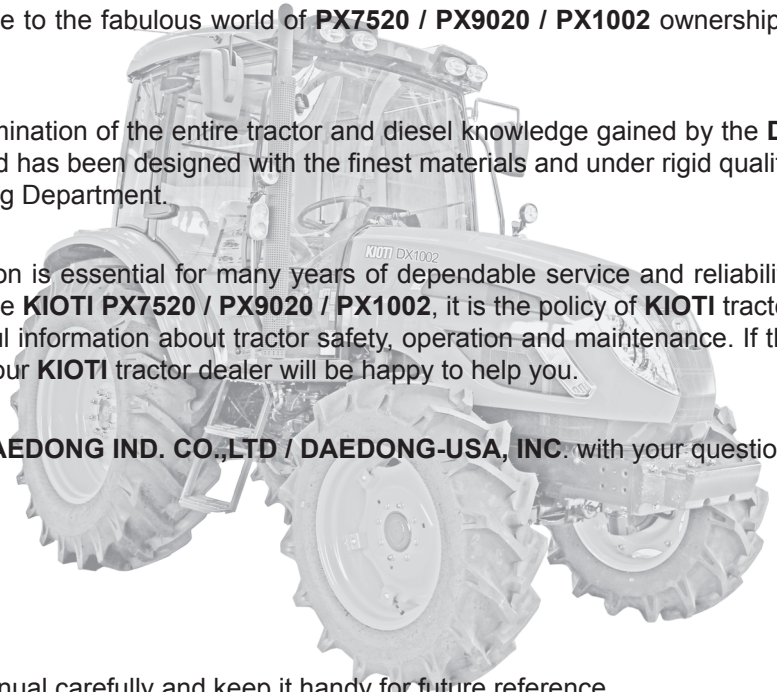
FORWARD

Congratulations, and welcome to the fabulous world of **PX7520 / PX9020 / PX1002** ownership, where serious work is made fun again!

This versatile tractor is a culmination of the entire tractor and diesel knowledge gained by the **Daedong IND. Co., LTD** over the years since 1947 and has been designed with the finest materials and under rigid quality control standards set forth by the **KIOTI** Engineering Department.

Knowledge of tractor operation is essential for many years of dependable service and reliability. To help new owner's familiarize themselves with the **KIOTI PX7520 / PX9020 / PX1002**, it is the policy of **KIOTI** tractor to provide an owner's manual which includes helpful information about tractor safety, operation and maintenance. If the information you seek is not found in this manual, your **KIOTI** tractor dealer will be happy to help you.

Please feel free to contact **DAEDONG IND. CO.,LTD / DAEDONG-USA, INC**. with your questions/concerns.



< NOTE >

- Make sure to read this manual carefully and keep it handy for future reference.
- When leasing or transferring this tractor, deliver this manual together with the tractor.
- The specifications in this manual are subject to change without notice.

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SAFETY AND VEHICLE DAMAGE WARNING

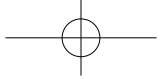
This manual includes information titled as **WARNING, CAUTION, IMPORTANT** and **NOTE.** These titles indicate the following:

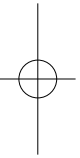
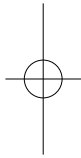
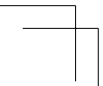
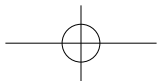
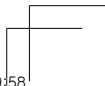
WARNING	**This indicates that a condition may result in harm, serious injury or death to you or other persons if the warning is not heeded. Follow the advice provided with the warning.**
CAUTION	**This indicates that a condition may result in damage to your vehicle or its equipment if the caution is not heeded. Follow the advice provided with the caution.**
IMPORTANT	**This mark indicates emphasis on notable characteristics of working procedures, and information about technology for easier operation.**
NOTE	**This indicates that interesting or helpful information is being provided.**

UNIVERSAL SYMBOLS

Various universal symbols have been used on the instruments and controls of your **KIOTI** tractor.
Below is a list of the universal symbols and their meanings.

- Fuel-level
- Engine coolant-temperature
- Parking brake
- Battery charging condition
- Engine oil-pressure
- Turn signal
- Power take-off clutch control-off position
- Power take-off clutch control-on position
- Differential lock
- Position control-lowered position
- Hazard warning lights
- Headlight-low beam
- Headlight-high beam
- Four-wheel drive-on
- Fast
- Slow
- Creep
- High range
- Middle range
- Low range
- N Neutral position
- Coolant
- Preheat
- QT lamp
- H : High travel light
- L : Low travel light
- Auto draft work light
- Auto level work light
- Auto tilling depth work light
- Turn up light
- Back up light
- AUTO Auto switch
- Single brake light



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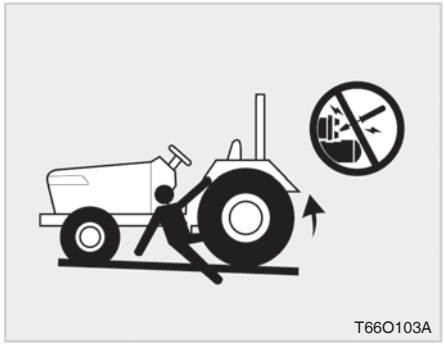
PRECAUTIONS BEFORE OPERATION
GENERAL PRECAUTIONS

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, use these safety precautions, and pay attention to the job at hand. If you can prevent an accident, your time will have been well spent.

T66O101A

T66O102A

1. It is recommended that you read and understand this entire manual before operation of your new tractor. Failure to do so could result in accidents or injury.
2. Only persons who are properly trained should be allowed to operate the tractor.
3. Read and follow all warning labels and decals affixed to the tractor.
4. Replace any missing or damaged decals as soon as it is practical. A list of decals is shown on page 1-17~20.
5. Keep safety decals clean of dirt and debris.
6. Watch where you are going at all times so that you are able to avoid obstacles that can cause injury or damage to your tractor.
7. When starting the tractor make sure your path is clear of people to avoid accidents caused by sudden movements.
8. Before making reverse movements with your tractor, you should always check to see that the path is clear.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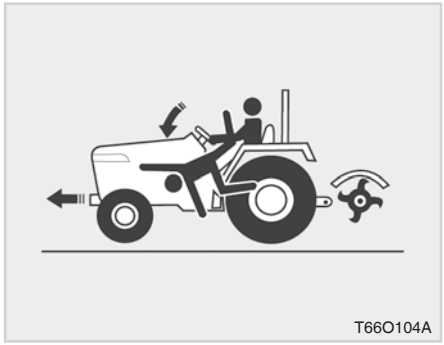
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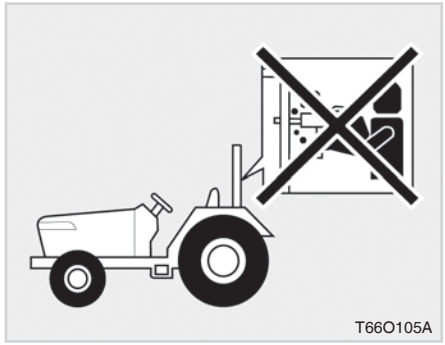
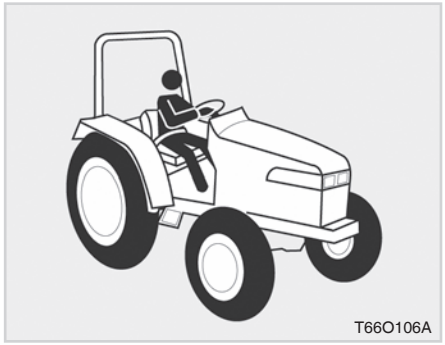

T66O105A

9. Never operate this tractor or any other agricultural equipment while under the influence of alcohol, drugs or while fatigued.
10. While working in cooperation with other tractors always communicate your intentions.
11. Do not start your tractor by shorting across the starter.
12. Never start the engine while standing on the ground.
13. Only the operator should ride on the tractor unless a passenger seat is installed. Keep bystanders away from the tractor while in operation.
14. When getting on and off the tractor, handholds and step plates should always be used. This will help to prevent accidental slips trips and falls.
15. Be sure to scrape off mud or soil from your shoes before mounting the tractor.
16. All persons using the tractor should have knowledge of its proper operation and should read this manual carefully.
17. Never get off the tractor without setting the parking brake, lowering the implement to the ground and shutting of the tractor.
18. No alterations should be made to your **KIOTI** tractor.


T66O106A

19. Before starting your tractor you should depress the clutch and make sure that all shift levers are in the neutral position and parking brake is applied.

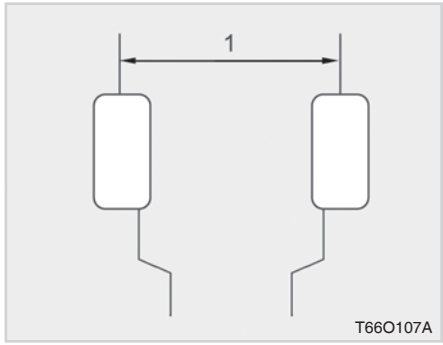
20. For your safety **ROPS** with a seat belt is recommended for all applications.

NOTE

- Always use seat belt when the tractor is equipped with a **ROPS** and CAB. Never use the seat belt when tractor is not equipped with a **ROPS**.
  (**ROPS** : Roll-Over Protective Structures)

A **ROPS** and CAB should never be modified by welding, grinding or cutting, as this can weaken the **ROPS** structure. If any components of the **ROPS** unit is damaged, it must be replaced.

If the **ROPS** unit is removed or loosened for any reason, the parts should be fitted back to their original positions and all bolts should be properly torqued.

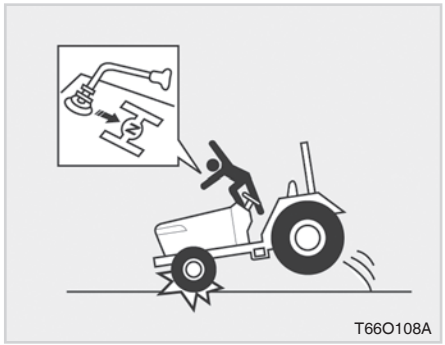


T66O107A

(1) Tread

21. Extra caution should be taken when driving tractors with narrow tread widths. For added stability you should adjust your rear wheel tread width, see page 4-54.

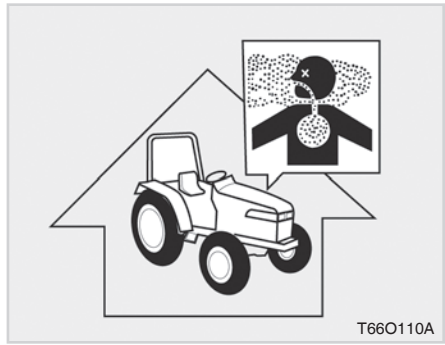
PRECAUTIONS DURING OPERATION
WHEN STARTING THE ENGINE


T66O108A

1. Avoid accidental contact with gear shift levers while the engine is running. Unexpected tractor movements can result in bodily injury.

T66O109A

2. Do not park your tractor on a steep incline, and remember to shut off the engine and PTO before dismounting the tractor.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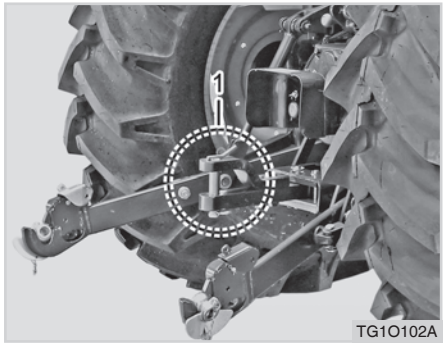
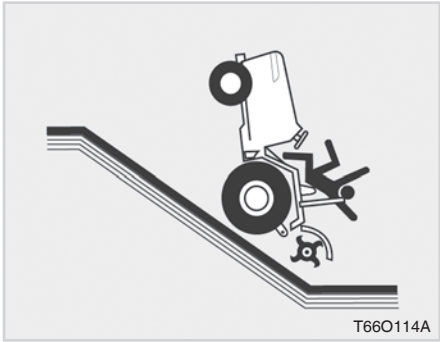
3. Do not operate your tractor in an enclosed building without the proper ventilation. Exhaust containing carbon monoxide can cause serious injury or death.

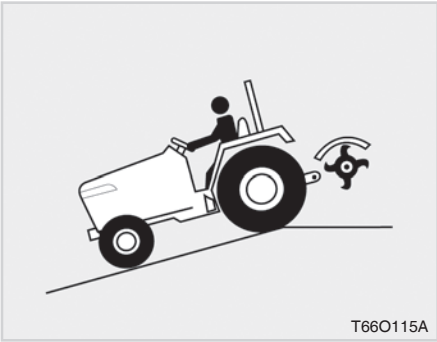


(1) Drawbar

4. Make sure that all pressure lines are tight before starting the tractor.
5. Pull only from the drawbar. Never hitch anything to the axle housing or any other point except the drawbar. Pulling from any other location only increase the risk of serious personal injury or death.
6. If the front of the tractor tends to rise up when heavy implements are attached to the three point hitch, weights should be installed on the tractor. Do not operate the tractor with a light front end.
7. Always use the proper ballast weight on your tractor when using rear implements.
8. Watch front and rear to avoid obstacles at row ends, near trees and around other obstructions.

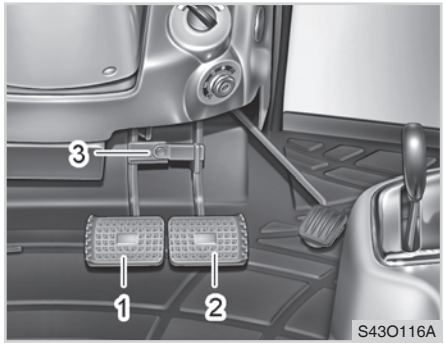
9. Do not leave equipment in the raised position when the vehicle is stopped or unattended.
10. When using implements or attachments with your tractor you should first read their respective owner's manual. You should always keep their safe operation procedures in mind.
11. You should be familiar with your equipment and its limitations.
12. If abused or used incorrectly your tractor can become dangerous to you and bystanders. Overloading your tractor or using unsafe equipment can also be dangerous and should be avoided. Refer to the "Specifications of Implement Limitation", which outlines the maximum load for safe tractor operation.


T66O114A


T66O115A

13. Driving forward out of a ditch or steep inclines can cause the tractor to tip over backwards. To avoid this you should back out of these positions. Four wheel drive tractors can give you a false sense of security in the tractors ability to maneuver out of these positions, so extra caution should be taken.
14. Never try to get on or off a moving tractor.
15. When working in groups, always let the others know what you are going to do before you do it.
16. Never "freewheel". Disengaging the clutch or shifting into neutral while descending a slope as this could lead to a loss of control.
17. Do not operate near ditches, holes, embankments, or other terrain features which may collapse under the tractor's weight. The risk of tractor upset is even higher when the ground is loose or wet.

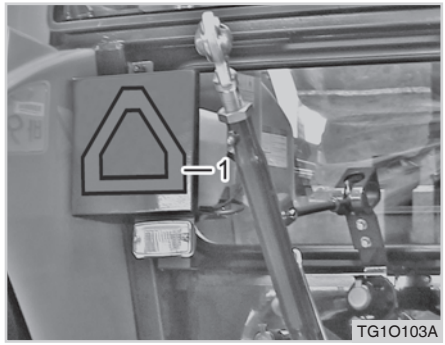
WHEN DRIVING THE TRACTOR



(1) Brake Pedal (R) *(2) Brake Pedal (L)*
(3) Brake Pedal Lock

1. Lock the brake pedals together when traveling at road speeds. Brake both wheels simultaneously when making an emergency stop. Uneven braking at road speeds could cause the tractor to tip over.

2. Always slow the tractor before turning. Turning at high speed may tip the tractor over or cause a loss of control.

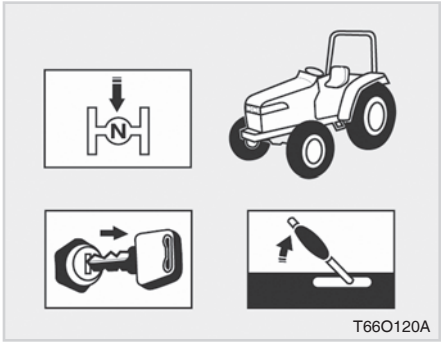


(1) SMV Emblem

3. Make sure that the Slow Moving Vehicle (SMV) sign is clean and visible. Use hazard lights as required.

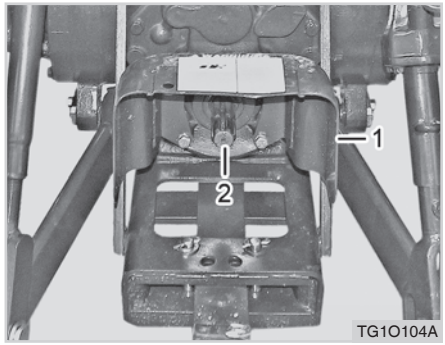
4. Observe all local traffic and safety regulations.
5. Turn the headlights on. Dim them when meeting another vehicle.
6. Drive at speeds that allow you to maintain control at all times.
7. Do not apply the differential lock while traveling at road speeds. As the tractor may run out of control.
8. Avoid sudden movements of the steering wheel as this can cause a loss of control of the tractor. This risk is especially great when traveling at road speeds.
9. Do not operate an implement while the tractor is on the road. Lock the three point hitch in the raised position.
10. When towing other equipment, use a safety chain and place an SMV emblem on it as well.

WHEN PARKING THE TRACTOR



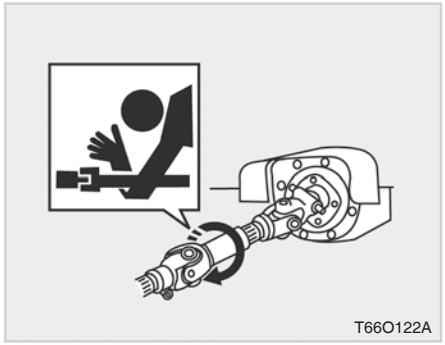
1. Disengage the PTO, lower all implements, place all control levers in the neutral position, set the parking brake, stop the engine and remove the key.

WHEN OPERATING THE PTO



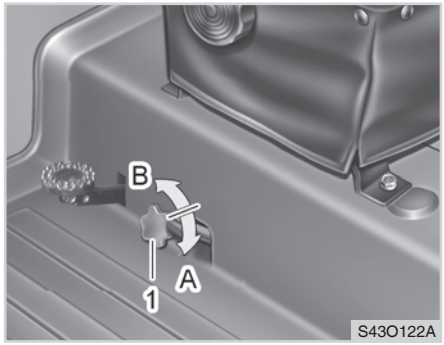
(1) PTO Shaft Cover (2) PTO Shaft Cap

1. Make sure the tractor is completely stopped, gears are in neutral and all moving components have completely stopped before connecting, disconnecting, adjusting, cleaning or servicing any PTO driven equipment.
2. Keep the PTO shaft cover in place at all times. Replace the PTO shaft cap when the shaft is not in use.
3. Before installing or using PTO driven equipment, read the manufacturer's manual and review the safety labels attached to the equipment.



4. When operating stationary PTO driven equipment, always apply the tractor parking brake and place chocks behind and in front of the rear wheels. Stay clear of all rotating parts.
5. Do not attach a PTO driven implement if the implements safety shields are damaged or not in place. Rotating shafts are an entanglement hazard.

WHEN USING THE 3-POINT HITCH



(1) 3-point hitch lowering speed knob
(A) SLOW (B) FAST

1. Use the 3-point hitch only with equipment designed for 3-point hitch usage.
2. When using a 3-point hitch mounted implement, be sure to install the proper counterbalance weight on the front of the tractor.
3. When transporting on the road, set the implement lowering control in the "LOCK" position to hold the implement in the raised position.

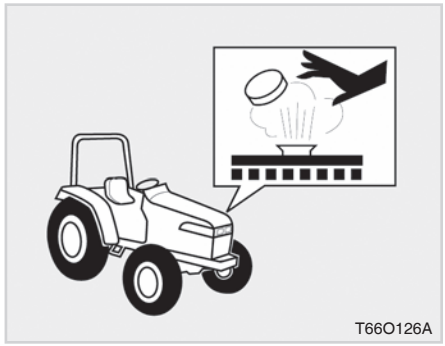
SAFETY PRECAUTIONS DURING SERVICING

In order to service your tractor you must park it on a flat level surface, set the parking brake, place the gear shift lever in neutral and stop the engine.

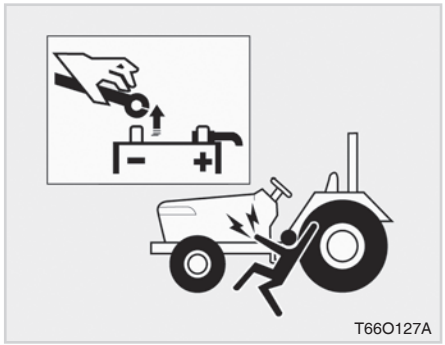
1. Do not smoke while working around the battery or when refueling your tractor. Keep all sparks and flames away from the battery and fuel tank. The battery presents an explosive hazard because it gives off hydrogen and oxygen etc. especially when recharging.

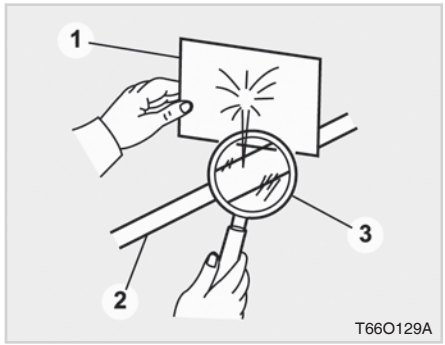
T66O125A

2. Allow the tractor time to cool off before servicing any part that may have become hot while the tractor was running.
3. You must always stop the engine before refueling the tractor. Avoid overfilling the tractor or spilling the fuel.
4. Before jump starting a dead battery, read and follow all of the instructions. (Refer to the page 5~9)
5. It is recommended to keep a first aid kit and fire extinguisher handy at all times.


T66O126A

6. Do not remove the radiator cap while the coolant is hot. When cool, slowly rotate the cap to the first stop and allow sufficient time for excess pressure to escape. After all the pressure is released remove the cap completely. If your tractor is equipped with a coolant recovery tank, add coolant there rather than to the radiator.

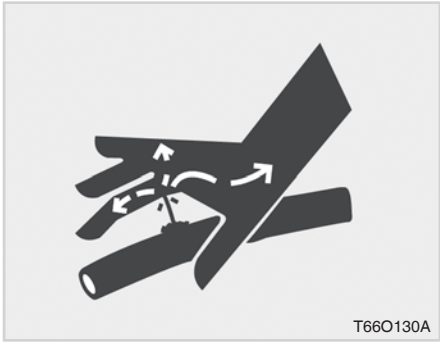




(1) Cardboard (2) Hydraulic Line
(3) Magnifying Glass

7. When working with your tractors electrical components you must first disconnect the battery cables.
8. To ensure that there are no accidents from sparks you must first disconnect the negative battery cable.
9. Tire mounting should be done by qualified professionals, with the proper equipment.
10. Maintaining correct tire pressure is important for the life of your tires. Do not inflate the tires above the recommended pressure specified in the owner's manual. (See page 4-50)
11. Securely support the tractor when changing wheels or the wheel tread width.
12. Make sure that wheel bolts have been tightened to the specified torque.
13. Escaping hydraulic fluid under pressure has sufficient force to penetrate skin, causing serious personal injury. Be sure to release all residual pressure. Before disconnecting hydraulic lines.

Before adding pressure to the hydraulic system, make sure that all connections are tight and that all lines, pipes and hoses are free of damage.


T66O130A

T66O131A

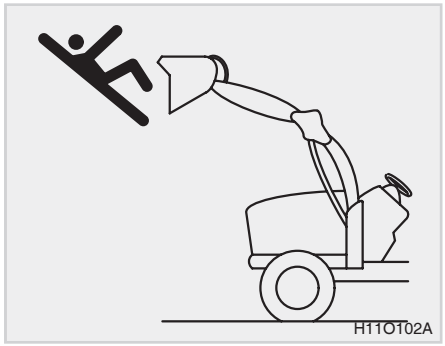
14. Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks

    Use a piece of cardboard or wood, instead. Use of safety goggles or other eye protection is also highly recommended. If injured by escaping fluid, see a medical doctor at once. This fluid can produce gangrene and/or severe allergic reaction.

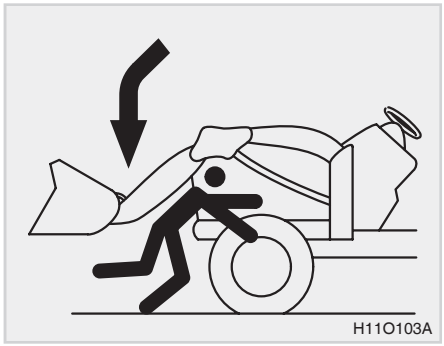
15. Keep environmental pollution in mind. When replacing coolant or oil, dispose of it the right way.

    Be sure to observe all relevant regulations when you dispose of the engine oil, transmission oil, fuel, coolant, filters and battery.

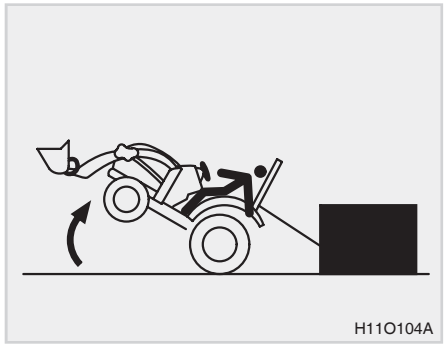
SAFETY PRECAUTIONS WHEN USING THE LOADER



Never let anyone get in the loader and use the loader as a workbench. Otherwise, it may lead to a fatal injury or even death.

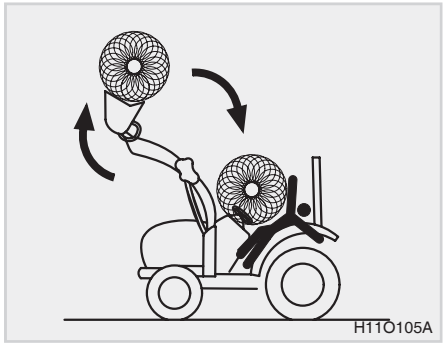


Do not stand under the lifted loader or get close to it. Also, lower the loader arm onto the ground before leaving the tractor. Otherwise, it may lead to a fatal injury or even death.

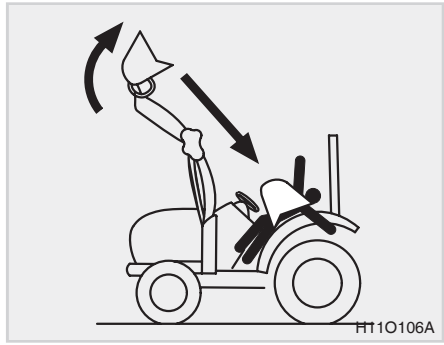


The loader can be turned over if a drawbar is improperly loaded.

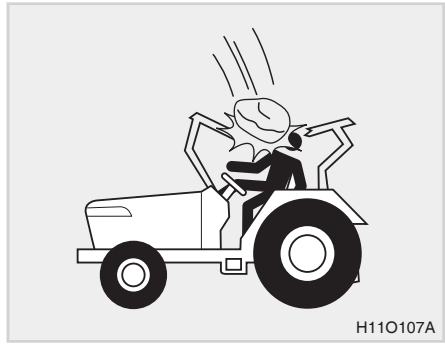
Make sure to use a drawbar proper for the 3-point hitch lower link.Otherwise, it may lead to an injury or even death.


H11O105A

Never carry a big object with the loader unless a proper implement is attached. Keep a carried object low during driving. Otherwise, it may lead to an injury or even death.


H11O106A

When attaching or detaching the loader, fix all parts which are connected to the bucket and boom. The bucket or boom can be accidentally dropped down, leading to an injury or even death.

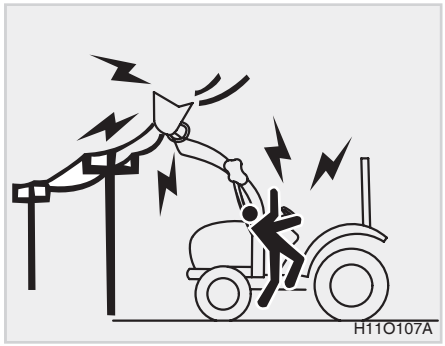

H11O107A

IMPORTANT

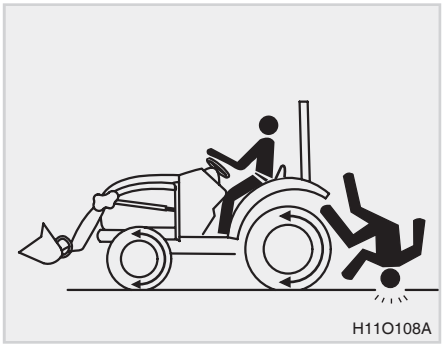
- **ROPS (Roll Over Protective Structure), sun canopy or cabin are not a FOPS. (Falling Object Protective Structure)**

  It never can protect the riders against falling objects.

  Avoid driving the vehicle into a dangerous area such as falling rocks zone.

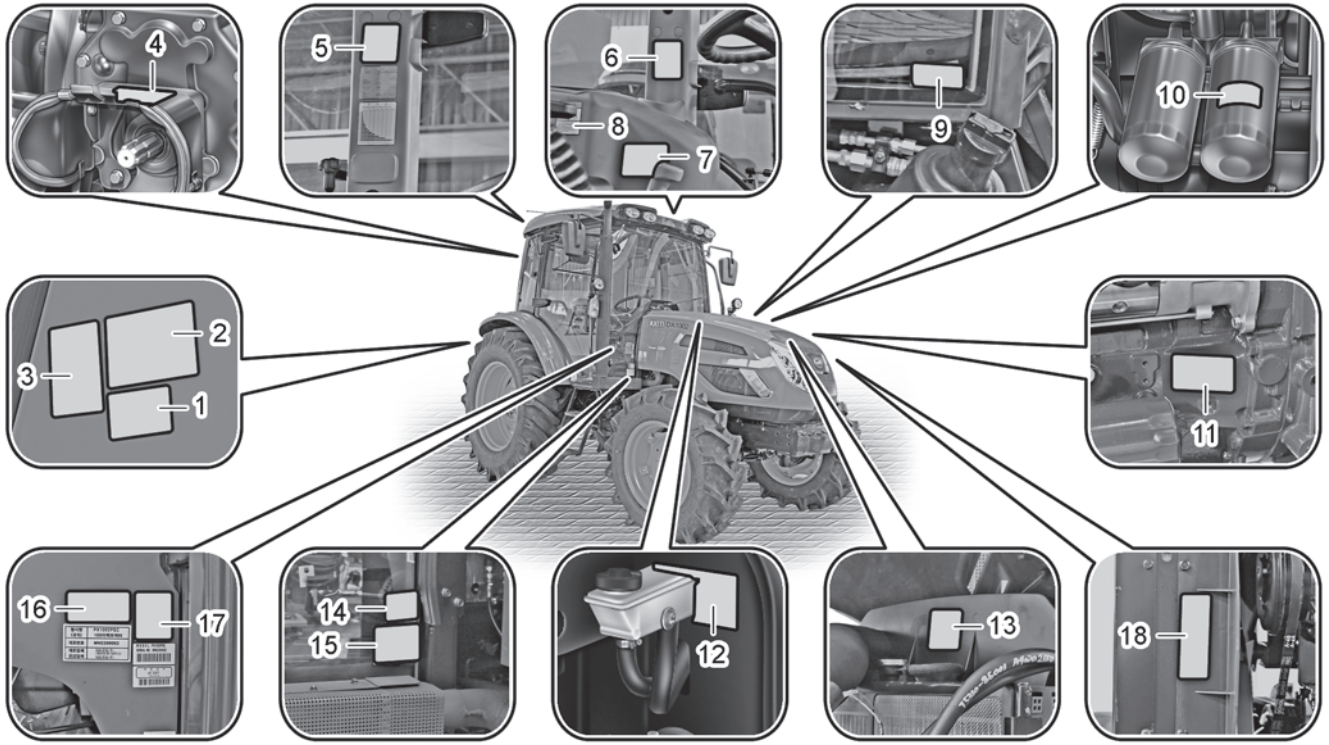


Do not allow loader arms or attachment to contact electrical power lines. Electrocution will cause serious injury or death.



Keep bystanders away. No riders.

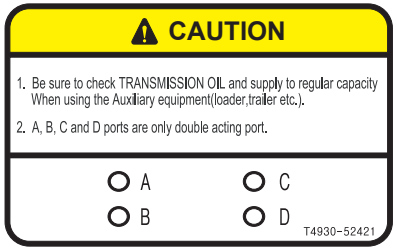
SAFETY DECAL MAINTENANCE
DECAL MOUNTING LOCATION



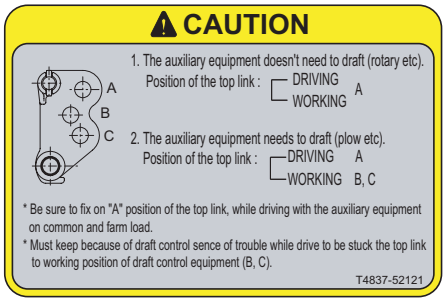
TG1O105A

DECALS

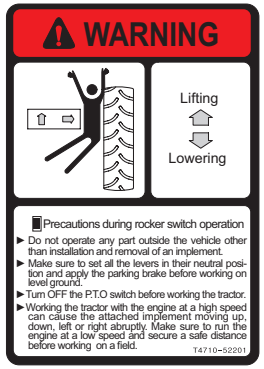
(1) Part No. : T4930-52421



(2) Part No. : T4810-52121

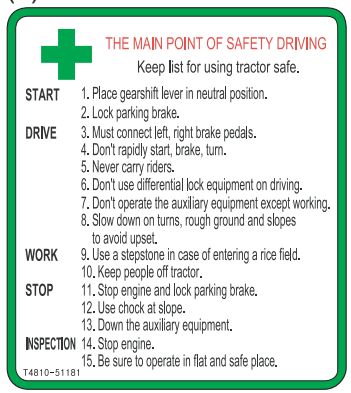


(3) Part No. : T4710-52201



(4) Part No. : T4930-52311

(5) Part No. : T4810-51181



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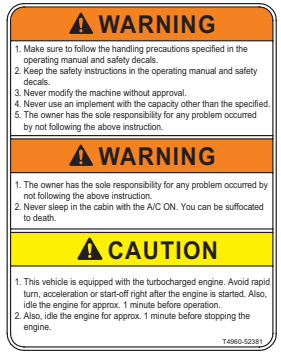
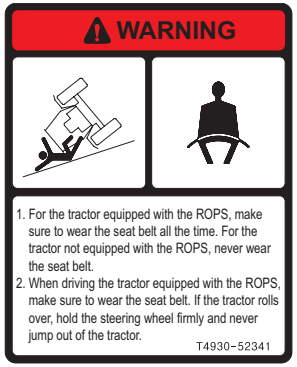


(7) Part No. : T4930-52321

(8) Part No. : T4930-52341



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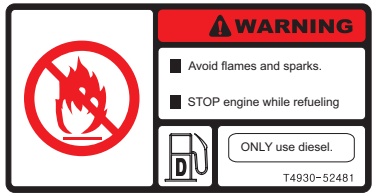
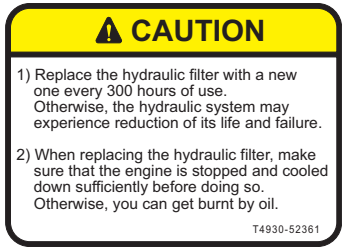
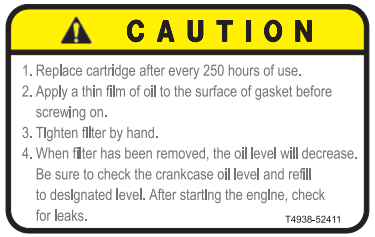


(10) Part No. :T4930-52361



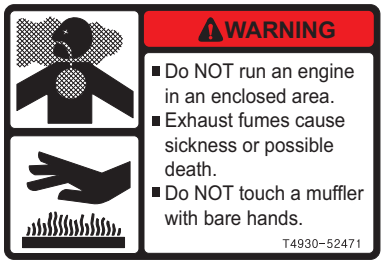
(11) Part No. : T4930-52411



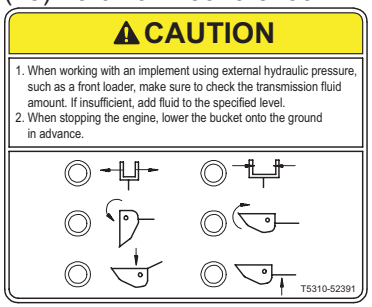
(12) Part No. : T4930-52441

(13) Part No. : T4930-52371

(14) Part No. : T4930-52471

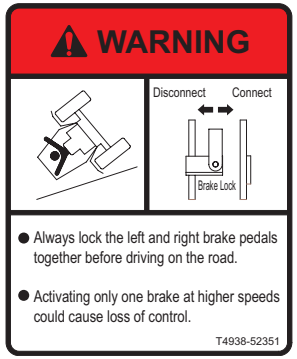


(15) Part No. :T5310-52391



(16) Part No. :T4930-52461

(17) Part No. : T4930-52351



(18) Part No. : T4625-52351

CAUTIONS FOR DECAL MAINTENANCE

Safety decals are attached to the tractor for safe operation. Make sure to follow the instruction on the decals as well as the following instruction.

⚠ CAUTION

- **Keep the decals clean and intact. If any decal is dirty, wash it with soap and dry with a soft cloth.**
- **Never use a solvent, such a thinner or acetone, since it can ruin the decals.**
- **Do not spray high-pressure water directly onto the decal. The decal may fall off the tractor.**

IMPORTANT

- **If a decal is damaged or lost, contact your local KIOTI dealer immediately to install a new decal.**
- **Make sure to attach the decal to the correct position cleanly without bubbles after cleaning its mounting surface.**
- **If a decal is attached to a component to be replaced, replace the decal as well.**

MEMO

VEHICLE IDENTIFICATION NUMBER..... 2-2

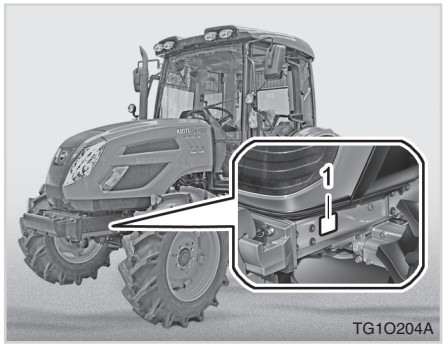
TRACTOR SERIAL NUMBER 2-2
ENGINE SERIAL NUMBER.....2-2
TRANSMISSION SERIAL NUMBER 2-2

ESSENTIAL REPLACEMENT PART 2-4

OILS AND FLUIDS 2-4
FILTERS 2-4
BELTS AND RUBBER PARTS.....2-5
OTHER COMPONENTS 2-5

VEHICLE IDENTIFICATION NUMBER

TRACTOR SERIAL NUMBER

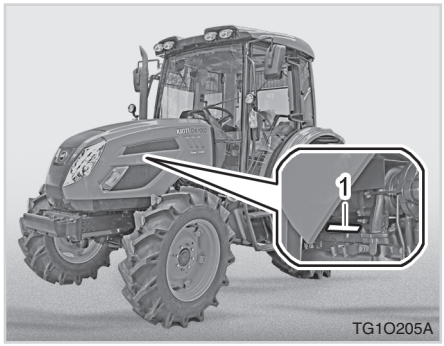


(1) Tractor Serial Number Plate

This number is to identify the vehicle, and its plate is attached on the front right side of the front axle frame.

This number also printed on the bar code label which is located on the dash board cover on your left hand side.

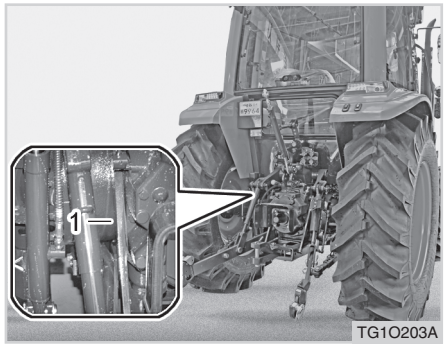
ENGINE SERIAL NUMBER



(1) Engine Serial Number

Engine identification plate is on the head cover.

TRANSMISSION SERIAL NUMBER



(1) Transmission Serial Number

The transmission number is stamped on the right side at clutch housing.

Your dealer is interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.

However, when in need of parts, warranty or major service, be sure to see your **KIOTI** dealer. For service, contact the **KIOTI** dealership from which you purchased your tractor or your local authorized **KIOTI** dealer.

When in need of parts, be prepared to give your dealer both the tractor and engine serial numbers.

Before using non-**KIOTI** approved implements, contact your nearest dealer, regarding safety application of the implement.

- **Tractor Model Name :**
- **Tractor Serial No :**
- **Engine Serial No :**
- **Date of Purchase :**

To be filled in by purchaser.

ESSENTIAL REPLACEMENT PART

OILS AND FLUIDS

H11O204A

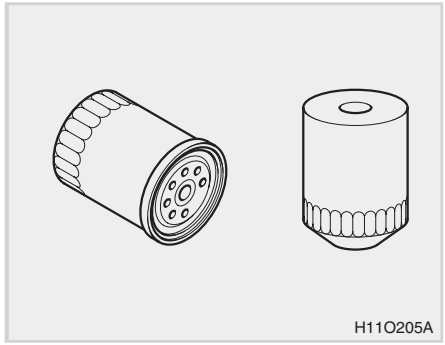
ITEM	SPECIFICATION	CAPA [L (U.S.gal.)]
Engine oil	SAE 15W40	10.5 (2.77)
Transmission fluid	DAEDONG UTF55 Exxonmobil Mobilfluid 424 BP : Tractran UTH Exxonmobil Hydraulic 560 Shell : Donax TD	74 (19.5)
Grease	SAE multi purpose type grease	A little
Anti-freeeze	Fresh clean water with ethylene glycol (50 : 50)	13.9 (3.67)

Various oils and fluids are used in this tractor for operation, lubrication, cooling, and anti-corrosion of various parts.

If oil or fluid is insufficient, contaminated or degraded, it can cause poor performance, incorrect operation, and seized part of the tractor, leading to malfunction.

Regularly add or change the fluid specified on the right to keep the tractor in perfect condition.

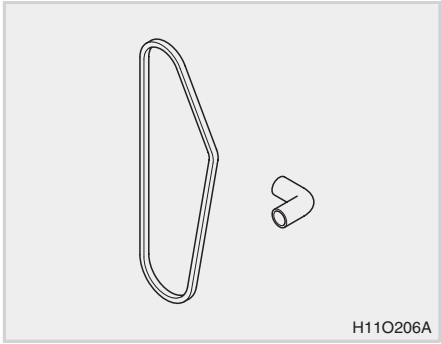
FILTERS


H11O205A

Filters for the engine, transmission, air cleaner, and A/C are consumables that purify oil and air. Make sure to replace the these items when changing oil.

PART NO	DESCRIPTION	QTY
2654407	Engine Oil Filter	1
T4620-38032	Hydraulic Filter	1
26560201	Fuel Filter Element	1
T4876-11081	Air filter	1

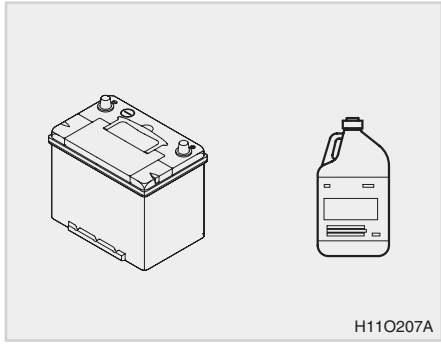
BELTS AND RUBBER PARTS



Belts, hoses and boots, which are made of rubber, get weakened and cracked as they age. If these parts are kept left in this state, they can be broken off, leading to a serious problem in the tractor. Therefore, regularly check or replace those items to prevent the failure.

PART NO	DESCRIPTION	QTY
2614B658	Fan Belt	1
E7310-72612	A/C Belt	1

OTHER COMPONENTS



The battery condition is very important for engine start performance especially in winter.

Therefore, make sure to check its condition daily.

MEMO

3

GENERAL SPECIFICATIONS 3-2

EXTERNAL DIMENSIONS 3-2
GENERAL SPECIFICATIONS 3-4

TRAVELING SPEED 3-10

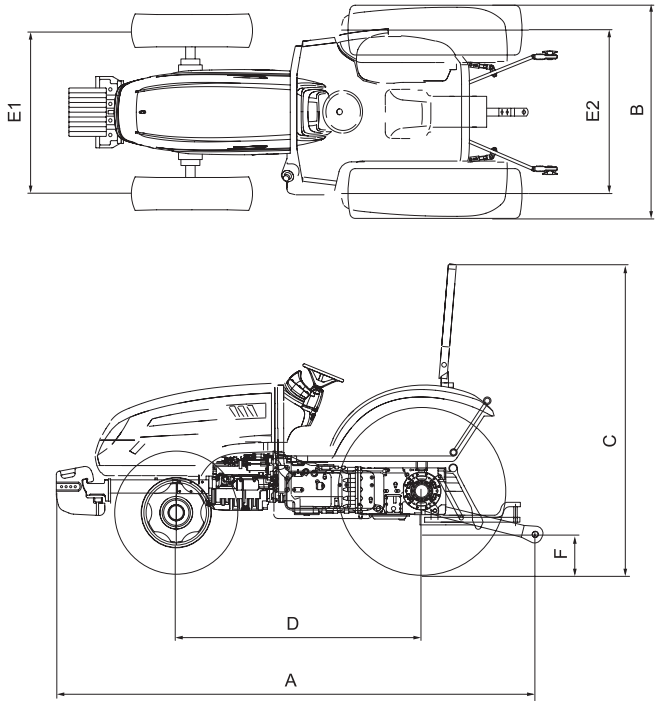
MANUAL 3-10
POWER SHUTTLE 3-11

IMPLEMENT LIMITATIONS 3-12

STANDARD SIZE BY IMPLEMENT 3-12

GENERAL SPECIFICATIONS
EXTERNAL DIMENSIONS

ROPS



TG1O301A

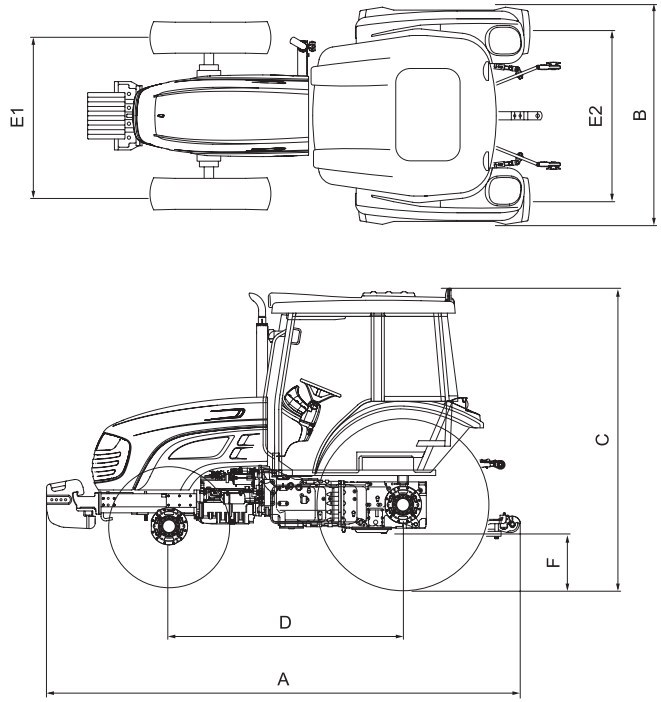
mm (in.)

ITEM	MODEL
	PX9020
1. Overall length (A)	4,535 (178.5)
2. Overall width (B)	2,000 (78.7)
3. Overall height (C)	2,950 (116.0)
4. Wheel base (D)	2,305 (90.7)
5. Tread (E1)	1,510 (59.5)
6. Tread (E2)	1,535 (60.4)
7. Ground clearance (F)	475 (18.7)

※ E1 : Front wheel tread
E2 : Rear wheel tread

※ These dimensions are measured with the standard tires (AG) installed to the ROPS model tractor.

CABIN



T85O301A

mm (in.)

ITEM	MODEL		
	PX7520	PX9020	PX1002
1. Overall length (A)	4,535 (178.5)	←	←
2. Overall width (B)	2,000 (78.7)	←	←
3. Overall height (C)	2,770 (109.1)	2,820 (111.0)	←
4. Wheel base (D)	2,305 (90.7)	←	←
5. Tread (E1)	1,510 (59.5)	←	←
6. Tread (E2)	1,530 (60.2)	1,535 (60.4)	←
7. Ground clearance (F)	475 (18.7)	←	495 (19.5)

※ E1 : Front wheel tread
E2 : Rear wheel tread

※ These dimensions are measured with standard tires (AG) installed on the CABIN model tractor.

GENERAL SPECIFICATIONS
[MANUAL]

ITEM			PX9020	PX9020C	PX1002C
Engine	Model		1104C-44TT	1104C-44TT	1104C-44TTT
	No.of cylinders		4	←	←
	Total Displacement	cc (cu in.)	4,399 (269)	←	←
	Bore & Stroke	mm (in.)	105X127 (4.13X5.00)	←	←
	Engine Gross Power	HP (kw)	89.2 (66.5)	←	99.2 (74)
	Rated PTO Power	HP(kw) / rpm	72.7(54.2) / 572	←	82.6(61.6) / 572
	Rated Revolution	rpm	2,200	←	←
Capacity	Fuel Tank	L (U.S.gal.)	120 (31.7)	←	←
	Transmission Case	L (U.S.gal.)	74 (19.5)	←	←
	Support of front axle	L (U.S.gal.)	8.9 (2.4)	←	←
	Engine Oil (Filter Included)	L (U.S.gal.)	10.5 (2.77)	←	←
	Engine Coolant	L (U.S.gal.)	13.9 (3.67)	←	←
Drive Train	Main Clutch Type		Single dry clutch	←	←
	Transmission	Shuttle Type	Synchro Mesh	←	←
		Main Gear Shift	Synchro Mesh 4 stages	←	←
		Range Gear Shift	Constant Mesh 4 stages	←	←
		No. of speeds	F16 X R16	←	←

ITEM				PX9020	PX9020C	PX1002C
Drive Train	Traveling Speeds (AG)	Forward	km/h (mph)	0.82~38.36 (0.51~23.83) (*)	←	←
		Reverse	km/h (mph)	0.80~37.33 (0.50~23.20 (**)	←	←
	Front wheel drive system			Hydraulic	←	←
	Main Brake Type			Wet Disc Type	←	←
	Mechanical Differential Lock			Rear Standard	←	←
Tire Size	Reverse	Front		12.4-24, 8PR	←	←
		Rear		18.4-34, 8PR (***)	←	←
Hydraulic	Pump	Implement Pump	lpm (cc/rev)	48.4 (22)	←	←
		Power steering pump	lpm (cc/rev)	30.8 (14)	←	←
	Steering			Hydrostatic Power Steering	←	←
	3 Point Lift Control Type			Position, Draft, Mixed Control	←	←
	No.of standard remote valves			2EA (4Port)	←	←
	Additional hyd. Lift cylinder			Opt.	←	←
	3-point Hitch Type			Category II	←	←
	Lift Capacity	@24 in.behind lift point	Kgf (lbs.)	2,200 (4,850)	2,169 (4,781)	←
		@lift point	Kgf (lbs.)	2,400 (5,291)	2,388 (5,264)	←

※ Thailand specification : (*)=0.77~34.62 (0.48~21.51), (**)=0.75~35.04 (0.47~21.77), (***)=18.4-30, 8PR

ITEM				PX9020	PX9020C	PX1002C
PTO	Rear	Type		Independent	←	←
		Rear PTO		SAE 1-3/8, 6 spline	←	←
		1 stages	rpm	540	←	←
		2 stages	rpm	1,000	←	←
Weight with Cabin and AG tires			Kgf (lbs.)	3,500 (7,716)	3,615 (7,969)	3,630 (8,002)
Automatic System		Draft Control		Std.	←	←
		Auto PTO				

※ The specifications are subject to change without notice.

[POWER SHUTTLE]

ITEM			PX7520PC	PX1002PC
Engine	Model		1104C-44	1104C-44TTT
	No.of cylinders		4	←
	Total Displacement	cc (cu in.)	4,399 (269)	←
	Bore & Stroke	mm (in.)	105X127 (4.13X5.00)	←
	Engine Gross Power	HP (kw)	72.4 (54)	99.2 (74)
	Rated PTO Power	HP(kw) / rpm	61.1(45.6) / 572	82.6(61.6) / 572
	Rated Revolution	rpm	2,200	←
Capacity	Fuel Tank	L (U.S.gal.)	120 (31.7)	←
	Transmission Case	L (U.S.gal.)	74 (19.5)	←
	Support of front axle	L (U.S.gal.)	8.9 (2.4)	←
	Engine Oil (Filter Included)	L (U.S.gal.)	10.5 (2.77)	←
	Engine Coolant	L (U.S.gal.)	13.9 (3.67)	←
Drive Train	Main Clutch Type		Multi wet disc clutch	←
	Transmission	Shuttle Type	Power Shuttle	←
		Main Gear Shift	Synchro Mesh 4 stages	←
		Range Gear Shift	Hi/Low hydraulic clutch+constant mesh 4 stages	←
		No. of speeds	F32 X R32	←

ITEM				PX7520PC	PX1002PC
Drive Train	Traveling Speeds (AG)	Forward	km/h (mph)	0.68~36.00 (0.42~22.37)	0.72~38.36 (0.45~23.83)
		Reverse	km/h (mph)	0.64~35.75 (0.40~22.21)	0.68~38.09 (0.42~23.67)
	Front wheel drive system			Hydraulic	←
	Main Brake Type			Wet Disc Type	←
	Mechanical Differential Lock			Rear Standard	←
Tire Size	Reverse	Front		12.4-24, 8PR	←
		Rear		18.4-30, 8PR	←
Hydraulic	Pump	Implement Pump	lpm (cc/rev)	48.4 (22)	←
		Power steering pump	lpm (cc/rev)	30.8 (14)	←
	Steering			Hydrostatic Power Steering	←
	3 Point Lift Control Type			Position, Draft, Mixed Control	←
	No.of standard remote valves			2EA (4Port)	←
	Additional hyd. Lift cylinder			Opt.	←
	3-point Hitch Type			Category II	←
	Lift Capacity	@24 in.behind lift point	Kgf (lbs.)	2,169 (4,781)	←
		@lift point	Kgf (lbs.)	2,388 (5,264)	←

ITEM				PX7520PC	PX1002PC
PTO	Rear	Type		Independent	←
		Rear PTO		SAE 1-3/8, 6 spline	←
		1 stages	rpm	540	←
		2 stages	rpm	1,000	←
Weight with Cabin and AG tires			Kgf (lbs.)	3,530 (7,782)	3,630 (8,002)
Automatic System		Draft Control		Std.	←
		Auto PTO			

※ The specifications are subject to change without notice.

TRAVELING SPEED
MANUAL

Km/h (mph)

OPERATING THE LEVER		PX9020-TH		PX9020C/PX1002C (EXCEPT TH)	
RANGE	MAIN	FORWARD	REVERSE	FORWARD	REVERSE
Creep(C)	1	0.77 (0.48)	0.75 (0.47)	0.82 (0.51)	0.80 (0.50)
	2	0.97 (0.60)	0.96 (0.60)	1.07 (0.66)	1.04 (0.65)
	3	1.26 (0.78)	1.25 (0.78)	1.39 (0.86)	1.36 (0.85)
	4	1.64 (1.02)	1.63 (1.01)	1.82 (1.13)	1.77 (1.10)
Low(L)	1	2.02 (1.26)	2.01 (1.25)	2.24 (1.39)	2.18 (1.35)
	2	2.65 (1.65)	2.63 (1.63)	2.93 (1.82)	2.86 (1.78)
	3	3.44 (2.14)	3.42 (2.13)	3.81 (2.37)	3.71 (2.31)
	4	4.49 (2.79)	4.46 (2.77)	4.98 (3.09)	4.85 (3.01)
Middle(M)	1	5.61 (3.49)	5.58 (3.47)	6.22 (3.86)	6.06 (3.77)
	2	7.34 (4.56)	7.29 (4.53)	8.14 (5.06)	7.92 (4.92)
	3	9.55 (5.93)	9.49 (5.85)	10.58 (6.57)	10.30 (6.40)
	4	12.46 (7.74)	12.38 (7.69)	13.81 (8.58)	13.44 (8.35)
Hgh(H)	1	15.59 (9.69)	15.48 (9.62)	17.28 (10.74)	16.82 (10.45)
	2	20.40 (12.68)	20.26 (12.59)	22.60 (13.71)	22.00 (13.67)
	3	26.52 (16.48)	26.34 (16.37)	28.71 (14.04)	28.61 (17.78)
	4	34.62 (21.51)	35.04 (21.77)	38.36 (23.84)	37.33 (23.20)

※ The specifications are subject to change without notice.

POWER SHUTTLE

Km/h (mph)

OPERATING THE LEVER		PX7520		PX1002	
RANGE	MAIN	FORWARD	REVERSE	FORWARD	REVERSE
Creep(C)	1	0.68 (0.42)	0.64 (0.42)	0.72 (0.45)	0.68 (0.42)
	2	0.83 (0.52)	0.77 (0.48)	0.94 (0.65)	0.89 (0.55)
	3	1.08 (0.67)	1.00 (0.62)	1.23 (0.76)	1.16 (0.72)
	4	1.40 (0.87)	1.31 (0.81)	1.60 (0.99)	1.51 (0.94)
Low(L)	1	1.73 (1.07)	1.61 (1.00)	1.97 (1.22)	1.86 (1.16)
	2	2.26 (1.40)	2.11 (1.31)	2.58 (1.60)	2.43 (1.51)
	3	2.94 (1.83)	2.75 (1.71)	3.35 (2.08)	3.16 (1.96)
	4	3.84 (2.39)	3.58 (2.22)	4.38 (2.72)	4.13 (2.57)
Middle(M)	1	4.80 (2.98)	4.48 (2.78)	5.47 (3.40)	5.16 (3.21)
	2	6.28 (3.90)	5.86 (3.64)	7.15 (4.44)	6.75 (4.19)
	3	8.17 (5.08)	7.62 (4.73)	9.30 (5.78)	8.78 (5.46)
	4	10.66 (6.62)	9.94 (6.18)	12.14 (7.54)	11.45 (7.11)
Hgh(H)	1	13.33 (8.28)	12.44 (7.73)	15.18 (9.43)	14.33 (8.90)
	2	17.44 (10.83)	16.27 (10.11)	19.86 (12.34)	18.74 (11.64)
	3	22.68 (14.04)	21.16 (13.15)	25.83 (16.05)	23.37 (14.52)
	4	36.00 (22.37)	35.75 (22.37)	38.36 (23.83)	38.09 (23.67)

※ The specifications are subject to change without notice.

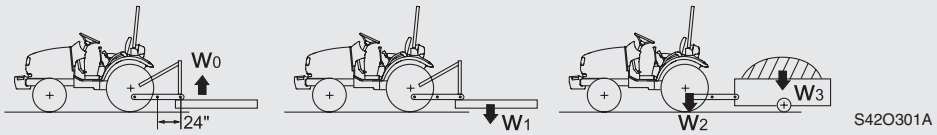
IMPLEMENT LIMITATIONS
STANDARD SIZE BY IMPLEMENT

This **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 this **KIOTI** tractor may result in malfunctions or failures to the tractor, damage to other property and injury to the operator or others. [Any malfunctions or failures to the tractor resulting from use with improper implements are not covered by the warranty.]

Item / Model	Tread (max. width)		Lifting Capacity max. loading weight W_0 (24 in. aft of hitch)
	Front	Rear	
ALL	1,515 mm (59.4 in.)	1,535 mm (60.4 in.)	2,400 kg (5,291 lbs.)

Item / Model	Actual figures		Trailer loading weight W_3 Max. capacity
	Implement weight W_1 and / or size	Max. Drawbar Load W_2	
ALL	As in the following list (shown on the next page)	1,500 kg (3,307 lbs.)	4,500 kg (9,921 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



NOTE : Implement size may vary depending on soil operating conditions.

[PX7520]

IMPLEMENT	REMARKS	PX7520
Loader	Max. Bucket width	2,134 mm (84 in.) bucket
Backhoe with sub frame	Max. Diging depth	N/A, 3-point mounting is not recommended by DAEDONG
Tiller	Max. Cutting width	Rated for 65 PTO HP
Box Blade	Max. Cutting width	2,134 mm (84 in.) maximum or rated for 65 PTO HP w/FWA
Rear Blade	Max. Cutting width	2,438 mm (96 in.) maximum or rated for 65 PTO HP w/FWA
Rotary Cutter	Max. Cutting width	Not to exceed 4,572 mm (180 in.) pull type or 2,438 mm (96 in.) lift or a 65 PTO HP rating
Aerator	Max. width	2,134 mm (84 in.) maximum or rated for 65 PTO HP w/FWA
Landscape Rakes	Max. width	2,134 mm (84 in.) maximum or rated for 65 PTO HP w/FWA

NOTE : This is a sample of attachments commonly used. Before purchasing or using any attachment on a **DAEDONG** product, please review the specifications to determine if it is a compatible product. Damages or failures due to improper use of compatibility issue will not be covered by warranty. If you have questions concerning product compatibility or warranty, please consult with your local **DAEDONG** Dealer.

[PX9020 / PX1002]

IMPLEMENT	REMARKS	PX9020 / PX1002
Loader	Max. Bucket width	2,134 mm (84 in.) bucket
Backhoe with sub frame	Max. Diging depth	N/A, 3-point mounting is not recommended by DAEDONG
Tiller	Max. Cutting width	Not recommended unless rated for 80 PTO HP
Box Blade	Max. Cutting width	2,438 mm (96 in.) maximum or rated for 80 PTO HP w/FWA
Rear Blade	Max. Cutting width	2,740 mm (108 in.) maximum or rated for 80 PTO HP w/FWA
Rotary Cutter	Max. Cutting width	Not to exceed 4,572 mm (180 in.) pull type or 3,048 mm (120 in.) lift or a 80 PTO HP rating
Aerator	Max. width	2,438 mm (96 in.) maximum or rated for 80 PTO HP w/FWA
Landscape Rakes	Max. width	2,438 mm (96 in.) maximum or rated for 80 PTO HP w/FWA

NOTE : This is a sample of attachments commonly used. Before purchasing or using any attachment on a **DAEDONG** product, please review the specifications to determine if it is a compatible product. Damages or failures due to improper use of compatibility issue will not be covered by warranty. If you have questions concerning product compatibility or warranty, please consult with your local **DAEDONG** Dealer.

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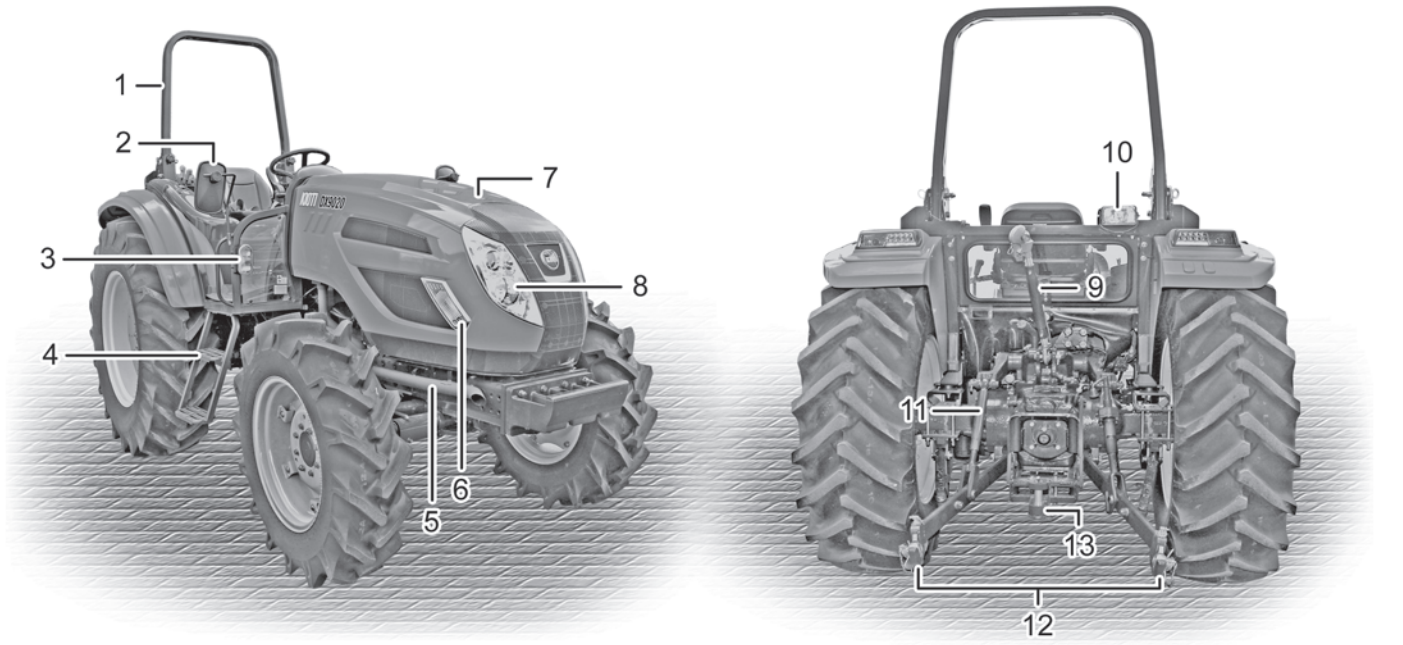
EXTERIOR VIEW

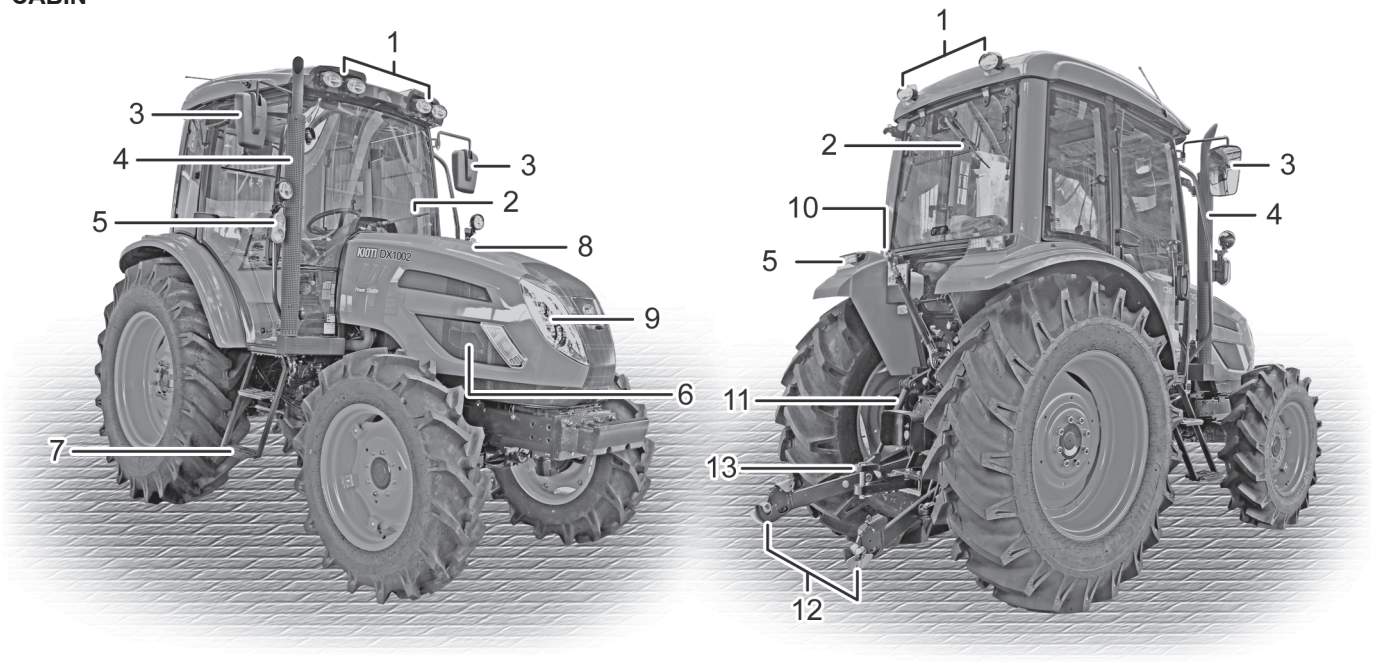
ROPS



TG1O4B4A

(1) ROPS
(2) Rear View Mirror
(3) Turn Signal Lamp
(4) Step
(5) Muffler
(6) Side Lamp
(7) Bonnet
(8) Head Lamp
(9) Top Link
(10) Working Lamp
(11) Lift Rod
(12) Lower Link
(13) Swing Draw Bar

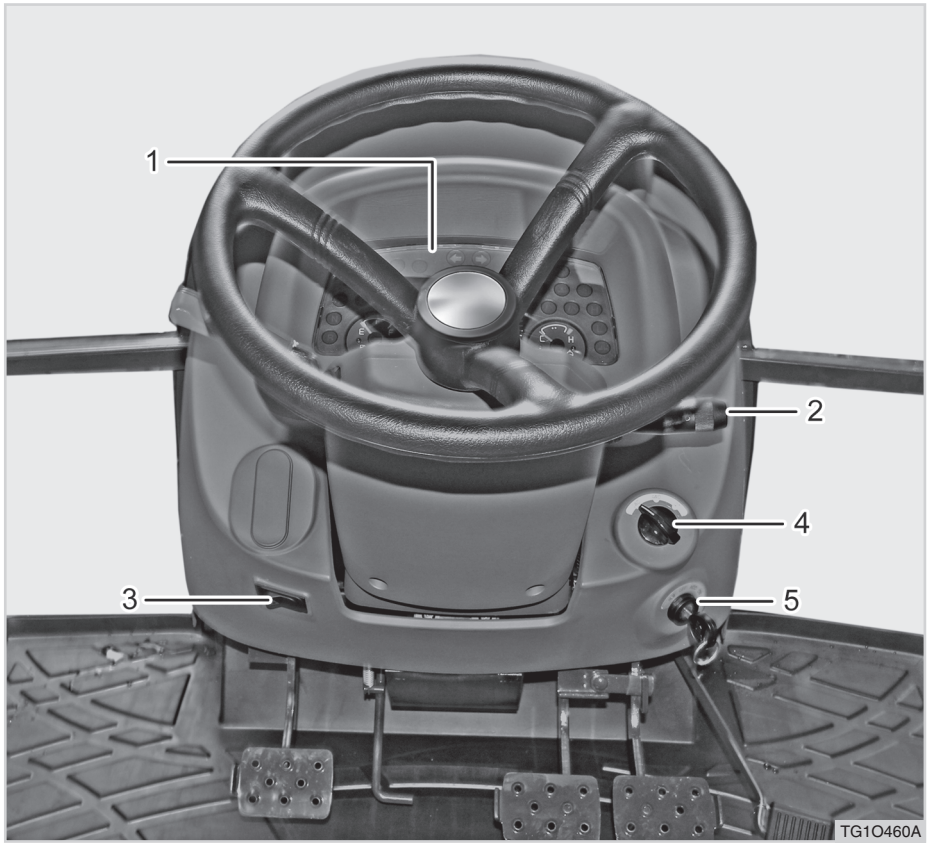
CABIN



TG1O459A

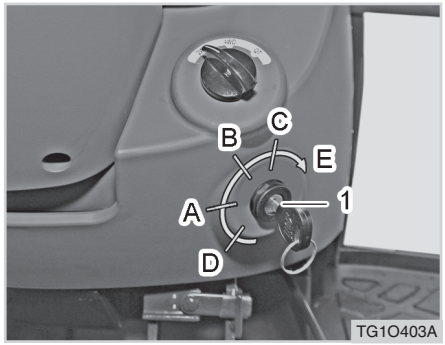
(1) Working Lamp
(2) Wiper
(3) Rear View Mirror
(4) Muffler
(5) Turn Signal Lamp
(6) Side Cover (Engine Shield)
(7) Step
(8) Bonnet
(9) Head Lamp
(10) Top Link
(11) Lift Rod
(12) Lower Link
(13) Swing Draw Bar

SWITCH
MOUNTING LOCATION



(1) Instrument Panel
(2) Combination Switch
(3) Hazard Lamp Switch
(4) PTO Auto / Manual Switch
(5) Key Switch

KEY SWITCH



(1) Key switch (B) ACC (D) Heat
(A) OFF (C) ON (E) Start

- **(A)**

  When the key switch is in position "A", the engine and all electrical devices in the vehicle stop.

- **ACC (B)**

  When the key switch is turned to the position "B", only electrical devices, such as the audio system and front and rear wiper, can be operated. The cigarette lighter, headlamps and work light can be operated only when the switch is turned to the "ON" position.

- (C)

  The position "C" indicates the "ON" position. As soon as the key switch is turned to this position, the oil pressure warning lamp and battery charge warning lamp comes on (These turn off after the engine is started). The preheat operation is automatically started. The automatic preheat operation is indicated by the glow plug indicator. Make sure to preheat the engine until the glow plug indicator goes off (approx. 8 seconds) in cold weather.

- (D)

  The position "D" indicates the "manual preheat" position, which is not used in normal conditions. This position is a self-return type, so the key should be held there while using. This position can be used in very cold weather to preheat the engine manually in order to start the engine. Using this position for more than 30 seconds consecutively can reduce the preheat system's life.

- (E)

  The position "E" indicates the "Start" . In order to start the engine, depress the clutch pedal and put the PTO switch into the "OFF" position. As soon as the engine is started, release the key and the key switch is returned to the position "C".

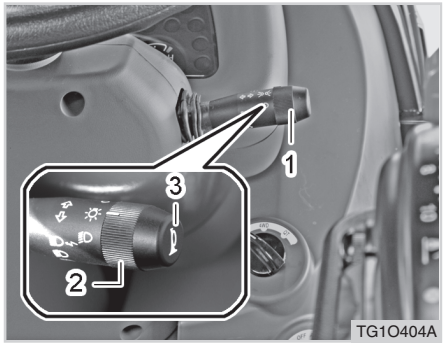
⚠ CAUTION

- **Stop the engine immediately if the oil pressure warning lamp does not go off after the engine is started. The engine may be severely damaged.**
- **If the battery charge warning lamp does not go off after the engine is started, check the electrical systems, such as the alternator, for damage. Continuing to use the engine under this condition can discharge the battery or damage other electrical devices.**

NOTE

- The ignition key is directional, so it can be inserted only in a certain direction. Also, be careful not to leave the tractor unattended as the same key is used for all **KIOTI** tractors. It can be stolen.
- The horn, turn signal lamp, and hazard lamp can be operated without the key inserted.

COMBINATION SWITCH



(1) Turn Signal Light Switch
(2) Head Light Switch *(3) Horn Switch*

The combination switch consists of the head light, turn signal light, and horn switches. Its function by its position is as follows :

"OFF" : Head light and tail light "OFF"

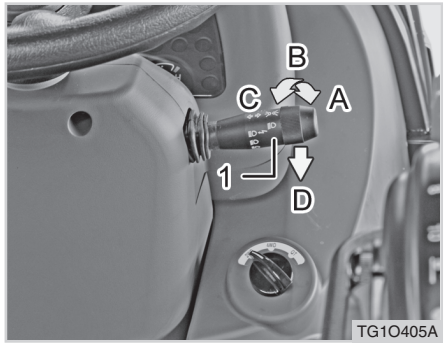
: Low beam and tail light "ON"

: High beam "ON"

: Turn signal light and tail light "ON"

: Head light "OFF" and tail light "ON"

HEAD LIGHT SWITCH



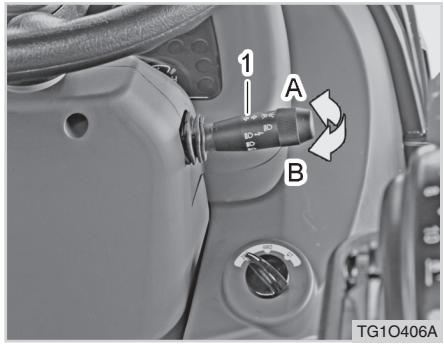
(1) Head Light Switch
(A) OFF *(B) Instrument Panel ON*
(C) Low Beam ON *(D) High Beam ON*

The head light switch can be operated only while the key switch is turned to the "ON" position. Turning the head light switch clockwise one click will illuminate the instrument panel lights while turning it one more click will illuminate the low beam head lights.

⚠ WARNING

- ***Driving with high beam head light disturbs the approaching vehicle's visibility for safe driving. Use the high beam head lights only if necessary.***

TURN SIGNAL LIGHT SWITCH



(1) Turn Signal Light Switch
(A) Left Turn (B) Right Turn

The turn signal lights are used when turning the vehicle left or right. Pulling the lever up blinks the left turn signal light while pushing the lever down blinks the right turn signal light.

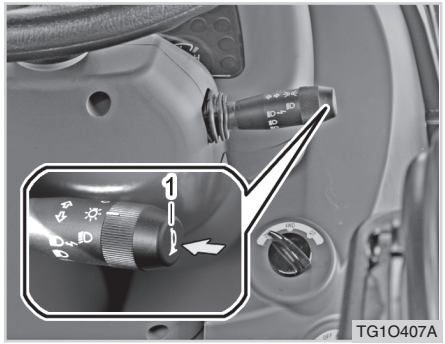
NOTE

- Make sure to control the work load so that the needle is not in the red zone.

NOTE

- If the needle stays in the red zone, do not stop the engine immediately. Instead, reduce the work load to cool down the engine before stopping the engine.
- Make sure to keep the front grill clean so that air is sucked through it freely for fast cooling.

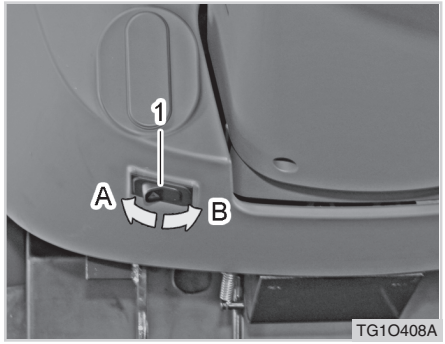
HORN SWITCH



(1) Horn Switch

The horn switch can be operated without the key inserted. Pressing this switch sounds the horn.

HAZARD LAMP SWITCH



(1) Hazard Lamp Switch
(A) ON (B) OFF

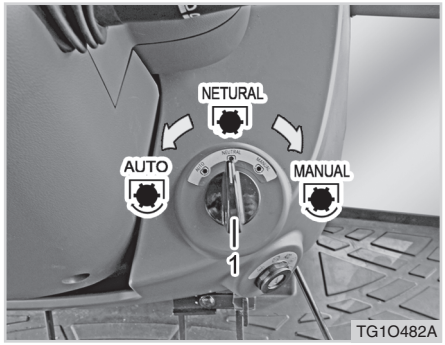
This switch can be used to warn other vehicles when malfunction occurs in the tractor while driving on a public road. Pressing this switch up blinks the hazard lamp and returning it turns off the lamp. The turn signal lights cannot be operated while this switch is pressed up to operate the hazard lamps.

⚠ CAUTION

- **If the hazard lamps are turned on for an extended period of time while the engine is stopped, the battery can be discharged. Therefore, use them only in emergency.**
- **The hazard lamp can be operated without the key inserted.**

4

PTO AUTO/MANUAL SWITCH



(1) PTO Auto / Manual Selection Switch

This switch is used to switch the PTO between automatic and manual operation.

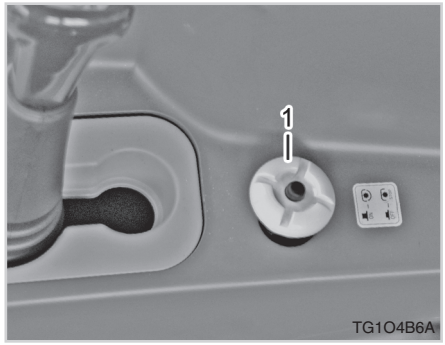
1. PTO Automatic

   When the PTO selection switch is put to the automatic operation position, the PTO is automatically disengaged after the hydraulic lifting arm(or implement) is lifted by the position control lever.

2. PTO manual

   When the PTO selection switch is put to the manual operation position, the PTO is operated regardless of the height of the lifting arm. (Implement)

PTO MAIN SWITCH



(1) PTO Main Switch

The PTO switch is used to supply power from the tractor to the implement.

Make sure to put this switch into the “OFF” position before starting the engine. Otherwise, the engine cannot be started.

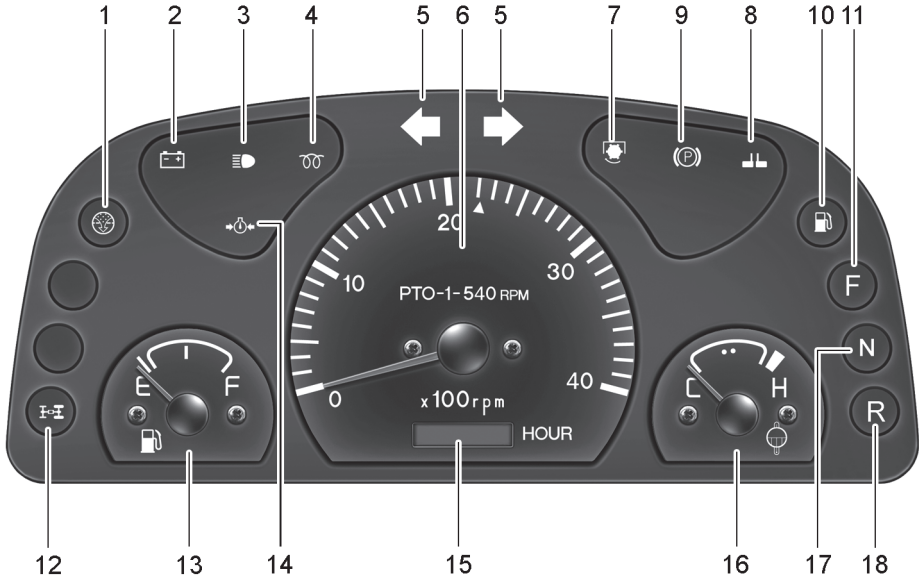
The rear PTO rotates at 540 rpm (1st) when the engine speed is approx. 2,500 rpm.

INSTRUMENT PANEL

IMPORTANT

- **For safety, the engine cannot be started as long as the PTO main switch is "ON".**
- **If the engine is started with the PTO main switch in the "ON" position, it can lead to damage in electric parts.**

Symbols on the instrument panel come on when the key switch is turned to the "ON" position.



TG1O495A

(1) Air Filter Clogging Warning Lamp
(2) Battery Charge Warning Lamp
(3) High Beam Indicator
(4) Glow Plug Indicator
(5) Turn Signal Lamp
(6) Tachometer
(7) PTO ON Indicator
(8) One Side Brake Lamp
(9) Parking Brake Indicator
(10) Low Fuel Level Warning Indicator
(11) Forward Indicator
(12) 4WD Operation Indicator
(13) Fuel Gauge
(14) Engine Oil Pressure Warning Lamp
(15) Hour Meter
(16) Coolant Temperature Gauge
(17) Neutral Indicator
(18) Reverse Indicator

TACHOMETER / HOURMETER

(1) Tachometer
(2) Hourmeter Indicator
(3) Rated Engine Speed Indicator

The tachometer indicates the engine rpm.

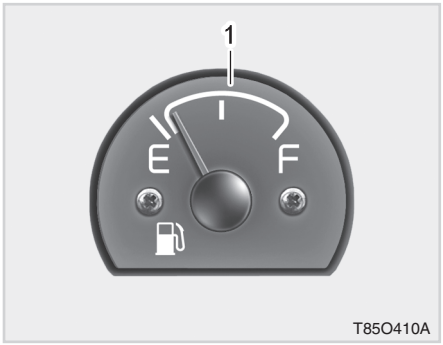
The mark "▲"(3) indicates approx.

engine rated speed. You can have the 540 PTO rpm while the engine speed is around this indicator.

For speedy and effective work, adjust the work load so that the engine rpm is close to this mark "▲".

The hourmeter does not operate if the engine is stopped even if the key switch is in the "ON" position.

FUEL GAUGE



(1) Fuel Gauge
E: Empty *F: Full*

This indicates the remaining fuel level after the key switch is turned to the "ON" position.

- **F** : Fuel is fully filled.
- **E** : Replenish the fuel tank.

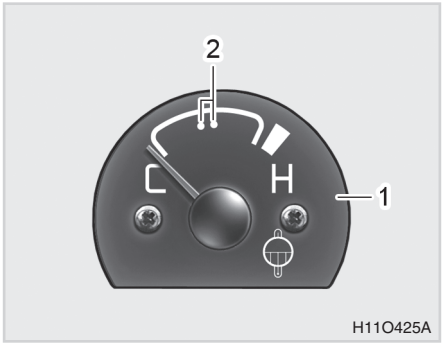
NOTE

- Make sure to use only genuine fuel as the engine can be damaged if unqualified fuel is used.

NOTE

- Use fuel for winter season in cold weather to start the engine easier.
- The gauge needle can move on a hill as fuel slopes in the tank.

ENGINE COOLANT TEMPERATURE GAUGE



(1) Coolant Temperature Gauge
(2) Normal Temperature Range
C: Cold H: Hot

This gauge indicates the coolant temperature after the key switch is turned to the "ON" position.

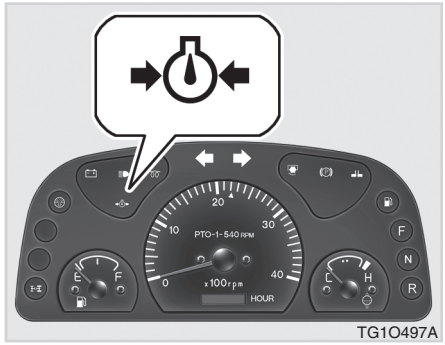
- **C** : Coolant is cold.
- **H** : Coolant is hot.

The range marked in "2" in the figure indicates the normal engine temperature. (Normal driving range)

⚠ CAUTION

- **Make sure to control the work load so that the needle is not in the red zone.**
- **If the needle stays in the red zone, do not stop the engine immediately. Instead, reduce the work load to cool down the engine before stopping the engine.**
- **Make sure to keep the front grill clean so that air is sucked through it freely for fast cooling.**

ENGINE OIL PRESSURE WARNING LAMP



This lamp comes on when the engine oil pressure or oil level is low.

This lamp is turned On when the starting switch is turned On before starting the engine but turned Off after starting the engine. If this lamp comes on while driving, stop the engine immediately and check the engine oil level.

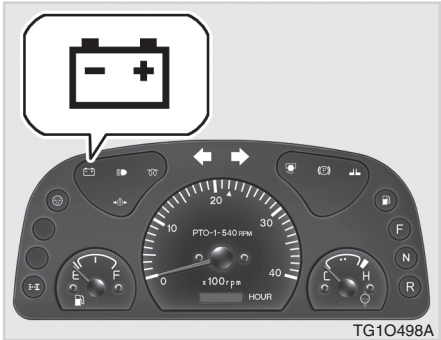
TG110-AU-04.indd 13 2013-03-06 오후 5:17:30

If this lamp comes on even with the specified engine oil level, have the tractor checked by your local **KIOTI** dealer.

⚠ CAUTION

- **If the oil level is below the specified range, the engine can sieze.**
- **The engine can be severely damaged if driving or operating the tractor with the engine oil warning lamp ON.**

BATTERY CHARGING LAMP



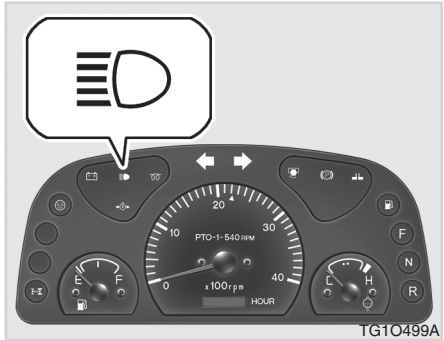
TG1O498A

This lamp is turned On when the starting switch is turned On before starting the engine but turned Off after starting the engine.

⚠ CAUTION

- **If this warning lamp comes on while driving, the charging system, such as the alternator, is malfunctioning. Therefore, turn off all electrical devices and have the tractor checked by your local KIOTI Dealer.**

HEAD LIGHT HIGH BEAM LAMP

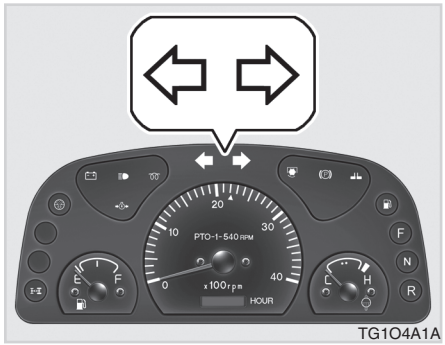


TG1O499A

This lamp comes on in blue when the high beam head light is switched on.

Driving with high beam head light disturbs an approaching vehicle' s visibility. For safe driving, use the high beam head light only if necessary.

TURN SIGNAL LAMP



Operating the turn signal lamp switch up and down turns on the corresponding lamp in green.

GLOW PLUG INDICATOR

This indicates the operating condition of the preheat system. When the key switch is turned to the "ON" position, this indicator comes on for approx. 8 seconds. It is recommended to start the engine as soon as this indicator goes off for best starting performance. This indicator may not turn on if the engine is warm. In this case, the engine can be started without the preheat operation.

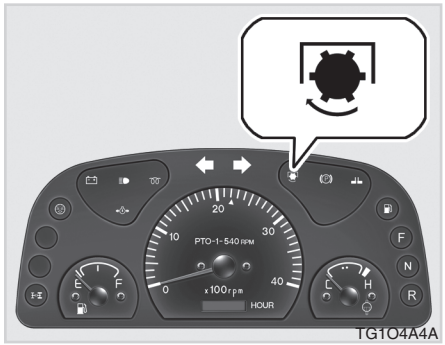
PARKING BRAKE WARNING LAMP

When the parking brake is actuated, the lamp lights ON.

⚠ CAUTION

- **If this indicator is ON even with the parking brake released, have the tractor checked by your local KIOTI dealer.**

PTO INDICATOR

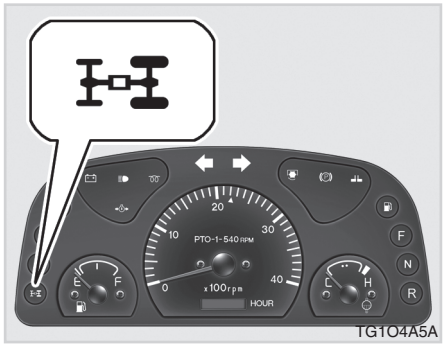


This indicator shows the PTO engagement condition. When the PTO is engaged, this indicator comes on. When the PTO clutch is disengaged, this indicator goes off.

⚠ CAUTION

- **Set the PTO switch to the "OFF" position in order to start the engine.**

4WD INDICATOR

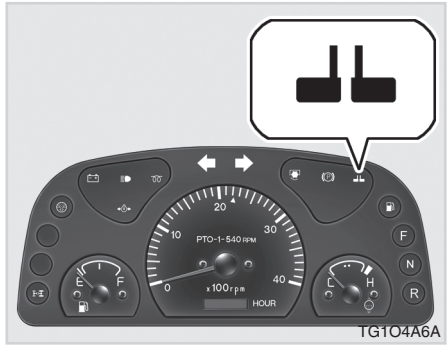


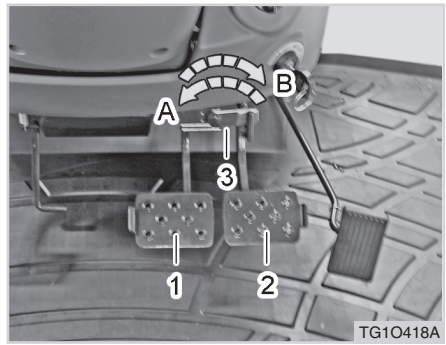
This comes on to indicate 4WD engagement.

⚠ CAUTION

- **The durability of the axle can be deteriorated if only one brake pedal is depressed during the 4WD is activated.**

BRAKE(ONE SIDE) LAMP





(1) Brake Pedal (LH) *(2) Brake Pedal (RH)*
(3) Pedal Interlock
(A) Lock *(B) Unlock*

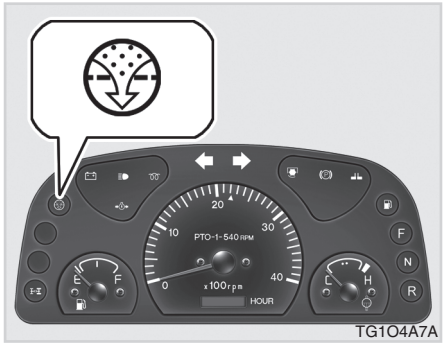
This lamp indicates the operating status of the brake. (One side)

This comes on when the brake pedal interlock for two brake pedals is unlocked.

IMPORTANT

- **When driving on a public road or at a high speed, never use only one brake pedal. The tractor can roll over.**
- **While the brake(one side) lamp is not illuminated, the brake pedals are not interlocked. Make sure to set the pedal interlock to the "Lock" position in a normal condition.**

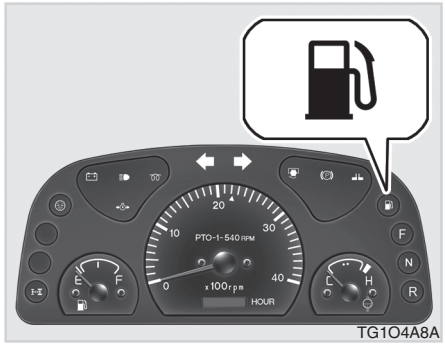
AIR FILTER WARNING LAMP



TG1O4A7A

This lamp illuminates when the air filter is clogged by dust etc.

LOW FUEL LEVEL WARNING INDICATOR



TG1O4A8A

This lamp comes on when the fuel tank is approaching empty. When it comes on, you should add fuel as soon as possible. Dirving with the this lamp on or with the fuel level below "E" can cause the engine to misfire and damage the engine parts.

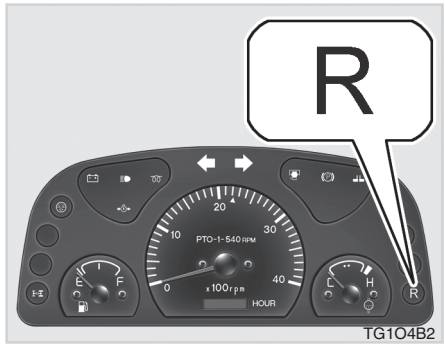
FORWARD INDICATOR

If the shuttle lever is in forward position, this lamp turns in green.

NEUTRAL INDICATOR

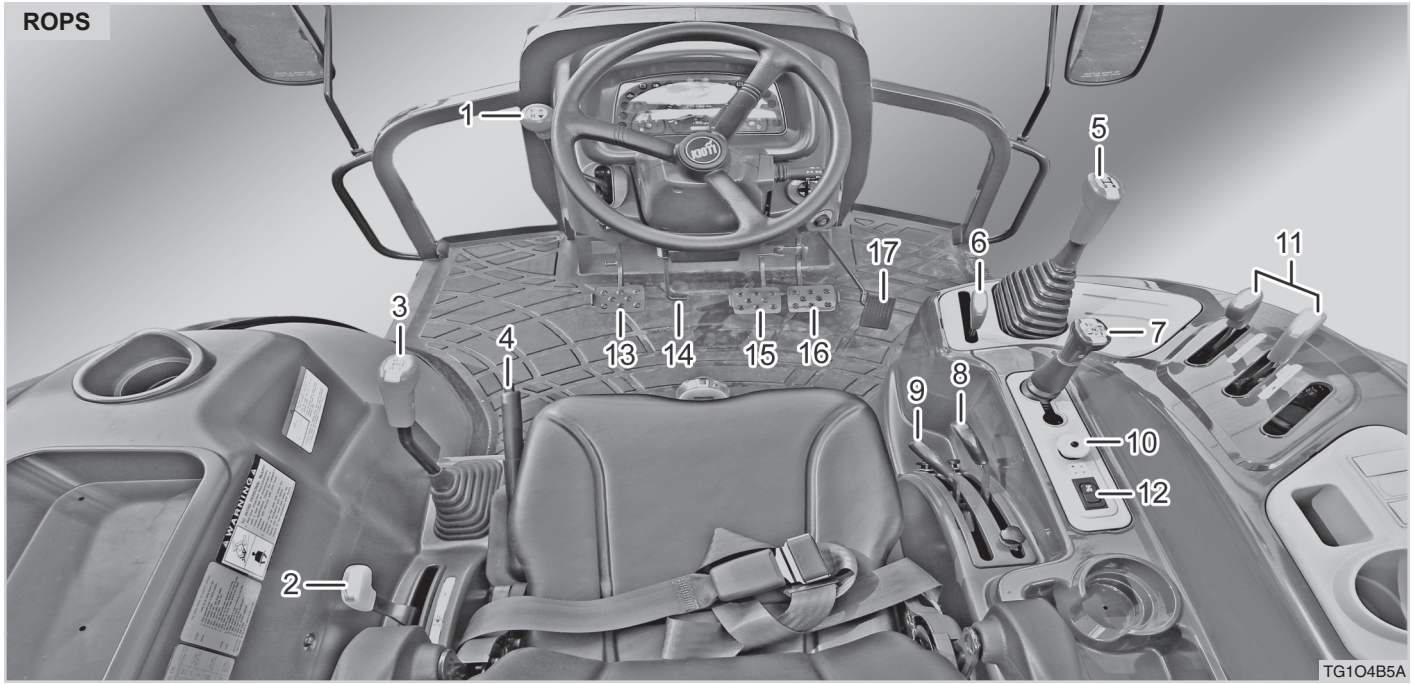
If the shuttle lever is in neutral position, this lamp turns in green.

REVERSE INDICATOR



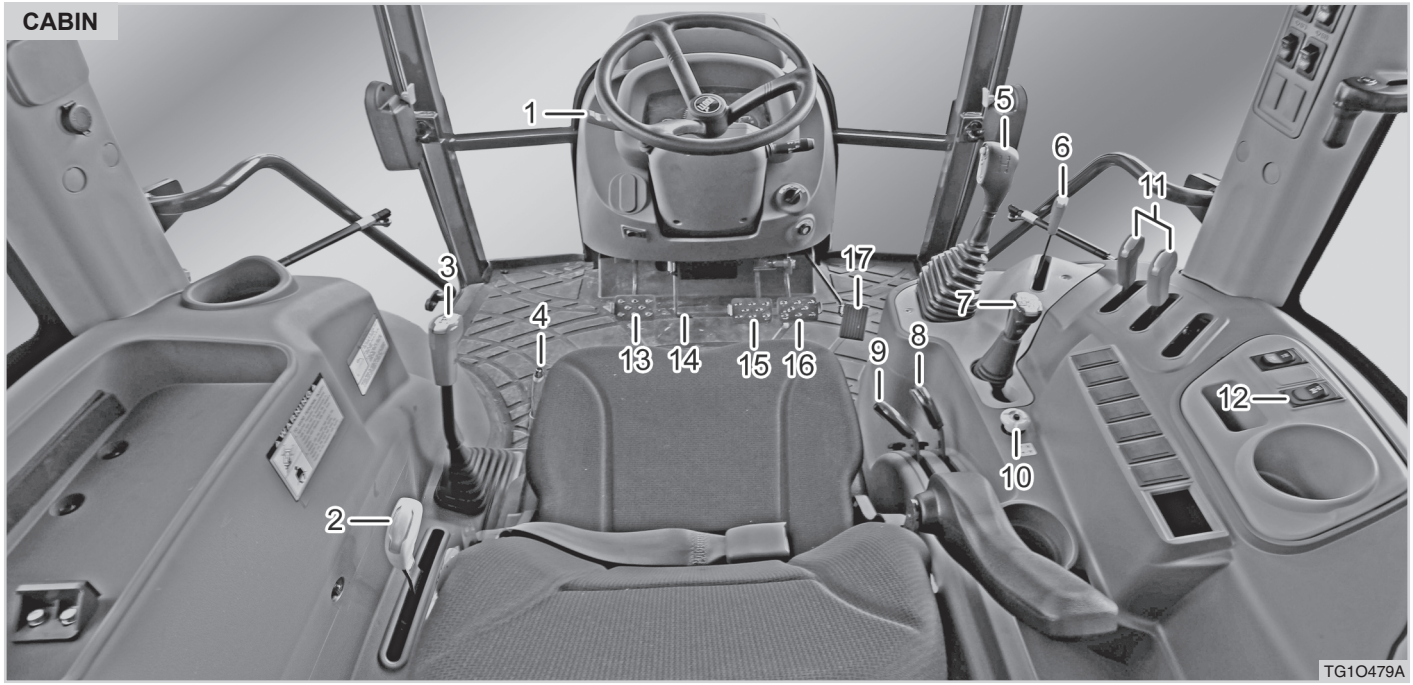
If the shuttle lever is in reverse position, this lamp turns in green.

OPERATING THE CONTROLS



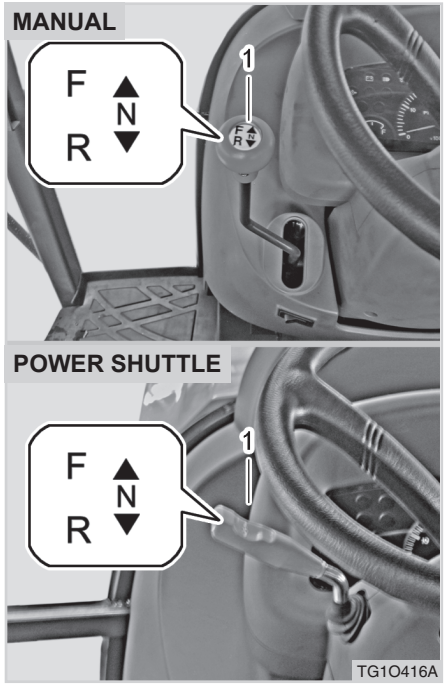
(1) Shuttle Shift Lever
(2) PTO Change Lever
(3) Range Shift Lever
(4) Parking Brake
(5) Main Shift Lever
(6) Hand Throttle Lever
(7) Joy-stick Lever
(8) Position Lever
(9) Draft Lever
(10) PTO Switch (ON/OFF)
(11) Double Acting Lever
(12) Drive Mode Selection Switch
(13) Clutch Pedal
(14) Steering Column Tilt
(15) Brake Pedal (L)
(16) Brake Pedal (R)
(17) Foot Throttle

CABIN



(1) Shuttle Shift Lever
(2) PTO Change Lever
(3) Range Shift Lever
(4) Parking Brake
(5) Main Shift Lever
(6) Hand Throttle Lever
(7) Joy-stick Lever
(8) Position Lever
(9) Draft Lever
(10) PTO Switch (ON/OFF)
(11) Double Acting Lever
(12) Drive Mode Selection Switch
(13) Clutch Pedal
(14) Steering Column Tilt
(15) Brake Pedal (L)
(16) Brake Pedal (R)
(17) Foot Throttle

SHUTTLE SHIFT LEVER



(1) Shuttle Shift Lever
(F) Forward (R) Reverse (N) Neutral

This lever is used to select forward or reverse driving.

As the transmission structure of this lever is an electro-hydraulic type, it can move in either a forward or reverse direction only by operating the shuttle shift lever without the clutch depressed. Put this lever into the neutral position when the tractor is not driven.

⚠ CAUTION

- **Reduce the speed before moving this lever since it is very dangerous to switch the driving direction at a high speed.**

HOW TO SWITCH BETWEEN FORWARD DRIVING AND REVERSE DRIVING (P/ SHUTTLE)

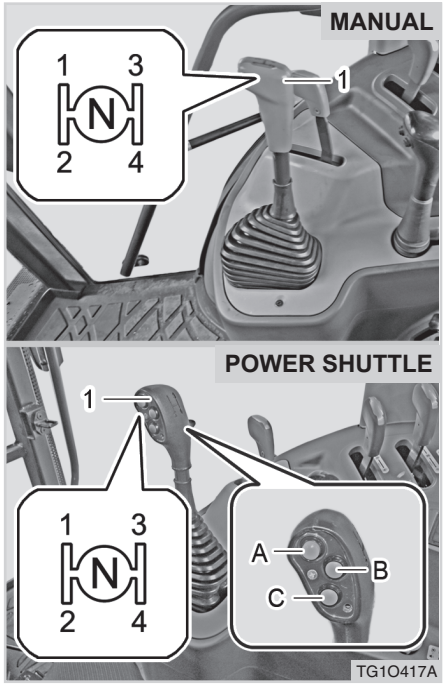
- To switch between the forward driving and reverse driving, push the shuttle shift lever forward while lifting it slightly to select forward driving. Pulling it back selects reverse driving.
- If the engine is just started, operate the shuttle shift lever at a low engine speed. When the machine starts to move, depress the accelerator pedal to increase the driving speed.
- There may be a shock from shuttle shifting if the transmission fluid temperature is low. Therefore, be sure to warm up the engine sufficiently before starting off.
- It is possible to operate the shuttle shift lever at a high speed. When pulling the lever backward during forward driving, reverse driving is selected as soon as the machine speed is decreased down to 9 km/h.

- When placing the shuttle shift lever in the neutral position, power is cut off, resulting in decrease of the machine speed and eventually stopping of the machine.

⚠ CAUTION

- **Operating the shuttle shift lever at a high speed can be very dangerous. Make sure to reduce the driving speed sufficiently before operating the lever.**

MAIN SHIFT LEVER



(1) Main Shift Lever *(2) Hand Clutch*

Four speeds can be selected by moving this main shift lever in "H"shaped path. You can shift this lever from the 1st to 4th gears even when the tractor body is moving by disengaging the clutch during driving as these gears are synchromeshed. In total, 16 forward driving speeds and 16 reverse driving speeds are provided by combination of the main shift lever (4 speeds), range shift lever (4 speeds) and shuttle shift lever.

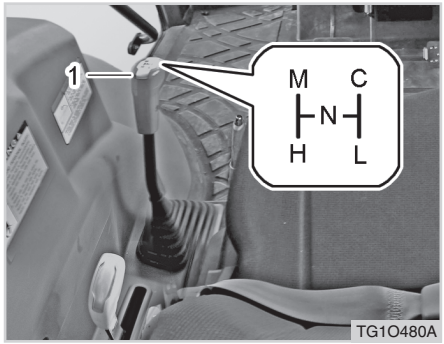
HAND CLUTCH

This functions as the foot clutch pedal. When pressing this button during driving, the main shift lever can be operated. (Without depressing the foot clutch pedal)

RANGE GEAR SHIFT LEVER

HIGH / LOW BUTTON (POWER SHUTTLE)

You can switch between the high driving speed and low driving speed by pressing this button during driving. The current shifting status can be identified through the HIGH/LOW lamp on the instrument cluster. (When the engine is started, the LOW speed is automatically selected.)



(1) Range Gear Shift lever
(C) Creep *(H) High Speed*
(L) Low Speed *(M) Mid Speed*
(N) Neutral

High, mid, low and creep speeds can be selected by the range shift lever. Make sure to shift the range shift lever after the tractor is completely stopped by depressing the clutch pedal.

If the lever is not moved freely or makes abnormal noise, put the lever into the neutral position, engage and disengage the clutch, and then try to shift the lever.

⚠ CAUTION

- **Make sure to shift the range gear shift lever with the clutch pedal depressed and the tractor stationary.**
- **Never put the range shift lever into the high speed position during driving backward as it is dangerous to drive at a high speed.**
- **The tractor is not braked by depressing the brake pedal without depressing the clutch pedal at a low speed as rotational force of the axle has a major effect at a low speed. Therefore, disengage the clutch before depressing the brake pedal to stop the tractor**

Position the creep speed lever in the "H" position in normal conditions, and shift it to the "L" position only when necessary.

When the creep speed is selected,

4

the rotational force of the axle has major effect on the tractor. (Mechanical)

Misuse of this lever can result in malfunction or damage. Therefore, note the followings:

1. It is recommended to use the creep speed under the following conditions

- When cultivating a field deeply or shallowly
- When it is not possible to work at the standard speed due to hard soil
- When transplanting
- When working with a trencher. (Agricultural)
- When loading or unloading during driving

2. It is recommended not to use the creep speed under the following conditions

- When getting out of a puddle in muddy area
- When towing or trailing
- When working with a loader
- When doing public works

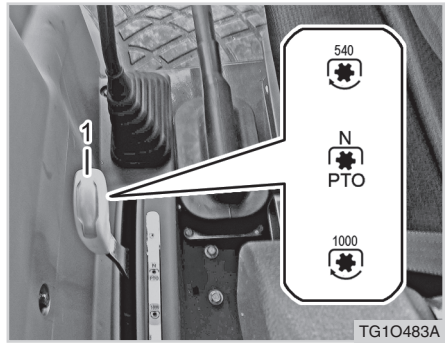
3. Precautions for creep speed

- Make sure to shift with the clutch pedal fully depressed.
- Start off the tractor with the parking brake released.
- Depress the brake pedal after disengaging the clutch to stop the tractor.

⚠ CAUTION

• The tractor is not braked by depressing the brake pedal firmly without depressing the clutch pedal at the creep speed as rotational force of the axle has a major effect at the creep speed.

PTO CHANGE LEVER



(1) PTO Change Lever

(rpm)

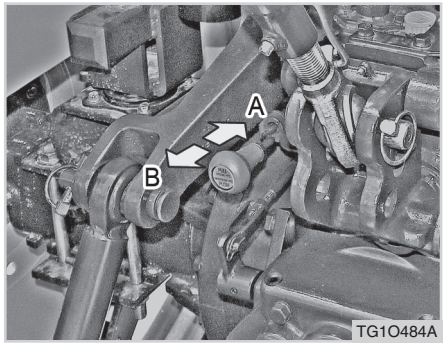
Model \ Shift	1st	2nd
ALL	540	1,000

⚠ CAUTION

To avoid personal injury :

• Disengage PTO, stop engine, and allow all rotating components to come to a complete stop before connecting, disconnecting, adjusting, or cleaning any PTO driven equipment.

PTO SELECTION LEVER



(1) PTO Selection Lever
(A) Independent PTO
(B) Ground Speed PTO

You can select independent PTO operation or ground speed (by transmission speed ratio) PTO.

To select an operating mode; stop the tractor completely, reduce the engine speed to idle, turn PTO switch to "OFF" position, put all shift lever on neutural position and now select the PTO operating mode.

INDEPENDENT PTO

The independent PTO mode is used for normal PTO operations. It operates continuously at a constant speed, independent of the transmission speed selections. The PTO shaft turns in a clockwise direction. (As viewed from the rear of the tractor)

GROUND SPEED PTO

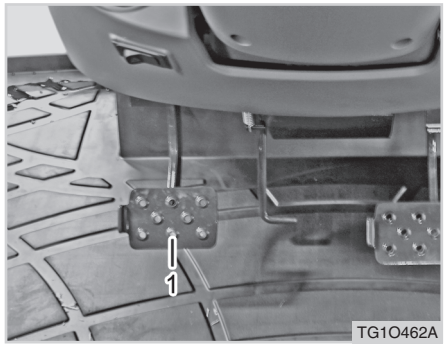
The PTO speed will be proportional to the tractor speed. The PTO shaft will stop when the tractor is stopped. It is important to note the PTO shaft will rotate in the opposite direction when the tractor is in reverse.

PTO GROUND SPEED RATIO

Shift / Model	1st	2nd	3th
ALL	4.925	7.5883	12.5442

※ Rear wheel contrast

CLUTCH PEDAL



(1) Clutch Pedal

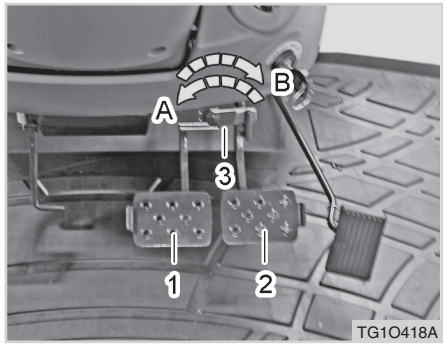
Make sure to depress the clutch pedal to its end. To start off smoothly, put the main and range shift levers into the proper positions and release the clutch pedal slowly.

It is not necessary to depress the clutch pedal when shifting shuttle lever as the electro-hydraulic clutch system is applied to this tractor.

BRAKE PEDAL

IMPORTANT

- **Never put your foot onto the clutch pedal during driving. There can be a malfunction in the hydraulic clutch.**
- **Be sure to depress the clutch pedal fully when shifting main gear or range gear.**



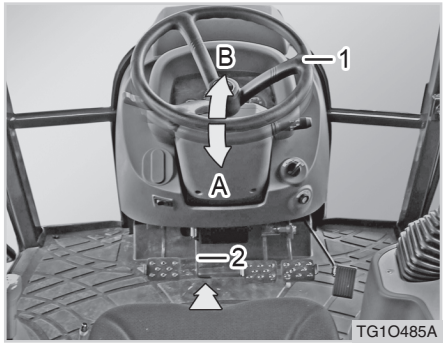
(1) Brake Pedal (L) *(2) Brake Pedal (R)*
(3) Pedal Interlock
(A) Unlock *(B) Lock*

1. Make sure to link the left and right brake pedals as shown in the figure while driving on a road. The tractor can roll over if depressing only one brake pedal at a high speed.
2. To make a sharp turn in a work field, disengage the left and right brake pedals to use one brake pedal. Unlock the brake lock, and then turn the steering wheel while depressing the brake pedal on the turning side.
3. Depressing only one brake pedal is not much effective while the 4WD is activated. (Effective in case of 2WD)

WARNING

- ***Make sure to interlock the brake pedals as an accident, such as rollover or impact, can occur during driving, and entering/exiting field.***
- ***The durability of the axle can be deteriorated if only one brake pedal is depressed during the 4WD is activated. It is more effective to use the quick turn function, rather than the brake (one side) pedal, during the 4WD is activated and to use the brake (one side) pedal during the quick turn function is activated.***

STEERING WHEEL ADJUSTMENT



(1) Handle *(2) Tilt Pedal*
(A) Lowering *(B) Lifting*

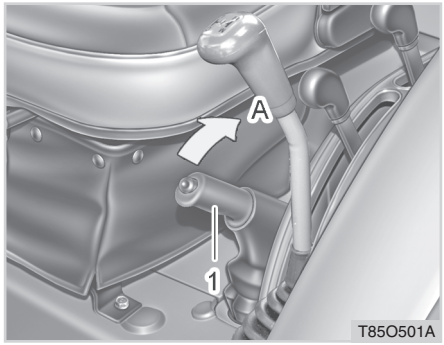
The angle of the steering wheel can be adjusted for the driver's comfort.

Hold the steering wheel with both hands, depress the tilt pedal lightly and then adjust the position of the steering wheel as desired.

⚠ WARNING

- ***Do not adjust the tilt steering while driving.***

PARKING BRAKE LEVER



(1) Parking Brake Lever
(A) Pull *(B) Push*

To stop the tractor, depress the brake pedal and pull the lever up to apply the parking brake. To engage the parking brake, pull the lever up to "A" position. To release the parking brake, pull up and press the thumb button. Then, while holding the button in, lower the brake lever.

⚠ WARNING

To avoid possible injury, death or loss of property from a machine runaway :

- ***With the engine off, the tractor may move unexpectedly regardless of the gear shift position.***
- ***Before leaving the tractor, certainly apply the parking brake to prevent machine runaway.***

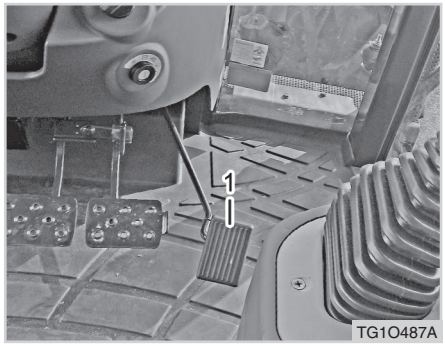
※ ***Only power shuttle model.***

⚠ CAUTION

- **If the vehicle is driven with the parking brake partially or completely engaged, it may cause early wear of the brake disc.**

4

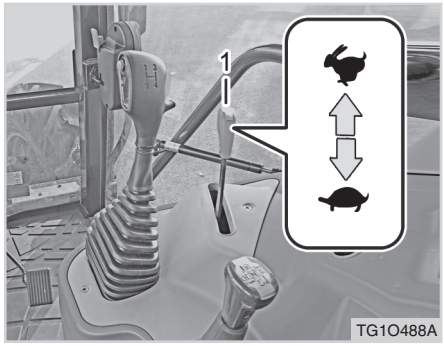
FOOT THROTTLE



(1) Foot Throttle

The foot throttle is mainly used during driving on a road while the hand throttle lever is mainly used in a work field.

HAND THROTTLE LEVER



(1) Hand Throttle Lever
Slow *Fast*

The hand throttle lever is to control the engine rpm. The engine accelerates to its full speed by pushing the hand throttle lever (position) completely out while pulling the lever (position) decelerates the engine.

The hand throttle lever is mainly used while working on a field.

⚠ CAUTION

- **Using the hand throttle lever during driving can lead to an accident as it becomes hard to decelerate the tractor rapidly.**

4WD SWITCH

(1) 4WD Switch

The 4WD (4 Wheel Driving) is to increase traction by driving four wheels. It is hydraulically operated by a simple switch operation.

To engage the 4WD, press the switch up. To disengage it, return the switch.

The 4WD function can be used under the following conditions :

1. If high traction is needed in a humid area
2. When towing a trailer or using a loader
3. When working on a sandy surface
4. When the tractor is pushed out by reaction from the implement during cultivating on a hard surface.
5. When cultivating a field or driving over a bank

⚠ CAUTION

To avoid accident :

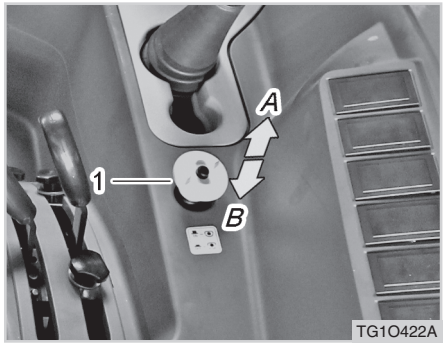
- **Engage the switch only when the vehicle is stationary.**
- **While the 4WD is engaged, drive the vehicle with low speed as steering and braking characteristics may differ.**
- **It is possible to engage the 4WD during driving. However, you may hear noise or feel slight shift impact some at times in this case. For safe driving, engage the 4WD when the tractor is stationary.**
- **The 4WD should not be used on a paved road as tires can be worn faster and could cause damage to front axle.**

CALIBRATION SWITCH

(1) Calibration Switch

This switch is for calibration of shuttle lever and clutch pedal. if any calibration is required please contact **KIOTI** dealer at your convenience.

PTO SWITCH



(1) PTO Switch
(A) ON : ON *(B) OFF : OFF*

The PTO switch is used to supply power from the tractor to the implement.

Make sure to put this switch into the "OFF" position before starting the engine. Otherwise, the engine cannot be started.

The rear PTO rotates at 540 rpm (1st) when the engine speed is approx. 2,200 rpm.

IMPORTANT

- **When engaging the PTO, lower the engine speed, engage the PTO, and then accelerate the tractor gradually in order to prevent impact load to the PTO from abrupt operation.**

NOTE

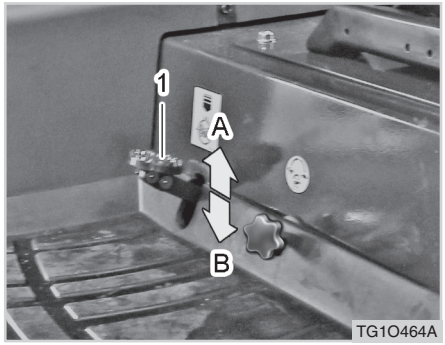
- The mark "▲" on the tachometer indicates 540 rpm of the PTO.

CAUTION

To avoid personal injury and accident :

- **Before disassembling or cleaning the PTO system, make sure that the PTO switch is in the "OFF" position, the engine is stopped, and all parts are stopped.**
- **Always keep the PTO driving part clean. Also, check that the PTO cover is open.**
- **Disengage the PTO while driving on a road.**
- **Be careful not to get your hand, foot, cloth, or hair into any driving part while the PTO is in operation. You can be severely injured.**
- **Make sure that no one is around the tractor and implement while the PTO is in operation.**

DIFFERENTIAL LOCK PEDAL (REAR)



(1) Lock Pedal
(A) Release to Disengage
(B) Depress to Engage

The differential lock is to secure the differential system and keep the wheel rotation on both sides the same in order to enhance the traction of the rear axle.

Depressing the pedal engages the differential lock while releasing the pedal disengages the differential lock.

Use this system under the following conditions.

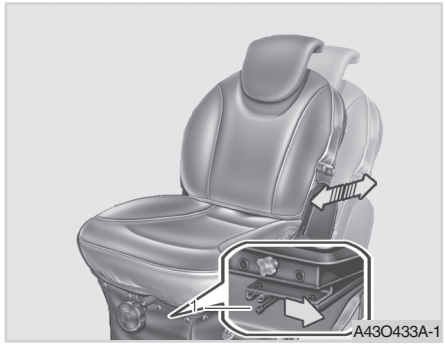
1. When any wheel slips and the tractor does not move in the field.
2. When it is hard to escape a paddy field.

⚠ CAUTION

- **The differential lock should be engaged only while the driving clutch is engaged. If the differential lock pedal does not move when depressing it, try to depress it again after releasing it.**
- **When engaging the differential lock, reduce the engine speed. After engaging it, accelerate the tractor.**
- **Make sure to set the steering wheel in the straight ahead position while the differential lock is in use. Otherwise, the differential system can be damaged.**

SEAT ADJUSTMENT

SEAT SLIDING



(1) Seat Adjustment Lever

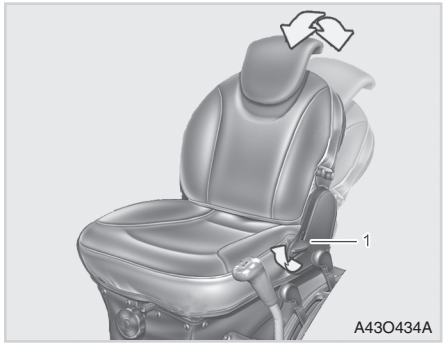
To adjust the seat position, pull the lever(1) to left under the front of the seat, slide the seat to the desired position, and then release the lever.

Make sure that the seat is firmly fixed by moving it gently after adjustment.

⚠ CAUTION

- **Do not put a hand between the seat and the slides when adjusting the seat position. You can get injured unexpectedly.**

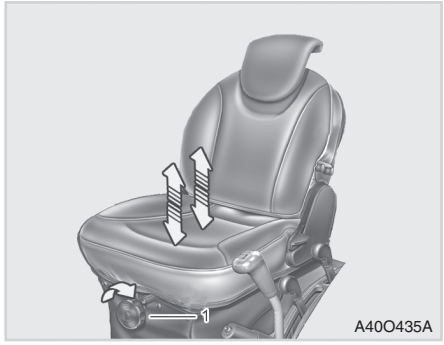
SEATBACK RECLINING



(1) Seatback Adjustment Lever

To change the seatback angle, raise the lever (1) on the left of the seat. Then, adjust the seatback angle with the lever pulled. Release the lever after adjustment. Make sure that the lever is returned and the seat is firmly fixed after adjustment.

CUSHION STRENGTH ADJUSTMENT



(1) Cushion Adjustment Lever

The seat cushion can be adjusted according to the weight of the driver.

Turning the cushion adjustment lever counterclockwise to the 50 kg position makes the cushion lighter, and turning the lever clockwise to the 120 kg position makes the cushion heavier.

SEAT BELT

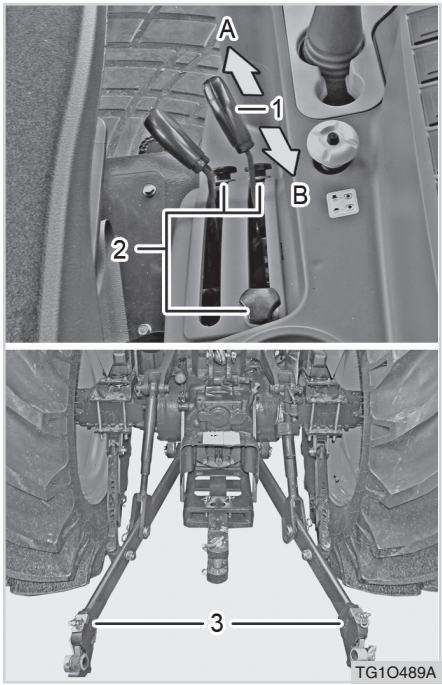
(1) Seat Belt

The seat belt is self-retracting type. Make sure to fasten the seat belt before driving.

POSITION CONTROL LEVER

⚠ WARNING

- ***Always fasten the seat belt when the tractor has ROPS properly. Otherwise, never wear the seat belt.***
- ***Make sure that the seat belt is not twisted. It cannot work properly, leading to a dangerous situation.***
- ***Be extra careful not to let any part of your body under the tractor or an implement when lowering an implement.***



(1) Position Control Lever *(2) Lock Bolt*
(3) Lower Link
(A) Lowering *(B) Lifting*

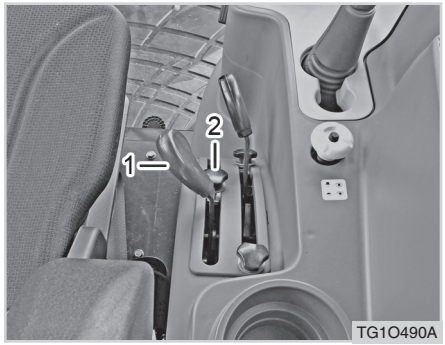
The position control lever is used to adjust the height of implements on the 3-point hitch ends.

The implement attached to the lifting arm can be lowered by pushing the lever while the implement is raised by pulling the lever.

In order to limit the lowering height of implements, use the lock bolt (2) to limit the operating range of the lever.

For detailed information, refer to "Operation" in Chapter 5.

DRAFT CONTROL LEVER



(1) Draft Control Lever (2) Stop Bolt

The draft function can be used for the plow which is installed to the lower link. (Lifting arm)

If the plow is applied with excessive draft, the lifting arm is automatically raised to reduce the draft and then returned to its original. This is called "Draft Function". The plowing depth can be controlled by the soil status by putting the draft control lever into the "Deep" position to activate the draft function at mid load and putting the lever into the "Shallow" position to activate the draft function at light load.

For detailed information, refer to "Initial Operation" in Chapter 5.

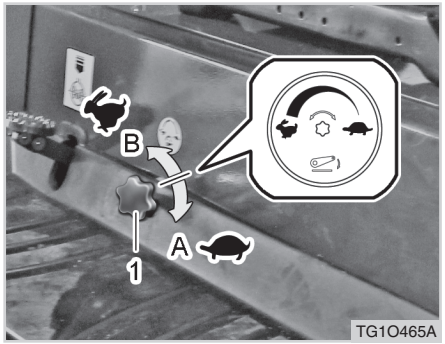
JOYSTICK LEVER

(1) Joystick Lever

This joystick lever is used mainly to operate the front end loader which attached to the tractor.

For detailed information, refer to "Handling Loader" in Chapter 6.

LIFTING ARM (LOWER LINK) SPEED CONTROL KNOB



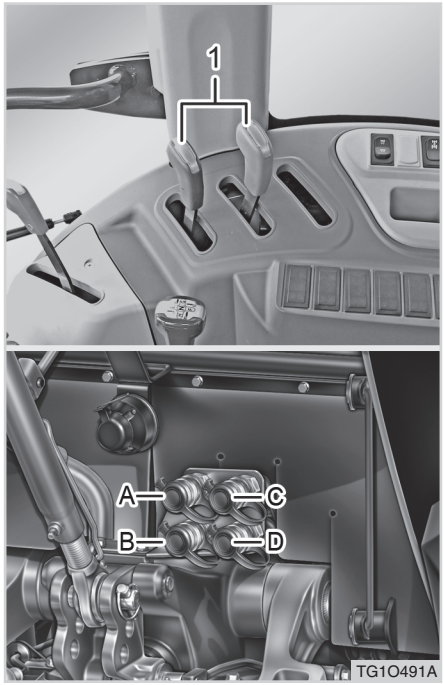
(1) Lowering Speed Control Knob
(A) Low Speed *(B) High Speed*

Turning the knob counterclockwise increases the lowering speed while turning it clockwise decreases the lowering speed. Also, turning it clockwise to its end can fix the implement to a certain position.

NOTE

- This knob does not control the lifting speed of the lower link.

DOUBLE ACTING LEVER



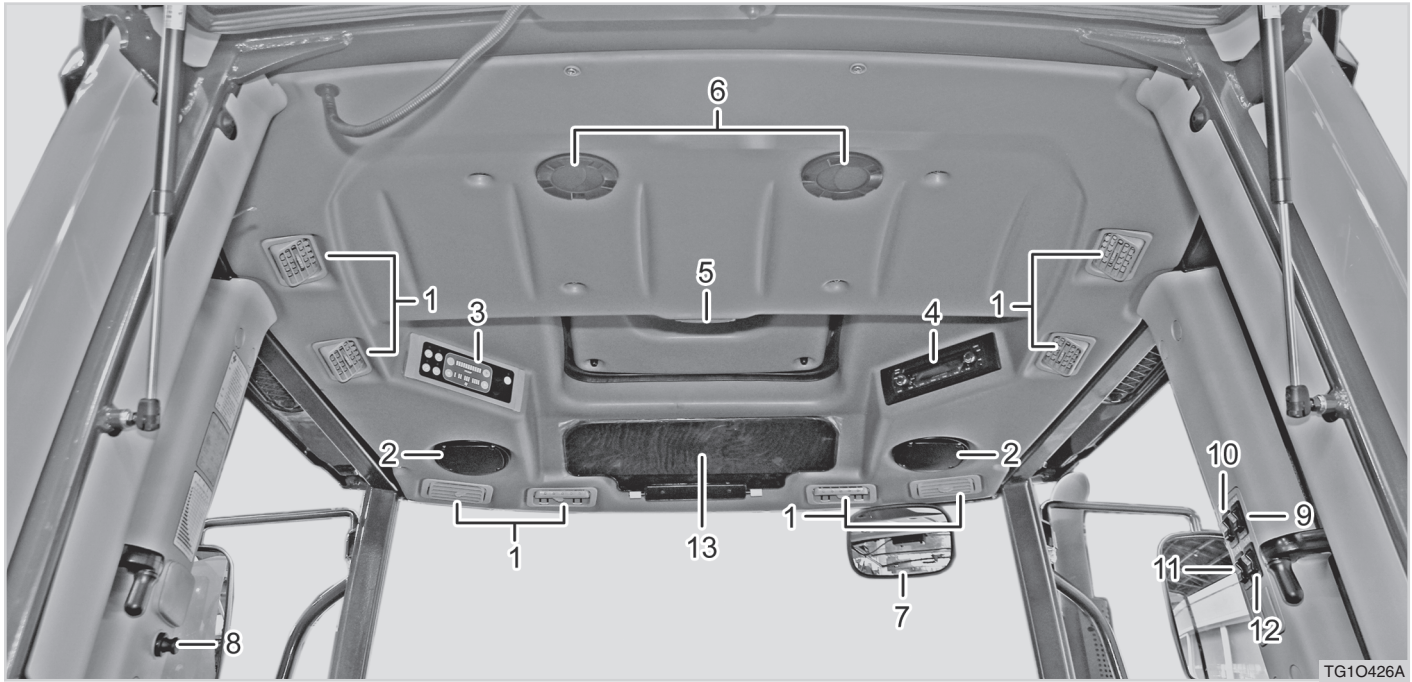
(1) Double Acting Lever
(A) Port A *(B) Port B*
(C) Port C *(D) Port D*

This lever is used to control a auxiliary hydraulic implement installed to rear.

Lowering the lever supplies hydraulic fluid to Port "B", while raising it supplies hydraulic fluid to Port "A".

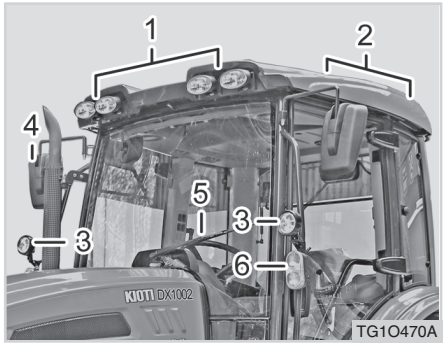
See chapter 5, "Operation" for details.

CABIN SYSTEM
INTERIOR DEVICES



(1) Air Grill
(2) Speaker
(3) Heater/Air Conditioner Switch
(4) CD Player
(5) Sunroof Handle
(6) Air Inlet
(7) Room Mirror
(8) Power Socket
(9) Working Light (Rear) Switch
(10) Working Light (Front) Switch
(11) Wiper Operating Switch (Front)
(12) Wiper Operating Switch (Rear)
(13) Sunvisor (Optional)

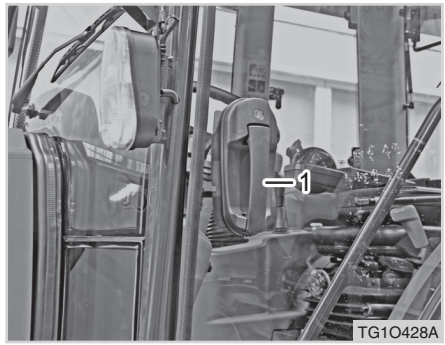
EXTERIOR DEVICES



(1) Work Light (FR) *(2) Work Light (RR)*
(3) Work Light *(4) Outside Rearview Mirror*
(5) Wiper *(6) Turn signal lamp*

1. The cabin is designed optimally for the driver's comfort and convenience.
2. This tractor has wide windows as well as outside rearview mirrors on both sides to provide a clear and wide rear view.
3. The cabin can be kept comfortable and pleasant by operating the air conditioner and heater.
4. The cabin structure is safe as it is verified by the ROPS(Roll Over Protection Structure) test. However, make sure to fasten the seat belt for best protection.

ENTRANCE



(1) Door Handle

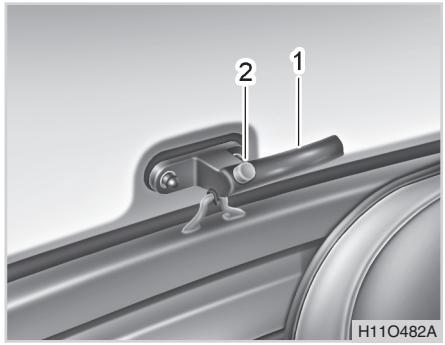
Pull the handle forward to open the door. The door can be locked by turning the lock cylinder on the outer side of the door with the ignition key.

UNLOCKING THE DOOR

(1) Door Lever

Push the lever to open the door in the cabin.

REAR WINDOW



(1) Handle of Rear Window
(2) Button

Press the button on the rear window handle lightly to open the rear window in the cabin.

To close it, hold the handle and pull it gently.

⚠ WARNING

- ***The rear window may not be opened due to an implement. Make sure to check if there is enough space to open the window to prevent damage and breakage by an implement.***

⚠ WARNING

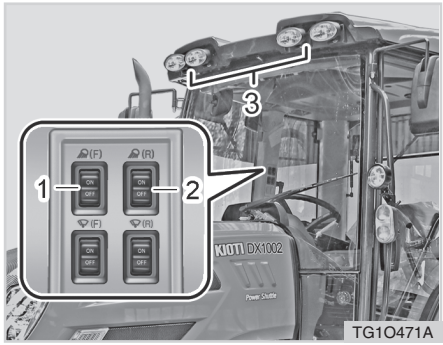
- ***Never drive the tractor with the door open. An accident can occur.***

SIDE WINDOW

(1) Side Window

When operating the tractor with the doors open, use the extendable door stopper. Do not leave the doors fully open while driving the tractor. Side windows can be partially open to vent the cab.

WORKING LIGHT



(1) Working Light Switch (Front)
(2) Working Light Switch (Rear)
(3) Working Light (Front/Rear)

The working lights are installed to the front and rear sections of the roof, and their operating button are installed in the right panel in the cabin.

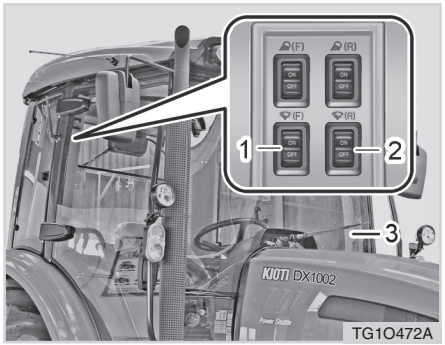
To turn on, position the switch marked (front) to "ON" the position.

The key switch should be positioned to the "ON" position at this moment.

⚠ WARNING

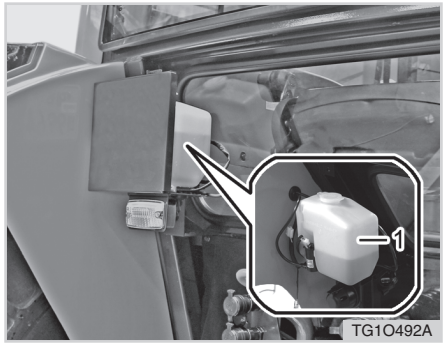
- ***Do not drive the tractor on a road with the work lights ON at night.***
- ***The approaching or following vehicle's visibility can be disturbed, which is very dangerous for both drivers. In this case, use the hazard lamps.***

WIPER



(1) Wiper Operating Switch (Front)
(2) Wiper Operating Switch (Rear)
(3) Wiper Front

1. To turn on, position the switch marked(wiper) to the "ON" position.
2. The washer fluid is sprayed through the nozzle of the wiper by pressing the switch again with the key switch in the "ACC" or "ON" position.



(1) Washer Fluid Tank

3. The washer fluid for the windshield is installed on the rear left side outside the cabin.

⚠ WARNING

- ***Normal water can be used as the washer fluid, but it is recommended to use the washer fluid made exclusively for vehicles. Especially, make sure to use seasonal washer fluid in winter.***
- ***The washer fluid motor can be damaged if you are trying to spray the washer fluid when its tank is empty. Therefore, make sure to check the fluid level before driving.***
- ***Spray enough washer fluid and operate the wiper if there is dirt on the window. When operating the wiper while it is frozen to the window, its fuse can be blown. In this case, operate the wiper after increasing the cabin temperature enough to defrost the wiper.***

RADIO CASSETTE

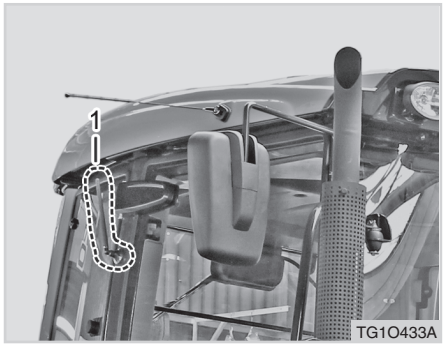
(1) CD Player

Pushing the PWR switch one time makes the power "ON", and pushing the PWR switch more one time again makes the power "OFF".

⚠ CAUTION

- **If the volume of the audio system is too high, the driver can be distracted, resulting in an accident.**

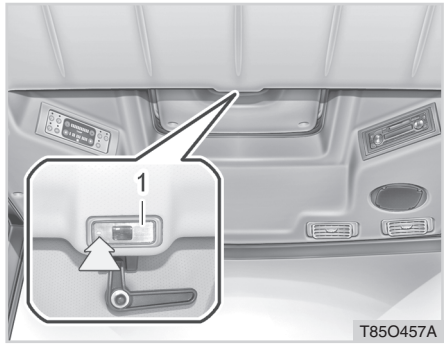
ANTENNA



(1) Antenna

Check the contact and angle of the antenna in case of poor signal reception.

ROOM LAMP



(1) Room Lamp

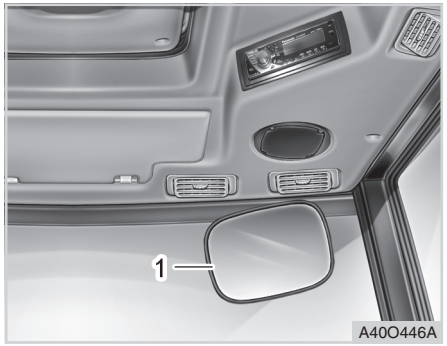
If you press the lens, the room lamp will be turned on. If you press it again, it will be turned off.

⚠ CAUTION

- **The room lamp can be operated without the key inserted. However, turning it on for an extended period of time can discharge the battery.**

ACCESSORY

INSIDE REAR VIEW MIRROR



(1) Inside Rearview Mirror

The cabin is equipped with the inside rearview mirror for the driver's convenience.

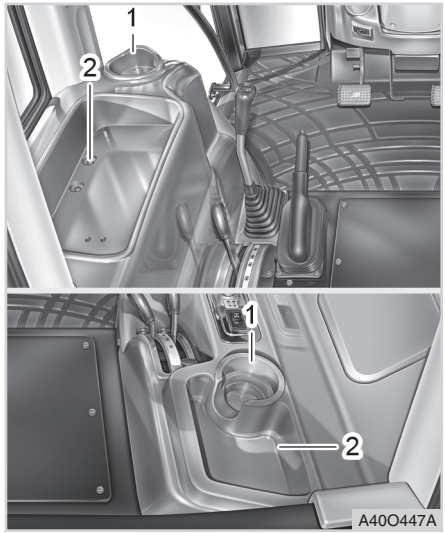
Adjust the angle of the mirror before driving to secure for a clear rear view.

POWER SOCKET / ASHTRAY/HANGER

(1) Power Socket *(2) Hanger*

Convenience accessories include Power Socket, mirror and clothes hanger.

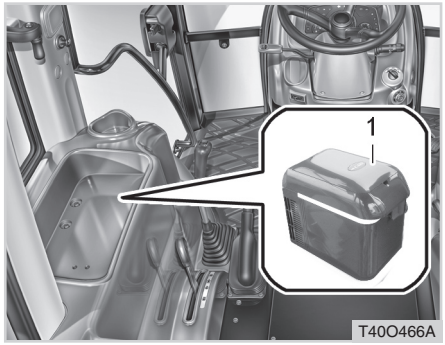
CUP HOLDER AND STORAGE



(1) Cup Holder *(2) Storage*

There are two storage areas and three cup holders above the left and right lever guides in the cabin.

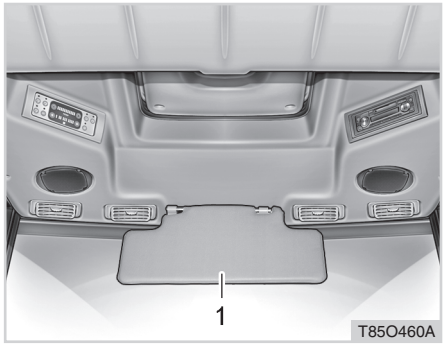
REFRIGERATOR / HEATING CABINET



(1) Refrigerator / Heating Cabinet

There is the refrigerator/heating cabinet which is located inside left fender cover in cabin to storage a drinking water and beverage. (Ref to the refrigerator/heating cabinet owner`s manual)

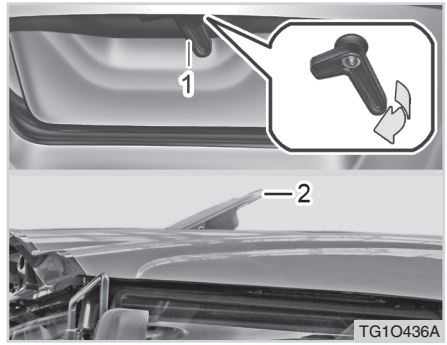
SUN VISOR (IF EQUIPPED)



(1) Sun Visor

Pull it down to block the sunlight from the front. Keep it folded unless necessary.

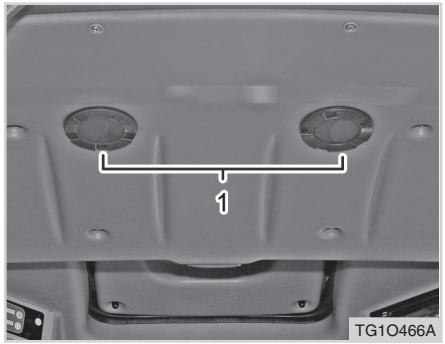
SUNROOF



(1) Sunroof Lever *(2) Sunroof*

1. You can use it, to let the fresh air in the cab.
2. If you want to open it, just press the button of the handle and rotate handle, then it will smoothly open by the gas cylinder.
3. If you want to close it after letting the fresh air in, just pull the handle lightly.
4. When you open and close it, do not apply the excessive force.

AIR RECIRCULATION AND FRESH AIR MODE



(1) Internal Air Inlet

It is possible to recirculate internal air or draw fresh air by operating the air conditioner. (Ref to the "Heater and Conditioner" in this chapter)

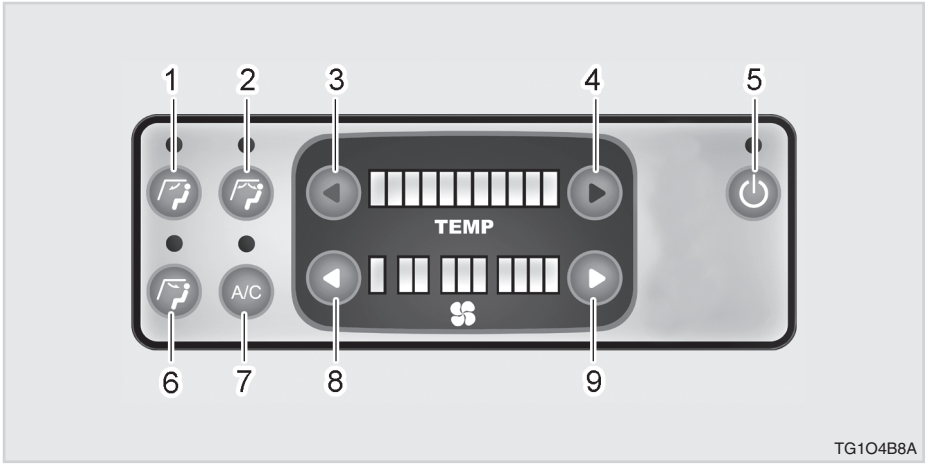
It is not possible to block outside air from coming in, even in the recirculation mode.

In the fresh air mode, air circulating in the cabin is 100% fresh air.

⚠ WARNING

- ***This cabin is not designed for spraying chemicals and cannot block polluted outside air from entering.***

HEATER AND AIR CONDITIONER



(1) Defrost Switch
(2) Bi-level Switch
(3) Temp. Down Switch
(4) Temp. Up Switch
(5) Power Switch
(6) Vent Switch
(7) A/C Switch
(8) Blower Down Switch
(9) Blower Up Switch

The air conditioner should be operated with the engine running.

⚠ WARNING

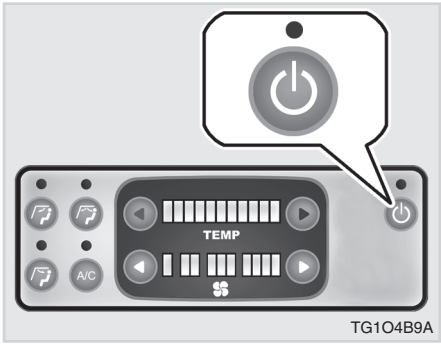
- ***Do not leave a child alone in the cabin. His/her health can be threatened as internal temperature rises rapidly in hot weather or on a sunny day.***

⚠ WARNING

- ***Use the fresh air mode in normal conditions and use the air recirculation mode only if necessary. Continued operation of the air recirculation mode can cause the inside to become stuffy, causing headaches, drowsiness, or frost on the windows. Do not operate the recirculation mode for an extended period of time.***

OPERATING METHODS

POWER SWITCH

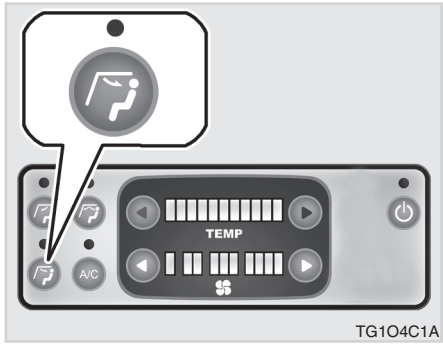


TG1O4B9A

It is used to operate or stop the heater/air-conditioning system as well to supply the power.

The power switch is used to turn the heating/airconditioning system "ON" an "OFF".

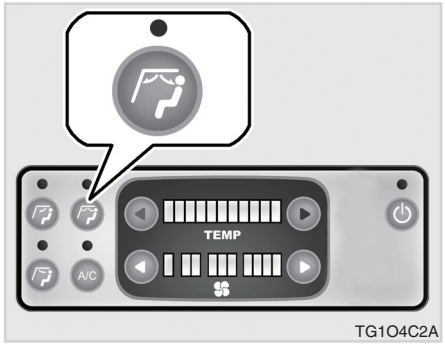
VENT SWITCH



TG1O4C1A

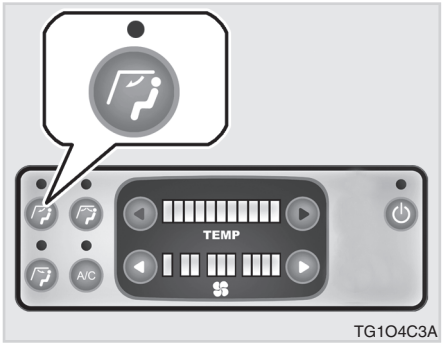
If this switch is pressed, air comes out from 4 grilles of the left/right.

BI-LEVEL SWITCH



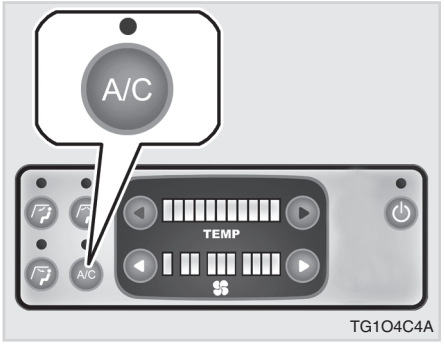
If this switch is pressed, air comes out from 4 positions of the front and 4 positions of the left/right simultaneously.

DEFROST SWITCH



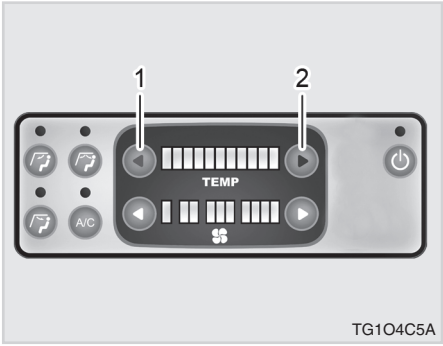
If this switch is pressed, air comes out from 4 grilles of the front. Also it is efficient to defrost the windshield.

A/C SWITCH



To operate the air-conditioner, press this switch.

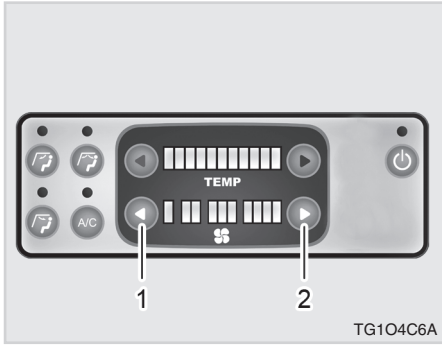
TEMPERATURE CONTROL



(1) Temp. Down Switch
(2) Temp. Up Switch

The temperature control raises or lowers the air temperature.

BLOWER UP CONTROL



(1) Blower Down Switch
(2) Blower Up Switch

This switch adjust the speed of the fan. There are 4 steps from low to high.

⚠ WARNING

- ***If you sleep with the air conditioner or heater in operation, you may be suffocated to death.***
- ***If keeping the A/C on for an extended period of time, inside air can become impure. Therefore, draw outside air and ventilate the cabin regularly.***

⚠ CAUTION

- **Keep the windows closed while the A/C is in operation for effective operation.**
- **Turn off the air conditioner for better engine power when the work load rapidly increases.**
- **When the tractor is stationary and being used in high load work, reduce the A/C operation period as the engine may be overheated.**
- **Make sure to operate the air conditioner once or twice a month in winter season to prevent refrigerant leakage and facilitate the compressor lubrication for durability of the A/C compo-nents.**
- **If the tractor has been parked under strong sunlight for a long period of time, open the windows to ventilate the cabin before operating the A/C.**

AIR CONDITIONER MAINTENANCE

Make sure to follow the instructions below to keep the air conditioner in the best condition :

1. Operation in winter season :

   During the winter time, run the air conditioner once or twice every month to prevent refrigerant leakage and corrosion in the air conditioner system and to facilitate oil circulation in the compressor in order to prevent malfunction.

   The A/C does not operate when the air temperature is below 2 É. Therefore, warm the inside air by operating the heater in order to be able to operate the A/C.

2. Air conditioner condenser care:

   If there is foreign material in the A/C condenser and engine radiator, their cooling performance may be deteriorated. Therefore, always keep them clean for their optimal cooling performance. When cleaning the core of the condenser, use a soft brush and water carefully to avoid bending the cooling fins.

3. Operation in summer season :

   Make sure to check the tension of the A/C belt before using the A/C frequently.

⚠ CAUTION

- **The A/C system is charged with new refrigerant that does not destroy the ozone layer. Be careful when servicing the A/C system.**
- **Do not use unspecified refrigerant and compressor oil, or the air conditioner system could be seriously damaged.**
- **The performance of the A/C becomes poor when the refrigerant is insufficient. However, charging the air conditioner with excessive refrigerant affects its performance negatively. Therefore, have the system checked by a KIOTI Dealer if malfunction is found.**

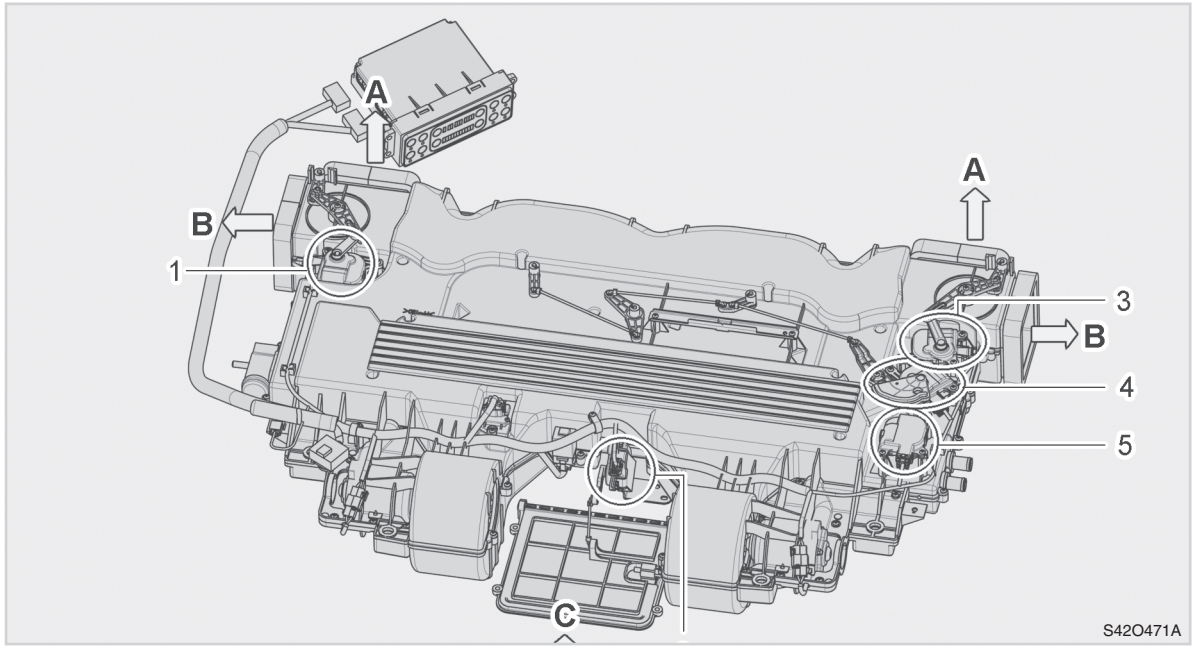
SPECIFICATIONS FOR A/C REFRIGERANT AND LUBRICANT

Item	New Refrigerant	Compressor Oil
Type	R-134a	UCON488
Charging amount	1.1 kg	265 cc

⚠ WARNING

- ***Have the air conditioner serviced by a qualified service personnel. If it is serviced by an unqualified person, he/she can be injured by the refrigerant under high pressure.***

SYSTEM CONFIGURATION



(1) Mode Actuator-1
(2) Indoor / Outdoor Air Actuator
(3) Mode Actuator-2
(4) Temperature Actuator
(5) Water Valve Actuator
(A) Defrost Outlet
(B) Vent Outlet
(C) Air Inlet

SELF-DIAGNOSIS FUCNTION

DIAGNOSTIC METHOD

If there is problem in the heater/air-conditioner, inspect it as below self-diagnostic method.

1. Turn "ON" the ignition switch.
2. Press the vent switch more than 4 times in 2 seconds with the air intake switch pressed.
3. Check that the switch indicator flashes 5 times.
4. If the system returns to the previous state of self-diagnosis, it is normal, if not, inspects items of self-diagnosis.
5. When the power switch is pressed once, the system is returned to the previous state of self-diagnosis, and when pressed twice, the system stops.

NOTE

- The system is stopped during self-diagnosis function.

ERROR MODE DISPLAY

1. If there's faulty parts, the corresponding indicator is flashed twice at an interval of 0.5 seconds, the other indicators are turned off.
2. The corresponding indicator display of faulty parts is as below.

Faulty parts	Indicator
Mode actuator-1	
Mode actuator-2	
Temperature actuator	
Water valve actuator	
Intake air actuator	
A/C temperature sensor	

⚠ CAUTION

- **A/C system uses new refrigerant R-134A. the use of the wrong refrigerant can cause a malfunction of the system such as compressor failure. be sure proper refrigerant is used prior to charging the system.**
- **Water in the A/C system can cause a cooling malfunction and damage cycle parts.**
- **Insufficient amount of oil in the compressor will cause poor lubrication and compressor failure.**
- **Excessive amounts of oil will cause a cooling malfunction.**
- **Refrigerant and compressor oil levels should be checked or replaced if the following occurs:**
  - **Refrigerant or oil leaks from A/C system**
  - **Serious refrigerant leaks**
  - **After repair of A/C system or part replacement**

A/C REFRIGERANT INSPECTION

If the refrigerant is insufficient, A/C performance becomes inefficient. Also overcharging has a bad effect on the system. If malfunction is detected, have it serviced at a local **KIOTI** dealer.

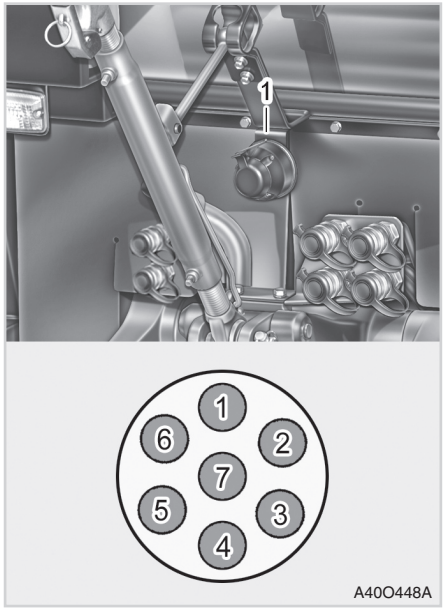
A/C REFRIGERANT CAPACITY

Item	New Refrigerant	Compressor Oil
Type	R-134a	UCON488
Charging amount	1.1 kg	265 cc

⚠ WARNING

- ***Never sleep in the cabin with A/C activated. There will be dangerous of death from suffocation.***
- ***Provide periodical ventilation to prevent the indoor air from polluting while a long driving with A/C activated.***

7-PIN POWER OUTPUT SOCKET



(1) Power Connector

The 7-pin socket is installed on the rear left side of the tractor.

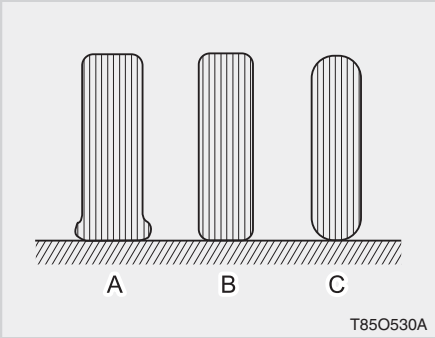
This supplies power to the brake lamps, turn signal lamps, and position lamps of the trailer.

No	Circuit	Color of wire
1	Earth	EW
2	Tail lamp and license plate lamp	Br
3	Left turn signal	G
4	Stop	R
5	Right turn signal	Y
6	Position Lamp	B
7	Spare	L

⚠ WARNING

- ***When driving on a road with an implement which has exterior lamps, such as a trailer, make sure to turn on those lamps by connecting them to the 7-pin socket in order to prevent an accident.***
- ***Make sure to check for proper operation after connecting the 7-pin socket to the trailer. It may not operate depending on the trailer specifications. Consult your local KIOTI Dealer for this issue.***

TIRES, WHEELS AND BALLAST
GENERAL TIRE INFORMATION



(A) Insufficient (B) Standard
(C) Excessive

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.

⚠ WARNING

- ***Do not use tires larger or smaller than specified.***

⚠ WARNING

- ***Do not disassemble or assemble the tire. If it is necessary to disassemble/assemble the tire, let a qualified service person perform the work.***

⚠ WARNING

- ***Use caution when inflating or checking air pressure.***

INFLATION PRESSURE

Always maintain the proper tire inflation pressure. Make sure the tire pressure does not exceed the pressure recommended in the manual.

Class	Tire Sizes	Inflation Pressure
Front	12.4-24 / 8PR	2.8 kg/cm² 275 Kpa 40 psi
Rear	18.4-30 / 8PR	1.7 kg/cm² 165 Kpa 24 psi
Front	12.4-24 / 8PR	2.8 kg/cm² 275 Kpa 40 psi
Rear	18.4-34 / 8PR	1.5 kg/cm² 152 Kpa 22 psi

** AG : Agricultural Tire*

NOTE

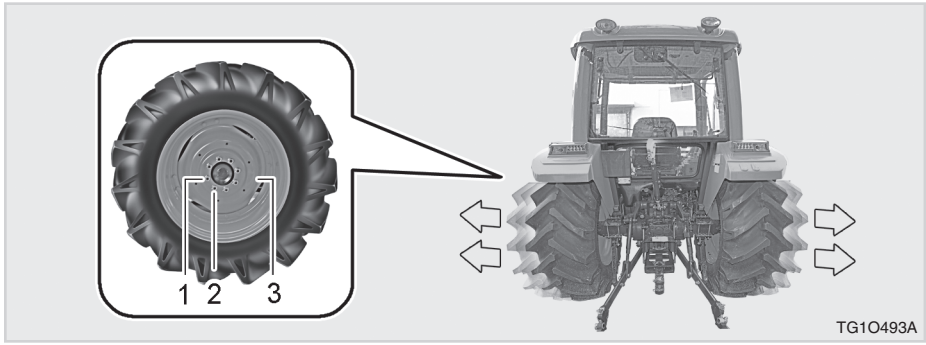
- Keep the front tire pressure to maximum when using the front end loader or front suitcase weights.
- If tires with a different size from the ones already in use are installed, contact the **KIOTI** dealer for the front/rear wheel speed ratio. Improper front/rear wheel speed ratio can result in excessive wear of the tires.

T46W031A

WARNING

- ***Do not weld or apply heat to the tire rim or disc. The tire can explode due to the rapidly increased pressure in the tire.***
- ***Check tires for inflation pressure, damage, deformation, and excessive wear on lug and damage of rim and disc. Also check if wheel bolts, rim bolts, and nuts are loose.***

TREAD



(1) Bolt *(2) Rim Bolt* *(3) Rim*

The rear axle tread width are adjustable by changing the installation of the tire (together with rim) to the disk, to suit the type or condition of work.

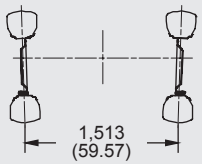
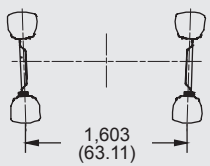
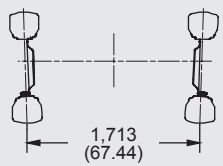
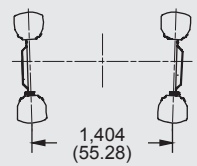
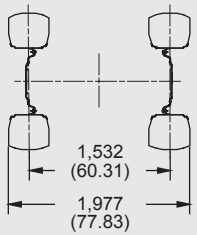
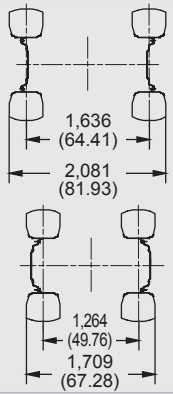
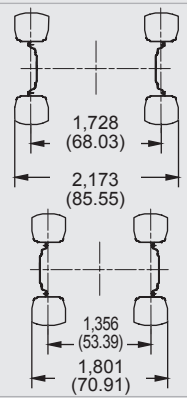
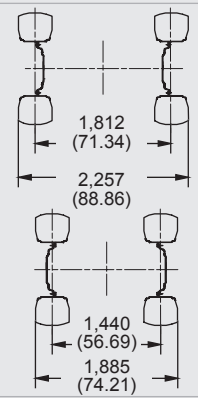
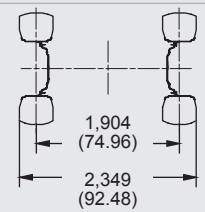
⚠ WARNING

Never operate tractor with a loose rim, wheel, or axle.

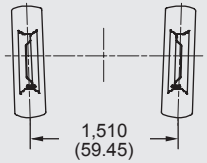
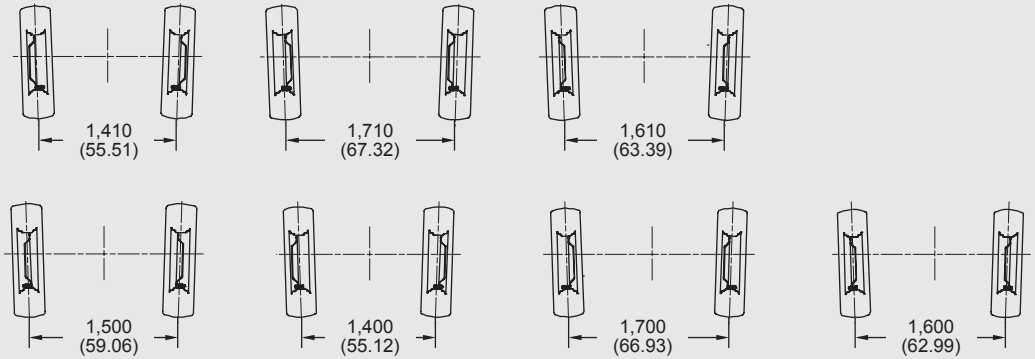
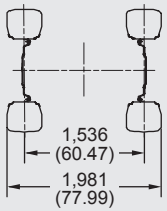
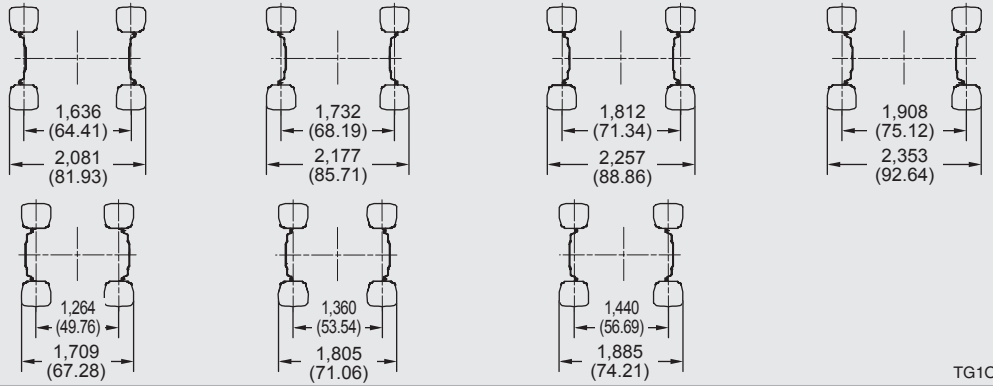
- ***Always tighten nuts or bolts to the specified torque.***
- ***Make sure to frequently check that all these parts are firmly tightened.***
- ***Make sure to perform inspection daily.***

[PX7520PC]

mm (in.)

	STANDARD	ADJUSTMENT RANGE			
Front					
Rear					 TG1O439A

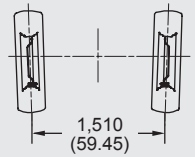
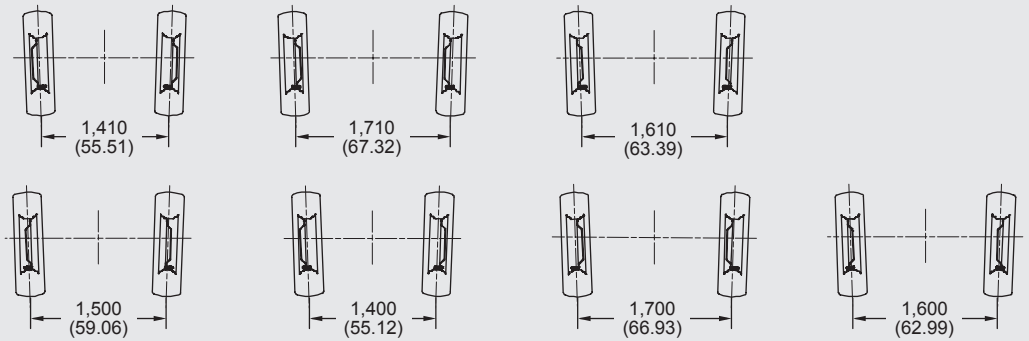
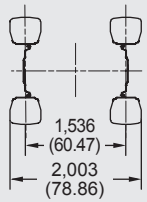
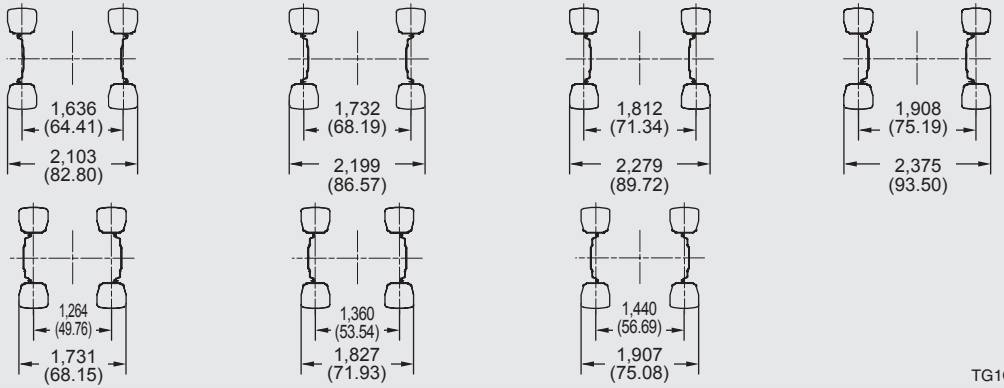
[PX9020C] mm (in.)

	STANDARD	ADJUSTMENT RANGE
Front		
Rear		

TG1O440A

[PX1002C/P]

mm (in.)

	STANDARD	ADJUSTMENT RANGE
Front		
Rear		

TG1O441A

Tightening torque	
Wheel nut	**Wheel nut**
28 ~ 32.5 kgf·m 274.6 ~ 318.7 N·m	274.6 ~ 333.4 N·m 28 ~ 34.0 kgf·m

⚠ WARNING

- ***Use tires approved by KIOTI only.***
- ***Assemble the tire as shown in the figure.***
- ***Contact your local KIOTI Dealer if it is necessary to change the tire specification or installation method.***

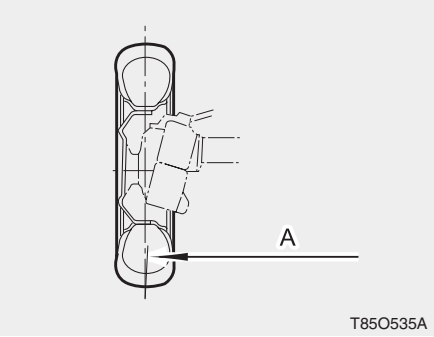
WHEEL INSTALLATION DIRECTION

For agricultural tires, make sure to install them with their arrow marks on their side pointing the front driving direction.

The tire is correctly installed if the tread mark "V" on the ground is shown correctly, not up side down, while the tractor is moving forward.

WHEEL TORQUE AND DIRECTION

FRONT WHEEL INSTALLATION PATTERN



(A) Tread

Front tread width can not be adjusted.

If it is necessary to adjust it, contact your local **KIOTI** Dealer.

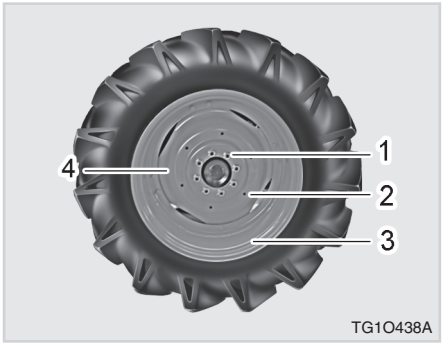
If it is damaged by unapproved modification, it will not be covered by warranty.

Tightening torque of wheel bolt (nut)
17~19 kgf·m 166.7~186.3 N·m

⚠ WARNING

- ***Use tires approved by KIOTI only.***
- ***Assemble the tire as shown in the figure.***
- ***Contact your local KIOTI Dealer if it is necessary to change the tire specification or installation method.***

REAR WHEEL INSTALLATION PATTERN



(1) Wheel Nut *(2) Rim Bolt*
(3) Rim *(4) Disc*

The rear axle tread width are adjustable by changing the installation of the tire (together with rim) to the disk, to suit the type or condition of work.

ADDITIONAL WEIGHT(IF EQUIPPED)
ADDITIONAL FRONT WEIGHT

(1) Additional Front Weight

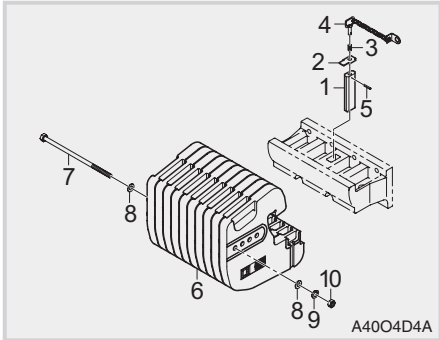
If the loader is not installed, attach a weight to the front frame of the tractor as a safety measure.

If a heavy implement is installed at the rear or when towing a heavy trailer, the front wheels may be lifted. Add sufficient weight to keep steerability and to prevent rollover.

If sufficient weight, such as front loader, is applied to the front wheels, remove the extra front weight.

If the front tires are excessively loaded, it becomes hard to steer the tractor, the tires can be worn faster and the durability of the front axle can be deteriorated.

COMPONENTS FOR ADDITIONAL FRONT WEIGHT



(1) Pin *(2) Plate*
(3) Spring *(4) Grip Ass`y*
(5) Spring Pin *(6) Front Washer*
(7) Bolt *(8) Plain Washer*
(9) Spring Washer *(10) Nut*

When installing or removing a weight, always check the tire inflation pressure and adjust it as necessary.

The front weights are available at the **KIOTI** Dealer. For required number of weights, consult your local **KIOTI** Dealer.

Model	Max. load
PX7520	270 kg (27 kg x 10 Pieces)
PX9020 PX1002	350 kg (35 kg x 10 Pieces)

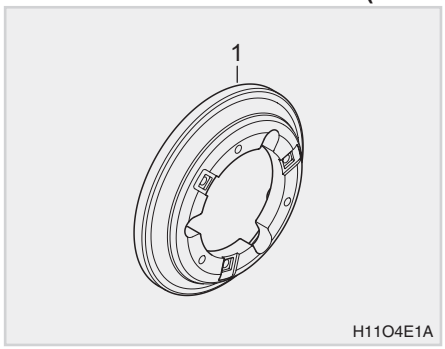
⚠ CAUTION

- **Additional weight might be needed for transporting heavy implements.**
- **Reduce the speed regardless of additional weight when driving on a bumpy or rough road with the implement lifted. The tractor can roll over.**

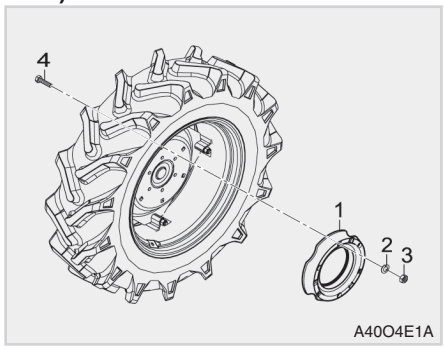
IMPORTANT

- **Attach only required amount of weight. Otherwise, the life of the axle or wheel can be shortened.**

ADDITIONAL REAR WEIGHT(IF EQUIPPED)



(1) Rear Weight



(1) Rear Weight *(2) Spring Washer*
(3) Nut *(4) Bolt*

The rear weight is used to maximize the traction of the tractor by increasing the grip of the rear wheels when using a heavy trailer or plow.

For detailed information on installation, contact your local **KIOTI** Dealer.

Max. load
92 kg (46 kg×2 Pieces)

IMPORTANT

- **Attach only required amount of weight.**

IMPORTANT

- **Unnecessary weight can result in poor braking performance, rapid wear of the brake discs, shortened axle life, and increase in fuel consumption.**

4

ADDITIONAL LIQUID TYPE WEIGHT

It is possible to inject water and calcium solution into the tire to use it as a ballast.

NOTE

- The liquid injection should be performed only by a qualified service personnel.

  For detailed information, contact your local **KIOTI** Dealer.

If one liter of water is mixed with 0.4 kg of calcium, this liquid does not freeze down at -45 °C (-49 °F).

For a tire without a tube, fill it with water and calcium solution at least to the valve stem level (75%).

If the tire without a tube is not filled with water and calcium solution sufficiently, a part of the rim is exposed, resulting in corrosion.

For a tire with a tube, fill it up to 90% of its level.

NOTE

- If the liquid injection should be performed only by a qualified service personnel.

  For detailed information, contact your local **KIOTI** Dealer.

MEMO

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PRE-OPERATION CHECK

It is a good practice to know the condition of your tractor before you start it. You should do routine check before each use.

⚠ CAUTION

- **Park the tractor on the level ground, stop the engine, and apply the parking brake before checking or repairing it.**

  Refer to "DAILY CHECKING ITEM" in the section 7 "MAINTENANCE" for pre-operation check.
- **Be sure to read and understand the information titled as "DANGER", "WARNING", and "CAUTION" thoroughly for the safe operation.**

CHECK ITEM

- Walk around inspection.
- Engine oil level.
- Transmission oil level.
- Coolant level.
- Clean the front grill and radiator screen.
- Air cleaner element.
- Brake pedal free play.
- All dash gauges and indicators.
- Head lights, tail lights, and working lights.
- Accessible wiring harness for any damage.
- Seat belt and **ROPS** for damage.
- All "DANGER" and "WARNING" decals.
- Fuel level.
- Tire pressure and wheel bolt tightening condition.
- 3-point hitch and secure pins.

For detailed information, refer to "Maintenance schedule chart" in chapter 7.

INITIAL OPERATION

Driving a new tractor at a high speed or under heavy load can affect its durability.

Make sure to run the tractor at the proper work load and speed for the initial operation of 10 to 20 hours.

TIPS FOR BREAKING-IN

1. Start the engine and idle the engine at a low speed for 3 to 4 minutes in advance.
2. Increase the idling time in cold weather.
3. Do not drive the tractor at the maximum speed on a road.
4. Never apply excessive load during work.
5. Idle the engine at a low speed for 2 to 3 minutes before stopping it.

OPERATING THE ENGINE
STARTING THE ENGINE

⚠ WARNING

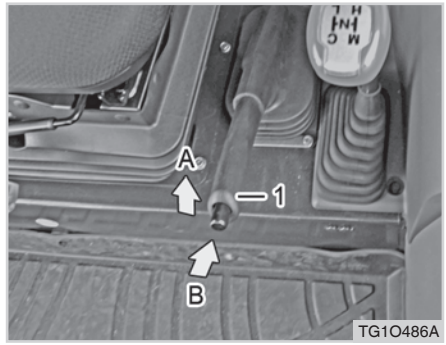
To avoid accidents :

- ***Be sure to read and understand the warning and caution decals on the tractor thoroughly.***
- ***Run the engine only in a well-ventilated area, or you can be suffocated by exhaust gas.***
- ***Never start the engine unless you are on the driver's seat.***

  The tractor can abruptly start off, resulting in an injury or accident.

IMPORTANT

- **Use of a starting aid can cause serious damage and will not be covered under warranty**
- **Never try to start the engine for over 10 seconds consecutively to protect the start motor and battery from damage.**



(1) Parking Brake Lever
(A) Pull *(B) Push*

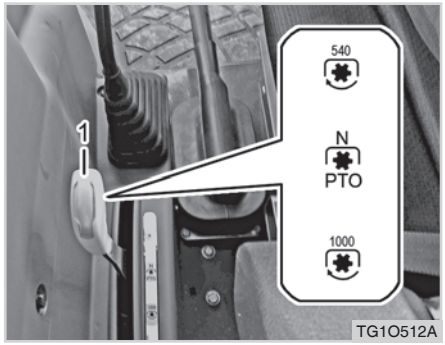
1. Make sure there is no obstacle around the tractor.
2. Make sure the parking brake is set

NOTE

- When the parking brake is engaged, the parking brake lamp on the instrument cluster illuminates. When releasing it, the parking brake lamp is turned off.

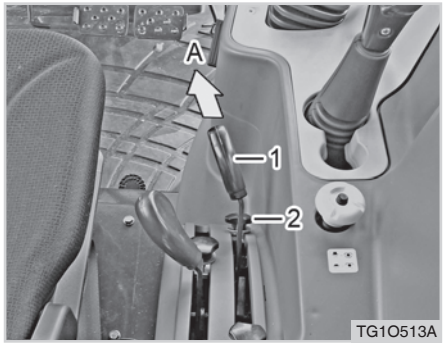
(1) Main Shift Lever *(2) PTO Switch*
(A) ON - ON *(B) OFF - OFF*

3. Press the PTO switch to the "OFF" position.
4. Set the main, range and shuttle shift levers in the neutral position.



(1) PTO Change Lever

5. Place the PTO change lever in the neutral position(N).

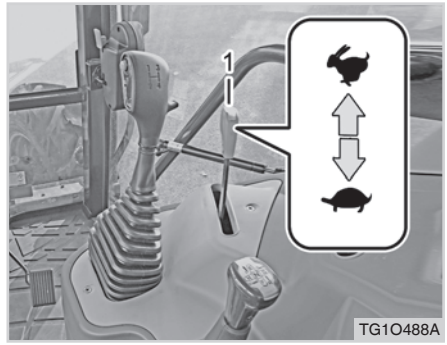


(1) Position Control Lever (2) Bolt
(A) DOWN

6. Lower the attachment by pushing the position control lever toward.

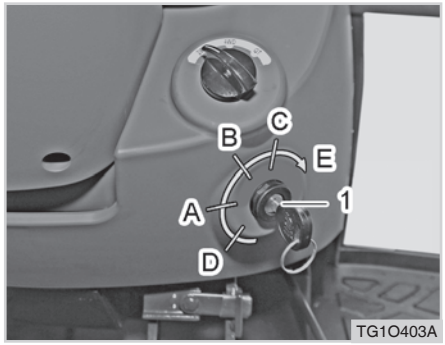
⚠ WARNING

- ***Make sure that no one is around the implement or behind the tractor.***



(1) Hand Throttle Lever
Slow *Fast*

7. Set the hand throttle lever to the "Slow" position. (In case of cold weather you may adjust it to "Fast" for easier starting)
8. Depress the clutch pedal.
   (It cannot be started while the clutch is not depressed)



(1) Key Switch (A) OFF (B) ACC
(C) ON (D) Heat (E) Start

9. Insert the key into the key switch and turn it "ON". Maintain it until the preheat lamp is turned off. (approx. 8 sec)

OPERATING PRINCIPLE OF PREHEAT SYSTEM

The glow plug lamp comes on for 8 seconds and then goes off when the key switch is turned to the "ON" position.

The engine should be started within 5 seconds after the glow plug lamp goes off. After the engine is started, post-heat is performed for 15 seconds with the key switch in the "ON" position.

The preheat/after-heat function and glow plug lamp do not operate when the coolant temperature is 0℃ (32°F) or higher. In this case, the engine can be started without the preheat operation.

※ The post-heating is a function to keep the preheating function activated for approx. 15 seconds after the engine is started in order to enhance the engine combustion performance and reduce harmful emissions right after engine start.

⚠ WARNING

- ***Never operate the start motor for 10 consecutive seconds as it consumes a lot of battery power. If the engine cannot be started within 10 seconds, wait for 30 seconds and try again.***
- ***Never try to crank while the flywheel is turning.***

10. When the engine is started, release the key. Then, the key is automatically turned back to the "ON" position.

⚠ WARNING

- ***Do not turn the key switch to the "Start" position while the engine is running.***

11. Warm up the engine for 3 to 4 minutes (10 minutes in winter) after releasing the clutch pedal.

(1) Instrument Panel
(2) Engine Oil Pressure Warning Lamp
(3) Charge Warning Lamp

12. Check to see that all the warning lamps on the instrument cluster turn "OFF".

If any lamp remains on, immediately stop the engine and determine the cause.

CHECKING WARNING LAMPS

1. If the oil pressure warning lamp(2) does not go off in 4 to 5 seconds after the engine is properly started, stop the engine immediately and check the engine oil level. If the engine oil level is proper, contact your local **KIOTI** Dealer.

⚠ WARNING

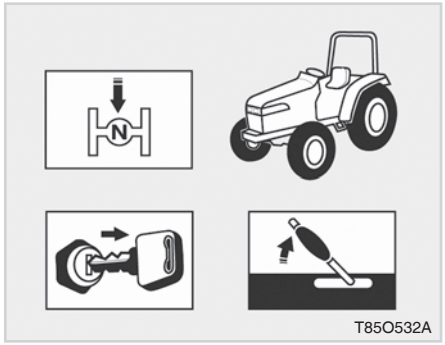
- ***The engine can be severely damaged if it is run with the oil pressure warning lamp ON.***

2. If the charge warning lamp(3) does not go off in 4 to 5 seconds after the engine is properly started, it means that the battery is not being charged. Have the charging system, such as the battery and alternator, serviced.
3. Refer to "Instrument panel" in chapter 4 for detailed information about other indicators and lamps.

⚠ WARNING

- ***If driving the tractor for an extended period of time with the charge warning lamp ON, the battery can be discharged and the tractor's electrical system can be damaged.***

STOPPING THE ENGINE



1. Make sure to reduce the engine rpm before stopping the engine.
2. Depress the clutch pedal and put all shift levers in the neutral position.
3. Run the engine at the idle speed for approx. 2 to 3 minutes, and then turn the key switch to the "OFF" position to stop the engine.

⚠ WARNING

- ***Never touch the muffler or hot covers until they are cooled down after running the engine or driving the tractor.***

⊕ IMPORTANT

- **Turn off all the electrical devices and remove the ignition key before leaving the tractor.**
- **Do not leave the tractor outside unattended. It can be stolen as the key used for all KIOTI tractors are the same in shape.**
- **The horn, turn signal lamp and hazard lamp can be operated without the key inserted. Therefore, using these components without the engine started can discharge the battery.**

WARMING UP

It is recommended always to warm up the engine before driving in order to maintain the durability of the engine. Before warming up the engine, make sure that each part in the engine is properly lubricated and each hydraulic part is in a perfect condition in order to prevent malfunction in the engine as well as the hydraulic system.

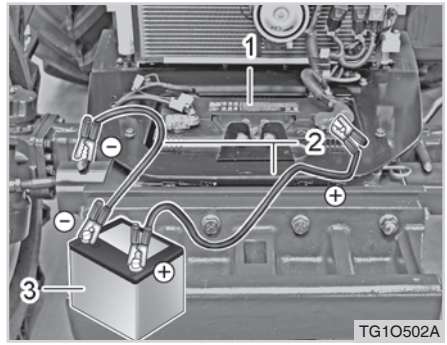
HOW TO WARM UP ENGINE

1. Start the engine and run it at a low speed and without load for approx. 3 to 4 minutes.
2. In cold weather, increase the warming up time to 10 minutes.
3. If it is very cold, warm up the engine for approx. 15 minutes.
4. The engine throttle can be open for 50 % in order to shorten the warming up time.
5. The engine is sufficiently warmed up when the temperature gauge on the instrument panel indicates 1/2 of the normal temperature range, regardless of the warming-up time.
6. Do not increase the work load rapidly after starting work.
7. Run the engine without load for approx. 2 to 3 minutes before stopping the engine after work.

⚠ WARNING

- ***Warming up the engine excessively increases fuel consumption and affects the durability of the tractor negatively.***
- ***Never warm up the engine and leave the tractor for an extended period of time. It can cause fire and an accident.***
- ***Never leave the tractor unattended while warming up.***

JUMP STARTING



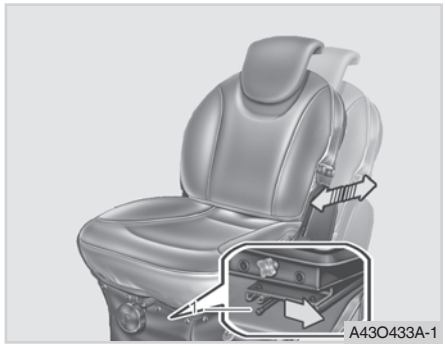
(1) Dead Battery *(2) Jumper Cables*
(3) Helper Battery

If the battery is discharged and the engine cannot be started, it is possible to start the engine by connecting the discharged battery to a battery from another tractor or other extra battery.

1. Check that the voltage of the discharged battery is same as the voltage of the other tractor or vehicle for jump start. (Specification for this tractor: 12V)

2. Check the length of the jump cable and position another tractor near the tractor with the discharged battery. Then, put all the shift levers in the neutral position, apply the parking brake, and stop the engine.
3. Wear protective glasses and gloves and open the hoods of both tractors. Remove the battery terminal cover as necessary.
4. Connect the alligator clips on both ends of the red positive cable to the positive terminals of both batteries.
5. Connect one clip of the black negative cable to the negative terminal of the normal battery and the other clip to the tractor body with the discharged battery. Make sure to connect the clip to the body part without paint.
6. Start the engine of the tractor with the normal battery.
7. Start the engine of the tractor with the discharged battery.
8. Disconnect the black cable from the negative battery terminals of both of the tractors.
9. Disconnect the red cable.
10. Run the engine for at least 30 minutes to charge the discharged battery.
11. If the battery is discharged again, replace it or check the charging system, such as the alternator.

OPERATING THE TRACTOR
HOW TO DRIVE



(1) Seat Adjustment Lever

1. Adjust the seat and fasten the seat belt.

⚠ WARNING

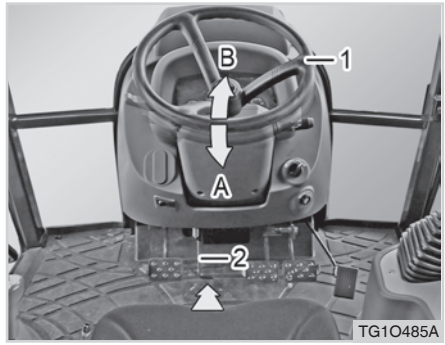
- ***Check if the seat is securely locked after the seat adjustment.***
- ***Do not adjust the seat while driving. The seat may move suddenly causing the loss of control of the tractor.***

(1) Seat Belt

2. Wear the seat belt.

⚠ WARNING

- ***Always wear the seat belt when cap is installed.***
- ***If the seat belt is worn across the abdomen or waist, not the hips, an injury can occur in case of an accident or impact.***
- ***Do not wear the seat belt if the ROPS is not installed or folded.***

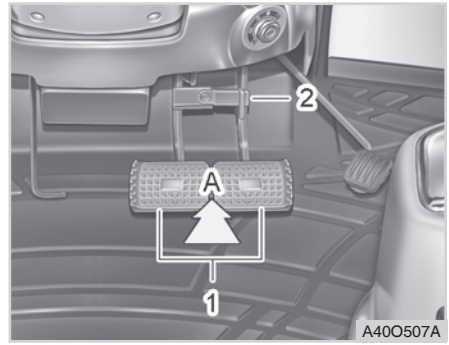


(1) Handle
(A) Lowering
(2) Tilt Pedal
(B) Lifting

3. Adjust the steering wheel according to the driver's physique.

⚠ WARNING

- ***Do not adjust the tilt angle of steering wheel while driving. You could lose the handle of your tractor, causing an accident.***

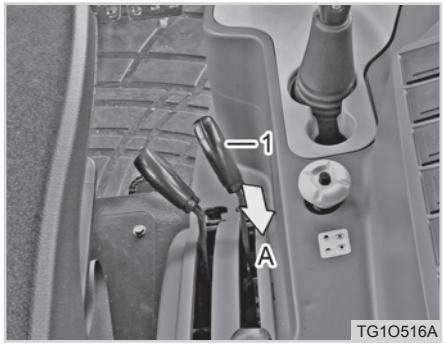


(1) Brake Pedal (LH/RH)
(2) Pedal Interlock
(A) Depress

4. Make sure that both of brake pedals are interlocked.

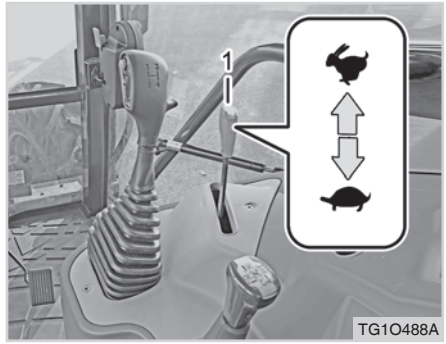
⚠ WARNING

- ***If depressing only one brake pedal at a high speed, the tractor can lose its balance and be overturned.***



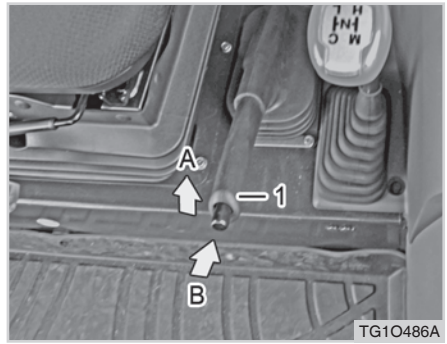
(1) Position Control Lever
(A) Lifting

5. Pull the position control lever backward to raise the attachment on the 3-point hitch.



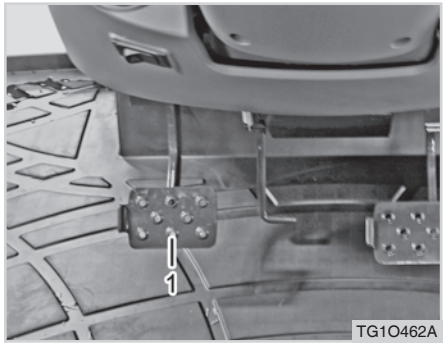
(1) Hand Throttle Lever
Slow *Fast*

6. Increase slowly the engine RPM from idle speed to the medium speed.



(1) Parking Brake Lever
(A) Pull *(B) Push*

7. To release the parking brake lever, pull up and press the thumb button. Then, while holding the button in, lower the brake lever.



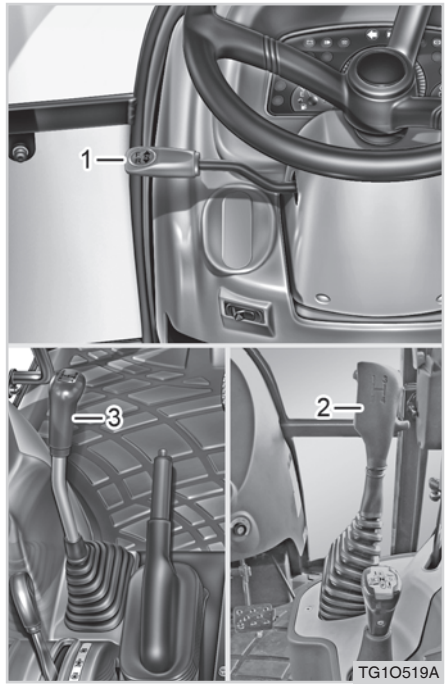
(1) Clutch Pedal

8. Depress the clutch pedal fully.

⚠ CAUTION

To avoid accidents :

- **Do not release the clutch pedal abruptly. The tractor may start off abruptly, resulting in rollover.**



(1) Shuttle Lever (2) Main Shift Lever
(3) Range Shift Lever

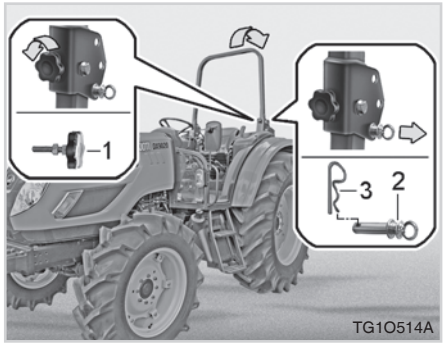
9. Change the main shift lever, range shift lever and shuttle lever to the position you want.

10. The tractor begins to move as you release the clutch.

⚠ CAUTION

- **Never put your foot on the clutch pedal during driving. The clutch disc can be rapidly worn.**
- **Make sure to operate the clutch fast when disengaging it and slowly when engaging it.**
- **Do not change the tractor speed abruptly for safe driving.**
- **When driving on a slope or loading or unloading the tractor to a transporting vehicle, reduce the speed in advance so that there is no need to shift the gear in the middle of the slope. Also, do not put your hand on the shift lever while driving on a slope. The tractor may roll down the slop due to the disengaged gear which is very dangerous.**

TO FOLD THE ROPS



(1) Grip Bolt *(3) Clip Pin*
(2) Set Pin

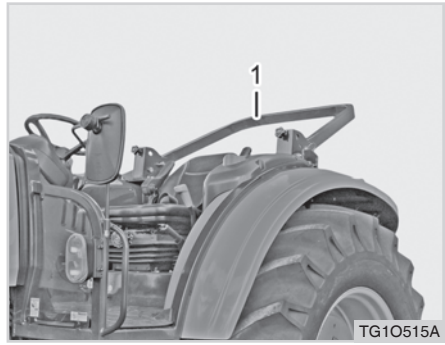
1. Remove the clip pin and set pin.

⚠ CAUTION

- **You should always stop the engine, remove the key and set the parking brake before raising or folding the rops.**
- **Always perform such tasks from a safe and stable position at the rear of the tractor.**

⚠ CAUTION

- **It is very dangerous to drive with the ROPS folded. Fold the ROPS only when there is absolutely no possibility for roll over. If the situation changes, unfold the ROPS immediately.**



(1) ROPS

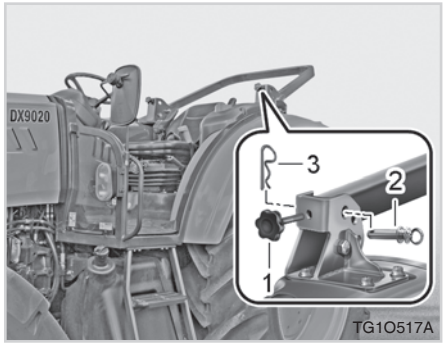
2. Loosen the grip bolt and fold the **ROPS.**

⚠ CAUTION

To avoid personal injury:

- **Hold the ROPS tightly with both hands and fold the ROPS slowly and carefully.**

TO RAISE THE ROPS TO UPRIGHT POSITION



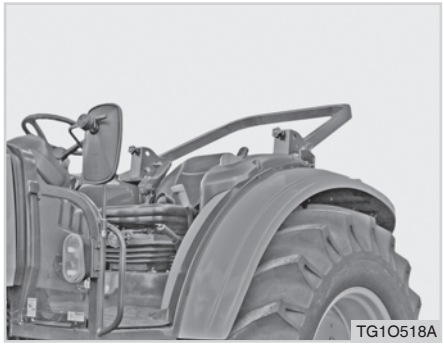
(1) Grip Bolt (2) Set Pin
(3) Clip Pin

3. Align pin holes, insert set pin, and secure them with the clip pin.

⚠ CAUTION

To avoid accidents:

- **Make sure the pins are properly installed and secured.**



1. Remove both the grip bolt, clip pin and set pin.
2. Raise **ROPS** to the upright position.

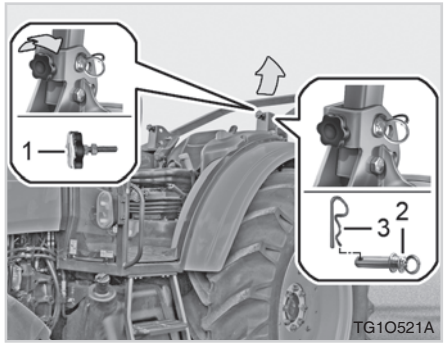
⚠ CAUTION

To avoid accidents:

- **Make sure to set the ROPS upright and fasten the seat belt during work.**

  If it is necessary to work with it folded, do not fasten the seat belt.

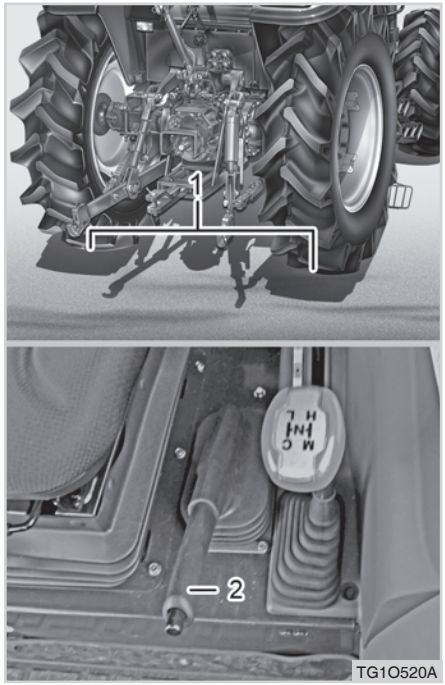
  It can be dangerous in case of tractor rollover.



(1) Grip Bolt (2) Set Pin
(3) Clip Pin

3. Align pin holes, insert set pin and secure them with the clip pin.
4. Fix the **ROPS** with the grip bolt.

PARKING



(1) Chocks *(2) Parking Brake Lever*

1. This tractor is equipped with a separate parking brake.
2. Pull the parking brake lever(2) up.
3. Before leaving the tractor after parking it, make sure to stop the PTO, lower the implement onto the ground, and stop the engine.
4. If it is necessary to leave the tractor with the engine running, put all the shift levers in the neutral position and apply the parking brake firmly.
5. When parking the tractor on a slope, stop the engine with the parking brake applied and every gears engaged in the low speed gear.
6. If it is necessary to park the tractor on a slope with the engine running, apply the parking brake and chock all four wheels.
7. In order to release the parking brake, push the button of parking brake and lower the parking brake.

⚠ WARNING

- ***The brake pad can be rapidly worn if you drive with the parking brake applied.***
- ***Never park the tractor on a steep slope in any circumstance. A severe accident can happen.***

⚠ WARNING

To avoid possible injury, death or loss of property from a machine runaway :

- ***With the engine off, the tractor may move unexpectedly regardless of the gear shift position.***
- ***Before leaving the tractor, certainly apply the parking brake to prevent machine runaway.***

※ ***Only power shuttle model.***

IMPORTANT

- **The tractor may move slowly with the engine running even though the main and shuttle shift levers are in the neutral position. This is normal and is due to the fluid friction in the transmission. This symptom can occur easily when the engine rpm is high, the low speed gear is selected by the range shift lever, and the viscosity of the transmission fluid is high due to low temperature. To prevent this symptom, make sure to apply the parking brake.**
- **Get off the tractor after checking that the tractor is completely stopped and the parking brake is firmly applied.**
- **Do not park the tractor on tall grass or hay. If grass or hay contacts with the muffler, it can catch fire.**

TURNING

You should turn slowly and lower the engine speed if possible.

WARNING

To prevent accidents due to loss of steering control :

- ***If you turn at high speed, the tractor can turn over.***
- ***Never use the differential lock system turning at high and low speeds. A serious accident can occur.***

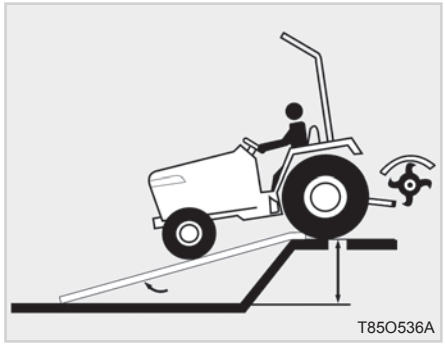
DRIVING ON SLOPE

1. Please drive according to the conditions of the slope at safe speed so that the engine is not under heavy load if possible.
2. Make sure to shift to the lower gear in order to prevent the engine from stalling on an uphill.
3. On the downhill slope, drive at the low speed.

WARNING

- ***Make sure that the coupling device of brake pedal interlock and differential lock pedal are released.***
- ***Do not disengage the clutch or put the shift lever in the neutral position on a slope. Otherwise, a runaway condition could occur.***
- ***Before entering a steep slope, move the shift lever down to a proper gear and never try to move the shift lever on a slope. "A" serious accident can occur.***

THE CAUTIONS WHEN COMING IN AND OUT OF WORK FIELD

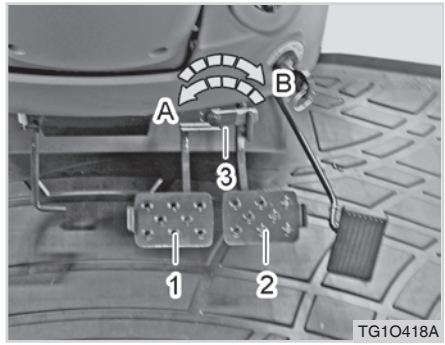


1. Make sure that the left and right pedal are interlocked.
2. Enter and exit the field by driving the tractor at a right angle to the bank.
3. It is recommended to use the 4WD and drive backward when moving onto a bank.

PRECAUTIONS WHILE DRIVING ON THE ROAD

(1) Turn Signal Light

1. When you change the driving direction on the road, let the other car know your direction with turn signal lights.
2. Do not use high beam headlights when another vehicle is approaching from the opposite direction so that not to interrupt another driver's view.
3. Always interlock the left and right brake pedal while driving on the public road.



(1) Brake Pedal (LH) (2) Brake Pedal (RH)
(3) Pedal Interlock
(A) Whenever traveling on the road

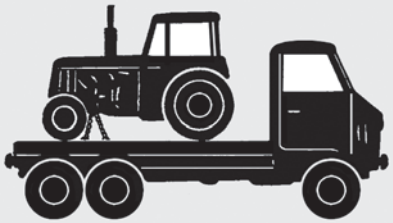
⚠ WARNING

- ***When you are driving on the road, observe all local traffic and safety regulations. If not, you can have an accident of bodily injury on a person.***
- ***Only the operator should ride on the tractor unless a passenger seat is installed.***

LOADING INTO AND UNLOADING OUT OF THE TRUCK

⚠ WARNING

- ***If the tractor is broken down during driving on the road, move it to a safe place to service. If not, it can cause personal injury.***



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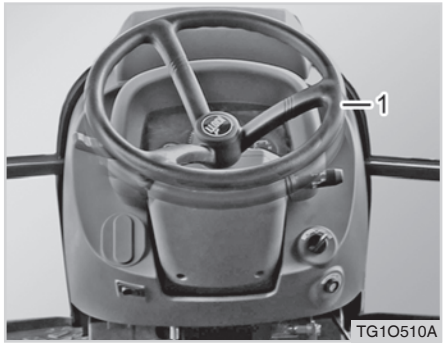
⚠ WARNING

- ***Attach the tractor securely to the truck when transporting. Be aware of the height of the loaded tractor and avoid low clearance areas.***
- ***Follow this instruction to avoid accidents***

1. When you load the tractor, do it by driving backward.
2. If the engine stalls out halfway, step on the brake pedal at once, and then take away the pedal slowly to reach the road. After that, restart the engine again to go up.

PRECAUTIONS WHEN USING POWER STEERING



(1) Power Steering Handle

1. The power steering function is activated only while the engine is running. However, the steering wheel becomes slightly firmer when the engine is running at a low speed.

   The steering wheel can be operated but becomes very firm while the engine is stopped.

2. If you operate the steering wheel, with the tractor stopped, using the implement equipped in front of the loader and the like, the steering wheel operation can be getting a little firm. Operate the steering

   wheel moving the tractor in this case.

3. When a loader is mounted, adjust the air pressure of the front wheel to its maximum specification and mount weight or implement on the 3 point hitch of the tractor, and remove the front weight to make the front and rear balance more stable for safe working.

4. When turning the steering wheel to its end, the operating sound of the safety valve (Relief valve) can be heard. Do not the tractor against the relief valve for extended periods. Hydraulic temperature may increase and damage the tractor.

NOTE

The power steering system in this tractor is a load reaction, full hydraulic type.

- The full hydraulic system means that power necessary for power steering is transferred by hydraulic fluid only and therefore mechanical devices, such as racks and pinions, are not installed to the tractor. Therefore, the angle of the **KIOTI** emblem on the center of the steering wheel may differ occasionally, which is normal.
- The load reaction type means that the reaction force or impact applied to the front axle is transferred to the steering wheel. Therefore, the steering wheel can be returned to its straightforward position from the turning position.

⚠ WARNING

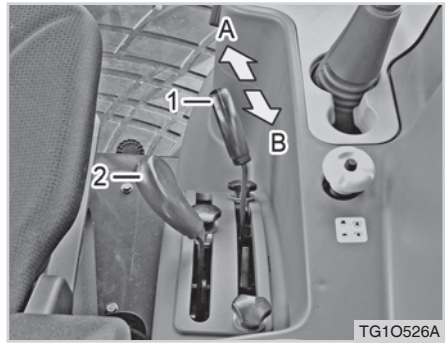
- *When driving on a road with an implement attached to the rear of the tractor, the friction of the front wheels becomes poor, resulting in poor steerability. In this case, attach a proper front weight and drive at a low speed.*
- *If malfunction occurs while driving on a road, stop the tractor in a safe place and service it. If it is not possible to move the tractor, turn on the hazard lights and set a warning triangle behind the tractor. Otherwise, a rear end accident may occur.*
- *The center of gravity of the tractor is higher compared to other common vehicles, so the possibility of the roll-over accident is very high. Be extra careful when driving on a lateral slope, bumpy road, road with puddles, and narrow road. Make sure to set the ROPS in its original position (up straight position) and fasten the seat belt.*

⚠ WARNING

- *If stopping the engine while driving, the steering performance can become deteriorated due to loss of hydraulic power, resulting in a severe accident. Never stop the engine while driving.*
- *If stopping the engine while driving, the steering performance can become deteriorated due to loss of hydraulic power, resulting in a severe accident. Never stop the engine while driving.*
- *Always grip the steering wheel using both hands while driving.*

3-POINT HITCH CONTROL

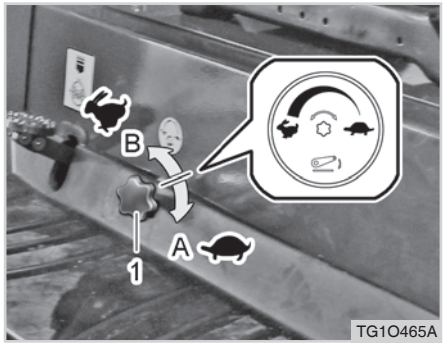
POSITION CONTROL LEVER



(1) Position Control Lever
(2) Draft Control Lever
(A) Lowering (B) Lifting

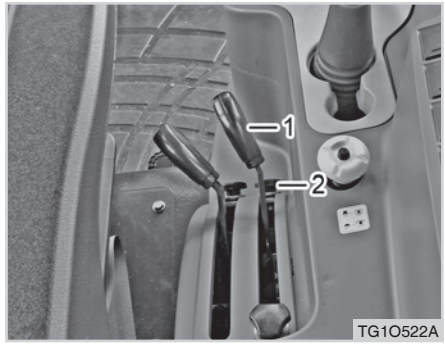
The 3-point hitch can be controlled by the position control lever and the draft control lever. The lever installed on the outer side (away from the driver) is the position control lever while the lever installed on the inner side (close to the driver) is the draft control lever.

1. The position control lever is used to lift or lower the lifting arm(lower link) of the 3-point hitch.
2. Pushing the lever forward lowers the lower link while pulling the lever backward lifts the lower link.
3. The height of the lower link is precisely controlled proportional to the position of the lever.
4. The lower link is lifted by the hydraulic energy of the tractor while it is lowered by potential energy of its own weight. Therefore, the implement cannot be lowered by the hydraulic pressure.
5. Therefore, the implement attached to the lower link may be lifted by protrusion on the ground when it is lowered to the ground. It is called as "floating".



(1) Lowering Speed Control Knob
(A) Low Speed (B) High Speed

6. The lowering speed of the lower link is proportional to the applied weight but can be controlled by adjusting the draining passage of the hydraulic fluid. (See "Lifting arm speed control knob" on Page 4-33)



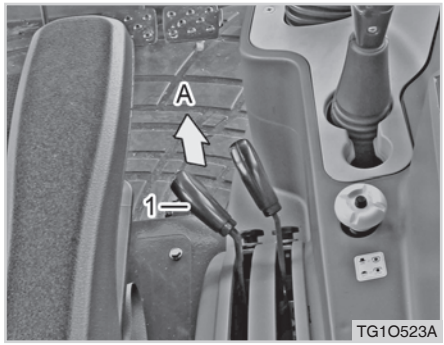
(1) Position Control Lever
(2) Lock Bolt

7. The lower limit of the implement's lowering height can be set by limiting the movement of the lever by the lock bolt.

⚠ WARNING

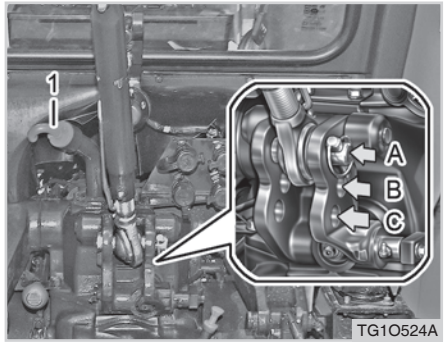
- ***If trying to lift an object with excessive weight by the 3-point hitch while the tractor is not equipped with proper front suit case weights, the front wheels may be lifted instead, leading to roll over. Make sure to follow the specifications for use.***

DRAFT CONTROL LEVER



(1) Draft Control Lever
(A) Lowering

1. The draft control function is used to prevent the wheels from rotating idle and the engine from stopping due to excessive draft load when the tractor is used for work which requires a lot of draft, such as plowing.



(1) Top Link
(A) Traction power is not required (Rotary etc.)
(B) Heavy Load Traction Work
(C) Normal Load Traction Work

2. The draft function is activated when the lowest or middle hole on the top link of the 3-point hitch is used. The lowest hole is for sensitive draft control.

3. To keep the plowing depth shallow, put the draft control lever to the rear(shallow) position. The plowing depth tends to become deeper naturally by outer conditions. As the plowing depth increases the applied load also increases. Placing the draft control lever to the "Shallow" position, plowing depth is maintained as shallow because the reaction force is transferred to the internal system via the top link and the lifting arm is automatically lifted.
4. When using an implement which requires no draft function, such as a rotary tiller and mower, use the highest hole on the top link and put the draft control lever in any position.
5. However, if the draft control lever is pushed forward to its end, the lowest position of the lifting arm can be lowered a little. On the other hand, if the lever is pulled back to its end, the highest position of the lifting arm can be raised a little.

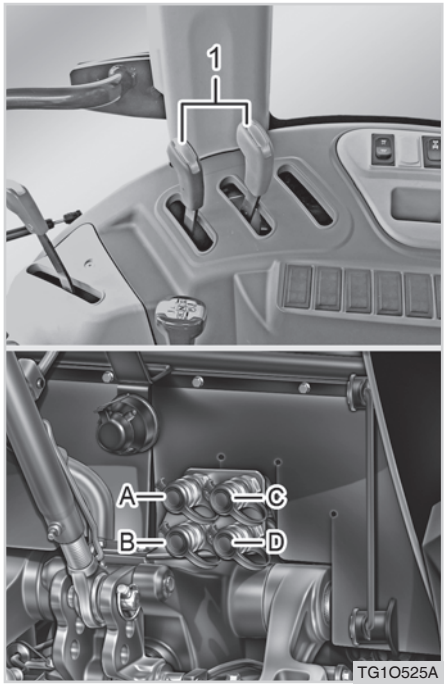
⚠ CAUTION

- **If the lifting arm is properly operated but abnormal noise is still heard, the hydraulic system may be malfunctioning. In this case, let the engine idle for 10 to 15 minutes and then resume functions. If the problem is still present, contact your local KIOTI Dealer.**
- **The implement may shake up and down as the draft sensor is under impact when the tractor is passing over irregular ground with the middle or lowest top link hole selected. In this case, put the draft control lever to the "Deep" position to decrease the sensitivity of the draft function or select the highest top link hole.**

⚠ CAUTION

- **If the tractor has been stored for a long period of time or the transmission fluid is just changed, abnormal noise may be heard and the hydraulic lifting arm may be inoperable temporarily. In this case, let the engine idle for 3 to 4 minutes.**

REMOTE HYDRAULIC DOUBLE ACTING VALVE



(1) Double Acting Lever
(A) Port A *(B) Port B*
(C) Port C *(D) Port D*

Pressure ⇨ Returning ⇦

Port		Push		Pull	
Lever 1	A	In	⇦	Out	⇨
	B	Out	⇨	In	⇦
Lever 2	C	In	⇦	Out	⇨
	D	Out	⇨	In	⇦

Coupler Size	
Port A, B, C, D	**½ inch**

KIOTI supplies two types of the double acting valves by region : self-return type and detent type.

- For the self-return type double acting lever, it returns to its neutral position to block the hydraulic fluid when it is pushed/pulled and then released. Therefore, this type of double acting valve lever should be pulled or pushed continuously for operation which is suitable for an implement with a short operating time, such as the hydraulic cylinder.
- For the detent type double acting valve lever, it keeps its position after it is pulled or pushed to a certain position. Therefore, it is not necessary to hold the lever to a certain position which is suitable for an implement with a long operating time, such as the hydraulic motor.

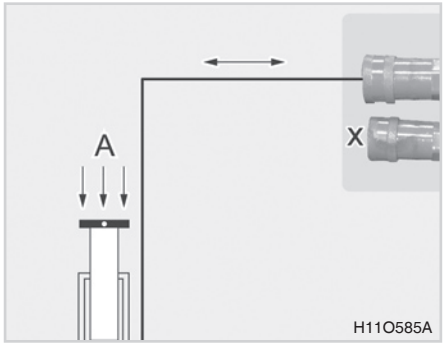
⚠ WARNING

- ***Put the detent valve operating lever into the neutral position when the hydraulic implement is not in use. If the detent valve is kept in the operating position for an extended period of time, the relief valve is kept open and the temperature of the hydraulic fluid rises, leading to damage of various hydraulic parts, such as the oil seals and O-rings.***

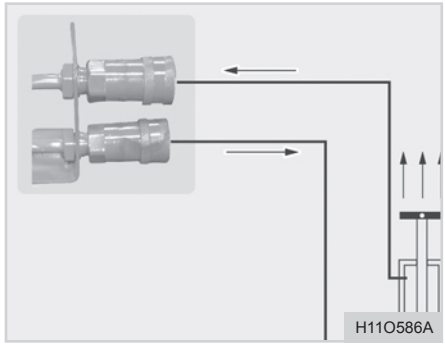
⚠ WARNING

- ***When the detent valve is in operation, unnecessary load is applied to the engine. Therefore, the engine power decreases significantly, and noise and vibration by opening of the relief valve increase.***
- ***It is hard to start the engine while the detent valve is in operation. This is especially true in winter and exhaust gas increases even after the engine is started.***

SINGLE ACTING AND DOUBLE ACTING CYLINDER



(1) Single Acting Cylinder
(A) External Load



(1) Double Acting Cylinder

This tractor is equipped with the remote control valve of the double acting type. However, this valve can also be used in the single acting type hydraulic cylinder.

1. Connect one end of the hydraulic port to the single acting cylinder as shown in the figure. The hydraulic pressure is properly supplied to the cylinder. However, when the hydraulic pressure is released, the cylinder is contracted only if there is outer force, such as potential energy.
2. To contract the cylinder, operate the lever to the opposite direction of the expansion. Then, the hydraulic fluid is supplied from the hydraulic pump to the hydraulic port which is not connected, and the pressure rises as the port is blocked. However, this pressure is released as the relief valve opens.

3. When the cylinder is contracted, the hydraulic fluid returned from the cylinder is drained to the transmission through the draining circuit as the operating lever is operated to the opposite direction from the expansion position.

IMPORTANT

- **It is recommended to use the double acting cylinder instead of the single acting cylinder if the implement will be operated frequently and continuously. If using the single acting cylinder too frequently or for an extended period of time, the hydraulic fluid can be overheated, resulting in deterioration of the hydraulic parts' durability as the main relief valve opens at cylinder contraction.**

CONNECTING AND DISCONNECTING IMPLEMENT

CONNECTION

1. Make sure to stop the engine before connecting it.
2. Move the double acting valve lever forward and backward for 4 to 5 times to release the pressure in the hydraulic line of the tractor. Otherwise, it is hard to connect the couplers, and hydraulic fluid can be sprayed from the line and get in to your eyes while connecting them.
3. Remove any foreign material around the male and female couplers. If foreign material enters the hydraulic components, it can lead to malfunction of the system.
4. Open the dust-proof cover of the female coupler of the tractor and insert the male coupler of the implement. A clicking sound is heard when the couplers are engaged.
5. Pull the hydraulic hose of the implement to check that the couplers are properly connected.
6. Start the engine and check the operating status and leakage.

DISCONNECTION

1. Make sure to stop the engine before disconnecting it.
2. Release any residual pressure in the hydraulic hoses of the implement and tractor by operating the double acting valve lever 4 to 5 times.
3. Remove any foreign material around the couplers.
4. Keep the implement balanced by removing any load applied. (Lowering it onto the ground, for example)

   If disconnecting the hose while outer load is applied to the implement, it is hard to connect the implement in the future.
5. Remove the male coupler by pushing the female coupler boss of the tractor backward.
6. Close the dust-proof cover of the female coupler of the tractor. Wrap the male coupler of the implement with a plastic bag to prevent contamination.

⚠ WARNING

- ***Never connect or disconnect the implement hydraulic hose while the pressure in it is not released or the engine is running. It is hard to connect and disconnect the hose and hydraulic fluid can be sprayed from the hose, and get into your eyes or skin.***
- ***Stop the engine and wear protective glasses and gloves before work.***

MEMO

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6

REMOVAL AND INSTALLATION OF 3-POINT HITCH IMPLEMENT(WITH PTO SHAFT) 6-2

OPERATION FOR 3-POINT HITCH IMPLEMENTS 6-5

ADJUSTMENT OF LIFT ROD 6-5
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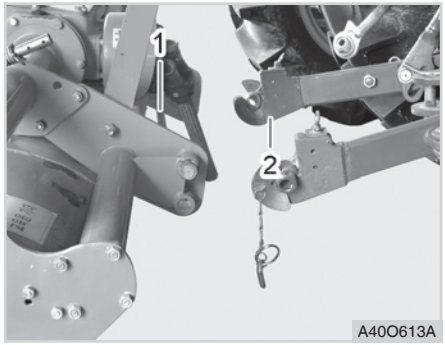
JOYSTICK VALVE 6-14

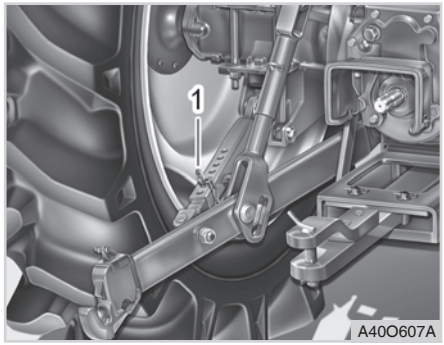
REMOVAL AND INSTALLATION OF 3-POINT HITCH IMPLEMENT(WITH PTO SHAFT)



(1) Implement Support (2) Lower Link

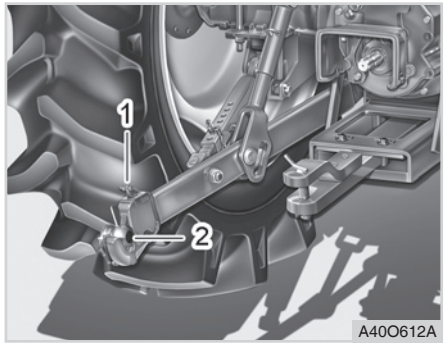
1. Place implement on the level ground.
2. Drive the tractor backward to move as close as possible to an implement. (approx. 5 cm)

   Then, adjust the height of the lower link to be parallel to the pins of the implement.
3. Put all the shift levers in the neutral position.



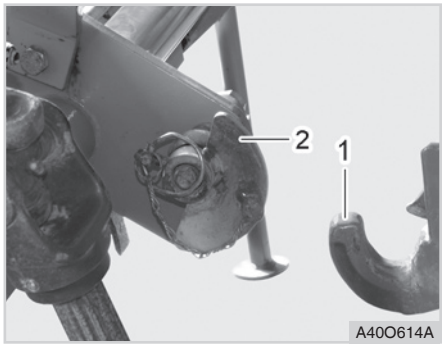
(1) Check Link Pin

4. Remove the pins on either side of the check link.



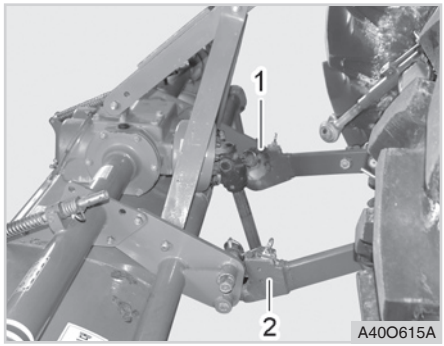
(1) Lever (2) Ball Assembly

5. Remove the ball assembly by pushing the guide pin operating lever.



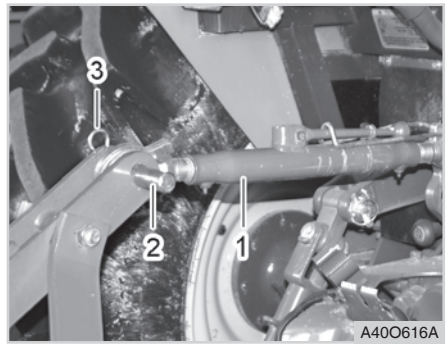
(1) Lower Link (2) Ball Assembly

6. Attach the ball assembly to the implement.



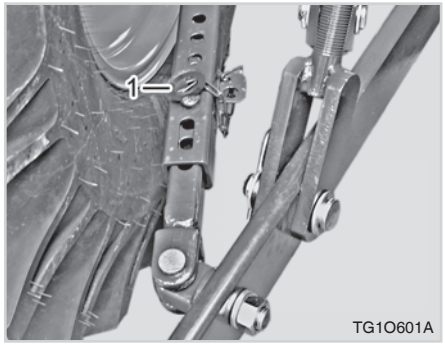
(1) Lower Link (2) Ball Assembly

7. When the lower link is lifted, it is secured with "click" sound.



(1) Top Link (2) Lock pin
(3) Snap Pin

8. Separate the top link from its bracket and turn it to adjust its length so that it becomes close to the upper bracket mounting hole of the implement. Then, fit it to the mounting hole, insert the lock pins, and fix it with the snap pin. Remove the implement support as necessary.



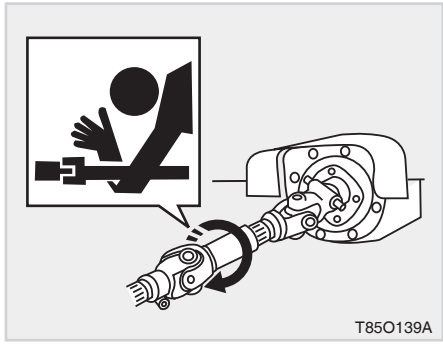
(1) Telescopic Stabilizers Pin

9. Turn the top link to make the implement balanced. Then, move the implement to the left and right, and secure it into the proper position by fitting the telescopic stabilizers lock pin
10. At this time, stop the engine, lower the implement onto the ground, and set the PTO gear neutral. The PTO shaft to the tractor PTO insuring the lock pin is engaged.

IMPORTANT

- **Consult your local KIOTI Dealer for selection of the universal joint.**
- **When selecting a universal joint, make sure that it is not too short to come off the its female and male shafts at the highest position or too long to impact its female and mail shafts at the lowest position.**
- **Move the joint front and back to check that its lock pin is properly seated to the groove of the PTO shaft.**

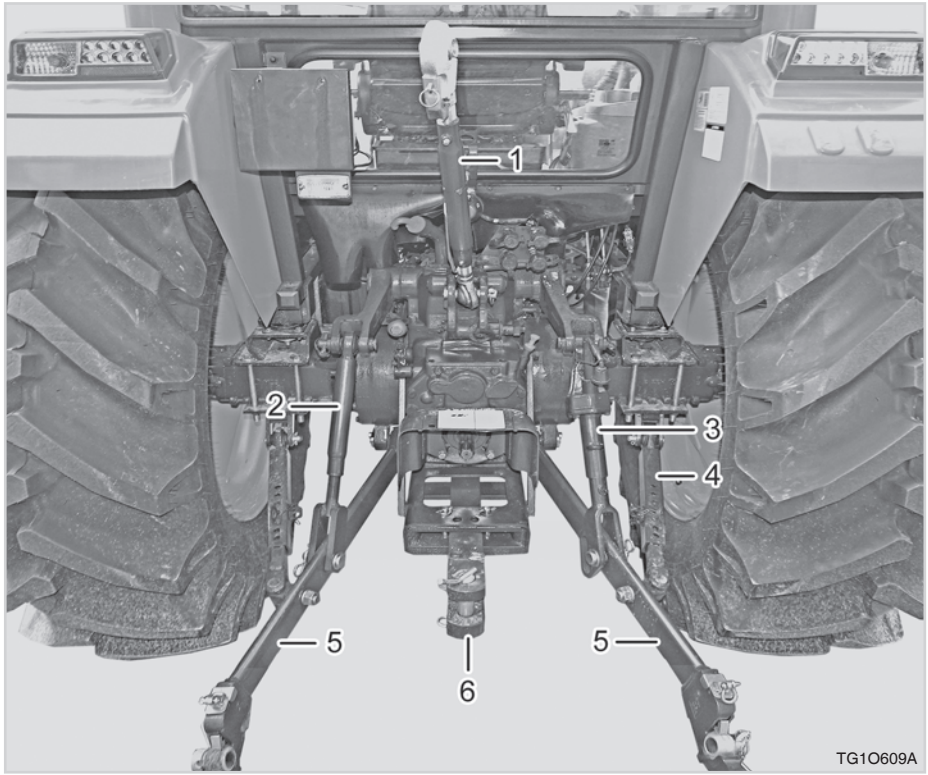
11. Remove the implement in the reverse order of installation and use the implement support as necessary.



WARNING

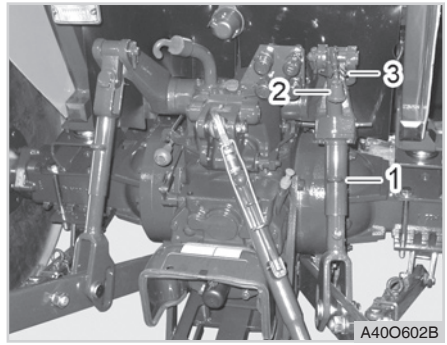
- ***Make sure that the PTO safe cover is in its position before driving the PTO shaft.***
- ***The PTO shaft and universal joint shaft should not be interfered by any surrounding parts.***
- ***Never go close to the rotating PTO shaft or universal joint shaft. "A" severe accident can happen.***

OPERATION FOR 3-POINT HITCH IMPLEMENTS



(1) Top Link
(2) Lift Rod (L)
(3) Lift Rod (R)
(4) Check Link
(5) Lower Link
(6) Draft Bar

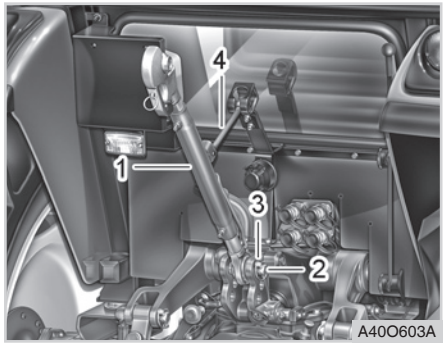
ADJUSTMENT OF LIFT ROD



(1) Lift Rod
(2) Adjuster Handle
(3) Stopper

1. Adjust the implement level balanced by turning the lift rod handle.
2. After adjustment, fix it with the stopper.

ADJUSTMENT OF TOP LINK



(1) Top Link *(2) Pin*
(3) Lynch Pin *(4) Top Link Hook*

1. Install the top link to the desired position, and install the pin and lynch pin.
2. Tighten the lock nut on the top link securely after adjusting top link length

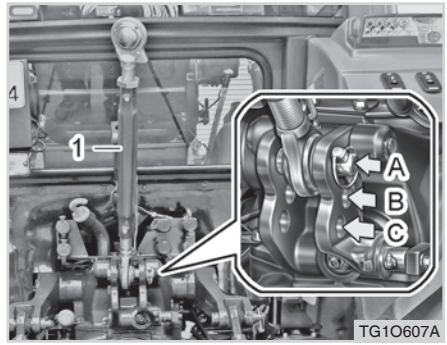
⚠ WARNING

- ***Stop the engine and lower the attachment on the ground prior to disconnecting the lift rod from the lower link. Check the attachment for proper support.***

NOTE

- When there is no implement attached, fix the lower link to the check link (LH/RH) so that it does not contact with the rear wheel.
- Secure the top link to the hook.

PRECAUTION FOR INSTALLING HOW TO USE TOP LINK HOLES



(1) Top Link

When attaching an implement, connect it according to its draft as follow.

- A: Traction power is not required (rotary etc.)
- B: Heavy load traction work
- C: Normal load traction work

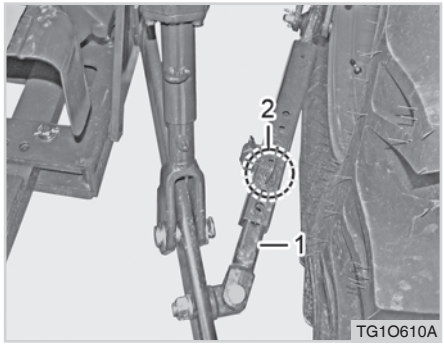
1. Adjust an angle of the implements to the desired position by shortening or lengthening the top link.
2. Adjusting top length varies as a type of implements used.

⚠ CAUTION

- **When you are attaching an implement not requiring any traction, mount the assembling spot of the top link into the hole "A".**
- **When you are attaching an implement. (Like plow)**

  Requiring some traction, mount the top link into the hole "B", "C".

ADJUSTMENT OF STABILIZER



(1) Telescopic Stabilizers (2) Pin

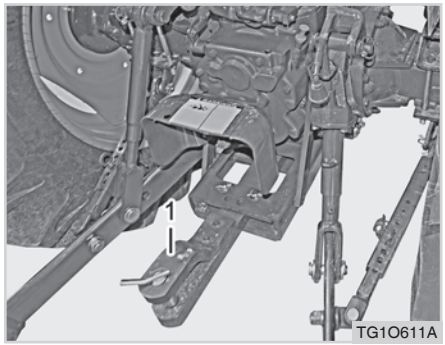
1. Adjust the telescopic stabilizers to control horizontal sway of the implement. It is also used to set the implement on the back of the tractor in center.
2. To adjust the check link, pull out the pin and adjust it until the desired transverse moving distance is obtained.

DISMOUNTING THE IMPLEMENT

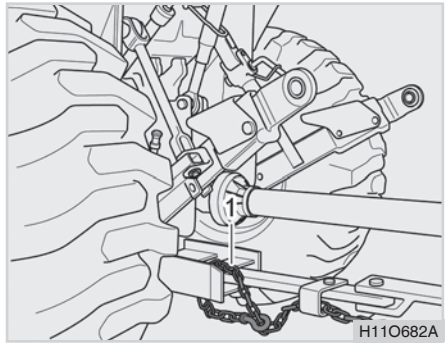
1. Park the tractor with the implement on the level ground and lower the implement all the way down.

   Install the implement support as needed.
2. Disconnect the top link and lower links from the implement by removing the pins.
3. Be sure to insert the set pins, lynch pins and snap pins back to the implement securely to keep those safe.
4. Stop the engine and move the remote hydraulic control lever back and forth to relief the hydraulic pressure in the system before disconnecting hydraulic couplers.
5. Put the top link back to its hook. Hold both lower links together with a rubber band. Otherwise, the lower links can contact with rear tires and cause damage to the lower links and tires while driving.

DRAFT HITCH AND TRAILER



(1) Draw Bar



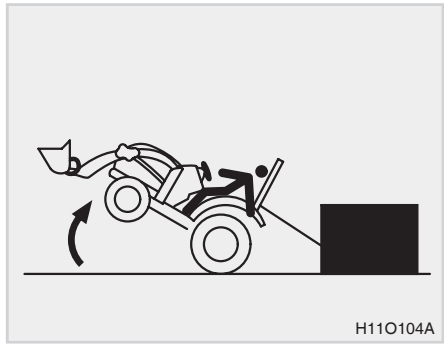
(1) Safety Chain

⚠ WARNING

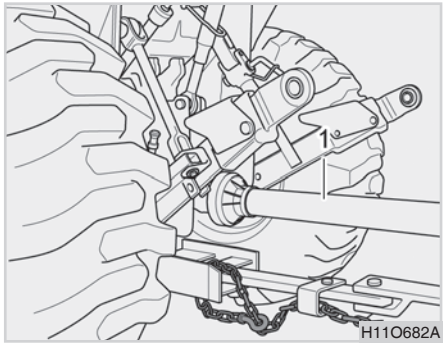
- ***Never use any other part for pulling except draw bar. Pulling with top link, ROPS and etc. will cause a fatal accident.***
- ***Be sure to install the auxiliary safety chain when installing a trailer.***

The draw bar is used to pull an implement, such as a trailer. This tractor is equipped with a draw bar. Make sure to check the max. towing weight of the trailer and max. vertical load that can be applied to the draw bar.

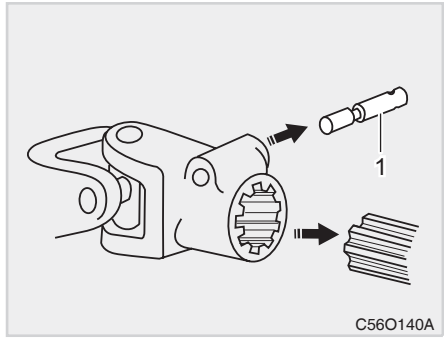
- Max. Trailer Weight (Trailer + Loaded Weight) = 4,500 kg (9,920 lbs.)
- Vertical load of hitch (Draw-bar)= 1,500 kg (3,360 lbs.)



INSTALLING PTO SHAFT

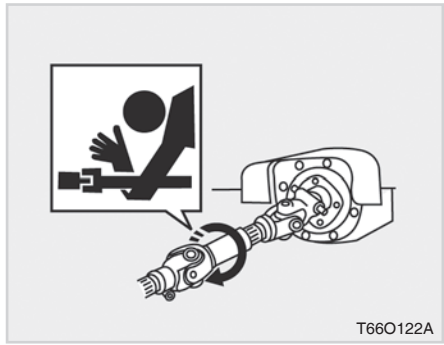


(1) Universal Joint



(1) Lock Pin

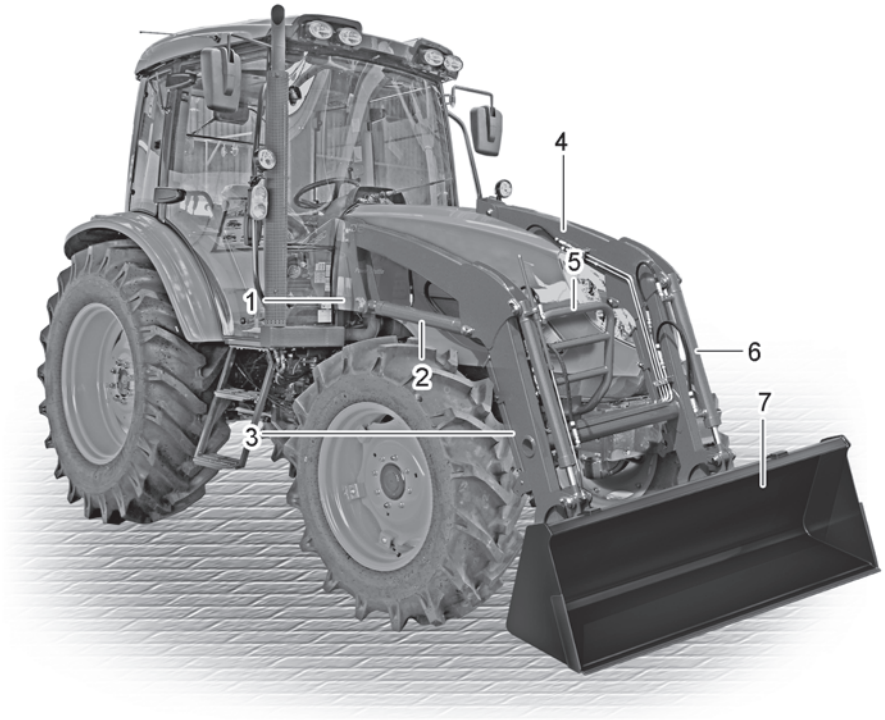
1. Consult your local **KIOTI** Dealer for selection of the universal joint.
2. When selecting a universal joint, make sure that it is not too short to come off the its female and male shafts at the highest position or too long to impact its female and mail shafts at the lowest position.
3. Move the joint back and forth to check that its lock pin is properly seated to the groove of the PTO shaft.



⚠ WARNING

- ***Make sure that the PTO safe cover is in its position before driving the PTO shaft.***
- ***The PTO shaft and universal joint shaft should not be interfered by any surrounding parts.***
- ***Never go close to the rotating PTO shaft or universal joint shaft. "A" severe accident can happen.***

HANDLING LOADER



TG1O603A

(1) Loader Mounting Bracket
(2) Boom Cylinder
(3) Loader Arm
(4) Boom
(5) Grill Guard
(6) Tilt Cylinder
(7) Bucket

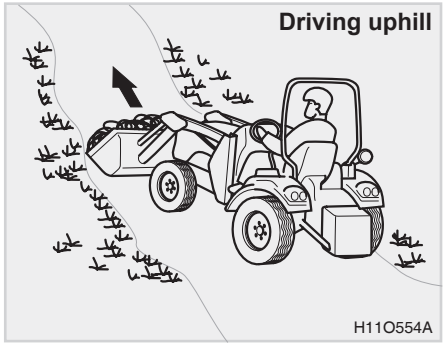
For detailed information about installation and use of the front loader, refer to the separate manual of the loader.

IMPORTANT

- **Check the transmission fluid level and add fluid as necessary after installing an implement.**

DRIVING ON SLOPE

WHEN LOADED BUCKET AND REAR BALLAST ARE INSTALLED

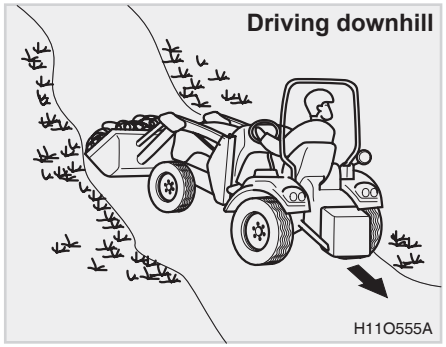


keep the bucket end of the tractor uphill. In other words, drive forward on uphill and backward on downhill.

⚠ WARNING

To avoid injuries:

- ***Keep the loader arm as low as possible when driving on a slope.***



When driving on uphill with the loaded bucket and rear ballast installed,

WHEN UNLOADED BUCKET AND REAR BALLAST ARE INSTALLED

When driving on downhill with the empty bucket and rear ballast in-

stalled, keep the rear ballast toward the higher level of the ground. In other words, drive backward on uphill and forward on downhill.

Use the 4WD to increase traction when driving on a slope with the loaded bucket and rear ballast installed.

Set the bucket and implement as low as possible for vehicle stability and safety while driving unless there are obstacles on the driving way.

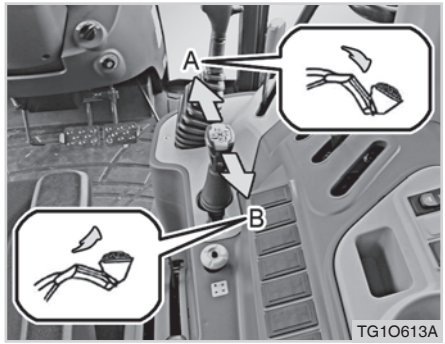
PARKING WITH LOADER INSTALLED

When parking the tractor which is equipped with a loader or backhoe, make sure that the bucket of loader or backhoe is lowered on the ground.

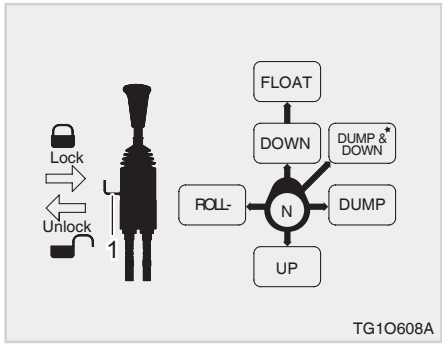
Otherwise, the tractor can become unstable, leading to an unexpected accident, such as roll over.

JOYSTICK LEVER

(1) Joystick Lever



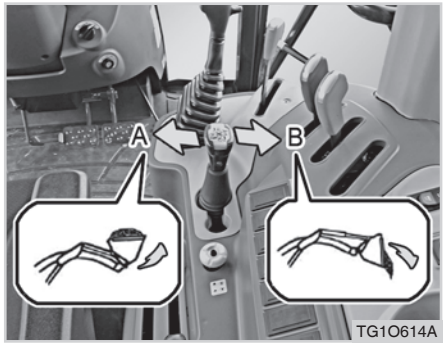
(A) Boom Down *(B) Boom Up*



(1) Joystick Lock Lever

1. Up and down of boom

   Pulling the joystick lever back (B) lifts the boom of the loader while pushing it forward (A) lowers the loader boom.



(A) Bucket Roll Back (B) Bucket Dump

2. Roll back & dump

"Roll back" means that the bucket scoops up. To operate this function, move the joystick lever to the left (A). "Dump" means that the bucket dumps. To operate this function, move the joystick lever to the right (B).

3. Float

The floating function is activated when the joystick lever is pushed one position further from the down position. When the lever is in this position, the boom moves up and down freely along the surface of the ground as the hydraulic line is opened from the valve to the boom cylinder. This function is useful when removing soft objects on hard ground. (for example, when removing snow or sand on an paved road or removing night soil on the ground in a stall)

⚠ WARNING

- ***If moving the lever to the floating position while the boom is up in the air, the boom can fall freely and lead to the accident.***

4. Down & dump

The boom can be lowered and the bucket can dump by operating the joystick lever to the front right position. (2 o'clock position)

However, these two operations may not be performed simultaneously due to unbalanced hydraulic pressure in the hydraulic circuit.

5. Locking/unlocking joystick

Pressing the joystick lock lever in locks the joystick while pulling it outward unlocks the joystick as shown in the figure.

⚠ WARNING

- ***Do not leave the tractor with the boom off the ground in any circumstances. If it is neces-sary, lock the joystick.***
- ***When the joystick lever is not in use, lock it since the implement can fall down if the lever is operated accidently.***

IMPORTANT

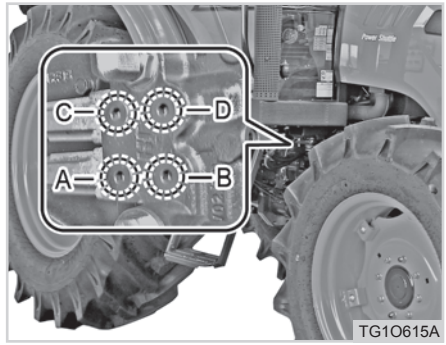
- **If the boom or bucket is not operating, properly, lower the bucket onto the ground, stop the engine and move the joystick lever to remove all hydraulic pressure in the system. Then, check all the hydraulic connections and reconnect them correctly.**
- **Before connecting or disconnecting the hydraulic hose coupling for the loader, lower the boom onto the ground, stop the engine, and move the joystick lever front and back, left and right for several times to remove residual pressure in the hydraulic hose.**

WARNING

To avoid accidents:

- ***Pressurized diesel fuel or hydraulic fluid may be sprayed on your skin or eyes, leading to a severe injury or even death.***
- ***To check leakage, use a board and wear protective gloves and goggles.***
- ***If your eyes come into contact with the hydraulic fluid, seek medical attention immediately.***
- ***Never try to disconnect the tube and quick coupler while the tractor and implement are in operation. Release the pressure by operating the lever after the engine is stopped.***

JOYSTICK VALVE



A : Bucket Up (Roll Back)
B : Bucket Down (Dump)
C : Boom Up
D : Boom Down

NOTE

- The hoses and couplers for installation are supplied with the loader.

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MAINTENANCE CHECK LIST
DAILY CHECK ITEM

SERVICE SCHEDULE		MAINTENANCE CODES
ITEM	SERVICE REQUIRED	
Engine Oil	Check the oil level and add as needed. Do not overfill.	E
Hydraulic (Trans / Diff.) Fluid	Check level and add as needed.	D
Engine Air Filter and Air Intake System	Check restriction indicator. (If equipped) Check for leaks and damaged components. Do not use compressed air to clean elements.	T
Engine Cooling System	Clean debris from oil cooler, radiator screen and grills. Check coolant level cold, add premixed coolant as needed.	F, G, AC
Seat Belt	Check the condition of seat belt and mounting hardware. Repair or replace as needed.	
Tires	Check for wear, damaged tires and ensure for proper sized tires and correct air pressure.	
Parking Brake	Check operation and adjust if required.	
Clean Pedals	Clean brake pedals, travel control pedal, clutch pedal and footrest area.	H
General Items	Check for loose or broken parts, damaged operator cab, instrument operation, loose wheel nuts / bolts, oil leaks and damaged or missing signs. (Decals)	Q, AG, AH, AM
PTO	Inspect the splines. Replaced damaged or missing shields and guards.	
Three-point Linkage	Check operation and condition of pins, links and bars.	
Loader (If Equipped)	Check mounting hardware for loose or broken parts.	

※ For detailed information about maintenance codes, refer to the corresponding section in each chapter.

MAINTENANCE SCHEDULE CHART

NO.	Item / Maintenance interval		Run hour									Run age		Remarks		Maintenance codes
			10	50	100	200	400	600	800	1500	3000	1Year	2Year			
1	Engine oil	Change		⊙	○											L
		Check	⊙													E
2	Transmission oil filter	Replace		⊙		○										M
3	Transmission fluid	Change					○									M
		Check	⊙													D
4	Front axle oil	Change					○									N
5	Front axle pivot	Adjust						○								
6	Engine start system	Check		○												
7	Greasing	Apply			○											P
8	Wheel bolt torque	Check	⊙	○												Q
9	Battery condition	Check			○									* 3		W
10	Air cleaner element	Check	○													T
		Clean		○										* 1	#	T, AF
		Replace			○							○		* 2		
11	Fuel filter element	Replace				○									#	S
12	Fan belt, Air-con belt	Adjust			○									* 3		V, AB

NO.	Item / Maintenance interval		Run hour									Run age		Remarks		Maintenance codes
			10	50	100	200	400	600	800	1500	3000	1Year	2Year			
13	Brake pedal free play	Adjust		⊙	○											R
14	Radiator hose and clamp	Clean	⊙													G
		Check				○										Z
		Replace											○			
15	Power steering hose and oil line	Check				○										AA
		Replace											○			
16	Fuel line	Check			○										#	U
		Replace											○			
17	Intake air hose	Check	⊙			○										X
		Replace											○	* 3		
18	PTO shaft and guard condition	Check	⊙		○											
19	3 point hitch and draw-bar condition	Check	⊙		○											
20	Secure pins	Check	⊙		○											
21	Tire pressure and damage	Check	⊙		○											
22	Parking brake condition	Check	⊙		○											
23	Toe-in	Adjust				○										Y

NO.	Item / Maintenance interval		Run hour									Run age		Remarks		Maintenance codes
			10	50	100	200	400	600	800	1500	3000	1Year	2Year			
26	Engine valve clearance	Adjust							○							AE
27	Fuel injection nozzle injection pressure	Check								○					#	
28	injection pump	Check									○				#	
29	Cooling system	Clean											○			AJ
30	Coolant	Check	⊙													AJ
		Replace											○			
31	Air-con filter	Replace										○				AI
32	Fuel system	Check												* 3		C
33	Fuse	Replace												* 3		AN, AQ, AP
34	Light bulb	Replace												* 3		AQ

IMPORTANT

- **⊙ must be done after the first 10 or 50 hours of operation.**
  *** 1 Air cleaner should be cleaned more often in dusty conditions than in normal condition.**
  *** 2 Every year or every 6 times of cleaning. * 3 Replace only if necessary.**
- **The items listed above (# marked) are registered as emission related critical parts by KIOTI in U.S.EPA exhaust emission standard non-road emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the above instruction.**

LUBRICANTS

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

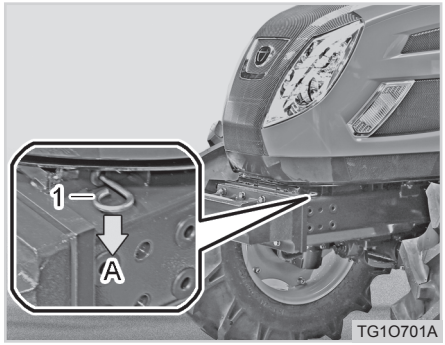
NO.	SECTION	CAPACITY [L (U.S.gal.)]	LUBRICANTS
1	Fuel	120 (31.7)	Unleaded diesel
2	Coolant	13.9 (3.67)	An antifreezing solution(Ethylene glycol) + Pure water (50 : 50)
3	Engine oil (Filter Included)	10.5 (2.77)	API Service Classification CC or CD SAE 15W-40
4	Transmission oil	74 (19.5)	Daedong : UTF 55 Exxonmobil : Mobilfluid 423 or 424, Exxon Hydraulic 560 Shell : DONAX-TD BP : Tractran UTH
5	Front axle oil	8.9 (2.4)	SAE 90 gear oil or better, or same as T/M oil
6	Brake oil	0.47 (0.12)	Korea Shell Tellus 32/SK ZIC SV AW 32
7	Grease - Ref to "Grease fitting location" in chapter 7.	A little	Multi purpose 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.***
- ***The KIOTI genuine brake fluid is mineral oil based fluid. Never use vegetable oil-based fluid for automobile.***

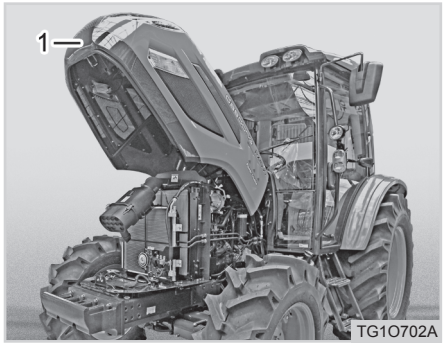
MAINTENANCE CODE

HOW TO OPEN THE HOOD(A)



(1) Opening Knob
(A) Pull *(B) Hood*

1. To open the hood, pull the lever on the lower right side from the hood to the side with the front section of the hood pressed down. Then, the front of the hood is opened.
2. To close the hood, press down the front section of the hood until it is locked into its original position.
3. Do not apply excessive force to the lever to fix the hood. The hood can be damaged.

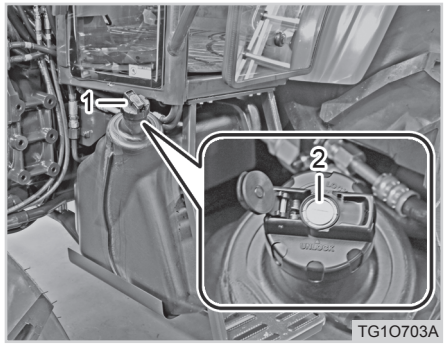


(1) Hood

⚠ CAUTION

- **Never open the hood while the engine is running.**

CHECKING AND ADDING FUEL(C)



(1) Fuel Tank Cap

The fuel tank cap is automatically locked as it is tightened. To fuel, unlock the cap with the ignition key before opening it.

Fuel Tank Capacity
120 L (31.7 U.S.gal.)

1. Turn the key switch to "ON", check the amount of fuel by fuel gauge.
2. If the needle on the fuel gauge is close to "E" or the fuel level is low, open the fuel tank filler cap and add the fuel.
3. After adding the fuel, close the fuel tank filler cap.

⚠ CAUTION

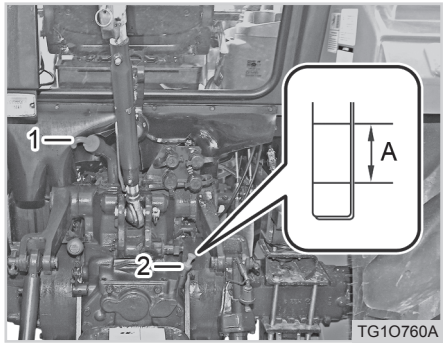
To avoid personal injury :

- **Do not smoke while refueling.**
- **Add the fuel in a well-ventilated area.**
- **Be sure to stop the engine before refueling.**
- **Dirt or sand contained in fuel may cause the fuel injection pump to malfunction, use the strainer when refuelling.**

⊕ IMPORTANT

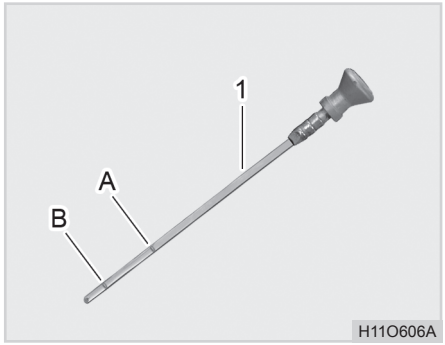
- **Be careful not to let the fuel tank become empty, otherwise air will enter the fuel system, necessitating bleeding before next engine start.**
- **Be careful not to spill during refueling. If a spill occur, wipe it off at once, or it may cause a fire.**
- **If unit is not used for a long time, make sure the fuel viscosity is suitable for the cold weather.**

CHECKING TRANSMISSION FLUID LEVEL(D)



(1) Oil Filler Plug (2) Oil Dipstick
(A) Oil Level Is Acceptable Within Range

1. Park the machine on a flat surface, lower the implement and shut off engine.
2. Depress the brake pedals and apply the parking brake.
3. Set all shift levers into the neutral position.
4. Stop the engine.



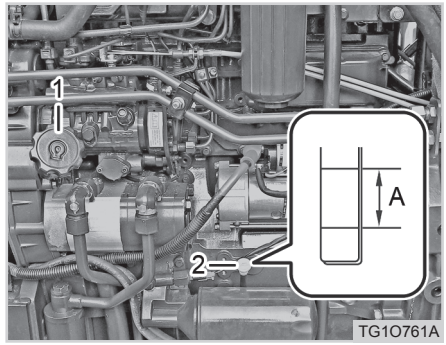
(1) Oil Dipstick
(A) Upper Limit *(B) Lower Limit*

5. Pull out the oil dipstick, clean it, and then insert it into its original position. Then, pull it out again and check if the oil level is within the specified range.
6. If the oil level is too low, add some new oil so that the level is within the allowable range. (Refer to "Lubricant" in this chapter for fluid specs)

IMPORTANT

- **If oil level is low, do not run engine.**
- **Never add the oil over the upper limit.**
- **Be sure to check the oil level after installing hydraulic implement. Add the fluid as needed.**
- **Check the oil level with the cylinders of an implement extended and check again with cylinders retracted. Add the oil to adjust average oil level in the range of the oil limit. (Upper or lower)**

CHECKING ENGINE OIL LEVEL(E)



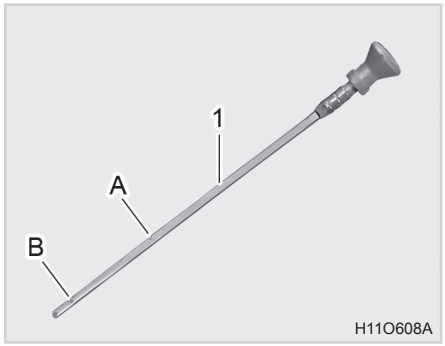
(1) Engine Oil Filler Plug
(2) Oil Dipstick
(A) Oil Level is Acceptable Within This Range

1. Check the engine oil daily.
2. Park the tractor on a level ground and lower the implement.
3. If the engine was just running, wait for approx. 5 minutes before checking the oil level.

⚠ CAUTION

To avoid personal injury :

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



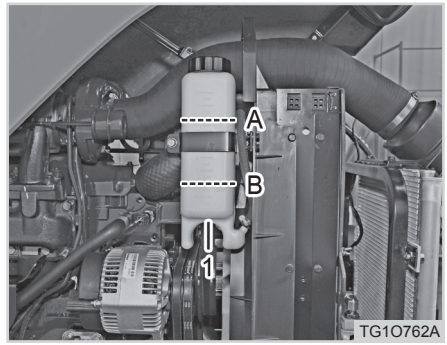
(1) Oil Dipstick
(A) Upper Limit (B) Lower Limit

4. Pull out the oil dipstick, clean it, and then insert it into its original position. Then, pull it out again and check if the oil level is within the specified range.
5. If the oil level is too low, add some new oil so that the level is within the allowable range.

IMPORTANT

- **When using oil of different maker or viscosity from the previous one, remove all of the old oil. Never mix two different types of oil.**
- **Do not start the engine when the oil level is below lower limit.**
- **Wipe the oil dipstick with clean cloth or tissue. If foreign material enters the oil sump, it can lead to malfunction of the engine.**
- **Never add the oil over the upper limit.**

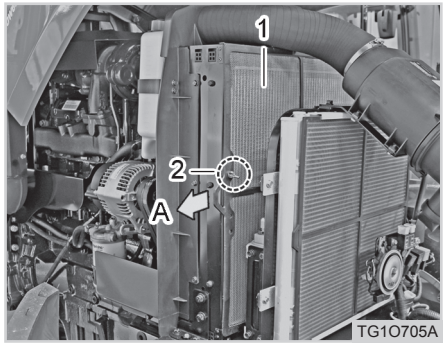
CHECKING COOLANT LEVEL(F)



(1) Reservoir Tank
(A) FULL (B) LOW

1. Check to see that the coolant level is between the "FULL" and "LOW" marks of reservoir tank.
2. When the coolant level drops due to evaporation, add water only up to the middle of the range. In case of leakage, add anti-freeze and water in the specified mixing ratio up to the middle of the range.
3. The tractor is furnished in the factory with a mixture of anti-freeze (ethylene glycol) and water in a ratio of 50 : 50 which is usable in any season.

CLEANING GRILL, RADIATOR SCREEN(G)



(1) Radiator Screen (2) Bolt
(A) Detach

1. Check front grill and side screens to be sure they are clean of debris.
2. Lift out the radiator screen and remove all the foreign material.

⚠ CAUTION

To avoid accidents :

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

⊕ IMPORTANT

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

CHECKING BRAKE PEDALS(H)

1. The brake pedals should be inspected for free travel, and smooth operation.
2. You should adjust this pedal if an incorrect measurement is found. (See maintenance code "O" and "R" in this chapter)

NOTE

- When checking the brake pedals separated, both of the brake pedals should move down to the same depth.

CHECKING GAUGES, METER AND EASY CHECKER(I)

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

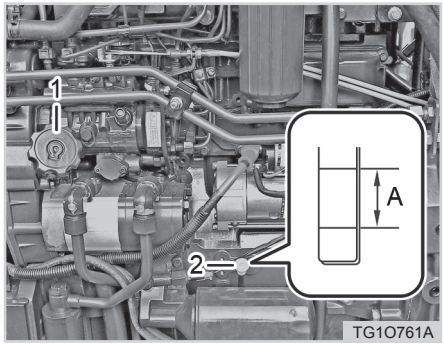
CHECKING HEAD LIGHT, HAZARD LIGHT ETC.(J)

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

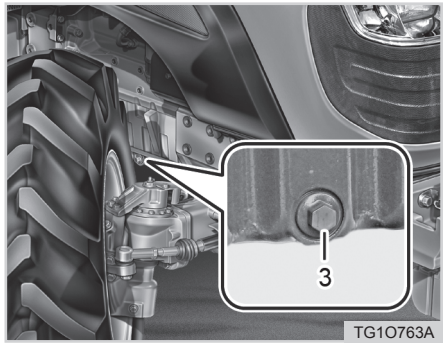
CHECKING SEAT BELT AND CABIN(K)

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

CHANGING ENGINE OIL AND REPLACING FILTER(L)



(1) Engine Oil Filler Plug (2) Oil Dipstick
(A) Oil level is acceptable within this range



(3) Drain Plug

1. Park the tractor on a level ground and start the engine to warm it up.
2. Stop the engine, apply the parking brake, and remove the drain plug.
3. Remove the drain plug at the bottom of the engine and drain the oil completely. All the used oil can be drained out easily when the engine is still warm.

   Be sure to put the drain plugs to the oil sump securely.

(1) Engine Oil Filter

4. Remove the oil filter behind the cooling fan on the right side of the engine.
5. Apply a thin film of oil to the O-ring of a new filter and tighten the O-ring firmly by hand.
6. Fill the engine oil to the specified level and tighten the oil filler cap.

Engine Oil Capacity (Filter Included)
10.5 L (2.77 U.S.gal.)

7. Run the engine for approx. 5 minutes to deliver oil to each part.
8. Engine oil light should go off after 10 seconds of running. If the oil pressure light stays on, stop the engine.
9. Check the engine oil level again with the oil dipstick. If the level is low, add more oil.

NOTE

- The engine oil filter should be replaced when changing the engine oil.

⚠ WARNING

- ***The engine oil is very hot while the engine is running or right after the engine is stopped. Be careful not to be burned.***
- ***Avoid oil contact while changing or adding engine oil and wear eye protection to prevent eye contact.***

⚠ WARNING

- ***Prolonged and repeated contact with the engine oil may cause skin disorders and skin cancer. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.***
- ***Keep the used oil out of reach of children.***

⚠ CAUTION

To avoid personal injury :

- **Be sure to stop the engine before changing the oil or replacing the filter.**
- **Check the engine oil level before every operation of the tractor. If the engine oil is insu-fficient, the engine can be da-maged, and this is not covered by warranty. Be sure to add the engine oil when its level is below the lower limit of the oil dipstick.**

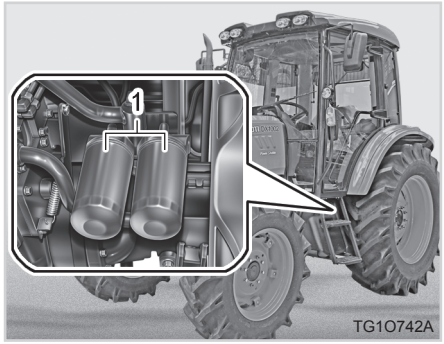
REPLACING TRANSMISSION FLUID AND FILTER(M)

⚠ CAUTION

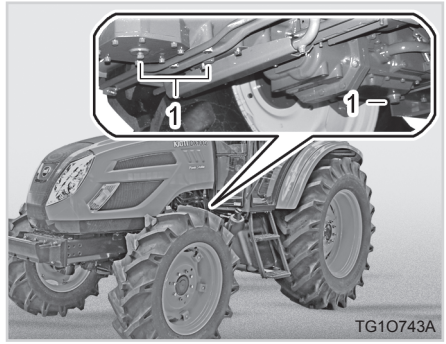
- **Do not dispose of used oil and oil filter into drainage and other places not designated by regulations. Observe applicable regulations when disposing used oil and filters.**

IMPORTANT

- **Use only KIOTI genuine engine oil and filters to insure smooth operation and durability of the engine.**



(1) Oil Filter Cartridge



(1) Drain Plug

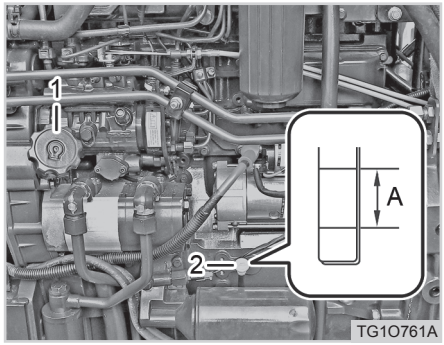
The transmission fluid should be changed if it is contaminated or after the transmission is serviced or every 400 hours of operation. When changing the transmission fluid, make sure to change the fluid filter. However, replace the filter only at initial 50 hours and every 200 hours operation afterward.

1. Park the tractor on a level ground and start the engine to warm it up.
2. Stop the engine, apply the parking brake, and remove the drain plug.
3. To drain the used fluid, place the oil container under the transmission case and remove the drain plug to drain used fluid. If the fluid does not flow out freely, unscrew

the breather plug on the top of the hydraulic cylinder on the behind of the top link bracket to facilitate drainage. (Ref to next page)

Reinstall the drain plugs securely afterward.

4. Unscrew the fluid filter from the rear right section on the tractor using a filter wrench.



(1) Oil Filler Plug (2) Oil Dipstick
(A) Oil level is acceptable within this range

5. Apply a thin film of clean oil onto the O-ring of a new filter.
6. Tighten the filter firmly by hand.
7. Run the engine for a few minutes and then stop it to check the leakage and fluid level. Add fluid to the specified level as needed.

Transmission Oil Capacity
74 (19.5)

⚠ CAUTION

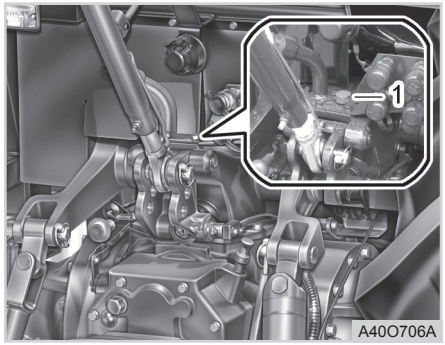
To avoid personal injury :

- **Be sure to stop the engine before changing the fluid or replacing the filter.**
- **Cool down the fluid sufficiently. You can get burned by hot fluid.**

IMPORTANT

- **To prevent serious damage to the hydraulic system, use only a KIOTI genuine filter.**
- **Do not operate the tractor with heavy load right after changing the transmission fluid. Run the engine at medium speed for a few minutes to prevent damage to the hydraulic system.**

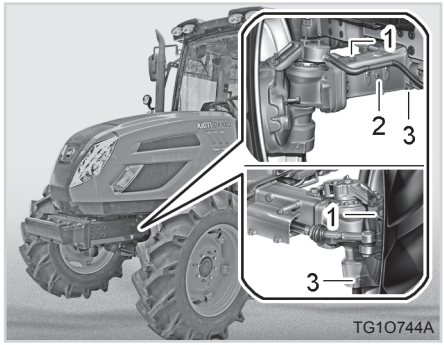
CHANGING FRONT AXLE CASE OIL(N)



(1) Air Bleeding Plug

IMPORTANT

- **When adding the fluid, unscrew the bleeding plug on the top of the hydraulic cylinder. Other-wise, the fluid can overflow.**



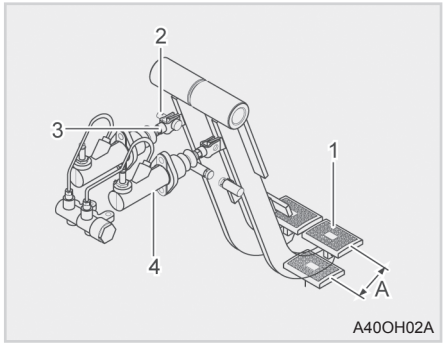
(1) Oil Filler Plug (2) Checking Oil Pulg
(3) Drain Plug

1. To drain the used oil, remove the right and left drain plugs 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 checking plug on the left of the front axle.
4. Add new oil to the specified level through the oil filler.
5. Wait at least 15 minutes to allow the oil flow to the bevel case before checking the oil level.
6. Add oil as necessary and tighten the oil filler plugs and oil level checking plug.

Front Axle Oil Capacity
8.9 L (2.4 U.S.gal.)

ADJUSTING BRAKE PEDAL(O)

BRAKE PEDAL FREE PLAY



(1) Brake Pedal *(2) Push Rod*
(3) Lock Nut *(4) Master Cylinder*
(A) Free Play

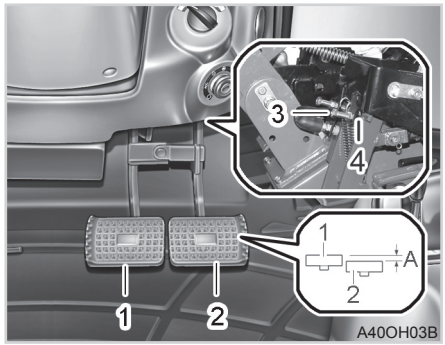
1. Slightly depress the brake pedal and measure its free play.
2. If the free play is out of the specification, adjust the length of the push rod.
3. Tighten the lock nut firmly after adjustment.

Pedal Free Travel (A)
15~30 mm (0.591 ~ 1.181 in.)

⚠ WARNING

- ***Make sure that the push rod does not push the piston with the pedal released.***

ALLOWABLE TOLERANCE OF FREE PLAY BETWEEN LH AND RH BRAKE PEDALS



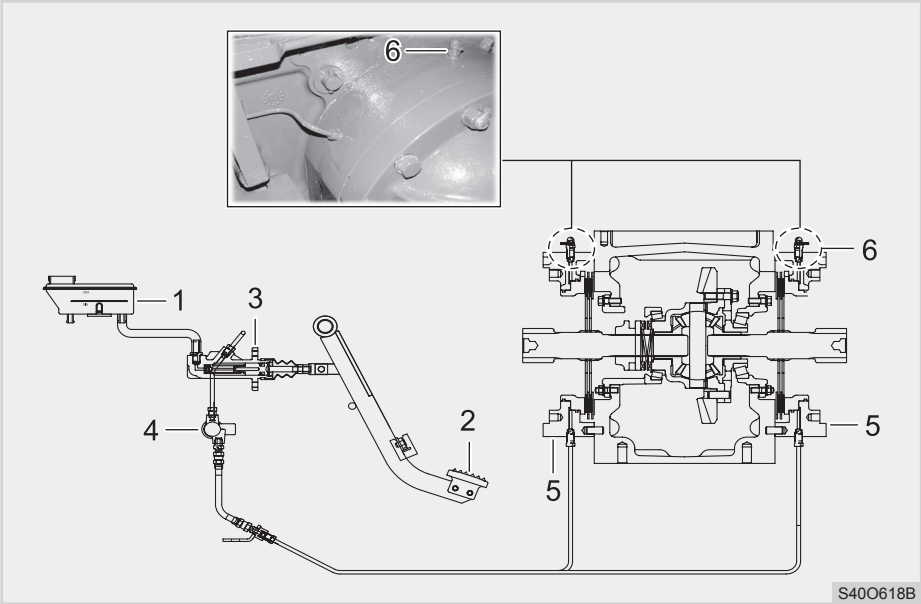
(1) Brake Pedal (LH) *(2) Brake Pedal (RH)*
(3) Adjusting Bolt
(A) Free play difference between brake pedals

1. Slightly depress the LH and RH pedals separately and measure the free play of both pedals.
2. If the difference between two pedals' free play is out of the specified value, adjust the free play with the bolt.

- Tighten the mounting nut firmly after adjustment.

Free play difference between brake pedals (LH, RH)
Less than 7 mm (0.276 in.)

BLEEDING BRAKE FLUID LINE



1. Add the brake fluid to the brake fluid tank (1) up to the upper limit.
2. Unscrew the bleeder (6) of the brake case (5) for a half turn.
3. Install a transparent plastic hose to the bleeder of the brake case (5) to collect the fluid.
4. Repeat depressing and releasing the brake pedal (2) slowly. Replenish the brake fluid tank (1) with fluid so that it does not get empty.
5. Repeat the step 4 until there is no air bubble coming out from the bleeder.
6. After bleeding is completed, tighten the bleeder with the brake pedal (2) depressed.
7. Bleed the other side of brake line by repeating the steps from 2 to 6.
8. The fluid level of the brake fluid tank (1) should be at the upper limit after bleeding the line.

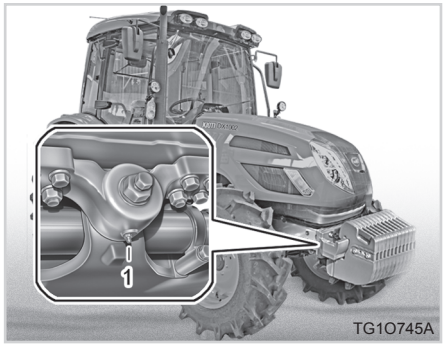
Brake Fluid Capacity
0.47 L (0.12 U.S.gal.)

⚠ WARNING

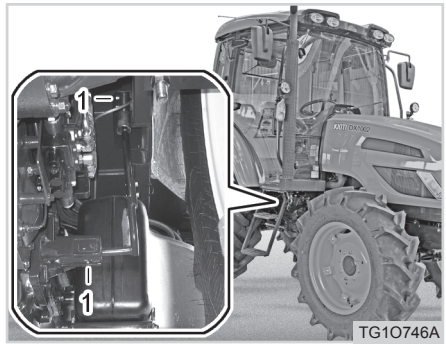
- ***The KIOTI genuine brake fluid is mineral oil based fluid. Never use vegetable oil-based fluid for automobile.***

LUBRICATING GREASE LOCATIONS(P)

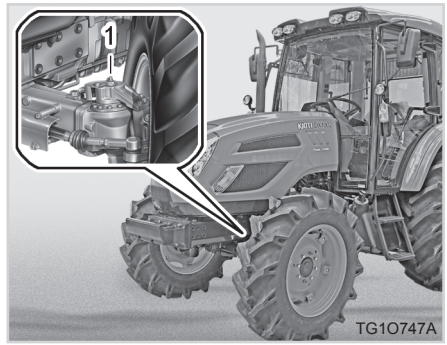
Apply high-quality multi-purpose grease onto the positions in the figure at every 50 hours of operation or whenever necessary and record the operating time when applying it.



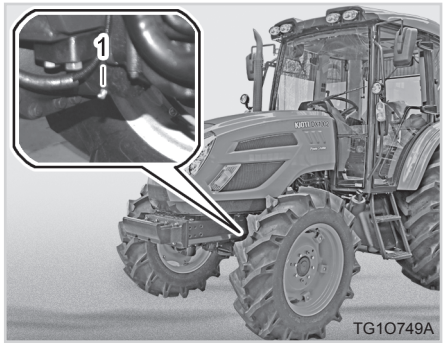
(1) Front Bracket Axle Pivot



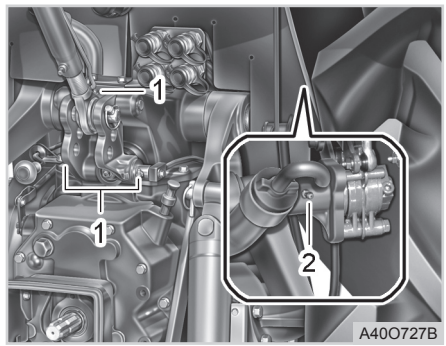
(1) Main Shift Lever



(1) Bevel Gear Case, LH/RH

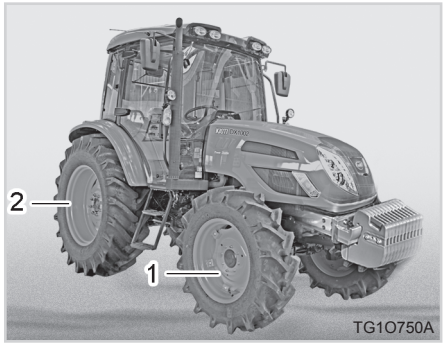


(1) Rear Bracket Axle Pivot



(1) Top Link Holder
(2) Piston Control Lever Shaft Housing

CHECKING WHEEL BOLT / NUT TORQUE(Q)



(1) Front Wheel Bolt / Nut
(2) Rear Wheel Bolt / Nut

⚠ CAUTION

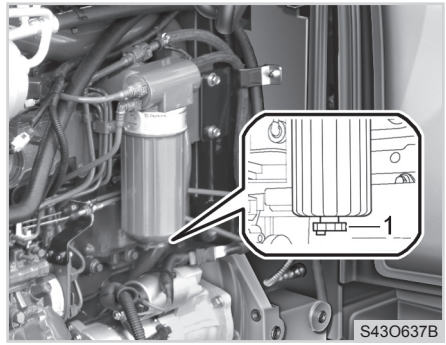
To avoid personal injury :

- **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.

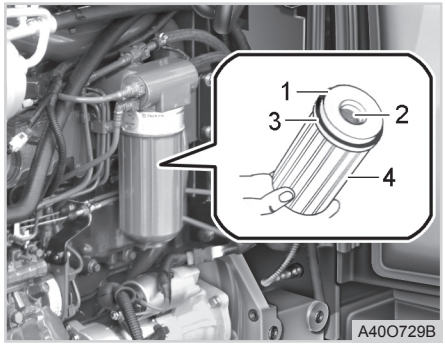
Item		Tightening Torque
Front wheel	Bolt	196 ~ 225 N·m 144 ~ 166 lbf·ft 20 ~ 23 kgf·m
	Nut	
Rear wheel	Nut	275 ~ 319 N·m 203 ~ 235 lbf·ft 28 ~ 32.5 kgf·m

REPLACING FUEL FILTER(S)



(1) Drain Tap

1. Place a suitable container below the fuel filter assembly to retain spilled fuel oil.
2. Thoroughly clean the outside surfaces of the fuel filter assembly. Open the drain tap at the bottom of the filter casing to drain the fuel from the filter.
3. Use a strap wrench to loosen the filter casing. Remove the casing and element from the fuel filter head.



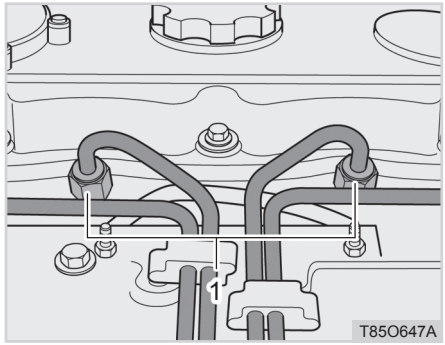
(1) Filter Element *(2) Thread*
(3) Seal *(4) Filter Casing*

4. To remove the filter element from the casing; Press down on the filter element, against the spring pressure, and rotate the element to counterclockwise to release it from the filter casing.
5. Put the new filter element inside the casing and press the element down against the spring pressure. Rotate the element to clockwise to lock the element into the casing.
6. Fit a new seal to the casing and lightly lubricate the seal face with clean fuel oil.
7. Check that the thread on the inside of the element is not damaged.
8. Fit the filter assembly to the fuel filter head and tighten by hand until the filter assembly contacts the filter head. Tighten the assembly a further 1/8 of a turn by hand. Do not use a strap wrench.
9. Close the drain tap and remove the container.
10. Bleed the fuel system. (Refer to the "air bleeding fuel system" in this chapter)

⚠ CAUTION

- **The pre-filter canister and main filter elements must be renewed at the same time.**
- **Do not allow dirt to enter the fuel system. Before a connection is disconnected, clean the area around the connection. After a component has been disconnected, fit a suitable cover to all open connections.**

AIR BLEEDING FUEL SYSTEM(S)



(1) High Pressure Pipe

⚠ CAUTION

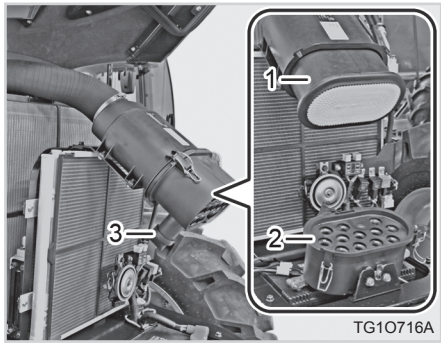
- **Do not run the engine before air bleeding the fuel injection pump.**
- **After bleeding the system, run the engine for 2 minutes at low idle.**

If the name of your tractor is PX9020 or PX1002, when the ignition key is turned to "ON" position and operated for 3 minutes, air is automatically purged.

If the name of tractor is PX7520, air cannot be automatically eliminated.

1. Loosen the injection nozzle cover setscrew and remove the injection nozzle cover.
2. Turn the ignition key to "ON" position for 3 minutes and then turn the key back to "OFF" position.
3. Loosen the high pressure pipe (1) from the injection nozzle.
4. Run the starting motor until fuel comes out of the connections.
5. Tighten the nozzle to 29.4 N·m (3.0 kgf·m).
6. Run the engine and check for oil leak.
7. Install the injection nozzle cover and tighten the setscrew.

REPLACING AIR CLEANER PRIMARY ELEMENT(T)



(1) Element *(2) Cap*
(3) Evacuator Valve

1. The air cleaner uses a dry element. Never apply oil.
2. Evacuator valve should not accumulate in the evacuator valve. Remove and clean it every week. If the tractor is operated in extremely dusty conditions, daily inspection is required.
3. If the element is stained with carbon , dust or oil, replace the filter.
4. Change the element every 1 years or every 100 hours whichever comes first.

To clean the element, use only clean dry compressed air on the inside of the element. Air pressure at the nozzle must not exceed 29 psi (2 kgf/cm²). Maintain reasonable distance between the nozzle and the filter.

IMPORTANT

- **The air cleaner will only fulfill its function if it is correctly and regularly maintained. A poorly maintained air cleaner will mean loss of power, excessive fuel consumption and a reduction in engine life.**
- **Do not run the engine with filter element removed.**

IMPORTANT

- **Be sure to refit the cap with the arrow ↑ (On the rear of cover) upright. If the cap is improperly fitted, evacuator valve will not function and dust will adhere to the element.**
- **Be sure to check any air leak or opening in the air intake system. Even the small gab or opening in the air intake system can cause the serious engine problem after a few years of operation.**

EVACUATOR VALVE

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

CHECKING FUEL LINES(U)

(1) Fuel Pipe *(2) Tightening Band*

Although checking the fuel pipe connection is recommended every 100 service hours, it should be done every 6 months if operation does not exceed 100 hours in 6 months.

1. If the hose clamps are loose, apply a slight coat of lubricant onto the threads and securely tighten it.
2. The fuel pipe is made of rubber and ages regardless of period of service. Change the fuel pipe together with the hose clamps every two years and securely tighten.
3. If the fuel pipes and hose clamps are found damaged or deteriorated earlier than two years, then change them immediately.
4. After the fuel pipe and hose clamps have been changed, bleed the fuel system. (Refer to the "Air bleeding fuel system" in this chapter)

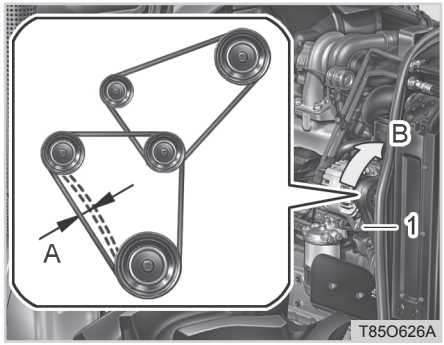
WARNING

- ***Stop the engine when checking the items above.***
- ***The fuel pipes are subject to wear and aging. Failure to perform periodic inspections may lead to a fuel leak. Fuel leaking on a hot engine could cause a fire.***

ADJUSTING FAN BELT TENSION(V)

IMPORTANT

- **When changing fuel pipes, be careful not to allow dust or dirt to enter the fuel system. Contaminations in the fuel system could damage the fuel system or injection pump. Pay extra caution to the fuel pump to prevent dust from entering it.**



(1) Adjusting Bolt
(A) Adjusting Belt Tension (B) Pull

In order to extend the fan belt's lifetime, the tension of the belt should be correctly adjusted if it slips. The belt tension should be inspected regularly according to the following procedure :

1. Stop the engine and apply the parking brake.
2. Open the hood and remove the left side cover.
3. In order to measure the belt tension, apply thumb pressure strongly to the "A" location of belt.

Belt deflection for proper fan belt tension (A)
9 ~ 10 mm (0.35 ~ 0.39 in.)

4. If tension is incorrect, loosen the alternator mounting bolt and hinge bolt. Pull the alternator outward using a pry to reach to the proper belt tension.
5. Be sure to retighten the alternator mounting bolt and hinge bolt securely after adjusting belt tension.
6. Replace the fan belt if it is damaged, cracked or worn.

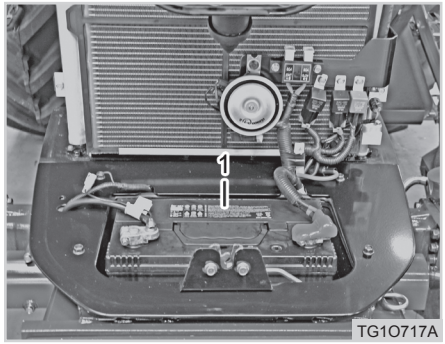
⚠ CAUTION

To avoid personal injury :

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

BATTERY(W)

PRECAUTIONS FOR HANDLING



(1) Battery

It is important to inspect the battery periodically.

1. The battery cable should always be clean and firmly connected. When installing a new or used battery, clean its terminals.
2. Check the battery and cable for damage and corrosion.
3. Apply grease to the terminals and cable end in order to prevent corrosion.

⚠ WARNING

- ***The battery gas can explode. Do not expose the battery to flames or sparks. It may cause a fire.***
- ***The battery fluid contains sulfuric acid that can burn you. Do not allow the battery fluid to contact your eyes, skin, or painted surfaces. If you accidentally get it in your eyes or on your skin, flush with water and seek immidiate medical attentention.***
- ***Be sure to wear eye protection while working on the battery. The battery fluid can hurt your eyes.***
- ***Use only the battery with the specified voltage. Otherwise, it may cause a fire.***

CHARGING

Contact the battery dealer for proper charging instruction.

⚠ CAUTION

- **The charge warning lamp comes on if the charging system is defective. If it comes on while driving, have the system checked or repaired by your local KIOTI Dealer.**
- **Keep the battery fully charged. If the battery fluid concentration is too low during the winter season, the battery may be frozen.**
- **Do not start the engine when the battery is frozen. Try to warm it up first.**
- **If the battery is not securely installed, the battery case and electrolytes could be damaged by vibration. To prevent the battery acid from contacting the terminals, apply grease around the battery terminals and connections.**

⚠ CAUTION

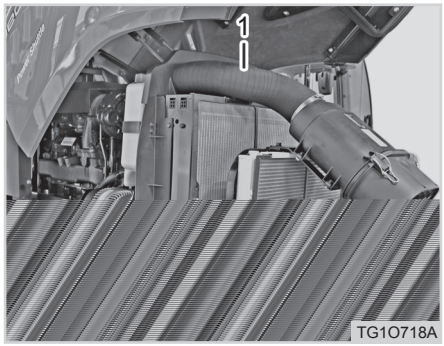
- **Never check the charge status of the battery by placing a metal object across the posts. Use a voltmeter or hydrometer.**

DIRECTION FOR STORAGE

1. When storing the tractor for a long period, remove the battery from tractor, 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.

CHECKING INTAKE AIR LINE(X)



(1) Air Line Hose

1. If the hose clamps are loose , tighten clamps securely.
2. If the hoses and clamps are damaged, you must replace them at once. Failure to do so could lead to engine damage.

ADJUSTING TOE-IN(Y)

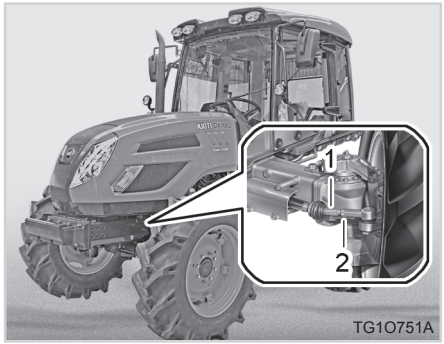
ADJUSTING PROCEDURE

(A) Wheel - to - wheel distance at front
(B) Wheel - to - wheel distance at rear

1. Park tractor on a flat place
2. Turn steering wheel so front wheels are pointed straight ahead.
3. Lower the implement, lock the parking brake and stop the engine.
4. Measure distance between tire beads (center) at front of tire and hub height.

5. Measure distance between tire beads at the rear of tire and hub height.
6. Front distance should be 2~8mm less than rear distance. If not, adjust ball joint length

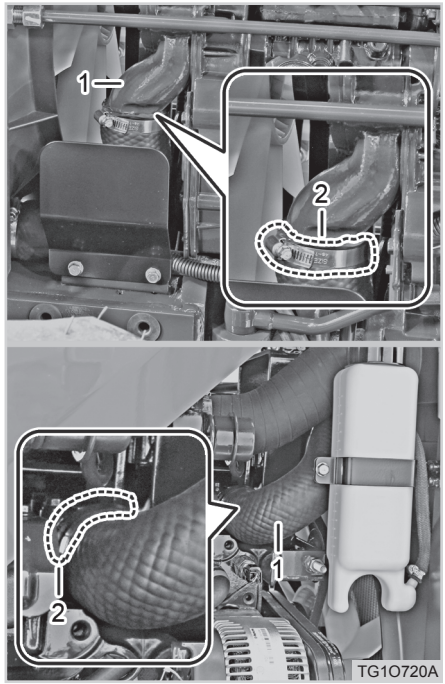
READJUSTMENT



(1) Tie Rod Lock Nut *(2) Tie Rod*

1. Loosen the lock nut and turn the turnbuckle to adjust the rod length until the proper toe-in measurement is obtained.
2. Check the toe-in value after the tie rod is adjusted.
3. Adjust it again if necessary.

CHECKING RADIATOR HOSE AND CLAMP(Z)



(1) Clamp *(2) Radiator Hose*

Check to ensure the radiator hoses are free from damage and are tight-

ened properly every 200 hours or every 6 months, whichever comes first.

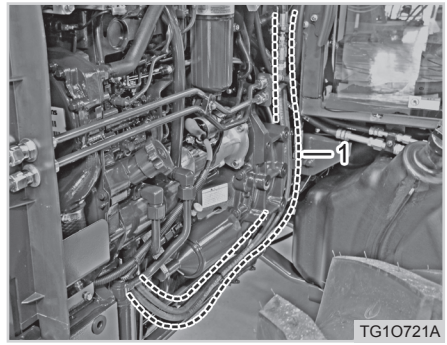
1. If the hose clamps are loose or water leaks from hose, tighten clamps securely.
2. If the radiator hoses are swollen, hardened, cracked, or otherwise damaged, you must replace the hoses. Failure to do so could lead to coolant loss and engine damage. Never perform work while engine is hot.

PRECAUTION AT OVERHEATING

Take the following actions in the event the coolant temperature reaches the boiling point, what is called "Over-heating".

1. Stop the machine in a safe place and keep the engine idling.
2. After 5 minutes of unloaded idling, shut the engine down.
3. Keep yourself away from the tractor for another 10 minutes or until steam has stopped blowing out of the engine.
4. Make sure that there is not danger and repair the cause of the overheating according to the manual's instruction. (Make sure to refer to "Engine troubleshooting" in chapter 8 before starting the engine)

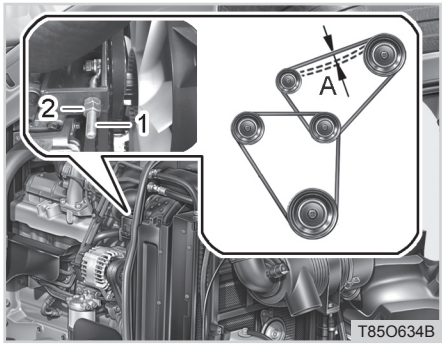
POWER STEERING LINE(AA)



(1) Power Steering Oil Line

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

AIR CONDITIONER BELT TENSION(AB)



(1) Adjusting Bolt (2) Lock Nut
(A) Adjusting Belt Tension

1. Stop the engine and apply the parking brake.
2. Press the belt between the pulley with force of 22.04 lbs. (10 kg) and adjust the belt tension according to the below specification.

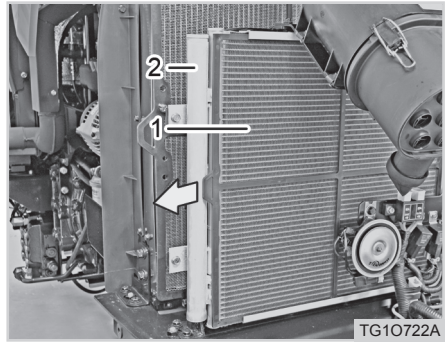
Tension of air conditioner belt (A)
When press the middle point of the belt : 9~10 mm (0.35~0.39 in.)

3. Replace the damaged belt.

⚠ CAUTION

Stop the engine before checking air conditioner belt.

CLEANING AIR CONDITIONER CONDENSER(AC)



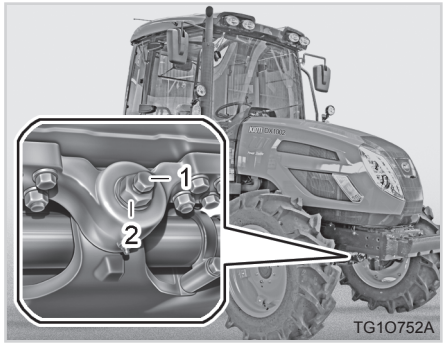
(1) Net (2) Condenser

1. Open the hood.
2. Remove the net and clean it.

⚠ CAUTION

- **Make sure to stop engine when checking. If cooler fan is blocked by dirt, clean with a soft brush or cloth using tab water.**

ADJUSTING FRONT AXLE PIVOT(AD)



(1) Adjusting Bolt *(2) Lock Nut*

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

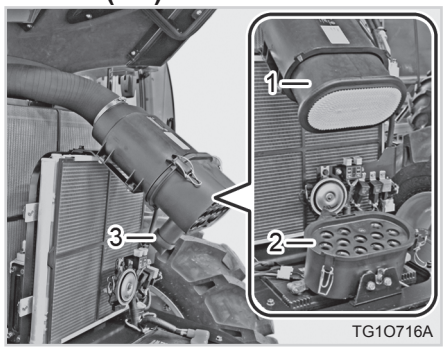
ADJUSTING PROCEDURE

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

ADJUSTING ENGINE VALVE CLEARANCE(AE)

This service can be affected by the engine sensitively. Therefore, contact your local **KIOTI** Dealer for this service.

REPLACING AIR CLEANER FILTER(AF)



(1) Filter *(2) Cap*
(3) Evacuator Valve

If the air cleaner is not in a good condition, the lifetime of the engine can be shortened, excessive soot can be produced, and the engine power can be deteriorated. Therefore, the filter should be inspected frequently. Its replacement interval can be changed according to driving conditions. Replace the filter according to the following proce-dure :

1. Open the hood and check the air cleaner housing for damage.
2. Release the air cleaner clip and remove the front cover.
3. Clean the inside of the air cleaner housing by blowing compressed air through it.
4. Replace the filter and check the housing for damage.
5. Install the front cover and fix it with the clip.

NOTE

- When installing the cover, make sure that the dust collection valve is heading down.

⚠ CAUTION

- **Use only a genuine filter. Use of a non-recommended filter can cause damage to the engine and sensor.**
- **Make sure that no dust enters the system by installing the cover firmly.**
- **When removing the filter, be careful not to let foreign material enter the air inlet.**

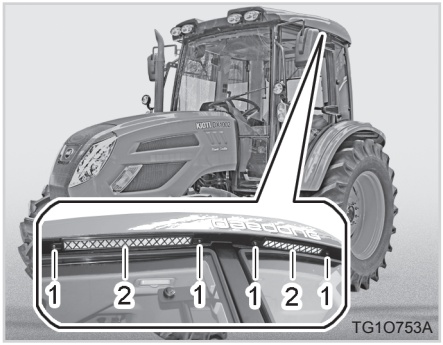
CHECKING AIR CONDITIONER HOSE(AG)

Check the linkage and damage of the air conditioner hose and pipe.

CHECKING CAB CUSHION RUBBER(AH)

Check the damage of the cab cushion rubber.

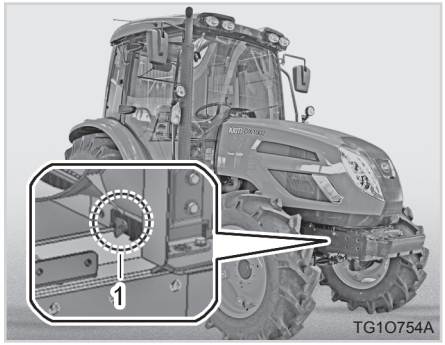
REPLACING AIR FILTER(AI)



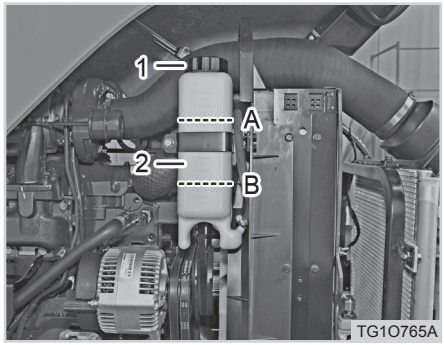
(1) Bolt *(2) Filter*

1. After loosening bolts from the left and right side of the cabin roof and separate the filter.

FLUSH COOLING SYSTEM AND CHANGING COOLANT(AJ)



(1) Drain Cock



(1) Radiator Cap *(2) Reservoir Tank*
(A) FULL *(B) LOW*

1. Stop the engine and let it cool.
2. To drain the coolant, open the radiator drain cock and remove radiator cap. The radiator cap must be removed to completely drain the coolant.
3. After all coolant is drained, close the drain cock.
4. Fill with clean water and cooling system cleaner.
5. Follow the cleaner manufacture's instruction.
6. Install the radiator cap securely.
7. Start and operate the engine for few minutes.
8. Stop the engine and let it cool.
9. Drain water and clears.
10. Add coolant and water, run for a few minutes and allow to come up to temperature.
11. Stop engine and let cool.
12. Check coolant level of reservoir tank and radiator. Add coolant if necessary.

Coolant capacity
13.9 L (3.7 U.S.gal.)

⚠ CAUTION

To avoid accidents :

- **Do not remove the radiator cap while the coolant is hot. You can get burnt by hot steam. Make sure to remove it after the coolant is cooled down enough.**
- **Even though the coolant is cooled down, turn the cap to its first stop and then wait until it is depressurized before removing the cap completely.**

ANTIFREEZE

IMPORTANT

- **Do not start engine without coolant.**
- **Use clean, fresh water and anti-freeze to fill the radiator and reservoir tank.**
- **When the anti-freeze is mixed with water, the anti-freeze mixing ratio must be no less than 50% mixture of water and anti-freeze.**
- **Securely tighten radiator cap.**
- **If the cap is loose or improperly fitted, water may leak out and the engine could overheat.**
- **If the radiator cap has to be removed, follow the caution above and securely retighten the cap.**
- **If the coolant leaks, contact your local KIOTI Dealer.**

This tractor is filled with 50% of ethylene glycol at factory.

If the antifreeze has been replaced by tap water later on, the coolant can be frozen, leading to damage to the cylinder and radiator when the ambient temperature is below 0°.

Therefore, make sure to change water into antifreeze before winter season comes.

When changing the antifreeze with one of another type, flush the cooling system several times and contact a professional for the mixture ratio.

Vol. %	Freezing Point		Boiling Point	
Antifreeze	°F	°C	°F	°C
40	-12	-24	222	106
50	-34	-37	226	108

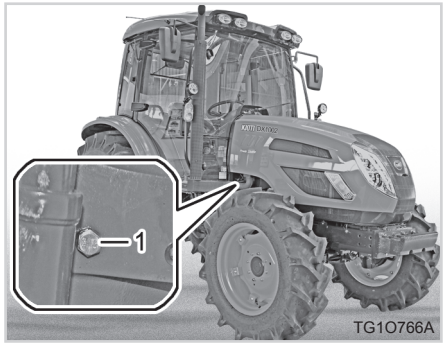
* At 760 mmHg pressure. (Atmospheric)

A higher boiling point is obtained by using a radiator pressure cap.

NOTE

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

DRAINING WATER FROM CLUTCH HOUSING(AL)

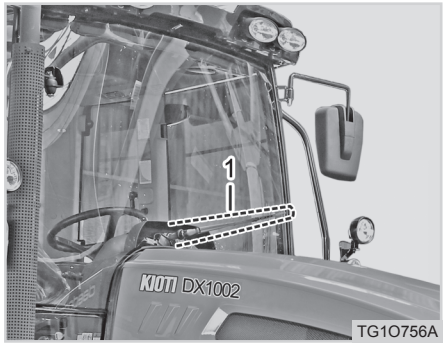


(1) Plug

1. There is a plug under the clutch housing.
2. Drain the water completely and install the plug. Drain the water into a container and dispose of it in a proper manner for environment protection.

CHECKING AND REPLACING WIPER(AM)

INSPECTION

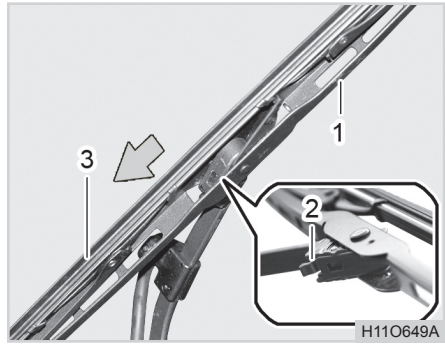


(1) Wiper

Check the operation and wear of the wiper blades frequently. To replace the wiper blade, press the wiper fixing lever to separate it and then pull it away.

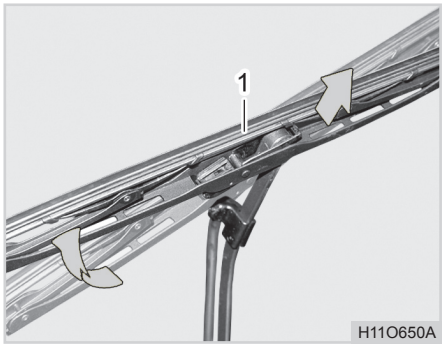
To remove the wiper arm, lift the cap of the wiper arm, remove the nut, and set the wiper arm upright. Then, hold the arm head and shake it left and right to remove the wiper arm from the drive spindle. Disconnect the washer fluid hose and then install a new wiper arm to its position by aligning it to the proper angle.

REPLACEMENT



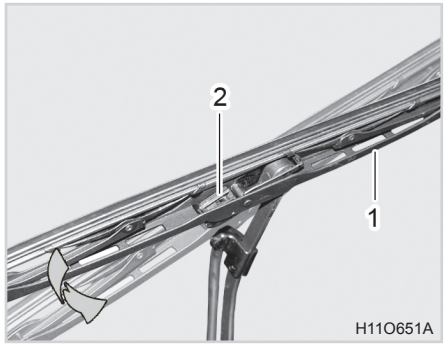
(1) Wiper Arm (2) Wiper Fixing Lever
(3) Wiper Blade

1. Set the wiper upright to replace the wiper blade.
2. Hold the blade with one hand and press the blade fixing lever with the other hand to separate the blade from the fixing part.



(1) Wiper Blade

3. Lower the blade and pull out the blade by moving it in the shape of "U". (Arrow direction in the figure)

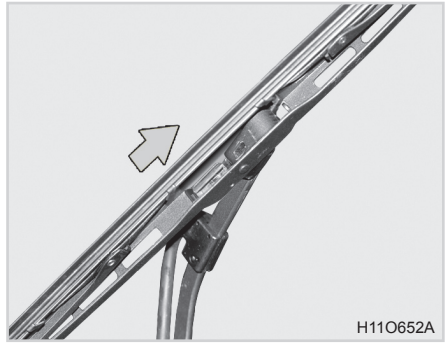


(1) Wiper Arm *(2) Fixing Lever*

4. Set a new wiper blade horizontal so that the fixing lever is facing down. Align the wiper arm with the fixing lever slot and lower the blade.

⚠ CAUTION

- **When the wiper blade is separated, the wiper arm should not contact the windshield or rear glass. The glass can be damaged.**



5. Lift the wiper blade to its end and install it so that the fixing lever is engaged with the wiper arm. (A clicking sound is heard)

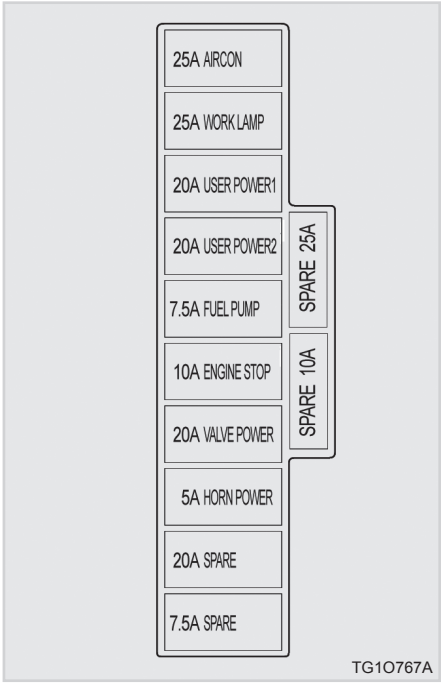
REPLACING FUSE(AN)

⚠ CAUTION

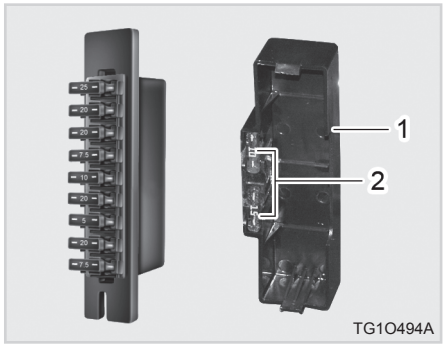
- **When wiping the windshield, set the wiper blade upright, spray water onto the glass with a hose, and wipe the glass with clean cloth.**
- **If the wiper blade is frozen to the glass in a cold weather or there is not washer fluid, never operate the wiper.**
- **In order to prevent damage of the wiper blade, never use synthetic detergent, thinner or solvent on the windshield.**

(1) Fuse Box

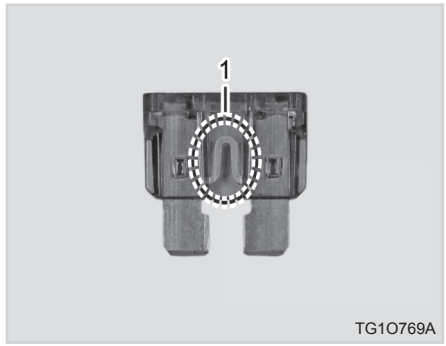
Fuses protect the tractor electrical system from potential damage. A blown fuse indicates that there is an overload or short somewhere in the electrical system.



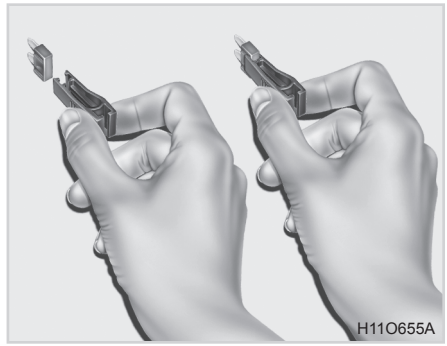
The fuse is located under the right side of the instrument panel.



(1) Fuse Storage Case (2) Fuse

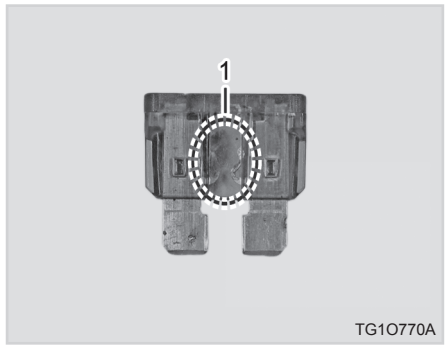


(1) Normal Fuse



There are marks for the fuse capacity and location on the cover of the fuse panel. Replace the fuse according to the following procedure :

1. Turn the key switch to the "OFF" position and turn off all the electrical devices.
2. Open the fuse box cover and check the fuse in question using fuse tongs.



(1) Blown Fuse

3. If the fuse is blown, replace it with a new fuse with same capacity. Make sure it is firmly installed.
4. Install the fuse box cover.

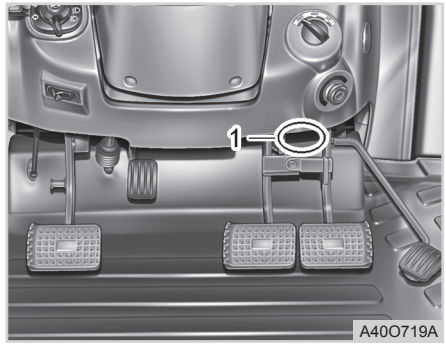
REPLACING CABIN FUSE(AO)

⚠ WARNING

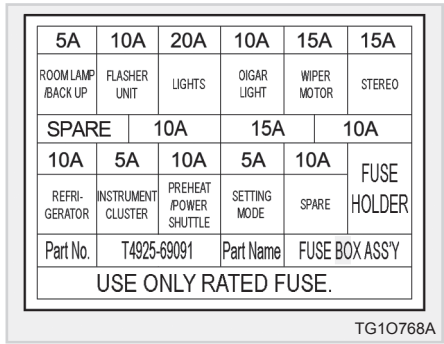
- ***Never use a fuse with the capacity higher than specified on the fuse box cover.***
- ***If using a faulty fuse, steel wire, or foil, the electrical device can be damaged or even catch a fire.***

NOTE

- If the replaced fuse is blown soon, it is probable that the wiring system is faulty. In this case, contact your local **KIOTI** Dealer.
- If the fusible link, relay or other electrical component is faulty, contact your local **KIOTI** Dealer.

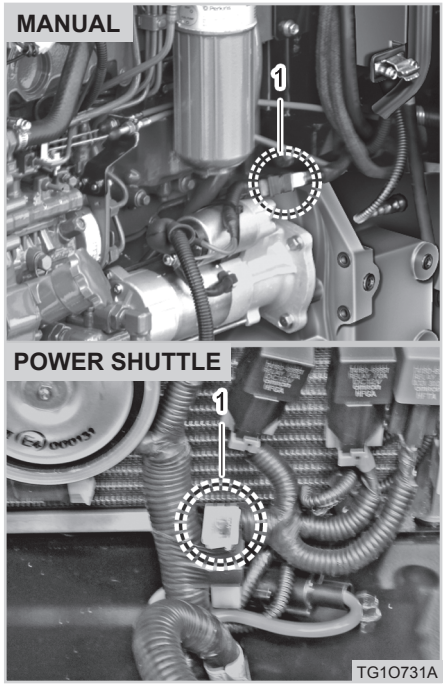


(1) Fuse Box



The fuse box in the cabin can be identified by opening the lever guide cover on the left side of the driver's seat. It is to protect the electrical devices in the cabin, excluding the body. The fuse in this box can be replaced with the same method for the fuse in the body fuse box.

SLOW BLOW FUSE(AP)



(1) Slow Blow Fuse

The slow-blow fuse is to protect the electric wiring. If it is blown, find and repair the cause and replace it with a new genuine part.

Slow Blow Fuse
60A

IMPORTANT

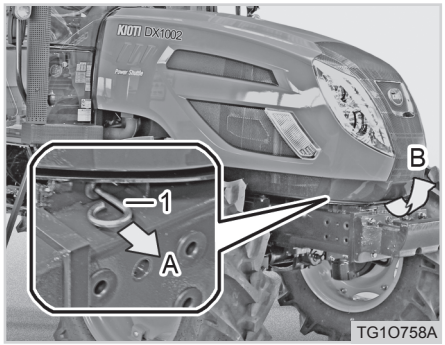
- **Using a non-approved slow-blow fuse can damage electrical systems in the tractor severely.**
- **Refer to the chapter "Troubleshooting" in this manual or contact your local KIOTI Dealer for specific information dealing with electrical problems.**

REPLACING BULB(AQ)

The bulb and capacity used in this tractor are listed in the below table. This section only describes procedures the users can handle.

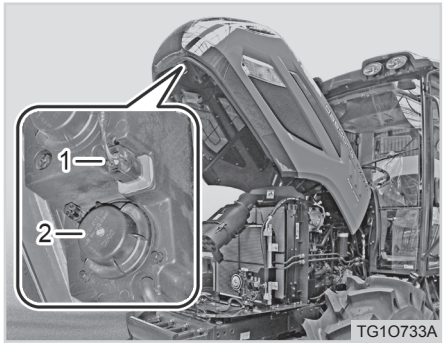
No.	Bulb		Capacity
1	Headlamp		35W/35W
2	Position lamp (Front)		5W
3	Stop/Position lamp (Rear)		21W/5W
4	Turn signal lamp		21W
5	Work lamp		21W
6	Cluster	Charging warning light	3W
	Indicator	Others	1.4W
7	Backup lamp		10W

HEADLAMP



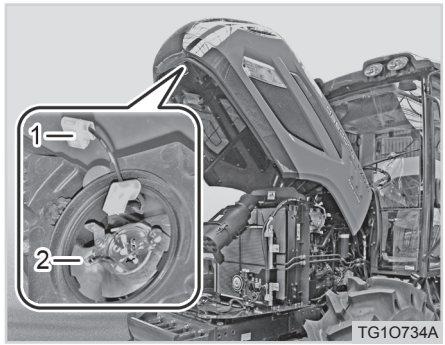
(1) Handle
(A) Pull *(B) Open*

1. Turn the key switch to the "OFF" position and open the hood.



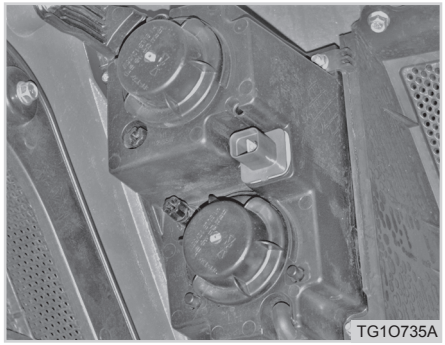
(1) Connector *(2) Rubber Cover*

2. Disconnect the wire connector.
3. Remove the rubber cover.



(1) Connector *(2) Safety Spring*

4. Press down the safety spring and turn it counterclockwise to remove the bulb. If the bulb is blown, replace it with a new one with the same capacity.



5. Installation is carried out in reverse order of removal.

   Be careful not to touch the new bulb with your finger`s to ensure its original life time.

   If you need to clean the bulb, use alcohol with a lint free rag.

⚠ WARNING

- ***If using a bulb other than the specified one, the lamp can be damaged and the tractor can even catch fire.***
- ***Make sure to use bulbs with the specified capacity.***

⚠ CAUTION

- **Make sure to use a KIOTI genuine bulb. Using a non-recommended bulb can cause a fire.**
- **The headlamps can temporarily be fogged due to rain or car wash. This is because of the temperature difference between the inside and outside of the lamp, which is normal.**

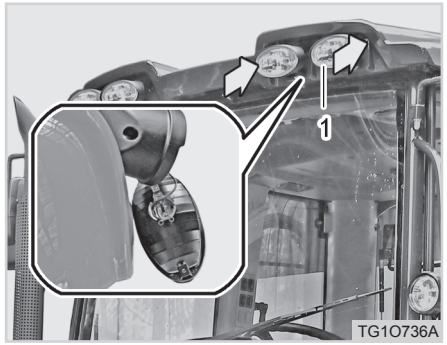
WORK LAMP (FRT/RR)

The work lamp uses a halogen bulb. Do not touch the illuminating part of the halogen bulb.

The bulb life can be shortened by finger prints, dust and moisture, or the bulb even can be broken. Clean it with soft cloth.

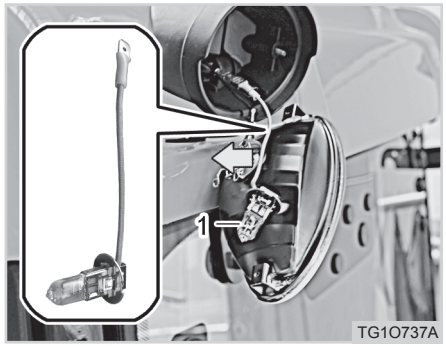
Be careful of the following when replacing the halogen bulb :

- Replace the bulb after it is cooled down.
- Do not touch the glass of the bulb.
- Handle the bulb with care and be careful not to scratch or rub it.
- Do not let the bulb contact with liquid when it is illuminated.
- Wear protective glasses when replacing the bulb.



(1) Work Lamp Glass Case

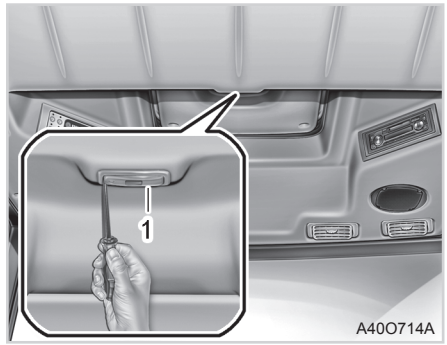
1. Turn the key switch to the "OFF" position and unscrew the screw from the mounting hole with a cross-head screwdriver to separate the front glass case.



(1) Work Lamp Bulb

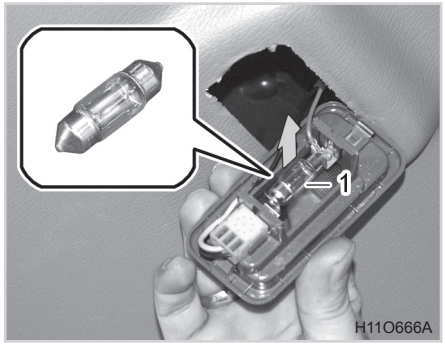
2. Unscrew the ground wire screw, disconnect the connector, and turn the bulb counterclockwise to remove it. Then, install a new bulb with the same capacity.

ROOM LAMP



(1) Room Lamp

1. Fit a flat-bladed screwdriver into the edge of the room lamp and pry off the room lamp cover.



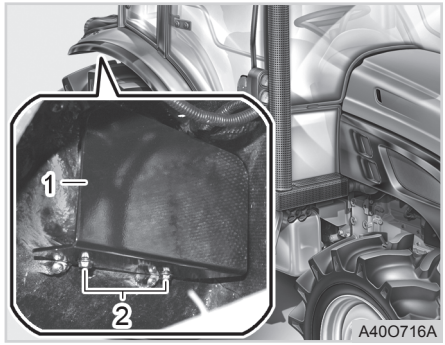
(1) Room Lamp Bulb

2. Remove the room lamp bulb by pulling it up. Install a new bulb.

TURN SIGNAL LAMP (REAR)

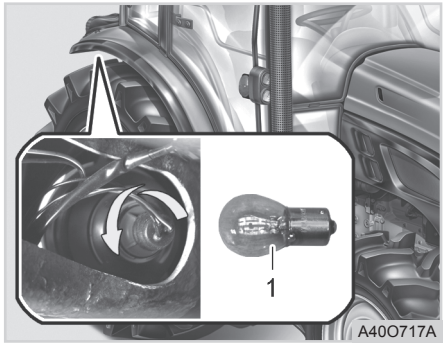
(1) Turn Signal Lamp (RR)

1. The turn signal lamp (rear) is installed on the rear fender.



(1) Protective Cover
(2) Mounting Bolt

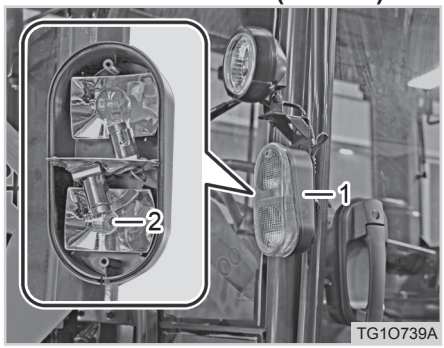
2. Unscrew the mounting bolts from the inside of the rear fender.



(1) Turn Signal Lamp (RR) Bulb

3. Remove the bulb by turning its socket counterclockwise. Install a new bulb.

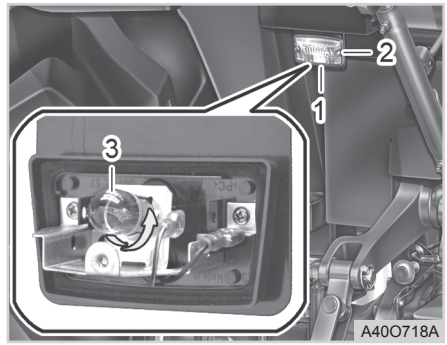
TURN SIGNAL LAMP (FRONT)



(1) Turn Signal Lamp (FRT)
(2) Turn Signal Lamp (FRT) Bulb

1. Remove the cap and unscrew the mounting bolts to remove the front turn signal lamp assembly.
2. Turn the bulb body counterclockwise to remove it.
3. Remove the bulb by pressing it down lightly and install a new bulb. Fit the socket to the grooves and turn it clockwise.

LICENSE PLATE LAMP



(1) License Plate Lamp
(2) Mounting Bolt
(3) License Plate Lamp Bulb

1. Remove the cover and unscrew the bolt. Then, turn the bulb while pressing it down lightly to remove it. Install a new bulb.

⚠ CAUTION

- **Do not touch the bulb if it is still illuminated or right after it is turned off. You can be burnt by the hot bulb.**

⚠ CAUTION

- **For some bulbs which require delicate handling or work process, contact your local KIOTI Dealer.**
- **Do not touch the illuminating glass part of the halogen bulb. The bulb life can be shortened by finger prints, dust and moisture, or the bulb even can be broken. Clean it with soft cloth.**
- **The halogen bulb contains compressed gas, so it can explode if dropping or scratching it. Therefore, never use a bulb if it is scratched or was dropped.**
- **When separating the cover by prying it off with a screwdriver, be careful not to damage it.**

⚠ CAUTION

- **Before replacing a bulb, make sure to put the key switch and the switch for the corresponding bulb to the "OFF" position.**
- **Install a new bulb with the same capacity after removing the installed bulb.**

8

TRACTOR STORAGE 8-2

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TRACTOR STORAGE

DAILY STORAGE

1. Keep the tractor clean when it is stored. Make sure to wash it after work.
2. Store it indoors if possible. If it should be kept outside, cover it.

⚠ WARNING

- ***When operating the tractor in an enclosed area, ventilate the area to release exhaust gas to the outside. The exhaust gas is colorless and not visible, but is harmful.***

3. Remove the battery from the tractor in winter and store it indoors.
4. Add anti-freeze to the tractor in winter season in order to prevent the radiator from freezing.
5. Remove the ignition key and store it separately.

LONG-TERM STORAGE

Follow the instructions below if the tractor is not to be used for a long period of time. This is to operate the tractor again with minimum preparation after long-term storage. Repeat this procedure if the tractor hasn't been used for one year.

⊕ IMPORTANT

- **If the tractor is not used for an extended period of time, follow the instructions below to prevent corrosion and performance deterioration of the tractor while it is stored.**

1. Check the bolts and nuts for looseness, and tighten if necessary.
2. Apply grease to tractor areas where bare metal will rust also to pivot areas.
3. Detach the weights from the tractor body.
4. Inflate the tires to a pressure a little higher than usual.
5. Change the engine oil and run the engine to circulate oil throughout the engine parts all for about 5 minutes.
6. With all implements lowered to the ground, coat any exposed area such as hydraulic cylinder piston rods with grease.
7. Remove the battery from the tractor. Store the battery following the battery storage procedures.
8. Keep the tractor in a dry place where the tractor is sheltered from rain. Cover the tractor.
9. Clean the engine components as well as the tractor.
10. Add grease to all the grease fitting.
11. Flush the cooling system and drain water from it. Also, add antifreeze as well as water.
12. Chock the frame in order to remove the weight from the tires.

13. Set all control systems neutral.
14. Plug any open exhaust pipes.
15. Attach a tag onto the tractor to inform the storage condition of the tractor.
16. Interlock the brake pedals and apply the parking brake.

⚠ CAUTION

To avoid injury :

- **Never clean the tractor body while the engine is running.**
- **Never run the engine in an enclosed area without proper ventilation system in order to prevent poisoning by exhaust gas.**
- **When storing the tractor, remove the key from the switch and store it separately in order to prevent an unauthorized person from operating the tractor and being injured.**
- **Cover the tractor after the muffler and the engine have cooled down.**
- **If the battery is not to be removed, disconnect its negative terminal at least. The wiring can be gnawed by rodents, leading to a fire.**

USING TRACTOR AFTER STORAGE

1. Check the tire air pressure and inflate the tires if they are low.
2. Install a fully charged battery.
3. Check the fan belt tension.
4. Check all fluid levels. (Engine oil, transmission/hydraulic oil, engine coolant and any attached implements)
5. Remove grease from the exposed cylinder rod.
6. Apply grease to the lubrication points.
7. Remove the cover from the exhaust pipe.
8. Get onto the tractor and start the engine.
9. Check if the instrument panel and all parts operate correctly while running the engine for a few minutes.
10. Drive the tractor outside and check if it is operating properly. Park the tractor outside and idle engine for at least 5 minutes.

USAGE AND DISPOSAL

Stop the engine and visually inspect the tractor. Check if there is leakage.

11. Start the engine, release the parking brake, and check the brake condition while driving forward. Adjust the brake pedals if necessary.
12. Stop the engine and check for leakage. Repair any part as required.

In order to protect the environment, use and dispose of the tractor keeping the following in mind :

1. When changing the oil or coolant by yourself, be careful not to spill it and dispose used oil and coolant properly according to the applicable regulations.
2. Never leave or discard the expired tractor or implement, but contact your local **KIOTI** Dealer to dispose it according to the regulations.
3. Avoid working under high load as it can cause excessive exhaust gas, which is harmful to the environment.

9

ENGINE TROUBLESHOOTING 9-2

TRACTOR TROUBLESHOOTING 9-4

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This troubleshooting chart summarizes simple service items for users who are familiar with mechanical systems.
For more detailed service items, contact your local **KIOTI** Dealer.

ENGINE TROUBLESHOOTING

CAUSE		Countermeasures
1. When engine is difficult to start	• Fuel is thick and doesn't flow.	• Check the fuel tank and fuel filter.
		• Remove water, dirt and other impurities.
		• As all fuel will be filtered by the filter, if there should be water of other foreign matters on the filter, replace the filter.
	• Air or water mixed in fuel system.	• If air is in the fuel filter or injection lines, the fuel pump will not work properly.
		• To attain proper fuel injection pressure, check carefully for loosened fuel cap nut, etc.
		• Loosen air vent screw over fuel filter and fuel injection pump to eliminate all the air in the fuel system.
	• Thick carbon deposits on orifice of injection nozzle.	• This is caused when water or dirt is mixed in the fuel. Clean the nozzle injection piece, being careful not to damage the orifice.
		• Check to see if nozzle is working properly or not, if not, install a new nozzle.
	• Valve clearance is wrong	• Adjust valve clearance. (When the engine is cold) - Inlet : 0.25 mm (0.010 in.) - Exhaust : 0.30 mm (0.012 in.)
	• Engine oil become thick in cold weather and engine cranks slow.	• Change grade of oil according to the weather. (Temperature)

CAUSE		Countermeasures
1. When engine is difficult to start	• Start motor does not rotate when key switch is turned	• Depress the clutch pedal unless depressed. (Manual type)
		• Put the PTO switch to the OFF position.
		• If the switch or start motor is faulty, have it repaired in a workshop.
		• If any terminal is loose or corroded, clean or fix it firmly.
2. When output is insufficient	• Valve out of adjustment	• Adjust to proper valve clearance. - Inlet : 0.25 mm (0.010 in.) - Exhaust : 0.30 mm (0.012 in.)
	• Air cleaner is dirty	• Clean or replace the element at every 100 to 200 hours of operation.
	• Fuel injection pressure is wrong	• Adjust it to 184 Kgf/cm² or replace the injection nozzle.
3. When color of exhaust is specially bad	• Fuel is of extremely poor quality	• Select good quality fuel. Temperature — Fuel type - Above -10°C (14°F) — NO.2 Diesel - Below -10°C (14°F) — NO.1 Diesel
	• Nozzle is bad	• If necessary, replace with new nozzle.

※ If you do not find the cause of trouble, consult your dealer for assistance.

TRACTOR TROUBLESHOOTING

Cause		Countermeasures
1. When tractor does not move while engine is running	• Shift lever is in neutral position	• Check the shift levers.
	• Parking brake is applied	• Release the parking brake.
2. Clutch is not operating properly	• Clutch slips (Idles)	• Contact **KIOTI** dealer.
	• Clutch cannot be disengaged	
3. Brake is not operating properly	• Brake does not operate or only one brake pedal operates	• The brake pedal play is excessive. Adjust the play.
		• The brake lining is worn or stuck. Have it replaced in a workshop.
	• Brake pedal does not return properly	• The brake return spring is damaged. Replace it.
		• Grease is insufficient on each mating surface. Remove rust and apply grease.
4. Steering wheel is not operating properly	• Steering wheel is heavy or vibrate	• The toe-in is incorrect. Adjust it again.
		• The tire inflation pressure is different. Inflate the left and right tires into the specified pressure.
		• Each connection is loose. Re-tighten each connection and replace the part.
	• Steering wheel play is excessive	• The steering wheel shaft is worn. Have it repaired in a workshop. Metal parts are worn. Have them repaired in a workshop. Each connection has play. Tighten the connection again.
5. Hydraulic system is faulty	• Oil is leaked from pipe or hose	• The pipe clamp is loose. Re-tighten it.
		• The pipe is cracked. Have it repaired in a workshop.
	• 3-point hitch cannot be lowered	• Set the lowering speed control knob to open if it is set to the stop position.
		• The valve and cylinder are damaged. Have them repaired in a workshop.

CAUSE		Countermeasures
5. Hydraulic system is faulty	• 3-point hitch cannot be lifted	• The transmission fluid is insufficient. Add it to the specified level.
		• There is air in the intake pipe. Bleed the pipe.
		• The oil filter is clogged. Replace it.
		• The hydraulic filter, valve and cylinder are malfunctioning. Have them repaired in a workshop.
	• 3-point hitch vibrates by itself	• Set the draft control lever to the "Deep" position.
		• Select the highest top link hole.
6. Electric system is faulty	• Headlamps cannot be turned on or are dim.	• The fuse is blown. Check the wiring and replace the fuse.
		• The bulb is blown. Replace it
		• The ground and terminal wirings are poorly contacted. Check and clean them.
		• The battery electrolyte level is low. Charge the battery.
	• Battery cannot be charged	• Check the battery and alternator.
	• Horn does not sound	• The horn switch is faulty. Replace or see **KIOTI** dealer.
		• The wiring is faulty. Replace or See **KIOTI** dealer.
		• The horn is damaged. Repair or replace it.
	• Turn signal lamps do not blink	• The bulb is blown. Replace it.
		• The blinking device is faulty. Repair or replace it.
		• The ground and terminal wirings are poorly contacted. Check and clean them.

Cause		Countermeasures
6. Electric system is faulty	• Work lamps do not come on	• The bulb is blown. Replace it.
		• The ground and terminal wirings are poorly contacted. Check and clean them.
7. Heater/air conditioner motor is faulty	• Fan speed is slow or no air is blown out	• The fan speed control switch and motor are faulty. Repair or replace them.
		• The air suction filter is clogged.
		• The wiring is short circuited. Check and repair it.
8. A/C performance is poor	• Abnormal noise occurs	• The internal parts are not sufficiently lubricated. Add lubricant.
		• The belt is loose. Adjust the belt tension.
		• The bracket is loose. Tighten its bolts again.
		• Inner and outer components are damaged. Check and repair them
	• Refrigerant and oil are leaking	• The sealing washer is broken. Replace it.
		• The tightening bolt is loose. Tighten it
	• High temperature and low pressure occur	• The refrigerant is insufficient. See **KIOTI** dealer.
		• The compressor is faulty. Repair or replace it.
	• Compressor clutch does not operate	• The wiring is faulty. Check and replace it.
		• The voltage is low. Replace the battery.
		• The internal part is malfunctioning. Replace it.

※ If you do not find the cause of trouble, consult your dealer for assistance.

10

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