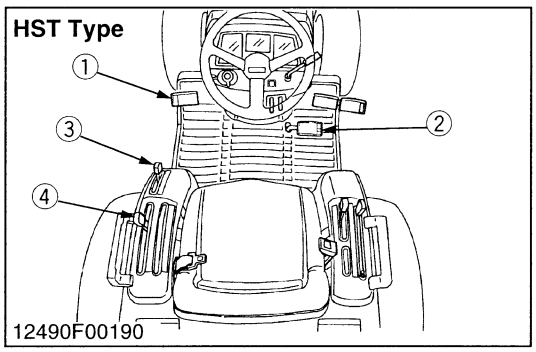

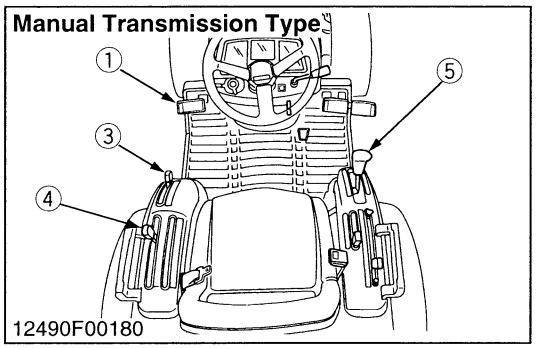

Checking Engine Start System

⚠ CAUTION

- **Do not allow anyone near the tractor while testing.**
- **If the tractor does not pass the test do not operate the tractor.**

■ Preparation before testing

1. Sit on operator's seat.
2. Set the parking brake and stop the engine.
3. [HST Type]
   Place the speed control pedal in **"NEUTRAL"** position.
   [Manual Transmission Type]
   Shift the main gear shift lever in **"NEUTRAL"** position.
4. Shift the PTO gear shift lever to **"OFF"** position.
5. Fully depress the clutch pedal.

■ Test 1 : for safety switch on the clutch linkage

1. Release the clutch pedal.
2. Turn the key to **"START"** position.
3. The engine must not crank.

■ Test 2 : for safety switch on speed control pedal linkage or main gear shift lever

1. Fully depress the clutch pedal.
2. Depress the speed control pedal (HST Type) or shift the main gear shift lever to "Desired" position (Manual Transmission Type).
3. Turn the key to **"START"** position.
4. The engine must not crank.

■ Test 3 : for safety switch on the PTO gear shift linkage

1. Fully depress the clutch pedal.
2. Place the speed control pedal in **"NEUTRAL"** position or shift the main gear shift lever to **"NEUTRAL"** position.
3. Shift the PTO gear shift lever to **"ON"** position.
4. Turn the key to **"START"** position.
5. The engine must not crank.

■ After testing :If crank any test of the above, adjust or replace the required safety switch.

When adjusting the safety switches keep the each linkage at condition indicated below.

1. Clutch pedal linkage → Fully depress the clutch pedal.
2. Speed control pedal → Place the speed control pedal in **"NEUTRAL"** position. (HST Type)
3. Main gear shift lever → Shift the main gear shift lever to **"NEUTRAL"** position. (Manual Transmission Type)
4. PTO gear shift linkage → Shift PTO gear shift lever to **"OFF"** position.

(1) Clutch Pedal
(2) Speed Control Pedal
(3) Range Gear Shift Lever (Hi-Lo)
(4) PTO Gear Shift Lever
(5) Main Gear Shift Lever

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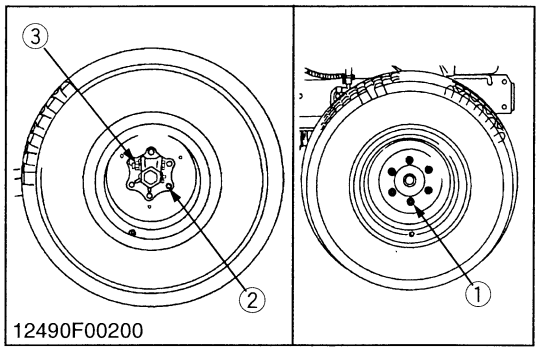

12490F00200

Checking Wheel Mounting Screws and Nuts Tightening Torque

CAUTION

To avoid personal injury :

- **Never operate tractor with a loose rim, wheel, or axle.**
- **Any time bolts and nuts are loosened, retighten to specified torque.**
- **Check all bolts and nuts frequently and keep them tight.**

1. Check wheel bolts and nuts regularly especially when new. If there are loosened, tighten as follows.

Tightening torque	Front wheel mounting nut	77 to 90 N·m 7.9 to 9.2 kgf·m 57.2 to 66.5 ft-lbs
	Rear wheel hub mounting nut	108 to 125 N·m 11.0 to 12.8 kgf·m 80 to 93 ft-lbs
	Cotter setting bolt and nut	123 to 147 N·m 12.6 to 15.0 kgf·m 91 to 108 ft-lbs

(1) Front Wheel Mounting Nut
(2) Rear Wheel Hub Mounting Nut
(3) Cotter Setting Bolt and Nut

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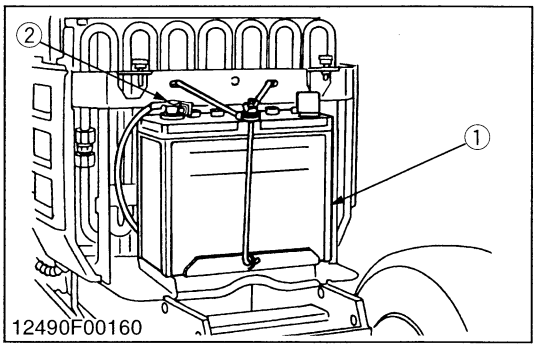

12490F00160

Checking Battery Condition

CAUTION

- **Never remove the vent plugs while the engine is running.**
- **Keep electrolyte away from eyes, hands and clothes. If you are spattered with it, wash it away completely with water immediately and get medical attention.**
- **Wear eye protection and rubber gloves when working around battery.**

1. Mishandling the battery shortens the service life and adds to maintenance costs.
2. The original battery is maintenance free type, but need some servicing.
   If the battery is weak, the engine is difficult to start and the lights become dim. It is important check the battery periodically.

(1) Battery
(2) Vent Plug

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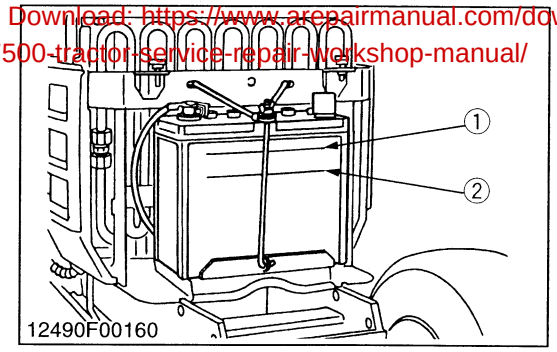

Table 1

■ B7400

Battery Type	Volts (V)	Capacity at 5H.R (A.H.)	Reserve Capacity (min.)	Cold Cranking Amps	Normal Charging Rate (A)
50B24L (S)-MF	12	36	71	390	4.5

■ B7500

Battery Type	Volts (V)	Capacity at 5H.R (A.H.)	Reserve Capacity (min.)	Cold Cranking Amps	Normal Charging Rate (A)
55B24L (S)-MF	12	36	79	433	4.5

■ Battery Charging

CAUTION

- **When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.**
- **When charging battery, remove battery vent plugs.**
- **When disconnecting the cable from the battery, start with the negative terminal first.**
  When connecting the cable to the battery, start with the positive terminal first.
- **Never check battery charge by placing a metal object across the posts.**
  Use a voltmeter or hydrometer.

1. Make sure each electrolyte level is to the bottom of vent wells, if necessary add distilled water in a well-ventilated area.
2. The water in the electrolyte evaporates during recharging. Liquid shortage damages the battery. Excessive liquid spills over and damages the tractor body.
3. To slow charge the battery, connect the battery positive terminal to the charger positive terminal and the negative to the negative, then recharge in the standard fashion.
4. A boost charge is only for emergencies. It will partially charges the battery at a high rate and in a short time.
   When using a boost-charged battery, it is necessary to recharge the battery as early as possible.
   Failure to do this will shorten the battery's service life.
5. When the specific gravity of electrolyte become between 1.27 and 1.29 charge has completed.
6. When exchanging an old battery into new one, use battery of equal specification shown in table 1.

■ Direction for Storage

1. When storing the tractor for long periods of time, remove the battery from tractor, adjust the electrolyte to the proper level and store in a dry place out of direct sunlight.
2. The battery self-discharges while it is stored.
   Recharge it once every three months in hot seasons and once every six months in cold seasons.

(1) Highest Level (2) Lowest Level

12490G00150

(4) Check Points of Every 100 Hours

Changing Engine Oil

1. See page G-12.

12270G00360

Checking Clutch Pedal Free Travel

1. See page G-15.

12490G00430