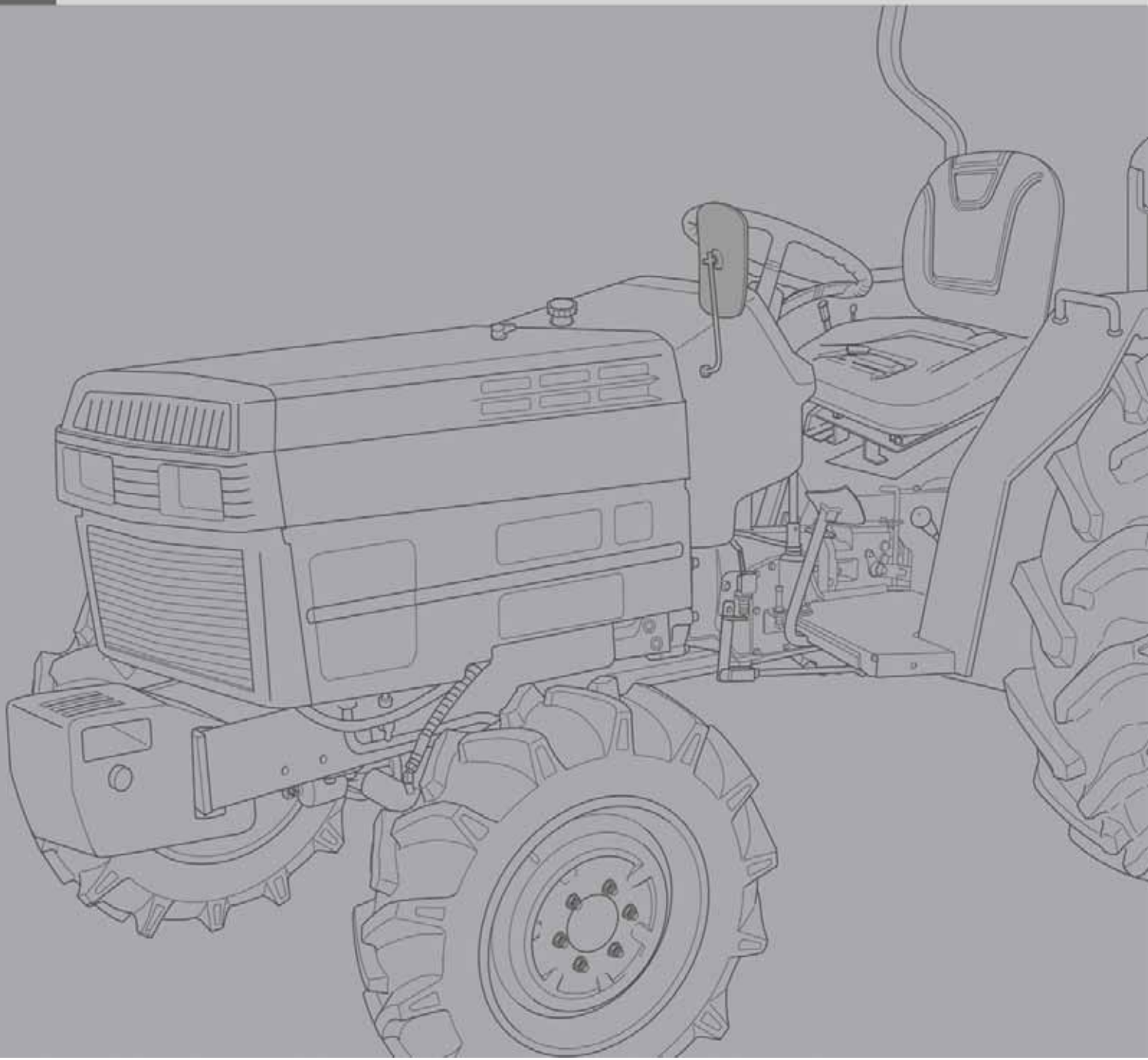




KIOTI TRACTOR WORKSHOP MANUAL

LK3054XS



TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of **KIOTI** tractors **LK3054XS**. It is divided into two parts, "Mechanism" and "Servicing".

■ MECHANISM

Information on the construction and functions are included. The part should be completely understood before proceeding with troubleshooting, disassembling or servicing.

■ SERVICING

In this section you will find general precautions, maintenance and special tools. There are other sections which include troubleshooting, servicing, specifications lists, disassembling, assembling and servicing that explains in detail procedures, precautions, factory specifications and acceptable limits.

This manual contains the latest production information on illustrations and specifications based on the most up to date production information available at the time of publication.

We reserve the right to make changes throughout the entire manual at any time without notice.



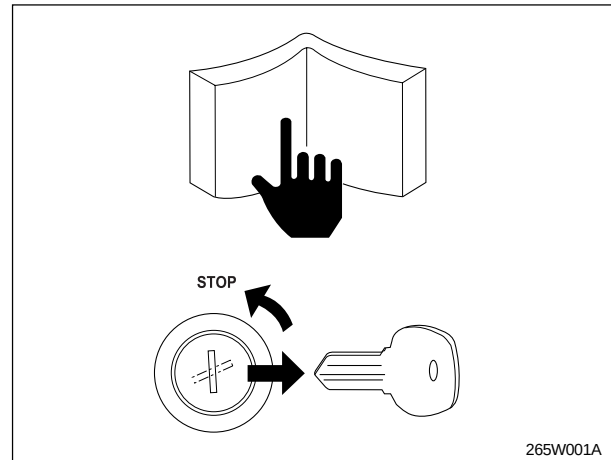
SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and the decals on the machine itself to warn of the possibility of personal injury. It is essential that you read the instructions and safety regulations before you attempt to repair or operate this unit. Read these instructions carefully.

SIGNS		DESCRIPTION
	DANGER	This mark indicates hazardous situation which, if not observed, may result in death or fatal injury. This mark should be indicated for most dangerous situations only.
	WARNING	This mark indicates potentially hazardous situation which, if not observed, may result in death or moderate injury.
	CAUTION	This mark indicates potentially hazardous situation which, if not observed, may result in minor or moderate injury. And this mark can be used as a warning against unsafe activities.
	IMPORTANT	This mark indicates emphasis on notable characteristics in working procedures or information on working procedures and technology for convenient use.
NOTE		Gives helpful information.

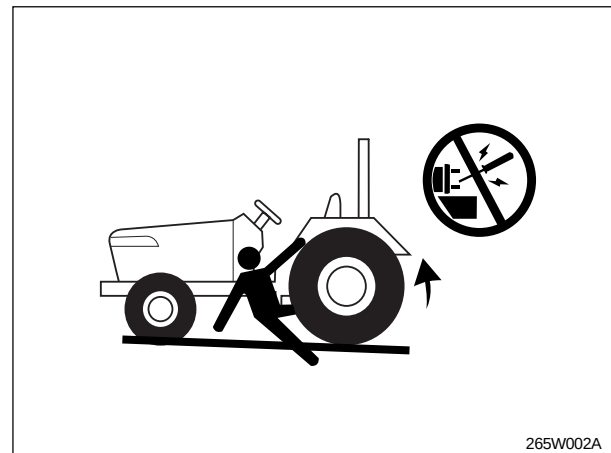
BEFORE SERVICING AND REPAIRING

1. Read all safety instructions in this manual and be aware of the safety decals on your machine itself.
2. Thoroughly clean your work area and the machine.
3. Make sure the machine is on firm and level ground and that the parking brake is set.
4. Lower the implement to the ground.
5. Stop the engine and remove the key.
6. Disconnect the negative battery cable.
7. Place a "DO NOT OPERATE" tag in operator station.



SAFETY STARTING

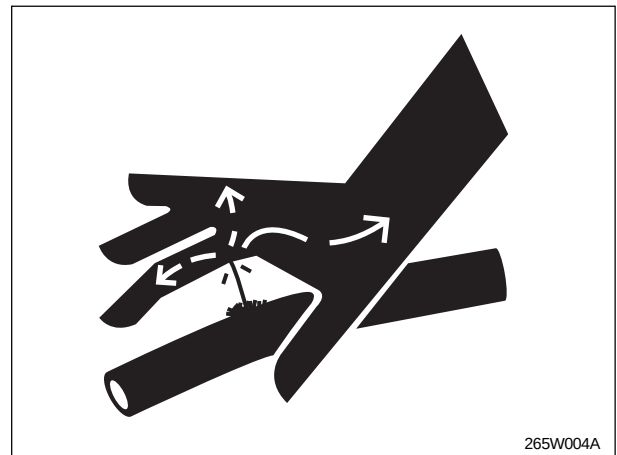
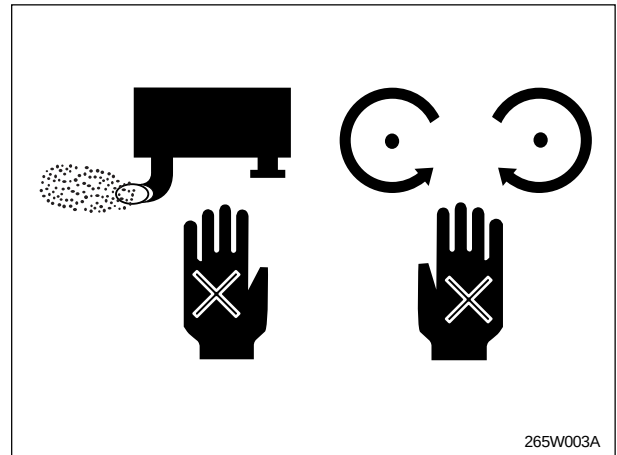
1. Always use the safety start switch to start the engine and never by any other means.
2. Do not alter or remove any part of machine safety system.
3. Before starting the engine, make sure that all shift levers are in neutral positions or in the disengaged positions.
4. Never start the engine unless you are in the operator's seat.



SAFETY WORKING

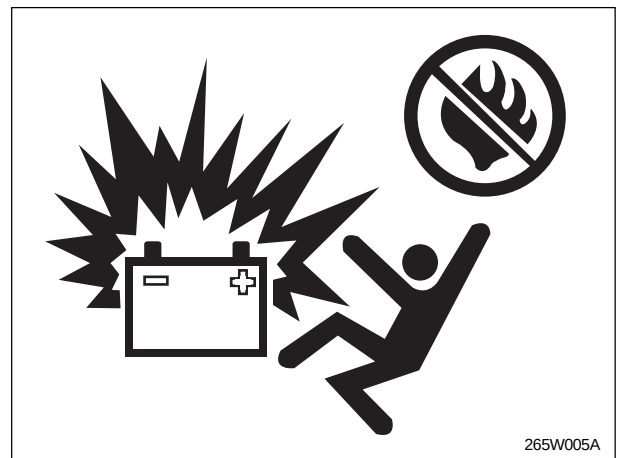
1. Do not operate or service the machine while under the influence of alcohol, medication, or other substances.
2. Never wear loose fitting clothing and always use safety equipment appropriate to the job.
3. Never use improvised tools, parts or procedures. Use only recommended tools appropriate to the work.
4. Be careful to perform all work safely when servicing is done by two or more people.
5. Always support the machine by safety stands. Never work under the machine that is supported solely by a jack.
6. Do not touch any rotating or hot parts while the engine is running.
7. Never remove the radiator cap while the engine is running, or immediately after stopping. Only remove radiator cap when it is cool enough to touch with bare hands. Slowly loosen the cap 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.



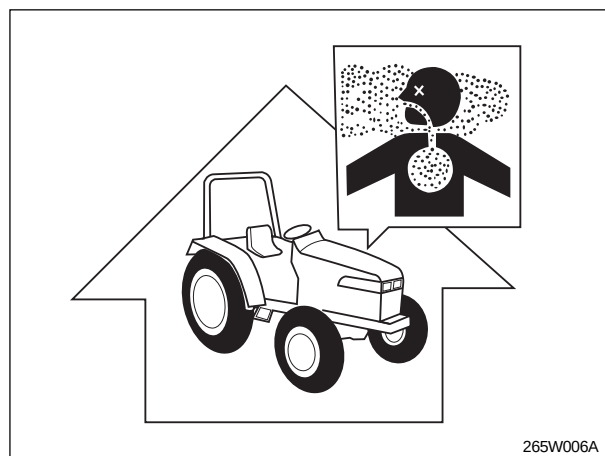
AVOID FIRES

1. Never smoke or allow flames or sparks in your work area, as fuel is extremely flammable and explosive under certain conditions.
2. Always disconnect the negative battery cable first and reconnect it last to avoid sparks from an accidental short circuit.
3. Battery gas will ignite. Keep sparks and open flame away from the top of battery, especially while charging.
4. Be careful not to spill fuel on the engine.



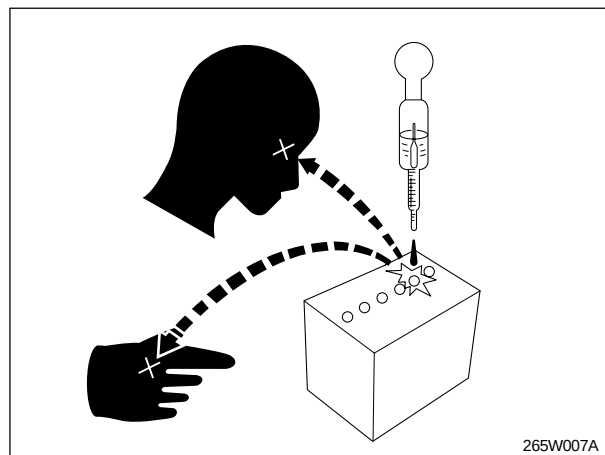
VENTILATE WORK AREA

1. Exhaust contains poisonous carbon monoxide, so you should never run the engine in a closed area. If the engine must be running while performing maintenance, make sure the area is well ventilated.



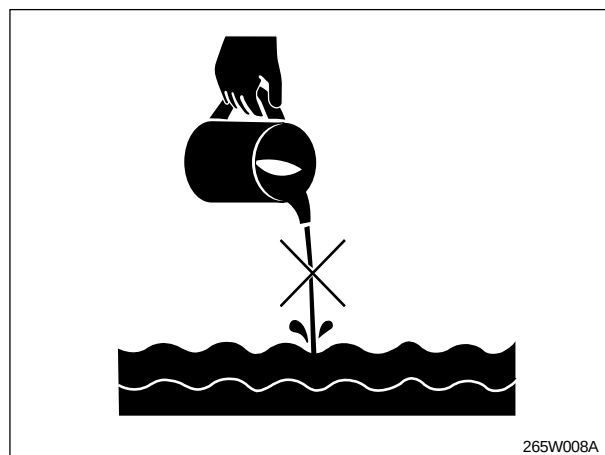
PREVENT ACID BURNS

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.



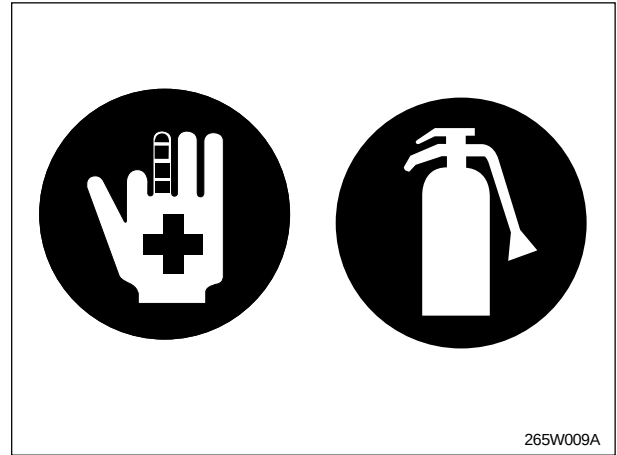
DISPOSE OF FLUIDS PROPERLY

1. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, electrolyte and other harmful waste. Never pour fluids into the ground, down a drain, or into a stream, pond, or lake.



PREPARE FOR EMERGENCIES

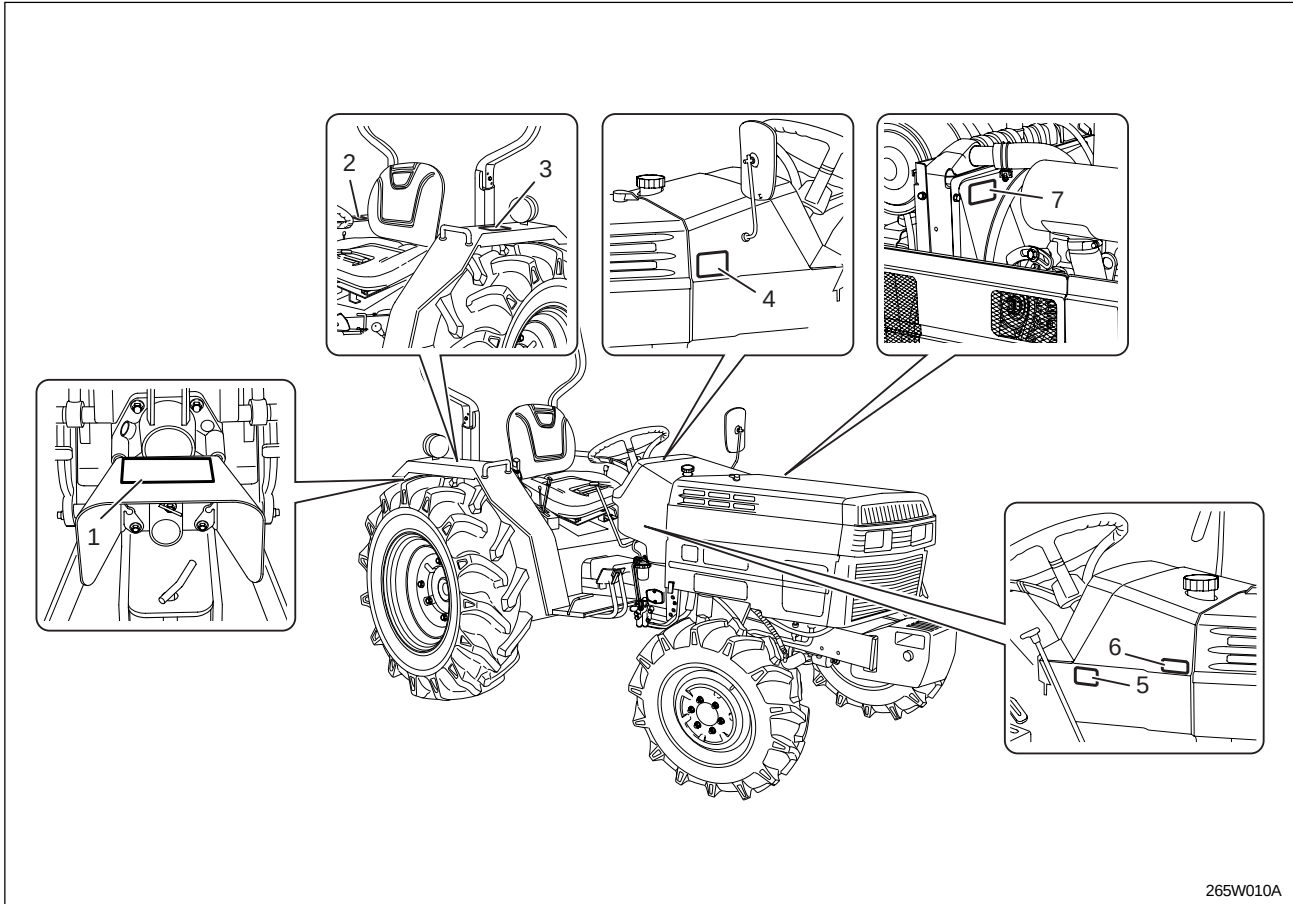
1. Be sure to keep a first aid kit and fire extinguisher handy at all times.
2. Keep emergency numbers for the nearest fire department, hospital, doctor and ambulance service, near your telephone in case of emergency.



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.



265W010A

(1) Parts No. : T2325-50743

! WARNING !



TO AVOID INJURY FROM PTO:

1. Keep all shields in place.
2. Keep hands, feet and clothing away.
3. Disengage PTO, stop the engine and set the brake before adjusting, repairing or servicing the tractor or implement.

TO AVOID PERSONAL INJURY:

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

T2325-50743

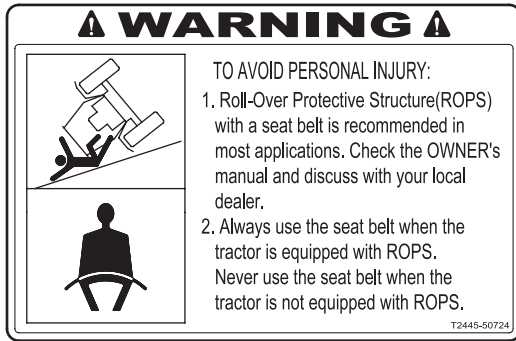
(2) Parts No. : T2325-50512

! CAUTION

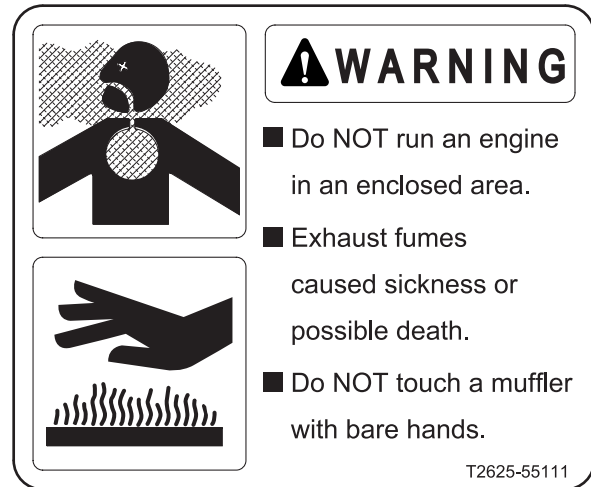
1. Read and understand the owner's manual before attempting to operate this tractor
2. Start the tractor in neutral and with clutch pedal fully depressed.
3. Start the engine only while in the operator's seat.
4. Keep people far away from tractor when working.
5. Avoid sharp turns or sudden braking.
6. Always slow down when driving on rough ground.
7. Always stop the engine and set the brake before checking, adjusting or repairing the tractor or implement.
8. Always lower implements to the ground before leaving the tractor seat.
9. Only the operator should be allowed on the tractor.
10. Lock brake pedals together, use warning lights, and use a slow moving vehicle emblem when traveling on the roadway.
11. Failure to follow the instructions above or in the owner's manual can cause serious injury to the operator or other persons.

T2325-50512

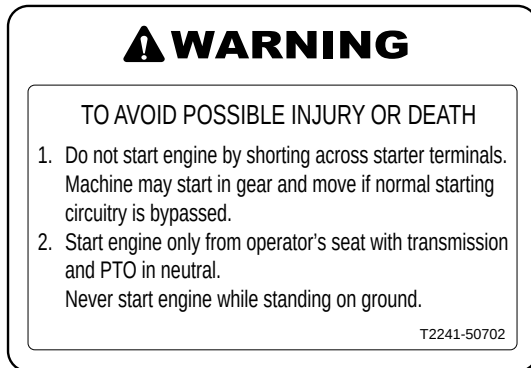
(3) Parts No. : T2445-50724



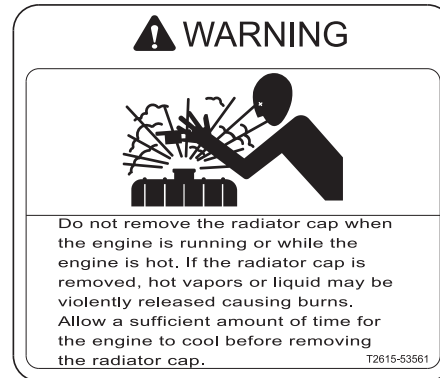
(4) Parts No. : T2615-55111



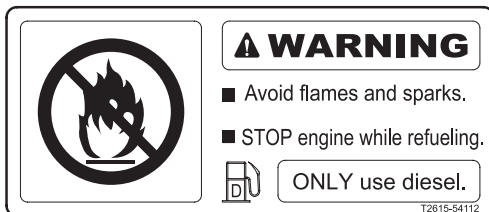
(5) Parts No. : T2241-50702



(7) Parts No. : T2615-53561



(6) Parts No. : T2615-54112



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) is replaced, make sure new label(s) is (are) attached in the same location(s) as the replaced component.
5. Mount new labels by applying on a clean dry surface and pressing any bubbles to outside edge.

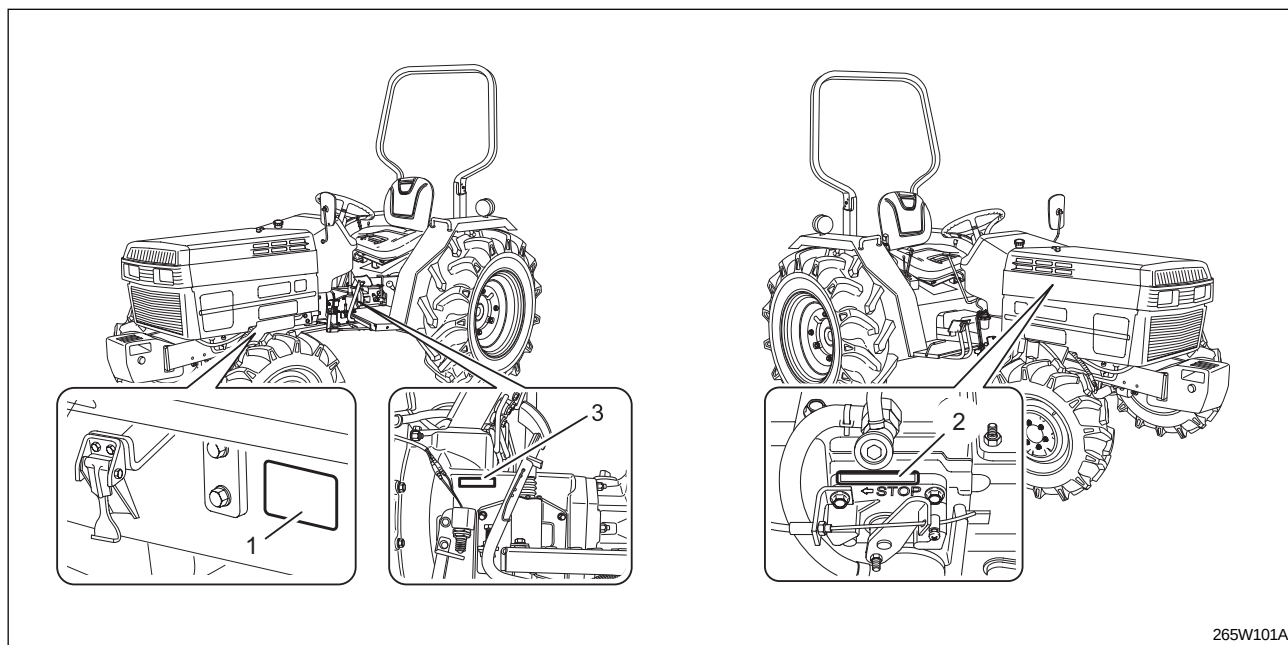
MEMO

CHAPTER 1

GENERAL

1. TRACTOR IDENTIFICATION

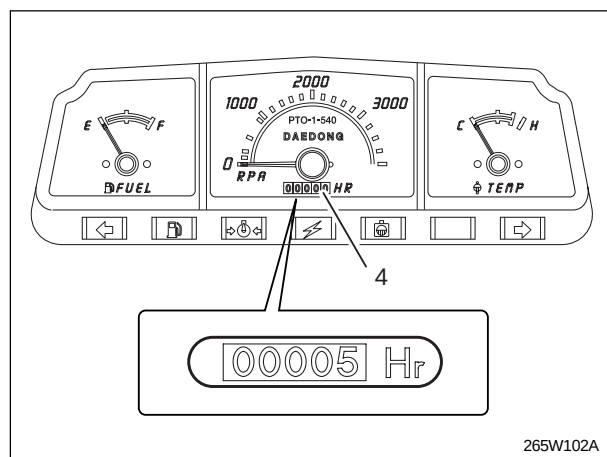
When contacting your local **KIOTI** distributor, always specify engine serial number, tractor serial number and hour meter reading.



(1) Statutory Plate

(2) Engine Serial Number

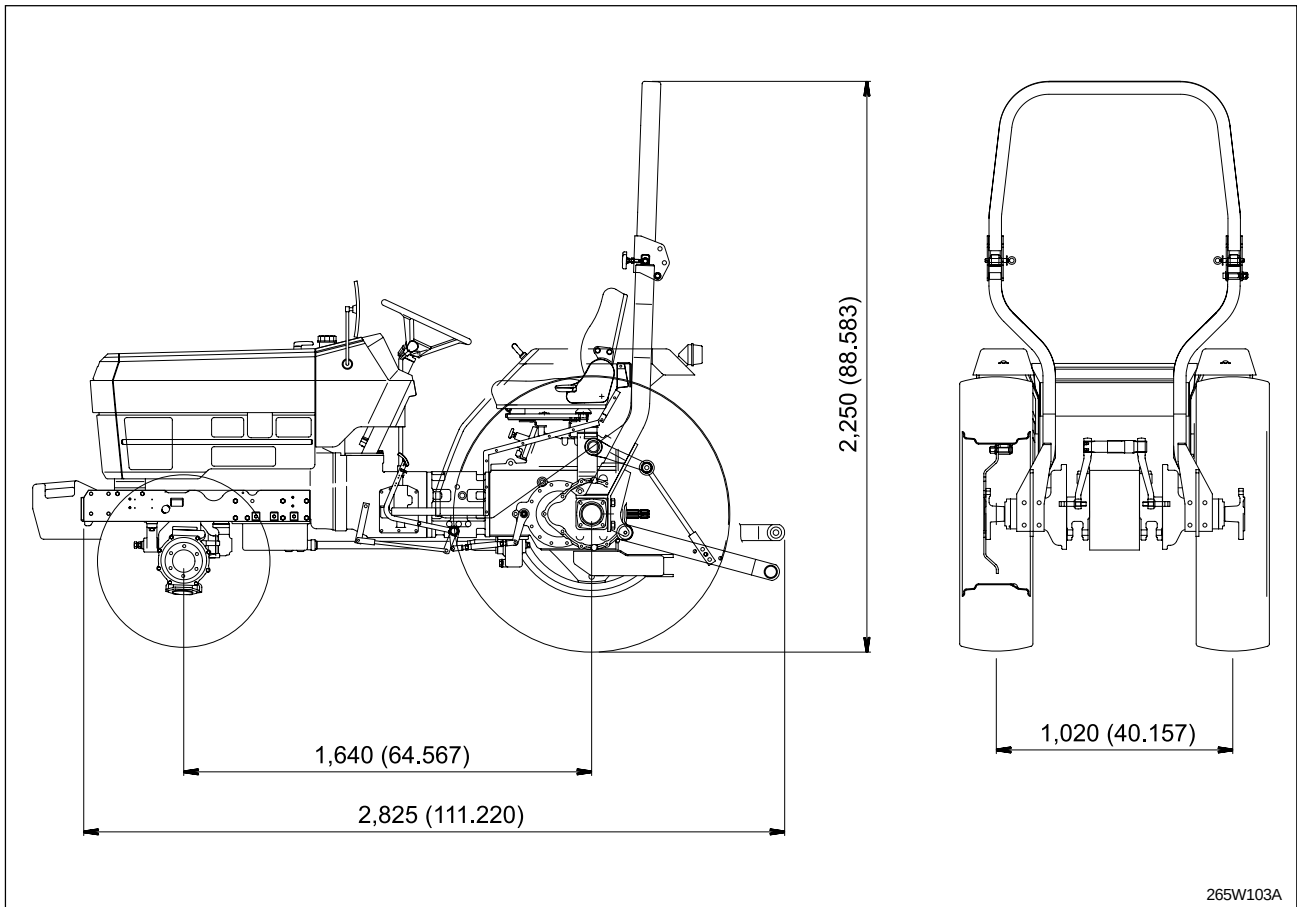
(3) Transmission Serial Number



(4) Hour Meter

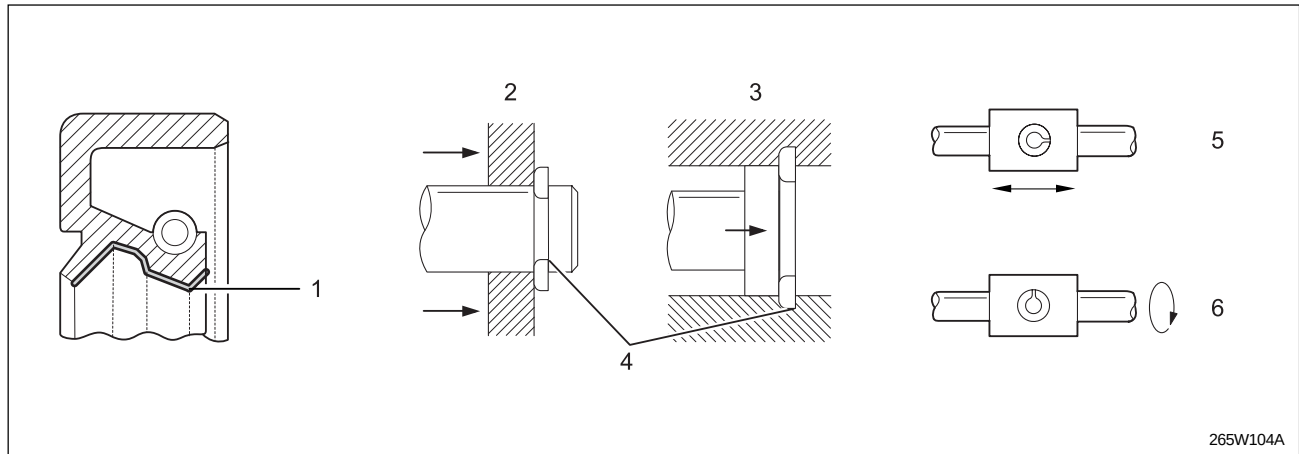
2. DIMENSIONS

mm (in.)



3. GENERAL PRECAUTIONS

3.1 ASSEMBLY AND DISASSEMBLY



(1) Grease

(2) Snap Ring for Shaft

(3) Snap Ring for Hole

(4) Assemble Towards to be Forced

(5) Reciprocating

(6) Rotating

1. Place the tractor on firm and level ground prior to any service or adjustment.
2. Work with the engine stopped whenever possible. Be careful when doing any testing that requires the engine to be running.
3. Use only DAEDONG (KIOTI) approved special tools. Servicing dealers may machine tools to DAEDONG (KIOTI) specifications, if the tool will not be used often.
4. Keep your work area and the tractor clean during all phases of the disassembly and reassembly process.
5. After removal, keep parts clean and organized. Tighten nuts to mating bolts by hand to keep matched sets together.
6. Be careful during disassembly, assembly, and storage of hydraulic parts. Dust and metal chips can contaminate the whole hydraulic system. Keep parts covered whenever possible.
7. Use only approved manufactures cleaning agents for parts cleaning. Hydraulic parts should be cleaned with an approved cleaning oil. Diesel fuel should never be used for cleaning.
8. Remove all oil and contaminates before performing any measurement of parts.
9. Disconnect the battery negative (-) cable before removing or installing any live electrical components.
10. Use only DAEDONG (KIOTI) genuine parts to maintain the performance and safety of your KIOTI tractor.
11. When assembling an outside snap ring, on a shaft, or an inside snap ring, in a hole, assemble with the head in the direction of force. Reference the above figure.
12. When replacing a new part also replace the associated packing (gasket), bearing (s), and o-ring (s). Apply grease properly for O-rings and oil seals before assembly.
13. Locate the split portion of any spring pin by referencing the direction of force, like the above figure.
14. Replace any split pin with a new one.



IMPORTANT

- **Use packing bond, gasket sealer, equivalent to Three Bond 1208D.**
- **Remove all existing sealer before applying new sealer to the part.**
- **Apply the bond, sealer, in a bead centered on the sealing flange area. If a bolt hole is encountered, continue bead to the center of the inner sealing surface.**
- **Assemble the parts within 10 minutes of bond, sealer, application. Wait 30 minutes before adding oil to the sealed parts, if applicable.**

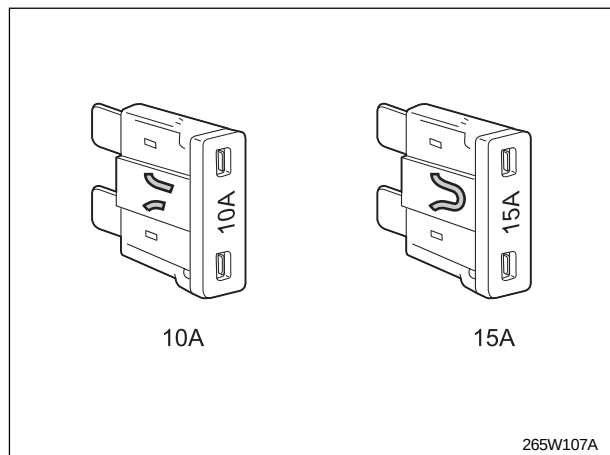
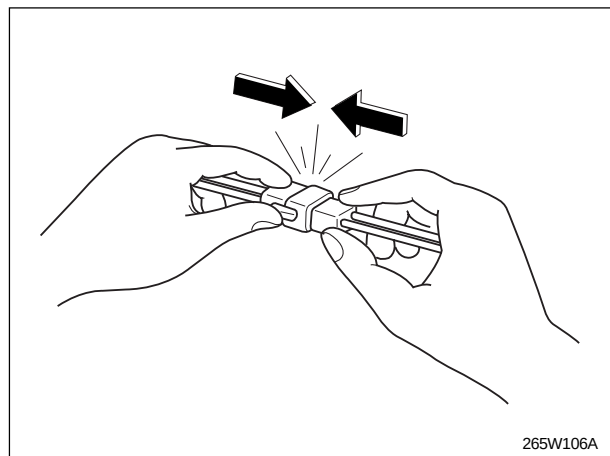
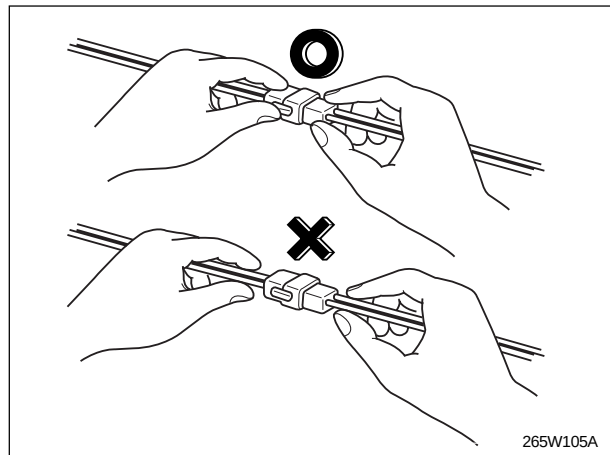
3.2 ELECTRICAL SYSTEM

1. Check all electrical connectors daily for any damage or short circuit at their junctions. In addition, annually schedule a complete electrical system inspection with your local KIOTI dealer.
2. Do not modify or reorganize the wiring harness or the electric field parts.
3. When disconnecting battery cables, disconnect the negative cable first. Reinstall the positive cable first when reinstalling.

DISCONNECTING BATTERY NEGATIVE CABLE

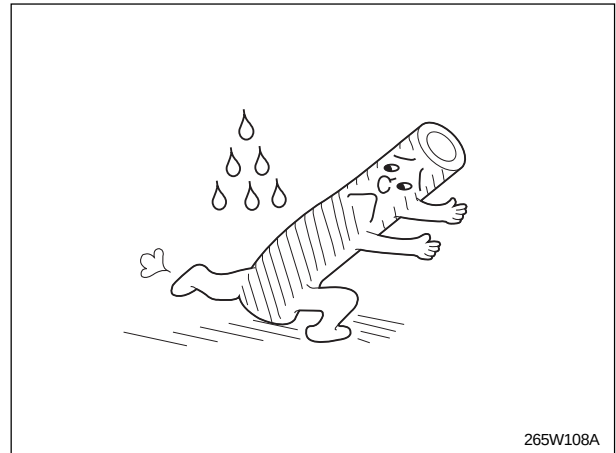
NOTE:

- **Be sure to turn the starting key OFF when connecting or disconnecting the cable.**
4. When disconnecting a connector, grasp the plastic section, not the wiring.
 5. When reconnecting the connector, insert it until it snaps.
 6. When replacing a broken fuse with a new one, be sure to use the fuse with the correct amperage capacity. Use your owner's manual to establish the correct capacity.
 7. Be sure not to drop sensors and relays. They are fragile.



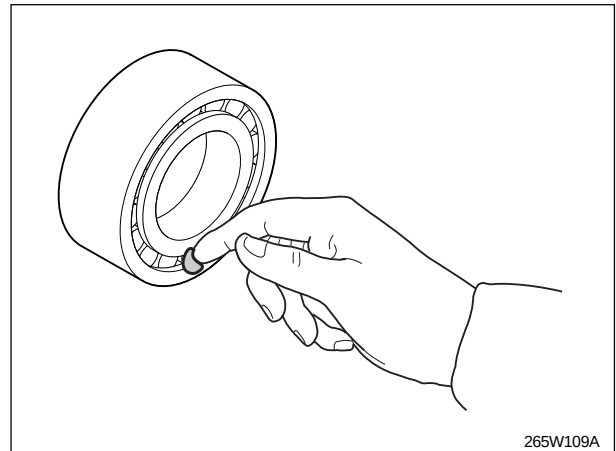
3.3 TUBES AND RUBBERS

Keep the tubes (hoses) and rubber parts free from oil and other petroleum products. This may cause a change in quality in these parts, and may shorten product life.



3.4 LUBRICANT

During assembly and repair, apply designated lubricant where specified in accordance with this repair manual.



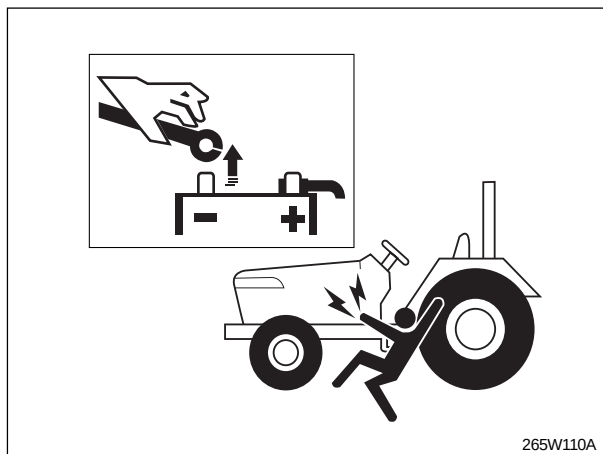
4. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING

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. At the same time recommend the dealer to performs a periodic check during regular maintenance.***
- ***Do not attempt to modify or remodel any electrical parts and/or wiring.***
- ***When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.***



5. SPECIFICATIONS

Model		LK3054XS
Engine	Model	TD140B-1
	Type	Vertical, water-cooled, 3-cylinder diesel
	Engine gross HP (kW)	30.5 (22.4)
	P.T.O HP (kW)/rpm	21 (15.7) / 2,700
	Displacement cc (cu.in)	1,395 (85.1)
	Rated revolution r.p.m min-1	2,700
	Fuel tank capacity ℓ (gal.)	28 (7.5)
Drive train	Clutch	Dry dual
	Transmission	Synchro shuttle
	Speeds	8F 8R
	Differential lock	Standard
	Brake	Wet disc type
	P.T.O	Live
	Rear (rpm)	540 rpm at 2,610engine rpm / (Option 1,000 rpm)
Hydraulic system	Pump capacity (Max. flow rate) ℓ/min (gpm)	38.7 (10.2)
	3-point hitch	Cat.I
	Maximum lifting capacity (24in. aft of hitch) kg (lbs)	975 (2,149)
	Hydraulic lift control system	Position control
	Steering	Hydrostatic Power Steering
Standard tire size	Front	7 ~ 14 / 6 PR
	Rear	11.2 ~ 2.4 / 6 PR
Traveling speeds	Forward (At rated engine rpm) km/h (mph)	1.4 ~ 19.5 (0.86 ~ 12.15)
	Reverse (At rated engine rpm) km/h (mph)	1.2 ~ 17.8 (0.75 ~ 11.09)
Dimensions	Overall length (with 3p) mm (in.)	2,825 (111.2)
	Overall width (minimum tread) mm (in.)	1,315 (51.8)
	Overall height (from top of ROPS) mm (in.)	2,250 (88.6)
	Wheel base mm (in.)	1,640 (64.6)
	Min. ground clearance mm (in.)	284 (11.2)
	Tread Front mm (in.)	1,115 (43.9)
	Tread Rear mm (in.)	1,020 ~ 1,268 (40.2 ~ 49.9)
	Min. turning radius (without brake) m (Ft.)	3.4 (11.2)
	Weight (with rops) kg (lbs.)	1,250 (2,756)

NOTE:

The specifications are subject to change for the purpose of improvement without any notice.

6. LUBRICANTS, FUEL AND COOLANT

To prevent serious equipment damage, use only genuine KIOTI fluids, oils and greases, or equivalents.

No.	Locations	Capacities	Lubricants	
1	Fuel	28 ℓ (7.4 U.S.gal.)	No.2-D diesel fuel No.1-D diesel fuel if temperature is below -10°C (14°F)	
2	Coolant	7.2 ℓ (1.9 U.S.gal.)	Fresh clean water with anti-freeze	
3	Engine crankcase	6.4 ℓ (1.69 U.S.gal.)	Engine oil: API Service Classification CC or CD	
			Above 25°C (77°F)	SAE30, SAE10W-30 or 10W-40
			0 to 25°C (32 to 77°F)	SAE20, SAE10W-30 or 10W-40
			Below 0°C (32°F)	SAE10W, SAE10W-30 or 10W-40
4	Transmission case	26 ℓ (6.86 U.S.gal.)	Exxonmobil	Mobilfluid 423 or 424 Exxon Hydraul 560
			Shell	DONAX-TD/TD Plus
			BP	Tractran UTH
5	Front axle case	6.0 ℓ (1.58 U.S.gal.)	SAE 90 gear oil or transmission case oil	
6	Greasing	No. of greasing points	Capacity	Type of grease
	Battery terminal	2	Moderate amount	Multipurpose type grease



WARNING

- **Check the oil level regularly.**
- **Correct the oil level, if needed, before operating.**
- **Always check and add oil with the tractor on a flat, level surface.**
- **To prevent personal injury, always stop the engine and set the parking brake before performing any kind of service.**

7. TIGHTENING TORQUES

7.1 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	 No-grade or 4T						 7T						 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.)	7.85 ~ 9.31	0.80 ~ 0.95	5.79 ~ 6.87	7.85 ~ 8.82	0.80 ~ 0.90	5.79 ~ 6.50	9.81 ~ 11.2	1.00 ~ 1.15	7.24 ~ 8.31	7.85 ~ 8.82	0.80 ~ 0.90	5.79 ~ 6.50	12.3 ~ 14.2	1.25 ~ 1.45	9.05 ~ 10.4
M8 (8 mm, 0.31 in.)	17.7 ~ 20.5	1.8 ~ 2.1	13.1 ~ 15.1	16.7 ~ 19.6	1.7 ~ 2.0	12.3 ~ 14.4	23.6 ~ 27.4	2.4 ~ 2.8	17.4 ~ 20.2	17.7 ~ 20.5	1.8 ~ 2.1	13.1 ~ 15.1	29.5 ~ 34.3	3.0 ~ 3.5	21.7 ~ 25.3
M10 (10 mm, 0.39 in.)	39.3 ~ 45.1	4.0 ~ 4.6	29.0 ~ 33.2	31.4 ~ 34.3	3.2 ~ 3.5	23.2 ~ 25.3	48.1 ~ 55.8	4.9 ~ 5.7	35.5 ~ 41.2	39.3 ~ 44.1	4.0 ~ 4.5	29.0 ~ 32.5	60.9 ~ 70.6	6.2 ~ 7.2	44.9 ~ 52.0
M12 (12 mm, 0.47 in.)	62.8 ~ 72.5	6.4 ~ 7.4	46.3 ~ 53.5	/			77.5 ~ 90.2	7.9 ~ 9.2	57.2 ~ 66.5	62.8 ~ 72.5	6.4 ~ 7.4	46.3 ~ 53.5	103 ~ 117	10.5 ~ 12.0	76.0 ~ 86.7
M14 (14 mm, 0.55 in.)	108 ~ 125	11.0 ~ 12.8	79.6 ~ 92.5				124 ~ 147	12.6 ~ 15.0	91.2 ~ 108	/			167 ~ 704	17.0 ~ 20.0	123 ~ 144
M16 (16 mm, 0.63 in.)	167 ~ 191	17.0 ~ 19.5	123 ~ 141				197 ~ 225	20.0 ~ 23.0	145 ~ 166				260 ~ 304	26.5 ~ 31.0	192 ~ 224
M18 (18 mm, 0.71 in.)	246 ~ 284	25.0 ~ 29.0	181 ~ 209				275 ~ 318	28.0 ~ 32.5	203 ~ 235				344 ~ 402	35.0 ~ 41.0	254 ~ 296
M20 (20 mm, 0.79 in.)	334 ~ 392	34.0 ~ 40.0	246 ~ 289				368 ~ 431	37.5 ~ 44.0	272 ~ 318				491 ~ 568	50.0 ~ 58.0	362 ~ 419

7.2 STUD BOLTS

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

7.3 AMERICAN STANDARD SCREWS, BOLTS AND NUTS WITH UNC OR UNF THREADS

Grade Unit Nominal diameter	SAE GR.5 			SAE GR.8 		
	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
5/16	23.1 ~ 27.8	2.35 ~ 2.84	17.0 ~ 20.5	32.5 ~ 39.3	3.31 ~ 4.01	24.0 ~ 29.0
3/8	47.5 ~ 57.0	4.84 ~ 5.82	35.0 ~ 42.0	61.0 ~ 73.2	6.22 ~ 7.47	45.0 ~ 54.0
1/2	108.5 ~ 130.2	11.07 ~ 13.29	80.0 ~ 96.0	149.2 ~ 179.0	15.22 ~ 18.27	110.0 ~ 132.0
9/16	149.2 ~ 179.0	15.22 ~ 18.27	110.0 ~ 132.0	217.0 ~ 260.4	22.14 ~ 26.57	160.0 ~ 192.0
5/8	203.4 ~ 244.1	20.75 ~ 24.91	150.0 ~ 180.0	298.3 ~ 358.0	30.44 ~ 36.53	220.0 ~ 264.0

8. MAINTENANCE CHECK LIST

No.	Period Item		Indication On Hour Meter																		After Purchase		Important	
			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	⊙	●		●		●		●		●		●		●		●						
2	Engine oil filter	Replace	⊙			●				●				●				●						
3	Hydraulic oil filter	Replace	⊙			●				●				●				●						
4	Transmission fluid	Change								●								●						
5	Front axle case oil	Change								●								●						
6	Front axle pivot	Adjust	●					●						●				●						
7	Engine start system	Check	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
8	Greasing	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
9	Wheel bolt torque	Check	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
10	Battery condition	Check		●		●		●		●		●		●		●		●					*4	
11	Air cleaner element	Clean		●		●		●		●		●		●		●		●					*1	@
		Replace																		●		*2		
12	Fuel filter element	Check		●		●		●		●		●		●		●		●						@
		Replace								●								●						
13	Fan belt	Adjust		●		●		●		●		●		●		●		●						
14	Clutch	Adjust		●		●		●		●		●		●		●		●						
15	Brake	Adjust		●		●		●		●		●		●		●		●						
16	Radiator hose and clamp	Check				●				●				●				●						
		Replace																			●			
17	Power steering oil line	Check				●				●				●				●						
		Replace																			●			
18	Fuel line	Check		●		●		●		●		●		●		●		●						@
		Replace																			●			
19	Intake air line	Check				●				●				●				●						
		Replace																			●		*3	
20	Toe-in	Adjust				●				●				●				●						
21	Engine valve clearance	Adjust																●						
22	Fuel injection nozzle injection pressure	Check																	●	●				@
23	Injection pump	Check																		●				@
24	Cooling system	Flush																			●			
25	Coolant	Change																			●			
26	Fuel system	Bleed																						
27	Fuse	Replace																						
28	Light bulb	Replace																						



IMPORTANT

- *The jobs indicated by © must be done after the first 50 hours of operation.*
 - *1 Air cleaner should be cleaned more often in dusty conditions than in normal conditions.*
 - *2 Every year or every 6 times of cleaning.*
 - *3 Replace only if necessary.*
 - *4 When the battery is used for less than 100 hours per year, check the fluid level annually.*
 - *The items listed above (@ marked) are registered as emission related critical parts by KIOTI in the U.S.EPA non-road 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.*

9. CHECK AND MAINTENANCE

9.1 DAILY CHECK

For your own safety and maximum service life of the machine, make a thorough daily inspection before operating the machine to start the engine.

CAUTION

To avoid personal injury:

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

A. CHECKING AND REFUELING

Item	Specified
Fuel tank capacity	28 ℓ (7.4 U.S.gal.)

CAUTION

To avoid personal injury:

- **Do not smoke while refueling.**
- **Be sure to stop the engine before refueling.**

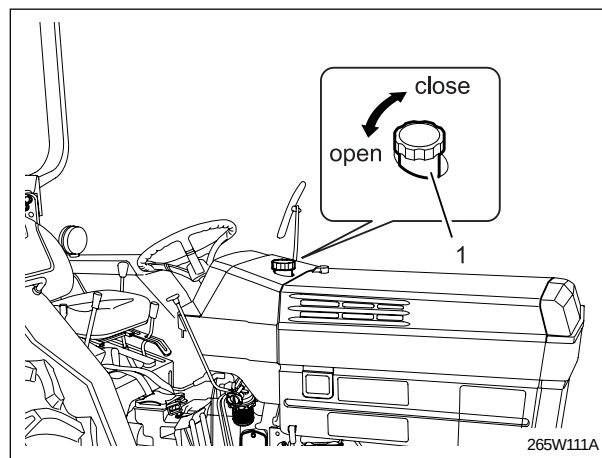
1. Turn the key switch to "ON", check the amount of fuel showing on the fuel gauge.
2. Fill fuel tank when the fuel gauge shows 1/4 or less fuel in the tank.
3. Use No.2-Diesel fuel at all temperatures above -10°C (14°F).

IMPORTANT

- **Do not permit dirt or trash to get into the fuel system.**
- **Be careful not to let the fuel tank become empty, otherwise air will enter the fuel system, requiring the fuel system to be bled before next engine start.**
- **Be careful not to spill during refueling. If a spill should occur, wipe it off at once. Fuel on the tractor may cause a fire.**
- **To prevent condensation (water) accumulation in the fuel tank, fill the tank before parking the tractor overnight.**

Walk around inspection

Look around and under the tractor for such items as loose bolts, trash build-up, oil or coolant leaks, broken or worn parts.



(1) Fuel Tank Cap

NOTE:

- **No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service. (SAE J313 JUN 87)**
- **Grade of Diesel Fuel Oil According to ASTM D975**

Flash Point °C (°F)	Water and Sediment, Volume %	Carbon Residue On, 10 Percent Residuum, %	Ash, Weight %
Min	Max	Max	Max
52 (125)	0.05	0.35	0.01

Distillation Temperatures, °C (°F) 90% Point		Viscosity Kinematic cSt or mm ² /s at 40°C		Viscosity Saybolt, SUS at 100°F		Sulfur, Weight %	Copper Strip Corrosion	Cetane Number
Min	Max	Min	Max	Min	Max	Max	Max	Min
282 (540)	338 (640)	1.9	4.1	32.6	40.1	0.50	No.3	40

CHAPTER 1 LK3054XS

B. CHECKING ENGINE OIL LEVEL



IMPORTANT

- *When using an oil of different maker or viscosity from the previous one, remove all of the old oil. Never mix two different types of oil.*
- *Never run engine if the oil level is low.*



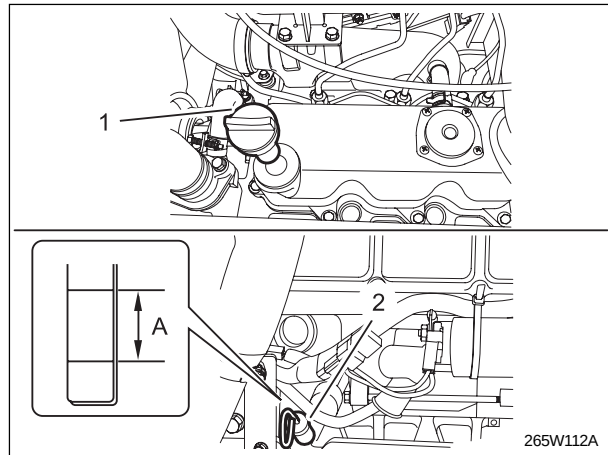
CAUTION

To avoid personal injury:

- *Be sure to stop the engine before checking the oil level.*

1. Park the machine on a flat surface.
2. Check the engine oil before starting the engine or 5 minutes or more after the engine has stopped.
3. To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level is between the two notches. If the level is too low, add new oil to the prescribed level at the oil inlet.

(See "LUBRICANTS" in Maintenance Section)



(1) Oil Inlet

(2) Dipstick

(A) Oil Level is Acceptable Within this Range

C. CHECKING COOLANT LEVEL



CAUTION

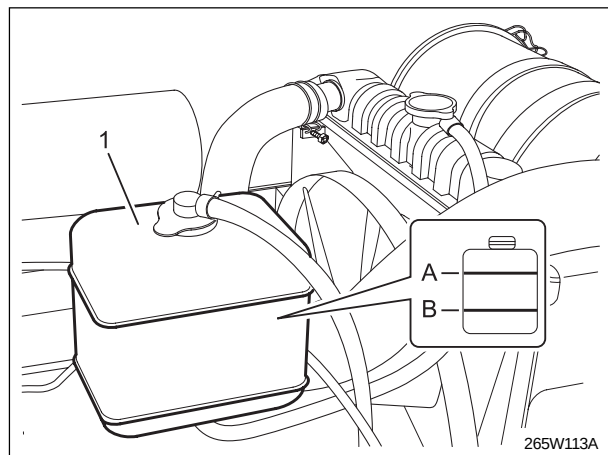
To avoid personal injury:

- *Do not remove the radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow ample time for excess pressure to escape before removing the cap completely.*

1. Make sure to see that the coolant level is between the "FULL" and "LOW" marks of recovery tank.
2. When the coolant level drops due to evaporation, add water only up to the full level.

In case of leakage, add anti-freeze and water in the specified mixing ration up to the full level.

(See "Flush Cooling System and Changing Coolant" in every 2 years maintenance.)



(1) Recovery Tank

(A) FULL

(B) LOW



IMPORTANT

- *If the radiator cap has to be removed, follow the caution above and securely retighten the cap.*
- *Use clean, fresh water and anti-freeze to fill the recovery tank.*
- *If water should leak, consult your local KIOTI Dealer.*

D. CHECKING HEAD LIGHT, HAZARD LIGHT ETC.

1. Inspect the lights for broken bulbs and lenses.
2. Replace if broken.

E. CHECKING SEAT BELT AND ROPS

1. Always check condition of seat belt and **ROPS** attaching hardware before operating tractor.
2. Replace if damaged.

F. CLEANING GRILL, RADIATOR SCREEN



CAUTION

To avoid personal injury:

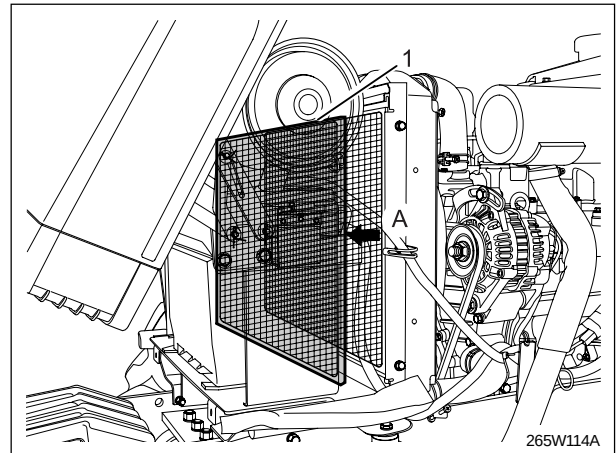
- *Be sure to stop the engine before removing the screen.*

1. Check the front grill and the side screens to be sure they are clean of any debris.
2. Detach the screen and eliminate all the foreign material.



IMPORTANT

- *Grill and screen must be clean from debris to keep the engine from overheating and to allow good air intake to the air cleaner.*



(1) Radiator Screen

(A) DETACH

G. CHECKING BRAKE PEDALS AND CLUTCH PEDAL

1. Examine the brake and clutch pedals for free travel, and smooth operation.
2. Adjust if free travel is not within specifications:
(See "Adjusting Clutch and Brake Pedal" in every 100 hours maintenance.)

NOTE:

Brake pedals should be equal when depressed.

H. CHECKING GAUGES, METER AND EASY CHECKER

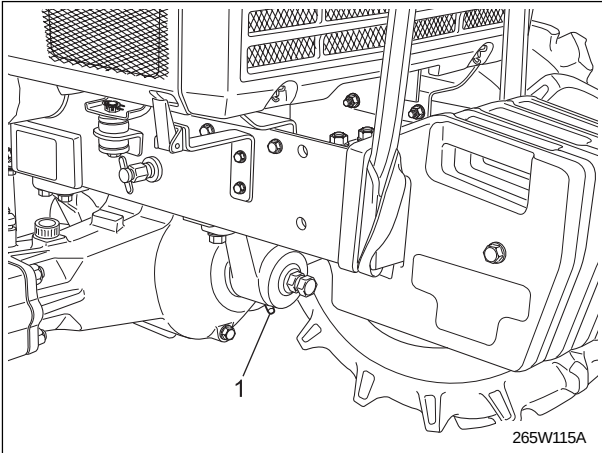
1. Examine the instrument panel for broken gauge(s), meter(s) and Easy Checker lamps.
2. Replace if broken.

9.2 EVERY 50 HOURS

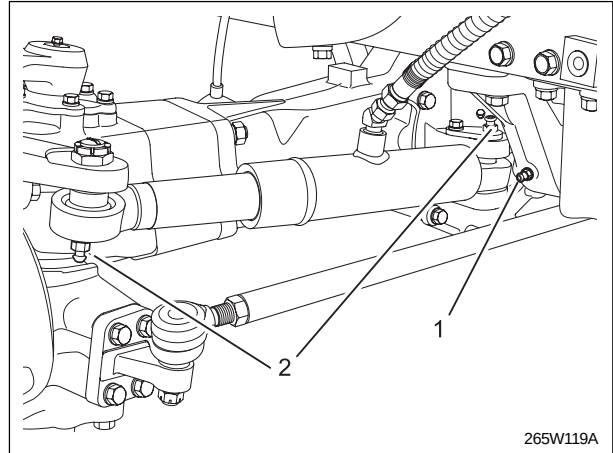
A. LUBRICATING GREASE FITTINGS

Apply a small amount of multipurpose grease to the following points every 50 hours:

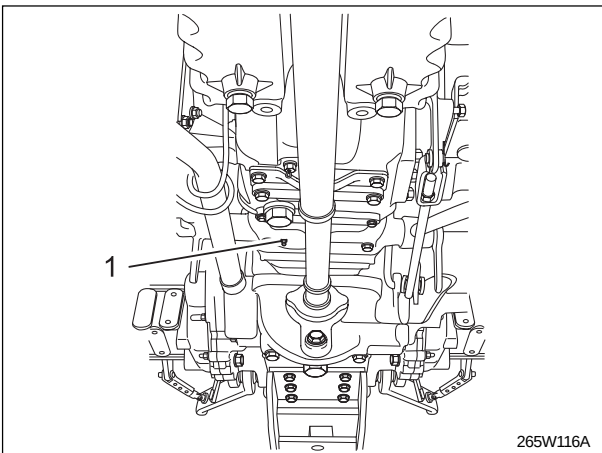
If you operated the machine in extremely wet and muddy conditions, lubricate grease fittings more often.



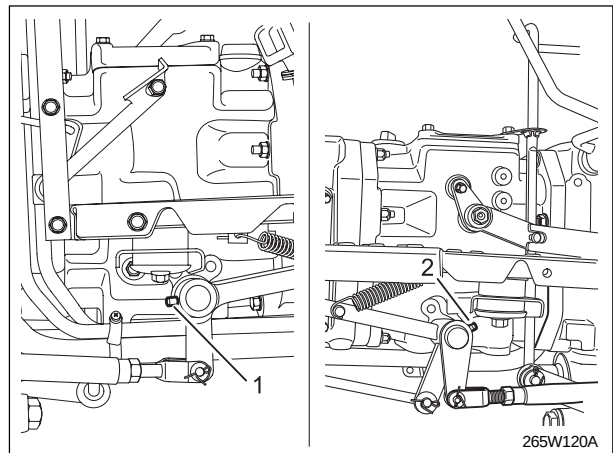
(1) Grease Fitting (Front Bracket)



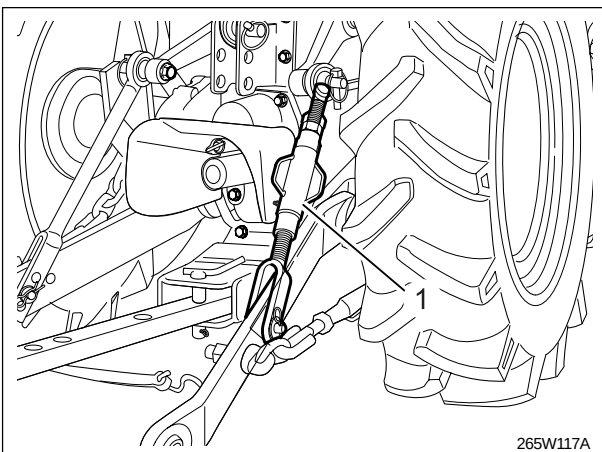
(1) Grease Fitting (Rear Bracket)
(2) Grease Fitting (Power Steering Cylinder) (RH, LH)



(1) Grease Fitting (Brake Pedal Shaft)



(1) Grease Fitting (Brake Pedal (RH))
(2) Grease Fitting (Clutch Pedal)



(1) Grease Fitting (Lift Rod)

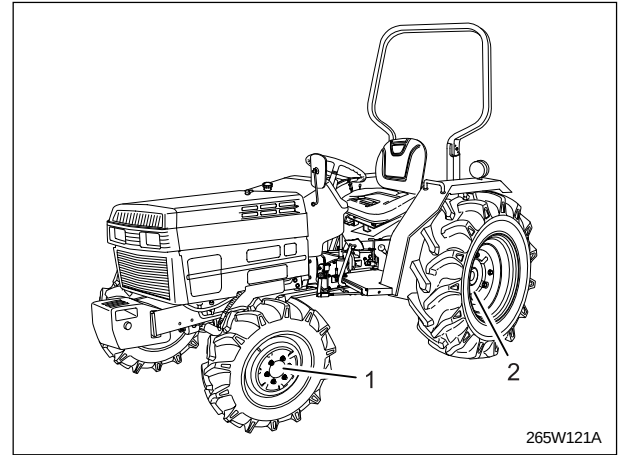
B. CHECKING WHEEL BOLT TORQUE

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.*

Check wheel bolts and nuts regularly especially when new. If they are loose, tighten them as follows.



(1) Bolt, Nut-M12 (7T)

(2) Bolt, Nut-M16 (7T)

9.3 EVERY 100 HOURS

A. CHANGING ENGINE OIL



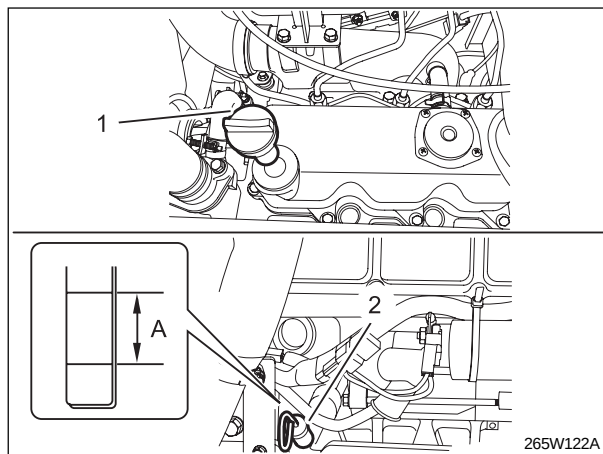
CAUTION

To avoid personal injury:

- **Be sure to stop the engine before changing the oil.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. To drain the used oil, remove the drain plug at the bottom of the engine and drain the oil completely into the oil pan.

All the used oil can be drained out easily when the engine is still warm.



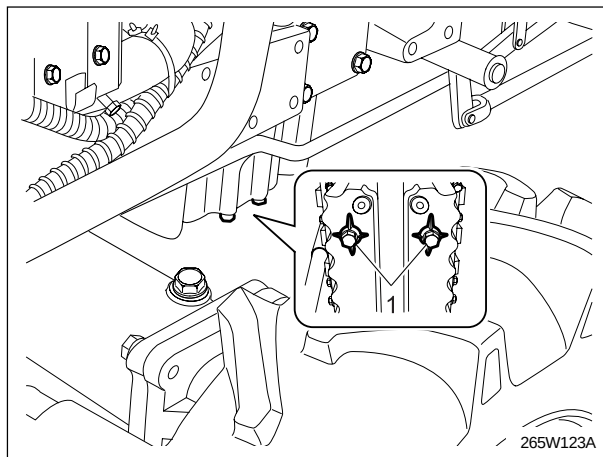
(1) Oil Inlet

(2) Dipstick

(A) Oil Level is Acceptable Within this Range

2. After draining reinstall the drain plug.
3. Fill with the new oil up to the upper notch on the dipstick.

Item	Specified
Oil capacity with filter	6.4 ℓ (1.69 U.S.gal.)



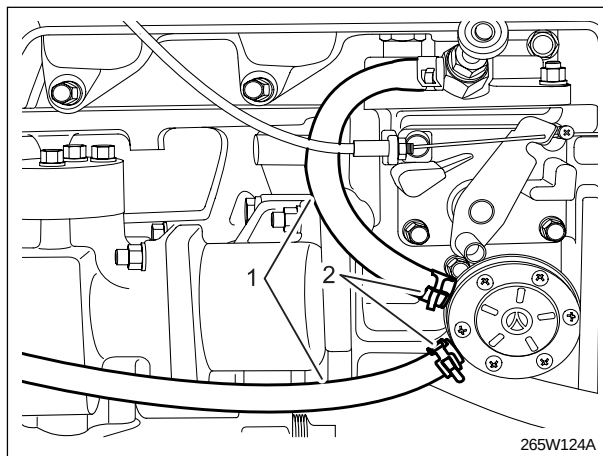
(1) Drain Plug

B. CHECKING FUEL LINE

1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.

NOTE:

- **If the fuel line is removed, be sure to properly bleed the fuel system. (See "Bleeding Fuel System" in as required maintenance)**



(1) Fuel Lines

(2) Clamp Bands

C. CLEANING AIR CLEANER PRIMARY ELEMENT

1. Remove the air cleaner cover and element.
2. Clean the element:
 - 1) When dry dust adheres to the element, blow compressed air from the inside, turning the element. The compressed air pressure must be below 686 kPa (7 kgf/cm³, 99 psi).
 - 2) When carbon or oil adheres to the element, soak the element in detergent for 15 minutes then wash it several times in water, rinse with clean water and dry it naturally. After element is fully dried, inspect inside of the element with a light and check if it is damaged or not.
3. Replace air cleaner element:

Once yearly or after every sixth cleaning, whichever comes first.

NOTE:

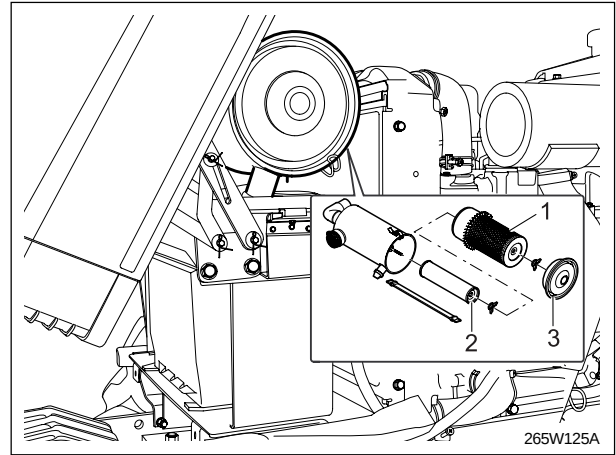
- *Check to see if the evacuator valve is blocked with dust.*



IMPORTANT

- *The air cleaner uses a dry element, never apply oil.*
- *Do not run the engine with the filter element removed.*
- *Be sure to refit the cover with the arrow ↑ (on the rear of cover) upright. If the cover is improperly fitted, evacuator valve will not function and dust will adhere to the element.*
- *Do not touch the secondary element except in cases where replacing is required.*

(See "Replacing Air Cleaner Secondary Element" in Every 1 Year maintenance.)



- (1) Element
- (2) Cover
- (3) Evacuator Valve

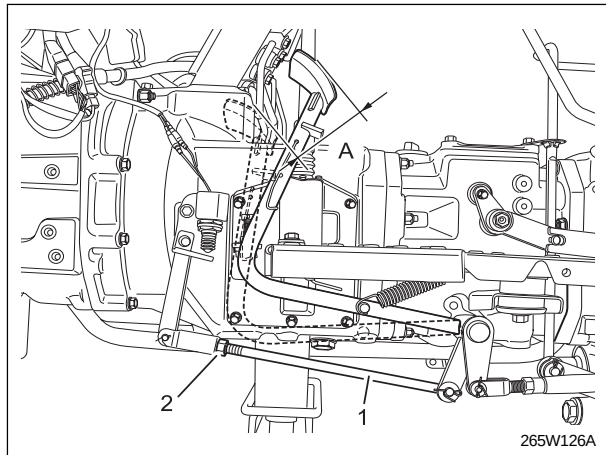
EVACUATOR VALVE

Open the evacuator valve once a week under ordinary conditions - or daily when used in a dusty place - to get rid of large particles of dust and dirt.

D. ADJUSTING CLUTCH PEDAL

1. Stop the engine and remove the key.
2. Slightly depress the clutch pedal and measure free travel at top of pedal stroke.
3. If adjustment is needed, loosen the lock nut, remove the clevis pin and adjust the rod length within acceptable limits.
4. Retighten the lock nut and split the cotter pin.

Item	Specified
Proper clutch pedal free travel	20 ~ 30 mm (0.8 ~ 1.2 in.) on the pedal



(1) Clutch Rod (2) Nut
(A) Free Travel

E. ADJUSTING BRAKE PEDAL



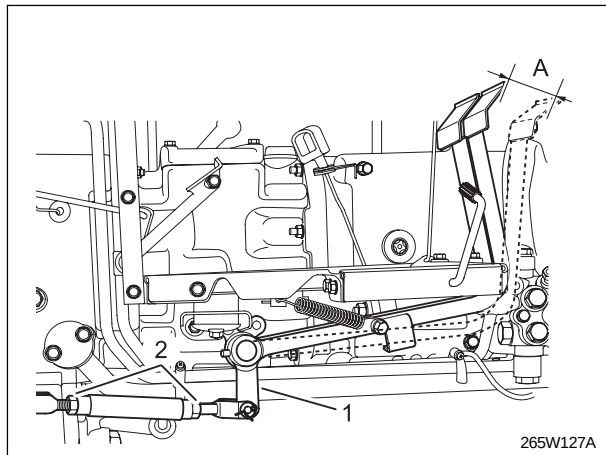
CAUTION

To avoid personal injury:

- **Stop the engine and chock the wheels before checking brake pedal.**

1. Release the parking brake.
2. Slightly depress the brake pedals and measure free travel at top of pedal stroke.
3. If adjustment is needed, loosen the lock nut and turn the turnbuckle to adjust the rod length within acceptable limits.
4. Retighten the lock nut.

Item	Specified
Proper brake pedal free travel	20 ~ 30 mm (0.8 ~ 1.2 in.) on the pedal. Keep the free travel in the right and left brake pedals equal.



(1) Lock Nut (2) Turnbuckle
(A) Free Travel

F. CLEANING FUEL FILTER

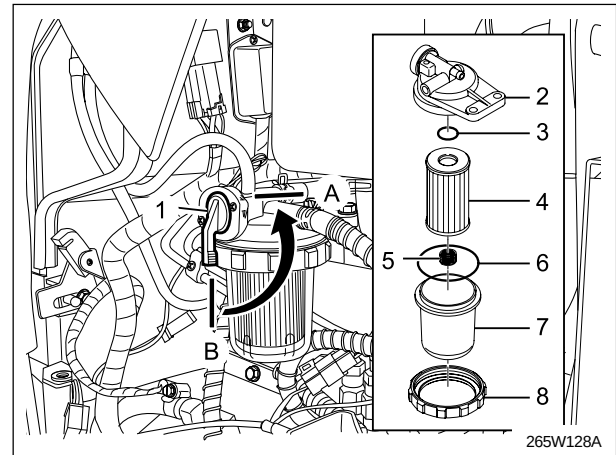


IMPORTANT

- *If dust and dirt enters the fuel system, the fuel pump and injection nozzles are subject to premature wear. To prevent this, be sure to clean the fuel filter bowl and element periodically.*

This job should not be done in the field, but in a clean place.

1. Close the fuel cock.
2. Unscrew the screw ring and remove the filter bowl, and rinse the inside with kerosene.
3. Take out the element and dip it in kerosene to rinse.
4. After cleaning, reassemble the fuel filter, keeping out dust and dirt.
5. Bleed the fuel system.
(See "Bleeding Fuel System" in service as required)



- | | |
|----------------------|-----------------|
| (1) Fuel Cock | (5) Spring |
| (2) Fuel Filter Bowl | (6) O-Ring |
| (3) O-Ring | (7) Filter Bowl |
| (4) Filter Element | (8) Screw Ring |
| (A) Close | (B) Open |

G. ADJUSTING FAN BELT TENSION



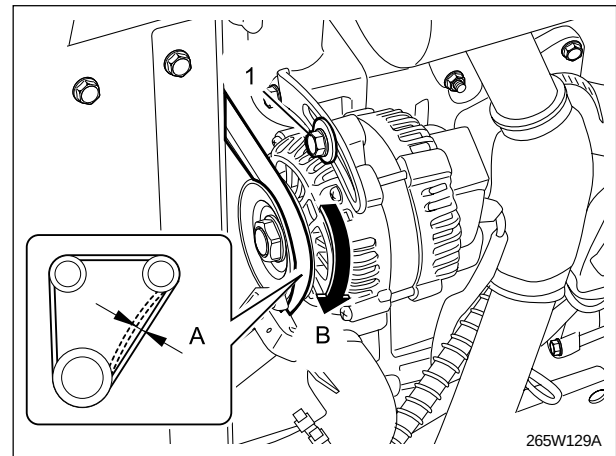
CAUTION

To avoid personal injury:

- *Be sure to stop the engine before checking belt tension.*

Item	Specified
Proper fan belt tension	A deflection of between 8 mm (0.32 in.) when the belt is pressed in the middle of the span.

1. Stop the engine and remove the key.
2. Apply moderate thumb pressure to belt between pulleys.
3. If tension is incorrect, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection of the belts falls within acceptable limits.
4. Replace fan belt if it is damaged.



- | |
|----------------------------|
| (1) Bolt |
| (A) Check the Belt Tension |
| (B) To Tighten |

H. BATTERY**CAUTION**

To avoid personal injury:

- **Never remove the vent caps 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 the battery.**

Mishandling the battery shortens the service life and adds to maintenance costs.

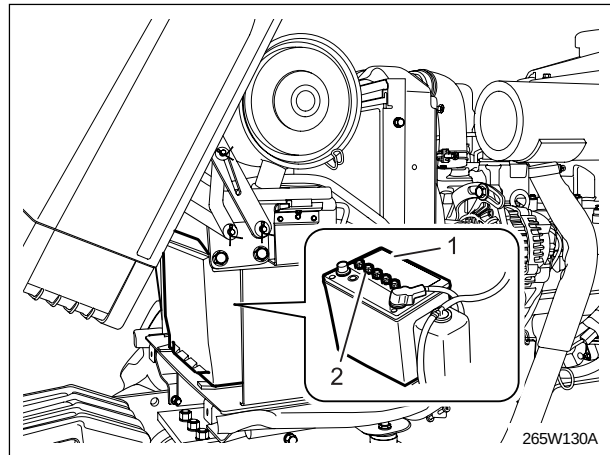
The original battery is maintenance free, but needs some servicing.

If the battery is weak, the engine will be difficult to start and the lights will be dim. It is important to check the battery periodically.

a. Battery Charging**CAUTION**

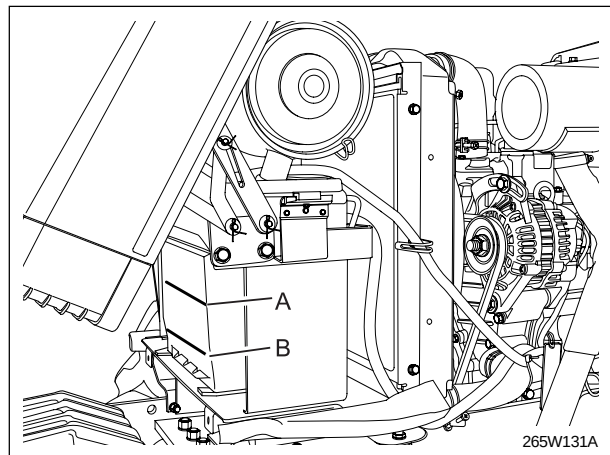
To avoid personal injury:

- **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 the battery, ensure the vent caps are securely in place. (If equipped)**
- **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) Battery

(2) Vent Cap



(A) Highest Level

(B) Lowest Level

1. Make sure each electrolyte level is somewhere between the markings (A) and (B). Add a proper amount of distilled water up to the highest level as required.
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 charge 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 is between 1.27 and 1.29 the charging is completed.
6. When exchanging an old battery for a new one, use battery of equal specification shown in table 1.

b. Table 1

Tractor model	Battery TYPE	Volts (v)	Capacity at 20HR (A.H)
CK25(H)/30(H)	80D26R DF80R	12	80

c. Direction for Storage

1. When storing the tractor for a long period, 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.

9.4 EVERY 200 HOURS

A. REPLACING ENGINE OIL FILTER



IMPORTANT

- *To prevent serious damage to the engine, use only a KIOTI genuine filter.*

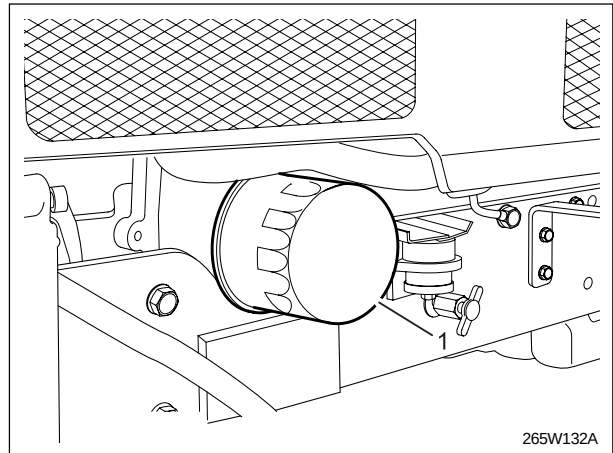


CAUTION

To avoid personal injury:

- *Be sure to stop the engine before changing oil filter cartridge.*
- *Allow engine to cool down sufficiently, oil can be hot and can burn.*

1. Remove the oil filter.
2. Put a film of clean engine oil on the rubber seal of the new filter.
3. Tighten the filter quickly until it contacts the mounting surface.
Tighten filter by hand an additional half turn only.
4. After the new filter has been replaced, the engine oil normally decreases a little. Make sure that the engine oil does not leak through the seal and be sure to check the oil level on the dipstick. Then, replenish the engine oil up to the prescribed level.



(1) Engine Oil Filter

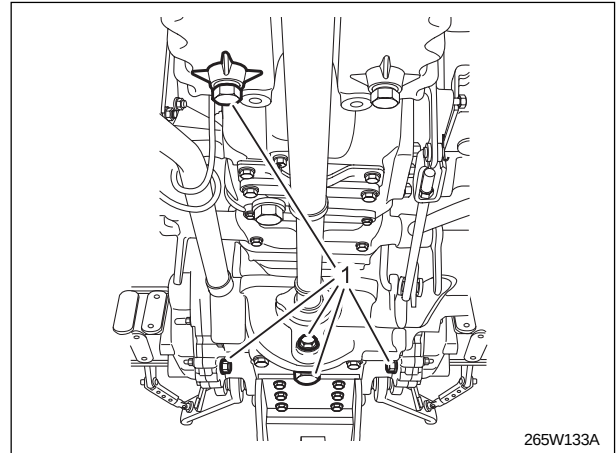
B. REPLACING HYDRAULIC OIL FILTER

CAUTION

To avoid personal injury:

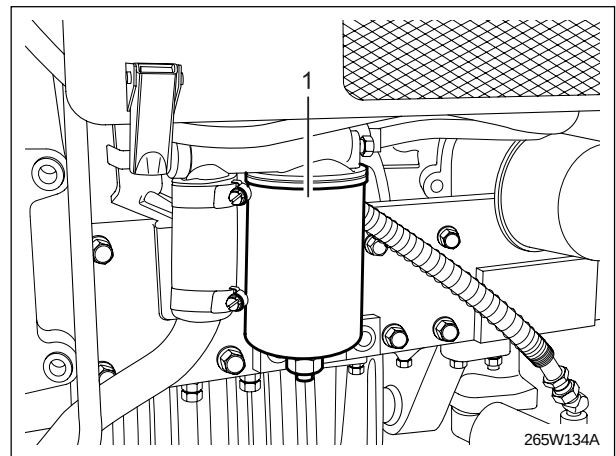
- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. Remove the drain plug at the bottom of the transmission case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.



(1) Drain Plugs

3. Remove the oil filter.
4. Put a film of clean transmission oil on the rubber seal of the new filter.
5. Tighten the filter quickly until it contacts the mounting surface.
Tighten the filter by hand an additional half turn only.

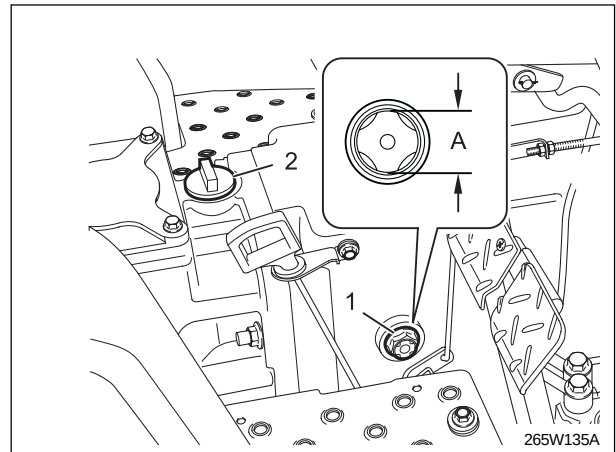


(1) Hydraulic Oil Filter

6. After the new filter has been replaced, fill with oil up to the upper line of the gauge.
7. After running the engine for a few minutes, stop it and check the oil level again, add oil to the prescribed level.
8. Make sure that the transmission fluid doesn't leak through the seal.

IMPORTANT

- **To prevent serious damage to the hydraulic system, use only a KIOTI genuine filter.**



(1) Gauge

(2) Oil Inlet

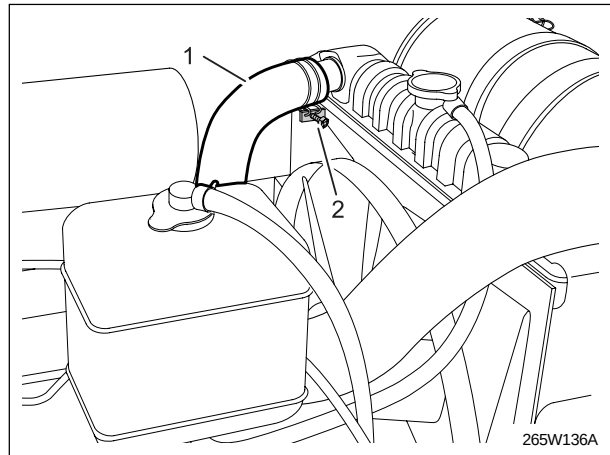
(A) Oil Level is Acceptable Within this Range

C. CHECKING RADIATOR HOSE AND CLAMP

Check to see if radiator hoses are properly fixed every 200 hours of operation or six months, whichever comes first.

1. If hose clamps are loose, or water leaks, tighten the clamps securely.
2. Check radiator hoses. If hoses are swollen, hardened, or cracked, replace both the hose and the related clamps, and tighten securely.

Replace hoses and hose clamps every 2 years or earlier if checked and found that hoses are swollen, hardened or cracked.



(1) Radiator Hoses

(2) Clamp

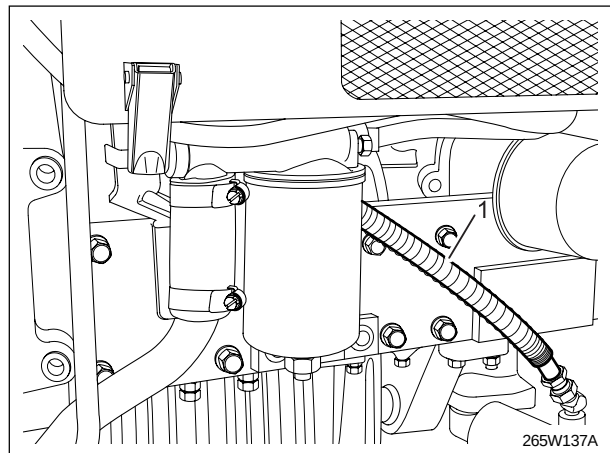
a. Precaution at Overheating

Take the following actions in the event of engine "overheating", an event that occurs when the engine coolant temperature is equal to or greater than its boiling point.

1. Stop the machine operation in a safe place and keep the engine unloaded idling.
2. Don't stop the engine suddenly, but stop it after about 5 minutes of unloaded idling.
3. Keep yourself well away from the machine for another 10 minutes or until the steam has stopped blowing out of the engine.
4. Allow the engine to cool sufficiently, before servicing the engine. Then follow the manual's "Troubleshooting" section to find and repair the cause of the overheating. Do not start the engine again until all repairs are made.

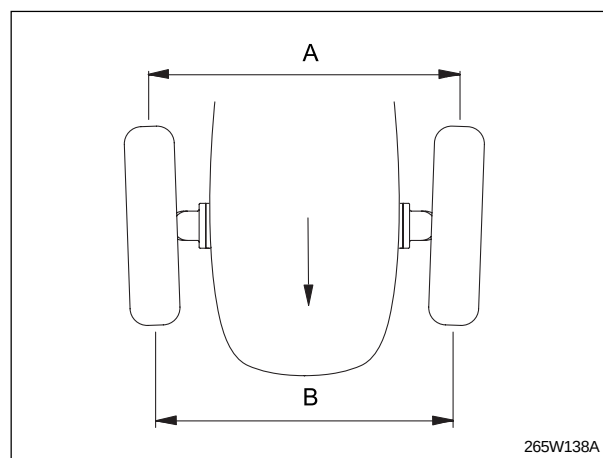
D. CHECKING POWER STEERING LINE

1. Check to see that all hydraulic lines and hose clamps are tight and undamaged.
2. If damage is found you should replace the hose or clamp at once.



E. ADJUSTING TOE-IN

1. Park tractor on a flat surface.
2. Turn the steering wheel so front wheels are in the straight ahead position.
3. Lower the implement, lock the park brake and stop the engine.
4. Measure the distance between tire beads at front of tire, hub height.
5. Measure the distance between tire beads at rear of tire, hub height.
6. The front distance should be 2 to 8 mm less than rear distance. If not, adjust the tie rod length.

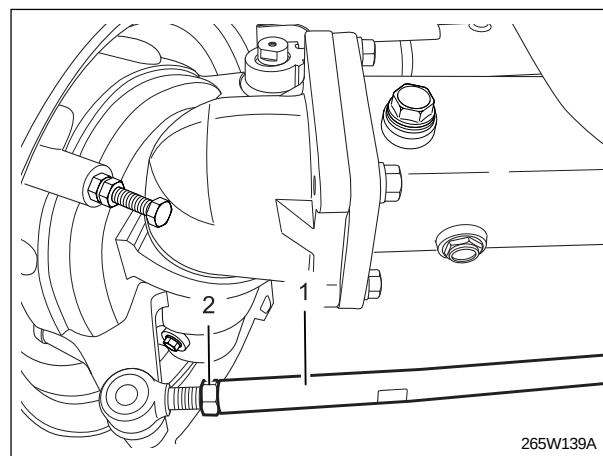


(A) Wheel - to - Wheel Distance at Rear

(B) Wheel - to - Wheel Distance at Front

ADJUSTING PROCEDURE

1. Loosen the lock nut and turn the turnbuckle to adjust the rod length until the proper toe-in measurement is obtained.
2. Retighten the lock nut.



(1) Tie Rod

(2) Lock Nuts

9.5 EVERY 400 HOURS

A. CHANGING TRANSMISSION FLUID



CAUTION

To avoid personal injury:

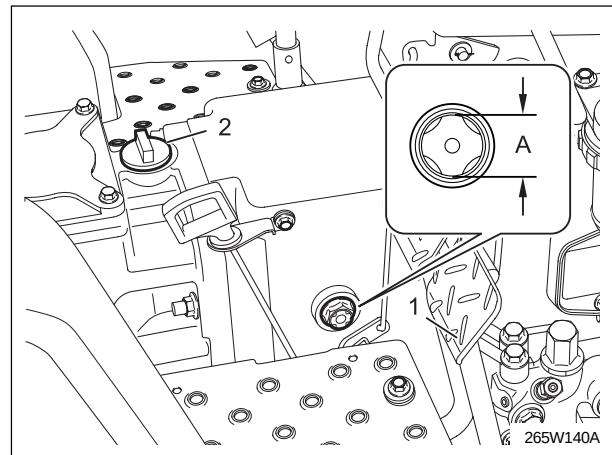
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**
1. To drain the used oil, remove the drain plug at the bottom of the transmission case and drain the oil completely into the oil pan.
 2. After draining reinstall the drain plug.
 3. Fill with the new **KIOTI TF65** fluid up to the upper line of the gauge.
(See "LUBRICANTS" in Maintenance Section)
 4. After running the engine for a few minutes, stop it and check the oil level again; add oil to prescribed level.

Item	Specified
Oil capacity	26 ℓ (6.86 U.S.gal.)

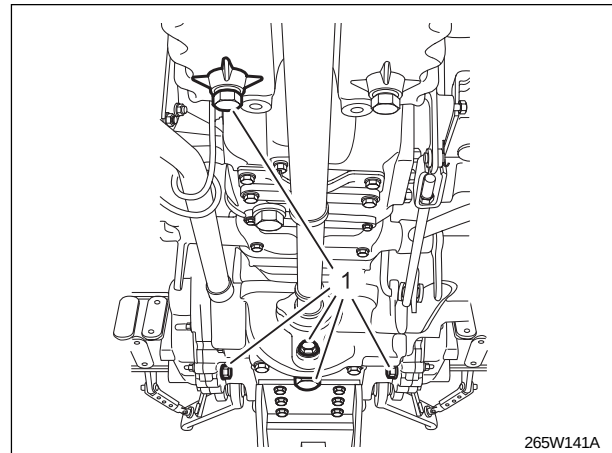


IMPORTANT

- **Do not operate the tractor immediately after changing the transmission fluid.**
Run the engine at medium speed for a few minutes to prevent damage to the transmission.



(1) Gauge (2) Oil Filling Plug
(A) Oil Level is Acceptable Within this Range



(1) Drain Plugs

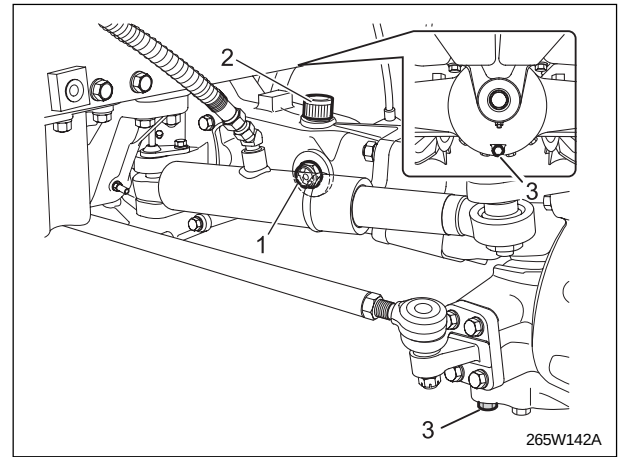
B. REPLACING FUEL FILTER ELEMENT

(See "Cleaning fuel filter" in every 100 hours maintenance.)

C. CHANGING FRONTAXLE CASE OIL

1. To drain the used oil, remove the right and left drain pugs and filling plug at the front axle case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plugs.
3. Remove the oil level check plug.
4. Fill with the new oil up to the check plug port.
(See "LUBRICANTS" in Maintenance Section)
5. After filling reinstall the filling plug and check plug.

Item	Specified
Oil capacity	6.0 ℓ (1.58 U.S.gal.)



(1) Check Plug

(3) Drain Plug

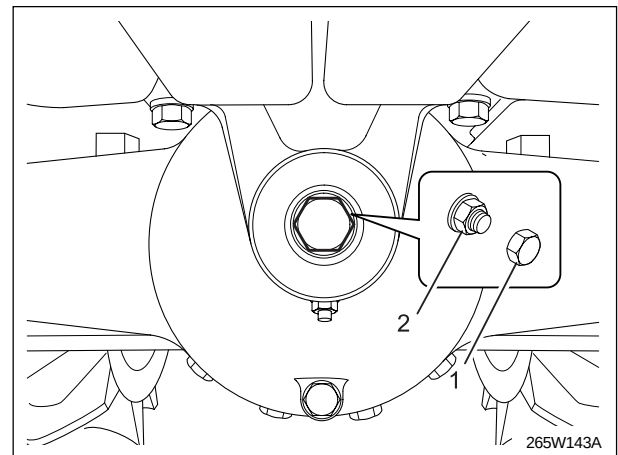
(2) Filling Plug

9.6 EVERY 600 HOURS**A. ADJUSTING FRONTAXLE PIVOT**

If the front axle pivot pin adjustment is not correct, front wheel vibration can occur causing vibration in the steering wheel.

B. ADJUSTING PROCEDURE

Loosen the lock nut, tighten the adjusting screw all the way, and then loosen the screw by 1/6 turn. Retighten the lock nut.



(1) Adjusting Screw

(2) Lock Nut

9.7 EVERY 800 HOURS**A. ADJUSTING ENGINE VALVE CLEARANCE**

Consult your local KIOTI Dealer for this service.

9.8 EVERY 1 YEAR

A. REPLACING AIR CLEANER ELEMENT

(See "Cleaning Air Cleaner Element" in every 100 hours maintenance.)

9.9 EVERY 2 YEARS

A. FLUSH COOLING SYSTEM AND CHANGING COOLANT



IMPORTANT

- **Do not start engine without coolant.**
- **Use clean, fresh water and anti-freeze to fill the radiator and recovery tank.**
- **When the anti-freeze is mixed with water, the anti-freeze mixing ratio must be less than 50 %.**
- **Securely tighten radiator cap. If the cap is loose or improperly fitted, water may leak out and the engine could overheat.**

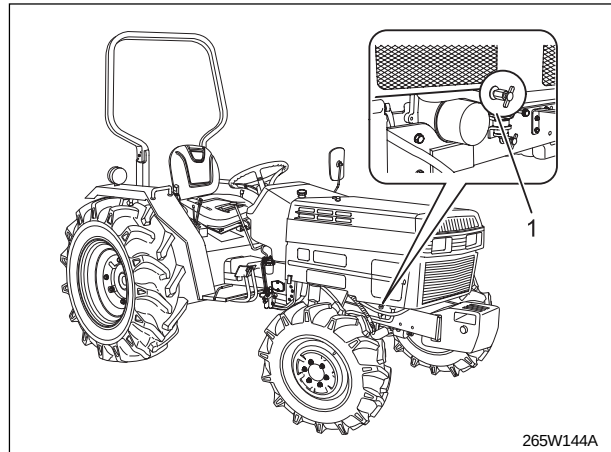


CAUTION

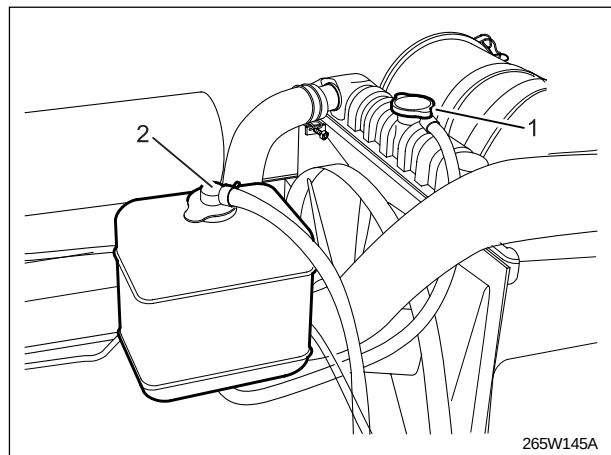
To avoid personal injury:

- **Do not remove the radiator cap when the engine is hot. Loosen cap slightly to the stop. Relieve any excess pressure before removing cap completely.**

1. Stop the engine and let cool down.
2. To drain the coolant, open the radiator drain plug and remove radiator cap. The radiator cap must be removed to completely drain the coolant.
3. After all coolant is drained, close the drain plug.
4. Fill with clean water and cooling system cleaner.
5. Follow directions of the cleaner instruction.
6. After flushing, fill with clean water and anti-freeze until the coolant level is just below the port.
7. Fill with coolant up to the "FULL" mark on the recovery tank.
8. Start and operate the engine for few minutes.
9. Stop the engine and let cool.
10. Check the coolant level of recovery tank and add coolant if necessary.



(1) Drain Plug



(1) Radiator Cap

(2) Recovery Tank

Item	Specified
Coolant capacity	7.2 ℓ (1.90 U.S.gal.)

B. ANTI-FREEZE

If cooling water freezes, it can damage the cylinders and radiator. It is necessary, if the ambient temperature falls below 0°C (32°F), to remove cooling water after operating or to add anti-freeze to it.

1. There are two types of anti-freeze available; use the permanent type (PT) for this engine.
2. Before adding anti-freeze for the first time, clean the radiator interior by flushing with fresh water a few times.
3. The procedure for mixing of water and anti-freeze differs according to the make of the anti-freeze and the ambient temperature. Basically it should be referred to SAE J1034 standard, more specifically also to SAE J814c.
4. Mix the anti-freeze with water, and then fill the radiator with the mixture.

Vol % Anti-freeze	Freezing Point		Boiling Point*	
	°C	°F	°C	°F
40	-24	-12	106	222
50	-37	-34	108	226

* At 760 mmHg pressure (atmospheric). A higher boiling point is obtained by using a radiator pressure cap which permits the development of pressure within the cooling system.

NOTE:

- **SAE J1034 and SAE J814c are industry standards that necessitate a minimum glycol content in the concentrated anti-freeze.**
- **When the cooling water level drops due to evaporation, add water only. In case of leakage, add anti-freeze and water in the specified mixing ratio.**
- **Anti-freeze absorbs moisture. Keep unused anti-freeze in a tightly sealed container.**
- **Do not use radiator cleaning agents when anti-freeze has been added to the cooling water. (Anti-freeze contains an anti-corrosive agent, that will react with the radiator cleaning agent forming sludge which will affect the engine parts.)**

C. REPLACING RADIATOR HOSE (WATER PIPES)

Replace the hoses and clamps.

(See "Checking Radiator Hose and Clamp" in every 200 hours maintenance.)

D. REPLACING POWER STEERING HOSE

Replace the hoses and clamps.

(See "Checking power steering line" in every 200 hours maintenance.)

E. REPLACING HST OIL LINE (HST TYPE)

Replace the hoses and clamps.

(See "Checking HST oil line" in every 200 hours maintenance.)

F. REPLACING FUEL HOSE

Replace the hoses and clamps.

(See "Checking Fuel line" in every 100 hours maintenance.)

9.10 SERVICE AS REQUIRED

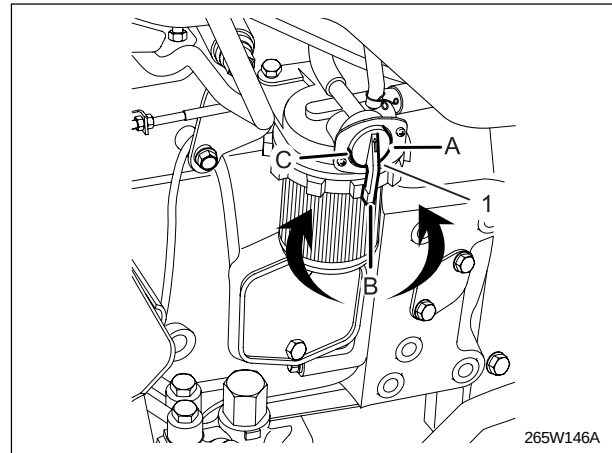
A. BLEEDING FUEL SYSTEM

Air must be removed:

1. When the fuel filter or lines are removed.
2. When tank is completely empty.
3. After the tractor has not been used for a long period of time.

Bleeding procedure is as follows:

1. Fill the fuel tank with fuel, and rotate the fuel cock to the air position.
2. Start the engine and run for about 25 seconds, and then stop the engine.
3. Rotate the fuel cock to open position.



(1) Fuel Cock

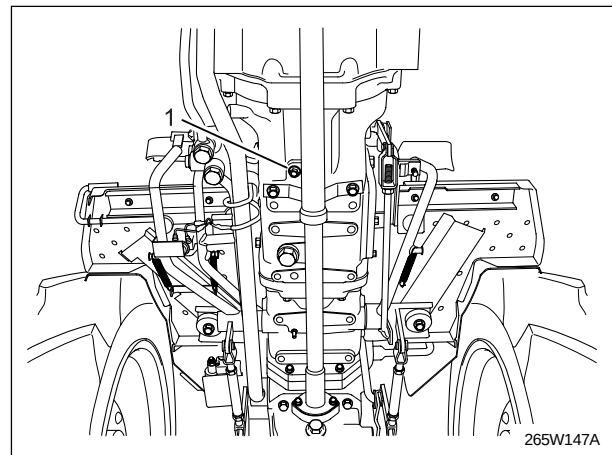
(A) Close (B) Open (C) Air

B. DRAINING CLUTCH HOUSING WATER

The tractor is equipped with a plug under the clutch housing.

After operating in rain or snow, or if the tractor has been washed, water may get into the clutch housing.

If water enters into the clutch housing, remove the plug and drain the water, then install the plug again.



(1) Split Pin Plugs

C. REPLACING LIGHT BULB

1. Head lights and rear combination lights:
Take the bulb out of the light body and replace with a new one.
2. Other lights:
Detach the lens and replace the bulb.

Light		Capacity
1	Head lights	35 W / 35 W
2	Stop lights	21 W
3	Turn signal lights	21 W
4	Work light	21 W
5	Instrument panel light	3.4 W
6	Tail lights	5 W

D. REPLACING FUSE

The tractor electrical system is protected from potential damage by fuses.

A blown fuse indicates that there is an overload or short somewhere in the electrical system.

If any of the fuses should blow, replace with a new one of the same capacity.



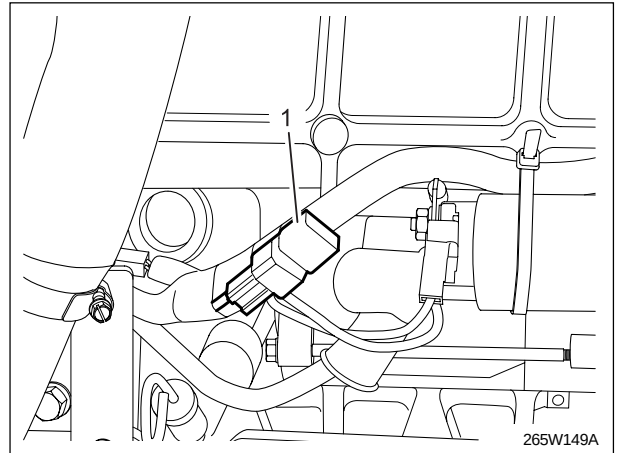
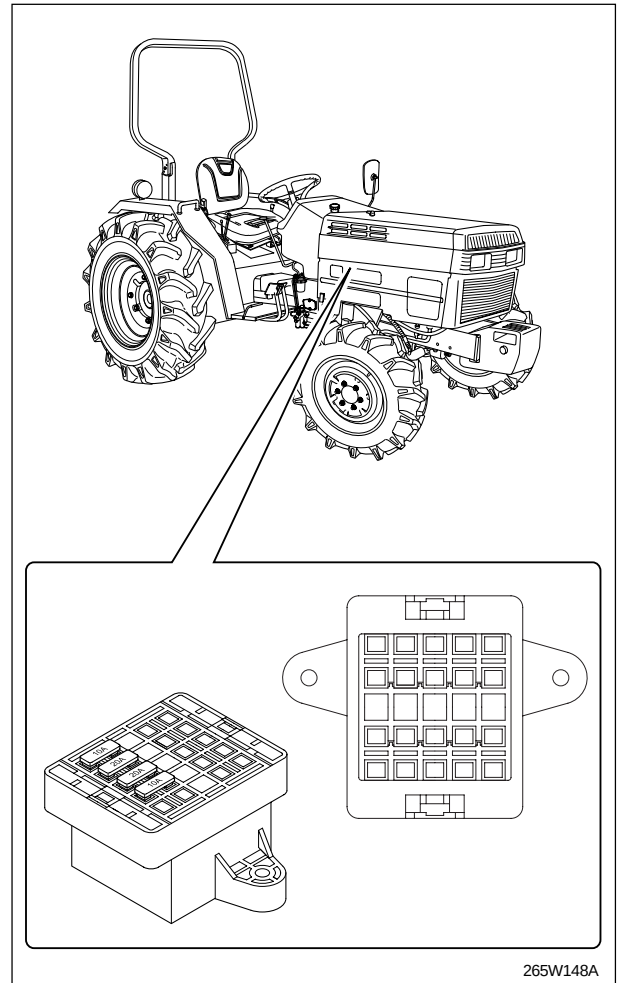
IMPORTANT

- **Before replacing a blown fuse, determine why the fuse blew and make any necessary repairs. Failure to follow this procedure may result in serious damage to the tractor electrical system. Refer to the troubleshooting section of this manual or your local KIOTI Dealer for specific information dealing with electrical problems.**

Protected circuit

No.	Capacity	Contact circuit
1	10A	Panel lamp
2	20A	Head light / Tail light
3	*20A	Stop lamp / Working lamp
4	10A	Hazard / Horn
		Spare fuse

Item	Capacity (A)
Slow Blow Fuse	60 A



(1) Slow Blow Fuse

10. TIRES

CAUTION

To avoid personal injury:

- Do not attempt to mount a tire. This should be done by a qualified person with the proper equipment.
- Always maintain the correct tire pressure.
Do not inflate tires above the recommended pressure shown in the operator's manual.

IMPORTANT

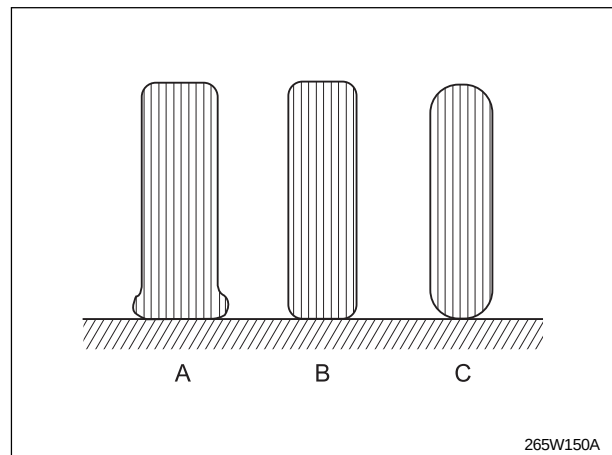
- Do not use tires larger than specified.
- When you intend to mound different size of tires from equipped ones, consult your dealer about front drive gear ratio for details. Excessive wear of tires may occur due to improper gear ratio.

10.1 INFLATION PRESSURE

Though the tire pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Thus, check it everyday and inflate as necessary.

NOTE:

- Maintain the maximum pressure in front tires, if using a front loader or when equipped with a full load of front weights.



(A) Insufficient

(C) Excessive

(B) Standard

		Tire sizes	Inflation Pressure
Rear	Farm	11.2 ~ 24 / 6 PR	179 kPa (1.8 kgf/cm ² , 26 psi)
	Turf	13.6 ~ 16 / 4 PR 41 x 14.0 ~ 20 / 4 PR	97 kPa (1.0 kgf/cm ² , 14 psi) 172 kPa (1.8 kgf/cm ² , 25 psi)
	IND	15 ~ 19.5 / 6 PR	207 kPa (2.1 kgf/cm ² , 30 psi)
Front	Farm	7 ~ 14 / 6 PR	248 kPa (2.5 kgf/cm ² , 36 psi)
	Turf	25 x 8.50 ~ 14 / 4 PR 25 x 8.50 ~ 15 / 4 PR	152 kPa (1.5 kgf/cm ² , 22 psi) 207 kPa (2.1 kgf/cm ² , 30 psi)
	IND	25 x 8.50 ~ 14 / 6 PR	345 kPa (3.5 kgf/cm ² , 50 psi)

* IND... for Industrial

10.2 TREAD

A. FRONT WHEELS

Front tread can not be adjusted.

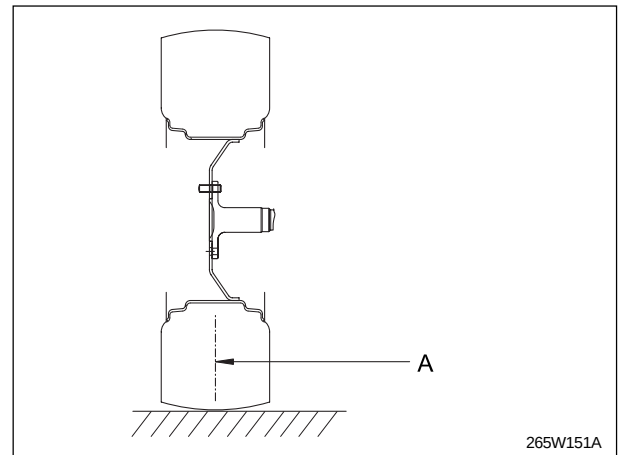


IMPORTANT

- *Do not turn front discs to obtain wider tread.*

Tire	Tread
7 - 14 Farm	1,115 mm (43.9 in.)
27 x 8.50 - 15 Turf	1,161 mm (45.7 in.)
25 x 8.50 - 14 IND	1,180 mm (46.5 in.)

* IND... for Industrial



(A) Tread

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B. REAR WHEELS

Rear tread width can be adjusted as shown with the standard equipped tires.

To change the tread width

1. Remove the wheel rim and / or disk mounting bolts.
2. Change the position of the rim and / or disk (right and left) to the desired position, and then tighten the bolts.

Model					
11.2 - 24 Farm	1,020 mm (40.2 in.)	1,060 mm (41.7 in.)	1,134 mm (44.7 in.)	1,150 mm (45.3 in.)	1,268 mm (49.9 in.)

(A) Tread

Model	
13.6 - 16 Turf	1,145 mm (45.1 in.)
41 x 14.0 - 20 Turf	1,174 mm (46.2 in.)
15 - 19.5 IND	1,202 mm (47.3 in.)

(A) Tread

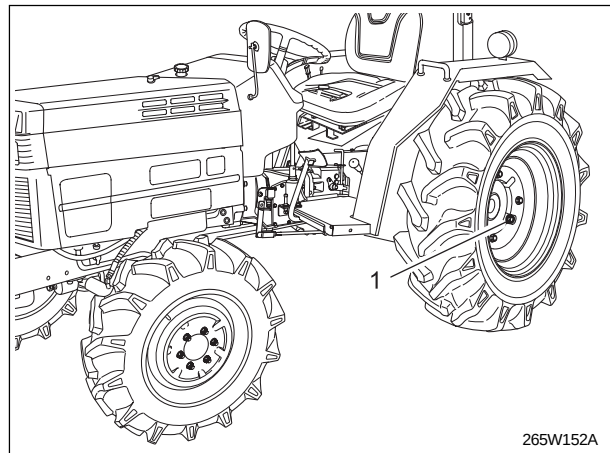


IMPORTANT

Always attach tires as shown in the drawings.

- **If not attached as illustrated, transmission parts may be damaged.**
- **When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200 m (2219 yards) and thereafter according to service interval.**

(See "MAINTENANCE" section)



265W152A

(1) Bolt, Nuts (216 N·m, 22 kgf·m, 159 lbf·ft)

10.3 BALLAST

A. FRONT BALLAST

CAUTION

To avoid personal injury:

- **Additional ballast will be needed for transporting heavy implements. When the implement is raised, drive slowly over rough ground, regardless of how much ballast is used.**
- **Do not fill the front wheel with liquid to maintain steering control.**

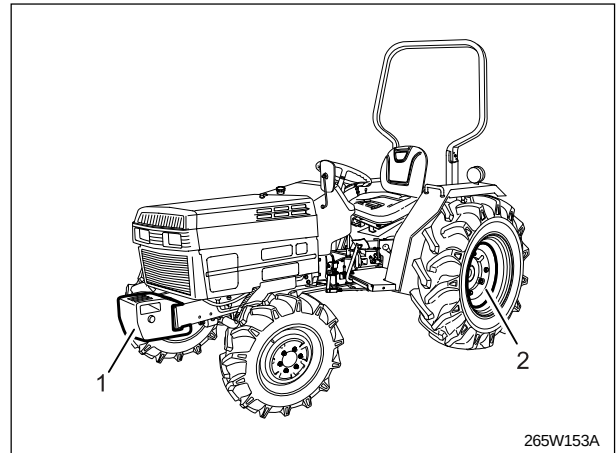
a. Front End Weights

The front end weights can be attached to the bumper. See your implement operator's manual for required number of weights or consult your local **KIOTI** Dealer to use.

IMPORTANT

- **Do not overload tires.**
- **Add no more weight than indicated in chart.**

Item	Specified
Maximum weight	17 kg x 4 Pieces (150 lbs.)



(1) Front End Weights

(2) Rear Wheel Weights

B. REAR BALLAST

Add weight to rear wheels if needed to improve traction or for stability. The amount of rear ballast should be matched to job and the ballast should be removed when it is not needed.

The weight should be added to the tractor in the form of liquid ballast, rear wheel weights or a combination of both.

a. Rear Wheel Weights (Option)

The rear wheel weights can be attached to the rear wheel.

See your implement operator's manual for required number of weights or consult your local **KIOTI** Dealer to use.

IMPORTANT

- **Do not overload tires.**
- **Add no more weight than indicated in chart.**

Item	Specified
Maximum weight per wheel	25 kg x 6 Pieces (331 lbs.)

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10.4 TRAVELING SPEED

* At rated engine rpm with standard tires.

km/h (mile/h)

Shuttle	Hi-Lo	Main	LK3054XS
Forward	Low	1	1.36 (0.84)
		2	1.89 (1.17)
		3	2.68 (1.66)
		4	4.34 (2.69)
	High	1	6.34 (3.93)
		2	8.79 (5.46)
		3	12.49 (7.76)
		4	19.50 (12.11)

km/h (mile/h)

Shuttle	Hi-Lo	Main	LK3054XS
Reverse	Low	1	1.24 (0.77)
		2	1.72 (1.06)
		3	2.44 (1.51)
		4	3.96 (2.46)
	High	1	5.78 (3.59)
		2	8.02 (4.98)
		3	11.39 (7.07)
		4	17.78 (11.04)

11. IMPLEMENT LIMITATIONS

The **KIOTI** tractor has been thoroughly tested for proper performance with implements sold or approved by **KIOTI**. Use with implements which are not sold or approved by **KIOTI** and which exceed the maximum specifications listed below, or which are otherwise unfit for use with the **KIOTI** tractor may result in malfunctions or failures of the tractor, damage to other property and injury to the operator or others. [Any malfunctions or failures of the tractor resulting from use with improper implements are not covered by the warranty.]

Item Model	Tread (max. width)		Lifting capacity max. loading weight (24 in. aft of hitch)
	Front	Rear	
LK3054XS	1,115 mm (43.9 in.)	1,268 mm (49.9 in.)	975 kg (2,149 lbs.)

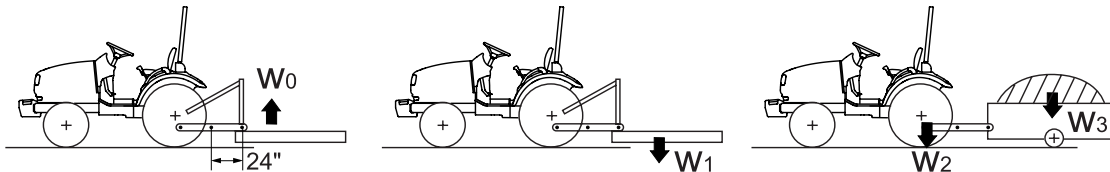
Item Model	Actual figures		Trailer loading weight W_3 Max. capacity
	Implement weight W_1 and / or size	Max. Drawbar Load W_2	
LK3054XS	As in the following list	500 kg (1,102 lbs.)	1,500 kg (3,300 lbs.)

Lifting capacity max. loading weight..... The max. allowable load which can be put on the 24 in. aft of hitch : W_0

Implement weight The implement's weight which can be put on the lower link : W_1

Max. drawbar load W_2

Trailer loading weight The max. loading weight for trailer (without trailer's weight) : W_3



265W154A

NOTE:

Implement size may vary depending on soil operating conditions.

Implement	Remarks		LK3054XS	Remarks
Loader	Max. Bucket width	mm (in.)	1,524 (60)	
Backhoe with sub frame	Max. Digging depth	mm (ft, in.)	2,280 (7.5, 89.8) and below	Do not use 3 point hitch backhoe
Rear Mower	Max. Cutting width	mm (in.)	1,524 (60) and below	
Tiller	Max. Cutting width	mm (in.)	1,397 (55) and below	
Rear Blade	Max. Cutting width	mm (in.)	1,829 (72) and below	
Rotary Cutter	Max. Cutting width	mm (in.)	1,829 (72) and below	
Aerator	Max. Width	mm (in.)	1,524 (60) and below	
Landscape Rakes	Max. Width	mm (in.)	2,134 (84) and below	

MEMO