

ISEKI TRACTORS



Operation Manual

MODELS:

TG5330

TG5390

TG5470



TO OUR CUSTOMER

Thank you very much for purchasing an ISEKI tractor.

This operator's manual provides the information necessary for operating and maintaining your tractor safely and properly. The contents are mainly composed of the following two items:

Safety instructions: Essential items which you should observe while operating the tractor

Technical instructions: Essential items which you should observe while operating the tractor

Before starting to operate the machine for the first time, you should read this operation manual thoroughly and carefully until you are sufficiently familiar with the operation of the machine to do jobs safely and properly. The manual should be kept in a handy place so you can refer to it when required. You are advised to refer to it from time to time to refresh your understanding of the machine.

Your dealer has performed the pre-delivery service on your new machine. He will discuss with you the operating and maintenance instructions given in this manual, and instruct you in the proper and varied applications of this machine. Call on him at any time when you have a question, or need equipment related to the use of your machine.



Paragraphs in the manual and labels on the machine which are accompanied by a caution particularly important information about safe operation to avoid accidents. You should always keep precautions in mind and follow them during operation.

***Be sure to wear
personnel protective equipment
during operation***



In some of the illustrations used in this operation manual, panels or guards may have been removed for clarity. Never operate the tractor with these panels and guards removed.

If the removal of a shield is necessary to make a repair, it must be replaced before operation

All information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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SAFETY

PERSONAL SAFETY INSTRUCTIONS

Whenever you see the words and symbols below, used in this Operator's Instruction Book and on decals, you **MUST** take note of their instructions as they relate to personal safety.



DANGER: This symbol together with the word **DANGER** indicates an imminently hazardous situation that, if not avoided, will result in **DEATH OR VERY SERIOUS INJURY**.



WARNING: This symbol together with the word **WARNING** indicates a potentially hazardous situation that, if not avoided, could result in **DEATH OR VERY SERIOUS INJURY**.



CAUTION: This symbol together with the word **CAUTION** is used to indicate a potentially hazardous situation that, if not avoided, may result in **MINOR INJURY**.

IMPORTANT: The word **IMPORTANT** is used to identify special instruction or procedures which, if not strictly observed, could result in damage to, or destruction of the machine, process or its surrounding.

NOTE: The word **NOTE** is used to indicate points of particular interest for more efficient and convenient repair or operation.

Understand thoroughly the following precautions, always keep them in mind before, during, and after operation, and never take chances.

MAKING YOUR TRACTOR A SAFE VEHICLE

HOW TO MAINTAIN SAFETY

- (1) Never attempt to do the following: Modification of the structure of the tractor Installation of other type engine.
Installation of tires of other than the original tire size.
Any malfunctions or failures of the tractor due to unauthorized modification are not covered by the warranty.
- (2) This machine cannot be driven on a public road without authorization by a local government agency, etc. When transporting an unauthorized machine on a public road, load it on a truck.
When traveling with an implement wider than the tractor, put red caution markers such as flags (red lamps at night) in the most visible locations on both sides of the implements, and place a **SLOW MOVING VEHICLE** sign in a place where it is easily seen by other drivers. Operate the machine carefully keeping in

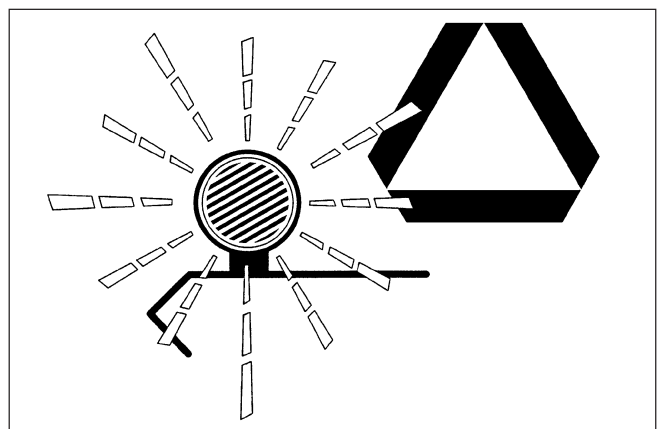


FIG. 1-1

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mind that the implement is wider and may roll easily. If the implement can be folded, fold it beforehand. If there are road or railway crossings where the visibility is poor, you should install on the machine a mirror to give a view ahead of you so that you need not move your machine too far into the intersection.

- (3) When you travel on a road, you must turn work lights off if the law requires it.

HOW TO BE A SAFE OPERATOR

- (1) Familiarize yourself fully with machine controls by studying the operation manual before using your machine.
- (2) Never allow persons listed below to operate the machine.
 - Persons with mental disease
 - Persons who cannot operate the machine properly because of fatigue, illness, or drowsiness from medication, etc.
 - Pregnant women
 - Young persons or children too young to legally operate the machine.

Always be careful of your health by taking suitable rest breaks.
- (3) Wear appropriate clothing and other protective devices during operation.
 - Protection of your head
Wear protective headgear such as a helmet, especially when traveling on roads or handling material above your head.
 - Protection to avoid being caught in the machine.
Wear tight fitting clothing and headgear, because loose clothing or hair can get caught in the moving parts of the machine.
 - Protection from poisonous dust or gases
Be sure to wear a protective device to protect the respiratory system, eyes, and skin when handling poisonous chemicals.
 - Protection of the ears
Wear ear plugs or take suitable countermeasures to protect your ears when you must operate the machine under extremely noisy conditions.
 - Maintenance of protective devices
Periodically inspect protective devices to assure that they are functioning properly. Use them at all times.

WHEN ANOTHER PERSON OPERATES YOUR MACHINE

When another person operates your machine, you must explain how to operate and instruct him or her to read this manual fully to avoid unexpected accident.

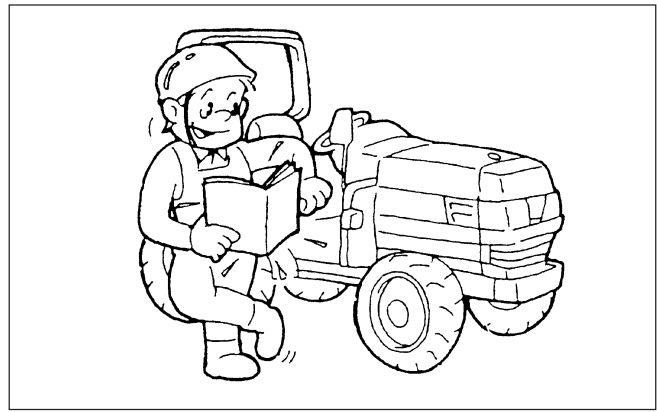


FIG. 1-2



FIG. 1-3

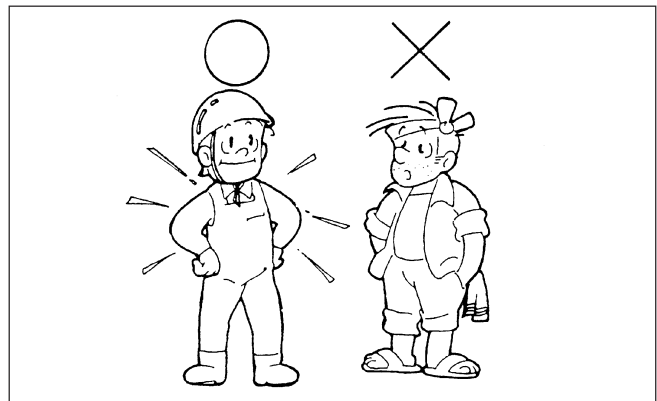


FIG. 1-4

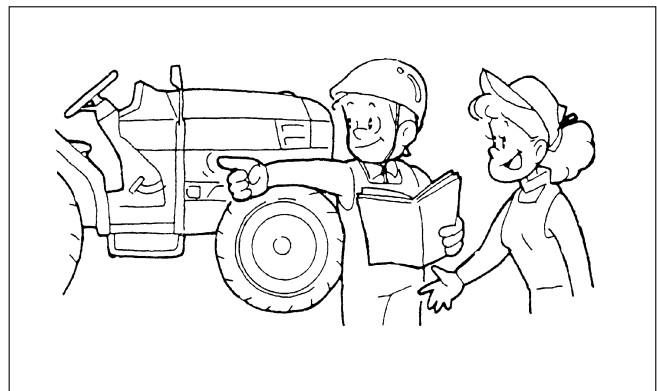


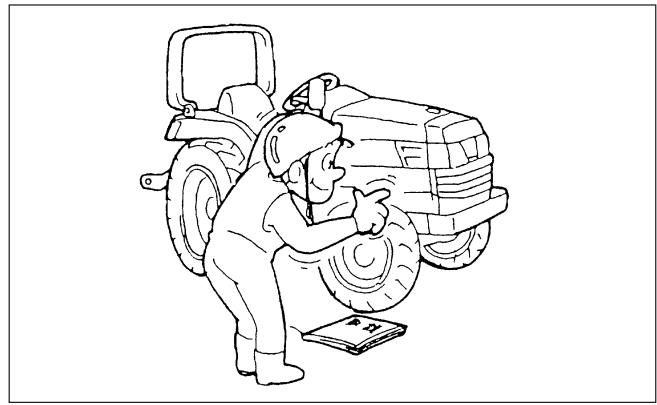
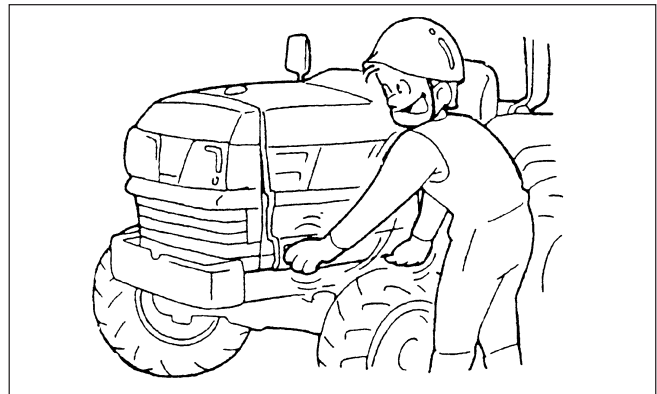
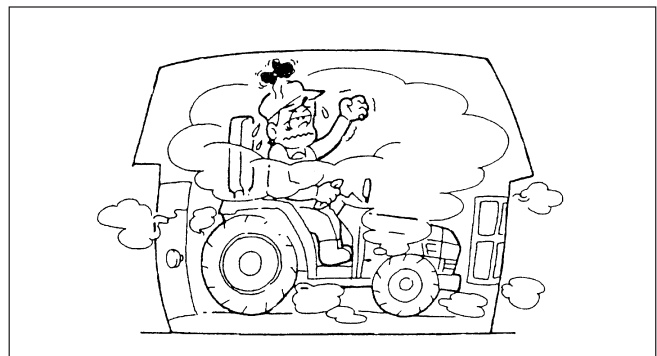
FIG. 1-5

BEFORE OPERATION

- (1) Set up an operation plan with sufficient time allowance. A tight plan may result in unexpected accidents when work has to be rushed.
- (2) Inspect and service the machine periodically in accordance with the instructions given in the operation manual to maintain the machine in best condition. Pay special attention to the controls, especially to the brakes and clutch, and safety measures for the machine functions properly and performs normally, the chance of an accident will be reduced greatly. If safety devices are damaged or do no work, please consult your ISEKI dealer.
- (3) Before removing a safety devices, such as a safety cover, be sure that the machine has stopped completely. Never forget to replace the removed part after servicing.
- (4) Never inject fuel while the engine is running or is still hot. Keep away from open fires and never smoke around a fuel tank or while fueling into the machine. Never use open flames for illumination when fueling the machine at night.

STARTING ENGINE AND MOVING TRACTOR

- (1) Before starting the engine indoors, make sure that there is proper ventilation because exhaust fumes contain poisonous carbon monoxide, which cause lethal poisoning.
- (2) Before starting the machine, confirm that the transmission gear has been shifted to the appropriate speed, that there is no one near the machine, and that the implement is securely installed on the machine. Always operate the machine from the operator's seat. Never leave the seat except in an emergency when operating the machine.
- (3) Before starting to move, pay attention to safety conditions around the machine to avoid injury to bystanders or damage to property. Never move abruptly.

**FIG. 1-6****FIG. 1-7****FIG. 1-8****FIG. 1-9**

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WHEN TRAVELLING

- (1) When you travel on roads, ensure the differential lock is off, or the tractor may turn over.
- (2) Do not make sharp turns when operating at high speed or for transportation as the tractor may turn over.
- (3) When operating on poor footing such as a rough road, a slope, a road along a ditch or river, or undeveloped land, drive the tractor at low speeds and operate it carefully.
- (4) Do not make sharp turns on a slope. It may cause turnover of the tractor.

When climbing up a hill, shift the speed change lever to the most suitable speed. Start moving the tractor as slowly as possible.

While climbing up a hill, never shift speeds along the way.

When starting to move the tractor on an up-hill slope, be sure that the front wheels do not lift up.

When going down a hill, drive the tractor at slower speed that used to climb up the hill.

While going down a hill, never shift into neutral, and never try to control the speed only with the brakes; use the engine brake effectively.

- (5) When traveling on a road where one or both shoulders are slanted and which run along a ditch, look out for softened shoulders especially when the ditch is full of water and be careful not to let the machine slip sideways.
- (6) Never allow other persons to get on the machine or the implement except when the machine or the implement is provided with a seat or a platform for persons to sit or stand on, and only within the capacity specified.
Never allow persons to get on the implement while traveling on roads.
- (7) When parking the tractor, you have to park it on hard, level ground and provide sufficient safety measures by grounding the implement, removing the key, applying the parking brakes, and chocking the wheels securely.
- (8) Keep inflammable away from the engine during operation. Especially during stationary operation do not operate the engine at high speeds so as not to set fire to grass or straw with a heated exhaust pipe or exhaust fumes.
- (9) When you have to operate the tractor at night, make sure of the location of the controls. If not, the tractor might work unexpectedly by mistake.

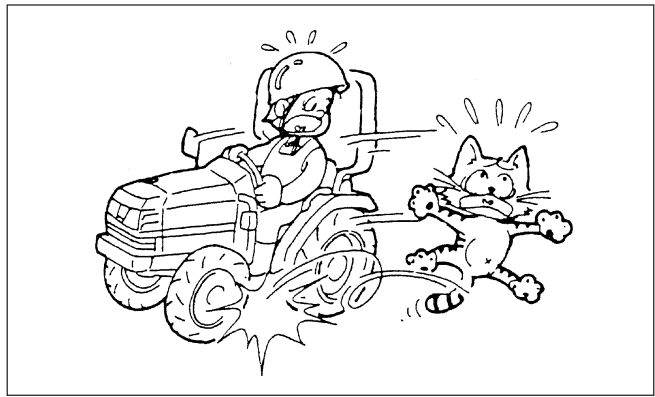


FIG. 1-10

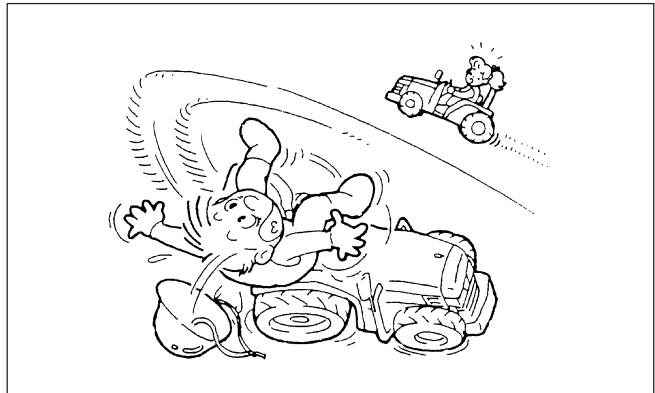


FIG. 1-11

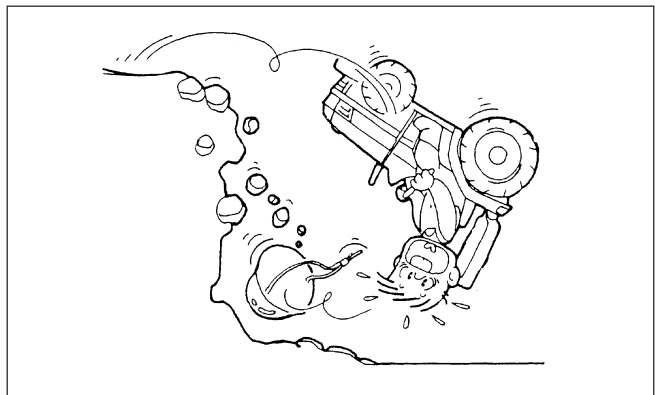


FIG. 1-12



FIG. 1-13

LOADING ONTO OR UNLOADING FROM A TRUCK

- (1) When loading the tractor onto a truck or a trailer, turn off the truck's engine and apply the parking brakes to the truck or the trailer.
Otherwise, the truck could move and the tractor falls to the ground.
- (2) Pay sufficient attention to the safety conditions around the tractor and have it guided by someone to assist the operation. Never allow other persons to approach the tractor, especially in front of or behind it.
- (3) When loading or unloading the machine on/off a truck, set slip-proof ramps at the same angles and drive the tractor straight at sufficiently slow speeds. Loading the tractor in reverse travel and unloading it in forward travel.
- (4) Never depress the brake pedal during loading or unloading operation, or the tractor may shift sideways, which may cause it to fall off the ramps.
- (5) If the engine stalls unexpectedly on the ramps, depress the brake pedal immediately and roll the tractor to the ground by manipulating the brake pedal. Start the engine on the ground and try again.
- (6) When the machine is loaded on the truck, stop the engine, apply parking brakes, and withdraw the stator key, chock the wheels, and rope it securely to the truck. During transportation, do not make sharp turns needlessly so as not to shift the loaded tractor.
- (7) Use ramps with the same or better specifications mentioned below. When the machine is equipped with attachments other than those included in the specifications mentioned below, ask your ISEKI dealer for advice.

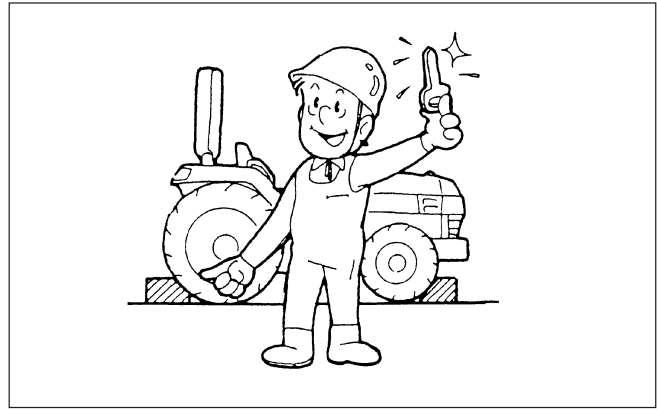


FIG. 1-14

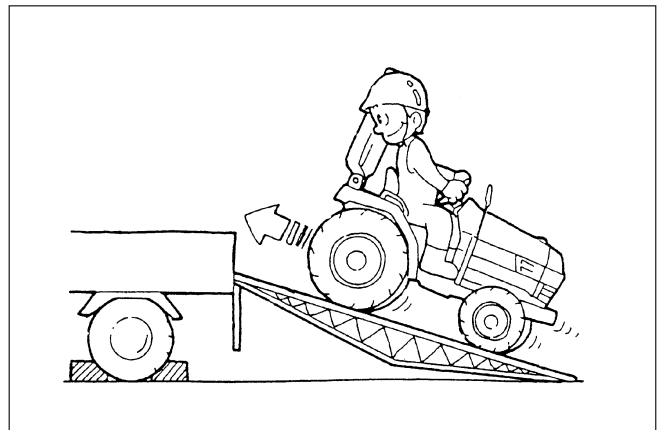


FIG. 1-15

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SPECIFICATIONS OF THE RAMPS

Length

More than 4 times the height of the platform of the truck

Width (effective width) more than 35cm

Capacity (one ramp) more than 1700kg

Ramps should have anti-skid surfaces

- (8) Hook the ramps securely on the platform of the tractor with the top of the ramp level with the platform.
- (9) Always prepare for even the worst, by never allowing other persons near the tractor.
- (10) Drive the tractor carefully at the moment the tractor moves from the ramps onto the platform, for it changes angle abruptly.

DURING OPERATION

- (1) During operation, never allow other persons in the vicinity of the tractor, because the tractor itself or flung pieces may cause injury.
- (2) Pay attention to safety around the tractor to avoid injury to bystanders or damage to property. Especially when operating with other persons, use the horn to warn them.
- (3) When crossing a ditch or a levee or when passing through soft land, drive the tractor slowly and straight so that it does not slip or turn over.
- (4) Do not touch dangerous parts such as rotating parts, moving parts, hot parts (muffler, radiator, or engine, etc.), or electric parts (battery terminals and other live parts), or you may be injured seriously.
- (5) If you use a trailer, use a proper one which suits your tractor. Using an improper trailer may cause serious accidents. Never attempt to haul beyond the tractor's capacity. If you have a question, please consult ISEKI dealer.
- (6) When moving the machine toward an implement for the purpose of installing the implement, never allow any one to stand in between. When installing the implement on the machine, be prepared to move away promptly in the event of an emergency. The brakes should be applied securely during installation.
- (7) When moving the machine toward an implement for the purpose of installing the implement, never allow any one to stand in between. When installing the implement on the machine, be prepared to move away promptly in the event of an emergency. The brakes should be applied securely during installation.

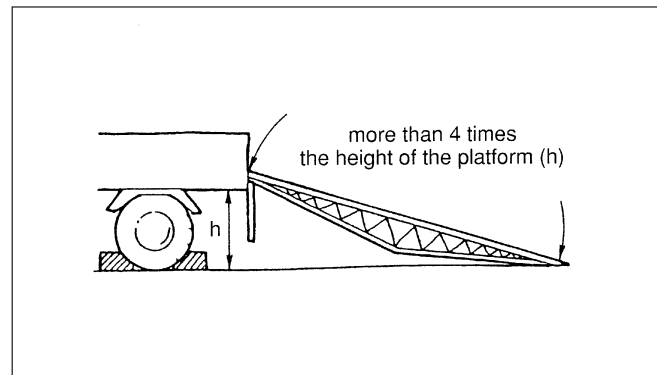


FIG. 1-16

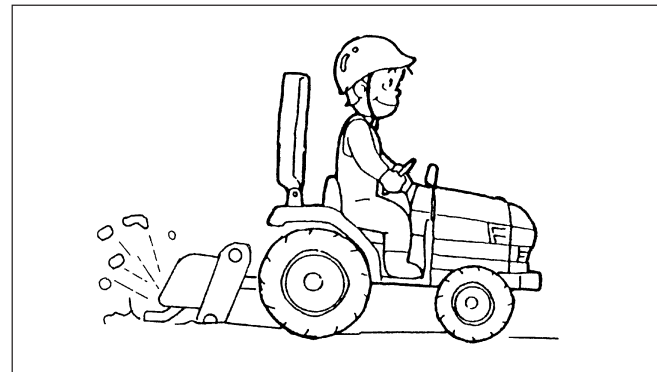


FIG. 1-17

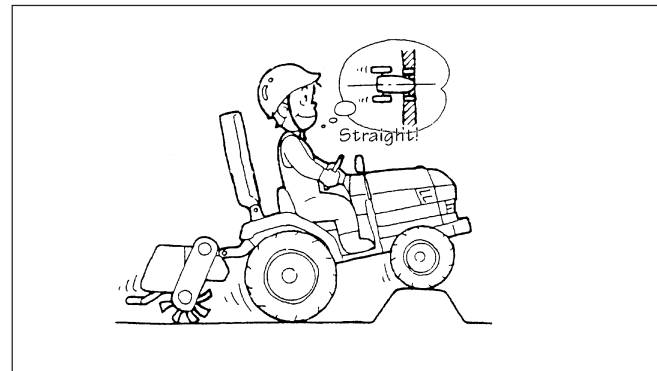


FIG. 1-18



FIG. 1-19

INSPECTION AND MAINTENANCE

- (1) When servicing the tractor or mounting or dismounting an implement, place the tractor on level, hard ground which is sufficiently illuminated, or unexpected accidents may occur.
- (2) When servicing the tractor, follow the instructions listed below:
 - Stop the engine.
 - Apply parking brakes.
 - Disengage all PTO.
 - Place all gear shift levers in neutral.
 - Remove the starter key.
 - Lower the implement fully, if equipped.If not, your hands or clothes may be caught or sandwiched between.
- (3) When servicing the tractor, use proper tools. Using makeshift tools may lead to injuries or poor servicing, which may result in unexpected accidents during operation.
- (4) The engine, muffler, radiator, etc. are very hot just after operation, so wait until they cool down sufficiently to avoid burns.
- (5) Never remove the radiator cap while the engine is hot or running. Wait until the engine cools down and then relieve the radiator pressure by releasing the radiator cap. Carelessly pouring cooling water into the heated radiator can cause serious damage to the radiator and the engine. Careless removal of the radiator cap can cause serious injury because of overheated water vapour.
- (6) Never fit unauthorized implements or attempt unauthorized modification.
- (7) Be sure to reinstall the removed safety covers in place as exposed dangerous parts may cause serious injury.
- (8) Avoid high-pressure fluids. Escaping fluid under pressure can penetrate the skin and cause serious injury, so keep hands and body away from pin holes and nozzles ejecting such fluids. Be sure to consult your dealer about the hydraulic and fuel injection system trouble.

When checking for leaks, use a piece of cardboard or wood without fail. If any hydraulic fluid is injected accidentally into the skin, it must be removed within a few hours by a doctor familiar with this type or injury.

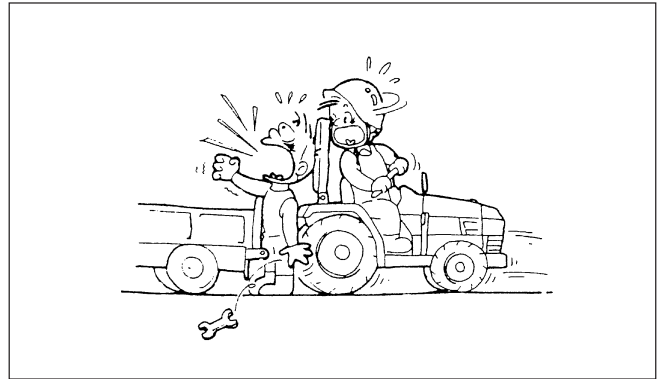


FIG. 1-20

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- (9) When servicing wheels and tires, the tractor and/or implement must be supported on suitable blocks or stands. Not a hydraulic jack.

Do not attempt to service a tire unless you have the proper equipment and experience to perform the job. Have the work carried out by your ISEKI dealer or a qualified repair service.

When seating tire beads onto rims, never exceed the maximum inflation specifications specified on the tire. Inflation beyond this maximum pressure may brake the bead, or even the rim, with dangerous, explosive force.

If tire have deep scratches, cuts or punctures, the replaced by qualified personnel as soon as possible.

Wear suitable protective clothing, gloves, eye/face protection.

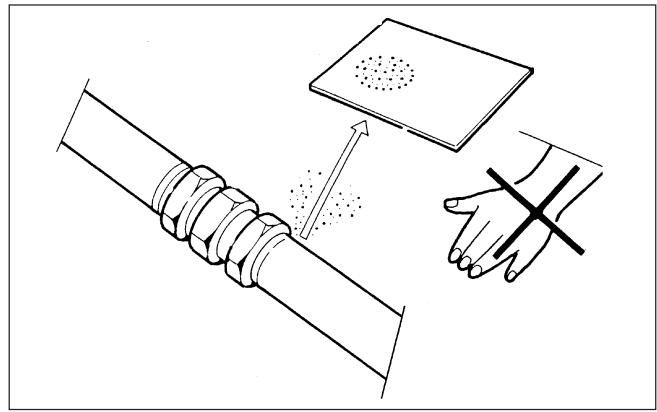


FIG. 1-21

STORAGE

- (1) Never cover a hot machine just after operation with a tarpaulin or the like, or the heated engine and related parts may cause a fire.
- (2) Before storing the tractor for a long period of time, disconnect the battery cables to prevent them, in case they are gnawed by a rat, from causing a short circuit, which may lead to a fire. When disconnecting the cables, disconnect the negative (-) cable first.
- (3) Safe storage of dangerous objects
 - When storing dangerous implements, take appropriate safety measures to prevent accidents by covering with tarpaulin.
 - Store fuel in a safe place with caution signs such as PREVENT FIRE or INFLAMMABLE .
 - All inflammable must also be stored in a safe, fire-resistant location.

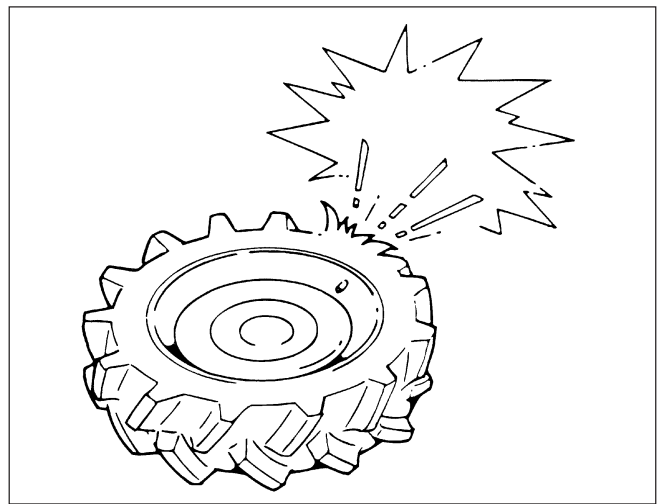


FIG. 1-22

MAINTENANCE OF THE ELECTRIC SYSTEM

TO MAINTENACE ELECTRIC WIRING

- (1) When servicing the electric wiring, stop the engine without fail. Otherwise your hands or clothes may be caught in or sandwiched between rotating parts.
- (2) Before manipulating electric parts, be sure to disconnect the earth battery cable (-), or you may get an electric shock or be injured by sparks.
- (3) Loose electric terminals or connectors may not only lower electrical performance but also cause short circuit or leakage of electricity, which may lead to a fire. Promptly repair or replace damaged wiring.
- (4) Remove chaff of dust from the battery, wiring, muffler, or engine. Otherwise it could result a fire.

TO HANDLE THE BATTERY

- (1) When working around the battery, avoid smoking. The battery generates explosive hydrogen and oxy gen gases when it is being charged. Keep the battery away from sparks or open flames.
- (2) The battery should be inspected before starting the engine. Be careful not to touch the electrolyte when removing the vent plugs. If the battery electrolyte makes contact with the skin or clothing, wash it off immediately with water and then consult a doctor.
- (3) When replacing or inspecting the battery, stop the engine and turn the main switch off, or electrical parts may be damaged or unexpected accident may occur.

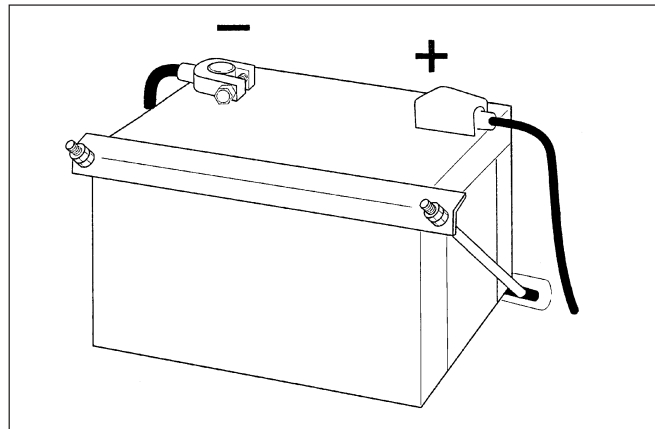


FIG. 1-23

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When disconnecting the battery cables, disconnect the earth cable (-) first without fail. When connecting the battery cables, connect the positive cable (+) first. Disconnecting or connecting in wrong order may lead to a short circuit or sparks.

TO HANDLE BOOSTER CABLES

When using booster cables, pay attention to the following items for safe operation:

- (1) Before connecting cables, remove the vent plugs. This will lower the force in case of explosion.
- (2) Before connecting cables, be sure to stop the engine. Otherwise unexpected accidents may occur.
- (3) Use booster cables with sufficient electrical capacity. A cable of inadequate capacity will cause generation of heat, which may lead to a fire.

SAFETY DECALS

The labels are stuck on the tractor. You should of course read the safety instructions in the manual. But never fail to read the labels on the machine as well.

- The labels should always be clearly seen, that is, nothing should obscure them.
- When they have become dirty, wash them with soap water and wipe off with soft cloth.
- If any of them are torn or lost, order new labels from your dealer. Their codes are mentioned in SAFETY DECALS AND THEIR LOCATION .
- A new label should be placed in the same place where the old one was located.
- When sticking on a new label, clean the place to enable the label to stick and squeeze out all air bubbles trapped under it.

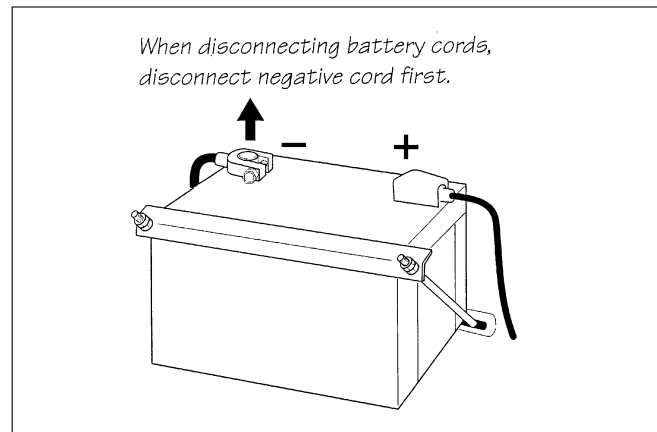


FIG. 1-24

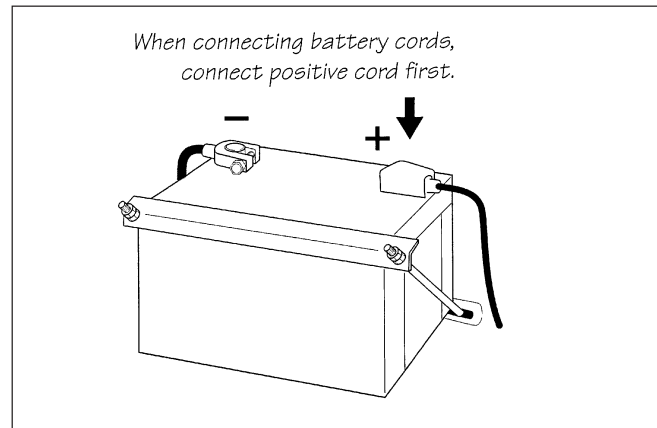
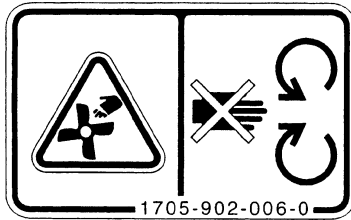


FIG. 1-25

SAFETY DECALS AND THEIR LOCATIONS

- (1) Fan warning label
(Code No. 1705-902-006-0)



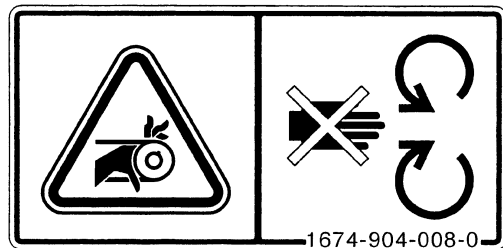
WARNING: RISK OF ENTANGLEMENT
Stay clear of the fan while it is running.

- (2) Battery disconnecting label
(Code No. 1636-901-022-0)



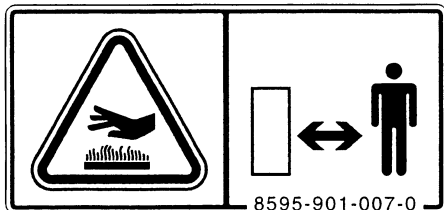
WARNING: RISK OF ELECTRIC SHOCK
When disconnecting the battery, detach the negative terminal first and attach the positive terminal first when connecting the battery.

- (3) Belt warning label
(Code No. 1674-904-008-0)



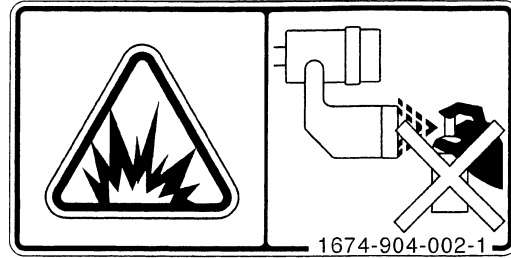
WARNING: RISK OF ENTANGLEMENT
Stay clear of the belt while it is running.

- (4) Hot part warning label
(Code No. 8595-901-007-0)



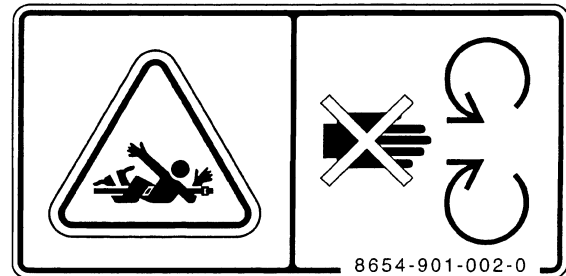
WARNING: HOT SURFACES, RISK OF BURNS ON HANDS AND FINGERS
Stay clear of the heated parts until they cool down sufficiently.

- (5) Ether label
(Code No. 1674-904-002-1)



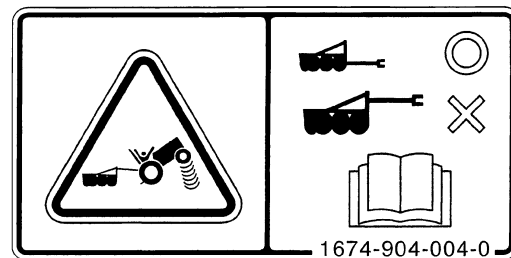
WARNING: RISK OF EXPLOSION
Ether or other starting fluid should never be used to start engines equipped with glow plugs.

- (6) PTO label
(Code No. 8654-901-002-0)



WARNING: RISK OF ENTANGLEMENT
Stay clear of the PTO shaft while the engine is running.

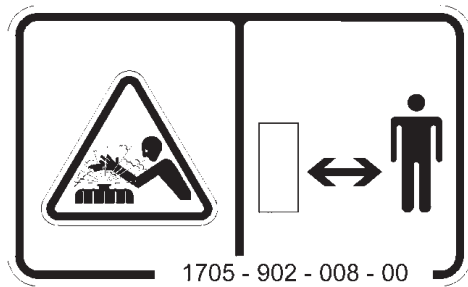
- (7) Trailer label
(Code No. 1674-904-004-0)



WARNING: RISK OF OVERHEATING
The rear implement should be installed on the tractor with an approved drawbar or by using the lower links of the three point hitch. Use only weight not exceeding the designed capability of the tractor.

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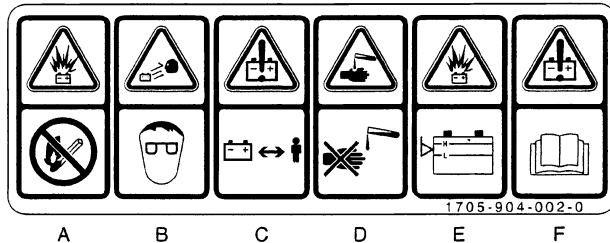
- (8) Radiator label
(Code No.1705-902-008-0)



WARNING: HIGH PRESSURE STEAM AND HOT WATER

Never remove the radiator cap during or just after operation. The water in the radiator is very hot and highly pressurized, which could cause burns.

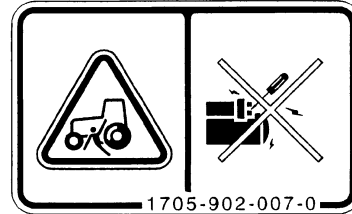
- (9) Battery label
(Code No.1705-904-002-0)



- A. WARNING: RISK OF EXPLOSION**
Keep away from sparks or flames, which could cause explosion.
- B. WARNING: WEAR AN EYE PROTECTION DEVICE**
Battery electrolyte (euphoric acid) may cause blindness. Wear an eye protector to prevent contact with the eyes.
- C. WARNING: KEEP OUT OF REACH OF CHILDREN**
- D. WARNING: RISK OF BURNS**
Battery electrolyte (sulphuric acid) may cause burns. Avoid contact with skin or clothing. In case of an accident, flush affected part immediately with plenty of water.
- E. WARNING: RISK OF EXPLOSION**
Never use the battery with the electrolyte surface below the LOWER limit, or it may explode. Never replenish exceeding UPPER limit or electrolyte may leak out.
- Maintenance free battery does not need to replenish distill water.
- D. WARNING: READ OPERATION MANUAL**
Read the safety and operating instructions in the operation manual before operating the tractor.

Take care of handling the battery.
Improper handling may lead to explosion.
Never short the poles.
Charge the battery in a well ventilated place.

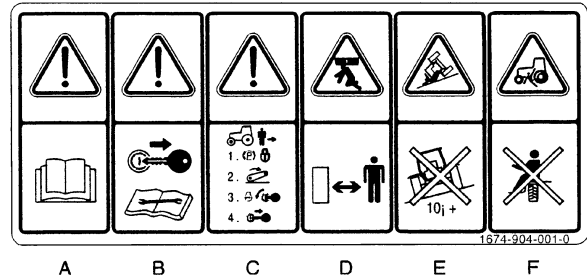
- (10) Starter warning label
(Code No.1705-902-007-0)



DANGER: RISK OF ELECTRIC SHOCK

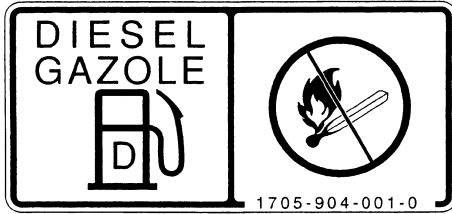
Start the engine only from the seat using the key.

- (11) Operation caution label
(Code No.1674-904-001-0)



- A. WARNING: BEFORE OPERATION**
Read the safety and operating instructions in the operation manual before operating the tractor.
- B. WARNING: BEFORE OPERATION**
Read the safety and operating instructions in the operation manual before operating the tractor.
- C. WARNING: RISK OF ABRUPT MOVING**
Before leaving the tractor unattended, apply the parking brake, lower the implement, turn off the engine and remove the starter key to avoid unexpected moving of the tractor.
- D. WARNING: RISK OF INJURY OR DAMAGE**
Pay attention to safety around the machine to avoid injury to bystanders or damage to property.
- E. WARNING: RISK OF OVERTURNING**
Never operate the tractor on a slope of over 10 degrees, or it could overturn.
- F. WARNING: RISK OF INJURY OR DAMAGE**
Never allow other persons to get on the tractor or the implement.

- (12) Fuel label
(Code No.1705-904-001-0)



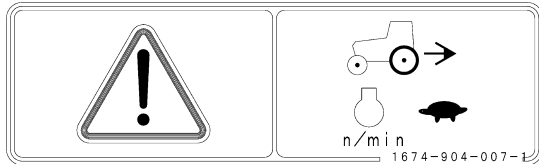
DANGER: RISK OF EXPLOSION AND BURNS

Use only diesel fuel.

Before replenishing fuel, be sure to stop the engine and wait until the engine and heated parts cool down sufficiently. Keep sparks, open flames, etc. away from the fuel tank.

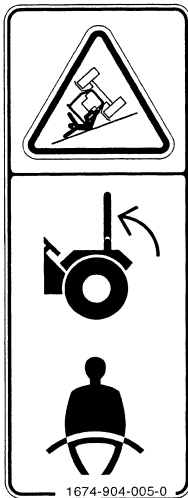
No smoking!

- (13) Reverse label
(Code No.1674-904-007-1)



Before moving tractor to reverse direction, be sure to reduce engine speed.

- (14) ROPS label
(Code No.1674-904-005-0)
(ROPS/CABIN type)



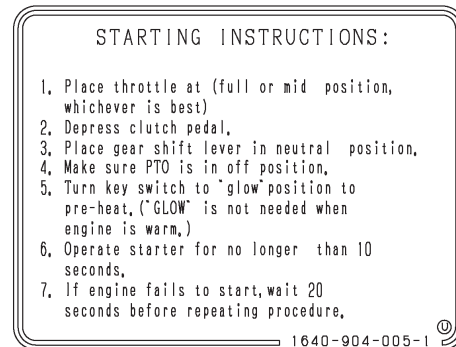
WARNING: RISK OF INJURY

Keep the ROPS in the upright position and fasten the seat belt at all times. Do not jump from the seat if the tractor starts to overturn, or you could be crushed under the tractor. The ROPS should usually be kept in the upright position during operation.

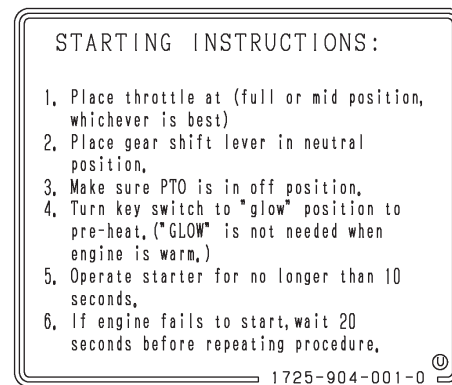
However, when the ROPS has to be lowered, do not wear the seat belt and operate the tractor with extreme caution.

Do not operate the tractor with a damaged or modified ROPS/CABIN.

- (15) Starting engine caution label
(Code No.1640-904-005-1)
(Except for HST type)



- (Code No.1725-904-001-0)
(HST type)



WARNING: RISK OF INJURY

"Before starting engine, be make sure to set throttle lever in full or mid position.

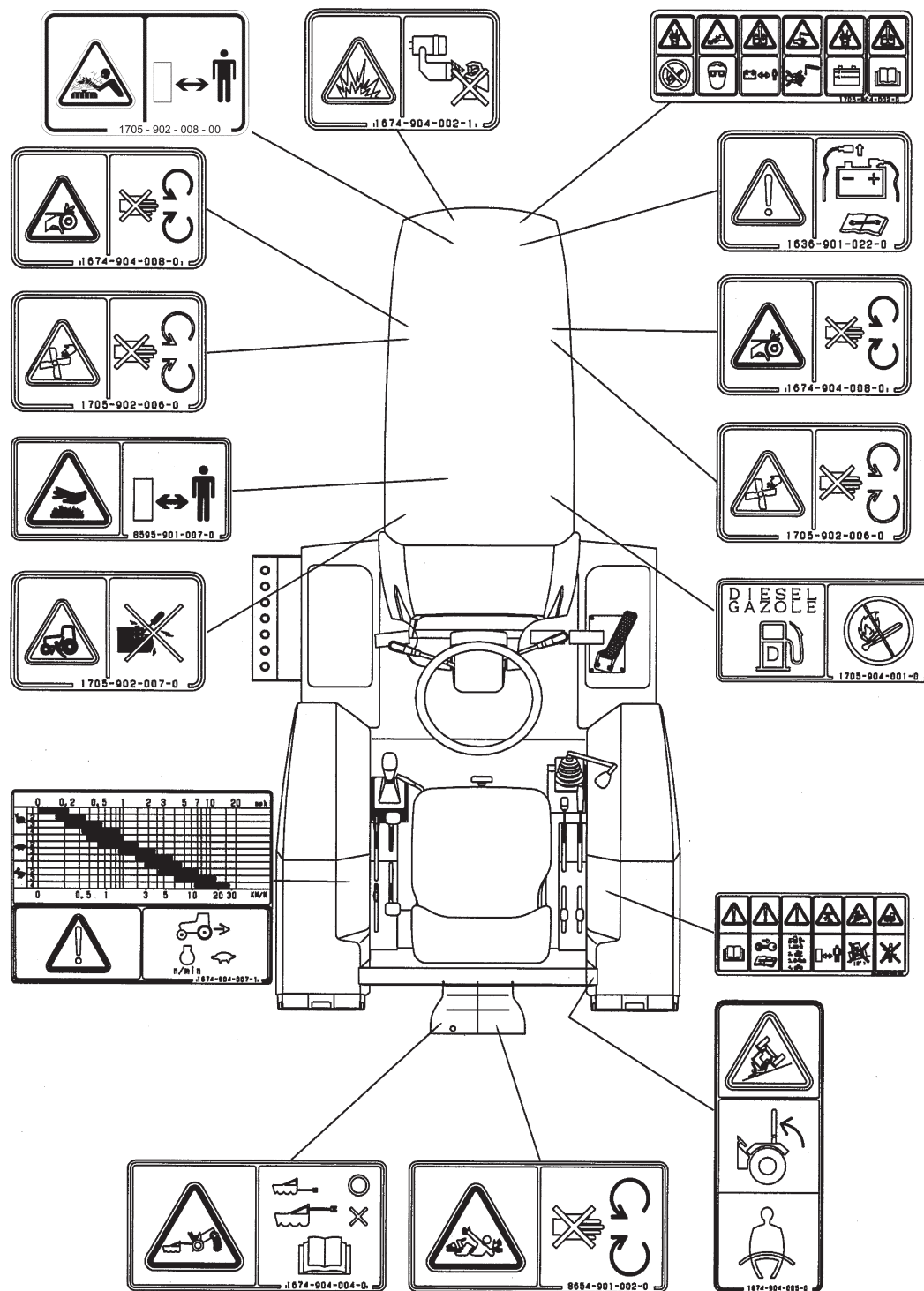
Depress clutch pedal(except for HST type) and set shuttle and shift lever and PTO lever(switch) in neutral position. When engine is cold, turn key switch to glow position to pre-heat.

Operate starter within 10 seconds.

If engine does not start, repeat above procedure after 20 seconds."

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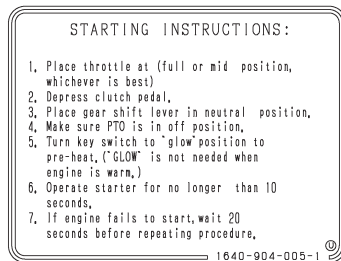
LOCATION OF SAFETY DECALS



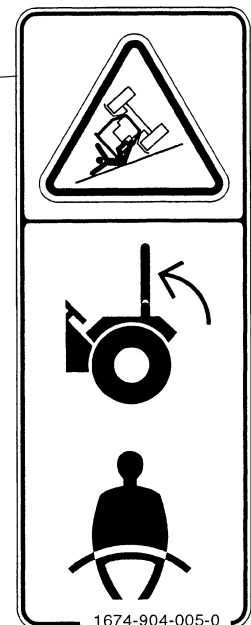
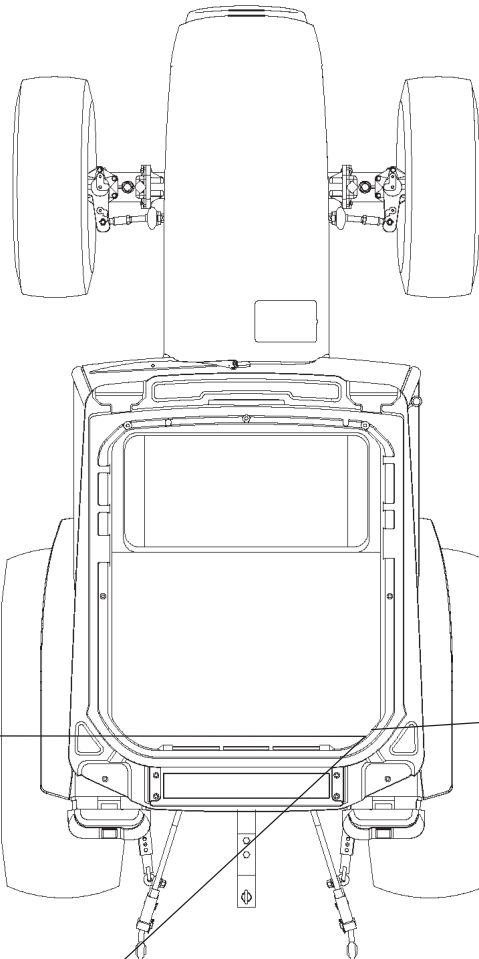
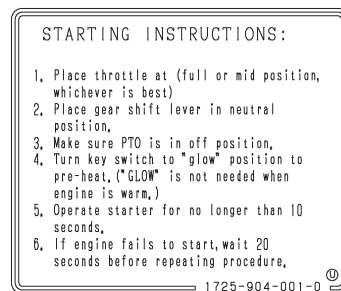
Location of all instruction decals provided as a reference.
Replace any decals that are damaged, missing or are not
readable. Consult your dealer.

(ONLY CABIN TYPE)

(Except for HST type)



(HST type)



Location of all instruction decals provided as a reference.
Replace any decals that are damaged, missing or are not readable. Consult your dealer.

INTRODUCTION

The information in this publication describes the operation, maintenance and servicing of the TG5330, 5390, 5470 Tractors. Every effort has been made to provide correct and concise information to you, the operator, as available at date of book publication. Your ISEKI Dealer is available should items in this book or details of your machine not be understood.

This book is supplied with each machine to familiarize the operator with proper instructions needed for operation and maintenance. Studying and adhering to these instructions will insure optimum machine performance and longevity. A machine that is maintained properly and operated in the intended manner will provide greater dividends than one that is neglected and/or operated in manner other than as intended. Design and servicing of this machine has been kept as simple as possible to permit maintenance operations to be carried out with tools normally available.

This book should be thoroughly read and understood prior to operation of this machine. Inexperienced operators should study contents of this publication and receive instruction from an experienced operator when possible. Your ISEKI Dealer can also assist in areas concerning machine operation and provide details concerning safe operation. It is suggested that this booklet be kept readily accessible, preferably with the machine, for future reference if questions or concerns arise. If the original book should become damaged, consult your Dealer in regards to acquiring a replacement.

Customers are strongly advised to use an official ISEKI Dealer in connection with any service problems and adjustments that may occur. The ISEKI Dealer network is specially trained and equipped for all service work and to advise customers on specific applications of the Tractor in local conditions.



CAUTION: In some of the illustrations used in this Operator Instruction Book, panels or guards may have been removed for clarity. Never operate the Tractor with these panels and guards removed. If the removal of a shield is necessary to make a repair, it **MUST** be replaced before operation.

CAUTION: READ THIS BOOK IN ITS ENTIRETY PRIOR TO OPERATING MACHINE.
Use only ISEKI parts for repairs and/or replacement.

TRACTOR IDENTIFICATION

MODEL/SERIAL NUMBER

Each Tractor is identified by means of Tractor model and serial numbers. As a further identification, engine and chassis are provided with identification numbers.

To ensure prompt, efficient service when ordering parts or requesting repairs from authorized Dealer, record these numbers in spaces provided.

TRACTOR MODEL/TYPE

--	--

TRACTOR SERIAL NUMBER

--

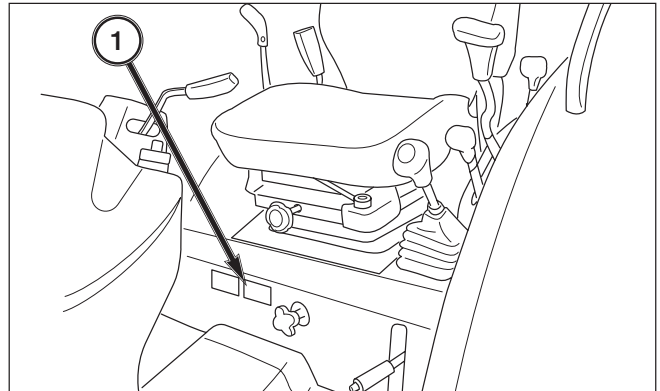


FIG. 3-1

FIGS. 3-1 & 3-2: Tractor identification plate, 1, located below operator's seat on right-hand side of fender. Contains model number in addition to Tractor serial number.



FIG. 3-2

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ENGINE MODEL NUMBER

ENGINE SERIAL NUMBER

FIG. 3-3: Engine model number, 1, is cast on right side of engine block, below the injection pump.

Engine serial number, 2, is stamped into cylinder block, below engine model number.

CHASSIS NUMBER

FIG. 3-4: Chassis number, 1, is stamped in right side of front frame.

NOTE: Reference to left-hand and right-hand, used throughout this book, refers to the position when seated in operator's seat and facing forward

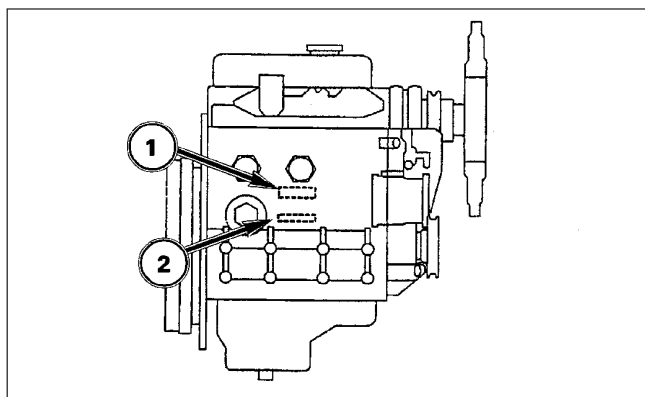


FIG. 3-3

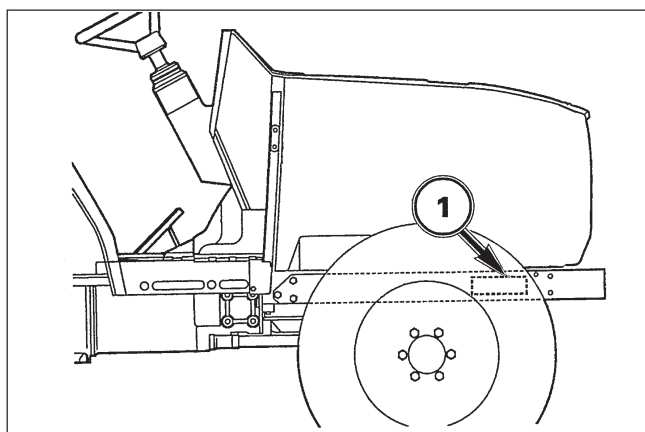


FIG. 3-4

Rear ROPS type

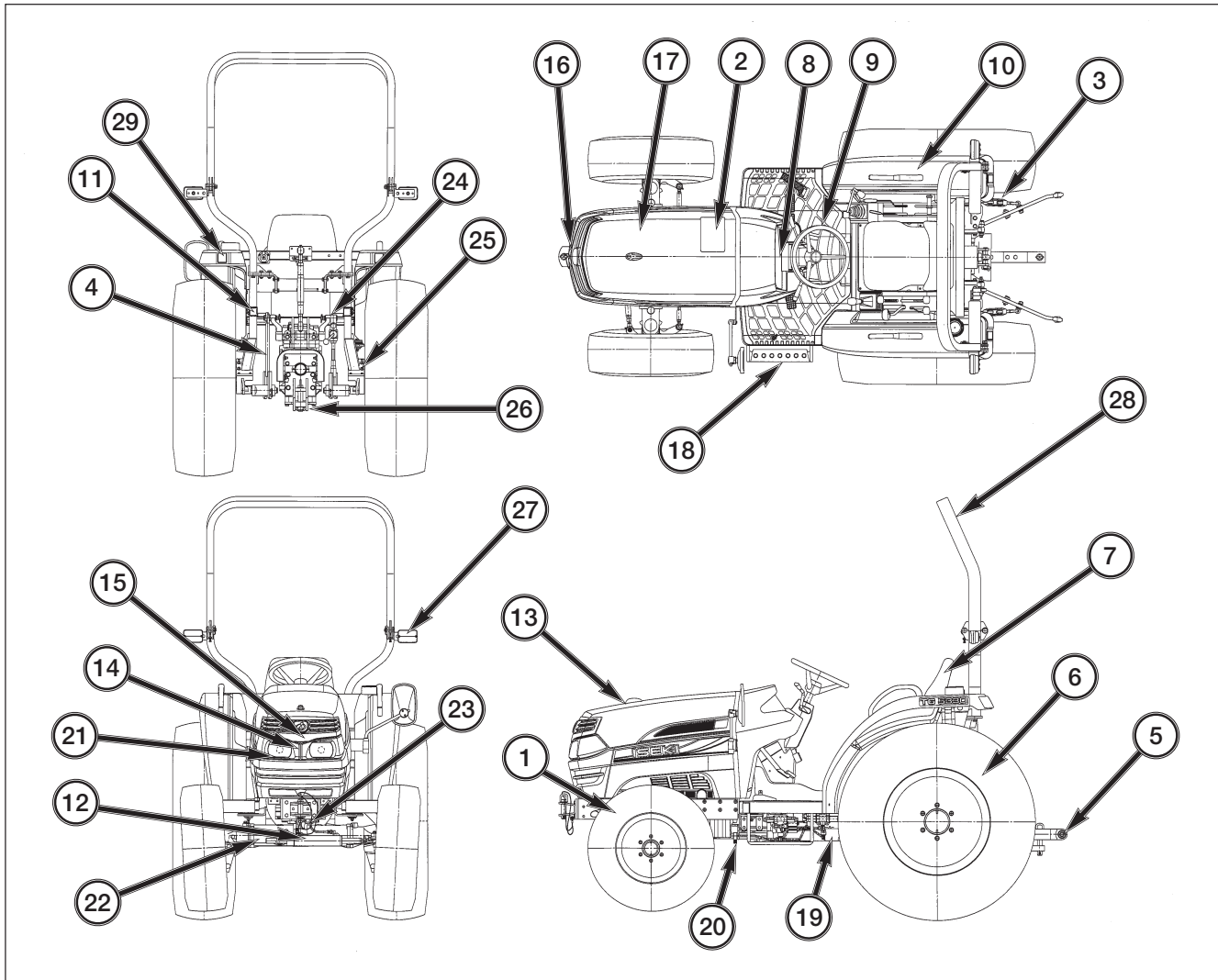


FIG. 3-5

FIG. 3-5: Identification and terminology of major components, as given in this book, are as follows:

- | | |
|-----------------------|---|
| 1. Front Wheels | 16. Front Hitch |
| 2. Fuel Tank Filler | 17. Engine |
| 3. Check Chain | 18. Foot Step |
| 4. Lift Rod | 19. Transmission |
| 5. Lower Link | 20. Front Wheel-Drive Shaft |
| 6. Rear Wheels | 21. Headlight |
| 7. Operator's Seat | 22. Front Axle |
| 8. Instrument Panel | 23. Front Axle Pivot |
| 9. Steering Wheel | 24. Lift Arm |
| 10. Fender | 25. Rear Axle |
| 11. Reflector | 26. Drawbar |
| 12. Steering Cylinder | 27. Turn/Hazard Position Light |
| 13. Hood | 28. Roll-Over Protective Structure (ROPS) |
| 14. Front Grille | 29. Turn/Reflector/Tail Light |
| 15. Battery | |

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CENTER ROPS type

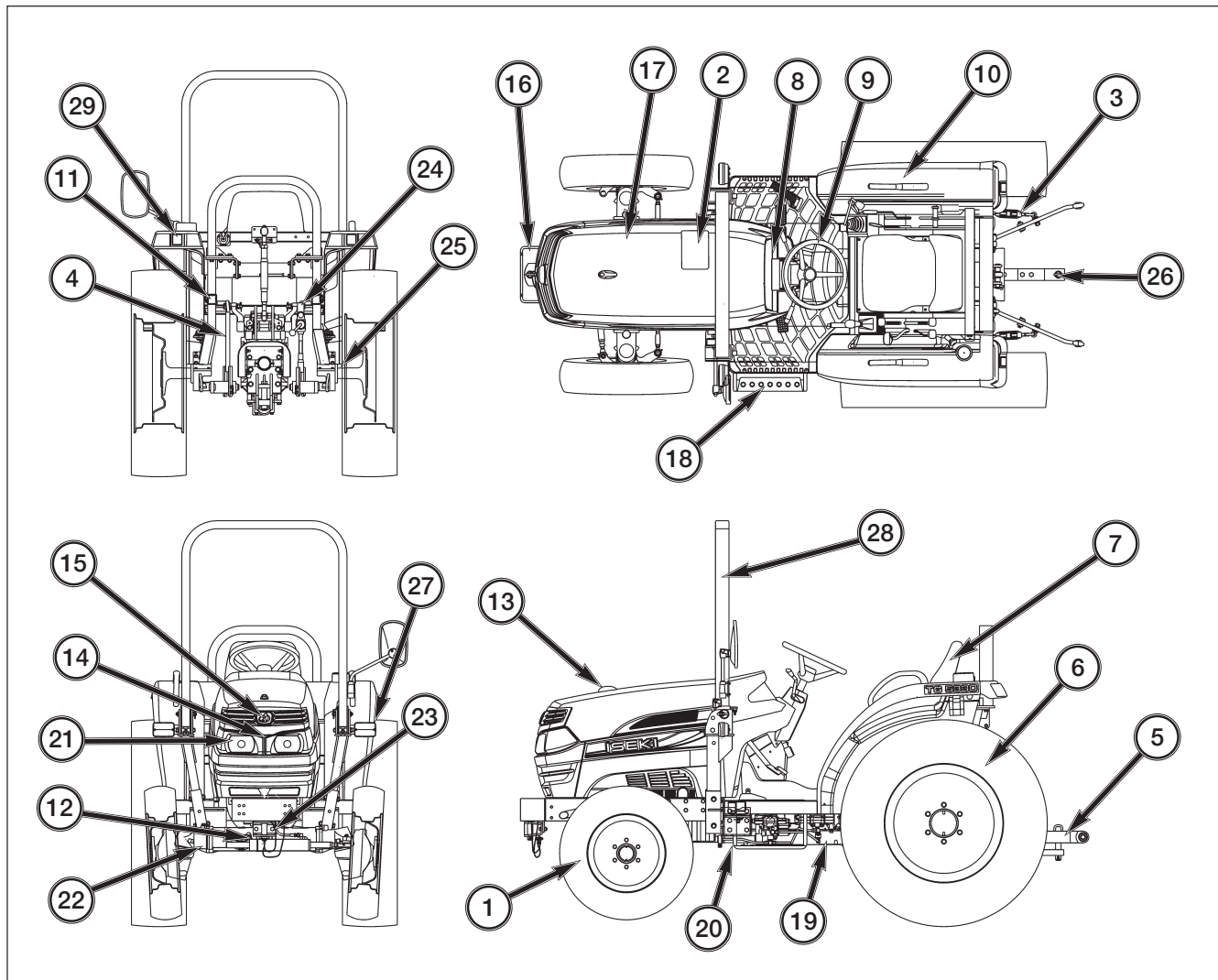


FIG. 3-6

FIG. 3-6: Identification and terminology of major components, as given in this manual, are as follows:

- | | |
|-----------------------|---|
| 1. Front Wheels | 16. Front Bumper |
| 2. Fuel Tank Filler | 17. Engine |
| 3. Check Chain | 18. Foot Step |
| 4. Lift Rod | 19. Transmission |
| 5. Lower Link | 20. Front Wheel-Drive Shaft |
| 6. Rear Wheels | 21. Headlight |
| 7. Operator's Seat | 22. Front Axle |
| 8. Instrument Panel | 23. Front Axle Pivot |
| 9. Steering Wheel | 24. Lift Arm |
| 10. Fender | 25. Rear Axle |
| 11. Reflector | 26. Drawbar |
| 12. Steering Cylinder | 27. Turn/Hazard Position Light |
| 13. Hood | 28. Roll-Over Protective Structure (ROPS) |
| 14. Front Grill | 29. Turn/Reflector/Tail Light |
| 15. Battery | |

CABIN type

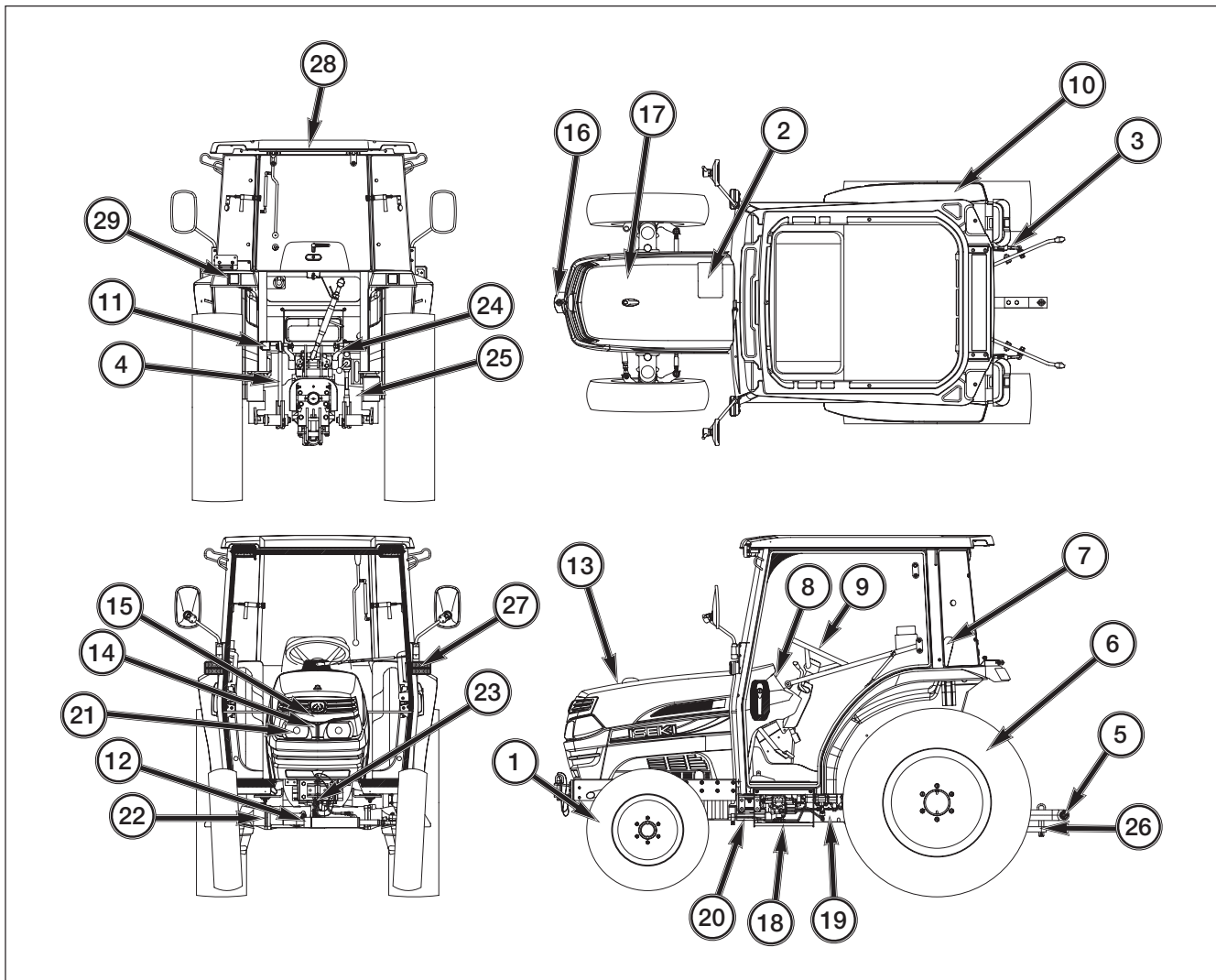


FIG. 3-7

FIG. 3-7: Identification and terminology of major components, as given in this book, are as follows:

- | | |
|-----------------------|--------------------------------|
| 1. Front Wheels | 16. Front Hitch |
| 2. Fuel Tank Filler | 17. Engine |
| 3. Check Chain | 18. Foot Step |
| 4. Lift Rod | 19. Transmission |
| 5. Lower Link | 20. Front Wheel-Drive Shaft |
| 6. Rear Wheels | 21. Headlight |
| 7. Operator's Seat | 22. Front Axle |
| 8. Instrument Panel | 23. Front Axle Pivot |
| 9. Steering Wheel | 24. Lift Arm |
| 10. Fender | 25. Rear Axle |
| 11. Reflector | 26. Drawbar |
| 12. Steering Cylinder | 27. Turn/Hazard position Light |
| 13. Hood | 28. Cabin |
| 14. Front Grille | 29. Turn/Reflector/Tail Light |
| 15. Battery | |

INSTRUMENTS & CONTROLS - STANDARD TYPE -

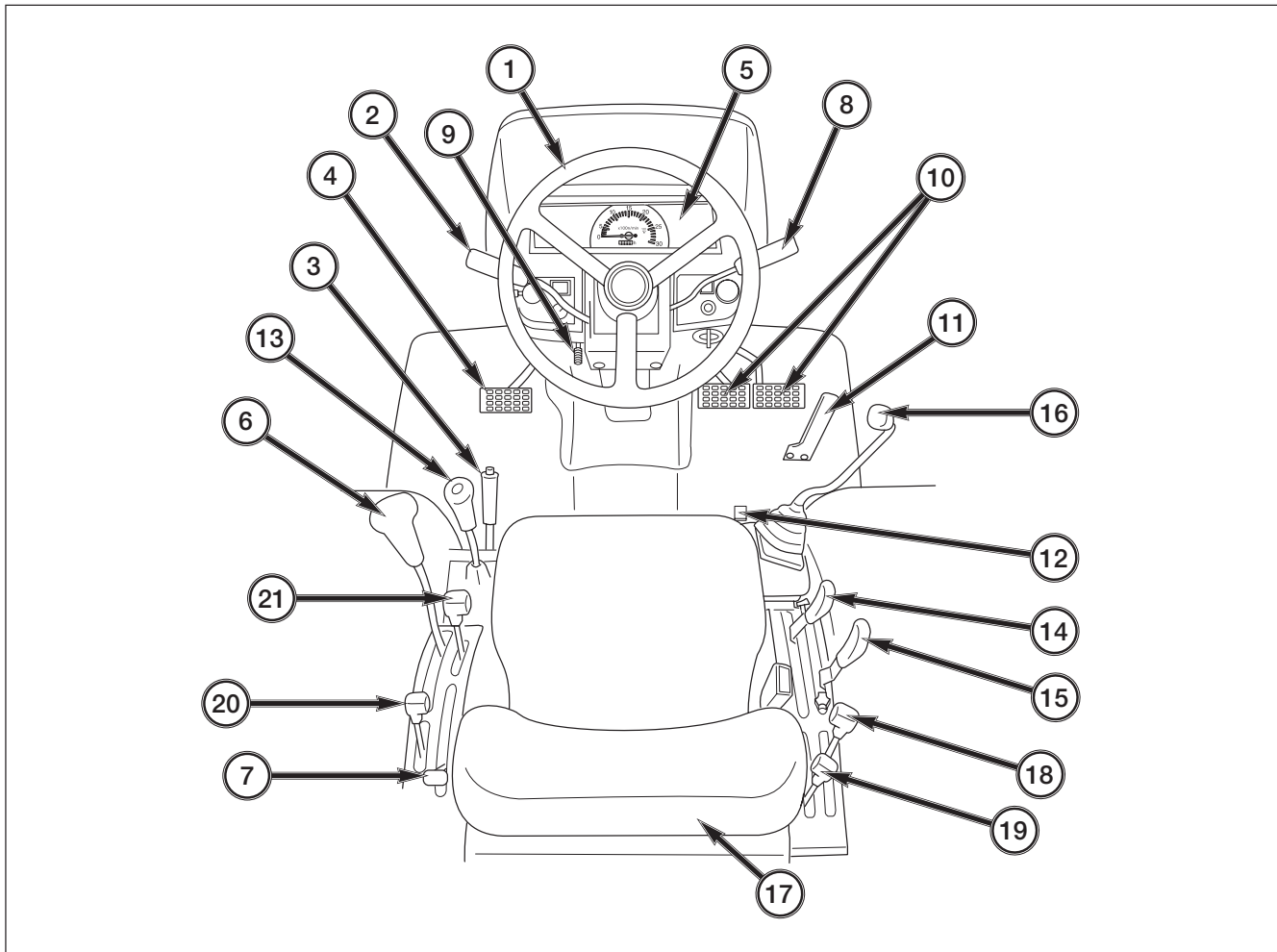


FIG. 4-1

FIG. 4-1: General layout and location of controls within operator's area on Tractor. Specific use of these controls is given later in this section and also in Operation section of this book:

- | | |
|---|---|
| 1. Steering Wheel | 11. Foot Throttle Pedal |
| 2. Forward / Reverse Lever | 12. Differential Lock Pedal |
| 3. Parking Brake Lever | 13. Gear Shift Lever |
| 4. Clutch Pedal | 14. Three Point Hitch Draft Control Lever (accessory) |
| 5. Instrument Panel | 15. Three Point Hitch Position Control Lever |
| 6. Range Shift Lever | 16. Joystick Control Lever (accessory) |
| 7. Rear Power Take-Off (PTO) Selector Lever | 17. Operator's Seat |
| 8. Hand Throttle Lever | 18. External Auxiliary Hydraulics Lever (accessory) |
| 9. Steering Column Tilt Pedal | 19. External Auxiliary Hydraulics Lever (accessory) |
| 10. Brake Pedals | 20. Mid Power Take-Off (PTO) Selector Lever (accessory) |
| | 21. Four wheel Drive (4-WD) Shift lever |



CAUTION: Become familiar with all operating controls prior to operating Tractor. Read this book in its entirety before starting.

INSTRUMENT PANEL

FIG. 4-2: Arrangement of gauges. Control switches and indicators located in instrument panel. Items are detailed in the descriptions that follow:

Electric Fuel Shut-Off

Turning main switch to off position will stop engine.

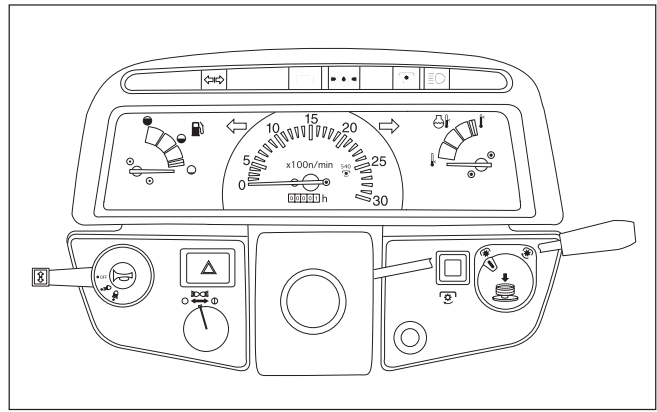


FIG. 4-2

Main Switch

FIG. 4-3: Main switch, 1, has the four following positions:

- **OFF** - Tractor engine and all electrical circuits off.(except for head light, turn/hazard position light, tail light, working lamp) Key can be removed.
- **ON** - Power supplied to all circuits. Normal operating position. Linkage on fuel injection pump moves (electrically) to the run position.
- **START** - Starter activated. This position spring loaded to ON .
- **GLOW** - Energizes glow plugs to pre-heat combustion chambers and assist starting.

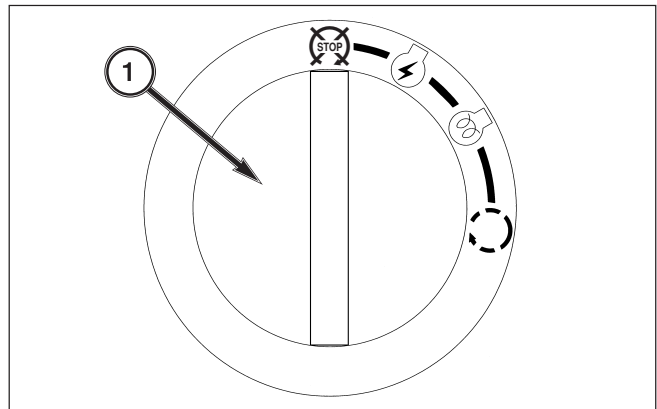


FIG. 4-3

NOTE: Main switch must be turned to ON before any circuits will operate. PTO switch must be off and gear shift lever in neutral before engine can be started.

This tractor is equipped with an electric fuel shut off. When main switch, 1, is turned to start , on , or glow position and gear shift lever is placed in neutral, a solenoid moves the fuel linkage on injection pump to run position to start engine. When main switch is turned to off , solenoid moves fuel linkage to off position to stop engine.

FIG. 4-4: When main switch, 1, is selected to GLOW position, glow indicator, 2, will illuminate after several seconds to indicate the engine combustion chambers are pre-heated and allow cold engine to be started.

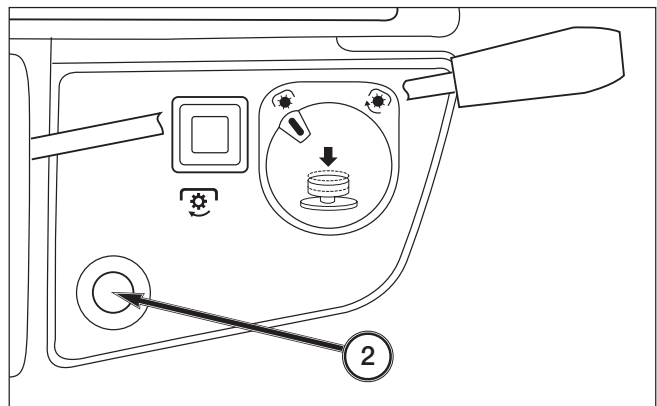


FIG. 4-4

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Indicator Light Strip

FIG. 4-5: Indicator light strip, 2, contains several warning lights to monitor certain functions. Currently used positions (from left to right) are:

-  Main (High) Beam - Illuminates when headlamps in front grille are selected to high beam position by light switch.
-  Power Take-Off (PTO) - Illuminates when PTO control switch is moved to engage PTO clutch pack (PTO operating). Light will go out when PTO switch is moved to off.
-  Engine Oil Pressure - Illuminates if engine oil pressure is low. If light comes on while engine is running, shut off engine immediately and investigate cause.
-  Battery Charge - Illuminates when main switch is turned ON and will go out after engine starts, to indicate battery is being charged.

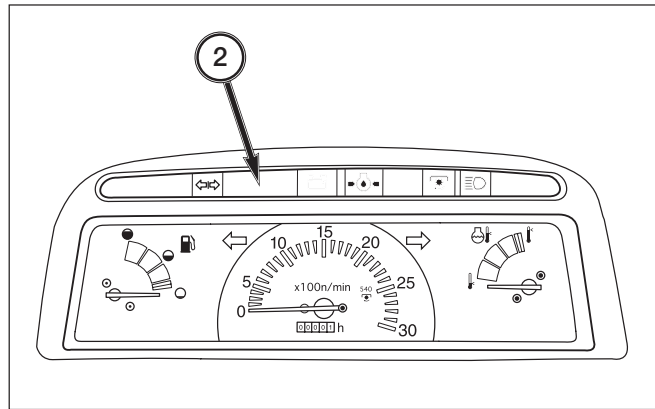


FIG. 4-5

Coolant Temperature Gauge

FIG. 4-6: Gauge, 3, indicates engine coolant temperature when main switch is selected to ON

-  - Shows too cool temperature for severe work. Allow to warm (needle in mid position) before applying heavy load.
-  - Indicates overheating (red area on gauge). Reduce engine speed to idle, allow to run at no load several minutes and investigate cause (refer to Troubleshooting).



CAUTION: Do not service hot engine. Allow to completely cool before servicing or removing radiator cap.

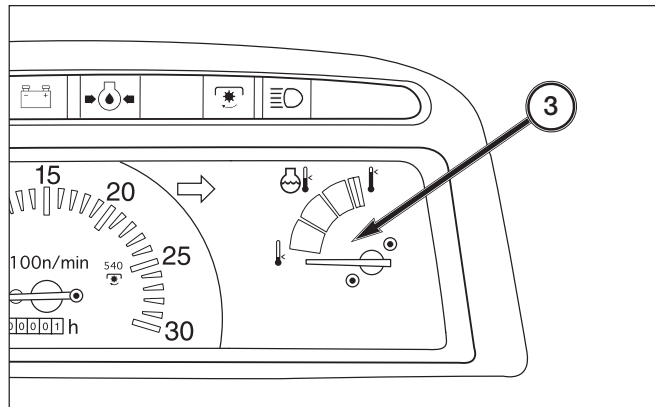


FIG. 4-6

Tachometer

FIG. 4-7: Gauge .4, indicates engine speed in crank shaft revolutions per minute (rpm). Index is also provided to show rear PTO speed of 540 at approximately 2430 engine rpm.

Normally, the PTO speed should be between 540 and 600. Operating the PTO at a speed above 600 is too fast, and may result in a breakdown of the tractor or implement.

Hourmeter in center of gauge indicates engine and tractor use to assist in maintenance intervals. The extreme right digit indicates 1/10 hour increments.

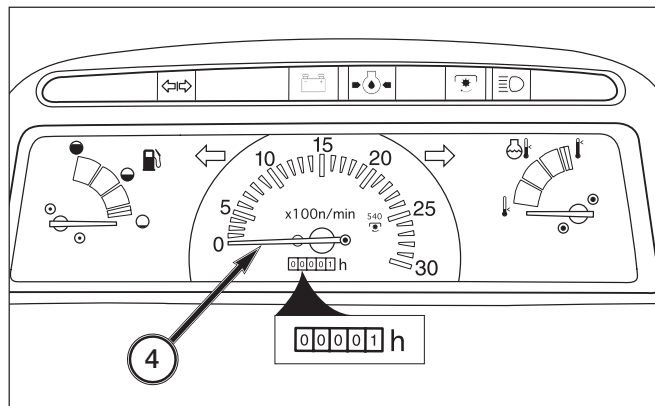


FIG. 4-7

Fuel Gauge

FIG. 4-8: Gauge, 5, indicates level of diesel fuel in fuel tank when main switch is ON

NOTE: Use only clean diesel fuel and clean area to prevent dirt/water entry into fuel tank when refilling. **DO NOT** run out of fuel as bleeding air from the system will be required. Keep fuel tank full to minimize condensation.



CAUTION: **DO NOT** refill fuel tank with engine running or hot. Allow cooling period. **DO NOT** smoke near fuel tank. Clean up any spilled fuel.

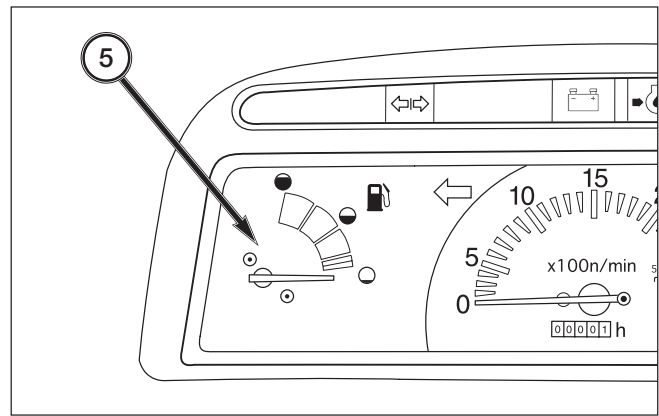


FIG. 4-8

Horn / Light Turn Switch

FIG. 4-9: Horn / Light Turn Switch.

Horn Switch, 6 - Horn will sound when center switch button is depressed.

Light Switch, 7 - Is a rotary switch with three operating positions:

- **OFF** - Fully counterclockwise. All lights off.
- **1st** - Low beam headlamps and rear tail lights.
- **2nd** - Main (high) beam headlamps and rear tail lights.

NOTE: When high beam is selected (2nd position), light in indicator light strip will come on.

Turn Switch, 8 - Operate switch handle in direction Tractor is being turned. The appropriate flashing amber warning light (ROPS-mounted) will operate as turn signal. Return switch to center position to cancel.

NOTE: Turn lights will not self-cancel. Select turn/hazard light switch to center position after completing turn.

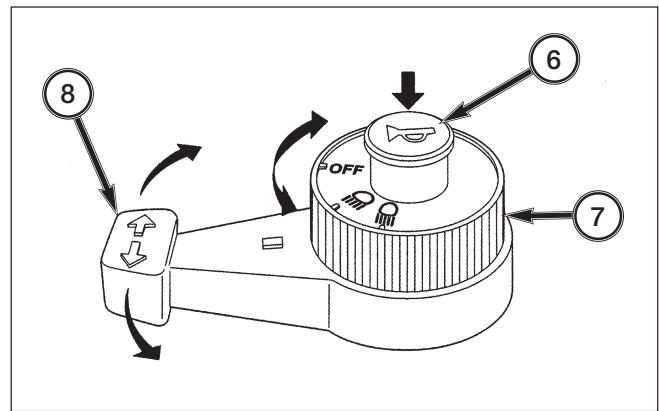


FIG. 4-9

FIG. 4-10: Turn the position lamp switch, 9, to turn the position lamps on.

Hazard Light Switch, - Press switch, 10, to turn on hazard lights. Both flashing amber warning lights will operate at the same time.



CAUTION: Hazard lights must be used any time Tractor is driven on public roadway. Consult local agencies for other marking requirements.

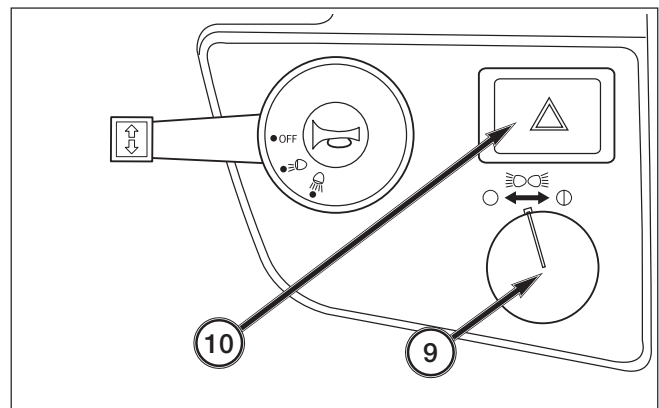


FIG. 4-10

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FIG. 4-11: Turn/hazard indicator lights, 11 and 12, will operate with ROPS-mounted warning lights. This provides operator with easy indication of warning light selection.

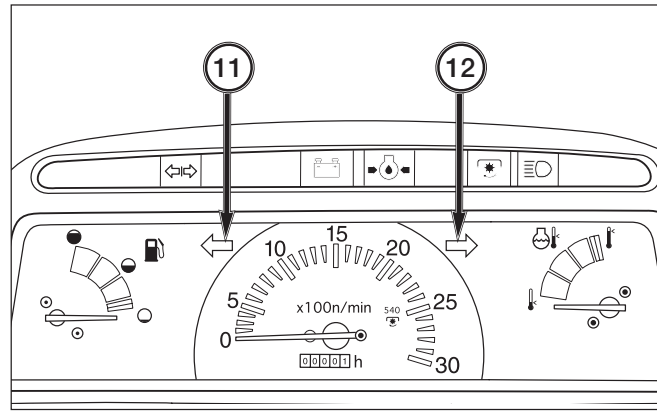


FIG. 4-11

Power Take-Off (PTO) Switch

FIG. 4-12 & 4-13: A dial-type safety switch, 1, is used to engage and disengage the PTO drive system. The switch must first be turned to right and then pulled up to engage PTO. When engaged, the PTO indicator light in the indicator light strip will illuminate.

A PTO selectable switch, 2, is used to adjust PTO clutch modulation.

Push on: soft start (button depressed illuminated) – for high inertia loads

Push off: standard start (button out and not illuminated)

IMPORTANT: PTO switch is equipped with a lock-out to prevent accidental engagement of PTO system. To engage PTO, first turn switch clockwise and then pull up it. **DO NOT FORCE SWITCH.**

NOTE: PTO switch, 1, must be used in conjunction with rear PTO selector lever, to left of operator's seat, when rear PTO is used. Refer to Operation section for complete details.

When PTO control switch is ON the engine cannot be started. Always switch off PTO and depress main clutch pedal to start engine.



WARNING: Always shut off PTO and shut off Tractor engine before servicing PTO-driven implement. Allow all movement and motion to stop before leaving operator's seat.

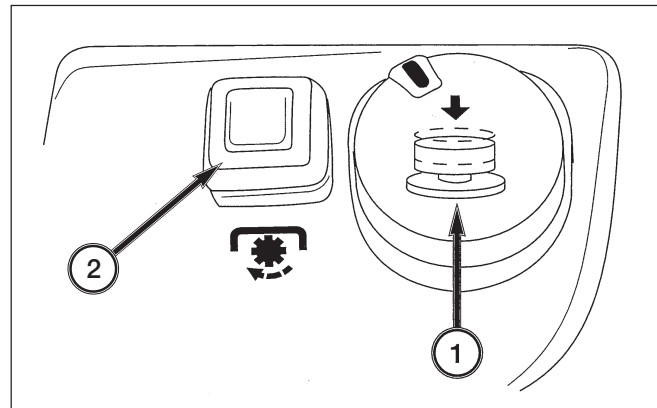


FIG. 4-12

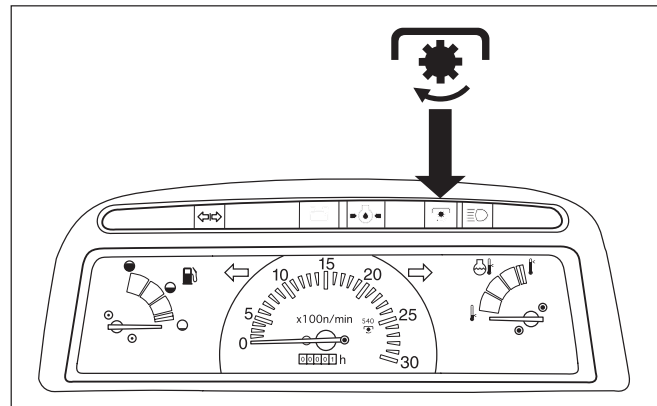


FIG. 4-13

MAIN CLUTCH PEDAL

FIG. 4-14: Foot pedal, 1, disengages engine from transmission when fully depressed, to permit engine starting, selecting/changing gears and stopping Tractor movement. Four-wheel drive selection also requires clutch disengagement.

Slowly raising the pedal will engage clutch and start Tractor moving in selected gear.

NOTE: Clutch pedal should be depressed quickly to prevent abnormal wear. Clutch pedal should be raised smoothly to prevent sudden movement. **DO NOT** ride clutch pedal with your foot.

IMPORTANT: Correct clutch pedal free-play adjustment is a must. Refer to Maintenance section.

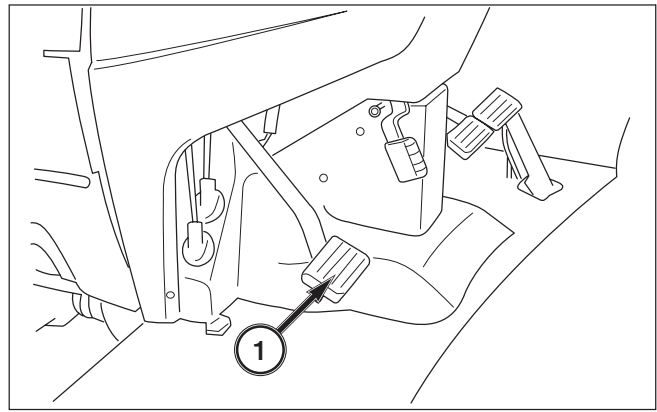


FIG. 4-14

BRAKES

Brake Pedals & Parking Brakes

FIG. 4-15: Inner brake pedal, 1, and outer brake pedal, 2, independently control the respective left and right wheel brakes, to assist in turning.

During Tractor transport or high speed operation, brake pedals must be latched together using interlocking plate, 3.



CAUTION: Do not use individual wheel brakes for transporting or operating at high speed. Always latch pedals together using interlocking, plate, 3. Make sure brakes are adjusted evenly.

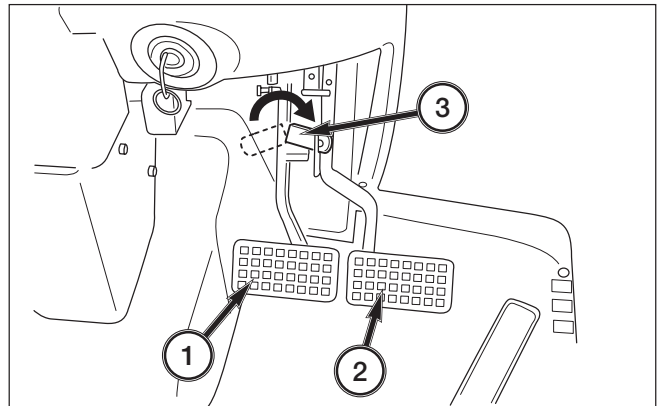


FIG. 4-15

Parking Brake lever



WARNING: ALWAYS apply the parking brake before dismounting from the tractor.

FIG. 4-16: The parking brake acts on the tractor rear wheels. To engage the brake, pull upward on the parking brake lever, 4 to lock brakes in applied position. To release the parking brake, press the button on the end of the lever and push the lever down.

Ensure the parking brake is fully released before driving off.

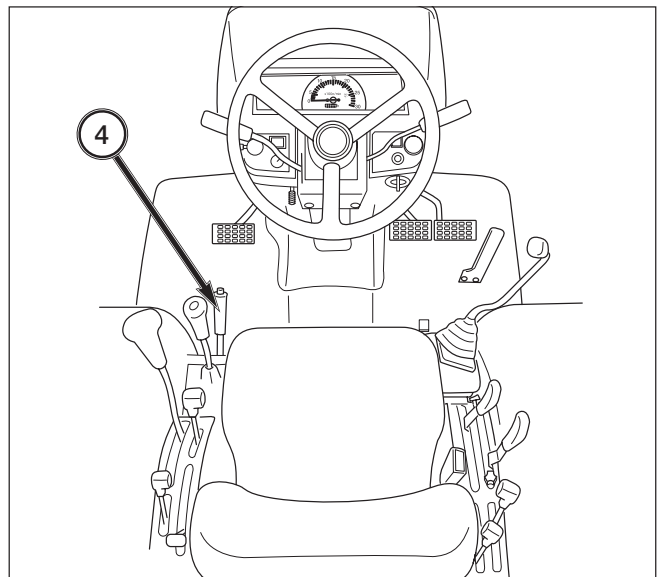


FIG. 4-16

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ENGINE SPEED CONTROLS



CAUTION: Always select engine speed to ensure safe operation. Reduce speed prior to turning or backing Tractor.

IMPORTANT: *DO NOT race or excessively load cold engine.*

FIG. 4-17: Hand Throttle Lever, 1 - Controls engine speed and will remain in position selected by the operator. With hand lever forward, engine will idle. Engine speed increases as lever is pulled progressively rearward.

Foot Throttle Pedal, 2 - Will override setting of hand throttle lever for increased engine speed. When pedal is released, engine speed returns to hand throttle lever setting.



CAUTION: When using foot throttle pedal, the hand throttle lever must be in the low idle speed position. This ensures maximum engine braking when pedal is released.

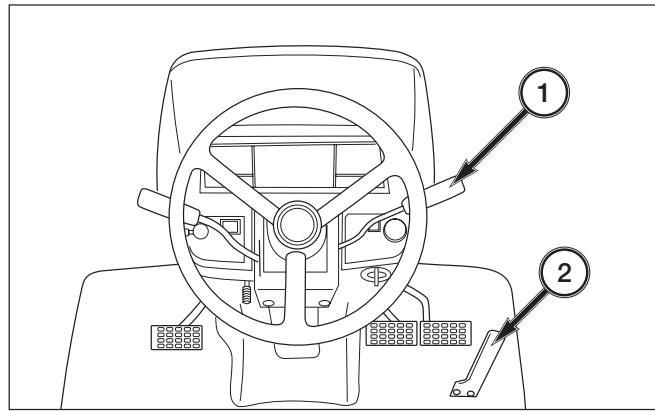


FIG. 4-17

TRANSMISSION SHIFT LEVERS

Three shift levers are used to select ground travel speed through different gear reductions within the drive train. Forward and reverse travel directions are also possible in all gear selections.

IMPORTANT: *All range and gear change selections require complete disengagement of main clutch (depressing pedal).*

Forward/Reverse Manual Shuttle Lever

FIG. 4-18: Forward or reverse travel is selected by lever, 1, on steering column. Moving lever forward will select forward travel, lever rearward will select reverse travel. A center neutral position should be selected whenever Tractor is stopped.

IMPORTANT: *Direction selection using manual shuttle requires complete disengagement of main clutch (pedal depressed).*

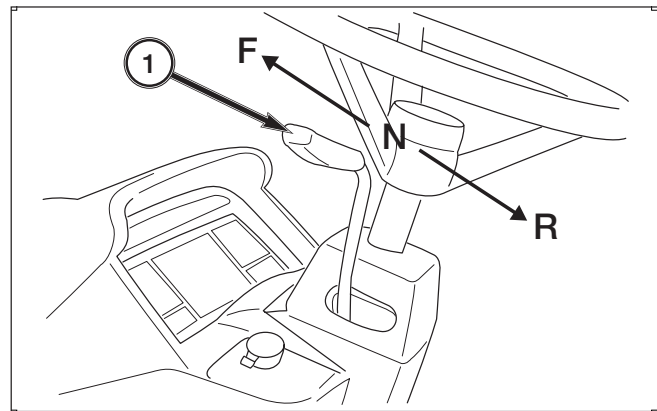
**FIG. 4-18****Range And Gear Shift Levers**

FIG. 4-19: Range shift lever, 3, is located to left of operator's seat. Gear Shift Lever, 4 is located to left of operator's seat.

Range Shift Lever, 2 - Provides three major speed changes from slowest speed range through highest speed range.

Gear Shift Lever, 3 - Provides four smaller gear speed changes within each range, from first through fourth gear positions.

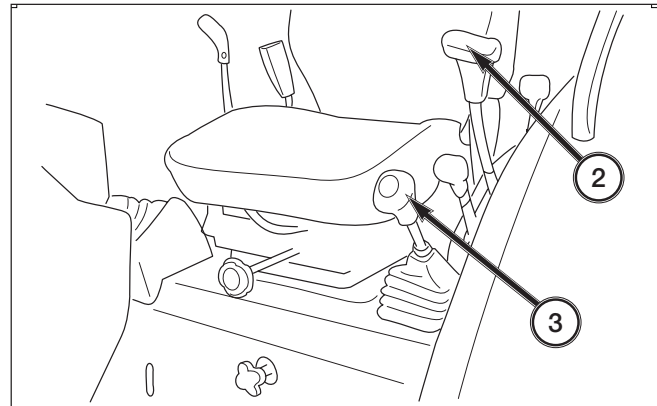
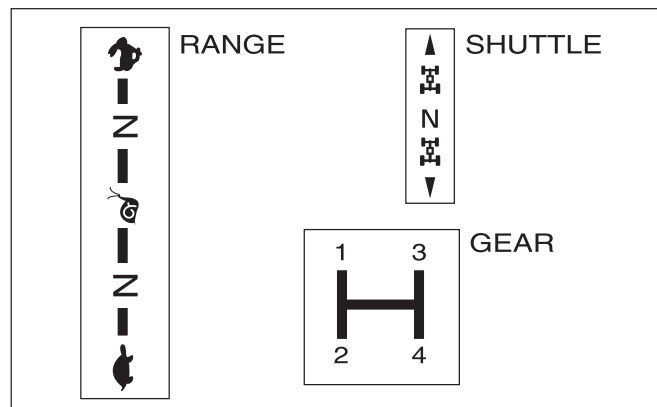
**FIG. 4-19**

FIG. 4-20: In total twelve forward and twelve reverse gear speeds are possible. The synchromesh allows the gear shift lever and manual shuttle shift lever to be changed with the Tractor in motion (with main clutch pedal depressed).

NOTE: *All range lever changes must be with clutch depressed and TRACTOR MOTION STOPPED.*



CAUTION: Reduce engine speed prior to changing any shift lever position. Make forward to reverse, and reverse to forward, direction changes with Tractor stopped or traveling at very slow ground speed.

**FIG. 4-20**

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DIFFERENTIAL LOCK PEDAL

FIG. 4-21: When differential lock pedal, 1, is depressed, both rear axles are locked together to provide equal traction to both rear wheels. This is especially important when operating in loose soil or slippery conditions.

IMPORTANT: *Depress main clutch pedal and stop before engaging differential lock.*

Disengage differential lock, by releasing foot pedal. If lock does not immediately disengage, tap right and left brake pedals alternatively until pedal is released.



CAUTION: When differential lock is engaged, steering ability of Tractor will be greatly reduced. Disengage before attempting a turn. Do not use during transport.

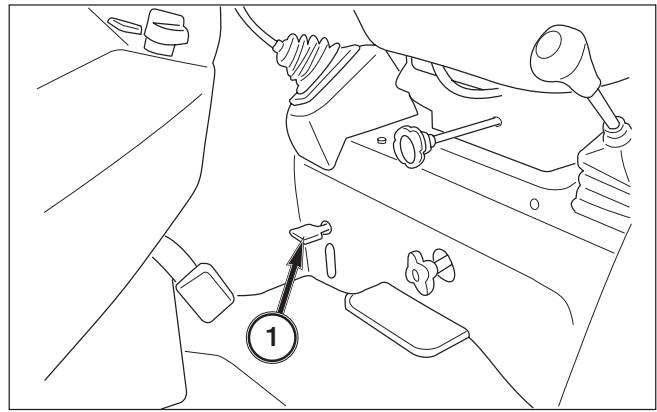


FIG. 4-21

FOUR-WHEEL DRIVE SHIFT LEVER

FIG. 4-22: Shift lever, 1, engages and disengages drive for the front axle. Lever forward, the front axle (4-WD) is disengaged. Lever rearward, the front axle is engaged, and power is available to both front and rear axle.

IMPORTANT: *Depress main clutch pedal and stop Tractor before engaging or disengaging four-wheel drive.*

Do not use 4-WD on hard surface. Rapid wear of front tires and possible drive line damage could occur if 4-WD is operated for prolonged periods on hard surface.

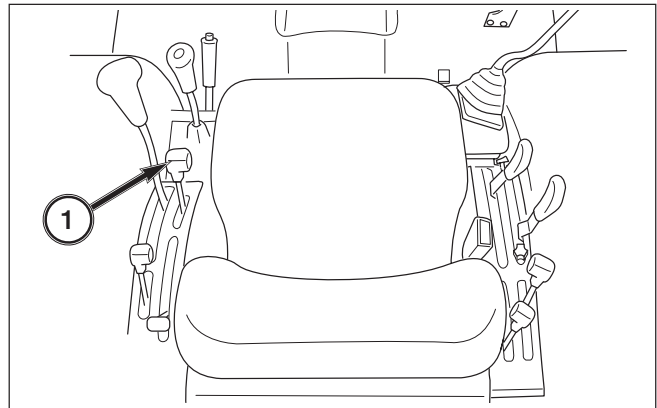


FIG. 4-22

REAR PTO SELECTOR LEVER

FIG. 4-23: Rear PTO (power takeoff) selector lever, 1, controls rear PTO on Tractor.

When lever is forward, 540 rpm rear PTO is selected.
When lever is rearward, 1000 rpm rear PTO is selected.
When lever is returned to rear neutral (N) position, the gear drive is disengaged

Rear PTO selector lever is used with PTO control switch on instrument panel. Refer to Operation section for complete details.

IMPORTANT: *Before moving rear PTO selector lever, PTO control switch on steering column must be off.*



CAUTION: Always shut off PTO and shut off Tractor engine before servicing PTO-driven implement. Allow all movement and motion to stop before leaving operator's seat.

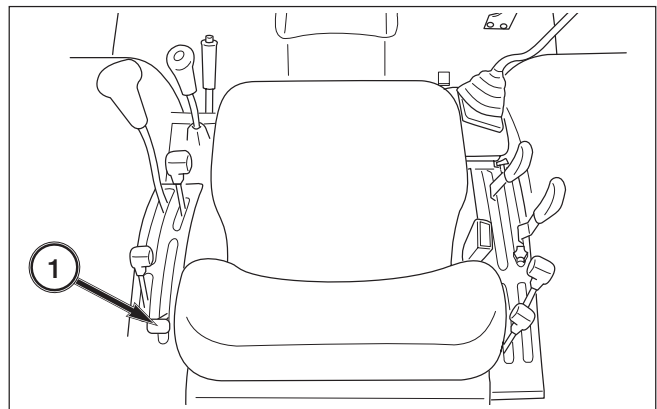


FIG. 4-23

MID PTO SELECTOR LEVER (accessory)

FIG. 4-24: The mid PTO selector lever, 1, controls the mid PTO on the tractor.

When the lever is shifted rearward, the mid PTO operates at 1916 rpm (when engine speed is 2600 rpm). When lever is returned, neutral is selected, and the mid PTO will stop rotating.

The mid PTO selector lever should be used with the PTO control switch on the instrument panel. Refer to the "Operation" section for complete details.

IMPORTANT: *The PTO control switch must be set to Off when the mid PTO selector lever is operated.*

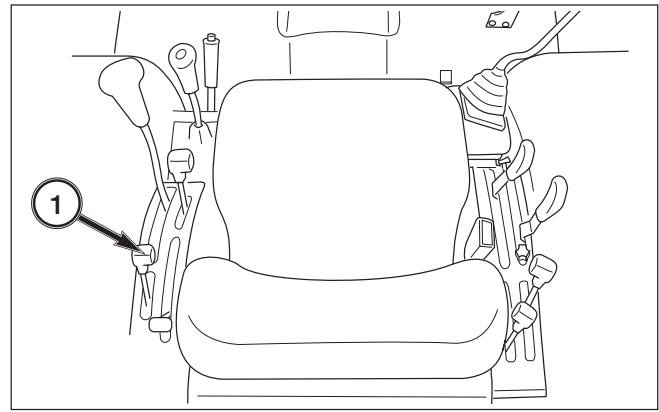


FIG. 4-24

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THREE-POINT HITCH

Complete operating instructions for three-point hitch are given in Operation section of this book.

Control Lever

FIG. 4-25: Position control lever, 1, adjusts height of three-point hitch on rear of Tractor. Setting lever in a particular position will set the height respectively. Full up position is with lever fully rearward and full down position is with lever completely forward.

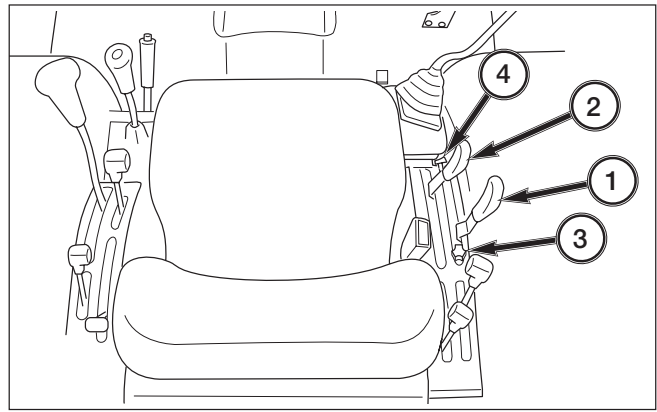


FIG. 4-25

Draft control lever, 2, adjusts height of three-point hitch according to the draft or pull of ground-engaging implements. This provides constant load on Tractor and provides weight transfer to Tractor rear wheels to reduce wheel slippage.

Lever stops, 3 and 4, can be adjusted within slot to limit implement raising/lowering.



CAUTION: use position control lever, 1, when attaching or detaching implements.

NOTE: When starting engine, ensure implement is lowered to the ground and both levers are fully forward. This reduces load on starter due to hitch trying to raise when engine is cranked.

Lowering Rate Control Knob

FIG. 4-26: Lowering rate knob, 1, adjusts rate of drop of three-point hitch and implement. Turning knob clockwise will increase lowering time and counterclockwise will decrease lowering time. Turning knob fully clockwise will lock implement (or hitch) in raised position for transport.

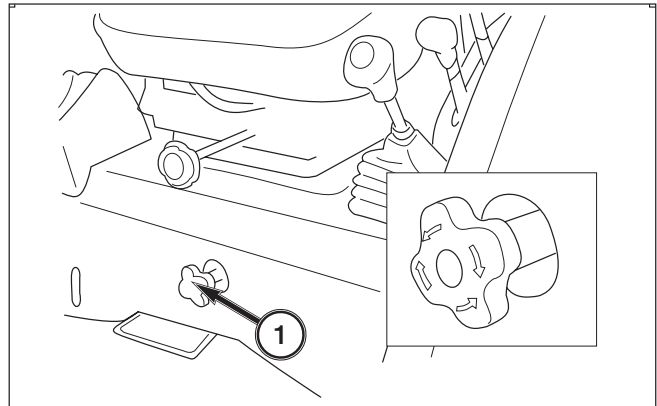


FIG. 4-26



CAUTION: When working near or under mounted equipment, securely block in position and turn lowering rate clockwise to stop.

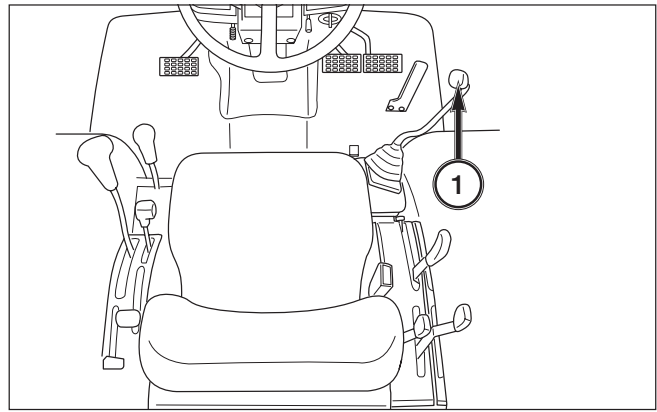
JOYSTICK CONTROL LEVER (accessory)

Fig.4-27: The Joystick control lever, 1, can be used to determine the front loader boom position and bucket position. The lever is located to the front on the right side of the seat.

The "Raise", "Lower", "Free Flow" operations for the boom, and "Bucket", "Dump" and "Fast Dump" operations for the bucket can be controlled with this lever.

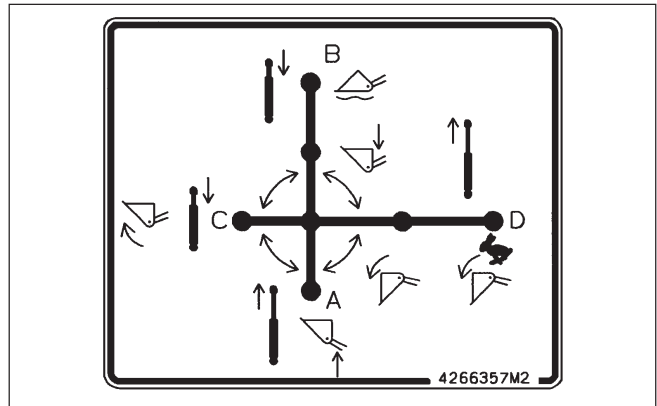
The raise and lower operations for the boom, and scoop and dump operations for the bucket automatically return to neutral when the lever is released.

The free flow on boom can be kept at the free flow position by the detent device.

**FIG. 4-27**

WARNING: Do not operate the joystick except when seated in the tractor. The front loader may operate unexpectedly, resulting in an accident.

NOTE: When the joystick is operated on a tractor without a front loader, the relief valve may be operated, causing the 3P link to stop operating.

**FIG. 4-28**

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COMFORT ADJUSTMENTS

Steering Column Tilt

FIG. 4-29: Steering column can be adjusted forward and rearward to any one of three positions, enabling operator to select best steering wheel position.

While holding steering wheel with both hands, depress tilt locking pedal, 1, and select desired position. Release pedal and make sure column is securely locked by pedal returning to original position.

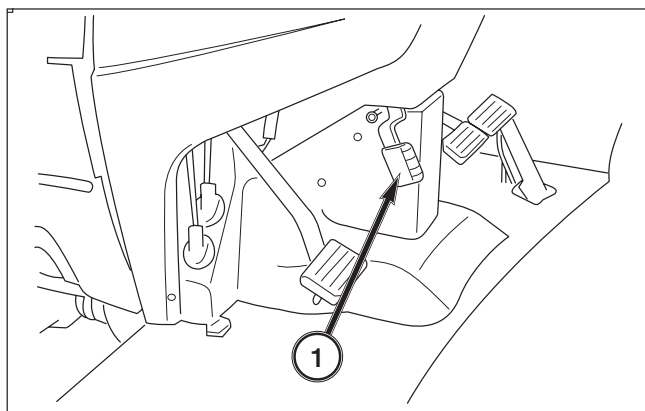


FIG. 4-29

Tool Box

FIG. 4-30: Tool box.1, is provided behind the seat back for tools. Open the lid and insert tools as needed.

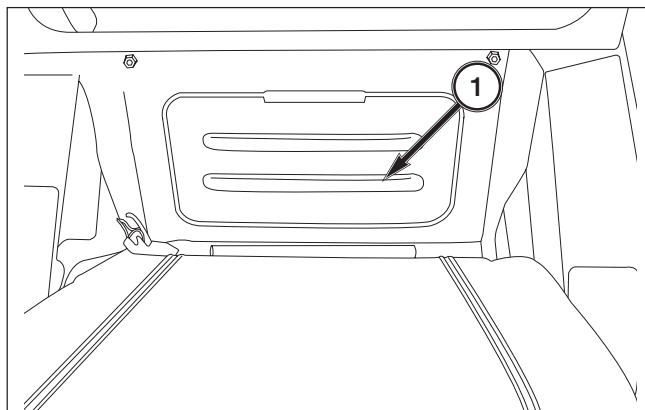


FIG. 4-30

INSTRUMENTS & CONTROLS - POWER SHIFT TYPE & HST TYPE-

Power Shift type

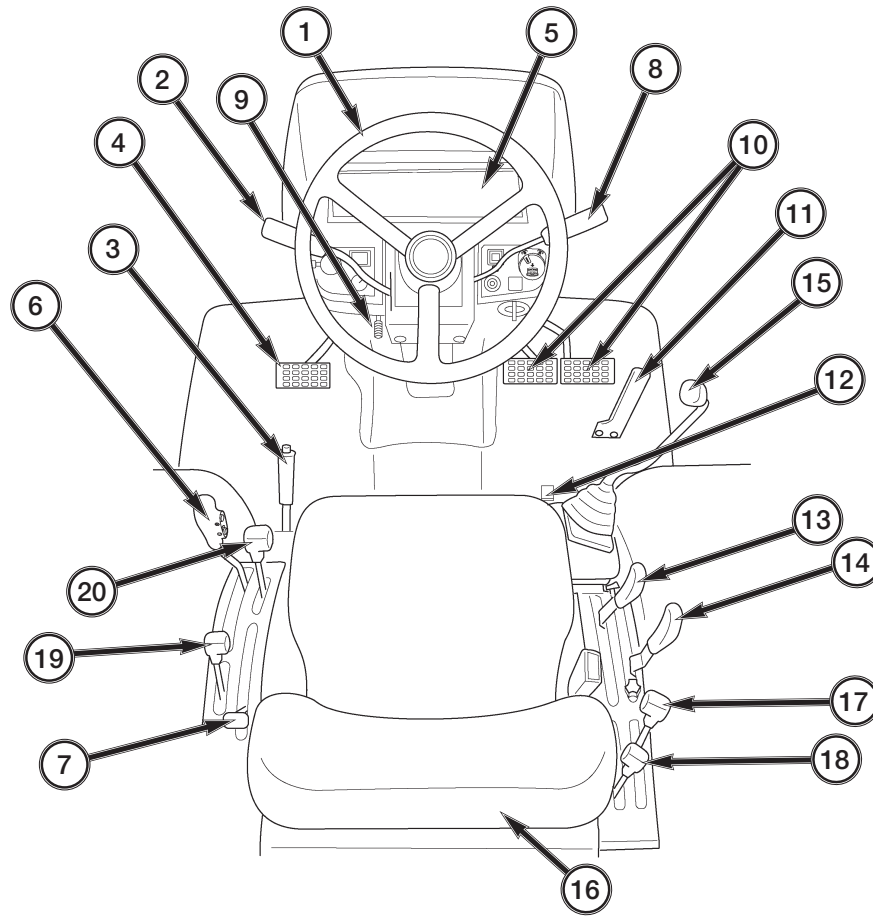


FIG. 4-31a

FIG. 4-31a: General layout and location of controls within operator's area on Tractor. Specific use of these controls is given later in this section and also in Operation section of this book:

- | | |
|---|---|
| 1. Steering Wheel | 11. Foot Throttle Pedal |
| 2. Forward / Reverse Lever | 12. Differential Lock Pedal |
| 3. Parking Brake Lever | 13. Three Point Hitch Draft Control Lever (accessory) |
| 4. Clutch Pedal | 14. Three Point Hitch Position Control Lever |
| 5. Instrument Panel | 15. Joystick Control Lever (accessory) |
| 6. Range Shift Lever (with Gear Shift Button) | 16. Operator's Seat |
| 7. Rear Power Take-Off (PTO) Selector Lever | 17. External Auxiliary Hydraulics Lever (accessory) |
| 8. Hand Throttle Lever | 18. External Auxiliary Hydraulics Lever (accessory) |
| 9. Steering Column Tilt Pedal | 19. Mid Power Take-Off (PTO) Selector Lever (accessory) |
| 10. Brake Pedals | 20. Four wheel Drive (4-WD) Shift lever |



CAUTION: Become familiar with all operating controls prior to operating Tractor. Read this book in its entirety before starting.

HST type

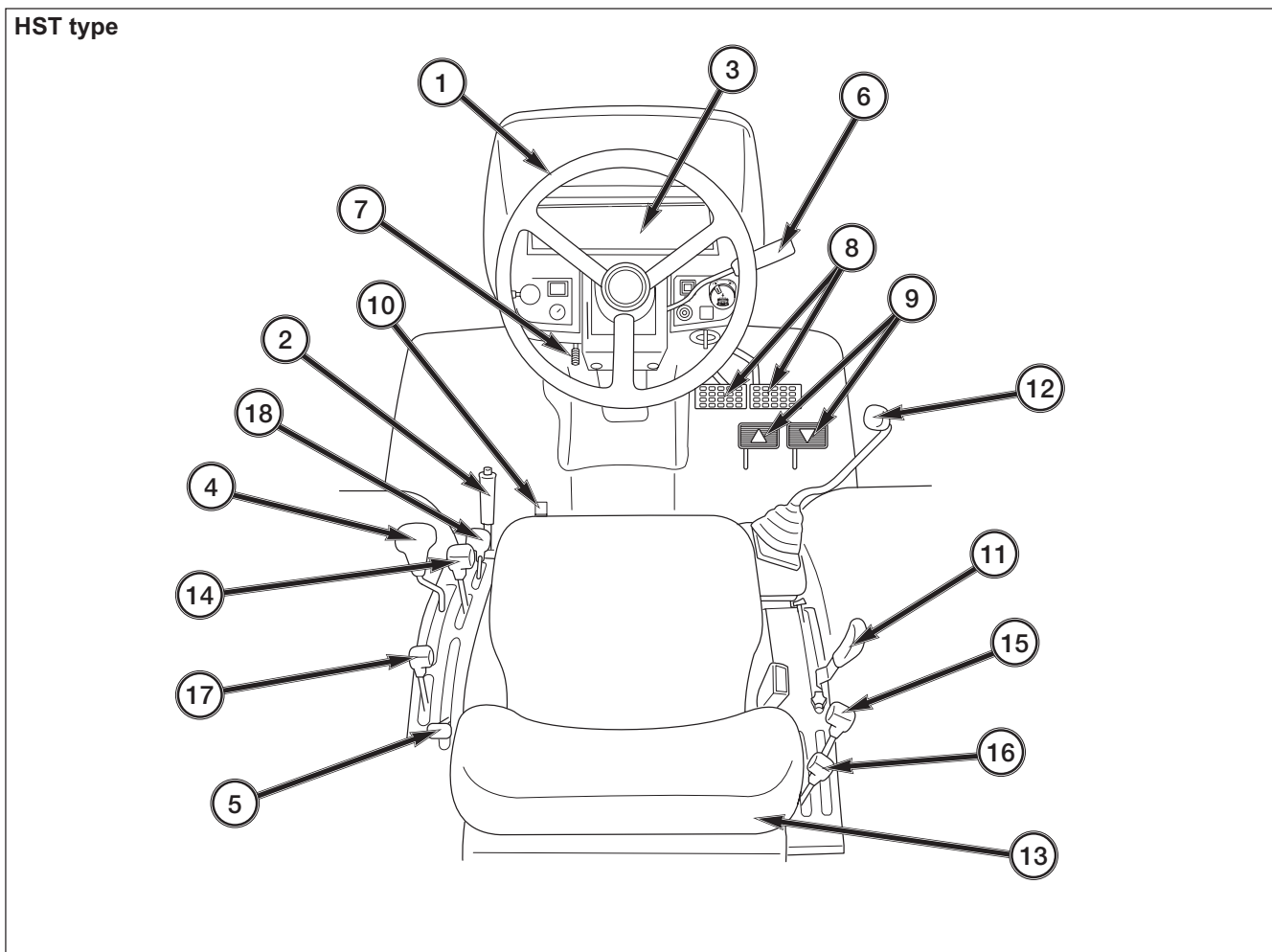


FIG. 4-31b

FIG. 4-31b: General layout and location of controls within operator's area on Tractor. Specific use of these controls is given later in this section and also in "Operation" section of this book:

- | | |
|--------------------------------|---|
| 1. Steering Wheel | 11. Three Point Hitch Position Control Lever |
| 2. Parking Brake Lever | 12. Joystick Control Lever |
| 3. Instrument Panel | 13. Operator's Seat |
| 4. Range Shift Lever | 14. Four Wheel Drive (4-WD) Shift Lever |
| 5. Rear PTO Selector Lever | 15. External Auxiliary Hydraulics Lever (accessory) |
| 6. Hand Throttle Lever | 16. External Auxiliary Hydraulics Lever (accessory) |
| 7. Steering Column Tilt Pedal | 17. Mid-PTO Selector Lever (accessory) |
| 8. Brake Pedal | 18. Cruise Control Lever |
| 9. Hydro Forward Reverse Pedal | |
| 10. Differential Lock Pedal | |



CAUTION: Become familiar with all operating controls prior to operating Tractor. Read this book in its entirety before starting. **CAUTION:** Become familiar with all operating controls prior to operating Tractor. Read this book in its entirety before starting.

INSTRUMENT PANEL

FIG. 4-32: Arrangement of gauges. Control switches and indicators located in instrument panel. Items are detailed in the descriptions that follow:

Electric Fuel Shut-Off

Turning main switch to off position will stop engine.

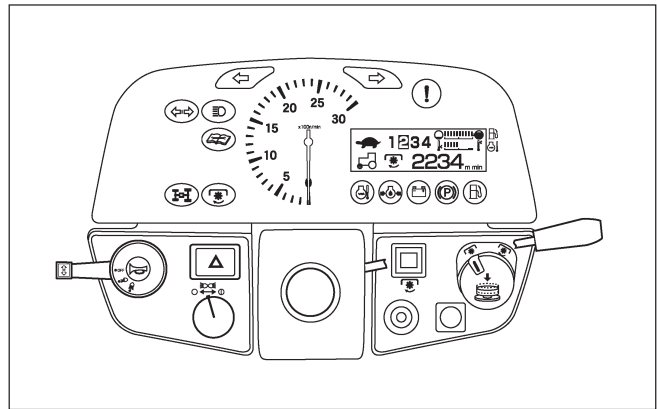


FIG. 4-32

Main Switch

FIG. 4-33: Main switch, 1, has the four following positions:

- **OFF** - Tractor engine and all electrical circuits off.(except for head light, turn/hazard position light, tail light, working lamp) Key can be removed.
- **ON** - Power supplied to all circuits. Normal operating position. Linkage on fuel injection pump moves (electrically) to the run position.
- **START** - Starter activated. This position spring loaded to ON .
- **GLOW** - Energizes glow plugs to pre-heat combustion chambers and assist starting.

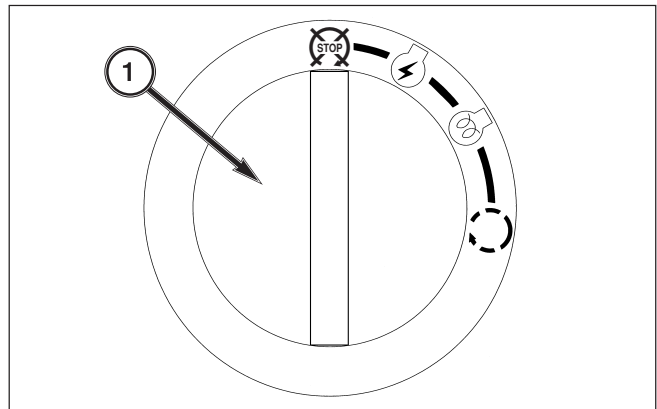


FIG. 4-33

NOTE: Main switch must be turned to ON before any circuits will operate. PTO switch must be off and gear shift lever in neutral before engine can be started.

This tractor is equipped with an electric fuel shut off. When main switch, 1, is turned to start , on , or glow position and gear shift lever is placed in neutral, a solenoid moves the fuel linkage on injection pump to run position to start engine. When main switch is turned to off , solenoid moves fuel linkage to off position to stop engine.

FIG. 4-34: When main switch, 1, is selected to GLOW position, glow indicator, 2, will illuminate after several seconds to indicate the engine combustion chambers are pre-heated and allow cold engine to be started.

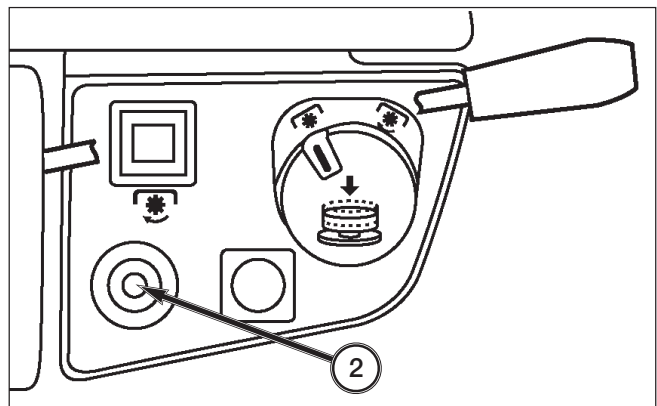


FIG. 4-34

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Indicator Light Strip

FIG. 4-35: Indicator light strip, 3, contains several warning lights to monitor certain functions. Currently used positions (from left to right) are:

-  Main (High) Beam - Illuminates when headlamps in front grille are selected to high beam position by light switch.
-  Power Take-Off (PTO) - Illuminates when PTO control switch is moved to engage PTO clutch pack (PTO operating). Light will go out when PTO switch is moved to off.
-  Engine Oil Pressure - Illuminates if engine oil pressure is low. If light comes on while engine is running, shut off engine immediately and investigate cause.
-  Battery Charge - Illuminates when main switch is turned ON and will go out after engine starts, to indicate battery is being charged.
-  Coolant Temperature - Illuminates when engine is overheating. Reduce engine speed to idle, allow to run at no load several minutes and investigate cause(refer to "Troubleshooting").
-  Fuel - Illuminates when fuel is low level in the fuel tank.
-  Inspection - Illuminates when hourmeter indicates 50/100/200/300/400 • • • hour, please inspect your tractor.
-  Caution - Illuminates when it is not normal with starting engine or sensor of Power shift is not normal.
-  Parking Brake - Illuminates when parking brake lever is pulled up.
-  4WD - Illuminates when 4WD is engaged by shifting 4WD lever.
-  Trailer Indicator - Blink when turn switch is ON with connecting 7 pins socket to your trailer or when hazard light switch is ON.

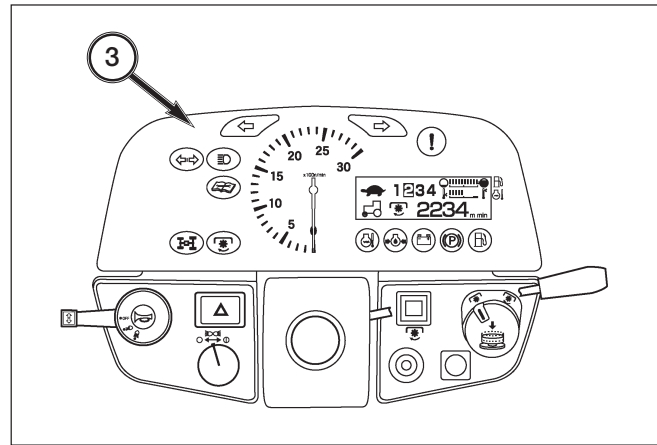


FIG. 4-35

Coolant Temperature Gauge

FIG. 4-36: Gauge, 4, indicates engine coolant temperature when main switch is selected to ON

-  - Shows too cool temperature for severe work. Allow to warm before applying heavy load.
-  - Indicates overheating Reduce engine speed to idle, allow to run at no load several minutes and investigate cause (refer to Troubleshooting).



CAUTION: Do not service hot engine. Allow to completely cool before servicing or removing radiator cap.

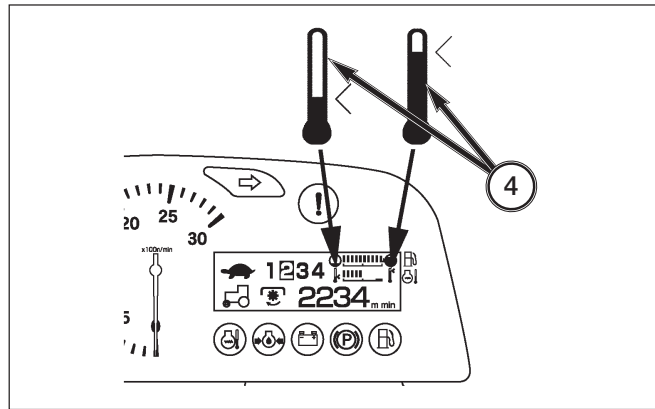


FIG. 4-36

Tachometer

FIG.4-37 & 4-38: Scale,5, indicates engine speed in crank shaft revolutions per minute(rpm). Digital panel indicates not only engine revolutions but also traveling speed, rear PTO speed, mid PTO speed, hourmeter, trip meter.

Indication of digital panel is changed by pushing selectable switch,6.

When rear PTO speed is 540, engine revolutions is approximately 2430 rpm.

Normally, the PTO speed should be between 540 and 600. Operating the PTO at a speed above 600 is too fast, and may result in breakdown of the tractor or implement.

Hourmeter is used to assist in maintenance intervals of tractor. The extreme right digit indicates 1 hour increments.

Tripmeter is used to assist in your operation. The extreme right digit indicates 1/10 hour increments.

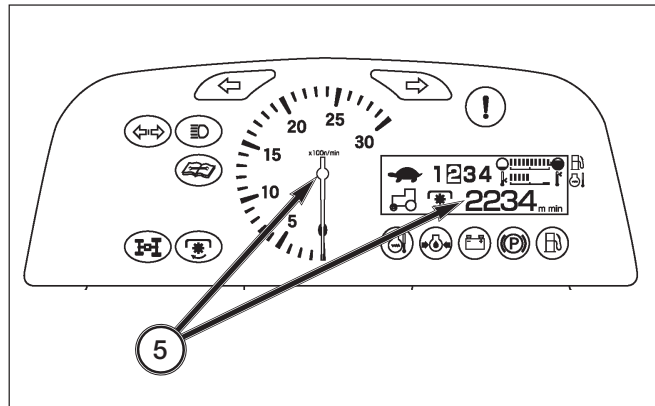


FIG. 4-37

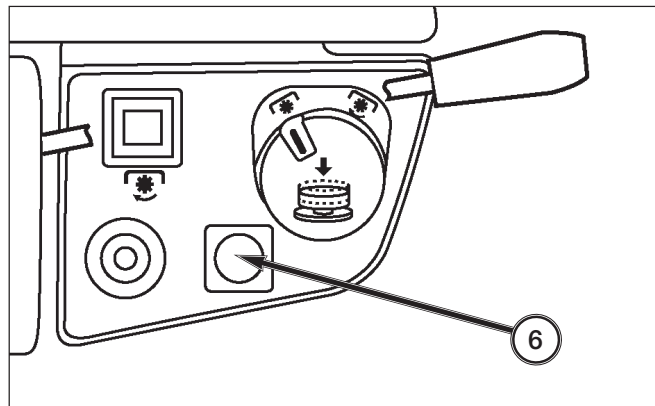


FIG. 4-38

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Fuel Gauge

FIG. 4-39: Scale, 7, indicates level of diesel fuel in fuel tank when main switch is ON

NOTE: Use only clean diesel fuel and clean area to prevent dirt/water entry into fuel tank when refilling. DO NOT run out of fuel as bleeding air from the system will be required. Keep fuel tank full to minimize condensation.



CAUTION: DO NOT refill fuel tank with engine running or hot. Allow cooling period. DO NOT smoke near fuel tank. Clean up any spilled fuel.

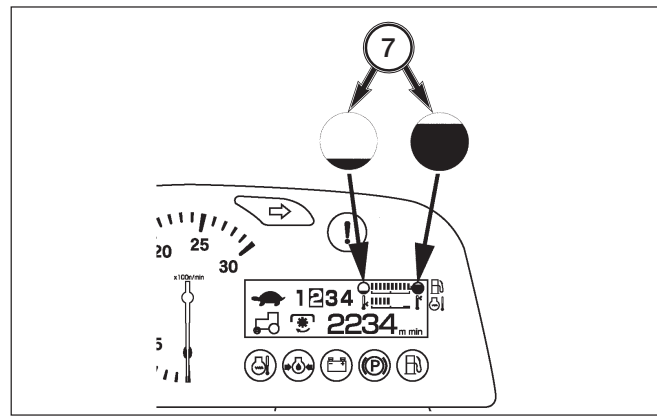


FIG. 4-39

Horn / Light Turn Switch

FIG. 4-40: Horn / Light Turn Switch.

Horn Switch, 8 - Horn will sound when center switch button is depressed.

Light Switch, 9 - Is a rotary switch with three operating positions:

- **OFF** - Fully counterclockwise. All lights off.
- **1st** - Low beam headlamps and rear tail lights.
- **2nd** - Main (high) beam headlamps and rear tail lights.

NOTE: When high beam is selected (2nd position), light in indicator light strip will come on.

Turn Switch, 10 - Operate switch handle in direction Tractor is being turned. The appropriate flashing amber warning light (ROPS-mounted) will operate as turn signal. Return switch to center position to cancel.

NOTE: Turn lights will not self-cancel. Select turn/hazard light switch to center position after completing turn.

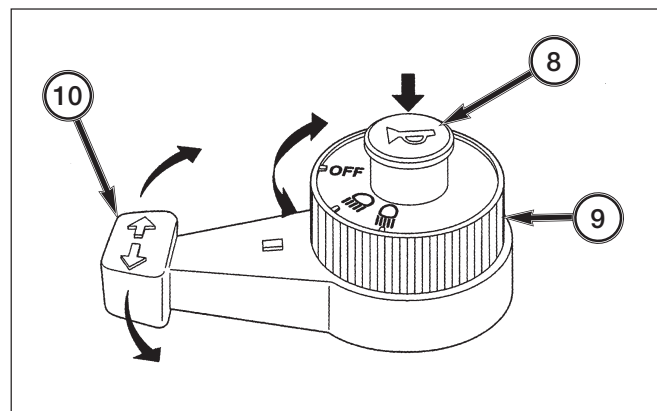


FIG. 4-40

FIG. 4-41: Turn the position lamp switch, 11, to turn the position lamps on.

Hazard Light Switch, - Press switch, 12, to turn on hazard lights. Both flashing amber warning lights will operate at the same time.



CAUTION: Hazard lights must be used any time Tractor is driven on public roadway. Consult local agencies for other marking requirements.

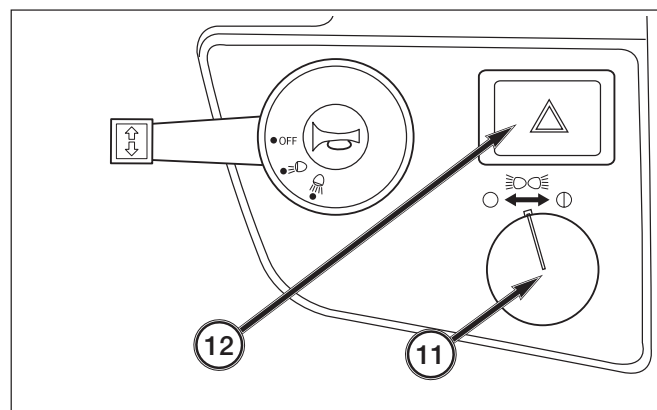


FIG. 4-41

FIG. 4-42: Turn/hazard indicator lights, 13 and 14, will operate with ROPS-mounted warning lights. This provides operator with easy indication of warning light selection.

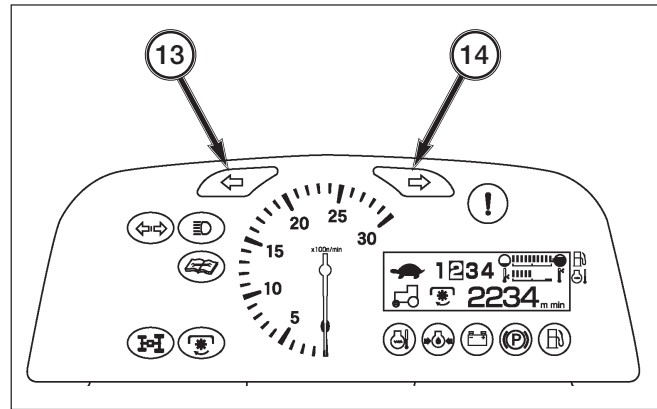


FIG. 4-42

Power Take-Off (PTO) Switch

FIG. 4-43 & 4-44: A dial-type safety switch, 1, is used to engage and disengage the PTO drive system. The switch must first be turned to right and then pulled up to engage PTO. When engaged, the PTO indicator light in the indicator light strip will illuminate.

A PTO selectable switch, 2, is used to adjust PTO clutch modulation.

Push on: soft start (button depressed illuminated) – for high inertia loads

Push off: standard start (button out and not illuminated)

IMPORTANT: PTO switch is equipped with a lock-out to prevent accidental engagement of PTO system. To engage PTO, first turn switch clockwise and then pull up it. **DO NOT FORCE SWITCH.**

NOTE: PTO switch, 1, must be used in conjunction with rear PTO selector lever, to left of operator's seat, when rear PTO is used. Refer to Operation section for complete details.

When PTO control switch is ON the engine cannot be started. Always switch off PTO and depress main clutch pedal to start engine.



WARNING: Always shut off PTO and shut off Tractor engine before servicing PTO-driven implement. Allow all movement and motion to stop before leaving operator's seat.

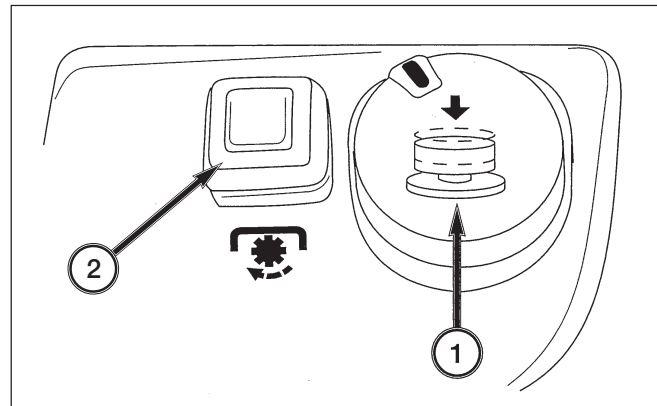


FIG. 4-43

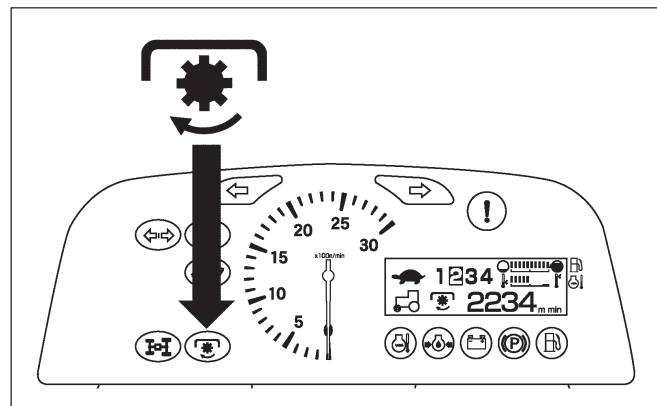


FIG. 4-44

TG5330,5390,5470

MAIN CLUTCH PEDAL (ONLY POWER SHIFT TYPE)

FIG. 4-45: Foot pedal, 1, disengages engine from transmission when fully depressed, to permit engine starting, selecting/changing gears and stopping Tractor movement. Four-wheel drive selection also requires clutch disengagement.

Slowly raising the pedal will engage clutch and start Tractor moving in selected gear.

NOTE: Clutch pedal should be depressed quickly to prevent abnormal wear. Clutch pedal should be raised smoothly to prevent sudden movement. **DO NOT** ride clutch pedal with your foot.

IMPORTANT: Correct clutch pedal free-play adjustment is a must. Refer to Maintenance section.

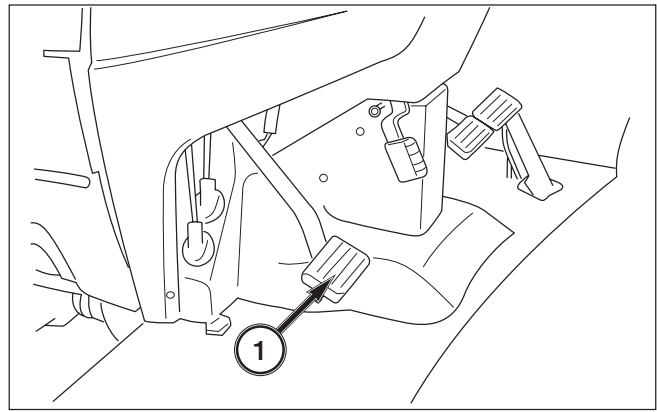


FIG. 4-45

BRAKES

Brake Pedals & Parking Brakes

FIG. 4-46: Inner brake pedal, 1, and outer brake pedal, 2, independently control the respective left and right wheel brakes, to assist in turning.

During Tractor transport or high speed operation, brake pedals must be latched together using interlocking plate, 3.

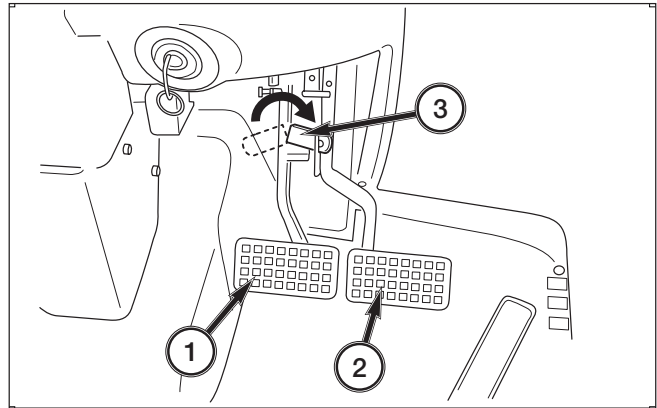


FIG. 4-46



CAUTION: Do not use individual wheel brakes for transporting or operating at high speed. Always latch pedals together using interlocking, plate, 3. Make sure brakes are adjusted evenly.

Parking Brake lever



WARNING: ALWAYS apply the parking brake before dismounting from the tractor.

FIG. 4-47 & 4-48: The parking brake acts on the tractor rear wheels. To engage the brake, pull upward on the parking brake lever, 4 to lock brakes in applied position. To release the parking brake, press the button on the end of the lever and push the lever down.

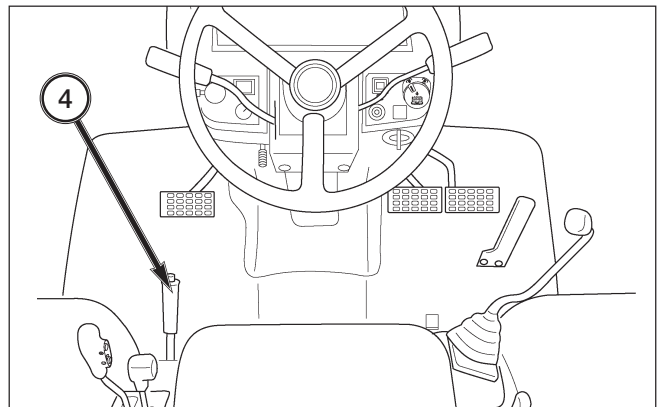


FIG. 4-47

When pulling upward on the parking brake lever, the parking brake indicator light will illuminate.

Ensure the parking brake is fully released before driving off.

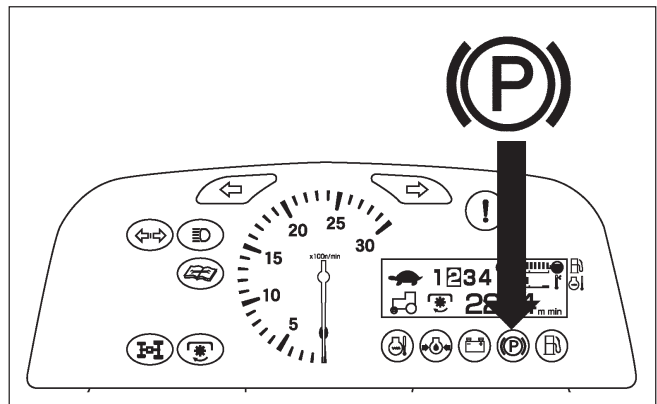


FIG. 4-48

ENGINE SPEED CONTROLS



CAUTION: Always select engine speed to ensure safe operation. Reduce speed prior to turning or backing Tractor.

IMPORTANT: *DO NOT race or excessively load cold engine.*

FIG. 4-49: Hand Throttle Lever, 1 - Controls engine speed and will remain in position selected by the operator. With hand lever forward, engine will idle. Engine speed increases as lever is pulled progressively rearward.

Foot Throttle Pedal, 2(Only Power Shift type) - Will override setting of hand throttle lever for increased engine speed. When pedal is released, engine speed returns to hand throttle lever setting.



CAUTION: When using foot throttle pedal, the hand throttle lever must be in the low idle speed position. This ensures maximum engine braking when pedal is released.

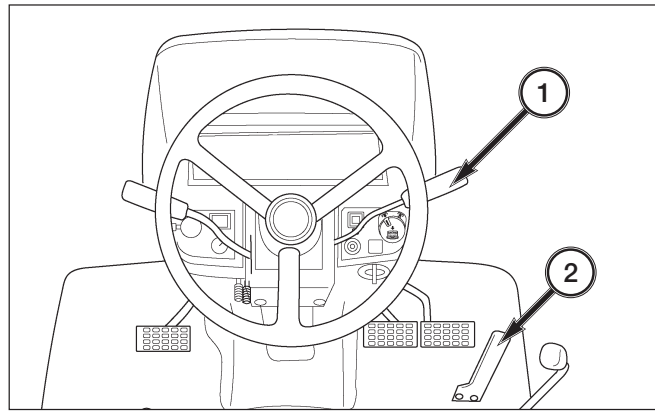


FIG. 4-49

TRANSMISSION SHIFT LEVERS AND BUTTON (Power Shift type)

Two shift levers and gear shift button are used to select ground travel speed through different gear reductions within the drive train. Forward and reverse travel directions are also possible in all gear selections.

IMPORTANT: *All range and gear change selections require complete disengagement of main clutch (depressing pedal).*

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Forward/Reverse Power Shuttle Lever

FIG. 4-50: With power shuttle lever, 1, forward or reverse direction changes are possible without depressing the main clutch pedal. Lift up and move lever forward to shift to the forward travel position, move lever rearward to shift to the reverse travel position.

NOTE: Make sure power shuttle lever is in neutral position before starting engine.



CAUTION: Forward/Reverse direction changes must not be made at high speed. Refer to operation section for complete details.

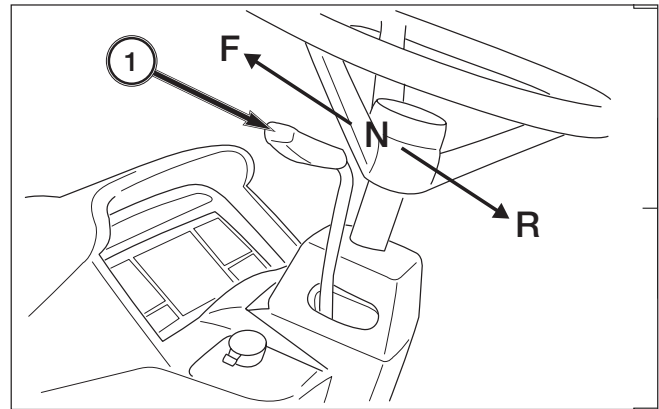


FIG. 4-50

Range Shift Lever and Gear Shift Button

FIG. 4-51: Range shift lever, 2, is located to left of operator's seat. Gear Shift Button, 3 is located to left of operator's seat.

Range Shift Lever, 2 - Provides three major speed changes from slowest speed range through highest speed range.

Gear Shift Button, 3 - Provides four smaller gear speed changes within each range, from first through fourth gear positions.

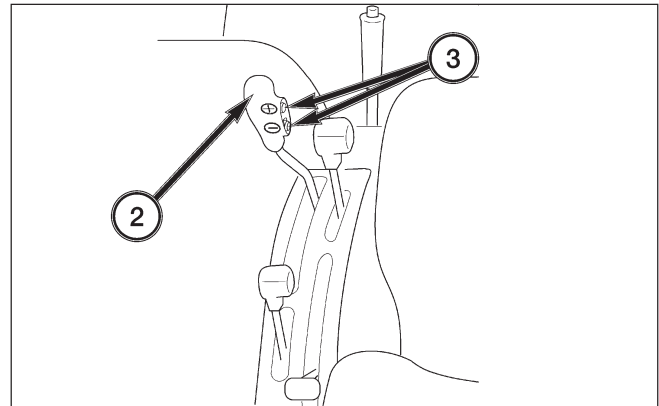


FIG. 4-51

FIG. 4-52: In total twelve forward and twelve reverse gear speeds are possible. The synchromesh allows the gear shift button and power shuttle shift lever to be changed with the Tractor in motion.

NOTE: Range shift lever changes must be with clutch depressed and TRACTOR MOTION STOPPED.



CAUTION: Reduce engine speed prior to changing any shift lever position. Make forward to reverse, and reverse to forward, direction changes with Tractor stopped or traveling at very slow ground speed.

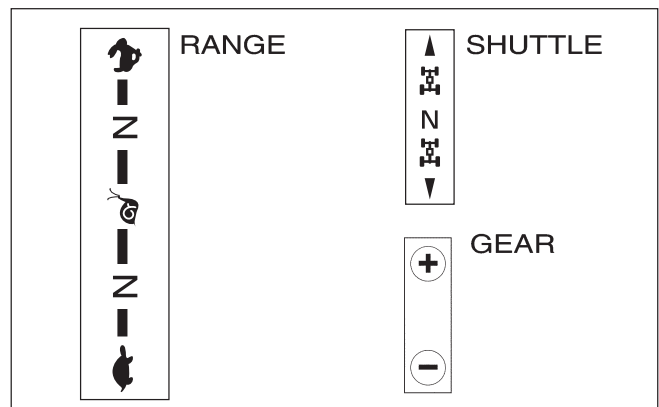


FIG. 4-52

TRANSMISSION SHIFT LEVER AND CONTROLS (HST type)

One shift lever is used to select a range of ground travel speed through different gear reductions within the drive train. A hydrostatic control unit (using a control pedal) allows infinitely variable speeds, from zero to top speed, in each range.

FIG. 4-53: Range Shift Lever, 1. Located to the left of the operator's seat, range lever provides three major speed changes.

IMPORTANT: Tractor must be completely stopped when shifting.

Hydrostatic Control Pedal, 2. Located on the right side of the platform and it actuates the hydrostatic unit in forward or reverse travel direction.

Depressing the forward portion of the pedal moves Tractor forward, depressing the rearward portion of the pedal moves Tractor rearward. As each movement is progressively depressed, a corresponding increase in ground speed of Tractor will be noticed in the appropriate direction.

Returning pedal towards spring-loaded neutral position, will slow Tractor and stop it when neutral position is reached. When pedal is completely released, Tractor should remain stopped with the pedal assembly in neutral position.

Cruise Control Lever, 3. Located on the left side the steering wheel. This lever actuates hydrostatic control unit for forward travel only. Move forward pedal down until desired forward speed is achieved, then move cruise control lever rearward to hold this speed. Move lever forward to slow down and stop. To release cruise control lever, move lever forward or depress brake pedals latched together with interlock plate.



WARNING: Cruise control should only be used in open spaces, without obstacles, with unobstructed view or traveling on load.

Before using cruise control lever, be make sure to set brake pedals to be latched together with interlocking plate.

If one brake is depressed to release cruise control, cruise control would not be released.

You should be thoroughly familiar with releasing cruise control. See operation section.

NOTE: Do not move cruise control lever without first moving the Hydrostatic control pedal downward in the forward position, to prevent mechanical failures. Do not use cruise control lever in reverse direction.

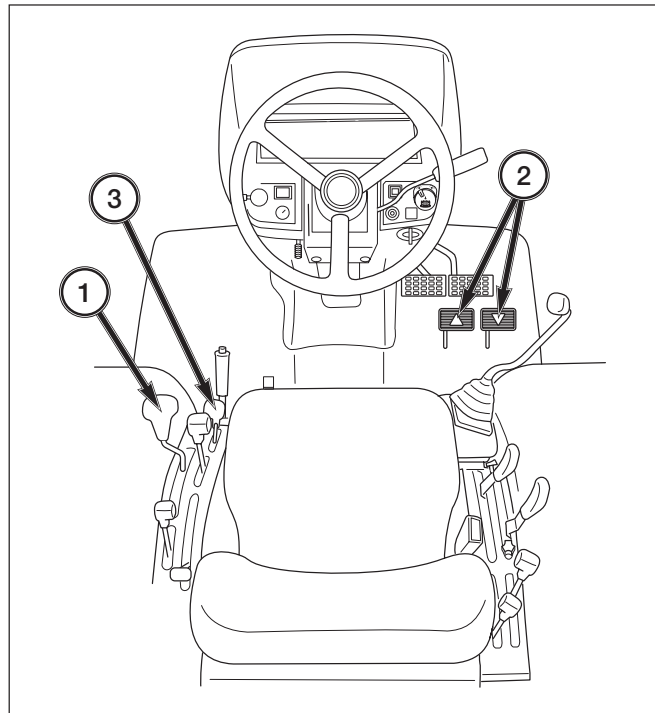


FIG. 4-53a

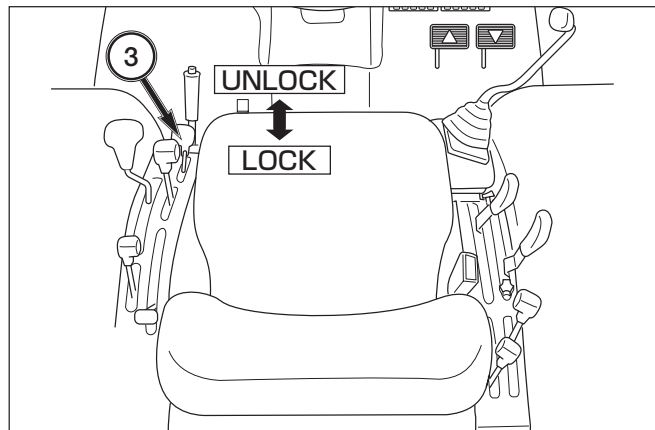


FIG. 4-53b

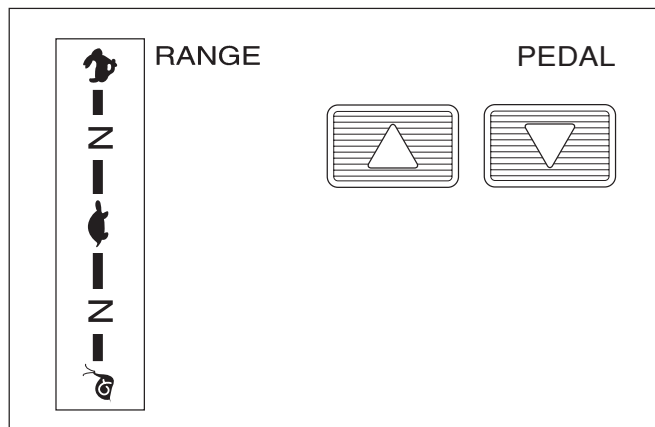


FIG. 4-53c

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DIFFERENTIAL LOCK PEDAL

FIG. 4-54a,54b: When differential lock pedal, 1, is depressed, both rear axles are locked together to provide equal traction to both rear wheels. This is especially important when operating in loose soil or slippery conditions.

IMPORTANT: *Depress main clutch pedal and stop before engaging differential lock.*

Disengage differential lock, by releasing foot pedal. If lock does not immediately disengage, tap right and left brake pedals alternatively until pedal is released.



CAUTION: When differential lock is engaged, steering ability of Tractor will be greatly reduced. Disengage before attempting a turn. Do not use during transport.

Power shift type

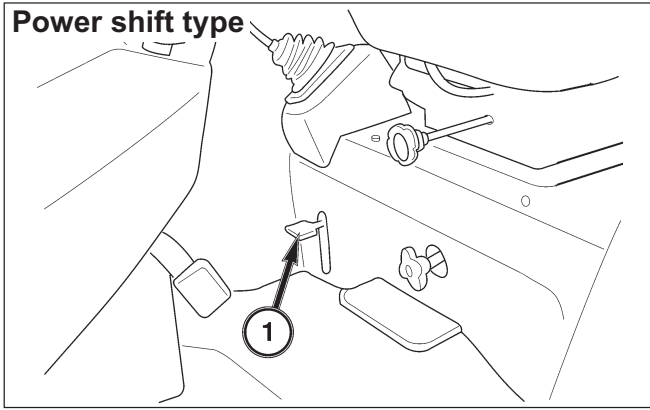


FIG. 4-54a

HST type

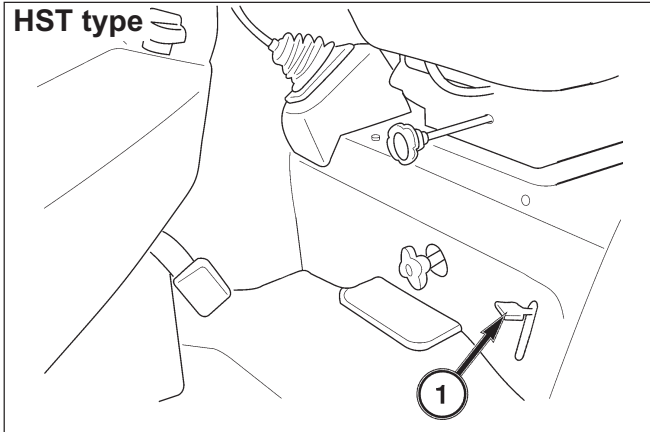


FIG. 4-54b

FOUR-WHEEL DRIVE SHIFT LEVER

FIG. 4-55: Shift lever, 1, engages and disengages drive for the front axle. Lever forward, the front axle (4-WD) is disengaged. Lever rearward, the front axle is engaged, and power is available to both front and rear axle. When shift lever is pulled rearward, the 4-WD indicator light will illuminate.

IMPORTANT: *Depress main clutch pedal and stop Tractor before engaging or disengaging four-wheel drive.*

Do not use 4-WD on hard surface. Rapid wear of front tires and possible drive line damage could occur if 4-WD is operated for prolonged periods on hard surface.

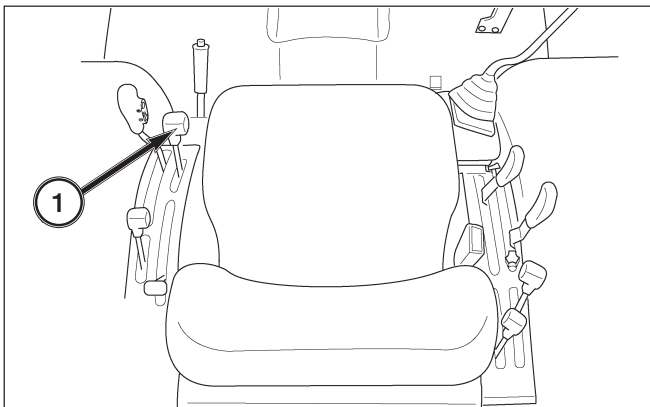


FIG. 4-55

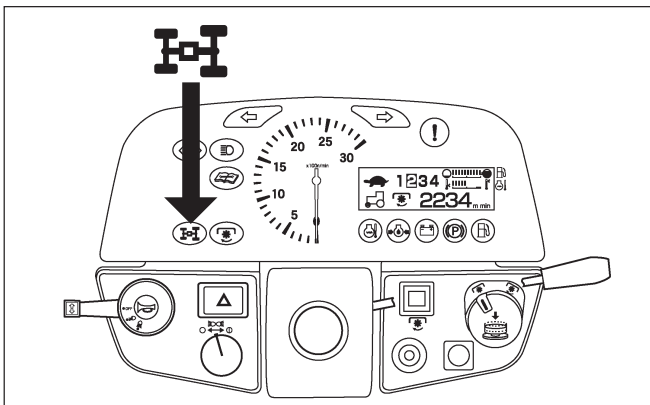


FIG. 4-56

REAR PTO SELECTOR LEVER

FIG. 4-57: Rear PTO (power takeoff) selector lever, 1, controls rear PTO on Tractor.

When lever is forward, 540 rpm rear PTO is selected.
When lever is rearward, 1000 rpm rear PTO is selected.
When lever is returned to rear neutral (N) position, the gear drive is disengaged.

Rear PTO selector lever is used with PTO control switch on instrument panel. Refer to Operation section for complete details.

IMPORTANT: Before moving rear PTO selector lever, PTO control switch on steering column must be off.



CAUTION: Always shut off PTO and shut off Tractor engine before servicing PTO-driven implement. Allow all movement and motion to stop before leaving operator's seat.

MID PTO SELECTOR LEVER (accessory)

FIG. 4-58: The mid PTO selector lever, 1, controls the mid PTO on the tractor.

When the lever is shifted rearward, the mid PTO operates at 1916 rpm (when engine speed is 2600 rpm). When lever is returned, neutral is selected, and the mid PTO will stop rotating.

The mid PTO selector lever should be used with the PTO control switch on the instrument panel. Refer to the "Operation" section for complete details.

IMPORTANT: The PTO control switch must be set to Off when the mid PTO selector lever is operated.

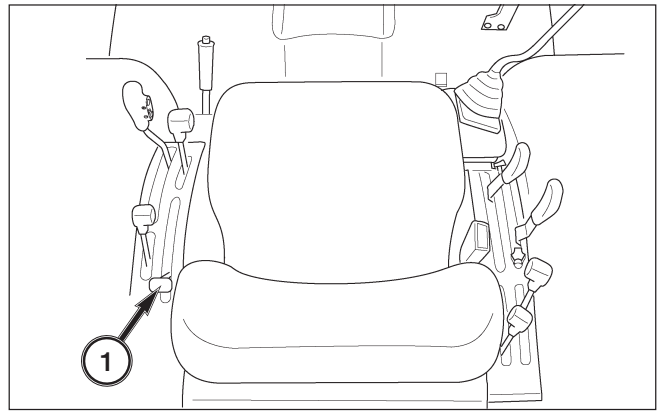


FIG. 4-57

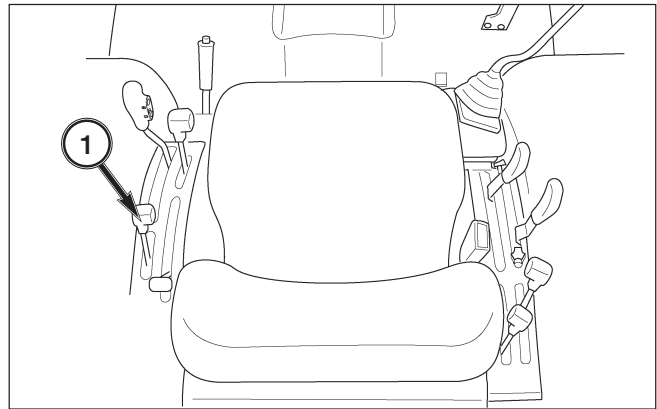


FIG. 4-58

TG5330,5390,5470

THREE-POINT HITCH

Complete operating instructions for three-point hitch are given in Operation section of this book.

Control Lever

FIG. 4-59: Position control lever, 1, adjusts height of three-point hitch on rear of Tractor. Setting lever in a particular position will set the height respectively. Full up position is with lever fully rearward and full down position is with lever completely forward.

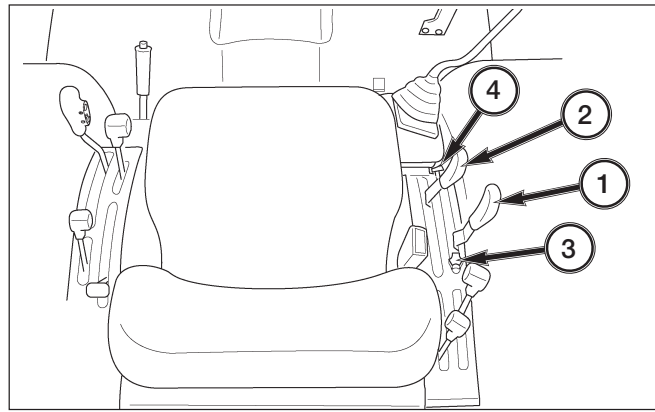


FIG. 4-59

Draft control lever, 2,(except for HST type) adjusts height of three-point hitch according to the draft or pull of ground-engaging implements. This provides constant load on Tractor and provides weight transfer to Tractor rear wheels to reduce wheel slippage.

Lever stops, 3 and 4, can be adjusted within slot to limit implement raising/lowering.



CAUTION: use position control lever, 1, when attaching or detaching implements.

NOTE: When starting engine, ensure implement is lowered to the ground and both levers are fully forward. This reduces load on starter due to hitch trying to raise when engine is cranked.

Lowering Rate Control Knob

FIG. 4-60: Lowering rate knob, 1, adjusts rate of drop of three-point hitch and implement. Turning knob clockwise will increase lowering time and counterclockwise will decrease lowering time. Turning knob fully clockwise will lock implement (or hitch) in raised position for transport.

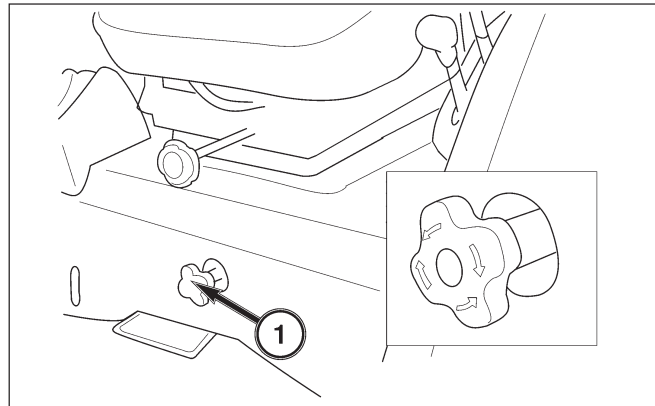


FIG. 4-60



CAUTION: When working near or under mounted equipment, securely block in position and turn lowering rate clockwise to stop .

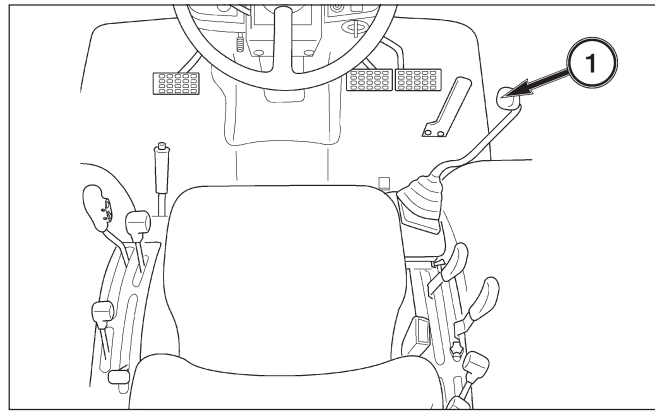
JOYSTICK CONTROL LEVER (accessory)

Fig.4-61: The Joystick control lever, 1, can be used to determine the front loader boom position and bucket position. The lever is located to the front on the right side of the seat.

The "Raise", "Lower", "Free Flow" operations for the boom, and "Bucket", "Dump" and "Fast Dump" operations for the bucket can be controlled with this lever.

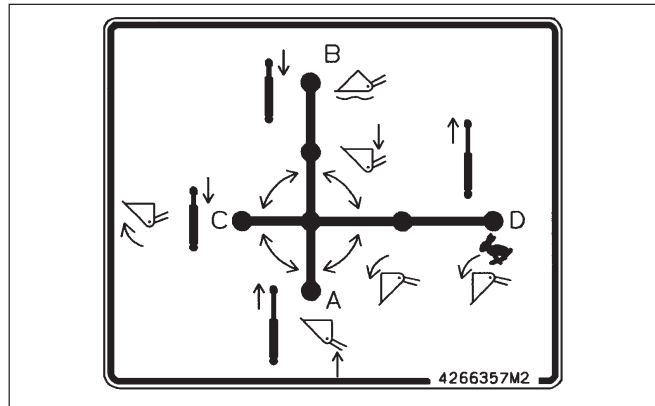
The raise and lower operations for the boom, and scoop and dump operations for the bucket automatically return to neutral when the lever is released.

The free flow on boom can be kept at the free flow position by the detent device.

**FIG. 4-61**

WARNING: Do not operate the joystick except when seated in the tractor. The front loader may operate unexpectedly, resulting in an accident.

NOTE: When the joystick is operated on a tractor without a front loader, the relief valve may be operated, causing the 3P link to stop operating.

**FIG. 4-62**

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COMFORT ADJUSTMENTS

Steering Column Tilt

FIG. 4-63: Steering column can be adjusted forward and rearward to any one of three positions, enabling operator to select best steering wheel position.

While holding steering wheel with both hands, depress tilt locking pedal, 1, and select desired position. Release pedal and make sure column is securely locked by pedal returning to original position.

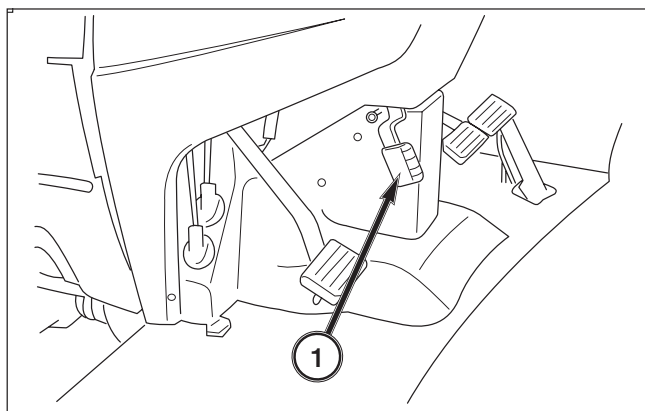


FIG. 4-63

Tool Box

FIG. 4-64: Tool box.1, is provided behind the seat back for tools. Open the lid and insert tools as needed.

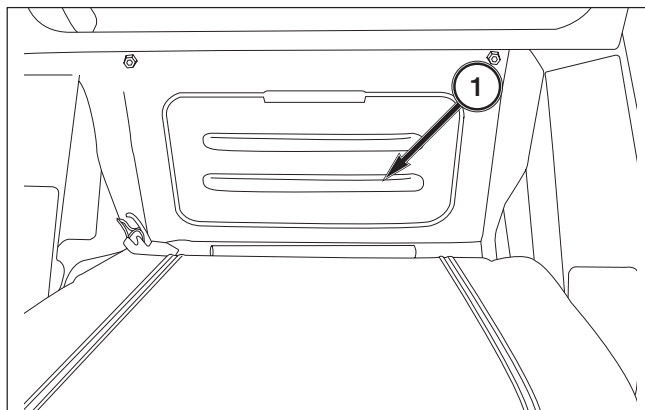


FIG. 4-64

OPERATION - STANDARD TYPE -

BREAK-IN PERIOD

Operation of Tractor within the first fifty hours can be a major factor in determining the performance and life of the engine and Tractor:

- The engine may be operated at full rpm but excessive load should be avoided. If engine begins to lug, operate in a lower gear to maintain higher engine speed.
- Check coolant level and check engine, transmission and other oil levels frequently during break-in period. Watch for evidence of leakage of above fluids. Replenish levels as required and repair any leaks that may have formed.
- Tighten any nuts, bolts, or screws that may have loosened and tighten as necessary. This is especially true of wheel retaining bolts. **All fasteners on this Tractor are metric.**
- Be observant of clutch pedal free-play adjustment and brake adjustment and readjust as required. Lining materials used on clutch and brake discs bed in in the first few hours of operation and may necessitate the need for early and frequent re adjustment.
- Keep area around fuel tank filler clean and make sure diesel fuel is correct grade and free of contamination.
- Initial engine oil and oil filter change is after first fifty hours of operation. Subsequent change interval is every one hundred fifty hours for engine oil and filter.



CAUTION: Proper maintenance practices cannot be over-emphasized. They are required for safe operation. Consult Lubrication and Maintenance section for full details.

STARTING

Pre-Start Inspection

Prior to daily start-up of Tractor, a few basic procedures should be followed to ensure Tractor is in operating order to insure life and dependability:

- Make sure all safety shields are in place and secured properly.
- Make sure operator is instructed on correct and safe operation of Tractor and related attachments or implements.
- Check coolant, engine oil and transmission oil levels and replenish as necessary.
- Check fan belt tension and adjust as required.
- Make sure radiator, air intake screens and radiator screen are clear of debris to provide maximum engine cooling.
- Check operation of clutch, brake and throttle controls. All controls must operate freely and be adjusted correctly.
- Conduct a general inspection of tires, tire pressure and wheel bolt torque. Observe for external signs of leakage and correct before operating Tractor. Check steering for excessive looseness.
- Check for adequate fuel supply. It is recommended fuel tank be filled following each day's use to reduce condensation and provide full tank for next use.
- Check operation of lights and warning flashers. If Tractor is to be transported on public road, ensure slow-moving vehicle emblem is in place.

NOTE: Requirements may vary regarding use of warning flashers and slow-moving vehicle emblem depending on locality. Check local safety codes.



WARNING: Carefully read and understand the SAFETY section of this manual. Your life, and that of others, can be in danger during the starting of the Tractor.

Always start and operate the engine in a well ventilated area.

If in an enclosed area, vent the exhaust to the outside.

DO NOT modify or tamper with the exhaust system.

TG5330,5390,5470**Normal Starting**

CAUTION: Do not attempt to start the tractor unless seated in the operator's seat. Do not allow anyone on the tractor except for the operator.

FIGS. 5-1 & 5-2: To start the engine, proceed as follows:

1. Apply parking brake ,1.
2. (a) Mechanical Transmission
Place the gear shift lever and range gear shift lever, 2, in the neutral position.
- (b) Hydrostatic Transmission
Place the range shift lever, 2, in the neutral position.
3. Make sure the rear PTO and mid PTO selector levers, 3, are in the neutral position.
4. Fully depress the main clutch pedal, 4, to disengage the clutch. (Mechanical Transmission)

NOTE: Make sure the PTO switch, 6, is in the OFF position.



CAUTION: The operator being seated in the operator's seat, the gearshift lever must be in neutral and the PTO levers must be in neutral to actuate safety switches and permit operation of the starter motor.

5. Set the position control lever, 5, (three-point hitch) and draft control lever (if equipped) in the down position.
6. Turn the main switch, 7, to the "glow" position for 5-10 seconds.
7. Set the throttle lever, 8, at half to the fully open position.
8. Turn the main switch, 7, to the "on" position for 1-2 seconds, then turn to the "start" position. Release the switch the moment engine starts.
9. Once the engine runs smoothly, set engine speed to approximately 1,500 rpm to allow the engine and hydraulic system to warm up for several minutes. **DO NOT LOAD A COLD ENGINE.**

IMPORTANT: Do not crank engine for more than 10 seconds at a time. Allow starter to cool at least 20 seconds before repeating procedure. Never turn main switch to start with engine running. Severe damage will result.

FIGS. 5-3: Battery charge indicator lamp and engine oil pressure lamp in indicator light strip should go out when the engine starts. If either light remains lit, **STOP ENGINE IMMEDIATELY** and investigate source of problem.

IMPORTANT: If engine will not start and run after several attempts, refer to Maintenance section in this book and bleed any air that may be present in the fuel system.

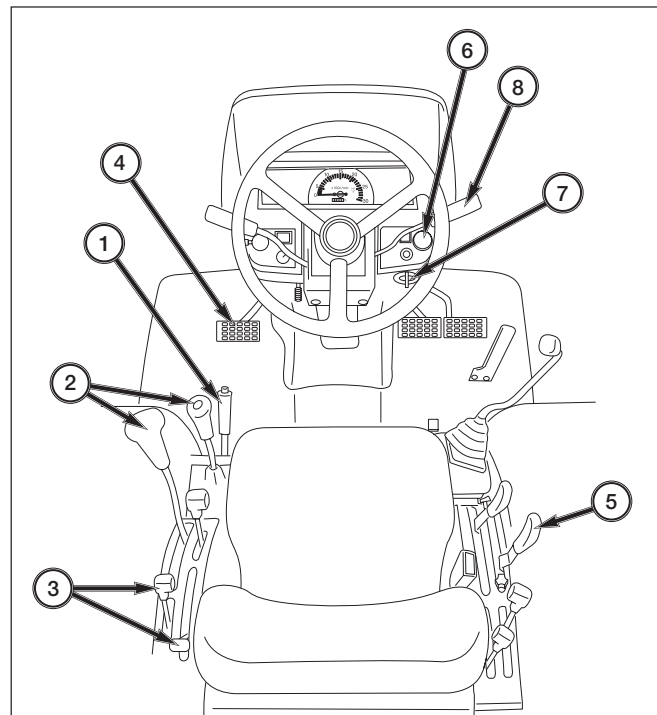


FIG. 5-1

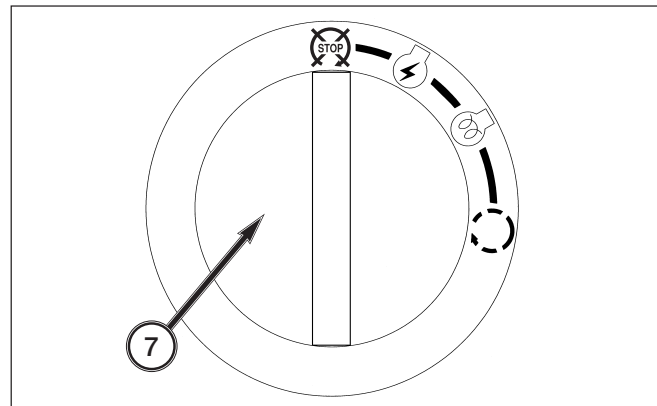


FIG. 5-2

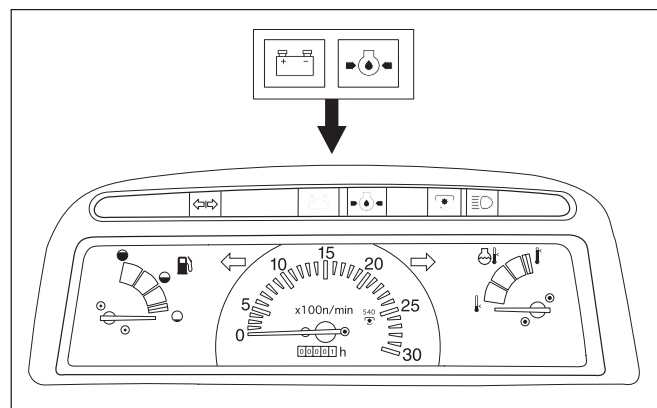


FIG. 5-3

Restarting Warm Engine

When restarting an engine that is still warm from previous use, the same procedure is used as with Normal Starting except step no. 6 may be omitted. Use of glow plugs is not necessary when starting a warm engine.

Cold Weather Starting

Procedure for starting an engine in colder ambient temperatures is identical to Normal Starting procedure except for the following:

- Longer use of glow plugs may be required. Instead of the normal 5-10 seconds, main switch may need to be selected to glow for 10-20 seconds to adequately warm engine combustion chambers.
- At temperatures below 39°F (4°C) use of No. 1 (No. 1-D) diesel fuel is recommended due to possible fuel gelling characteristics of No. 2 (No. 2-D) fuel at cold ambient temperature.
- The central hydraulic reservoir, which provides supply of hydraulic fluid in addition to transmission and center housing lubrication, will require additional warm-up time due to colder (thicker) oil. Refer to Warm-Up Period at right.
- Test all controls (steering, braking, etc.) prior to operating unit.

NOTE: Installation of accessory engine block heater is recommended in cold weather conditions. Consult your Dealer.

IMPORTANT: Under no circumstances should ether or other starting fluid be used to start engines equipped with glow plugs. Severe engine damage will result should starting fluid contact a hot glow plug. If, for some reason, a booster battery is required to start Tractor, ensure booster battery is connected in parallel. When using booster battery and booster cables always connect positive (+) terminals together first. Then install booster cable on booster battery negative (-) terminal and ground final booster cable end on Tractor away from Tractor battery.

Warm Up Period

After starting a cold engine, let engine idle at slow speed to make sure all engine components are lubricated.

In colder ambient temperatures, extended warm-up will be required to also warm hydraulic fluid and lubricate drive-line components.

Suggested warm-up period:

Ambient Temp.		Warm-Up Time
°F	°C	Time
32 & up	0 & up	5 to 10 min
32 to 14	0 to -10	10 to 20 min
14 to -4	-10 to -20	20 to 30 min
-4 & less	-20 & less	30 or more

IMPORTANT: Improper warm-up can result in severe engine damage, hydraulic pump seizure, driveline bearing/gear damage and/or sluggish steering/braking



CAUTION: Make sure parking brake is securely applied and all controls are in neutral while warming unit. Do not leave unit unattended.

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Operator Observations

Constant attention should be paid to the following points during operation:

- Engine oil pressure lamp will come on in case of low engine oil pressure. Stop engine immediately.
- Battery charge lamp will come on if battery is not being charged properly. Stop engine and investigate cause.
- Coolant temperature gauge needle will indicate  (hot) in case of overheated engine. Stop engine, allow to cool and investigate cause.
- Fuel gauge should not be allowed to  (empty) as running out of fuel may result with need to bleed air from fuel system.



CAUTION: DO NOT attempt to service Tractor with engine running or hot. Allow to cool.

NOTE: Refer to Trouble-Shooting when defect is indicated, to assist locating problem.

Starting Circuit Operation

Tractor is equipped with a starting system to protect the operator. To permit tractor to be started (start motor to operate), ALL the following is required:

- Shuttle Lever in Neutral
- Rear PTO Switch in Off position.



WARNING: Safety switch system is installed for your protection. DO NOT bypass or modify the safety start switch system. If the neutral start switch system does not operate properly as detailed above, contact your Dealer immediately and have the system repaired.

Periodically check that the starting circuit is functioning correctly. The procedure for this is check is as follows:

1. Check that there are no bystanders around the tractor should it inadvertently start.
2. Depress clutch and brake pedals. Attempt to start the tractor with the gear shift levers and PTO control switch OFF. The tractor should start.
3. Depress the clutch and brake pedals. Attempt to start the Tractor with the gears engaged and the PTO switch ON. The Tractor should NOT start.
4. Depress the clutch and brake pedals. Attempt to start the tractor with the gears in neutral and the PTO switch ON. The Tractor should NOT start.

If starting system is not working correctly it must be repaired immediately by your Dealer.

The starter will rotate when not sitting in the seat, but the engine will not start.

The engine will automatically stop about three seconds after the operator leaves the seat. Do not leave the seat while operating the tractor.

GROUND SPEED SELECTION

Tractor is equipped to provide twelve forward gear speeds and twelve reverse gear speeds.

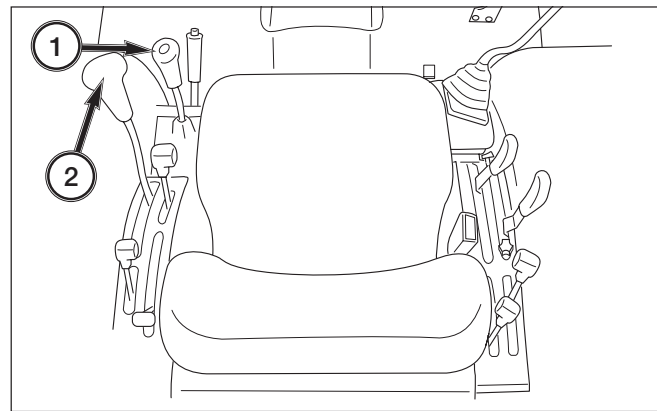
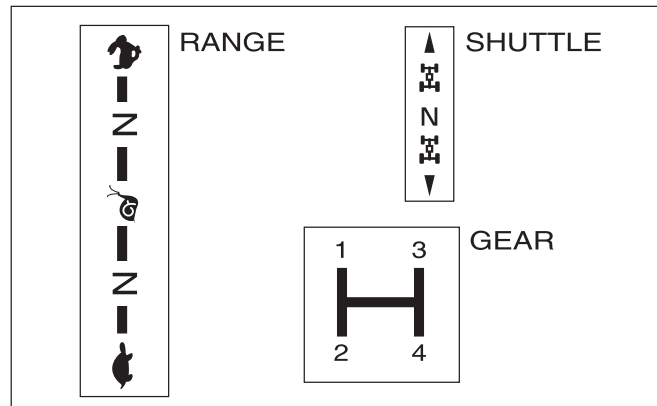
FIG. 5-4: Gear shift lever, 1, provides four gear selections. These gear selections are compounded by range shift lever, 2. The range shift lever provides three major changes in ground speed. Gear shift lever provides smaller ground speed changes.

FIG. 5-5: Depress clutch pedal and position shift levers in desired positions. Depress brake pedals to release parking brake lock and then slowly release clutch pedal.

Should another transmission gear be desired:

- **Range Shift** - Depress the clutch pedal and shift gears after bringing the tractor to a complete stop.
- **Gear shift** - Depress clutch and brake pedals stopping the Tractor. Select desired range lever position and continue with operation.

IMPORTANT: *Depress clutch and stop Tractor before all range lever shifts.*

**FIG. 5-4****FIG. 5-5**

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FIG. 5-6: Arrangement of gears with appropriate ground speeds, in order from slow to fast, are shown in chart at right.

NOTE: Ground speed indicated at 2600 engine rpm with TG5330 - 12.4 - 24, TG5390 - 13.6 - 24 TG5470 - 13.6 - 28 agriculturaltype rear tires .

Shift Positon		TG5330	TG5390	TG5470
Range	Gear	km/h		
Engine Speed		2600rpm		
Forward				
	1	0.4	0.4	0.4
	2	0.6	0.6	0.6
	3	0.9	0.9	0.8
	4	1.4	1.4	1.3
	1	1.6	1.6	1.5
	2	2.5	2.6	2.5
	3	3.7	3.9	3.6
	4	5.8	6.1	5.7
	1	7.2	7.6	7.1
	2	11.7	12.2	11.4
	3	17.1	17.9	16.7
	4	27.1	28.3	26.4
Reverse				
	1	0.3	0.4	0.3
	2	0.6	0.6	0.5
	3	0.8	0.8	0.8
	4	1.3	1.3	1.2
	1	1.5	1.5	1.4
	2	2.3	2.4	2.3
	3	3.4	3.6	3.3
	4	5.4	5.7	5.3
	1	6.7	7.0	6.5
	2	10.8	11.3	10.5
	3	15.9	16.6	15.5
	4	25.1	26.2	24.5

FIG. 5-6

FIG. 5-7: Forward/reverse shuttle lever, 3, provides synchronized changes in travel direction in each gear/range combination. Reverse travel speed is slightly slower than forward travel in the same gear speed selection.



CAUTION: Reduce engine speed before changing travel direction. Tractors with manual shuttle require complete disengagement of main clutch (depressed clutch pedal) before changing shuttle lever position.

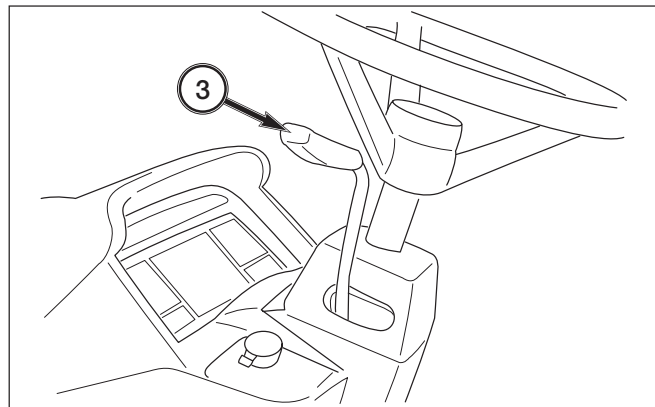


FIG. 5-7

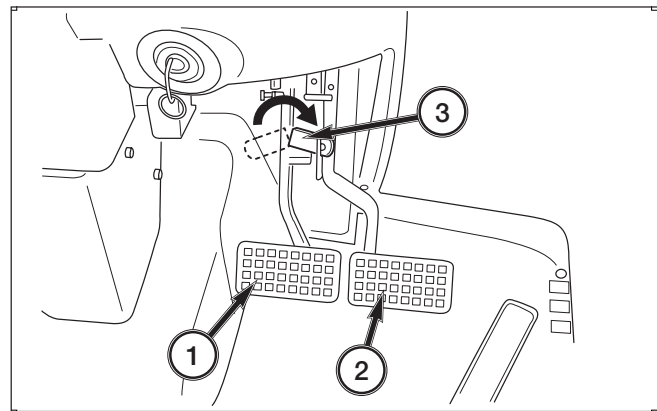
STOPPING TRACTOR

FIG. 5-8: Brake pedals, 1 and 2, may be used independently to operate respective brake and assist turning at low speed operation. Unlatch brake pedals and use as required to assist turning.

When Tractor is being used at higher rate of speed, brake pedals must be latched together with interlocking plate, 3, so both brakes will apply at the same time.



CAUTION: Do not use one wheel braking at high speed. Always latch brake pedals together when Tractor is being transported. Make sure brakes are adjusted evenly.

**FIG. 5-8a**

To stop the tractor with regular gear transmission, move the throttle lever, 4, forward, to reduce engine speed and slow travel. Depress the clutch pedal, 5, and brake pedal, 1 and 2, to stop. Position the range and gear shift lever, 6, and shuttle shift, 7, in neutral position.

Be make sure to latch the brake pedals together, depress the brake pedals and pull parking brake lever, 8, up firmly. Allow engine speed to idle several minutes to allow even cooling. Then turn main switch to "off" shutting off engine. Lower three-point hitch and remove key from ignition.

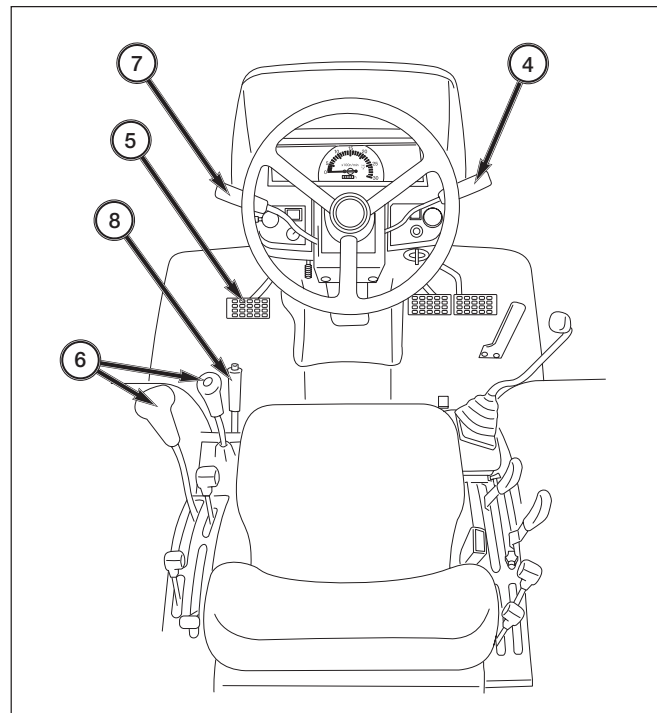
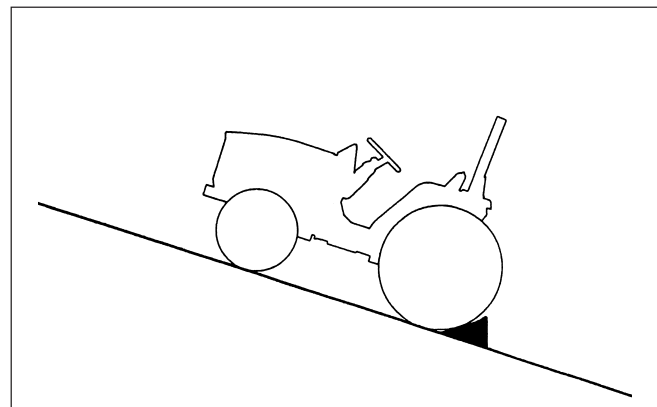
**FIG. 5-8b**

FIG. 5-9: Always park Tractor on level area whenever possible. If hillside parking is necessary, securely block both rear wheels as shown.

NOTE: When stopping or parking Tractor, be sure brakes are locked. With transmission of constant mesh design, Tractor may have a tendency to creep (particularly with cold oil).

**FIG. 5-9**

TG5330,5390,5470

DIFFERENTIAL LOCK

FIG. 5-10: Differential lock pedal, 1, should only be depressed when required as steering ability is greatly reduced.

To engage differential lock, depress clutch pedal and allow all rear wheel movement to stop. Depress lock pedal and slowly engage the clutch.

To disengage differential lock, depress clutch pedal and release differential lock pedal. Lock pedal should normally return to the off position.

NOTE: On occasion, differential lock pedal may remain engaged due to torque difference exerted by rear wheels. In this case, tap brake pedals alternatively while Tractor is slowly in motion to release the pedal.



CAUTION: DO NOT use differential lock on hard surfaces or when transporting unit. DO NOT engage with rear wheel(s) spinning as severe damage may result.

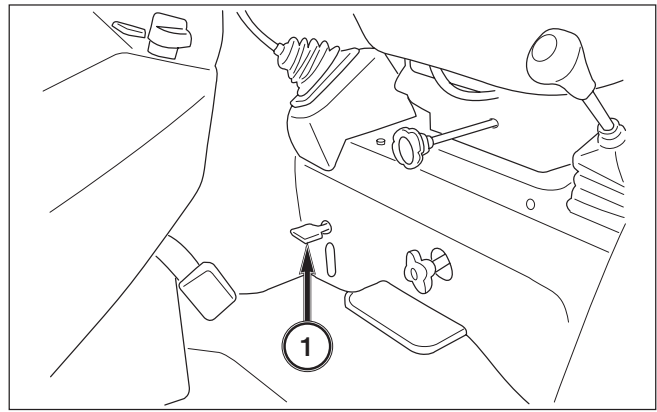


FIG. 5-10

FOUR-WHEEL DRIVE

FIG. 5-11: Four-wheel drive models have a mechanically driven front axle. Engagement and disengagement of front drive axle is controlled by lever, 1, on left side of Tractor.

IMPORTANT: Prior to engaging or disengaging 4WD, clutch pedal must be depressed and Tractor stopped.

FIG. 5-12: When front axle is engaged, ground speed of front tires will vary from ground speed of rear tires. This is to assist steering when four-wheel drive is selected.

For this reason, front axle must be disengaged when Tractor is transported or operated on a hard, dry surface. Failure to do so will result in rapid wear of front drive tires and possible driveline damage.

IMPORTANT: Always disengage front drive axle when operating in conditions with minimal wheel slippage (DRY OR HARD SURFACES).

If tire replacement is necessary, identical replacements must be installed to maintain correct front/rear axle ratio.

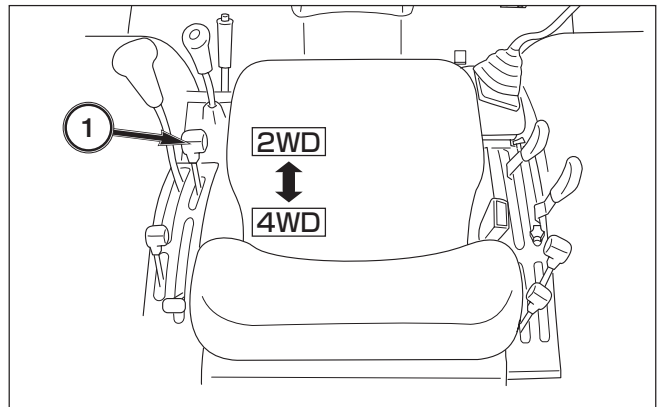


FIG. 5-11

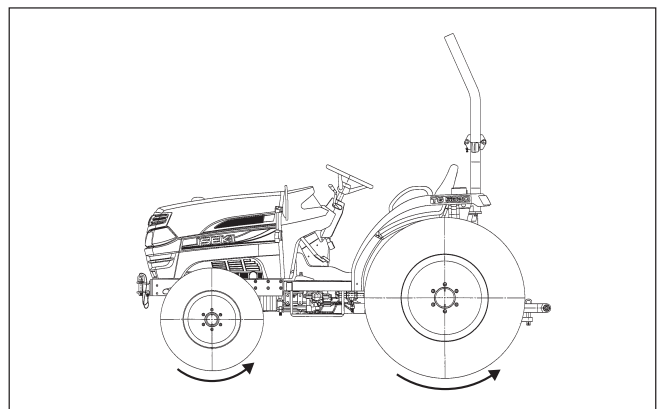


FIG. 5-12

POWER TAKE-OFF (PTO)

WARNING: PTO shafts and PTO driven implements can be extremely dangerous. Observe the following important points:

DO NOT operate tractor without a PTO cap installed. The cap protects people from injury as well as the splines from damage.

Before attaching, adjusting or working on PTO driven implements, disengage the PTO, stop the engine and remove the key. **DO NOT** work under raised equipment.

Before engaging a PTO-driven implement, **ALWAYS** carefully raise and lower the implement using Position Control. Check clearances, PTO shaft sliding range and articulation.

Ensure that all PTO safety shields are in place at all times.

Ensure all PTO-driven implements are in good condition and conform to current standards.

NEVER step across any driveline.

DO NOT use the tractor drawbar or the implement drawbar as a step.

NEVER use the driveline as a step.

NEVER wear loose fitting clothes.

Keep at least your height away from a rotating driveline.

Rear PTO Shaft

FIG. 5-13: A six-spline (35 mm) PTO shaft, 1, is provided at rear of Tractor to provide power for mounted and other PTO driven equipment as required.

A protective cover is positioned over shaft splines when not in use.

Normal rear PTO shaft operating speed.

540 rpm @ 2430 engine rpm

1000 rpm @ 2500 engine rpm

IMPORTANT: When rear PTO is used with three-point mounted equipment, it may be necessary to remove drawbar, 2, at rear of Tractor. Some types of mounted equipment, when lowered, may allow PTO shaft to contact drawbar.

FIG. 5-14: Implement driveshaft shown connected to tractor rear PTO shaft.



CAUTION: Make sure all PTO shields are installed on Tractor and equipment. Before cleaning or adjusting Tractor or PTO driven machine, **SHUT OFF ENGINE AND DIS-ENGAGE PTO.**

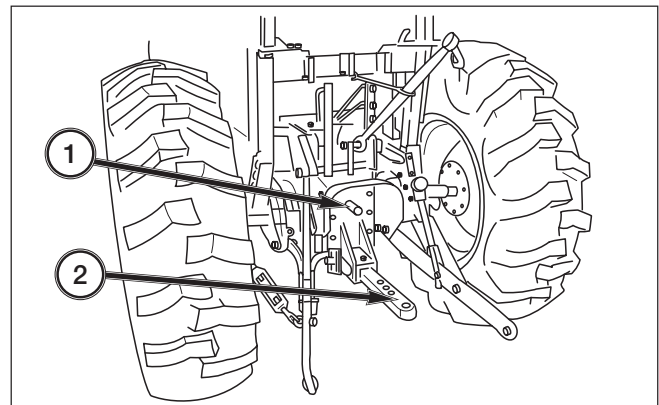


FIG. 5-13

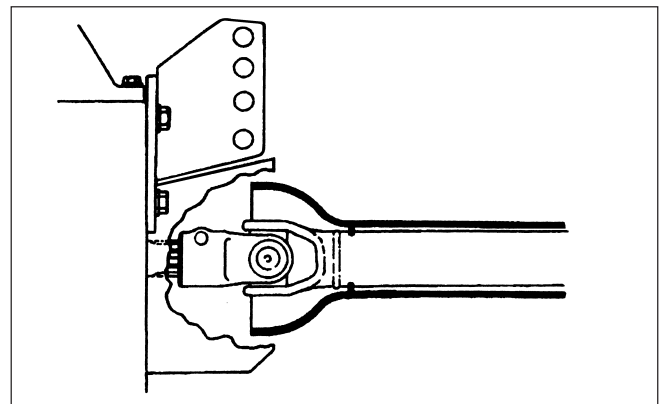


FIG. 5-14

TG5330,5390,5470

Mid PTO Shaft (accessory)

FIG. 5-15: Mid PTO, 1, is a forward-facing shaft located at underside of Tractor. This accessory can be installed to operate certain mid or front-mounted implements.

TG5330/5390: ASAES431 25mm 15spline shaft is used.

TG5470: ASAES431 35mm 6spline shaft is used.

Normal mid PTO shaft operating speed:

1916 rpm @ engine 2600 rpm

Mid PTO cover must be installed when use of mid PTO is not required.

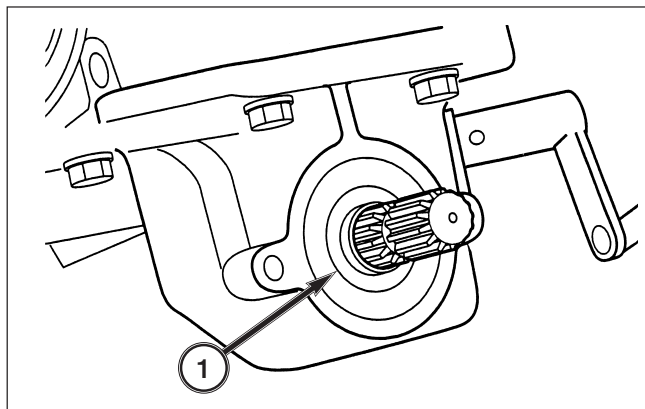


FIG. 5-15



CAUTION: Make sure all PTO shields are installed on tractor and equipment. Before cleaning or adjusting tractor or any PTO driven machine, SHUT OFF ENGINE AND DISENGAGE PTO.

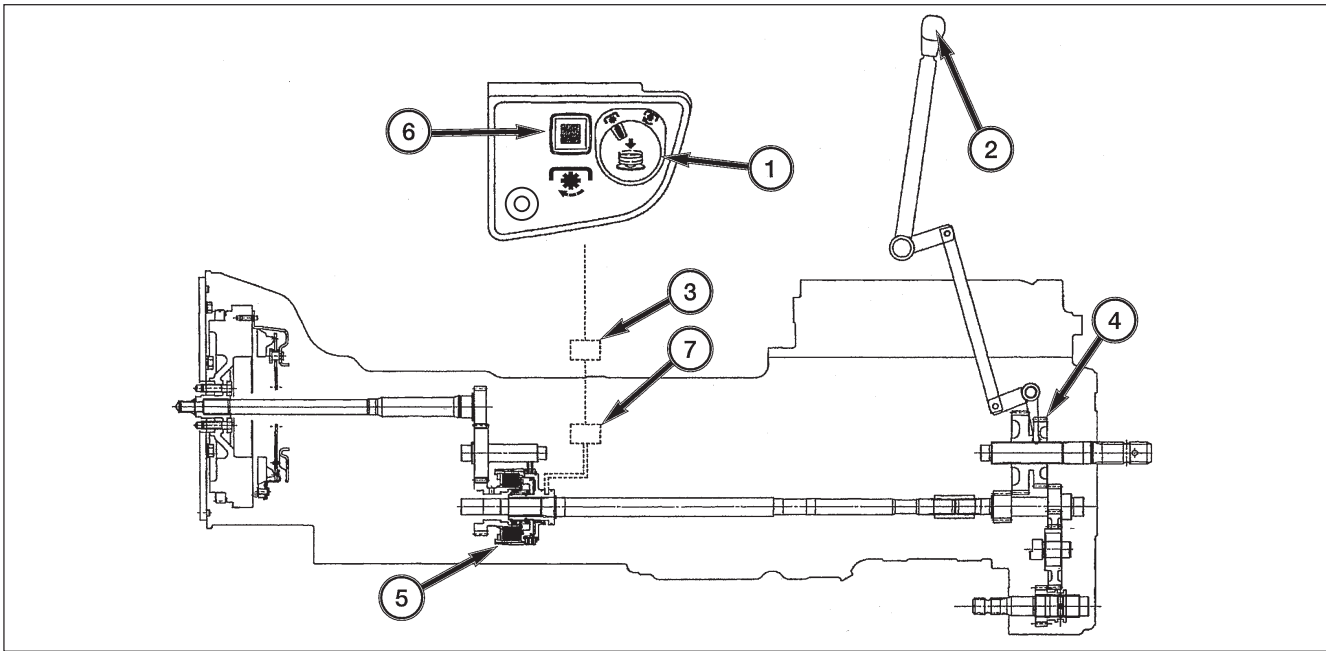
PTO Operating Control**FIG. 5-16**

FIG. 5-17 To select rear PTO - Make sure PTO control switch is OFF and then move rear PTO selector lever, 2, engage gear set, 4, inside rear housing.

To engage PTO - Turn PTO switch, clockwise and then pull up to actuate hydraulic clutch, 5, and complete the drive. The indicator light in the warning light strip will come on, showing PTO clutch is engaged.

To disengage PTO - Push PTO switch, 1, to release hydraulic clutch, 5.

When further use of rear PTO is not required, depress clutch pedal and return rear PTO selector lever, 2, to neutral.

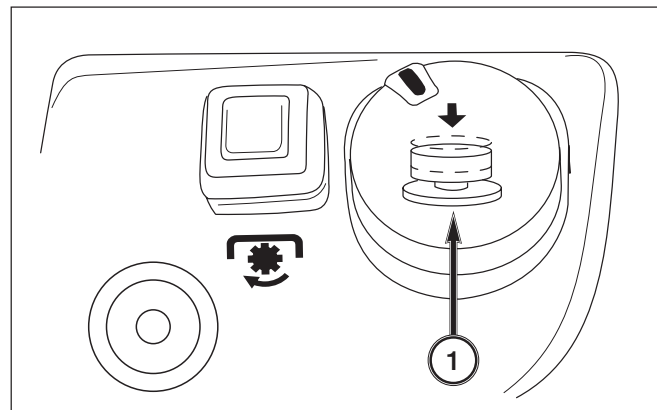
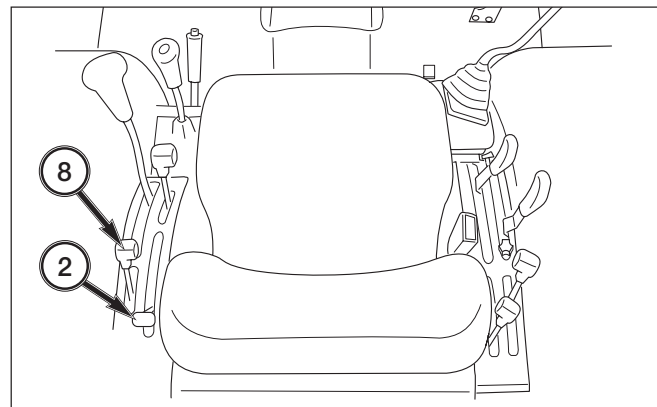
**FIG. 5-17**

FIG. 5-18 To select mid PTO - Make sure PTO control switch is off and then move PTO selector lever, 8, backward to mid PTO position to engage gear set in mid PTO.

NOTE: PTO can be engaged/disengaged by control switch, 1, independently of main clutch. Reduce engine rpm prior to engaging (switching on) and disengaging (switching off) PTO. Always move PTO control switch to OFF before shifting rear or mid PTO selector levers. Rear and mid PTO can be operated separately or together.

**FIG. 5-18**

TG5330,5390,5470

PTO Operating Controls

The pressure control valve, 7, operates when the PTO clutch, 5, begins to operate, enabling efficient engaging of the PTO with a minimum of shock.

Setting the mode change switch, 6, facilitates optimum engagement of the PTO.

Push PTO selectable switch, 6, to engage rear and mid PTO more smoothly and slowly.

Push PTO selectable switch, 6, again, to return to normal mode.

NOTE: Lower the engine speed when turning On PTO control switch if there is considerable shock.

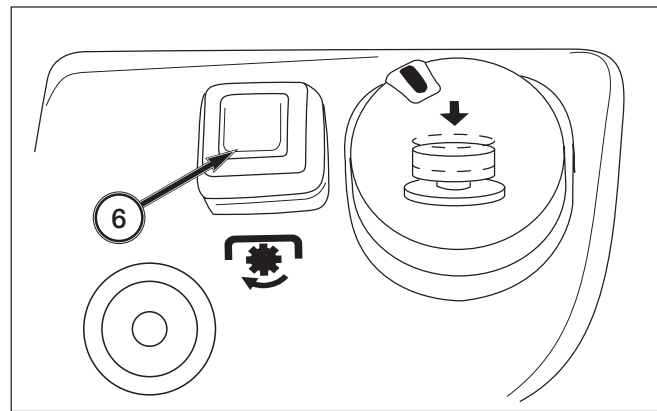


FIG. 5-19

Selectable mode						
Switch	Switch lamp	Required torque	Initial pressure rise at engage	speed of pressure rise	Shock&noise at engage	Attachment
OFF	OFF	Big	High	Short	Normal	Rotary, Cultivator
ON	ON	Small	Low	Long	Smaller	Mower, Hayer

FIG. 5-20

THREE-POINT HITCH

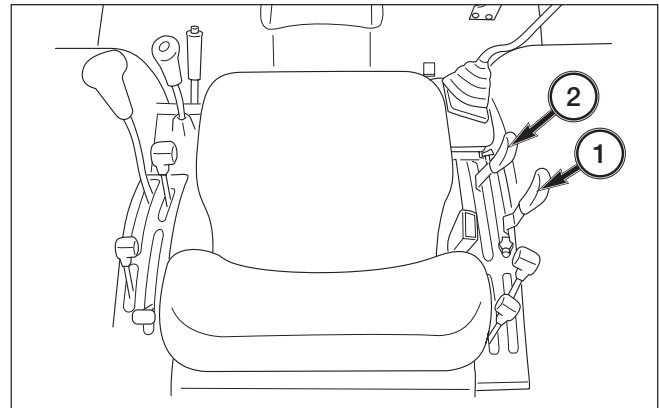
Three-point hitch combines Tractor and implement into one working unit. Implement position and raising are controlled hydraulically. In addition, implement weight and loads impose downward pressure at Tractor rear wheels to increase traction.

Hitch Controls

FIG. 5-21: Control quadrant, to right of operator's seat, controls the system to provide the following hitch control functions:

Position Control - Maintains hitch position at constant height in relation to the Tractor. As position control lever, 1, is moved rearward, hitch (and implement) are raised. Moving lever forward will lower hitch to selected position. Each lever setting provides a specific hitch (and implement) position.

Draft Control - Regulates hitch height to provide constant draft, or pull, of ground engaging implements (plows, subsoilers, etc.). Moving draft control lever, 2, forward will provide deeper implements working depth. Moving lever rearward will provide a shallower depth. As ground contours and / or soil conditions change, the system will raise or lower implements as needed to keep even load in Tractor.

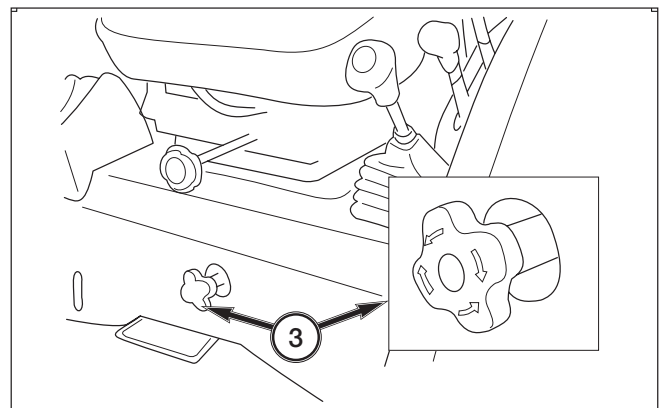
**FIG. 5-21**

CAUTION: Use position control lever, 1, when attaching or detaching implements. Place draft control lever, 2, fully forward when using position control.

FIG. 5-22: Lowering Rate Control - Knob, 3, controls discharge rate of hydraulic oil to adjust lowering speed of hitch and implement. Turn knob clockwise to slow drop rate, counterclockwise to increase drop rate. Turning knob fully clockwise will lock implement in raised position.



CAUTION: When working on or around mounted implements, always lower to ground prior to work. If implement must be raised, always block implement and lower links securely.

**FIG. 5-22**

TG5330,5390,5470

Rear Linkage

FIG. 5-23: Linkage consists of several major components for implement attachment and operation:

Lower Links, 1 - Primary attaching points to lower implement pins.

Lift Rods, 2 - Connect lower links to hydraulic lift arms for raising/lowering of lower links. The lift rod connected to the right lower link has provisions for leveling the implement (side to side).

Check Chain, 3 - Reduce side sway of implement.

Top Link, 4 - Adjustable, turn-buckle type to level implement (front to rear). Top link also provides draft load sensing for draft control.

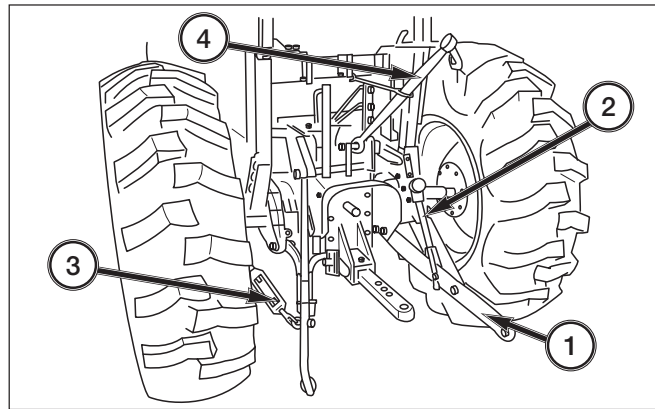


FIG. 5-23

FIG. 5-24: To match varying implements, rear linkage is standardized according to spacing, pin size, etc. This enables usage of alternate implements with minimal adjustments as long as matching size or Category is used.

This Tractor is equipped for Category I implements with following attaching point dimensions:

Ref.	Description	Dimension (Size)
A	Lower Link Width	26.8 (681mm)
B	Lower Link Pin Diameter	0.88 (22mm)
C	Top Link Height	18 (457mm)
D	Top Link Pin Diameter	0.75 (19mm)

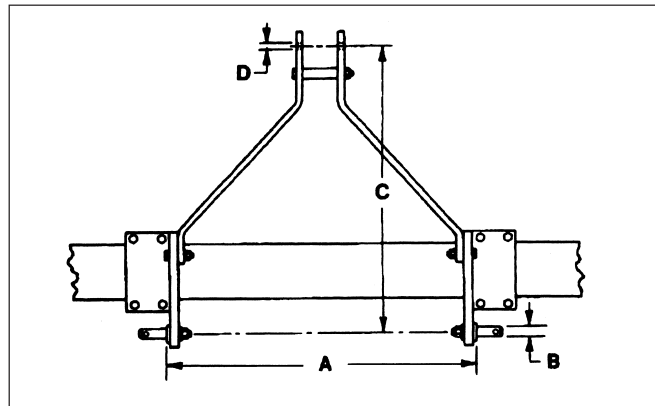


FIG. 5-24

FIG. 5-25: Linkage provides three positions of connecting top link, 1, to Tractor.

For most implements, securing top link, 1, B, is satisfactory, but position may be varied to provide increased implement height during transport.

- Select hole, A, when installing a heavy implement.
- Select hole C or D for an implement that is used high off the ground.

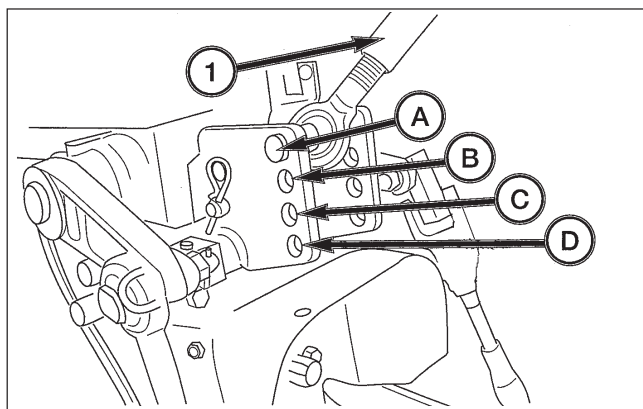


FIG. 5-25

FIG. 5-26: Lift rods, 1, and lower links, 2, also have multiple positions. Normally, lower hole, B, in each lift rod is attached to forward hole, X, in lower link.



CAUTION: Secure all pins after adjustment is made. Always use pins supplied with Tractor.

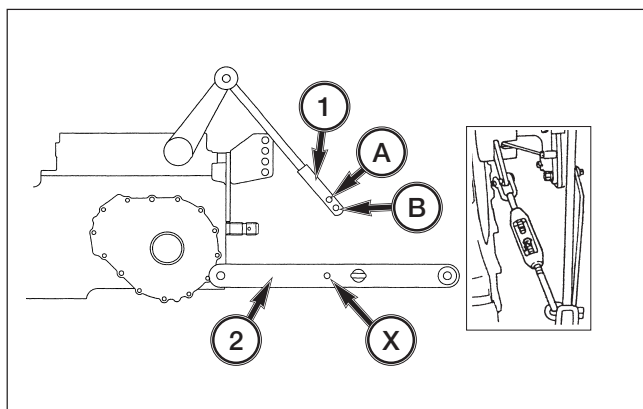


FIG. 5-26

TG5330,5390,5470

Attaching Implements



CAUTION: Always use **POSITION CONTROL** to attach/detach implements to provide precise control of hitch.

FIG. 5-27: Back Tractor to implement, centering Tractor with implement hitch frame.

Raise or lower hitch using position control lever, 1, and align left lower link end with corresponding implement attaching pin.

Lock the brakes, shut off engine and remove key.

FIG. 5-28: Slide ball end of left lower link, 1, over implement pin and secure with lynch pin.

Adjust height of right lower link using leveling crank, 2. Attach and secure right lower link, 3, to implement with lynch pin.

Attach top link, 4, to top of implement hitch frame using pin supplied with Tractor. Rotate center barrel section of top link, to lengthen or shorten it, and level implement from front to rear.

After the implement is attached, it can be readjusted for level operation using turn buckle and top link. Secure all adjustments.

IMPORTANT: *With some mounted implements, it will be necessary to remove drawbar at rear of Tractor to permit implement to be raised and lowered without obstruction.*

FIG. 5-29: Certain implements require minimal side-play. Check chain 1, at each lower link should be evenly adjusted to reduce side-play to desirable level. Do not remove all side-play as lower link damage may result.

NOTE: *The amount of side-play (stabilizer looseness) is dependent upon implement and type of operation. Normally 2 (50mm) of total side movement is desired, 1 (25mm) to each side of Tractor center-line.*

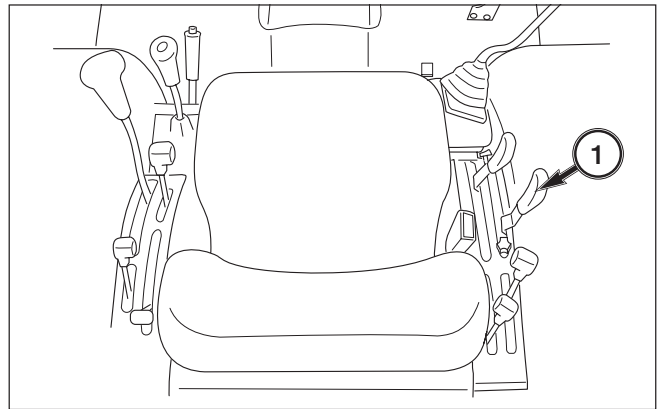


FIG. 5-27

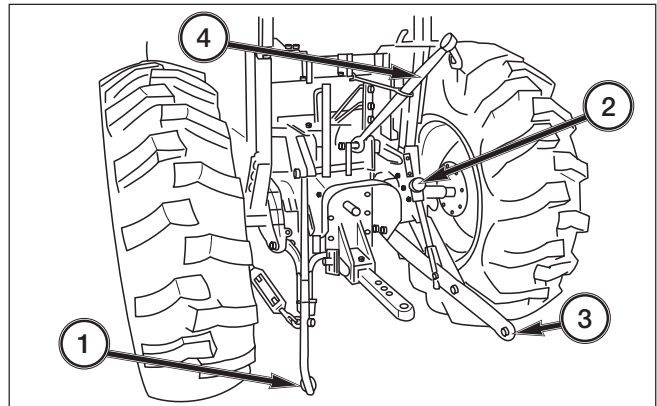


FIG. 5-28

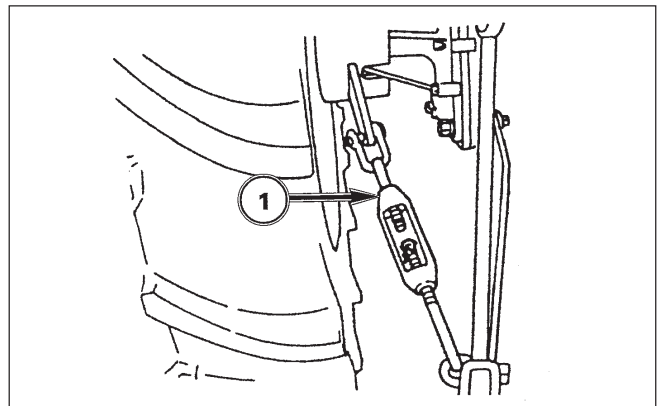


FIG. 5-29

Using Position Control

FIG. 5-30: Type of Work - Attaching/detaching implements and other operations requiring implement to be kept at constant height above ground. Also used with tool bars having flexible row units and implements equipped with gauge (support) wheels.

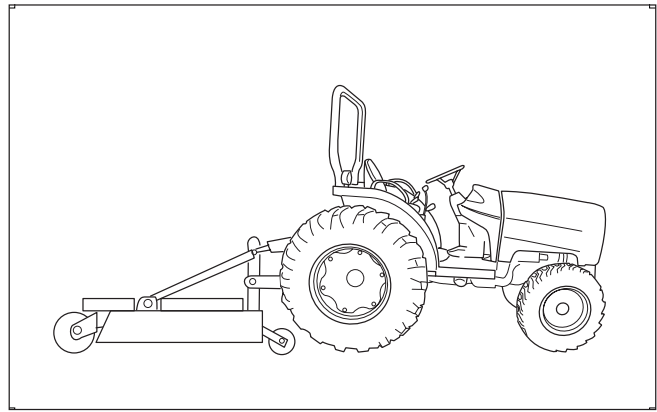
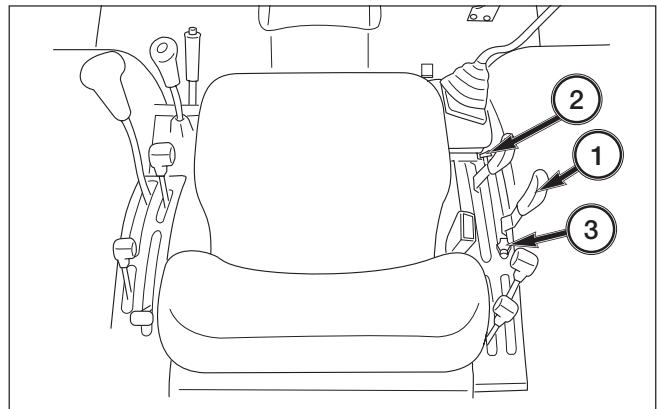
**FIG. 5-30**

FIG. 5-31: Lever Positions - Use position control lever, 1, to adjust hitch and implement position.

NOTE: Front lever stop, 2, can be set to contact position control lever in implement work position. This enables implement to be returned to identical position after hitch has been raised for turning, transporting, etc. Rear lever stop, 3, can be set to limit raising height, if required.

**FIG. 5-31**

To Begin Work - Align Tractor and implement in field and move position control lever, 1, forward (toward DOWN). Adjust implement height using position control lever and set adjustable stops, 2 and 3, as desired. When Turning - Move position lever, 1, rearward (toward UP) to raise implement. Finish turning and return lever against stop to resume operation.

To Finish Work and Transport - Move position control lever, 1, fully rearward in quadrant.

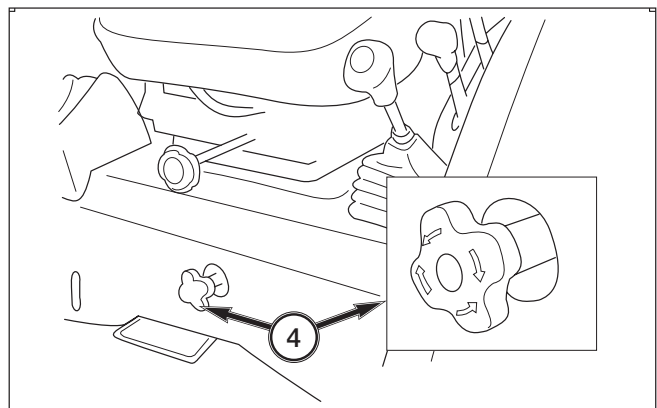
FIG. 5-32: Lowering speed can be readjusted as necessary using lowering rate control knob, 4.



CAUTION: When using mounted implements with PTO driveline, make sure:
PTO drive shaft has minimum 51 mm (2 engagement of telescoping sections, at all hitch/implement positions.

Hitch height during raising does not bind drive shaft universal joints due to extreme drive shaft angles. Limiting raising height may be required.

PTO drive is disengaged during transport.

**FIG. 5-32**

TG5330,5390,5470

Using Draft Control (accessory)

FIG. 5-33: Type of Work - When ground-engine implements such as plows, subsoilers, cultivators, etc. are used.

NOTE: Refer to Rear Linkage for locking pin details.



CAUTION: Do not use draft control when precise hitch positioning is required (attaching/detaching implements for example). Using draft control on non be attempted.

FIG. 5-34: Lever Positions - Use position control lever, 1, to raise and lower implement and use draft control lever, 2, to adjust implement working depth and system sensitivity in soil.

Position control lever, 1, can also be used to prevent excessive lowering of hitch when low draft areas (sandy soil) are encountered.

NOTE: Adjust lever stops, 3 and 4, can be set to contact position control lever in implement work or raised position. This enables implement to be returned to identical setting after hitch has been raised for turning at field ends.

To Begin Work - Align Tractor and implement in field and move position control lever, 1, forward (to DOWN). while driving Tractor forward, lowering implement. Then adjust draft control lever, 2, until correct working depth is maintained.

When Turning - Move position control lever, 1, rearward to raise implement and permit completion of turn. Return implement to work position by selecting position control lever to previous position against stop.

To Finish Work and Transport - Pull position control lever rearward fully to up setting.

FIG. 5-35: Lowering speed can be readjust as necessary with lowering rate control knob, 5.

NOTE: Changes in soil texture or ground speed of unit may require slight readjustment of draft control lever to maintain consistent working depth as these can have a direct influence on implement draft load.

If erratic operation is encountered, turn lowering rate control knob, 5, clockwise to slow. Lowering top link attaching location on Tractor will also decrease sensitivity.

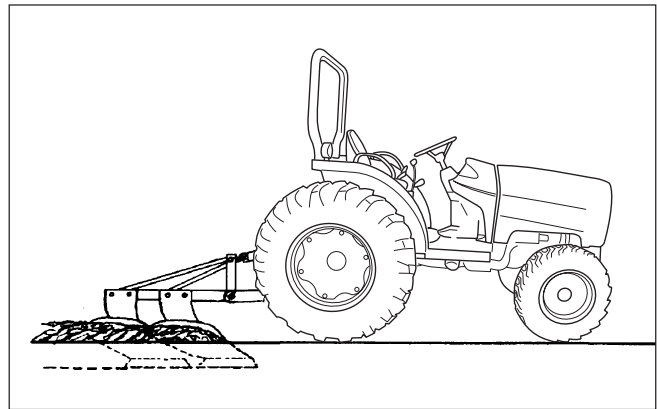


FIG. 5-33

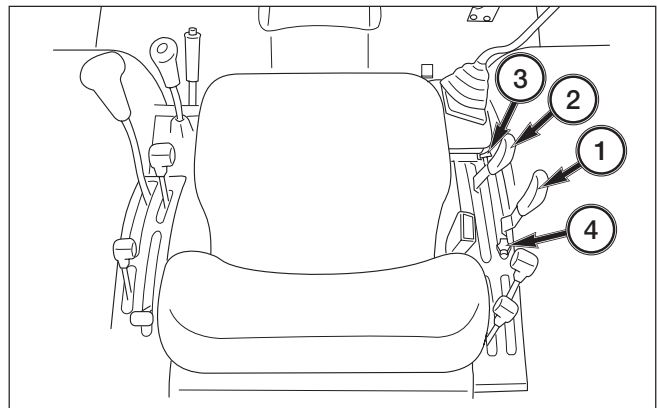


FIG. 5-34

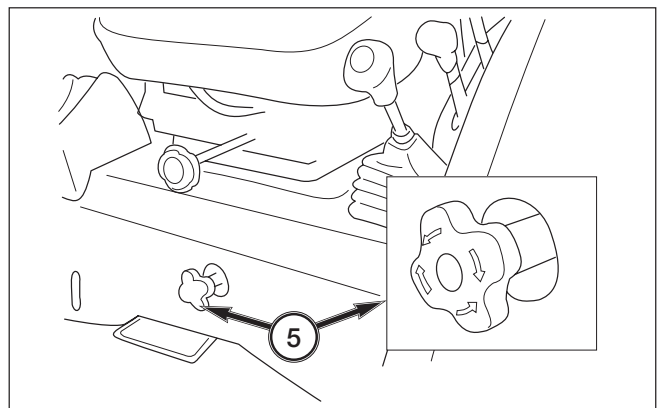


FIG. 5-35

Detaching Implements



CAUTION: Always use **POSITION CONTROL** to attach/detach implements to provide precise control of hitch.

Select a level area to detach and store the implement. Lower implement to ground by moving position control lever to DOWN. If necessary, adjust leveling crank on right lift link to level implement on ground.

Shut off engine, securely lock brakes and remove key from Tractor.

Disconnect implement PTO drive shaft (as applicable). Detach top link from implement and place in storage position on Tractor by engaging spring on top link in slot in rear center panel.

NOTE: Lengthening or shortening of top link may be required to permit disconnection from implement.

TG5330,5390,5470**JOYSTICK OPERATION (ACCESSORY)**

FIGS. 5-36 & 5-37: Single-lever control, 1, provides Joystick operation of auxiliary valve. Moving lever rearward and forward moves the A/B spool in control valve respectively raising and lowering loader (or other attachment). Pushing lever completely forward will retain lever in float position to allow attachment to follow ground contours.

Moving lever side-to-side moves the C/D valve spool and controls Loader bucket position. Pulling lever to left will curl bucket and pushing lever to right will dump the bucket. Pushing lever completely to right side will retain lever in regenerative position, allowing bucket to dump quickly. When used with a blade angling (left and right) can be controlled.

All positions (except float) will return to neutral position when lever is released. When in Float, the A/B valve spool is held by detents and the lever will have to be pulled rearward to disengage the detents.

NOTE: Inability to select float or any other valve functions may indicate the need for control rod adjustment at base of control lever.

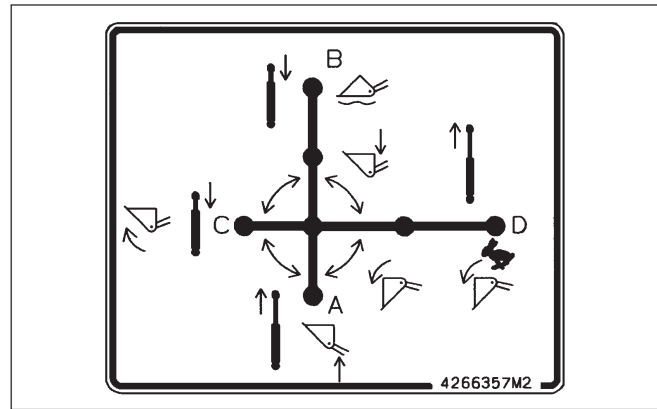
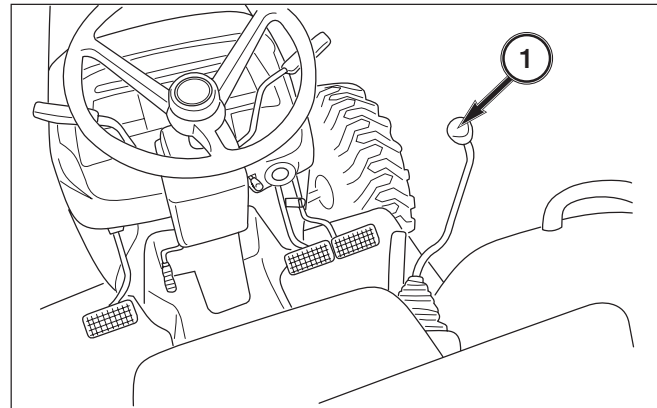
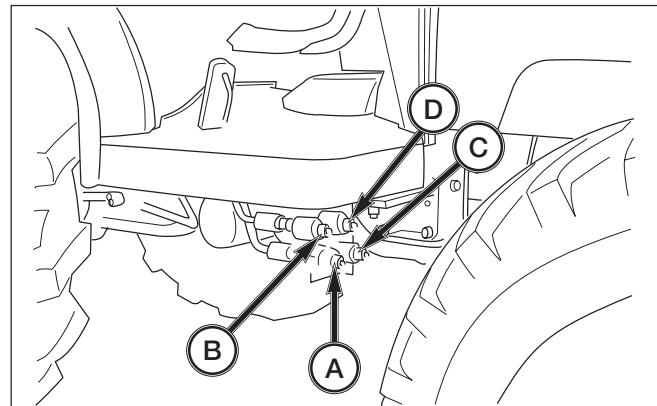
**FIG. 5-36****FIG. 5-37**

FIG. 5-38: Output ports are located under the right step.

1. The output ports are identified by letters, 1, A,B,C, D, from left to right as indicated on output ports.
2. The following chart provides correct output port location when using a loader.

Output port	Function
A	Loader Raise
B	Loader Lower and Loader Float
C	Bucket Curl
D	Bucket Dump and Dump quickly

**FIG. 5-38**

3. For other operations, except for loader work use the following.

Output port	Double acting	Single Acting
A	Extend	Extend/Retract
B	Retract	Not Used
C	Extend	Not Used
D	Retract	Not Used

EXTERNAL AUXILIARY HYDRAULICS

(Except Center ROPS type: accessory,
Center ROPS type: 1-spool as standard, 2-spools as
accessory)

<Except center ROPS type>

Auxiliary hydraulics can be Dealer-installed to operate implements requiring external hydraulic source for operation. Kits are available as single-spool (one auxiliary circuit) or two-spool (two hydraulic circuits).

<Center ROPS type>

To operate implements requiring external hydraulic source for operation, center ROPS type tractor equipped single-spool (one auxiliary circuit) external auxiliary hydraulics as standard.

And the tractor can be installed with additional spool kit as accessory in order to be equipped with two-spool (two-circuits) external auxiliary hydraulics.

FIG. 5-39: Control lever, 1, controls implement raising/lowering when first set of remote couplers are used. Control lever, 2, controls implement when second set of remote couplers are used (two-spool kit only).

Control lever(s) are spring-loaded to center neutral position, from normal raise or lower positions.

FIG. 5-40: Remote couplers are located at rear of Tractor, above three-point hitch, or, under right step (depending on kit installed). Rear location shown.

Coupler set, 1, corresponds with control lever, 1, coupler set, 2, with control lever, 2.

Implement hoses must be connected to each coupler set so when respective control lever is pulled rearward, implement raises and, when pushed forward, implement lowers. Male coupler tips (on implement hoses) must be compatible with Tractor couplers and must also be inserted fully and locked into Tractor couplers to operate correctly.



CAUTION: Always lower implement to ground, shut off engine and relieve system pressure (by operating control levers with engine off) before connecting or disconnecting implement hoses.

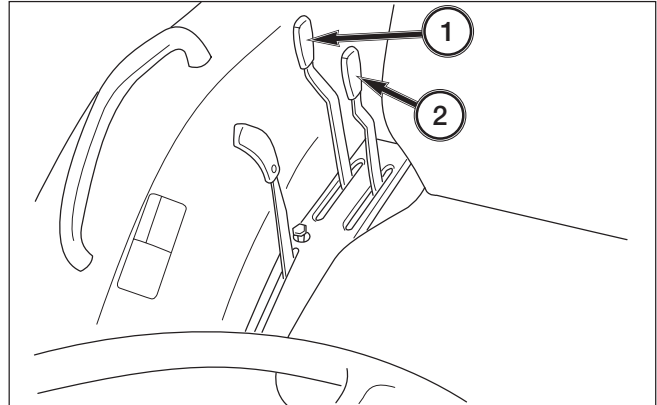
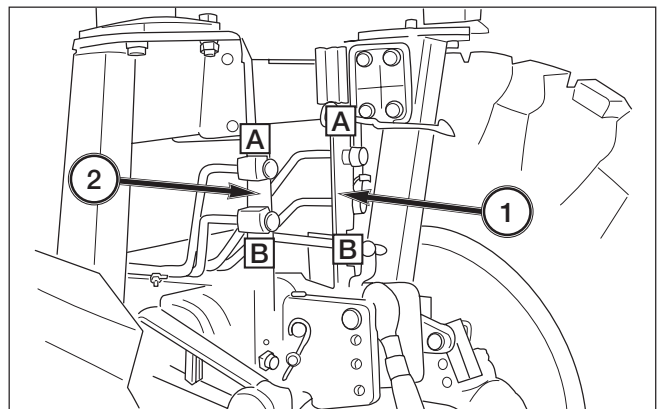
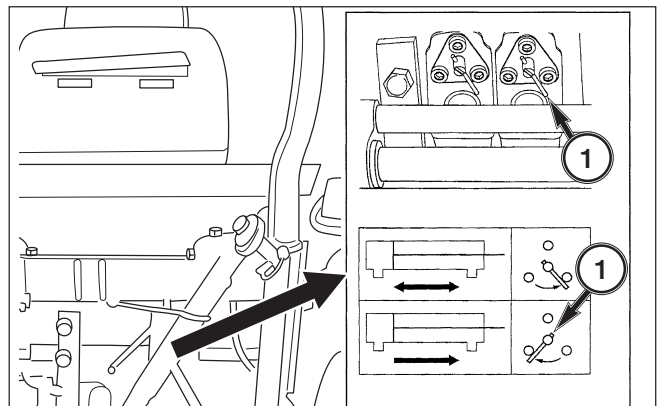


CAUTION: Make sure all hydraulic hoses, couplers and cylinders are in good condition before use. Damaged equipment is dangerous.

FIG. 5-41: Most implements require double-acting hydraulics. Each implement cylinder will have two hoses connected to it.

When single-acting service is required (cylinder with only one hose), the inner A coupler will be used and selector function, 1, must be turned to the left.

NOTE: For normal double-acting operation selector function must be turned to the right.

**FIG. 5-39****FIG. 5-40****FIG. 5-41**

TG5330,5390,5470

DRAWBAR

FIG. 5-42: Drawbar, 1, at rear of Tractor allows pull- type implements to be attached to Tractor. Maximum vertical load on drawbar must not exceed 880 lbs (400 kg).



CAUTION: Pulling heavy loads will require extended braking distances. Reduce travel speed.

Make sure attachment is properly secured and safety chain is used.

NOTE: When using three-point hitch, it may be necessary to remove drawbar by removing clips and pins, 2, and sliding drawbar from bracket to improve operating clearance. This is particularly true with mounted implements using PTO drive.

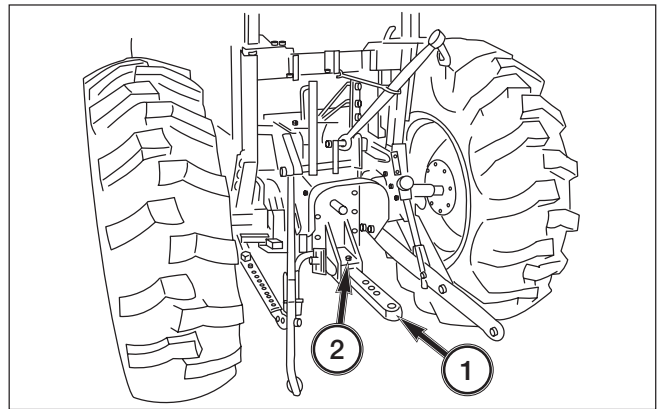


FIG. 5-42

ROLL OVER PROTECTIVE STRUCTURE (ROPS)

Rear ROPS type

FIG. 5-43a: This tractor is equipped with a roll-over protective structure (ROPS). Seat belts must be worn.

When the tractor is not being operated, the ROPS can be folded down if it will hit the roof of the garage where it is parked.



When the locking pin, 1, is removed, the upper portion, 2, of the ROPS can be folded down to the rear.

WARNING: Do not operate the tractor with the ROPS folded down. This may result in serious injury if the tractor rolls over.

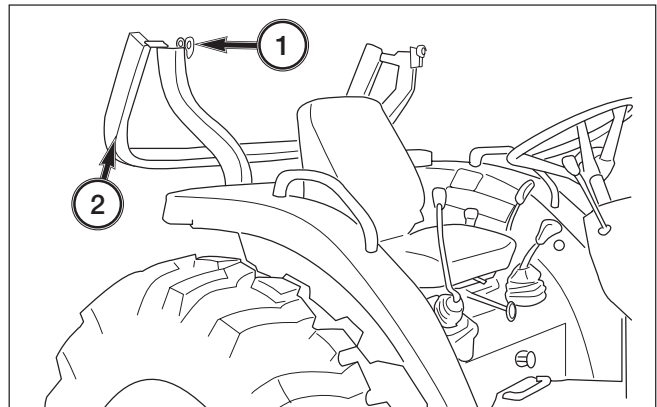


FIG. 5-43a

Center ROPS type

This tractor is equipped with center mounted roll-over protective structure (Center ROPS). Seat belt must be worn.

When the tractor is not being operated, the ROPS can be folded down if it will hit the roof of the garage where it is parked.

FIG. 5-43b: After removing the lock pin, 1, and the pin, 2, the upper portion, 3, of ROPS can be folded down to the front.

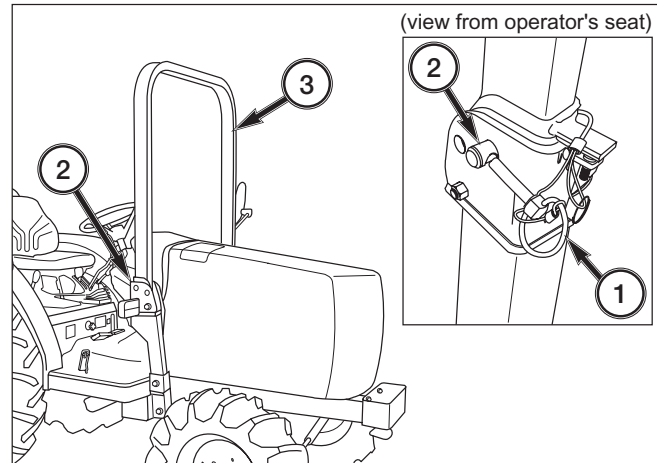
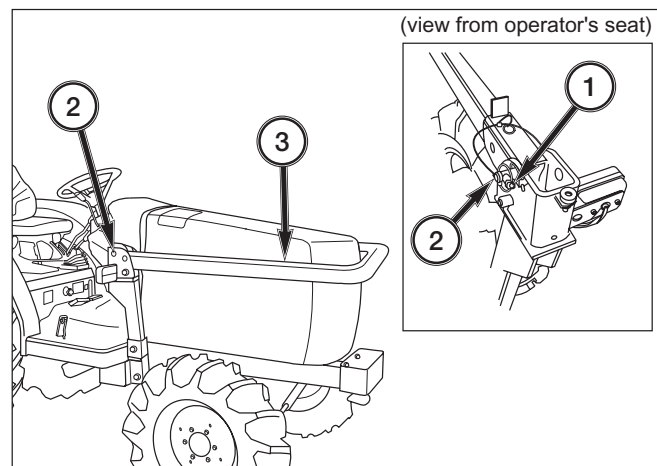
**FIG. 5-43b**

FIG. 5-43c: The upper portion, 3, of ROPS can be fixed to folded position by installing the lock pin, 1, and the pin, 2.



WARNING: Do not operate the tractor with the ROPS folded down. This may result in serious injury if the tractor rolls over.

**FIG. 5-43c**

OPERATION - POWER SHIFT TYPE & HST TYPE -

BREAK-IN PERIOD

Operation of Tractor within the first fifty hours can be a major factor in determining the performance and life of the engine and Tractor:

- The engine may be operated at full rpm but excessive load should be avoided. If engine begins to lug, operate in a lower gear to maintain higher engine speed.
- Check coolant level and check engine, transmission and other oil levels frequently during break-in period. Watch for evidence of leakage of above fluids. Replenish levels as required and repair any leaks that may have formed.
- Tighten any nuts, bolts, or screws that may have loosened and tighten as necessary. This is especially true of wheel retaining bolts. **All fasteners on this Tractor are metric.**
- Be observant of clutch pedal free-play adjustment and brake adjustment and readjust as required. Lining materials used on clutch and brake discs bed in in the first few hours of operation and may necessitate the need for early and frequent re adjustment.
- Keep area around fuel tank filler clean and make sure diesel fuel is correct grade and free of contamination.
- Initial engine oil and oil filter change is after first fifty hours of operation. Subsequent change interval is every one hundred fifty hours for engine oil and filter.



CAUTION: Proper maintenance practices cannot be over-emphasized. They are required for safe operation. Consult Lubrication and Maintenance section for full details.

STARTING

Pre-Start Inspection

Prior to daily start-up of Tractor, a few basic procedures should be followed to ensure Tractor is in operating order to insure life and dependability:

- Make sure all safety shields are in place and secured properly.
- Make sure operator is instructed on correct and safe operation of Tractor and related attachments or implements.
- Check coolant, engine oil and transmission oil levels and replenish as necessary.
- Check fan belt tension and adjust as required.
- Make sure radiator, air intake screens and radiator screen are clear of debris to provide maximum engine cooling.
- Check operation of clutch, brake and throttle controls. All controls must operate freely and be adjusted correctly.
- Conduct a general inspection of tires, tire pressure and wheel bolt torque. Observe for external signs of leakage and correct before operating Tractor. Check steering for excessive looseness.
- Check for adequate fuel supply. It is recommended fuel tank be filled following each day's use to reduce condensation and provide full tank for next use.
- Check operation of lights and warning flashers. If Tractor is to be transported on public road, ensure slow-moving vehicle emblem is in place.

NOTE: Requirements may vary regarding use of warning flashers and slow-moving vehicle emblem depending on locality. Check local safety codes.



WARNING: Carefully read and understand the SAFETY section of this manual. Your life, and that of others, can be in danger during the starting of the Tractor.

Always start and operate the engine in a well ventilated area.

If in an enclosed area, vent the exhaust to the outside.

DO NOT modify or tamper with the exhaust system.

Normal Starting

CAUTION: Do not attempt to start the tractor unless seated in the operator's seat. Do not allow anyone on the tractor except for the operator.

Power Shift type

FIGS. 5-44 & 5-45: To start the engine, proceed as follows:

1. Apply the parking brake, 1.
2. Make sure the forward/reverse lever, 2, in the neutral position.
3. Make sure the range gear shift lever, 3, in the neutral position.
4. Make sure the rear PTO lever and mid PTO selector levers, 4, are in the neutral position.
5. Make sure the PTO switch, 5, is in the OFF position.
6. Fully depress the main clutch pedal, 6, to disengage the clutch.

NOTE: "When turning main switch on to start engine with shift lever position "ON" or PTO switch "ON", digital panel will indicate error message. Please refer to trouble shooting."



CAUTION: The operator being seated in the operator's seat, the gearshift lever must be in neutral and the PTO levers must be in neutral to actuate safety switches and permit operation of the starter motor.

7. Set the position control lever, 7, (three-point hitch) and draft control lever (if equipped) in the down position.
8. Turn the main switch, 8, to the "glow" position for 5-10 seconds.
9. Set the throttle lever, 9, at half to the fully open position.
10. Turn the main switch, 8, to the "ON" position for 1-2 seconds, then turn to the "start" position. Release the switch the moment engine starts.
11. Once the engine runs smoothly, set engine speed to approximately 1,500 rpm to allow the engine and hydraulic system to warm up for several minutes.

DO NOT LOAD A COLD ENGINE.

IMPORTANT: Do not crank engine for more than 10 seconds at a time. Allow starter to cool at least 20 seconds before repeating procedure. Never turn main switch to start with engine running. Severe damage will result.

FIGS. 5-46: Battery charge indicator lamp and engine oil pressure lamp in indicator light strip should go out when the engine starts. If either light remains lit, **STOP ENGINE IMMEDIATELY** and investigate source of problem.

IMPORTANT: If engine will not start and run after several attempts, refer to Maintenance section in this book and bleed any air that may be present in the fuel system.

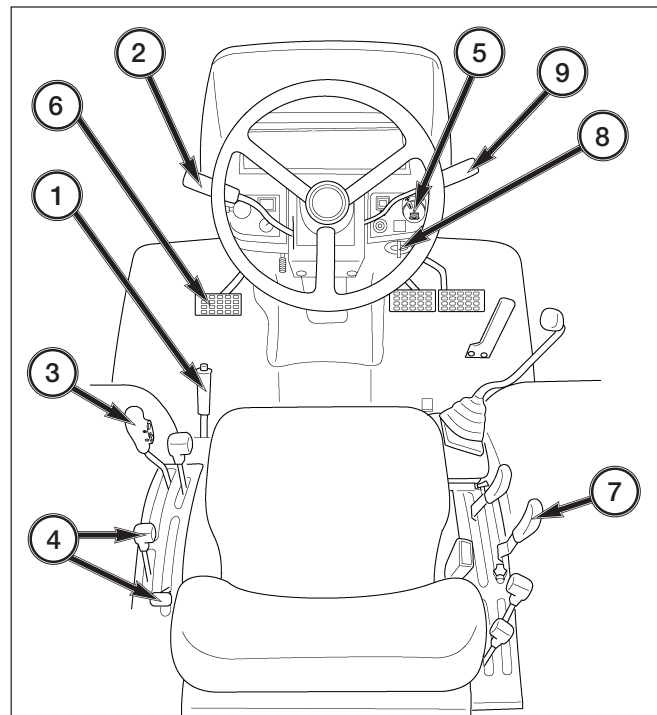


FIG. 5-44

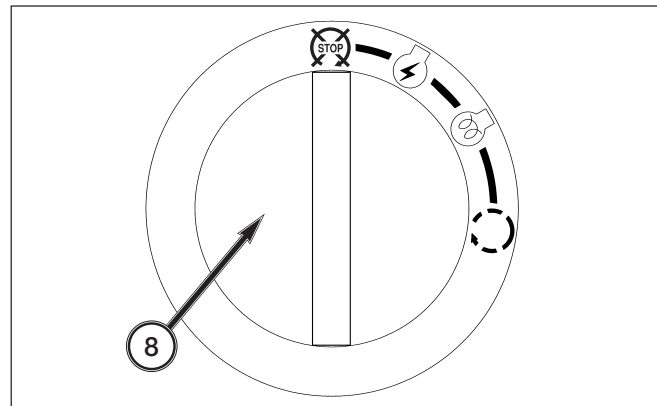


FIG. 5-45

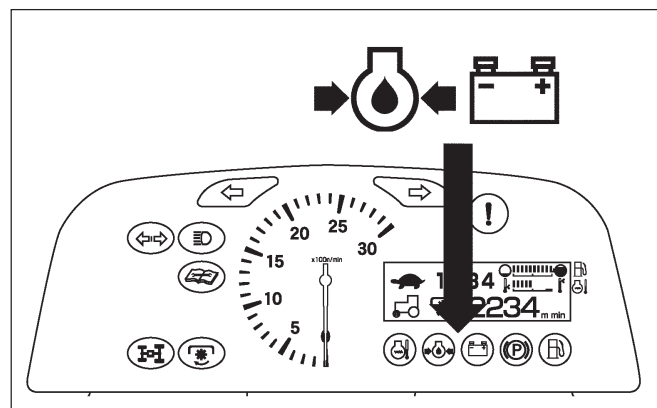


FIG. 5-46

TG5330,5390,5470

HST type

FIGS.5-47 & 5-48: To start the engine, proceed as follows:

1. Apply the parking brake,1.
2. Make sure the range gear shift lever,2, in neutral position.
3. Make sure the rear PTO lever and mid PTO lever selector levers,3, are in neutral position.
4. Make sure the PTO switch,4, is in the OFF position. Do not depress hydrostatic pedal,5. The hydrostatic pedal must be in neutral position.
5. Make sure cruise control lever,6, is in the rearward position.
6. Set three-point hitch position lever,7, in the down position.



WARNING: Range shift lever must be placed in neutral position and PTO switch must be off to actuate safety switches and permit operation of the stater motor.

7. Turn the main switch, 8, to the "glow" position for 5-10 seconds.
 8. Set the throttle lever, 9, at half to the fully open position.
 9. Turn the main switch, 8, to the "ON" position for 1-2 seconds, then turn to the "start" position. Release the switch the moment engine starts.
 10. Once the engine runs smoothly, set engine speed to approximately 1,500 rpm to allow the engine and hydraulic system to warm up for several minutes.
- DO NOT LOAD A COLD ENGINE.**

IMPORTANT: Do not crank engine for more than 10 seconds at a time. Allow starter to cool at least 20 seconds before repeating procedure. Never turn main switch to start with engine running. Severe damage will result.

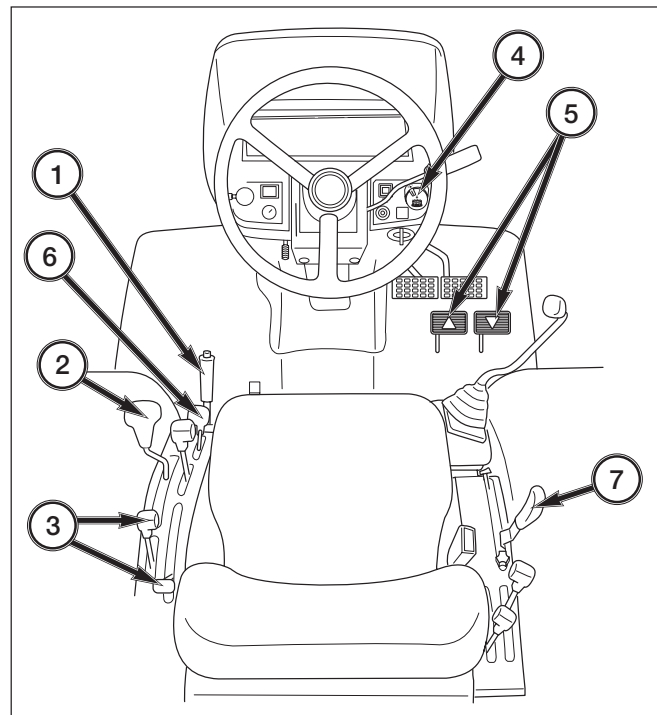


FIG. 5-47

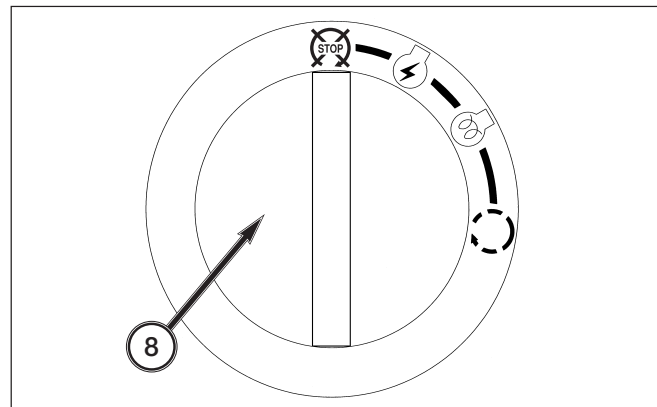


FIG. 5-48

FIGS. 5-49: Battery charge indicator lamp and engine oil pressure lamp in indicator light strip should go out when the engine starts. If either light remains lit, **STOP ENGINE IMMEDIATELY** and investigate source of problem.

IMPORTANT: If engine will not start and run after several attempts, refer to Maintenance section in this book and bleed any air that may be present in the fuel system.

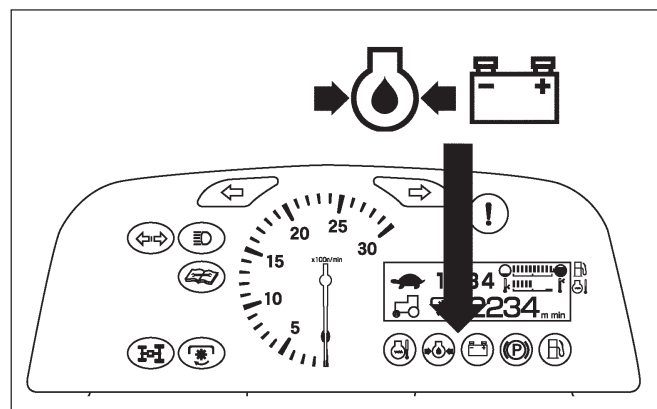


FIG. 5-49

Restarting Warm Engine

When restarting an engine that is still warm from previous use, the same procedure is used as with Normal Starting except step no. 6 may be omitted. Use of glow plugs is not necessary when starting a warm engine.

Cold Weather Starting

Procedure for starting an engine in colder ambient temperatures is identical to Normal Starting procedure except for the following:

- Longer use of glow plugs may be required. Instead of the normal 5-10 seconds, main switch may need to be selected to glow for 10-20 seconds to adequately warm engine combustion chambers.
- At temperatures below 39°F (4°C) use of No. 1 (No. 1-D) diesel fuel is recommended due to possible fuel gelling characteristics of No. 2 (No. 2-D) fuel at cold ambient temperature.
- The central hydraulic reservoir, which provides supply of hydraulic fluid in addition to transmission and center housing lubrication, will require additional warm-up time due to colder (thicker) oil. Refer to Warm-Up Period at right.
- Test all controls (steering, braking, etc.) prior to operating unit.

NOTE: Installation of accessory engine block heater is recommended in cold weather conditions. Consult your Dealer.

IMPORTANT: Under no circumstances should ether or other starting fluid be used to start engines equipped with glow plugs. Severe engine damage will result should starting fluid contact a hot glow plug. If, for some reason, a booster battery is required to start Tractor, ensure booster battery is connected in parallel. When using booster battery and booster cables always connect positive (+) terminals together first. Then install booster cable on booster battery negative (-) terminal and ground final booster cable end on Tractor away from Tractor battery.

Warm Up Period

After starting a cold engine, let engine idle at slow speed to make sure all engine components are lubricated.

In colder ambient temperatures, extended warm-up will be required to also warm hydraulic fluid and lubricate drive-line components.

Suggested warm-up period:

Ambient Temp.		Warm-Up Time
°F	°C	Time
32 & up	0 & up	5 to 10 min
32 to 14	0 to -10	10 to 20 min
14 to -4	-10 to -20	20 to 30 min
-4 & less	-20 & less	30 or more

IMPORTANT: Improper warm-up can result in severe engine damage, hydraulic pump seizure, driveline bearing/gear damage and/or sluggish steering/braking



CAUTION: Make sure parking brake is securely applied and all controls are in neutral while warming unit. Do not leave unit unattended.

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Operator Observations

Constant attention should be paid to the following points during operation:

- Engine oil pressure lamp will come on in case of low engine oil pressure. Stop engine immediately.
- Battery charge lamp will come on if battery is not being charged properly. Stop engine and investigate cause.
- Coolant temperature gauge needle will indicate  (hot) in case of overheated engine. Stop engine, allow to cool and investigate cause.
- Fuel gauge should not be allowed to  (empty) as running out of fuel may result with need to bleed air from fuel system.



CAUTION: DO NOT attempt to service Tractor with engine running or hot. Allow to cool.

NOTE: Refer to Trouble-Shooting when defect is indicated, to assist locating problem.

Starting Circuit Operation

Tractor is equipped with a starting system to protect the operator. To permit tractor to be started (start motor to operate), ALL the following is required:

- Shuttle Lever in Neutral
- Range Shift Lever in Neutral.
- Rear PTO Switch in Off position.



WARNING: Safety switch system is installed for your protection. DO NOT bypass or modify the safety start switch system. If the neutral start switch system does not operate properly as detailed above, contact your Dealer immediately and have the system repaired.

Periodically check that the starting circuit is functioning correctly. The procedure for this is check is as follows:

1. Check that there are no bystanders around the tractor should it inadvertently start.
2. Depress clutch and brake pedals. Attempt to start the tractor with the gear shift levers and PTO control switch OFF. The tractor should start.
3. Depress the clutch and brake pedals. Attempt to start the Tractor with the gears engaged and the PTO switch ON. The Tractor should NOT start.
4. Depress the clutch and brake pedals. Attempt to start the tractor with the gears in neutral and the PTO switch ON. The Tractor should NOT start.

If starting system is not working correctly it must be repaired immediately by your Dealer.

The starter will rotate when not sitting in the seat, but the engine will not start.

The engine will automatically stop about three seconds after the operator leaves the seat. Do not leave the seat while operating the tractor.

GROUND SPEED SELECTION**Power Shift type**

Tractor is equipped to provide twelve forward gear speeds and twelve reverse gear speeds.

FIG. 5-50: Gear shift button, 1, provides four gear selections. These gear selections are compounded by range shift lever, 2. The range shift lever provides three major changes in ground speed. Gear shift button provides smaller ground speed changes.

FIG. 5-51: Depress clutch pedal and position shift levers in desired positions. Depress brake pedals to release parking brake lock and then slowly release clutch pedal.

Should another transmission gear be desired:

Gear Shift Button-Push gear shift button to select the desired speed and continue with operation.

- +: Push gear shift button(+) to increase the traveling speed.
- : Push gear shift button(-) to reduce the traveling speed.

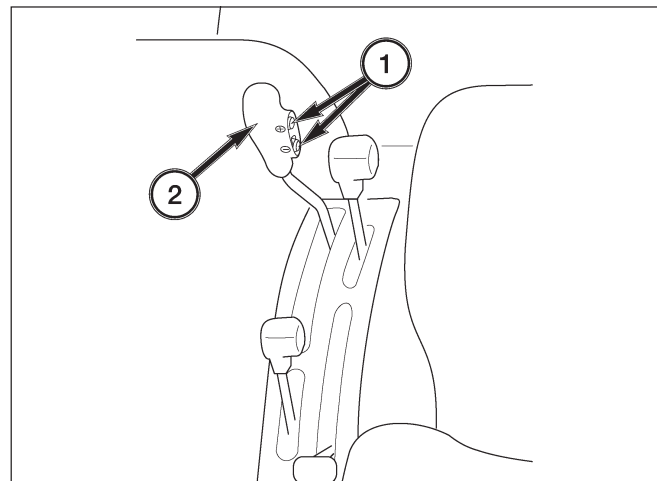
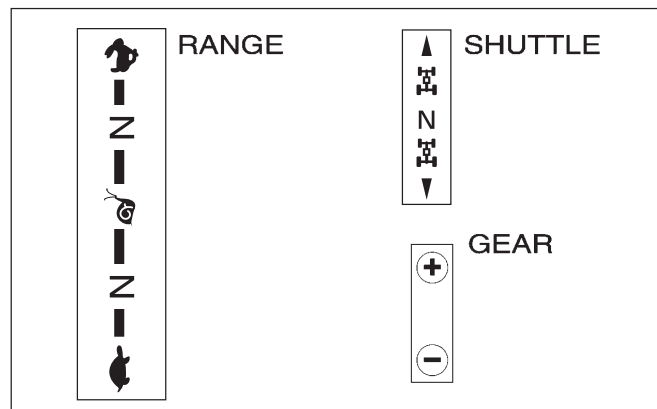
NOTE: Gear shift buttons are not available when shifting range gear in neutral position. When starting engine, set 1st gear in gear speed selection automatically. Range gear position become 3rd gear automatically when shifting shuttle lever rearward in traveling forward 4th range gear.

IMPORTANT: Depress clutch and stop Tractor before all range lever shifts.



CAUTION: Do not use gear shift button when loading or unloading the tractor on/off a truck. Drive the tractor slowly and carefully at the moment the tractor moves from ramps onto the level platform.

Do not use gear shift button when traveling on steep slope. Make engine speed low before pushing the gear shift button. Otherwise it may cause front-tyre lift up or tractor turnover.

**FIG. 5-50****FIG. 5-51**

TG5330,5390,5470

FIG. 5-52: Arrangement of gears with appropriate ground speeds, in order from slow to fast, are shown in chart at right.

NOTE: Ground speed indicated at 2600 engine rpm with TG5330 - 12.4 - 24, TG5390 - 13.6 - 24 TG5470 - 13.6 - 28 agriculturaltype rear tires .

Shift Positon		TG5330	TG5390	TG5470
Range	Gear	km/h		
Engine Speed		2600rpm		
Forward				
	1	0.4	0.4	0.4
	2	0.6	0.6	0.6
	3	0.9	0.9	0.8
	4	1.4	1.4	1.3
	1	1.6	1.6	1.5
	2	2.5	2.6	2.5
	3	3.7	3.9	3.6
	4	5.8	6.1	5.7
	1	7.2	7.6	7.1
	2	11.7	12.2	11.4
	3	17.1	17.9	16.7
	4	27.1	28.3	26.4
Reverse				
	1	0.3	0.4	0.3
	2	0.6	0.6	0.5
	3	0.8	0.8	0.8
	4	1.3	1.3	1.2
	1	1.5	1.5	1.4
	2	2.3	2.4	2.3
	3	3.4	3.6	3.3
	4	5.4	5.7	5.3
	1	6.7	7.0	6.5
	2	10.8	11.3	10.5
	3	15.9	16.6	15.5
	4	25.1	26.2	24.5

FIG. 5-52

FIG. 5-53: Forward/reverse shuttle lever,3, changes in travel direction in each gear/range combination.Direction change is possible without depressing the main clutch pedal. Lift up and move lever forward to shift to the forward travel position. Lift up and move lever rearward to shift to the reverse travel position. Reverse travel speed is slightly slower than forward travel in the same gear speed selection.

NOTE: Make sure power shuttle lever is in neutral position before starting engine.



CAUTION:Forward or reverse direction changes must not be made at high speed.

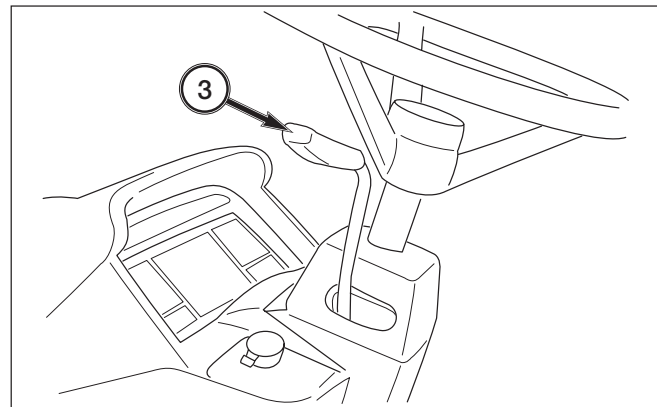


FIG. 5-53

GROUND SPEED SELECTION

HST type

Tractor is equipped to provide three forward gear speeds and three rearward gear speeds.

FIG. 5-54: The hydrostatic transmission provides variable speed control in forward or reverse.

Range shift lever, 1, provide three major changes in ground speed.

IMPORTANT: Stop tractor completely whenever shifting the range shift lever, 1.

Hydrostatic control pedal

Depressing the forward pedal, 2, causes the tractor to move forward. Depressing the reverse pedal, 3, causes the tractor to move rearward. Ground speed will increase as the pedal is depressed.

When released, the spring loaded pedal will return to neutral position. The tractor will slow, then stop when neutral position is reached. When the pedal is completely released and in neutral position, the tractor should remain stopped.

This tractor is equipped with Auto throttle system, it raises up engine speed by depressing forward direction the pedal. Whenever it would be used, tractor dose not load any implements or trailer.

When tractor is operated with implements or trailer, set rated engine speed by hand throttle lever.

IMPORTANT: For optimum operation, keep engine speed above 1500rpm whenever operating the Hydrostatic control pedal. When start on upward slope, select higher engine speed.

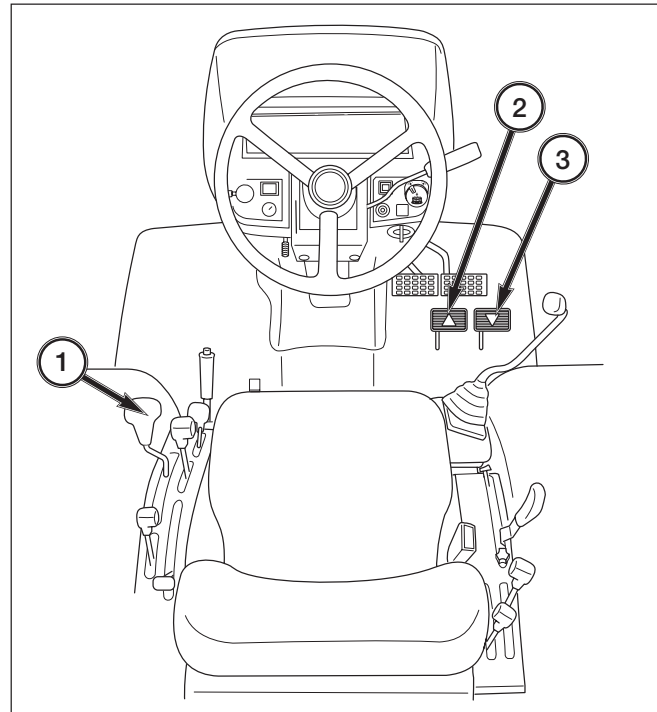


FIG. 5-54

CRUISE CONTROL LEVER

FIG. 5-55: The cruise control lever, 1, is located to the left of the operator's seat. Cruise control is designed for tractor operating efficiency and operator comfort. This devise will provide a constant forward operating speed by mechanically holding the speed control pedal at the selected position.

To set the cruise control, depress the forward hydrostatic control pedal, 2, until the desired speed is achieved. Then move the cruise control lever rearward, until resistance is felt, to hold this speed. Release the hydrostatic control pedal. The tractor will continue to move at the preset position.

To slow down, move the cruise control lever forward.

Release cruise control by depressing the brake pedal or by moving the cruise control lever to the forward position.



WARNING: Cruise control should only be used in open spaces, without obstacles, with unobstructed view or traveling on the road. Be thoroughly familiar with cruise control operation before using.

NOTE: Do not move cruise control lever without first moving the hydrostatic control pedal downward in the forward position, to prevent mechanical failures. Do not use cruise control lever in reverse direction.

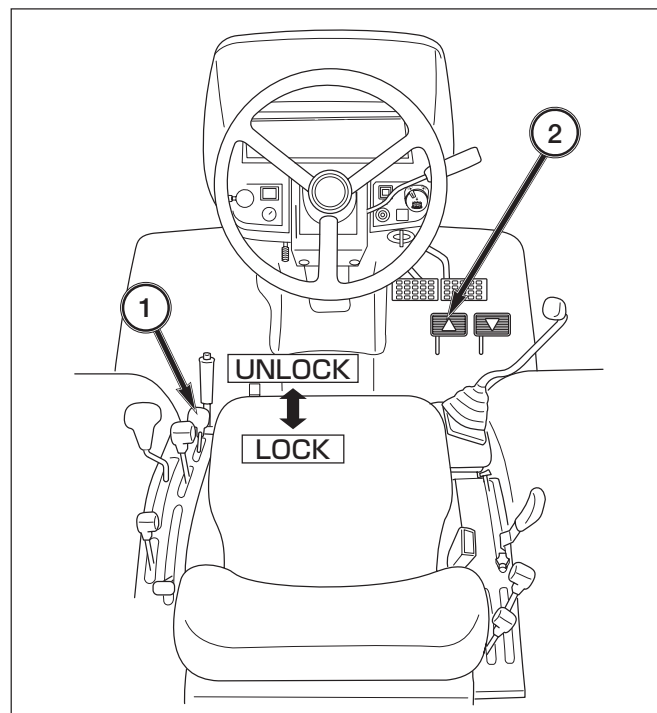


FIG. 5-55

TG5330,5390,5470

FIG. 5-56: Arrangement of gears with appropriate ground speeds, in order from slow to fast, are shown in the chart at right.

NOTE: Ground speed indicated at 2600 engine rpm with TG5390- 355/80D-20, TG5470-475/65D-20 turf-type rear tires.

Shift Positions	TG5390	TG5470
Range	km/h	
Engine Speed	2600rpm	
Forward		
	5.7	5.1
	12.9	11.4
	26.0	23.2
Reverse		
	4.5	4.1
	10.3	9.2
	20.8	18.6

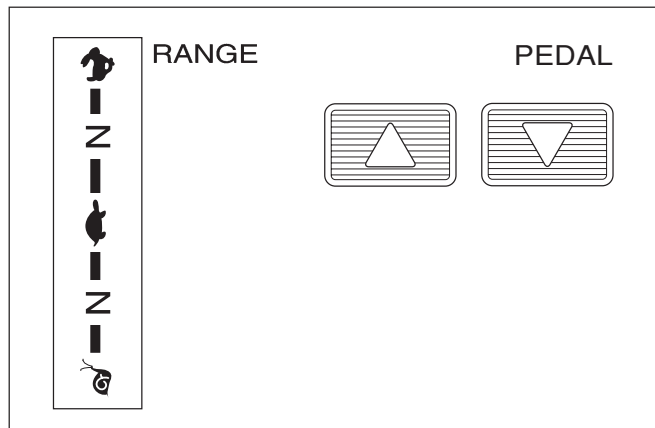


FIG. 5-56

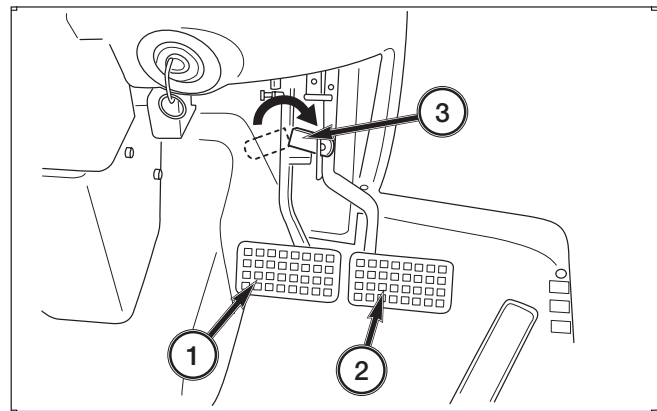
STOPPING TRACTOR

FIG. 5-57: Brake pedals, 1 and 2, may be used independently to operate respective brake and assist turning at low speed operation. Unlatch brake pedals and use as required to assist turning.

When Tractor is being used at higher rate of speed, brake pedals must be latched together with interlocking plate, 3, so both brakes will apply at the same time.



CAUTION: Do not use one wheel braking at high speed. Always latch brake pedals together when Tractor is being transported. Make sure brakes are adjusted evenly.

**FIG. 5-57a**

To stop the tractor with regular gear transmission, move the throttle lever, 4, forward, to reduce engine speed and slow travel. Depress the clutch pedal, 5, and brake pedal, 1 and 2, to stop. Position the range shift lever, 6, and shuttle shift, 7, in neutral position.

Be make sure to latch the brake pedals together, depress the brake pedals and pull parking brake lever, 8, up firmly. Allow engine speed to idle several minutes to allow even cooling. Then turn main switch to "off" shutting off engine. Lower three-point hitch and remove key from ignition.



CAUTION: Because gear shift is hdraulic system, gear position is not engagement in transmission system when stopping engine. So engine braking do not work when stopping engine. When stopping or parking Tractor , be make sure to apply the brake. Otherwise tractor may have a tendency to creep.

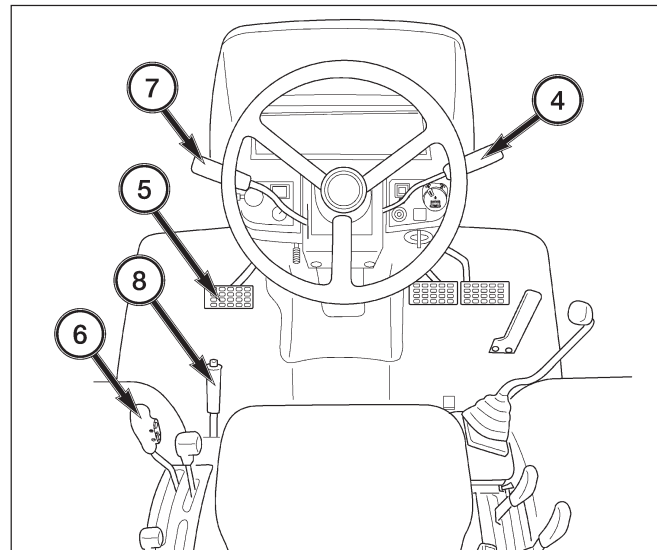
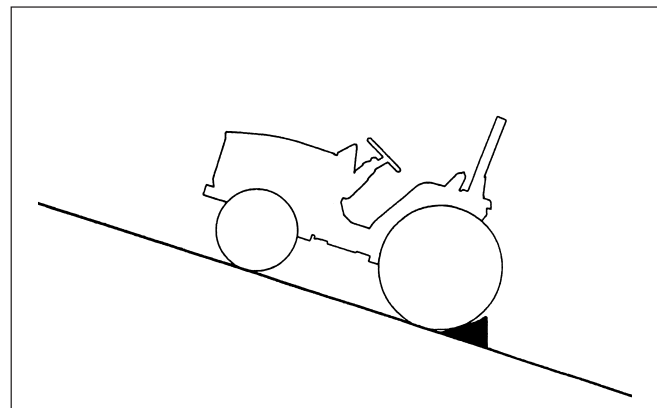
**FIG. 5-57b**

FIG. 5-58: Always park Tractor on level area whenever possible. If hillside parking is necessary, securely block both rear wheels as shown.

NOTE: When stopping or parking Tractor, be sure brakes are locked. With transmission of constant mesh design, Tractor may have a tendency to creep (particularly with cold oil).

**FIG. 5-58**

TG5330,5390,5470

DIFFERENTIAL LOCK

FIG. 5-59: Differential lock pedal, 1, should only be depressed when required as steering ability is greatly reduced.

To engage differential lock, depress clutch pedal and allow all rear wheel movement to stop. Depress lock pedal and slowly engage the clutch.

To disengage differential lock, depress clutch pedal and release differential lock pedal. Lock pedal should normally return to the off position.

NOTE: On occasion, differential lock pedal may remain engaged due to torque difference exerted by rear wheels. In this case, tap brake pedals alternately while Tractor is slowly in motion to release the pedal.



CAUTION: DO NOT use differential lock on hard surfaces or when transporting unit. DO NOT engage with rear wheel(s) spinning as severe damage may result.

Power shift type

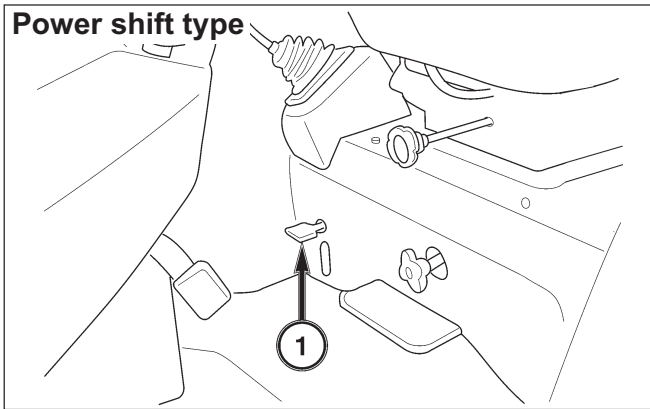


FIG. 5-59a

HST type

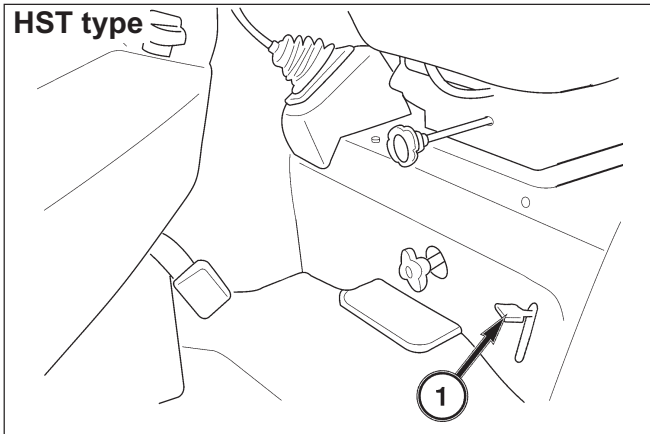


FIG. 5-59b

FOUR-WHEEL DRIVE

FIG. 5-60: Four-wheel drive models have a mechanically driven front axle. Engagement and disengagement of front drive axle is controlled by lever, 1, on left side of Tractor.

IMPORTANT: Prior to engaging or disengaging 4WD, clutch pedal must be depressed and Tractor stopped.

FIG. 5-61: When front axle is engaged, ground speed of front tires will vary from ground speed of rear tires. This is to assist steering when four-wheel drive is selected.

For this reason, front axle must be disengaged when Tractor is transported or operated on a hard, dry surface. Failure to do so will result in rapid wear of front drive tires and possible driveline damage.

IMPORTANT: Always disengage front drive axle when operating in conditions with minimal wheel slippage (DRY OR HARD SURFACES).

If tire replacement is necessary, identical replacements must be installed to maintain correct front/rear axle ratio.

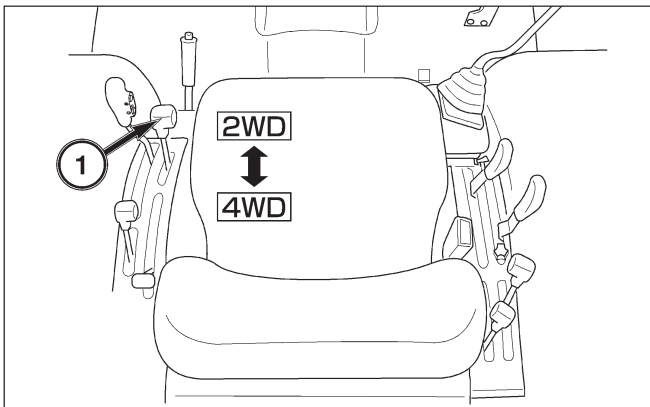


FIG. 5-60

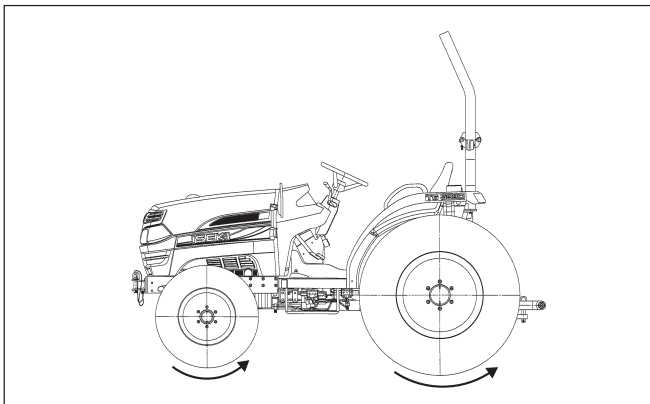


FIG. 5-61

POWER TAKE-OFF (PTO)

WARNING: PTO shafts and PTO driven implements can be extremely dangerous. Observe the following important points:

DO NOT operate tractor without a PTO cap installed. The cap protects people from injury as well as the splines from damage.

Before attaching, adjusting or working on PTO driven implements, disengage the PTO, stop the engine and remove the key. **DO NOT** work under raised equipment.

Before engaging a PTO-driven implement, **ALWAYS** carefully raise and lower the implement using Position Control. Check clearances, PTO shaft sliding range and articulation.

Ensure that all PTO safety shields are in place at all times.

Ensure all PTO-driven implements are in good condition and conform to current standards.

NEVER step across any driveline.

DO NOT use the tractor drawbar or the implement drawbar as a step.

NEVER use the driveline as a step.

NEVER wear loose fitting clothes.

Keep at least your height away from a rotating driveline.

Rear PTO Shaft

FIG. 5-62: A six-spline (35 mm) PTO shaft, 1, is provided at rear of Tractor to provide power for mounted and other PTO driven equipment as required.

A protective cover is positioned over shaft splines when not in use.

Normal rear PTO shaft operating speed.

540 rpm @ 2430 engine rpm

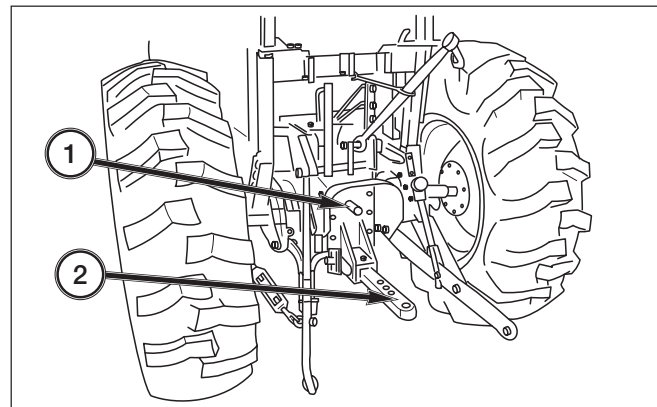
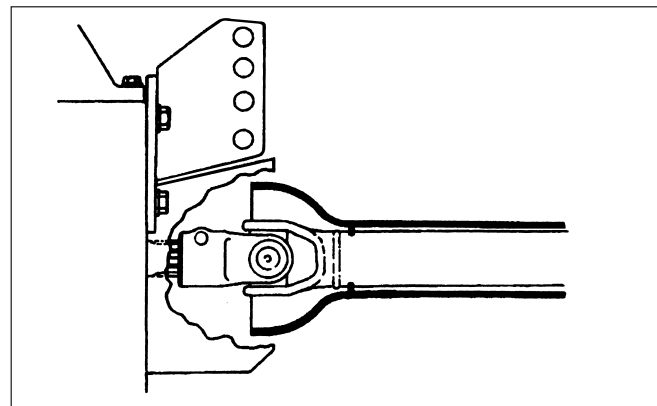
1000 rpm @ 2500 engine rpm

IMPORTANT: When rear PTO is used with three-point mounted equipment, it may be necessary to remove drawbar, 2, at rear of Tractor. Some types of mounted equipment, when lowered, may allow PTO shaft to contact drawbar.

FIG. 5-63: Implement driveshaft shown connected to tractor rear PTO shaft.



CAUTION: Make sure all PTO shields are installed on Tractor and equipment. Before cleaning or adjusting Tractor or PTO driven machine, **SHUT OFF ENGINE AND DIS-ENGAGE PTO.**

**FIG. 5-62****FIG. 5-63**

TG5330,5390,5470

Mid PTO Shaft (accessory)

FIG. 5-64: Mid PTO, 1, is a forward-facing shaft located at underside of Tractor. This accessory can be installed to operate certain mid or front-mounted implements.

TG5330/5390: ASAES431 25mm 15spline shaft is used.

TG5470: ASAES431 35mm 6spline shaft is used.

Normal mid PTO shaft operating speed:

1916 rpm @ engine 2600 rpm

Mid PTO cover must be installed when use of mid PTO is not required.

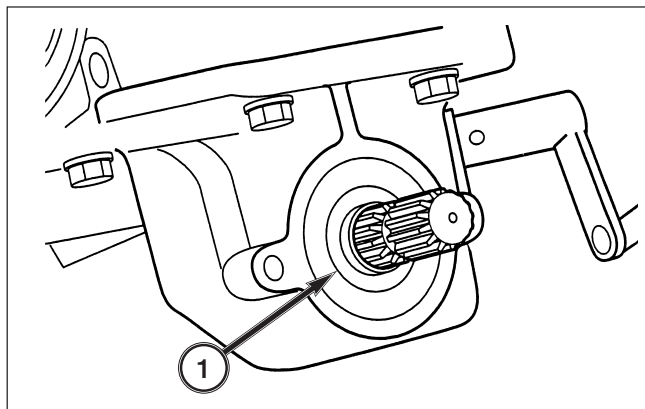


FIG. 5-64



CAUTION: Make sure all PTO shields are installed on tractor and equipment. Before cleaning or adjusting tractor or any PTO driven machine, SHUT OFF ENGINE AND DISENGAGE PTO.

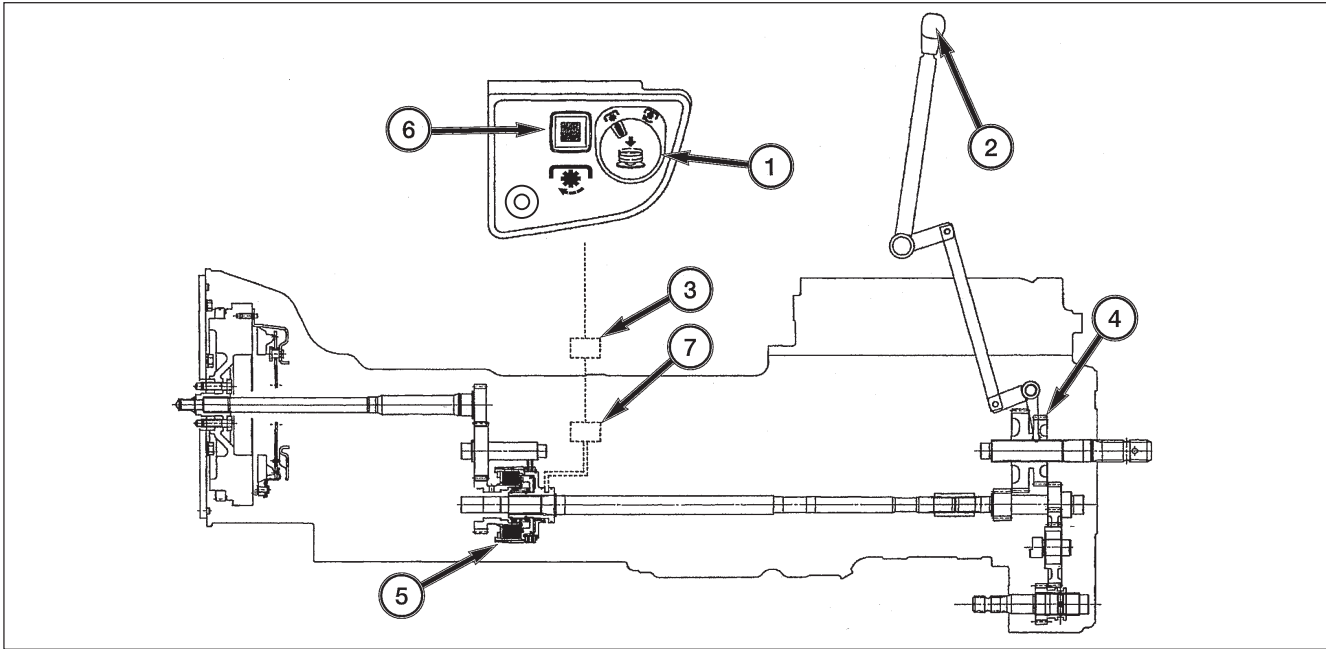
PTO Operating Control**FIG. 5-65**

FIG. 5-66 To select rear PTO - Make sure PTO control switch is OFF and then move rear PTO selector lever, 2, engage gear set, 4, inside rear housing.

To engage PTO - Turn PTO switch, clockwise and then pull up to actuate hydraulic clutch, 5, and complete the drive. The indicator light in the warning light strip will come on, showing PTO clutch is engaged.

To disengage PTO - Push PTO switch, 1, to release hydraulic clutch, 5.

When further use of rear PTO is not required, depress clutch pedal and return rear PTO selector lever, 2, to neutral.

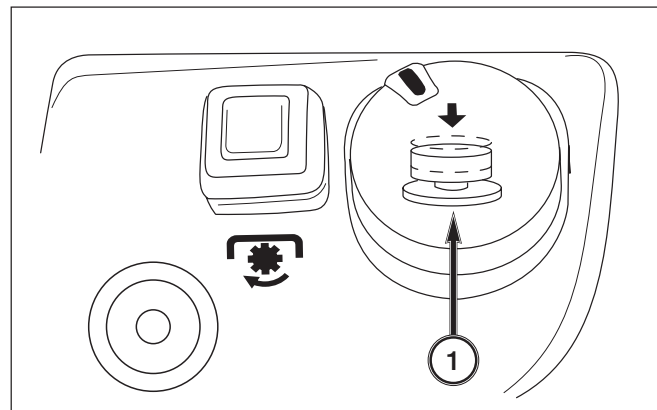
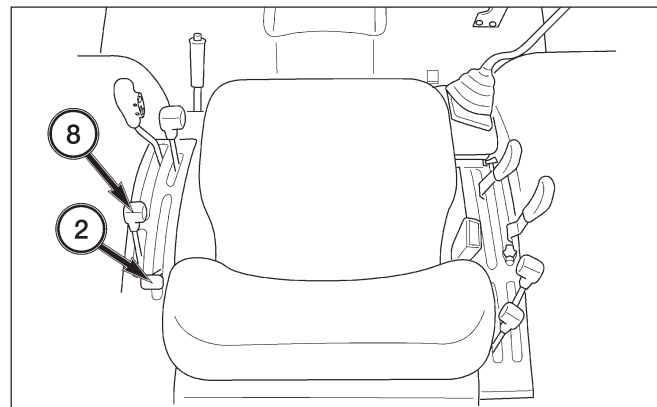
**FIG. 5-66**

FIG. 5-67 To select mid PTO - Make sure PTO control switch is off and then move PTO selector lever, 8, backward to mid PTO position to engage gear set in mid PTO.

NOTE: PTO can be engaged/disengaged by control switch, 1, independently of main clutch. Reduce engine rpm prior to engaging (switching on) and disengaging (switching off) PTO. Always move PTO control switch to OFF before shifting rear or mid PTO selector levers. Rear and mid PTO can be operated separately or together.

**FIG. 5-67**

TG5330,5390,5470

PTO Operating Controls

The pressure control valve, 7, operates when the PTO clutch, 5, begins to operate, enabling efficient engaging of the PTO with a minimum of shock. Setting the mode change switch, 6, facilitates optimum engagement of the PTO.

Push PTO selectable switch, 6, to engage rear and mid PTO more smoothly and slowly.

Push PTO selectable switch, 6, again, to return to normal mode.

NOTE: Lower the engine speed when turning On PTO control switch if there is considerable shock.

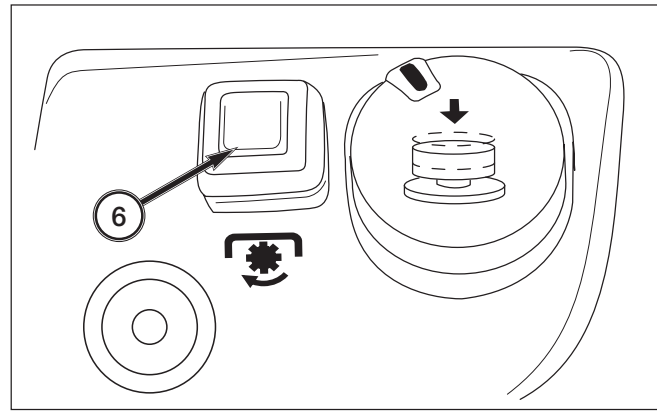


FIG. 5-68

Selectable mode						
Switch	Switch lamp	Required torque	Initial pressure rise at engage	speed of pressure rise	Shock&noise at engage	Attachment
OFF	OFF	Big	High	Short	Normal	Rotary, Cultivator
ON	ON	Small	Low	Long	Smaller	Mower, Hayer

FIG. 5-69

THREE-POINT HITCH

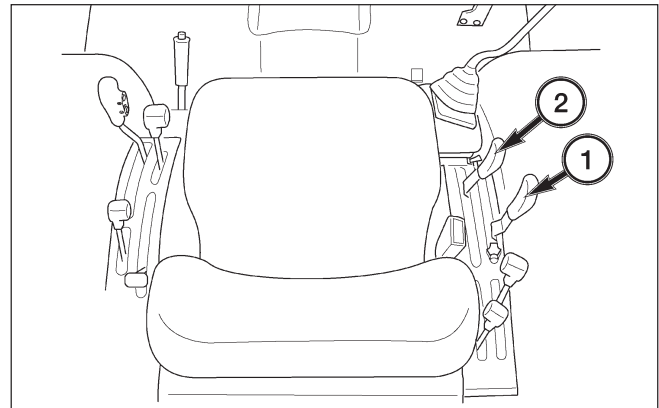
Three-point hitch combines Tractor and implement into one working unit. Implement position and raising are controlled hydraulically. In addition, implement weight and loads impose downward pressure at Tractor rear wheels to increase traction.

Hitch Controls

FIG. 5-70: Control quadrant, to right of operator's seat, controls the system to provide the following hitch control functions:

Position Control - Maintains hitch position at constant height in relation to the Tractor. As position control lever, 1, is moved rearward, hitch (and implement) are raised. Moving lever forward will lower hitch to selected position. Each lever setting provides a specific hitch (and implement) position.

Draft Control - Regulates hitch height to provide constant draft, or pull, of ground engaging implements (plows, subsoilers, etc.). Moving draft control lever, 2, forward will provide deeper implements working depth. Moving lever rearward will provide a shallower depth. As ground contours and / or soil conditions change, the system will raise or lower implements as needed to keep even load in Tractor.

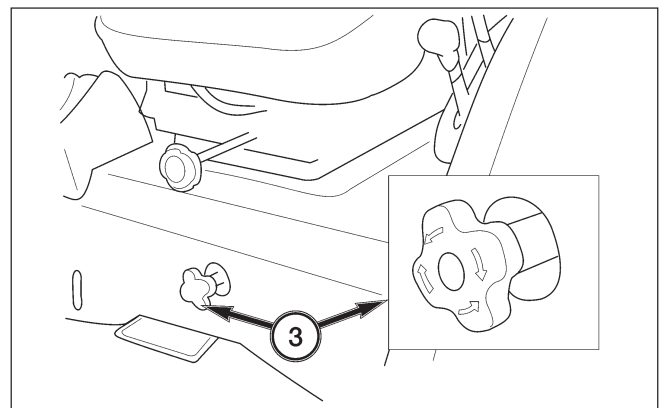
**FIG. 5-70**

CAUTION: Use position control lever, 1, when attaching or detaching implements. Place draft control lever, 2, fully forward when using position control.

FIG. 5-71: Lowering Rate Control - Knob, 3, controls discharge rate of hydraulic oil to adjust lowering speed of hitch and implement. Turn knob clockwise to slow drop rate, counterclockwise to increase drop rate. Turning knob fully clockwise will lock implement in raised position.



CAUTION: When working on or around mounted implements, always lower to ground prior to work. If implement must be raised, always block implement and lower links securely.

**FIG. 5-71**

TG5330,5390,5470

Rear Linkage

FIG. 5-72: Linkage consists of several major components for implement attachment and operation:

Lower Links, 1 - Primary attaching points to lower implement pins.

Lift Rods, 2 - Connect lower links to hydraulic lift arms for raising/lowering of lower links. The lift rod connected to the right lower link has provisions for leveling the implement (side to side).

Check Chain, 3 - Reduce side sway of implement.

Top Link, 4 - Adjustable, turn-buckle type to level implement (front to rear). Top link also provides draft load sensing for draft control.

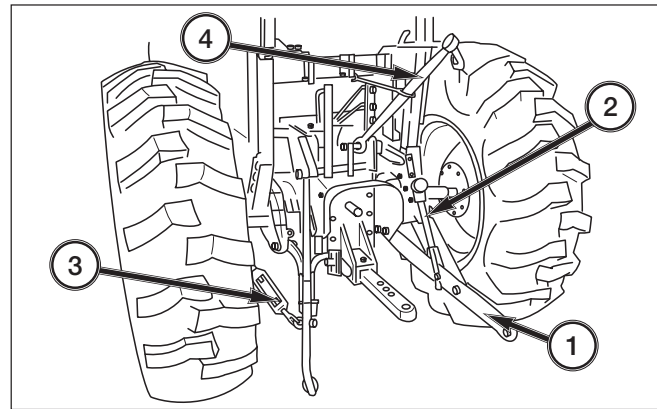


FIG. 5-72

FIG. 5-73: To match varying implements, rear linkage is standardized according to spacing, pin size, etc. This enables usage of alternate implements with minimal adjustments as long as matching size or Category is used.

This Tractor is equipped for Category I implements with following attaching point dimensions:

Ref.	Description	Dimension (Size)
A	Lower Link Width	26.8 (681mm)
B	Lower Link Pin Diameter	0.88 (22mm)
C	Top Link Height	18 (457mm)
D	Top Link Pin Diameter	0.75 (19mm)

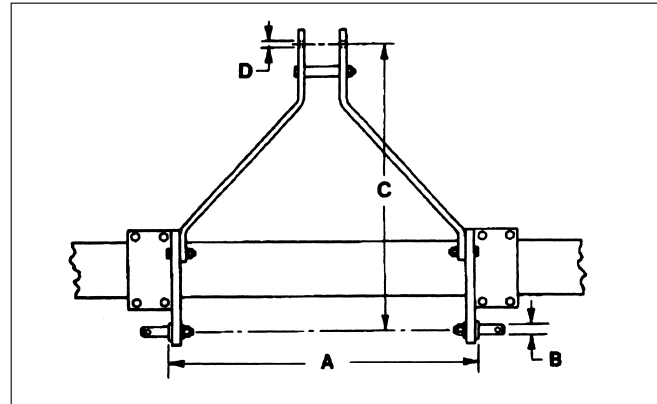


FIG. 5-73

FIG. 5-74: Linkage provides three positions of connecting top link, 1, to Tractor.

For most implements, securing top link, 1, B, is satisfactory, but position may be varied to provide increased implement height during transport.

- Select hole, A, when installing a heavy implement.
- Select hole C or D for an implement that is used high off the ground.

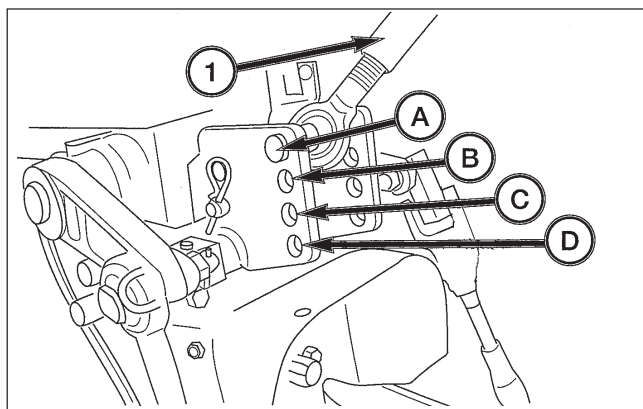


FIG. 5-74

FIG. 5-75: Lift rods, 1, and lower links, 2, also have multiple positions. Normally, lower hole, B, in each lift rod is attached to forward hole, X, in lower link.



CAUTION: Secure all pins after adjustment is made. Always use pins supplied with Tractor.

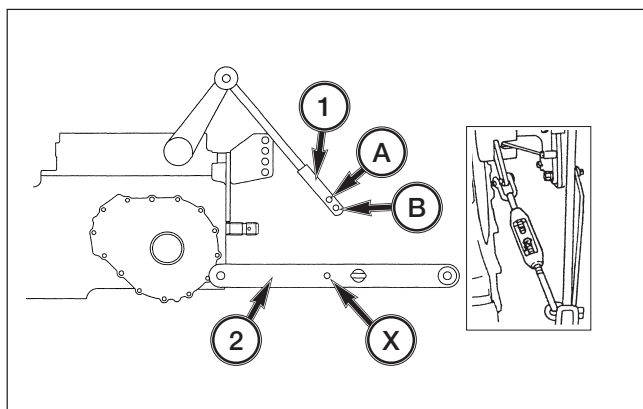


FIG. 5-75

TG5330,5390,5470

Attaching Implements



CAUTION: Always use **POSITION CONTROL** to attach/detach implements to provide precise control of hitch.

FIG. 5-76: Back Tractor to implement, centering Tractor with implement hitch frame.

Raise or lower hitch using position control lever, 1, and align left lower link end with corresponding implement attaching pin.

Lock the brakes, shut off engine and remove key.

FIG. 5-77: Slide ball end of left lower link, 1, over implement pin and secure with lynch pin.

Adjust height of right lower link using leveling crank, 2. Attach and secure right lower link, 3, to implement with lynch pin.

Attach top link, 4, to top of implement hitch frame using pin supplied with Tractor. Rotate center barrel section of top link, to lengthen or shorten it, and level implement from front to rear.

After the implement is attached, it can be readjusted for level operation using turn buckle and top link. Secure all adjustments.

IMPORTANT: *With some mounted implements, it will be necessary to remove drawbar at rear of Tractor to permit implement to be raised and lowered without obstruction.*

FIG. 5-78: Certain implements require minimal side-play. Check chain 1, at each lower link should be evenly adjusted to reduce side-play to desirable level. Do not remove all side-play as lower link damage may result.

NOTE: *The amount of side-play (stabilizer looseness) is dependent upon implement and type of operation. Normally 2 (50mm) of total side movement is desired, 1 (25mm) to each side of Tractor center-line.*

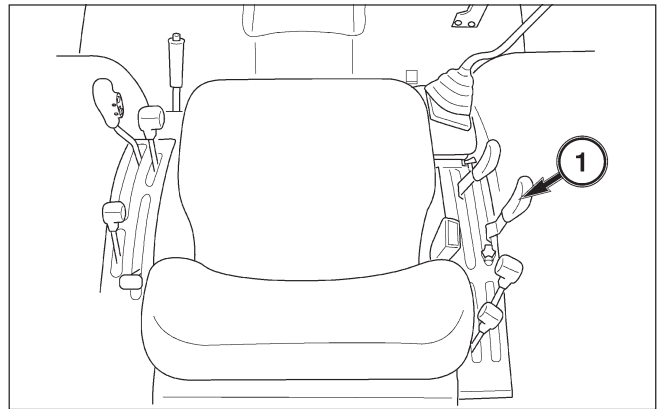


FIG. 5-76

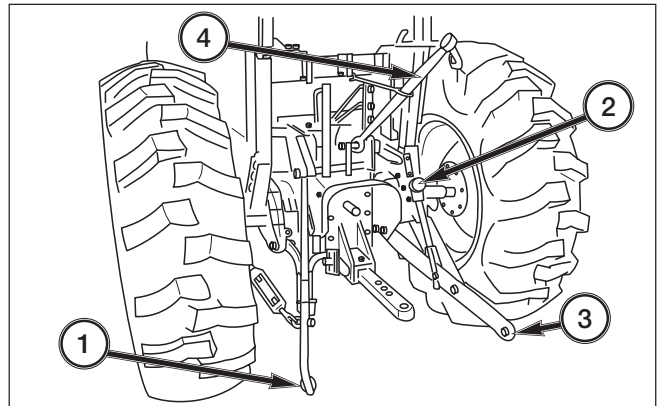


FIG. 5-77

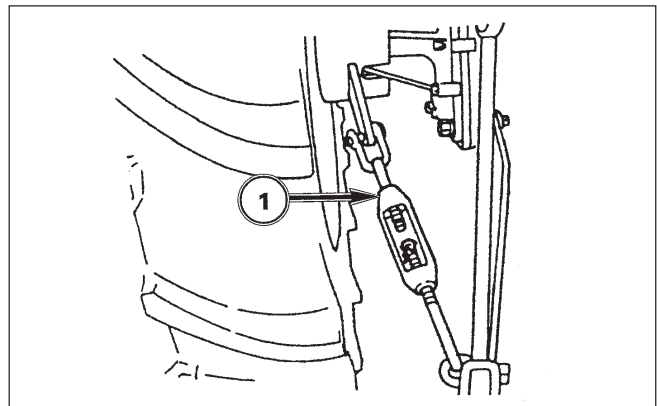


FIG. 5-78

Using Position Control

FIG. 5-79: Type of Work - Attaching/detaching implements and other operations requiring implement to be kept at constant height above ground. Also used with tool bars having flexible row units and implements equipped with gauge (support) wheels.

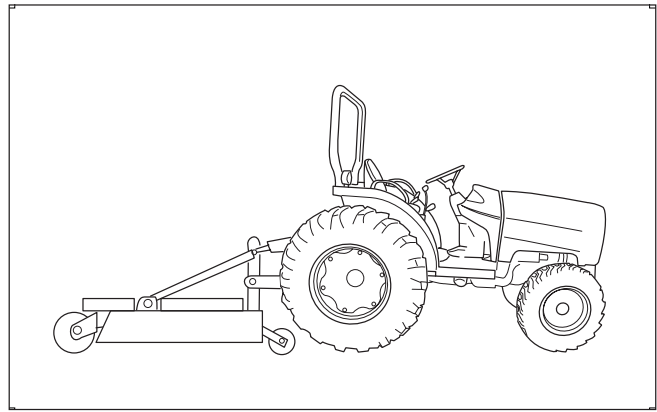
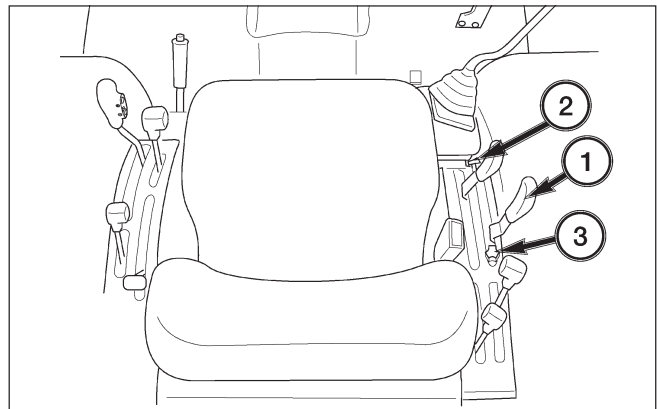
**FIG. 5-79**

FIG. 5-80: Lever Positions - Use position control lever, 1, to adjust hitch and implement position.

NOTE: Front lever stop, 2, can be set to contact position control lever in implement work position. This enables implement to be returned to identical position after hitch has been raised for turning, transporting, etc. Rear lever stop, 3, can be set to limit raising height, if required.

**FIG. 5-80**

To Begin Work - Align Tractor and implement in field and move position control lever, 1, forward (toward DOWN). Adjust implement height using position control lever and set adjustable stops, 2 and 3, as desired. When Turning - Move position lever, 1, rearward (toward UP) to raise implement. Finish turning and return lever against stop to resume operation.

To Finish Work and Transport - Move position control lever, 1, fully rearward in quadrant.

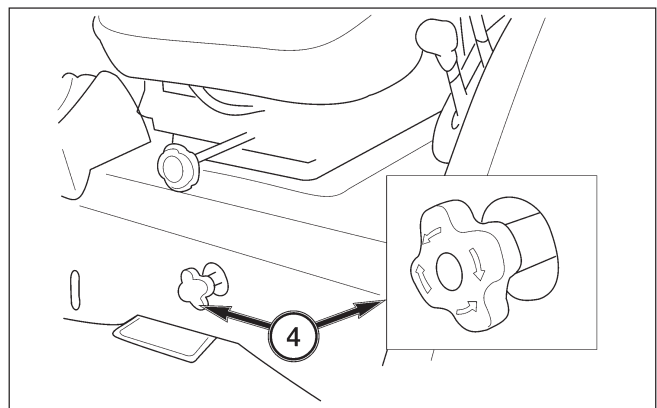
FIG. 5-81: Lowering speed can be readjusted as necessary using lowering rate control knob, 4.



CAUTION: When using mounted implements with PTO driveline, make sure:
PTO drive shaft has minimum 51 mm (2 engagement of telescoping sections, at all hitch/implement positions.

Hitch height during raising does not bind drive shaft universal joints due to extreme drive shaft angles. Limiting raising height may be required.

PTO drive is disengaged during transport.

**FIG. 5-81**

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Using Draft Control (accessory)

FIG. 5-82: Type of Work - When ground-engine implements such as plows, subsoilers, cultivators, etc. are used.

NOTE: Refer to Rear Linkage for locking pin details.



CAUTION: Do not use draft control when precise hitch positioning is required (attaching/detaching implements for example). Using draft control on non be attempted.

FIG. 5-83: Lever Positions - Use position control lever, 1, to raise and lower implement and use draft control lever, 2, to adjust implement working depth and system sensitivity in soil.

Position control lever, 1, can also be used to prevent excessive lowering of hitch when low draft areas (sandy soil) are encountered.

NOTE: Adjust lever stops, 3 and 4, can be set to contact position control lever in implement work or raised position. This enables implement to be returned to identical setting after hitch has been raised for turning at field ends.

To Begin Work - Align Tractor and implement in field and move position control lever, 1, forward (to DOWN). while driving Tractor forward, lowering implement. Then adjust draft control lever, 2, until correct working depth is maintained.

When Turning - Move position control lever, 1, rearward to raise implement and permit completion of turn. Return implement to work position by selecting position control lever to previous position against stop.

To Finish Work and Transport - Pull position control lever rearward fully to up setting.

FIG. 5-84: Lowering speed can be readjust as necessary with lowering rate control knob, 5.

NOTE: Changes in soil texture or ground speed of unit may require slight readjustment of draft control lever to maintain consistent working depth as these can have a direct influence on implement draft load.

If erratic operation is encountered, turn lowering rate control knob, 5, clockwise to slow. Lowering top link attaching location on Tractor will also decrease sensitivity.

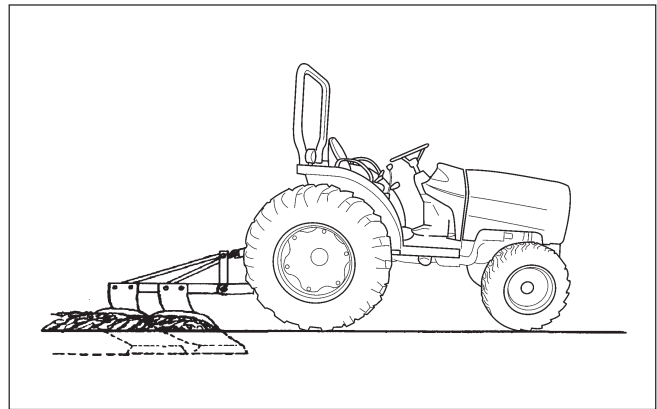


FIG. 5-82

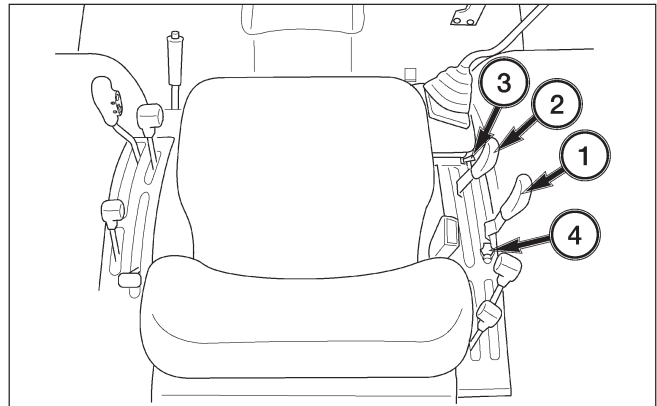


FIG. 5-83

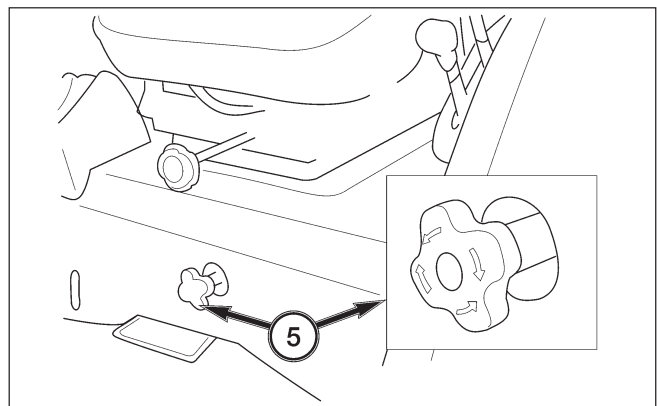


FIG. 5-84

Detaching Implements



CAUTION: Always use **POSITION CONTROL** to attach/detach implements to provide precise control of hitch.

Select a level area to detach and store the implement. Lower implement to ground by moving position control lever to DOWN. If necessary, adjust leveling crank on right lift link to level implement on ground.

Shut off engine, securely lock brakes and remove key from Tractor.

Disconnect implement PTO drive shaft (as applicable). Detach top link from implement and place in storage position on Tractor by engaging spring on top link in slot in rear center panel.

NOTE: Lengthening or shortening of top link may be required to permit disconnection from implement.

TG5330,5390,5470**JOYSTICK OPERATION (ACCESSORY)**

FIGS. 5-85 & 5-86: Single-lever control, 1, provides Joystick operation of auxiliary valve. Moving lever rearward and forward moves the A/B spool in control valve respectively raising and lowering loader (or other attachment). Pushing lever completely forward will retain lever in float position to allow attachment to follow ground contours.

Moving lever side-to-side moves the C/D valve spool and controls Loader bucket position. Pulling lever to left will curl bucket and pushing lever to right will dump the bucket. Pushing lever completely to right side will retain lever in regenerative position, allowing bucket to dump quickly. When used with a blade angling (left and right) can be controlled.

All positions (except float) will return to neutral position when lever is released. When in Float, the A/B valve spool is held by detents and the lever will have to be pulled rearward to disengage the detents.

NOTE: Inability to select float or any other valve functions may indicate the need for control rod adjustment at base of control lever.

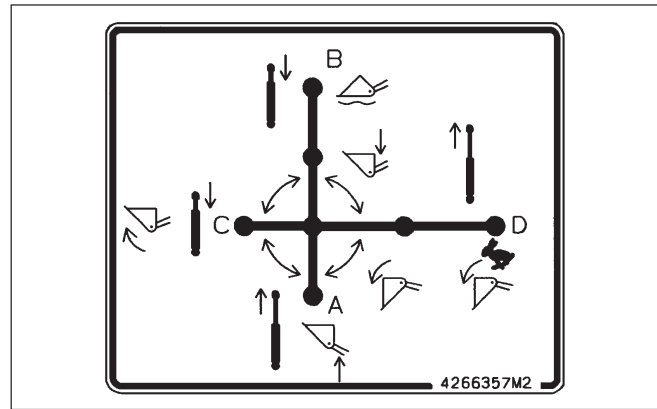
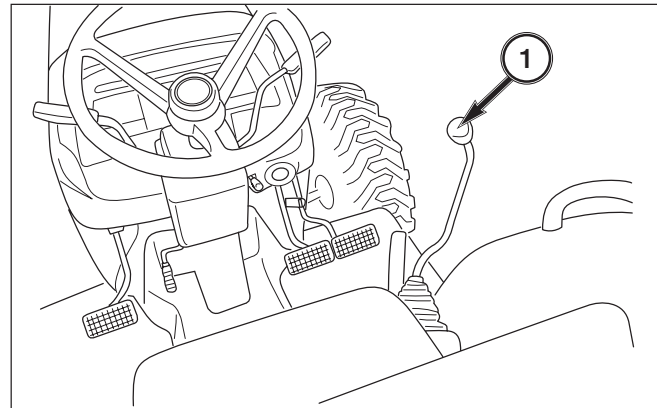
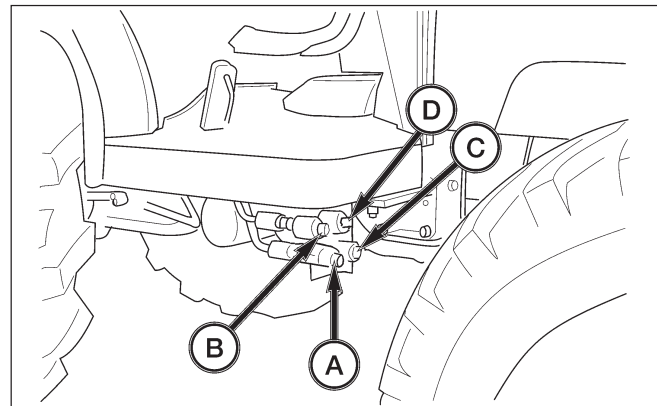
**FIG. 5-85****FIG. 5-86**

FIG. 5-87: Output ports are located under the right step.

1. The output ports are identified by letters, 1, A,B,C, D, from left to right as indicated on output ports.
2. The following chart provides correct output port location when using a loader.

Output port	Function
A	Loader Raise
B	Loader Lower and Loader Float
C	Bucket Curl
D	Bucket Dump and Dump quickly

**FIG. 5-87**

3. For other operations, except for loader work use the following.

Output port	Double acting	Single Acting
A	Extend	Extend/Retract
B	Retract	Not Used
C	Extend	Not Used
D	Retract	Not Used

EXTERNAL AUXILIARY HYDRAULICS (accessory)

Auxiliary hydraulics can be Dealer-installed to operate implements requiring external hydraulic source for operation. Kits are available as single-spool (one auxiliary circuit) or two-spool (two hydraulic circuits).

FIG. 5-88: Control lever, 1, controls implement raising/lowering when first set of remote couplers are used. Control lever, 2, controls implement when second set of remote couplers are used (two-spool kit only).

Control lever(s) are spring-loaded to center neutral position, from normal raise or lower positions.

FIG. 5-89: Remote couplers are located at rear of Tractor, above three-point hitch, or, under right step (depending on kit installed). Rear location shown.

Coupler set, 1, corresponds with control lever, 1, coupler set, 2, with control lever, 2.

Implement hoses must be connected to each coupler set so when respective control lever is pulled rearward, implement raises and, when pushed forward, implement lowers. Male coupler tips (on implement hoses) must be compatible with Tractor couplers and must also be inserted fully and locked into Tractor couplers to operate correctly.



CAUTION: Always lower implement to ground, shut off engine and relieve system pressure (by operating control levers with engine off) before connecting or disconnecting implement hoses.



CAUTION: Make sure all hydraulic hoses, couplers and cylinders are in good condition before use. Damaged equipment is dangerous.

FIG. 5-90: Most implements require double-acting hydraulics. Each implement cylinder will have two hoses connected to it.

When single-acting service is required (cylinder with only one hose), the inner A coupler will be used and selector function, 1, must be turned to the left.

NOTE: For normal double-acting operation selector function must be turned to the right.

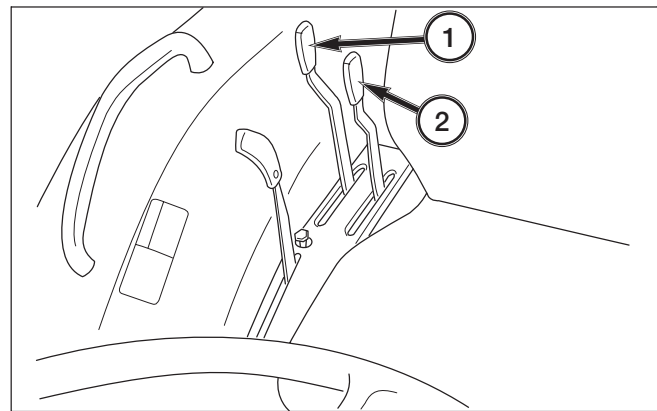


FIG. 5-88

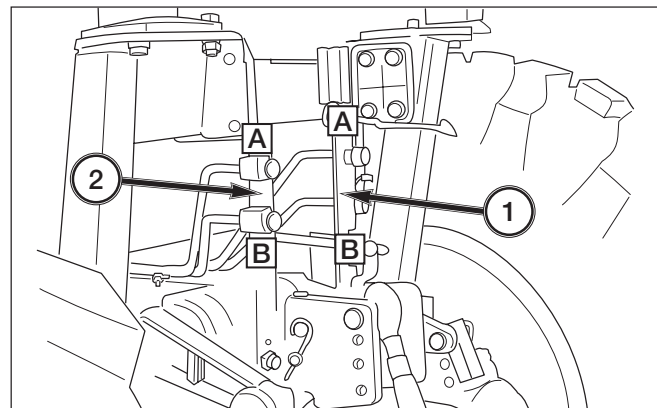


FIG. 5-89

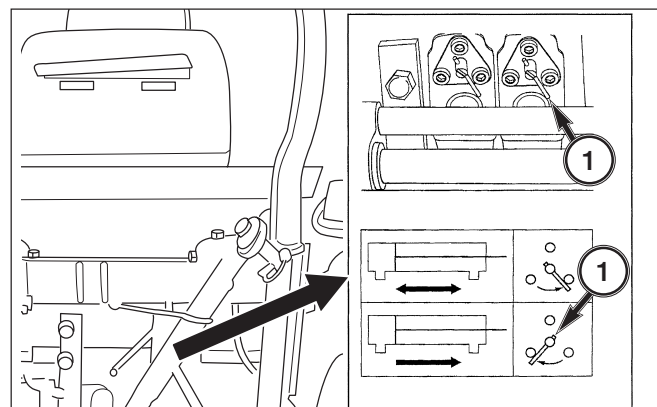


FIG. 5-90

TG5330,5390,5470

DRAWBAR

FIG. 5-91: Drawbar, 1, at rear of Tractor allows pull- type implements to be attached to Tractor. Maximum vertical load on drawbar must not exceed 880 lbs (400 kg).



CAUTION: Pulling heavy loads will require extended braking distances. Reduce travel speed.

Make sure attachment is properly secured and safety chain is used.

NOTE: When using three-point hitch, it may be necessary to remove drawbar by removing clips and pins, 2, and sliding drawbar from bracket to improve operating clearance. This is particularly true with mounted implements using PTO drive.

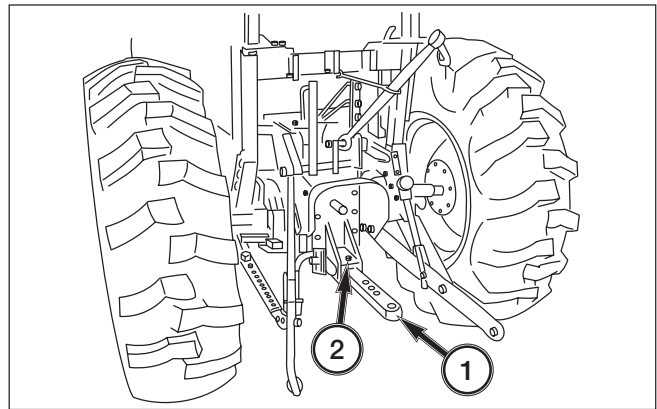


FIG. 5-91

ROLL OVER PROTECTIVE STRUCTURE (ROPS)

FIG. 5-92

: This tractor is equipped with a roll-over protective structure (ROPS). Seat belts must be worn.

When the tractor is not being operated, the ROPS can be folded down if it will hit the roof of the garage where it is parked.

When the locking pin, 1, is removed, the upper portion, 2, of the ROPS can be folded down to the rear.



WARNING: Do not operate the tractor with the ROPS folded down. This may result in serious injury if the tractor rolls over.

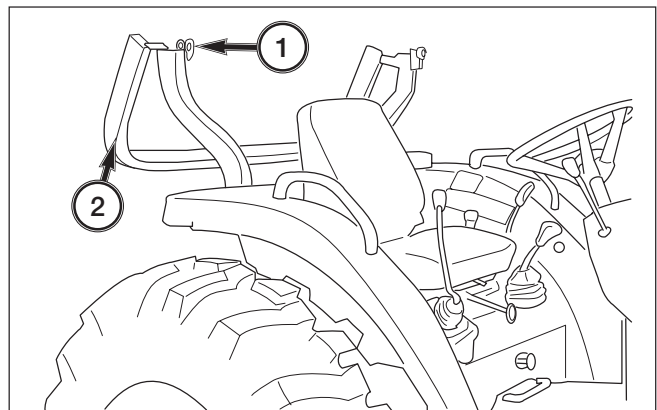


FIG. 5-92

INSTRUMENTS & CONTROLS & OPERATION - CABIN TYPE -

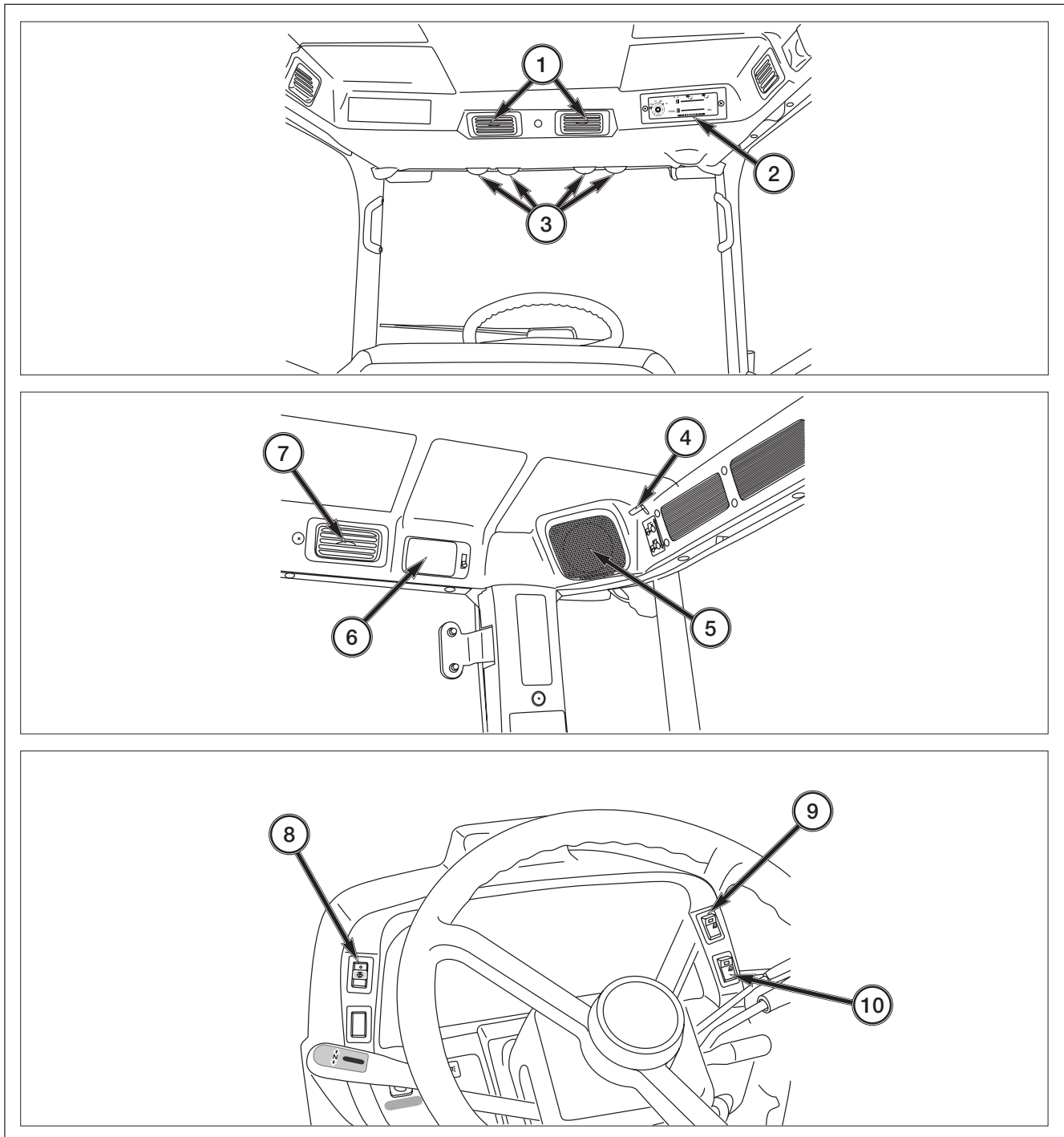


FIG. 5-93

FIG. 5-93: General layout and location on Cabin.

- | | |
|------------------------------------|---|
| 1. Upper fresh air vents | 6. Room lamp |
| 2. Air conditioner operation panel | 7. Side fresh air vents |
| 3. Front fresh air vents | 8. Front wiper/washer switch |
| 4. Ventilation control lever | 9. front working light switch |
| 5. Speaker | 10. Rear working light switch (accessory) |

TG5330,5390,5470

OPENING/CLOSING DOORS

FIG. 5-94: To open the door from outside, push the door lock button(1) and pull the handle(2).

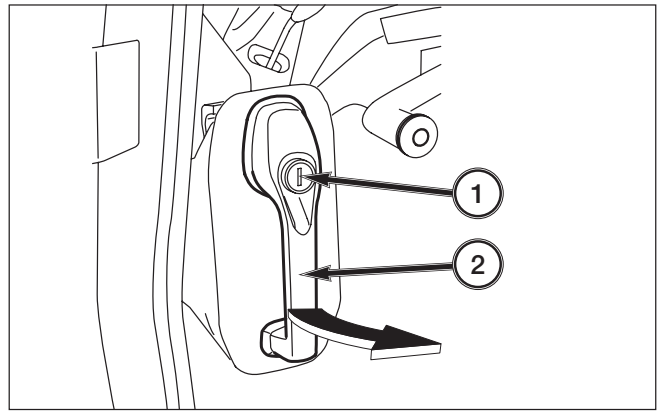


FIG. 5-94

FIG. 5-95: To open the door from inside the cabin, move the door lever(3) rearward and push door frame(4). To close the door, grasp the door handle(2) or door frame(4) and close slowly.

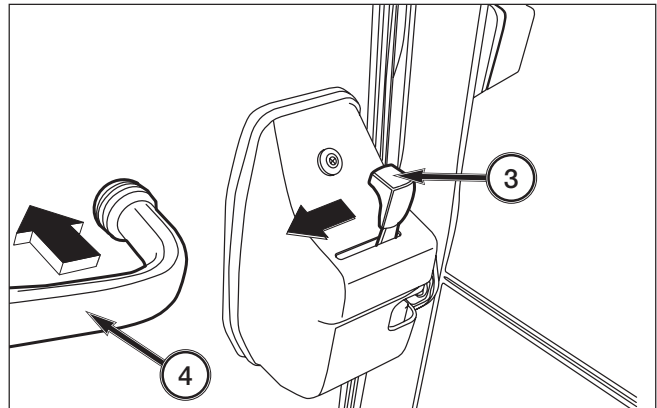


FIG. 5-95



CAUTION: When closing the door, be sure to keep hands and fingers out of the way.



CAUTION: Do not operate tractor with the door fully or partially open.

LOCK/UNLOCK DOORS

FIG. 5-96: To lock the door, insert the key into the key-hole in the door lock button and turn 90 degrees counter-clockwise(1).

Pull the key out in the horizontal position."

To unlock the door, insert the key and turn 90 degrees clockwise(2).

Pull the key out in the vertical position.

NOTE: It is not possible to lock or unlock the door with the key, lock or unlock from inside the cab.

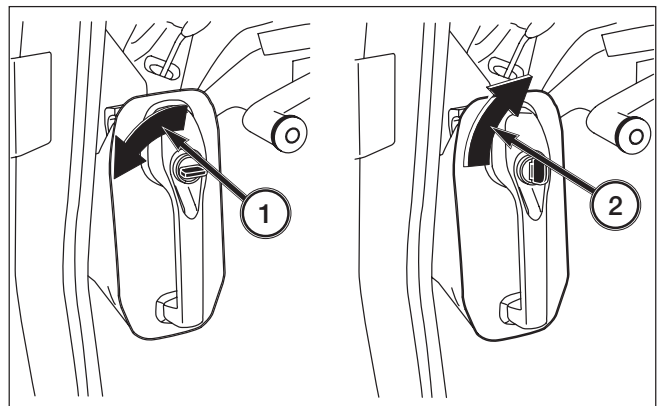


FIG. 5-96

FIG. 5-97: When getting on or off the tractor, use the handle(1) and footstep(2).



CAUTION: Do not put your weight on the door spring(3) when getting on or off the tractor.

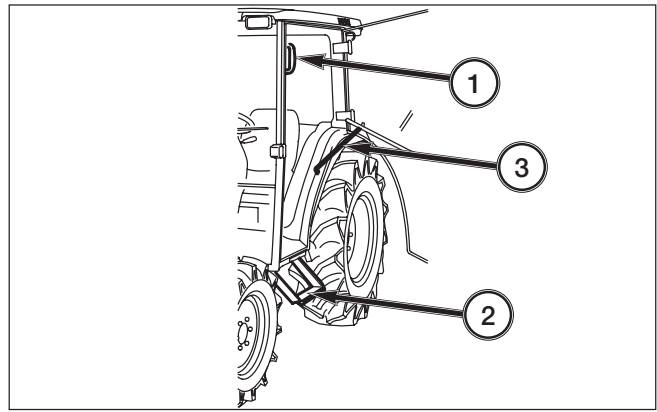


FIG. 5-97

REAR WINDOW

FIG. 5-98: Grasp the handle(1) and turn 90 degrees clockwise to unlock the window. To open, push the rear window out slightly. The window will open and is held in place by the damper.

IMPORTANT: Before opening the rear window, make sure of the situation at the rear of the tractor.

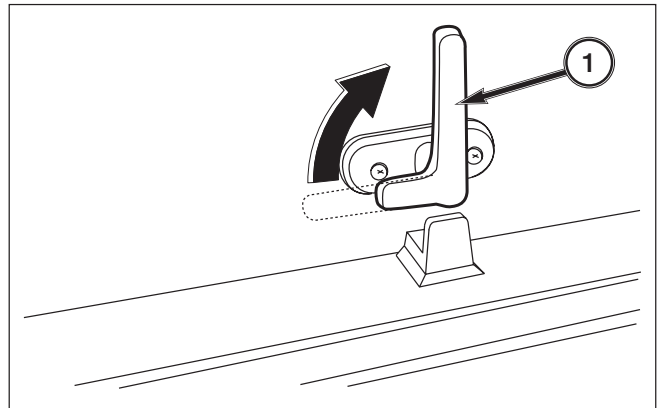


FIG. 5-98

FIG. 5-99: To close the rear window, pull toward you with the handle in the unlock position until the window can be locked securely. Then turn the handle 90 degrees counterclockwise(1) to lock the window.



CAUTION: When closing the rear window, be sure to keep hands and fingers out of the way.

IMPORTANT: Make sure the handle is in the unlock position when closing the rear window. Damage to the handle may result if the rear window is closed with the handle in the lock position.

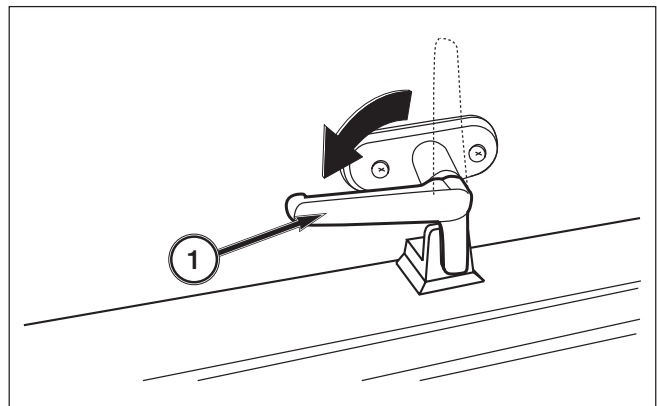


FIG. 5-99

TG5330,5390,5470

CORNER WINDOWS

The left and right corner windows can be opened and closed.

FIGS. 5-100,101: Pull the handle (1) to unlock the window (Position A). Push the handle away from you (Position B) to secure the window in the open position (Position B).

To close the window, grasp the handle and pull the window toward you (Position C). Rotate the handle to securely lock the window (Position D).



CAUTION: When opening and closing the corner windows, make sure to use the handle to prevent fingers from getting caught in window linkage.

IMPORTANT: When driving on the road, be sure to close and securely lock the corner windows. Failure to do so may result in damage to the windows.

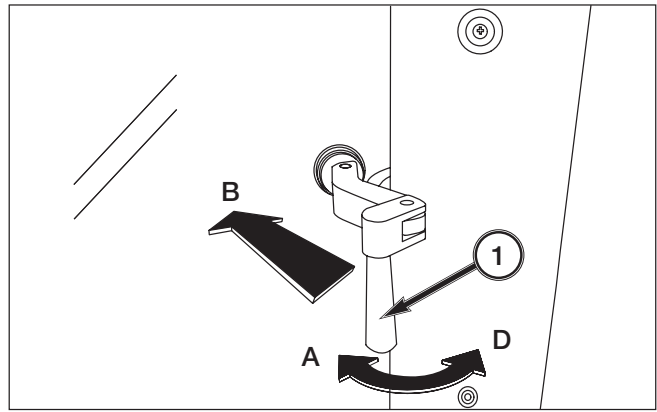


FIG. 5-100

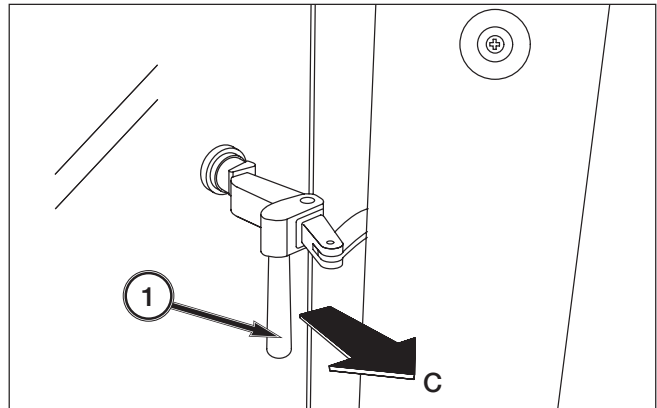


FIG. 5-101

ROOM LAMP

FIG. 5-102: The cab light(1) is located at the right rear. The switch(2) turns the light on and off.

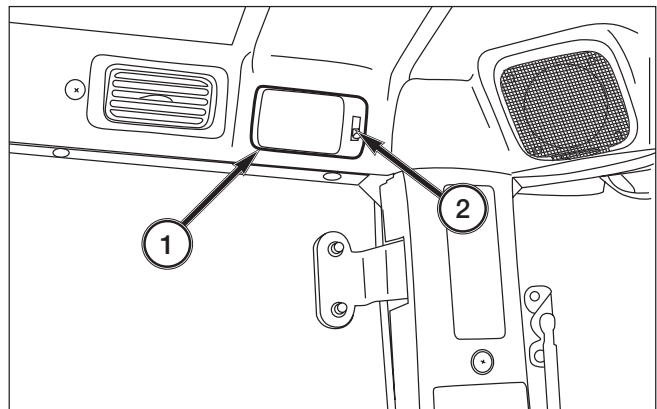


FIG. 5-102

WORK LIGHTS

The work lights will light up the working area in front and rear of the cab.

FIG. 5-103: To turn on the work light, press the upper part of the switch(1) to ON. The switch LED will be on.

Press the lower part of the switch to OFF to turn off the work light.

NOTE: When stopping the engine, be sure to turn off the work lights to prevent the battery from being run down.

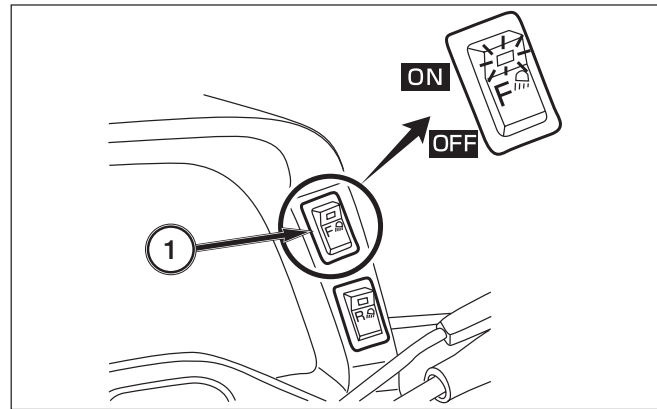


FIG. 5-103

FIGS. 5-104,105: Adjust the direction of the light beam as follows (rear working light:accessory):

- Loosen the mounting bolts and move the light up and down or right and left.
- Tighten the mounting bolts after adjustment.

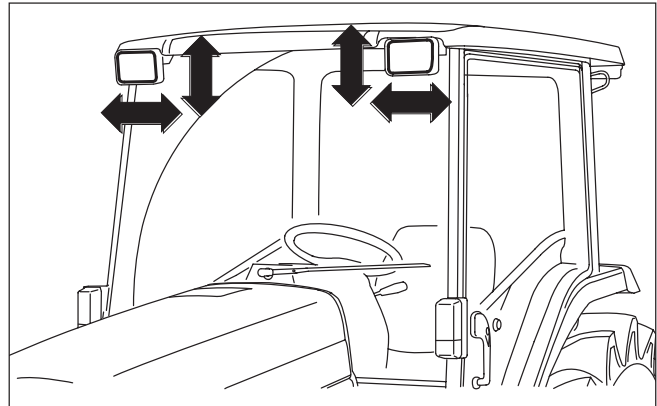


FIG. 5-104

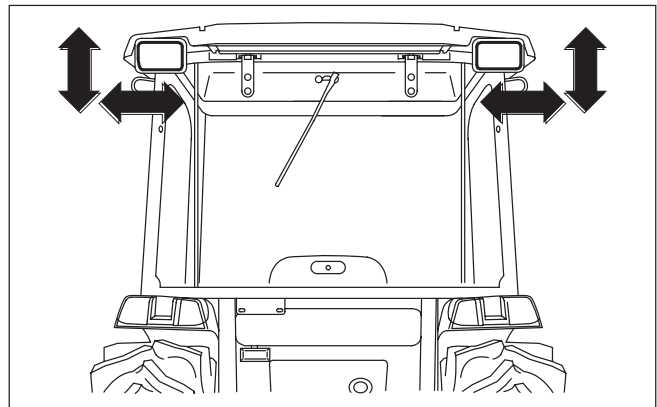


FIG. 5-105

TG5330,5390,5470

WIPER AND WASHER SWITCH

FIGS. 5-106,107: To operate the window wiper/washer switch(1), press the upper part of the switch to start the wiper blade. Press harder to release the washer fluid while the wiper blade is moving back and forth.

Press the lower part of the switch to stop the wiper blade. Press the lower part of the switch harder to release the washer fluid only.

IMPORTANT: Do not use the wiper for an extended time with the engine shut off.

IMPORTANT: If the wiper blade is frozen, remove ice before using.

- (2) Washer nozzle
- (3) Wiper

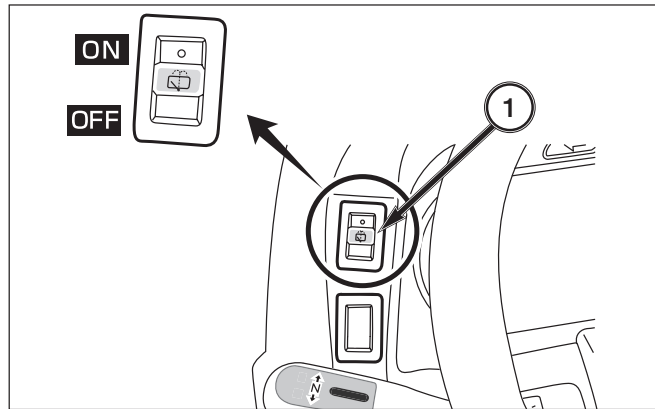


FIG. 5-106

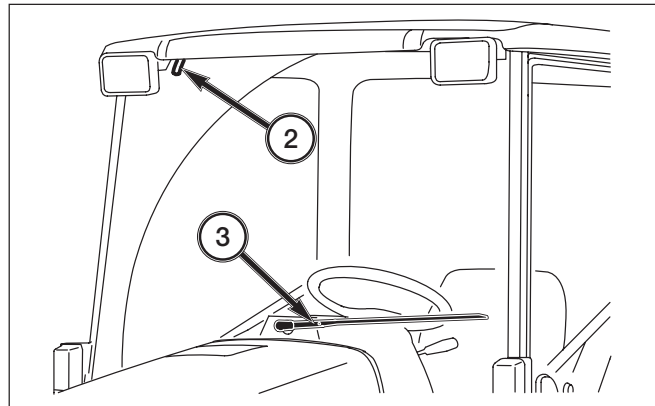


FIG. 5-107

WASHER RESERVOIR

FIG. 5-108: The washer reservoir port is located under the floor mat on the left-hand side. Use automobile washer fluid to replenish the washer fluid level.

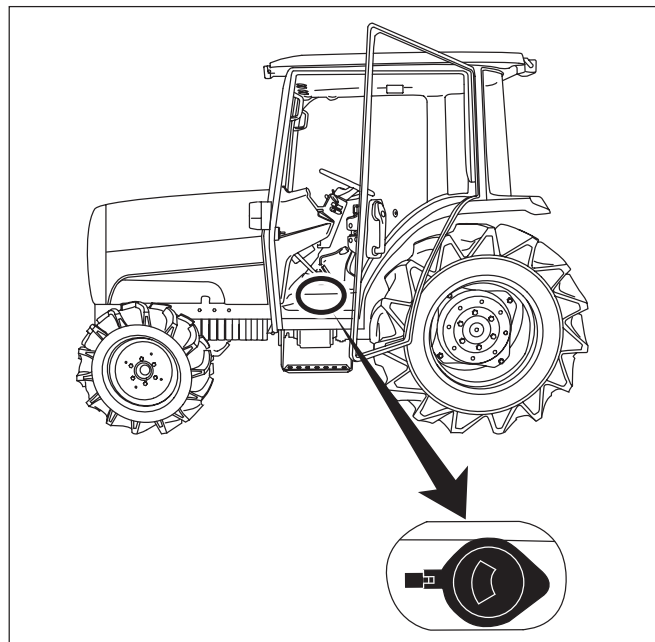


FIG. 5-108

HEATER OPERATION (TG5330/5390)

FIG.5-109&110: To turn on the heater, change the fan speed control switch.

- (1) Fan speed control switch.
- (2) Fresh air vents switch lever.
- (3) Temperature adjustment lever.
- (4) Switch set to OFF-heater is not operating.
- (5) Switch set to ON-heater is operating.

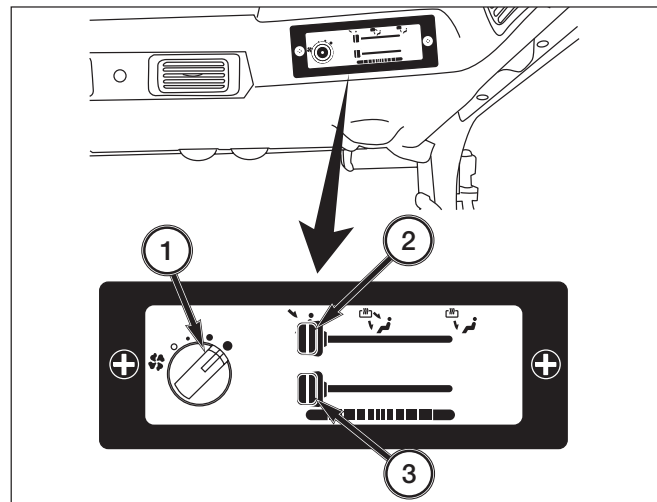


FIG. 5-109

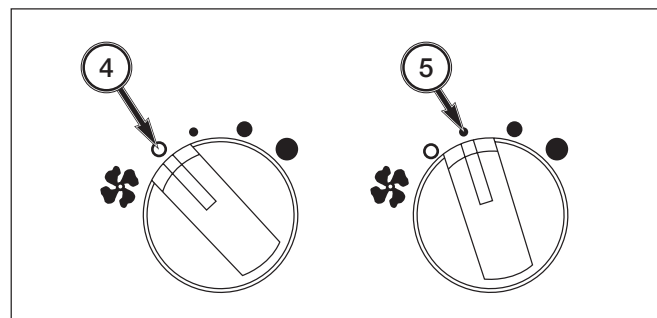


FIG. 5-110

FIG.5-111: The fan speed can be adjusted to three levels by changing the fan speed control switch position to (1),(2) and (3).

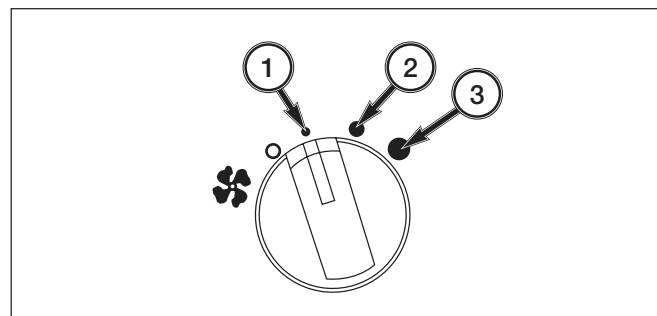


FIG. 5-111

FRESH AIR VENT LEVER(TG5330/5390)

Use the fresh air vent lever to adjust which vents to use:

FIG.5-112: Air blows from both the upper and side air vents.

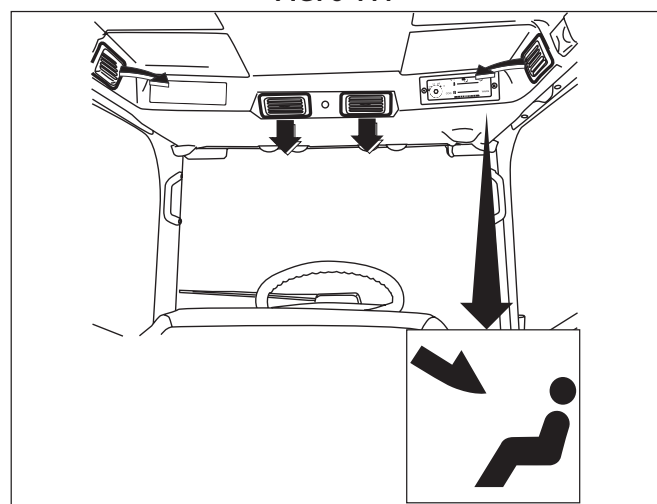


FIG. 5-112

TG5330,5390,5470

FIG.5-113: Air blows from the front air vents as well as the upper and side air vents. With an increased number of air vents used, the air volume from each vent decreases. This is a setting suitable for driving.

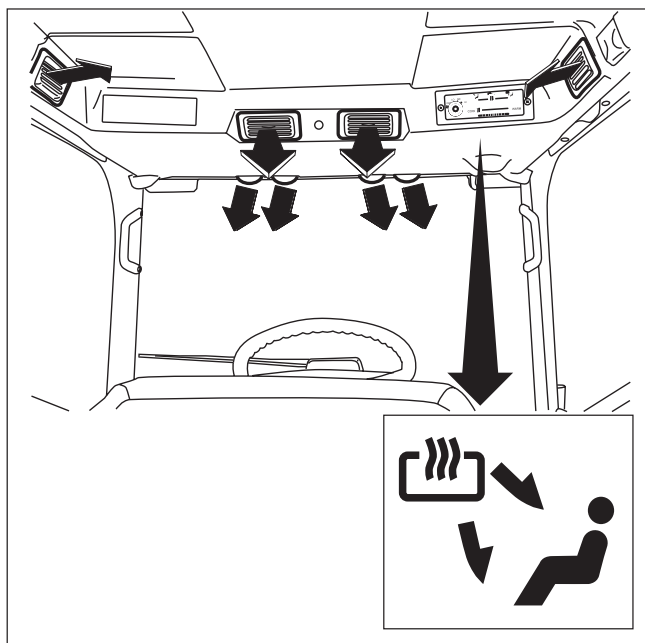


FIG. 5-113

FIG.5-114: Air blows from the front air vents. Use this setting to defrost the front window.

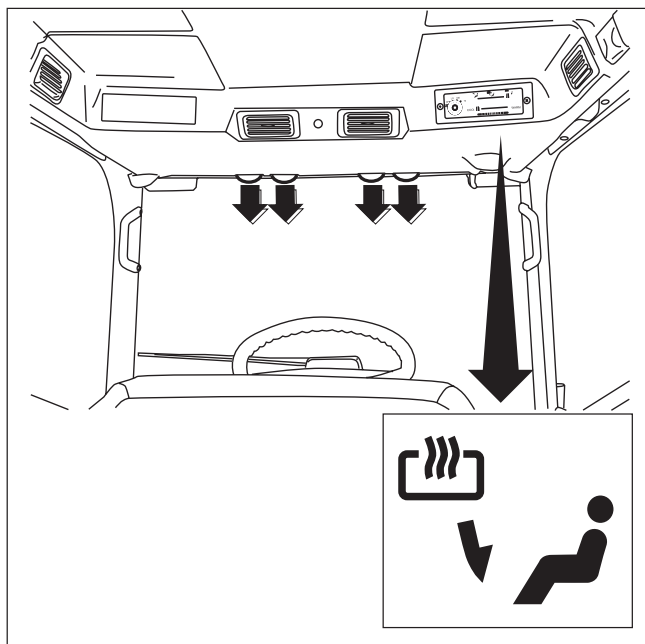


FIG. 5-114

TEMPERATURE ADJUSTMENT LEVER (TG5330/5390)

FIG.5-115: Heat the air temperature by moving the temperature adjustment lever(1).

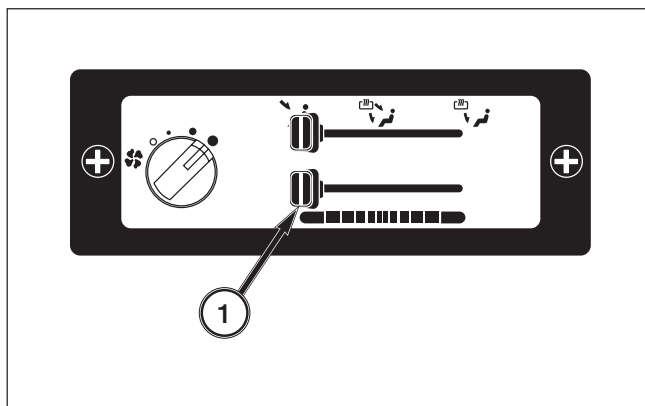


FIG. 5-115

VENTILATION CONTROL LEVER

FIG. 5-116: The ventilation control lever (1) is used to switch between outside air and recirculated air.



(outside air) - Blows air while drawing outside air. This setting is used for normal operation or when the windows are foggy.



(recirculated air) - Blows air while recirculating air without drawing outside air. This setting is useful to make the air conditioning more efficient.

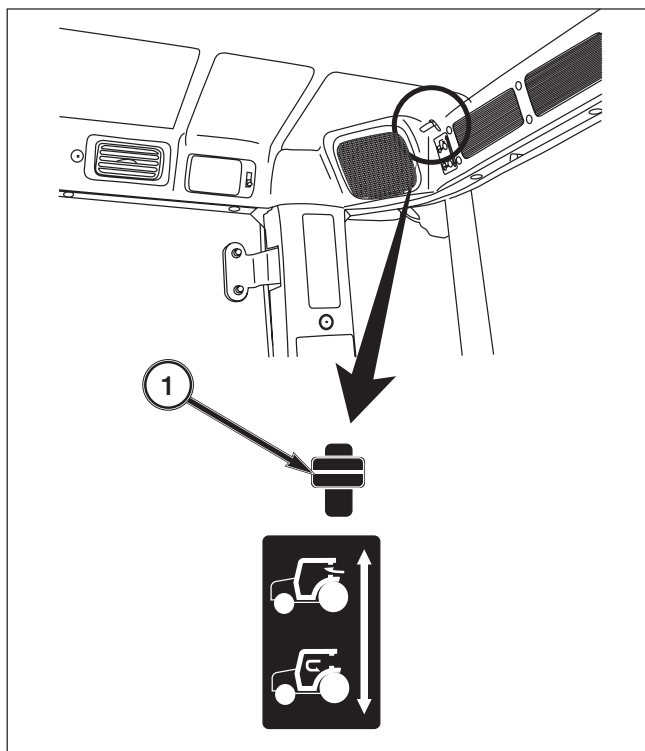


FIG. 5-116

AIR VENTS

Air vents are found in the upper, side, and front areas of the cab.

FIG. 5-117: Upper air vents - Two vents blow cool or warm air directly toward the operator. Each vent moves independently.

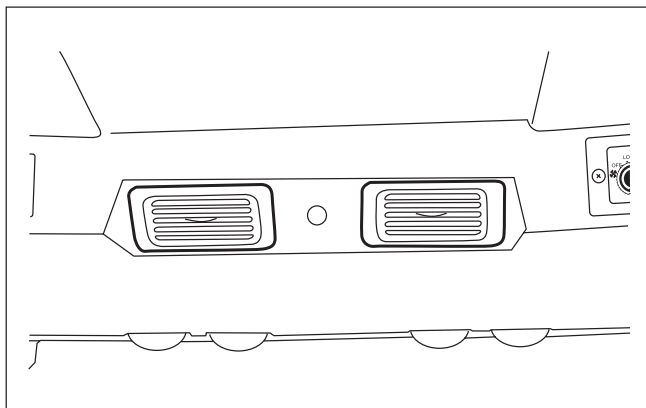


FIG. 5-117

TG5330,5390,5470

FIG. 5-118: Side air vents - Two vents, one on the left side and on the right side of the cab, blow air toward the sides of the operator. Each vent moves to allow the air flow direction to be changed.

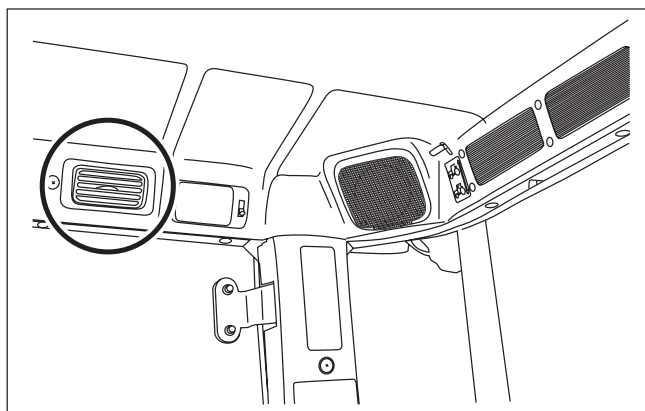


FIG. 5-118

FIG. 5-119: Front air vents - Four vents at the front of the cab blow air toward the front window to help defrost the front window or prevent from fogging.

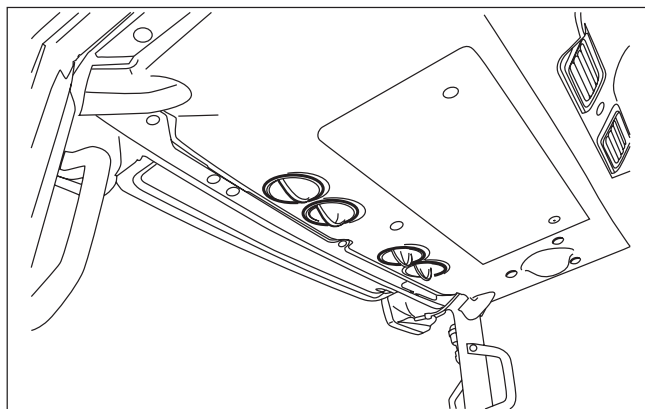


FIG. 5-119

FIGS. 5-120, 121: Adjusting the air flow direction

- (1) Left and right
- (2) Up and down
- (3) Front and rear

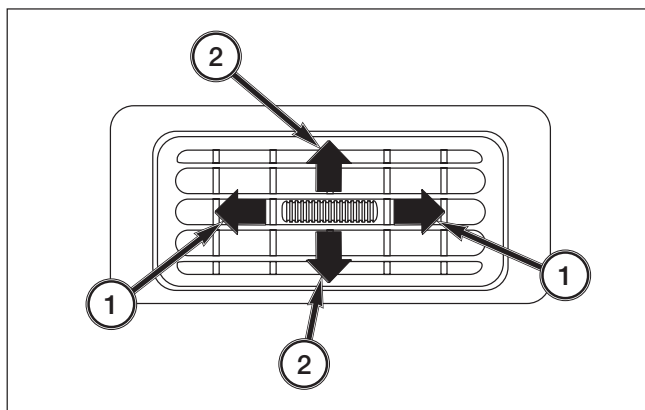


FIG. 5-120

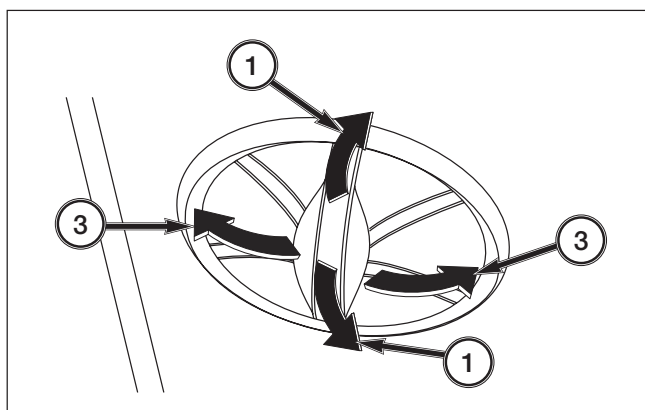


FIG. 5-121

HEATING

FIG. 5-122: Set the ventilation control lever to .

Set the switch levers on the heater panel to the positions shown.

Warm air will blow from the front air vents to heat the cab. Adjust the air speed, direction, and temperature as necessary.

When the temperature becomes comfortable, switch the ventilation control lever to .

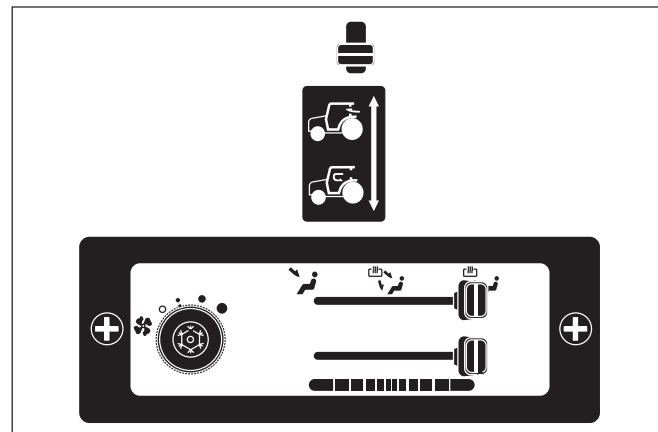


FIG. 5-122

TG5330,5390,5470

AIR CONDITIONER OPERATION (TG5470)

FIGS. 5-123, 124: To turn on the air conditioner, press the button (2).

NOTE: The air conditioner will not operate with the fan speed control switch (1) set to OFF.

Press the button again to turn off the air conditioner.

- (1) Fan speed control switch.
- (2) Air conditioner button.
- (3) Fresh air vents switch lever.
- (4) Temperature adjustment lever.
- (5) Switch set to OFF-air conditioner is not operating.
- (6) Switch set to ON-air conditioner is operating.

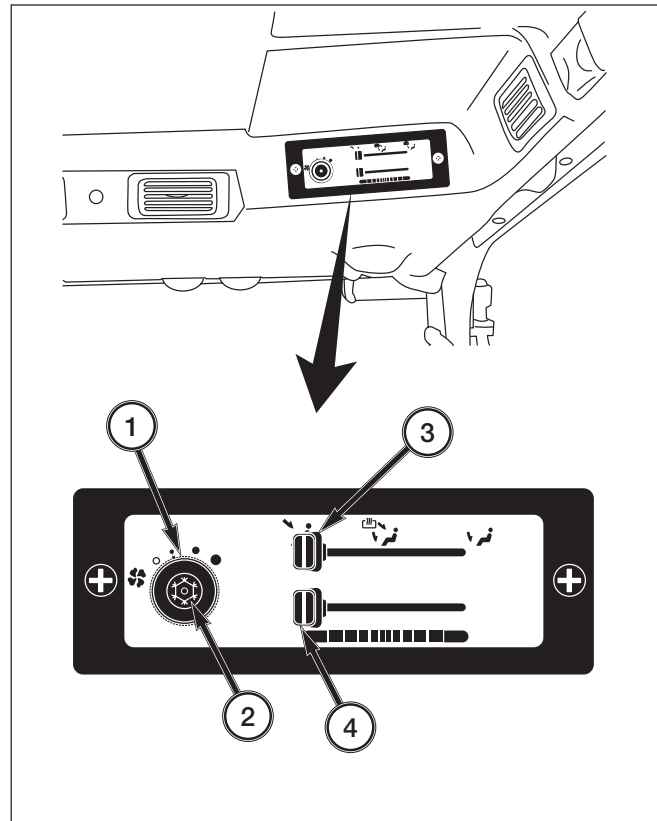


FIG. 5-123

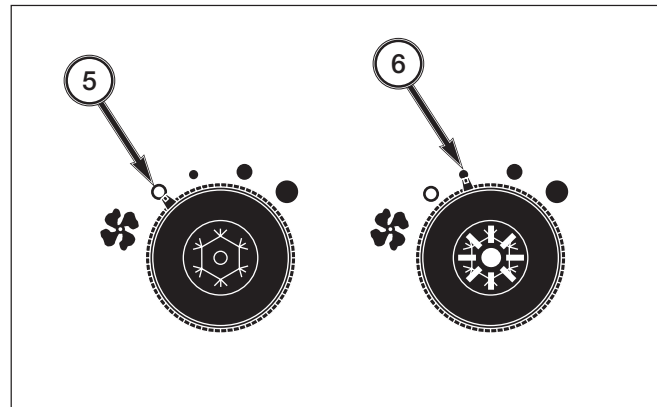


FIG. 5-124

FIG. 5-125: The fan speed can be adjusted to three levels by changing the fan speed control switch position to (1), (2) and (3).

Turn the lever to OFF to stop the air conditioner.

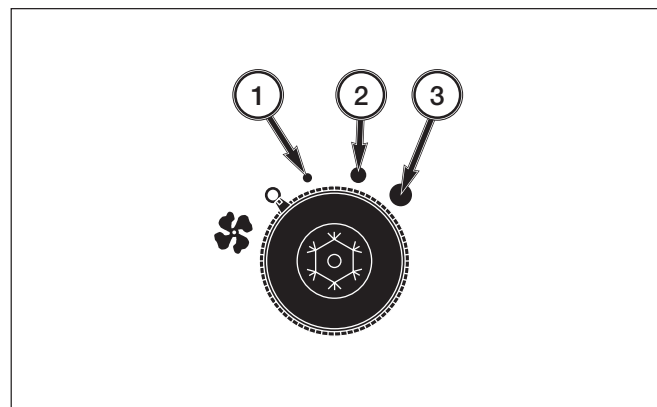


FIG. 5-125

FRESH AIR VENT LEVER

Use the fresh air vent lever to adjust which vents to use:

FIG. 5-126: Air blows from both the upper and side air vents.

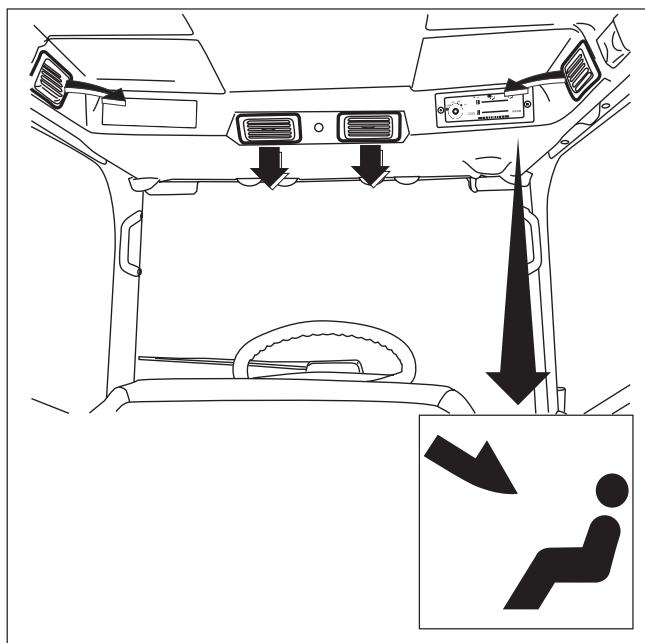


FIG. 5-126

FIG. 5-127: Air blows from the front air vents as well as the upper and side air vents. With an increased number of air vents used, the air volume from each vent decreases. This is a setting suitable for driving.

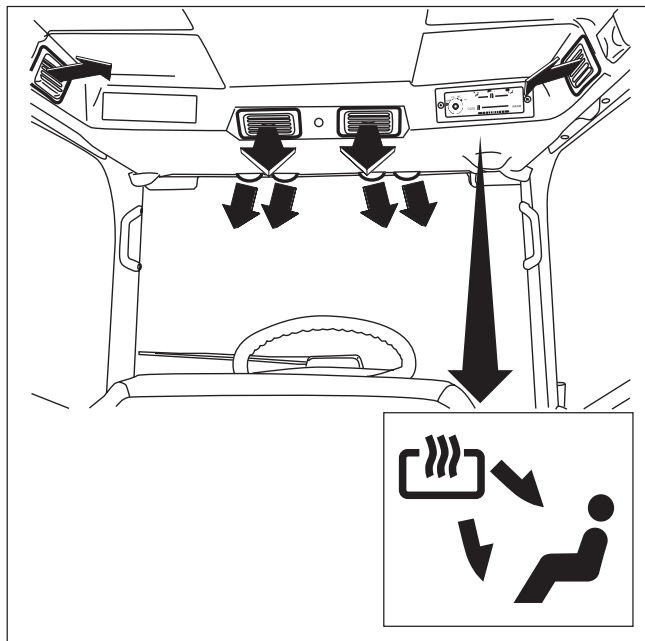


FIG. 5-127

TG5330,5390,5470

FIG. 5-128: Air blows from the front air vents. Use this setting to defrost the front window.

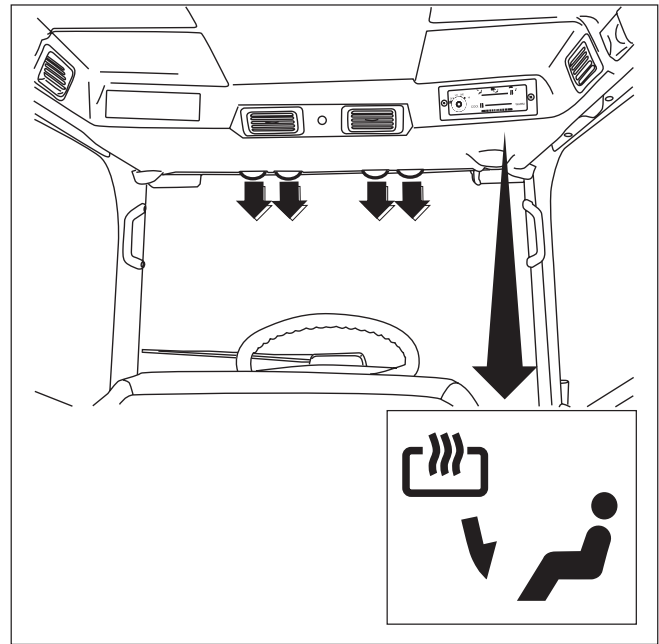


FIG. 5-128

TEMPERATURE ADJUSTMENT LEVER

FIG. 5-129: Adjust the air temperature by moving the temperature adjustment lever(1) from COOL (left-side) to WARM (right-side) or anywhere in between.

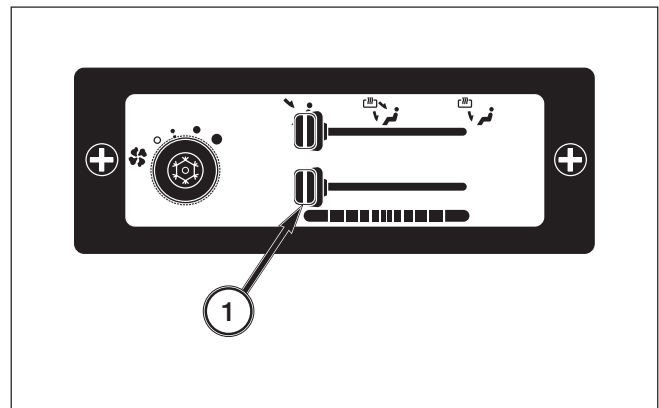


FIG. 5-129

VENTILATION CONTROL LEVER

FIG. 5-130: The ventilation control lever (1) is used to switch between outside air and recirculated air.



(outside air) - Blows air while drawing outside air. This setting is used for normal operation or when the windows are foggy.



(recirculated air) - Blows air while recirculating air without drawing outside air. This setting is useful to make the air conditioning more efficient.

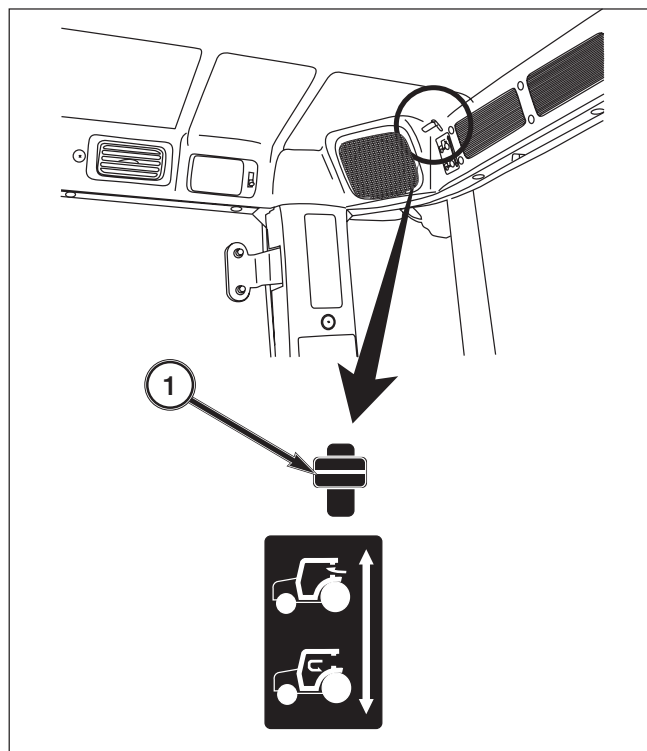


FIG. 5-130

AIR VENTS

Air vents are found in the upper, side, and front areas of the cab.

FIG. 5-131: Upper air vents - Two vents blow cool or warm air directly toward the operator. Each vent moves independently.

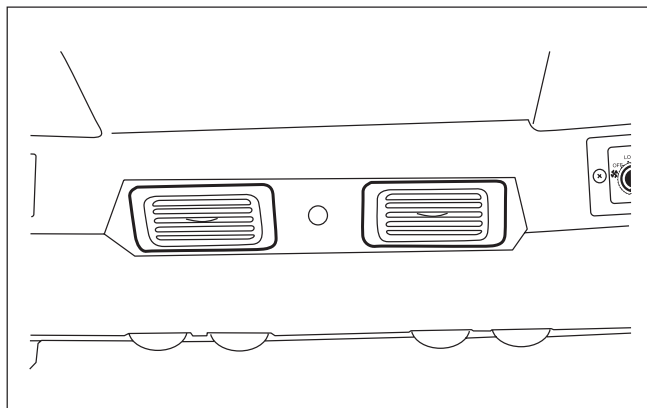


FIG. 5-131

TG5330,5390,5470

FIG. 5-132: Side air vents - Two vents, one on the left side and on the right side of the cab, blow air toward the sides of the operator. Each vent moves to allow the air flow direction to be changed.

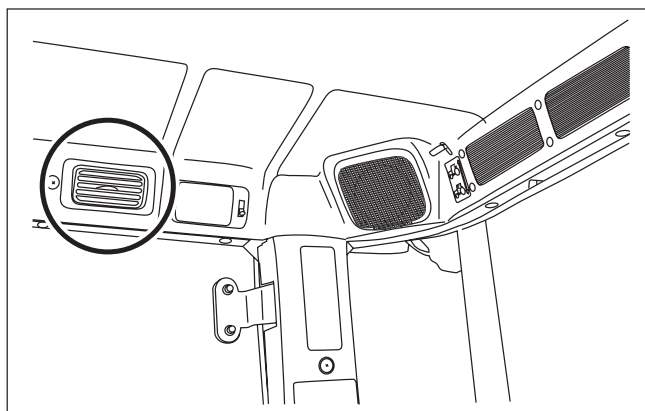


FIG. 5-132

FIG. 5-133: Front air vents - Four vents at the front of the cab blow air toward the front window to help defrost the front window or prevent from fogging.

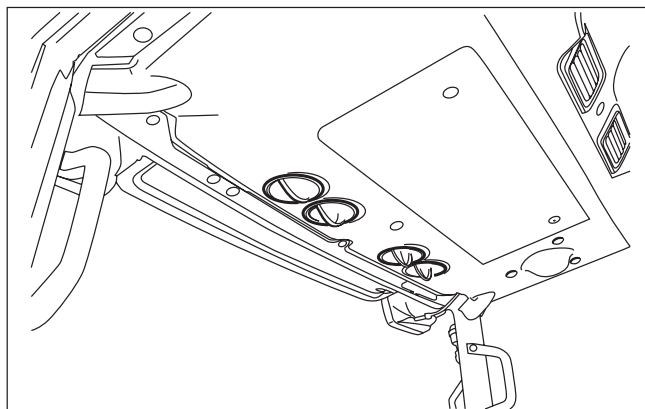


FIG. 5-133

FIGS. 5-134, 135: Adjusting the air flow direction

- (1) Left and right
- (2) Up and down
- (3) Front and rear

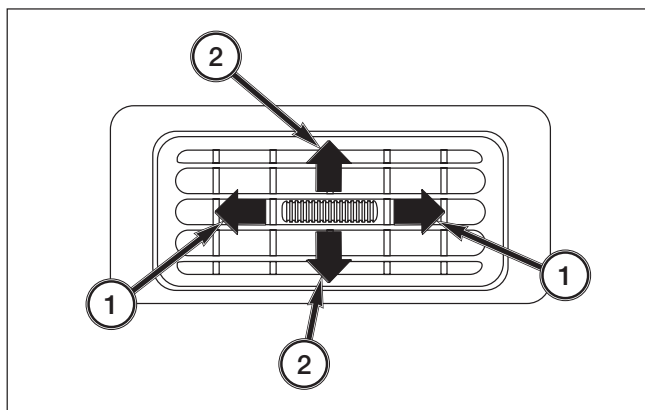


FIG. 5-134

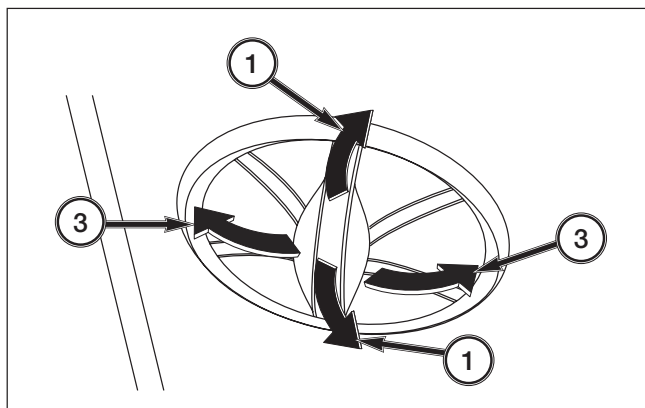


FIG. 5-135

USING THE AIR CONDITIONER

COOLING

FIG. 5-136: Set the ventilation control lever to .

Set the switch levers on the air conditioning panel to the positions shown. Turn on the air conditioner.

Cool air will blow for the upper and side air vents to cool and dry the air in the cab.

Adjust air speed, direction and temperature as necessary.

When the temperature becomes comfortable, switch the ventilation control lever to .

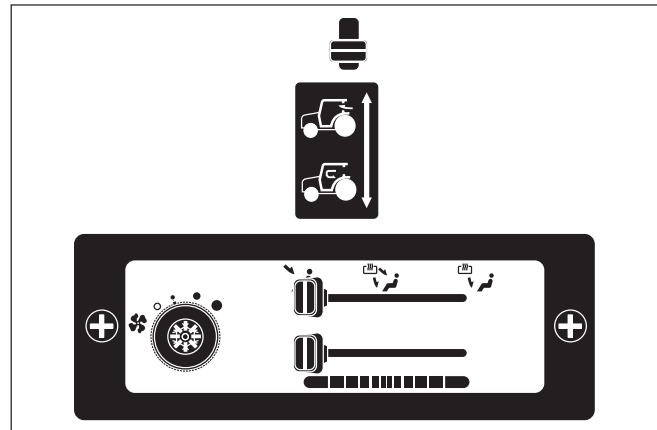


FIG. 5-136

HEATING

FIG. 5-137: Set the ventilation control lever to .

Set the switch levers on the air conditioning panel to the positions shown.

Turn off the air conditioner.

Warm air will blow from the front air vents to heat the cab. Adjust the air speed, direction, and temperature as necessary.

When the temperature becomes comfortable, switch the ventilation control lever to .

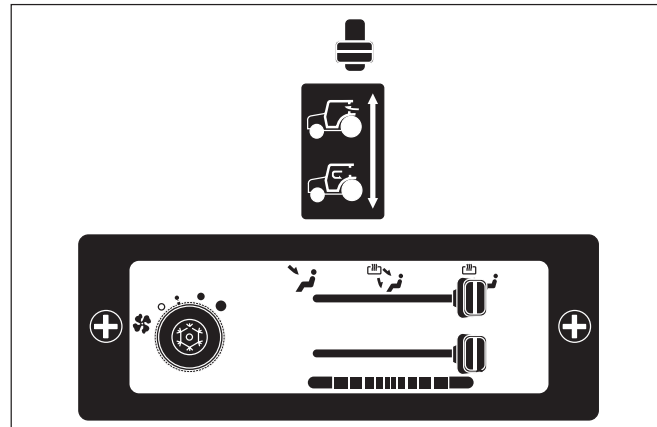


FIG. 5-137

When the air is humid, turn on the air conditioner and set the switch levers as shown. Warm air blow from the front air vents and remove humidity in the cab.

DEFROSTING

FIG. 5-138: Set the ventilaton control lever to .

Set the switch levers as shown. To remove fog from the windows, turn on the air conditioner. Warm air will blow from the front air vents.

NOTE: Air conditioning is not required in extreme cold. When the air conditioner is not in use, set the air volume control switch to OFF.

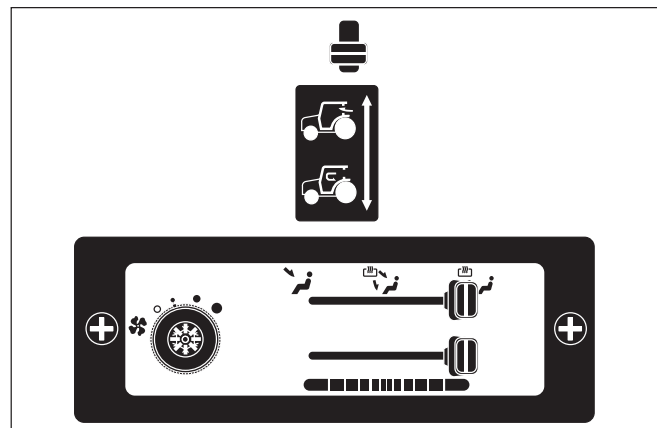


FIG. 5-138

TG5330,5390,5470

LUBRICATION & PERIODIC MAINTENANCE

SPECIFICATIONS & CAPACITIES

Engine Oil

Use oil of the quality recommended by ISEKI. API Service CC (TG5330/5470), API Service CD (TG5390).

Capacity(Crankcase and Filter)

TG5330/5390.....	4.7liters
TG5470	8.0liters

Recommended Viscosity:

25° C and Above	SAE 30W, 10W-30
0° -25° C	SAE 20W, 10W-30
0° C	SAE 10W, 10W-30
<i>15W-40 may be used in ambient temperatures above -10° C</i>	

Recommended Change Interval, Initial Oil and Filter Change	50 hours
Oil and Filter Change, Thereafter	Engine oil
.....	filter
.....	Every 100 hours
.....	Every 200 hours

Engine Coolant

Freezing Protection (Original Factory Fill)	-34° C
Recommended Coolant	50/50 mixture ethylene glycol and water
System Capacity	
TG5330/5390.....	6.7liters
TG5470	7.6liters

Fuel Tank

Capacity	
TG5330/5390.....	40.0liters
TG5470	50.0liters
Fuel Recommended, Above 39° F (4° C)	No. 2 or No. 2-D
Fuel Recommended, Below 39° F (4° C)	No. 1 or No. 1-D

Transmission & Differential Housing (Including Hydraulic System)

Capacity	
TG5330/5390	31.0 liters
TG5470.....	38.0 liters
Recommended Lubricant	Shell DONAX TD or equivalent
Recommended Change Interval	First 50 hours, every 200 hours thereafter

Front Axle (4-WD Only)

Capacity	
TG5330/5390.....	7.5liters
TG5470	8.5liters
Recommended Lubricant	SAE 80 GL-4
Recommended Change Interval	Every 600 hours

Grease Fittings

Grease Interval (All Fittings)	Every 50 hours
Recommended Grease	Lithium base grease No. 2

NOTE:Change intervals stated above are for normal usage. Due to adverse operating conditions that may be experienced (extremely dusty or muddy), change intervals may need to be more frequent.

LUBRICATION/FILL POINTS

FIG. 6-1a: General layout of lubrication, fill and drain locations on Tractor:

Ref.	Description:	Type:
1	Crankcase	Engine Oil
2	Engine Radiator	Coolant
3	Radiator Overflow Reservoir	Coolant
4	Fuel Tank	Diesel Fuel
5	Rear Housing	Hydraulic Oil
6	4-WD Axle	Hydraulic Oil
7	Axle Pivots (4-WD)	Grease
8	Tie Rod Ends	Grease
9	Clutch Shaft	Grease
10	Brake Pivots	Grease
11	Lift Rod	Grease

TG5330/5390

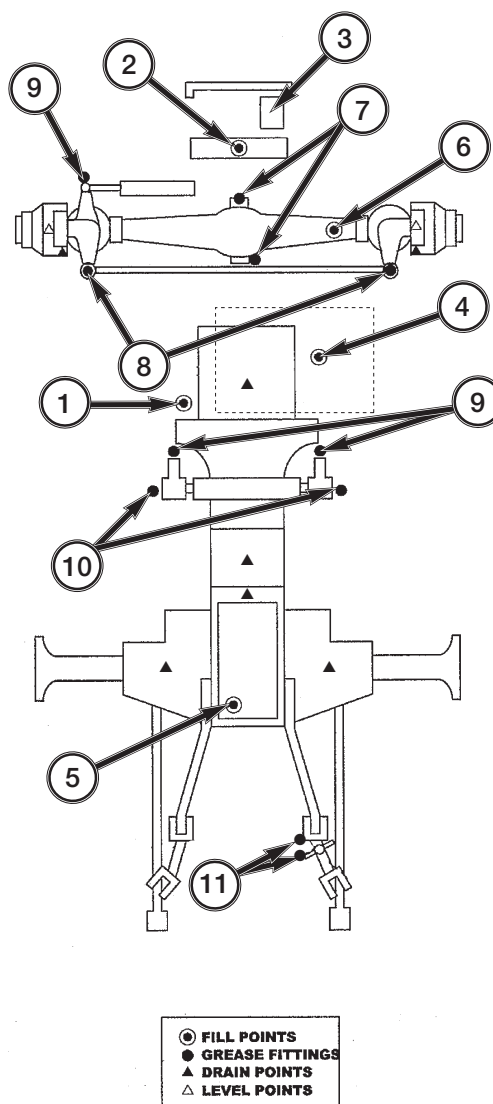


FIG. 6-1a

TG5330,5390,5470

LUBRICATION/FILL POINTS

FIG. 6-1b: General layout of lubrication, fill and drain locations on Tractor:

Ref.	Description:	Type:
1	Crankcase	Engine Oil
2	Engine Radiator	Coolant
3	Radiator Overflow Reservoir	Coolant
4	Fuel Tank	Diesel Fuel
5	Rear Housing	Hydraulic Oil
6	4-WD Axle	Hydraulic Oil
7	Axle Pivots (4-WD)	Grease
8	Front Spindles (4-WD)	Grease
9	Tie Rod Ends	Grease
10	Clutch Shaft	Grease
11	Brake Pivots	Grease
12	Assist Cylinder	Grease
13	Lift Rod	Grease

TG5470

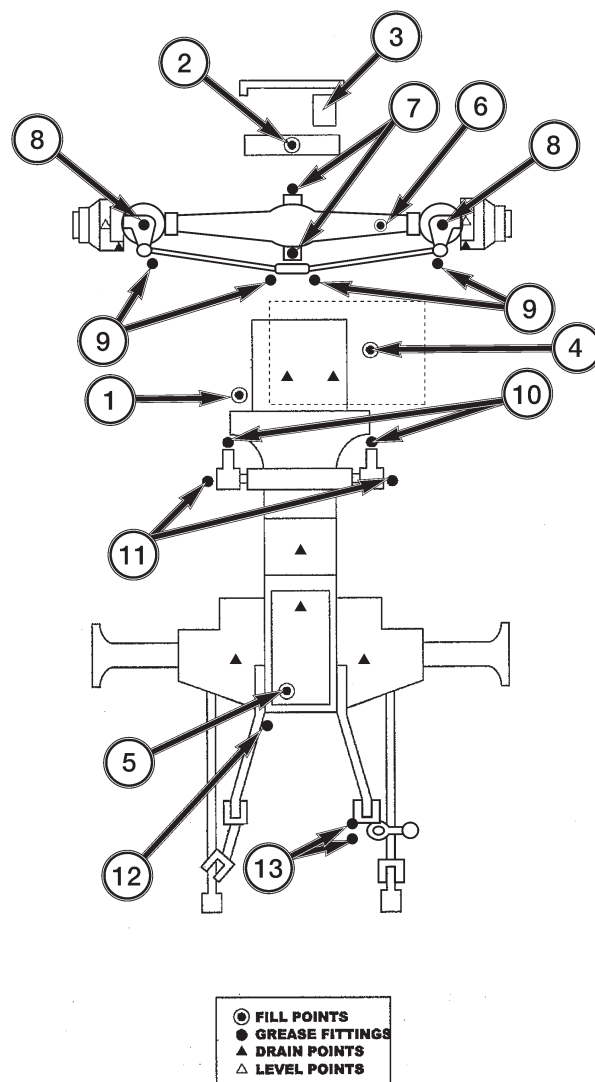


FIG. 6-1b

PERIODIC INSPECTION AND MAINTENANCE TABLE

○: Inspect, replenish or adjust ● Replace △ Clean or wash
★: Replacement or servicing at authorized service facility recommended.

			Before ope.	First insp. ★	100 Hr	200 Hr ★	300 Hr	400 Hr ★	500 Hr	600 Hr ★	1 / Month	1 / Year ★	1 / 2 years ★	Remarks
Engine	1	Engine oil	○	●	●	●	●	●	●	●				Replace every 100 Hr.
	2	Engine oil filter		●		●		●		●				Replace every 200 Hr.
	3	Air cleaner element	○	△	△	△	△	△	△	●		●		Wash every 100 Hr. Replace every 600 Hr. or once/year.
	4	Reserve tank coolant/level	○	○	○	○	○	○	○	●		●		Wash every 100 Hr. Replace every 600 Hr. or once/2 years.
	5	Radiator		○									△	Flush once/2 years.
	6	Radiator hose	○	○		○				○			★	Inspect every 200 Hr. Replace once/2 years.
	7	Fuel filter	○	△	△	△	△	●	△	△				Wash every 100 Hr. Replace every 400 Hr.
	8	Fuel pipe hose		○	○	○	○	○	○	○			★	Inspect every 100 Hr. Replace once/2 years.
	9	Fan belt	○	○	○	○	○	○	○	○				Inspect every 100 Hr.
	10	Battery fluid level	○	○	○	○	○	○	○	○		○		Check every 100 Hr. or once/1 year.
	11	Engine valve clearance								★				Inspect every 600 Hr.
Tractor	12	Transmission oil	○	●		●		●		●				Replace every 200 Hr.
	13	Transmission oil filter		●		●		●		●				Replace every 200 Hr.
	14	Front axle oil	○	○		○		○		●				Inspect every 200 Hr. Replace every 600 Hr.
	15	Draining of clutch chamber		○	○	○	○	○	○	○				Inspect every 100 Hr.
	16	Clutch pedal play	○	○	○	○	○	○	○	○				Inspect and adjust every 100 Hr.
	17	Brake pedal play	○	○		○		○		○				Inspect and adjust every 200 Hr.
	18	Steering joint		○		○		○		○				Inspect and adjust every 200 Hr. ★

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○: Inspect, replenish or adjust ● Replace △ Clean or wash
★: Replacement or servicing at authorized service facility recommended.

			Before ope.	First insp. ★	100 Hr	200 Hr ★	300 Hr	400 Hr ★	500 Hr	600 Hr ★	1 / Month	1 / Year ★	1 / 2 years ★	Remarks
Tractor	19	Toe-in adjustment		○		○		○		○				Inspect and adjust every 200 Hr. ★
	20	Tightening of tie-rod ends		○		○		○		○				Inspect and adjust every 200 Hr. ★
	21	Front accelerator front/rear play		○						○				Inspect every 600 Hr.
	22	Tire air pressure	○	○		○		○		○				Inspect/add air every 200 Hr.
	23	Tighten wheel lugs	○	○	○	○	○	○	○	○				Inspect every 100 Hr.
	24	Electrical wiring		○								○	★	Inspect once/year. Replace once/2 years.
	25	Power steering hose		○	○	○	○	○	○	○			★	Inspect every 100 Hr. Replace once/2 years.
	26	Horizontal cylinder hose		○									★	Replace once/2 years.
	27	Auto brake hose		○									★	Replace once/2 years.
Cabin	28	Replenish grease	○	○	○	○	○	○	○	○		○		Grease before/after operation.
	29	Air conditioner belt	○	○		○		○		○				Inspect every 200Hr.
	30	Air conditioner condenser		△		△		△		△				Clean every 200Hr.
	31	Air conditioner hose and pipe										○		Inspect once / year.
	32	Air conditioner filter	○								○			Inspect once / month.
	33	Window washer liquid	○											Check every
	34	Rubber bush										○		Inspect once / year.
	35	Wiring harness										○	★	Inspect once / year. Check once / 2 years.

Opening/Closing Hood

FIG. 6-2: Turn locking knob, 1, onequarter turn clockwise on top of engine bonnet, pull upward the bonnet.

Reinstall in reverse order, engine bonnet will be necessary to push inward on locks, 1, and then turn onequarter turn counterclockwise to secure.

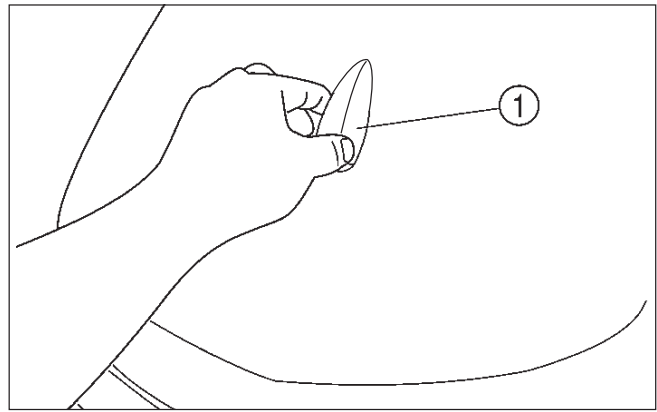


FIG. 6-2

FIG. 6-3: When top the front grille, 2, is pulled up with the hood open, the lock, can be disengage. Disconnect the headlamp wiring couplers and lift front grille upward to disengage the lower hooks and remove it from the tractor. When reinstalling front grille, place the grille on the lower hook and push on the top.

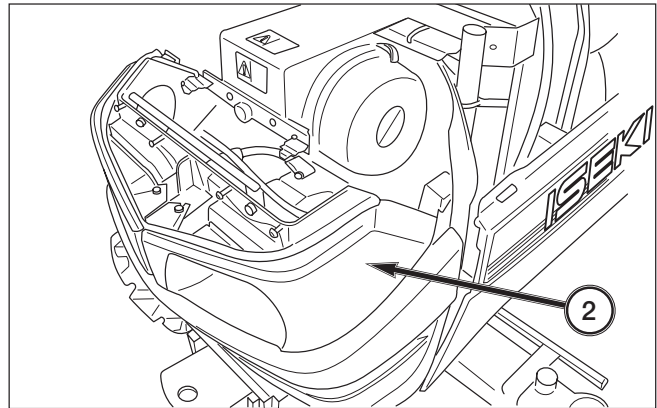


FIG. 6-3

Removing/Reinstalling Side Cover

FIG. 6-4: When top of the side cover, 3, is pulled out with the hood open, the lock, can be disengaged.

The cover can be removed by slipping the side cover off of the two hinges on the bottom.

When reinstalling the side cover, place the cover on the hinges at the bottom, and push on the top.

The side cover (left) can be removed with the same procedure.

The muffler is adjacent to the left side cover. Make sure to allow it to cool before removing.

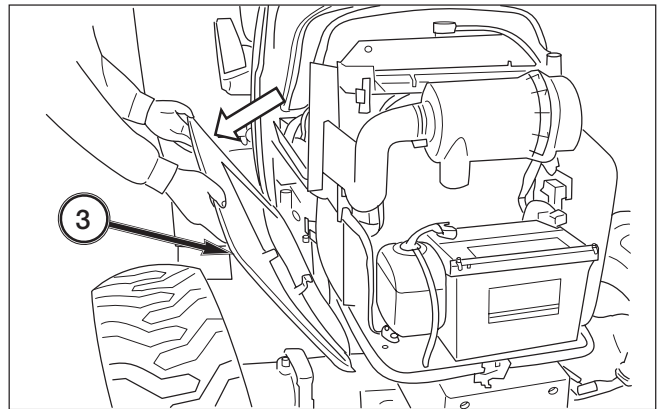


FIG. 6-4

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LUBRICATION DETAILS

Grease Fittings

Lubricate all grease fittings every 50 hours of operation. Clean grease gun and fittings before and after greasing to prevent contamination from dirt.

NOTE: When operating in muddy or extremely wet conditions, daily lubrication of fittings is recommended.

Engine Oil & Filter

Engine oil and filter should be changed after first 50 hours of operation and then every 100 hours thereafter.

FIG. 6-5: To Check Engine Oil Level —Tractor must be parked on level ground with engine off. Pull out dipstick, 1, and check that oil level is between upper limit, F, and lower limit, L, on dipstick. Wipe off dipstick, momentarily reinstall in engine and check oil level again.

Add oil through filler opening, 2, as required.

NOTE: Add oil slowly to assist in venting air from crankcase.

FIG. 6-6: To Change Engine Oil —Operate Tractor until oil is adequately warmed. Remove drain plug(s), 3, from engine and allow all oil to drain.

Reinstall drain plug(s) and fill engine crankcase to upper limit on dipstick.

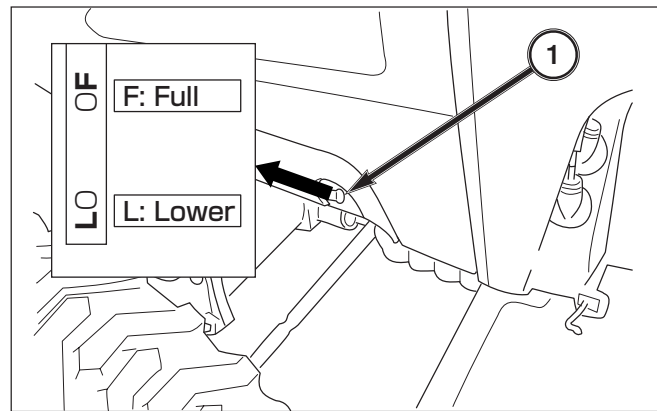


FIG. 6-5

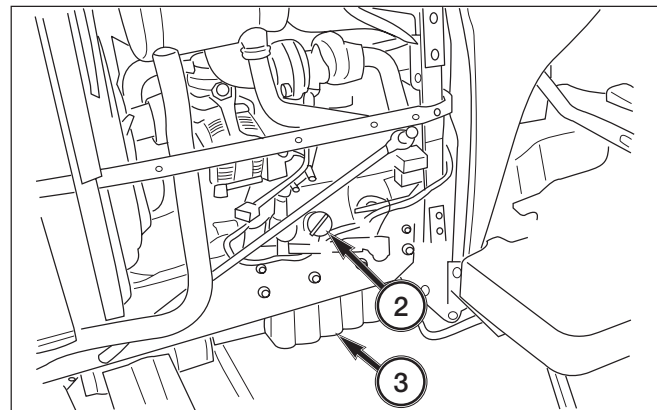


FIG. 6-6

FIG. 6-7: To Replace Engine Oil Filter —Unscrew element, 4, from engine and discard. Make sure original filter gasket has been removed.

Lubricate new gasket on replacement element with clean engine oil. Screw on new element until gasket contacts adapter and then tighten element 1/2 turn more.

Clean spilled oil and refill crankcase. Start engine, check for leaks and replenish oil level as required.

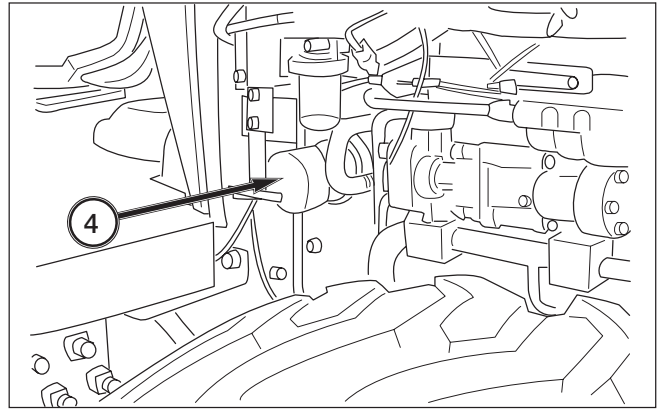


FIG. 6-7

Transmission Oil & Filters

Transmission oil lubricates transmission, center housing, and rear axles and also serves as hydraulic fluid. Transmission oil and filter should be changed after first 50 hours of operation and then every 200 hours thereafter.

FIG. 6-8: To Check Transmission Oil Level —Park Tractor on level ground. Oil level should be indicated in oil level window, 1.

Oil level is replenished, as necessary, by removing filter plug, 2, and adding oil through filter opening.

NOTE: Adding oil to transmission will also maintain correct oil level in center housing and rear axles.

FIG. 6-9: To Replace Transmission Oil —Remove drain plug, 3, and completely drain oil from system.

IMPORTANT: *Completely lower three-point hitch prior to draining transmission oil.*

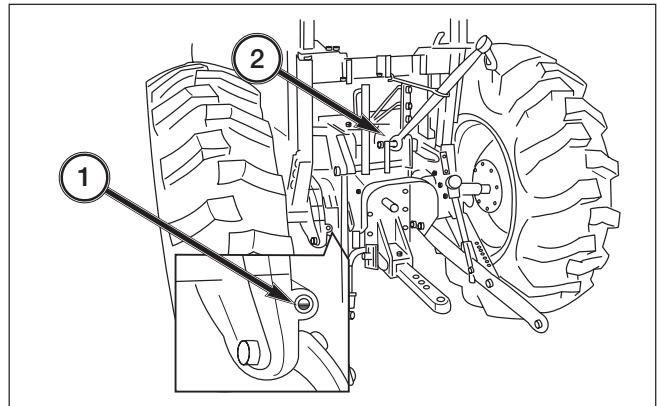


FIG. 6-8

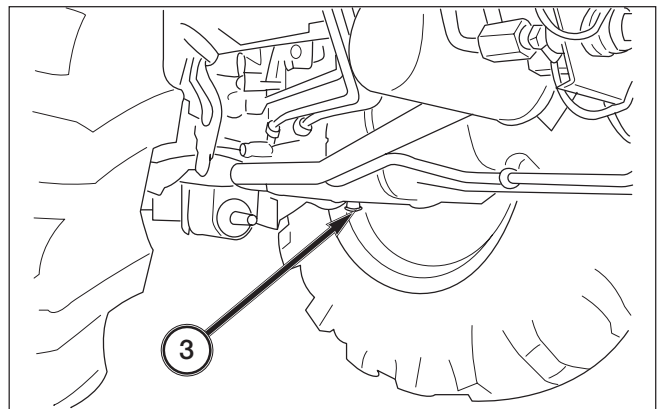


FIG. 6-9

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FIG. 6-10: Transmission filter,4, for power shuttle model shown. With oil drained, unscrew filter from adapter (filter wrench may be required).

Clean adapter and lubricate seat on new filter. Install until filter gasket contacts adapter and tighten additional 2/3 turn, by hand. Do not use filter wrench to tighten.

Front Axle Oil (4-WD Only)

Front drive axle has a common oil level for front differential housing and each wheel reduction unit. Oil level should be checked every 200 hours of Tractor operation. The oil should be changed every 600 hours of operation(indicated on Hourmeter).

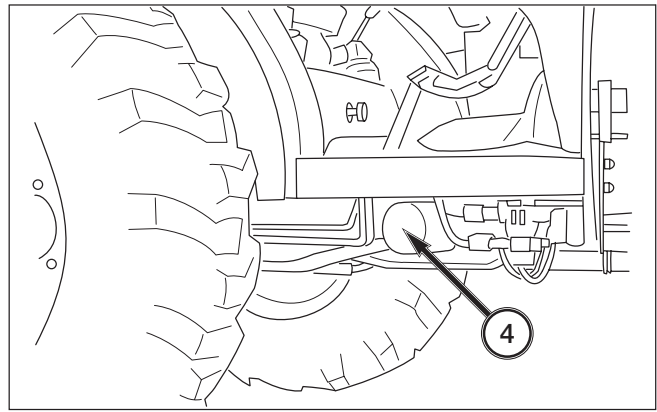


FIG. 6-10

FIG.6-11a: TG5330:S/N~000060 TG5390:S/N~000145 TG5470:S/N ALL

To Check Oil Level—Park Tractor on level ground and then remove oil level plug,1. Oil should be level with or slightly below level plug opening. Remove fill plug,2, and add oil until oil is expressed from level plug opening. Replace level plug and fill plug.

To Change Oil —Remove drain plug,3, from both wheel reduction units. When all oil has drained, replace drain plugs and fill housing to level plug opening. Replace level plug and fill plug.

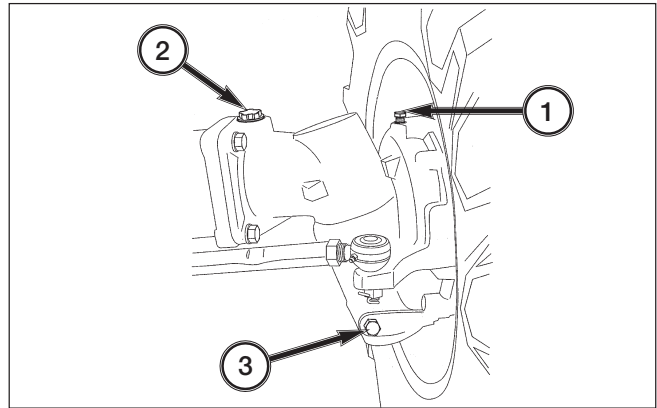


FIG. 6-11a

FIG.6-11b: TG5330:S/N 000061~ TG5390:S/N 000146~

To Check Oil Level—Park Tractor on level ground and then remove fill plug,2. Oil should be level to top of the shaft. Add oil to top of the shaft. Replace fill plug.

To Change Oil —Remove drain plug,3, from both wheel reduction units. When all oil has drained, replace drain plugs and fill housing to top of the shaft. Replace fill plug.

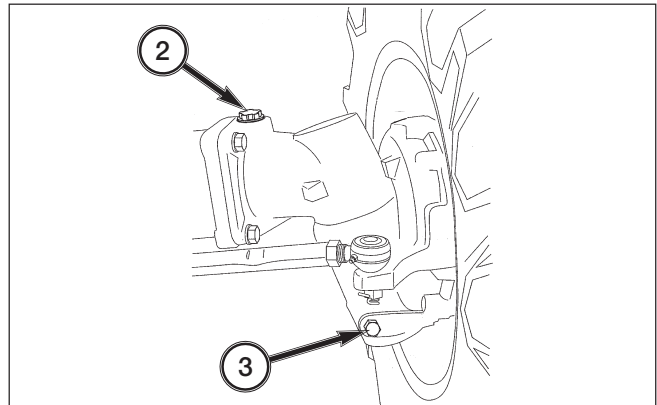


FIG. 6-11b

Checking/Replenishing Coolant

Fig. 6-12: The radiator is provided with a reserve tank, 1, to maintain the coolant in the radiator at the proper level. Check the level in this reserve tank during the daily inspection.

Open the hood, and confirm that the coolant in the reserve tank is between FULL and LOW.

If the coolant level is low, add coolant to the reserve tank up the FULL level.

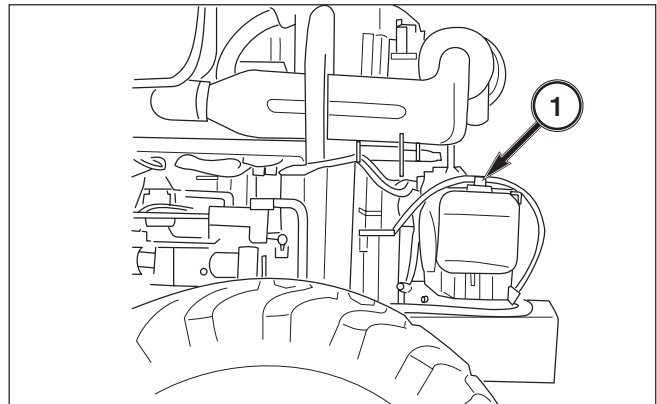


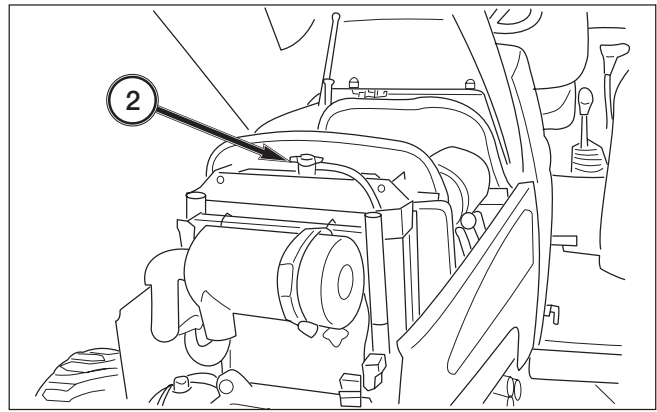
FIG. 6-12

Fig. 6-13: When the coolant level is below the LOW level, remove the radiator cap, 2, after allowing the engine to cool sufficiently, and confirm that there is an adequate amount of coolant in the radiator.



CAUTION: Do not open the radiator cap except when checking or replacing the coolant. Make sure to allow the engine to cool sufficiently before opening the cap. If the cap is opened while the engine is hot, coolant may be discharged, resulting in a burn or other injury.

IMPORTANT: Do not fill the reserve tank higher than the FULL level. This will prevent the radiator from functioning optimally, and may result in leakage of coolant.

**FIG. 6-13**

Flushing Radiator / Replacing Coolant

FIG. 6-14: Open the drain cock, 3, at the right side of the engine to drain coolant. Open the radiator cap, 2, at the same time to help allow the coolant to drain. Remove the reserve tank, 1, to drain coolant from it.

Thoroughly flush out the inside of the radiator with tap water.

Close the drain cock, 3, and pour coolant into the reserve tank up to the FULL level to fill the radiator.

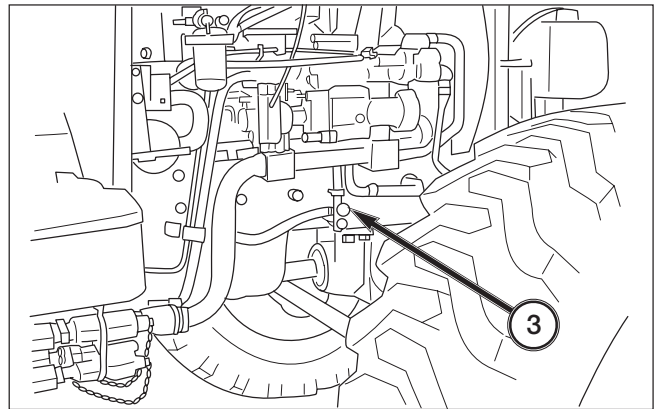
**FIG. 6-14**

FIG. 6-15: Securely close the radiator cap, 2, and reserve tank cap, and start the engine, allowing it to run for about five minutes in the mid speed range (Approx. 1500 rpm). Then stop the engine.

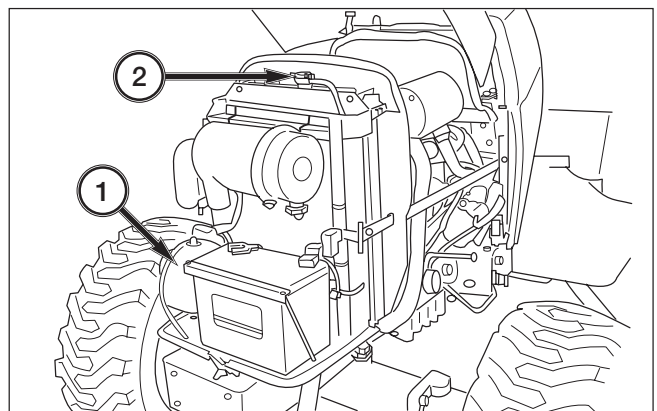
When the engine cools, the coolant in the reserve tank will be sucked into the radiator.

Add coolant to the reserve tank up to the FULL level (Approx. 400cc required for cabin type tractor).

Use of Anti-Freeze

Freezing of the coolant may result in damage to the engine. Mix in anti-freeze (Long Life Coolant) when the outside temperature will drop below 0°C (32°F) during the winter.

The mixture ratio of anti-freeze differs depending upon the anti-freeze manufacturer and temperature. Follow the instruction for the anti-freeze.

**FIG. 6-15**

Cleaning of Radiator



WARNING: Make sure to stop the engine when cleaning the radiator. Placing your hands in this area while the engine is operating may result in serious injury.

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FIG. 6-16: Cleaning Insect Net ,1

When the tractor is operated in fields or at night, the insect net may become clogged with grass, straw, insects and other matter.

Open the hood, pull out the insect net and clean it.

Cleaning Radiator Core ,2

Wash away any dirt or other foreign matter in between the fins with tap water.

IMPORTANT: When the radiator becomes clogged, it will overheat, resulting in increased oil consumption.

Be careful not to apply high pressure water directly to the radiator as this may result in deformation of the fins.

Do not directly spray water on the electrical wiring or electrical parts around the engine.

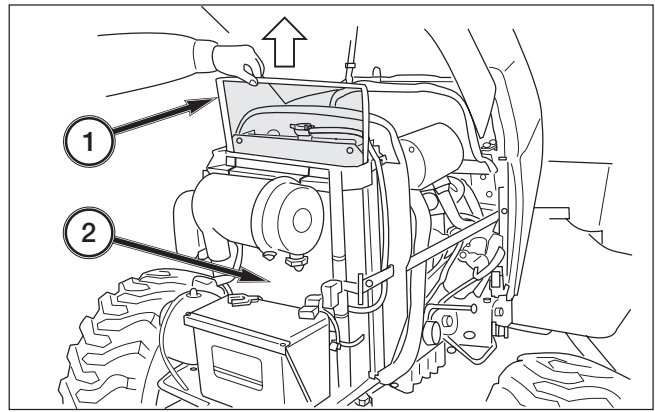


FIG. 6-16

FIG. 6-17: Correct fan belt tension helps to insure adequate coolant flow through cylinder block and radiator. Belt is correctly tensioned when belt deflection is approximately 14 mm when thumb pressure (10kgf) is exerted at center of belt span.



CAUTION: Due to muffler position, allow to cool before checking or adjusting fan belt tension.

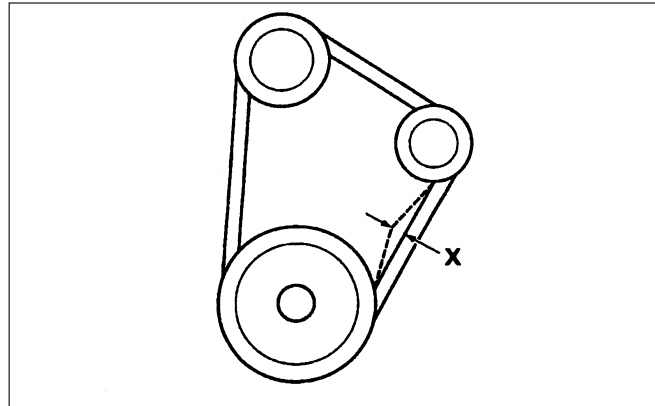


FIG. 6-17

FIG. 6-18: To adjust belt tension, loosen alternator pivot bolt, 1, and tensioning bracket bolt, 2. Pull outward on top of alternator to correctly tension belt and tighten bolt, 2, first and then tighten pivot bolt, 1.

IMPORTANT: Do not pry against alternator housing or pulley. Carefully pry against alternator mounting flange to prevent damage.

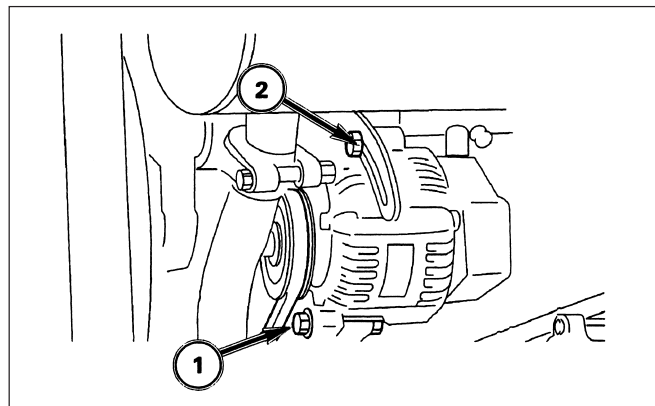


FIG. 6-18

Cleaning Air Cleaner / Vacuator Valve

FIG. 6-19: Open the hood, and remove the left side cover and front grill.

Press the vacuator valve, 2 , to discharge any dirt inside. If there is moisture, wipe the inside of the air cleaner, 1 , with a rag.

FIG. 6-20: Cleaning/Replacing Air Cleaner Filter Element Remove the clip, 3, and take the filter element, 4 , out of the air cleaner.

Use the following procedure to clean the filter element:

When there is dry dust

Blow air from the inside of the filter element, or lightly tap the filter element with your hand to discharge the dust.

When there is moist dirt or oil

Dilute a neutral household detergent in water, and soak the filter element for about 30 minutes. Then rinse the filter element and allow it to naturally dry.

After cleaning the filter element, push it straight back into the air cleaner to securely assemble it.

IMPORTANT: Do not hit the filter element against a rock, concrete or other hard item when cleaning it. This may result in damage or deformation of the filter element, inhibiting engine performance.

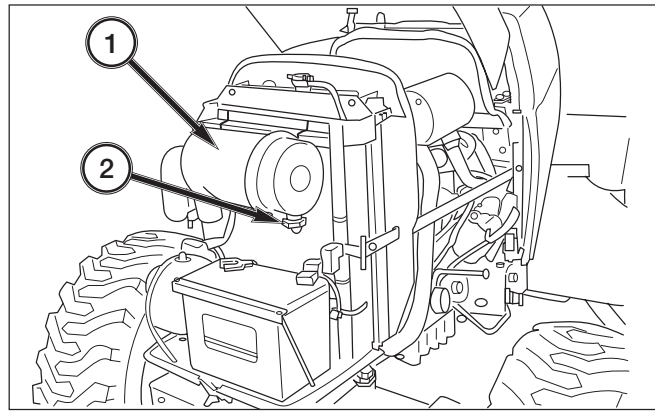


FIG. 6-19

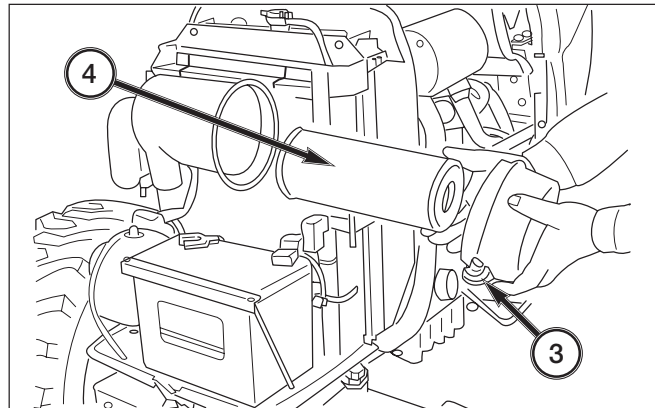


FIG. 6-20

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FIG. 6-21: Outer element, 4, may be cleaned (if in serviceable condition) using following procedures:

- Using compressed air not to exceed 30 psi (200 kPa) from inside element, remove loose dirt, grass, chaff, etc. Be careful not to damage element pleats with air flow.
- If outer element is coated with oil or soot:
 1. Prepare solution of warm water and non-foaming detergent.
 2. Soak element for thirty minutes.
 3. Agitate element in solution until oil and soot are loosened.
 4. Rinse element until rinse water is clear.
 5. Allow element to completely dry. Do not dry by using compressed air or heat.
- After cleaning (or washing) element examine for pin holes, punctures, or tears. If element paper, canister or seal show any signs of physical damage, element must be replaced.

NOTE: *Replace outer element which has already been washed five times.*

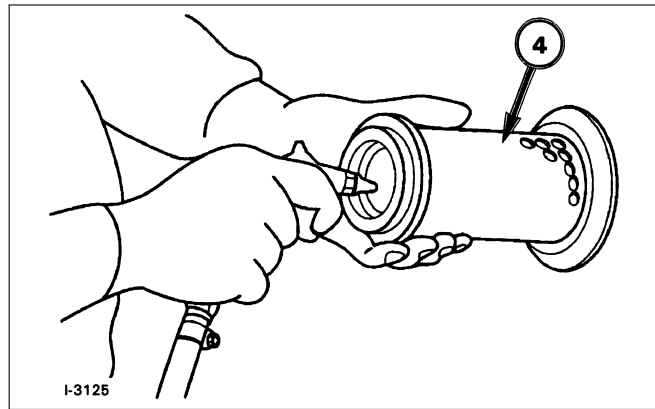


FIG. 6-21

FUEL SYSTEM

Use only clean diesel fuel of correct grade. Introduction of water or dirt into fuel tank or other portion of fuel system can cause repeated plugging of fuel filter and possible injection pump and injector damage.

IMPORTANT: *Do not tamper with injection pump or injector adjustments as doing so may render engine and/or Tractor warranty void and may cause severe engine damage. Contact your Dealer.*

Fuel Filter

FIG. 6-22: Fuel filter assembly, 1, is located at light side of engine and is used to strain impurities from fuel before fuel reaches injection pump. Fuel filter incorporates valve, 2, to aid in filter servicing and airbleeding of fuel system.

Check filter bowl for accumulation of sediment or water and clean as required.

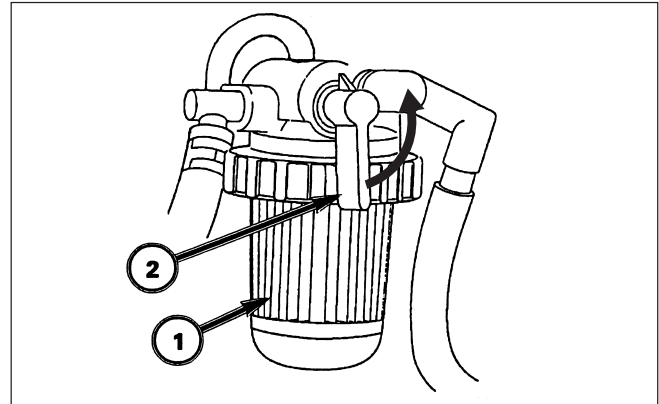


FIG. 6-22

FIG. 6-23: To replace fuel filter element or clean sediment, turn fuel valve to OFF position (handle to front).

Carefully loosen spanner nut, 1, Remove nut, sediment bowl, 2, and O ring, 4. Sediment bowl can be cleaned at this time. Pull downward on filter element, 3, and discard. Examine small O ring, 5, in filter head and replace as necessary. Install new element, pushing upward until seated.

Install sediment bowl O ring, and nut. Tighten nut and wipe up spilled fuel.

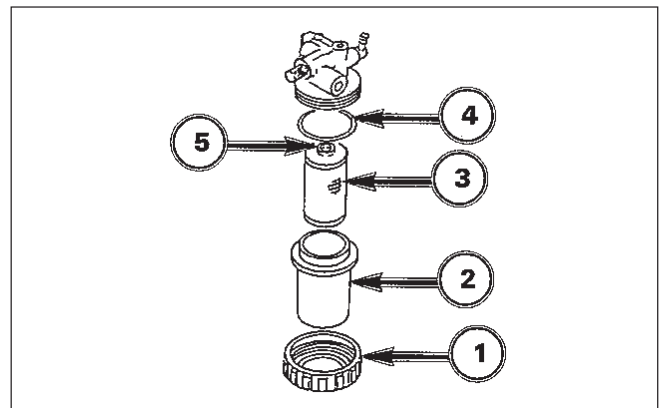


FIG. 6-23

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Air-Bleeding Fuel System

To bleed air from the fuel system:

- Fill the fuel tank.
- Turn the fuel cock to ON . (TG5330/5390)
- Turn the main switch "ON" and turn the fuel cock to "AIR". (TG5470)
- Loosen the air-bleeding screw of the fuel injection pump and let air bubbles out of the pump.

FIG. 6-24: If the engine still fails to start, pressure injection line can be loosened where they attach to the injectors. Turn the engine over several times, until fuel spouts out, then tighten the lines and stop the engine.

NOTE: Normally, further air-bleeding is not required due to electric fuel pump operating when main switch in instrument panel is ON.

If engine will not start after several attempts, check fuel pump fuses (see Electrical System).

Fuel Tank Filler Cap

When fuel tank filler cap is removed, a hissing or popping noise may be noticed. This is due to cap design and is a normal condition. Do not alter cap or use unapproved replacement as fuel leakage may occur in event of Tractor upset.

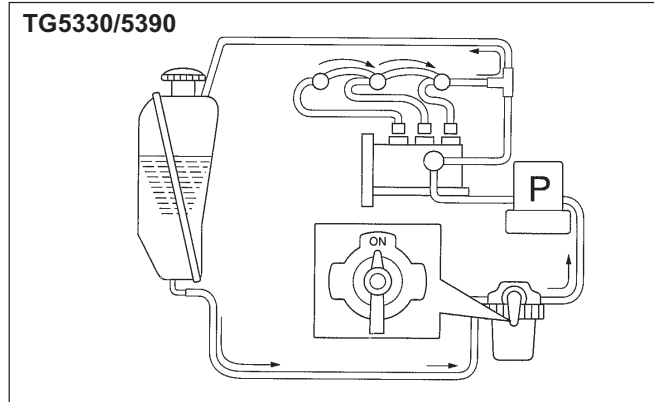


FIG. 6-24a

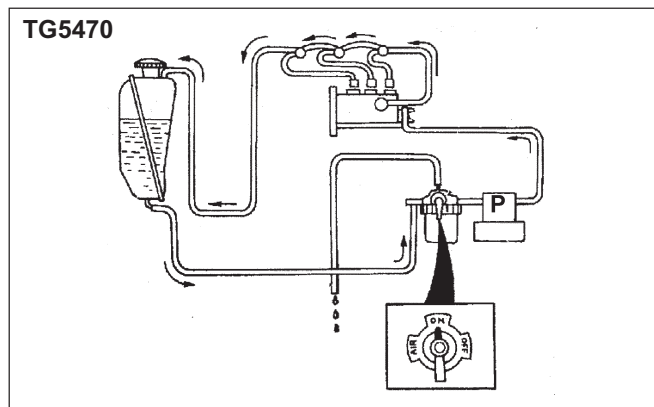


FIG. 6-24b

Throttle Lever

FIG. 6-25: Hand throttle lever should remain in position selected by operator. Through normal use, friction against lever may decrease, causing lever to move out of selected position. Turn adjusting nut, 1, as required to retain throttle lever in position selected.

NOTE: Throttle lever friction adjustment is accessed by removing rear steering column cover.

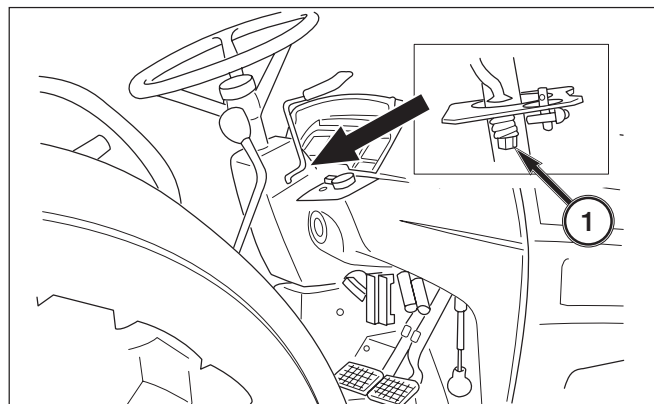


FIG. 6-25

ELECTRICAL SYSTEM

Battery

FIG. 6-26: Battery, 1, is located under engine hood in front of radiator. If battery requires only minor servicing or charging, it is recommended that hood side panels be removed to access battery.

When battery removal, electrolyte inspection or cable cleaning is necessary, front grille must be removed from Tractor.

Keep top of battery clean and ensure cable connections are clean and tight. Debris on battery can cause discharge of battery and possible source of fire.



CAUTION: Batteries produce explosive hydrogen gas when charged. Keep all sparks and open flame away from battery.

When necessary to disconnect battery cables, always disconnect the grounded (-) cable first to prevent short circuits.

Batteries contain sulfuric acid electrolyte (fluid). Wear eye and face protection. If electrolyte comes in contact with skin or clothes, wash immediately. Contact physician if electrolyte is ingested or gets in eyes.

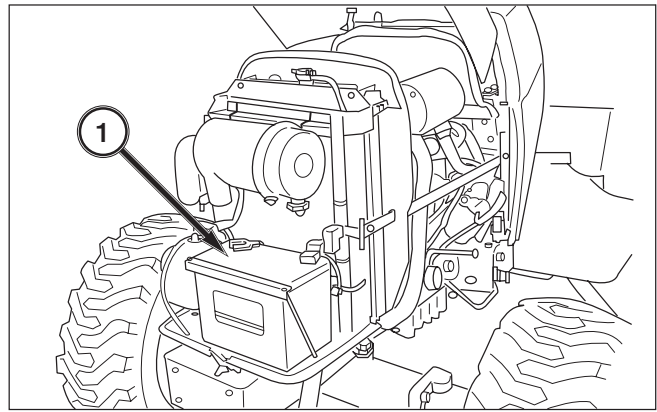


FIG. 6-26

FIG. 6-27: Tractors are shipped with battery installed. If battery replacement should become necessary, disconnect negative (-) cable, 1, first and then remove positive (+) cable, 2. Loosen and remove battery securing clamp and carefully remove battery from Tractor.

When installing battery, cable, 2, connected to starter solenoid should be connected to positive (+) battery terminal first then cable, 1, grounded to Tractor frame can be connected to negative (-) battery terminal.

NOTE: Make sure replacement battery is of identical size and equal capacity.

IMPORTANT: Do not reverse battery cable connections as severe electrical system damage will result.

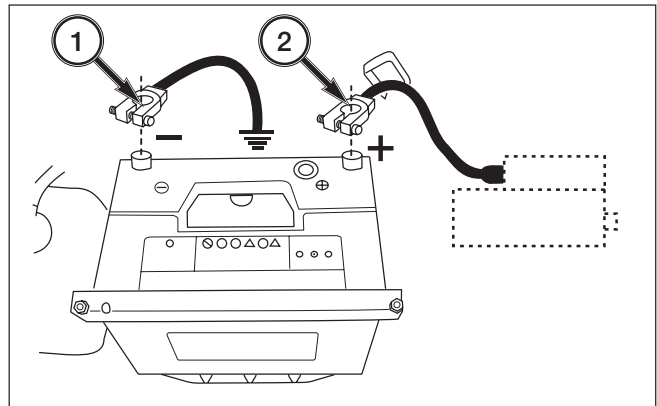


FIG. 6-27

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FIG. 6-28: Water need not be added to battery, the battery is of maintenance-free type.

Should battery performance be questioned, the battery should be removed and recharged from an external source following battery charger instructions.

Repeated battery charging may be due to a defect in Tractor charging system and/or a defective battery.

NOTE: When charging battery from an external source, battery temperature must not exceed 125F (54°C) if overheating occurs, charge rate must be reduced or halted.

FIG. 6-29: Water normally need not be added to battery as battery is of maintenance-free type.

However, electrolyte level should be inspected and must be maintained between upper limit, A, and lower limit, B. DO NOT overfill as electrolyte will spill and cause corrosion. Add only distilled water to individual cells, when required.

IMPORTANT: To mix electrolyte and distilled water, Tractor must be operated or battery charged. Failure to mix will result in frozen battery in low temperatures.

To handle the battery

- (1) Water need not be added to battery, the battery is maintenance-free type.
- (2) Never close or cover vent of battery.
- (3) Battery indicator with colors shows battery condition. When checking battery, set machine in horizontal place and look indicator from top of battery.
- (4) If indicator shows clear or light green color, tap battery body to remove bubble inside indicator. Then check battery indicator.



WARNING:

Never disassemble battery.

Batteries contains sulfuric acid electrolyte (fluid).

Keep away from sparks or flames, which could cause explosion.

When charging battery from an external source;

Set charging voltage below 16V.

Set charging ampere below 1/10 (one tenth) of battery capacity.

When connecting and disconnecting battery cables, turn off power of battery charger.

If you have any question about battery, consult your dealer.

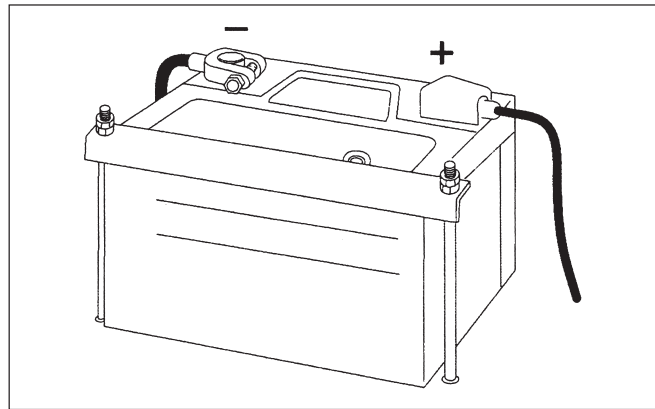


FIG. 6-28

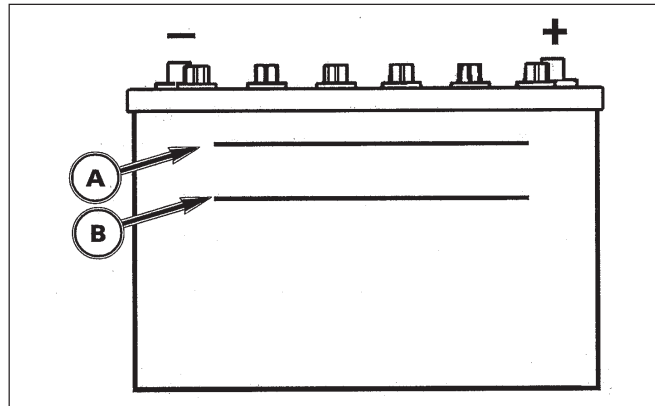


FIG. 6-29

Indicator Color	Condition	Countermeasure
Green	Charged	Usable
Black	Discharged	Need to charge
Clear	Low Electrolyte	Need to replace

Starting Switches

This Tractor is equipped with a neutral-start system consisting of neutral switches and a relay. To start Tractor, ALL the following is required:

Range shift lever must be in neutral position

PTO control switch must be in OFF position

NOTE: A seat safety switch is incorporated into system. The engine stops when operator leaves seat when either PTO is engaged and / or range shift lever is not in neutral.



WARNING: DO NOT bypass or modify the neutral switch. If the neutral start system does not operate properly, consult your Dealer immediately.

Safety Switches

This Tractor is equipped with a safety-start system consisting of safety switches and safety relay. To start Tractor, ALL the following is required:

- Gearshift lever must be in neutral position
- PTO control switch must be OFF

Wiring/Fuse Arrangement



CAUTION: Keep all wiring connections clean and tight. Make sure wiring is correctly secured to prevent damage.



CAUTION: DO NOT alter wiring by adding home-made extensions or replacements. Doing so can eliminate fuse protection and/or eliminate safety features of the system.



CAUTION: Tractor is equipped with negative (-) ground system. Tractor metal parts provide many electrical connections. For this reason, all positive (+) circuits must be insulated to prevent grounding or short circuits and prevent possible fire.



CAUTION: DO NOT replace any fuse with a fuse of higher amperage rating. DO NOT use wire (or foil) to by-pass fuse protection. Fire can result.

If fuses blow repeatedly, examine electrical system for grounded or shorted circuits.

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Fuse Location (Standard type)

Main Fuse Box, A- Located on right side, to steering post.

Ref	Amp	Function
1	15A	Turn Lights
2	20A	Head Lights, Tail Lights, License Plate Light, Position Light, Horn
3	10A	Stop Light
4	10A	Key Stop Relay, Safety Relay, PTO Solenoid Valve, Fuel Pump
5	10A	Alternator, Monitor
6	15A	Assistant Power
7	15A	Assistant Power
8	20A	Work light
9	10A	Head Light-Hi beam(Right)
10	10A	Head Light-Hi beam(Left)
11	10A	Head Light-Low beam(Right)
12	10A	Head Light-Low beam(Left)
13	5A	Tail Light(Right)
14	5A	Tail Light(Left)
15	5A	Position Light(Right)
16	5A	Position Light(Left)
17	5A	License Plate Light

- **Slow-Blow Fuses, B & C-** In-line fuses protect relevant circuit by melting when sustained heavy electrical load or short circuit is encountered.
Fuse B is located above and to the left of battery.
Fuse C is located on left side, to rear of engine.(above the starter)

Ref.	Amp	Function
B-1	40A	Engine Stop Solenoid (Green)
B-2	40A	Main circuit (Green)
C	60A	Alternator circuit (Yellow)

NOTE: Failure of fuse, C, is usually caused from incorrect polarity (such as reversed cables when using a booster battery). Failed fuse will not allow battery to be charged during normal operation.

IMPORTANT: Fuses are of specific amperage capacity for the circuit in which they are located. Do not replace fuses with unauthorized parts.

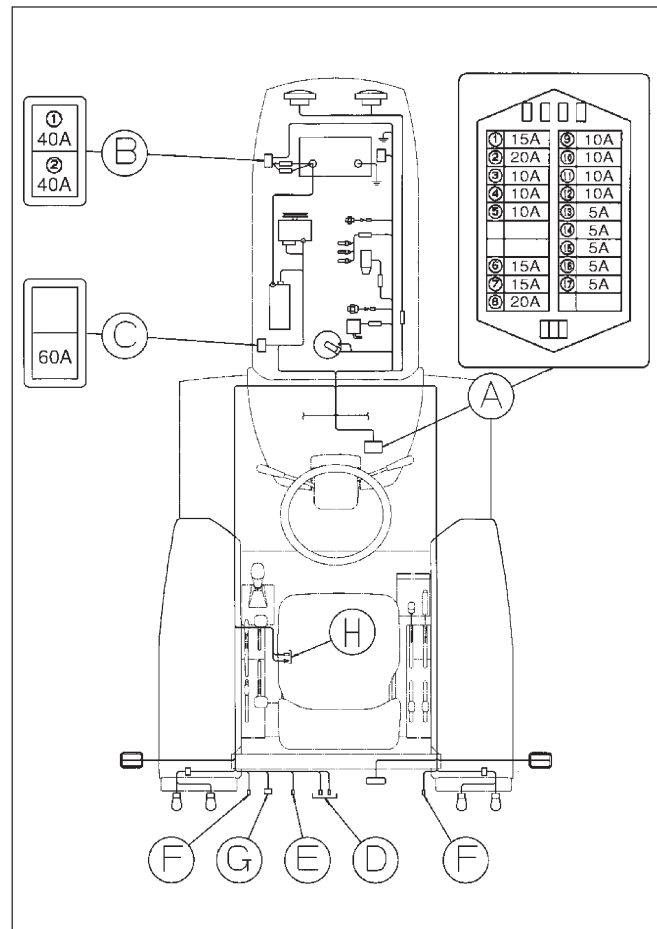
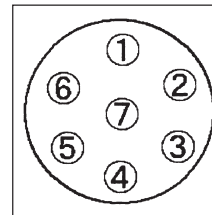


FIG. 6-30a

- D: Assistant Power 120W×2
- E: Assistant Power 70W (with key switch ON)
- F: Work Light 100W×2
- G: 7 Pins Socket
- H: Seat Switch

G: 7 Pins Socket Location



Ref.	DIN	Function
①	L	Left Turn
②	52	-
③	31	Ground
④	R	Right Turn
⑤	58R	Tail Light
⑥	54	Stop Light
⑦	58L	Tail Light

Fuse Location (Power shift type)

Main Fuse Box, A- Located on right side, to steering post.

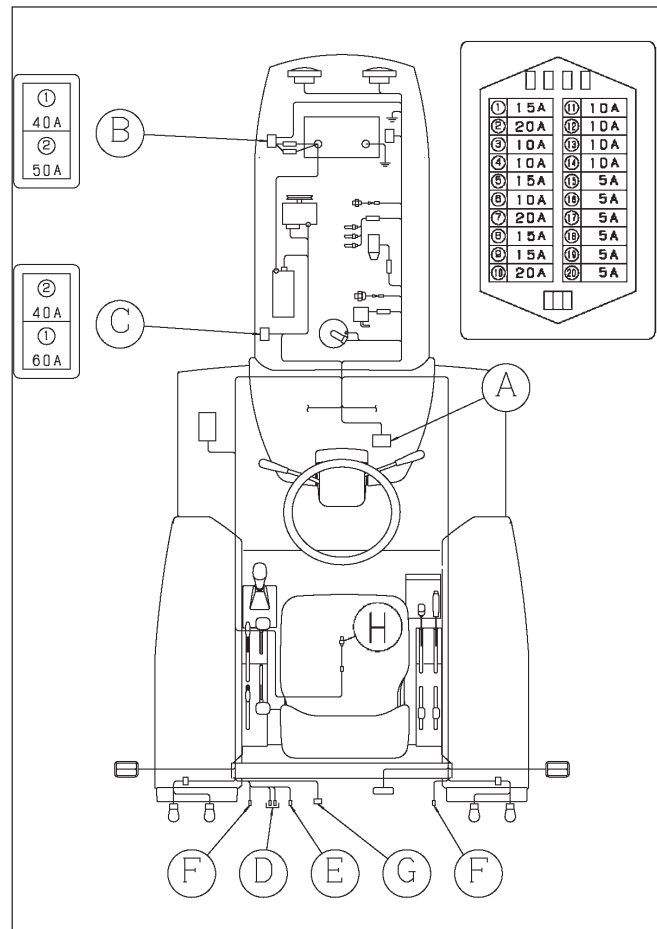
Ref	Amp	Function
1	15A	Turn Lights
2	20A	Head Lights, Tail Lights, Position Light, Horn
3	10A	Stop Light
4	10A	Instrument Panel
5	15A	Alternator, Fuel Pump, Safety Relay
6	10A	ECU and Control System
7	20A	Cab Power Supply
8	15A	Assistant Power
9	15A	Assistant Power
10	20A	Work Light
11	10A	Head Light-Hi beam(Right)
12	10A	Head Light-Hi beam(Left)
13	10A	Head Light-Low beam(Right)
14	10A	Head Light-Low beam(Left)
15	5A	Tail Light(Right)
16	5A	Tail Light(Left)
17	5A	Position Light(Right)
18	5A	Position Light(Left)
19	5A	License Plate Light
20	5A	Check Mode Fuse

- **Slow-Blow Fuses, B & C-** In-line fuses protect relevant circuit by melting when sustained heavy electrical load or short circuit is encountered.
Fuse B is located above and to the left of battery.
Fuse C is located on left side, to rear of engine.(above the starter)

Ref.	Amp	Function
B-1	40A	Engine Stop Solenoid (Green)
B-2	50A	Main circuit (Red)
C-1	60A	Alternator circuit (Yellow)
C-2	40A	Cabin circuit (Green)

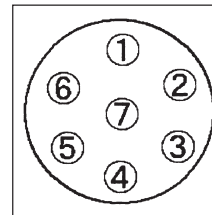
NOTE: Failure of fuse, C, is usually caused from incorrect polarity (such as reversed cables when using a booster battery). Failed fuse will not allow battery to be charged during normal operation.

IMPORTANT: Fuses are of specific amperage capacity for the circuit in which they are located. Do not replace fuses with unauthorized parts.

**FIG. 6-30b**

- D: Assistant Power 120W×2
E: Assistant Power 70W (with key switch ON)
F: Work Light 100W×2
G: 7Pins Socket
H: Seat Switch

G: 7 Pins Socket Location



Ref.	DIN	Function
①	L	Left Turn
②	52	-
③	31	Ground
④	R	Right Turn
⑤	58R	Tail Light
⑥	54	Stop Light
⑦	58L	Tail Light

TG5330,5390,5470**Fuse Location(HST type)**

Main Fuse Box, A- Located on right side, to steering post.

Ref	Amp	Function
1	15A	Turn Lights
2	20A	Head Lights, Tail Lights, Position Light, Horn
3	10A	Stop Light
4	10A	Key Stop Relay, ECU, PTO Safety System
5	15A	Alternator, Instrument Panel, Safety Relay
6	20A	Cab Power Supply
7	15A	Assistant Power
8	15A	Assistant Power
9	20A	Work Light
10	10A	Head Light-Hi beam(Right)
11	10A	Head Light-Hi beam(Left)
12	10A	Head Light-Low beam(Right)
13	10A	Head Light-Low beam(Left)
14	5A	Tail Light(Right)
15	5A	Tail Light(Left)
16	5A	Position Light(Right)
17	5A	Position Light(Left)
18	5A	License Plate Light
19	5A	Check Mode Fuse

Slow-Blow Fuses,B&C- In-line fuses protect relevant circuit by melting when sustained heavy electrical load or short circuit is encountered.

Fuse B is located above and to the left of battery.

Fuse C is located on left side, to rear of engine.(above the starter)

Ref	Amp	Function
B-1	40A	Engine Stop Solenoid (Green)
B-2	50A	Main circuit (Red)
C-1	60A	Alternator circuit (Yellow)
C-2	40A	Cabin circuit (Green)

NOTE: Failure of fuse, C,is usually caused from incorrect polarity (such as reversed cables when using a booster battery).Failed fuse will not allow battery to be charged during normal operation.

IMPORTANT: Fuses are of specific amperage capacity for the circuit in which they are located. Do not replace fuses with unauthorized parts.

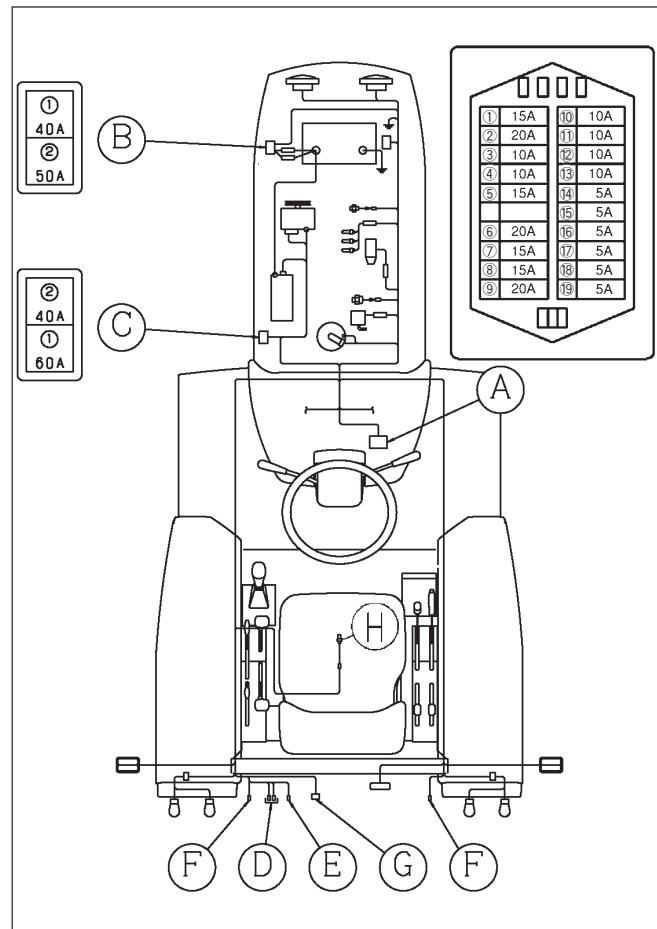


FIG. 6-30c

D: Assistant Power 120W×2

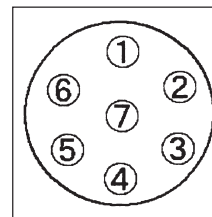
E: Assistant Power 70W (with key switch ON)

F: Work Light 100W×2

G: 7Pins Socket

H: Seat Switch

G: 7 Pins Socket Location



Ref.	DIN	Function
①	L	Left Turn
②	52	-
③	31	Ground
④	R	Right Turn
⑤	58R	Tail Light
⑥	54	Stop Light
⑦	58L	Tail Light

Fuse Location(CENTER ROPS type)

Main Fuse Box, A- Located on right side, to steering post.

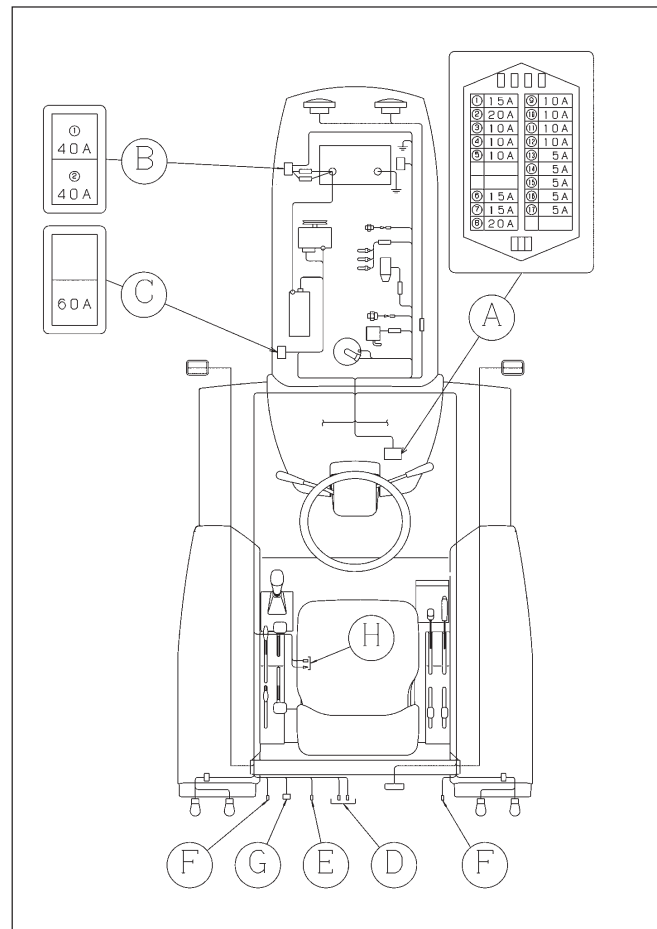
Ref	Amp	Function
1	15A	Turn Lights
2	20A	Head Lights, Tail Lights, License Plate Light, Position Light, Horn
3	10A	Stop Light
4	10A	Key Stop Relay, Safety Relay, PTO Solenoid Valve, Fuel Pump
5	10A	Alternator, Monitor
6	15A	Assistant Power
7	15A	Assistant Power
8	20A	Work light
9	10A	Head Light-Hi beam(Right)
10	10A	Head Light-Hi beam(Left)
11	10A	Head Light-Low beam(Right)
12	10A	Head Light-Low beam(Left)
13	5A	Tail Light(Right)
14	5A	Tail Light(Left)
15	5A	Position Light(Right)
16	5A	Position Light(Left)
17	5A	License Plate Light

- **Slow-Blow Fuses, B & C** —In-line fuses protect relevant circuit by melting when sustained heavy electrical load or short circuit is encountered.
Fuse B is located above and to the left of battery.
Fuse C is located on left side, to rear of engine.(above the starter)

Ref.	Amp	Function
B-1	40A	Engine Stop Solenoid (Green)
B-2	40A	Main circuit (Green)
C	60A	Alternator circuit (Yellow)

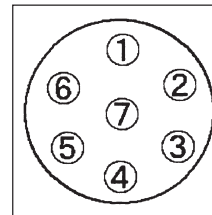
NOTE: Failure of fuse, C, is usually caused from incorrect polarity (such as reversed cables when using a booster battery). Failed fuse will not allow battery to be charged during normal operation.

IMPORTANT: Fuses are of specific amperage capacity for the circuit in which they are located. Do not replace fuses with unauthorized parts.

**FIG. 6-30d**

- D: Assistant Power 120W×2
E: Assistant Power 70W (with key switch ON)
F: Work Light 100W×2
G: 7Pins Socket
H: Seat Switch

G: 7 Pins Socket Location



Ref.	DIN	Function
①	L	Left Turn
②	52	-
③	31	Ground
④	R	Right Turn
⑤	58R	Tail Light
⑥	54	Stop Light
⑦	58L	Tail Light

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Fuse Location(Cabin)

Cabin Fuse Box,P- Located on the left hand side of the operator's seat

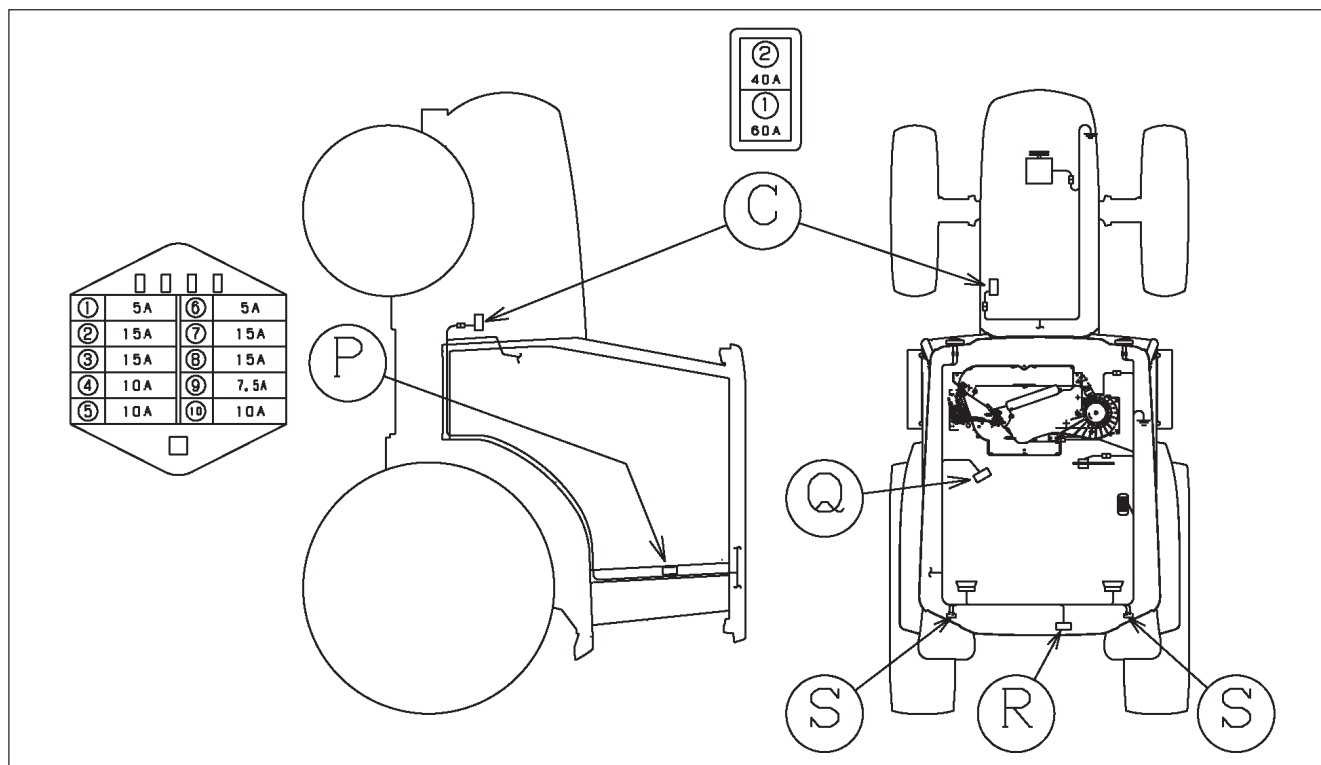


FIG. 6-31

Ref	Amp	Function
1	5A	Radio(accessory)
2	15A	Front Working Lamp
3	15A	Rear Working Lamp(accessory)
4	10A	Windshield Wiper
5	10A	Rear Window Wiper(accessory)
6	5A	Courtesy Lamp
7	15A	Air Conditioner Lamp
8	15A	Socket
9	7.5A	Air Conditioner
10	10A	Radio(accessory)

Radio Connection,Q(accessory)

Rear Wiper Connection ,R(accessory)

Rear Working Lamp,S(accessory)

CLUTCH FREE-PLAY ADJUSTMENT

FIG. 6-32: Check clutch pedal free-play regularly and adjust as necessary. Correct clutch pedal free-play, A, is 7/8" to 1-1/8" (20 to 30 mm) when measured at the end of the pedal as shown.

NOTE: Through use, clutch free-play will be reduced.

IMPORTANT: Correct free-play must be maintained to; reduce wear on clutch and release bearing, and allow complete disengagement when pedal is depressed.

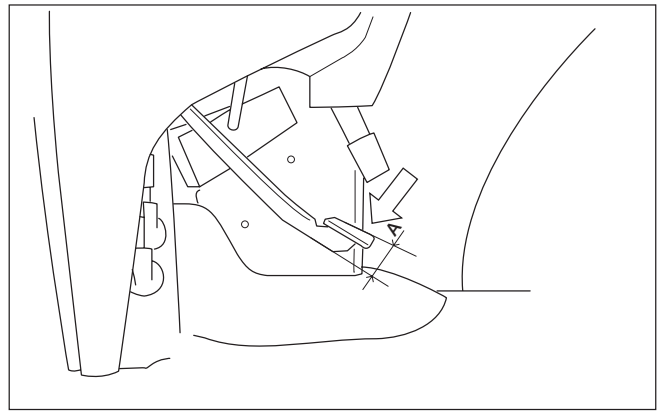


FIG. 6-32

FIG. 6-33: To adjust clutch pedal free-play, loosen lock nut, 1 (right-hand thread), and lock nut, 2 (left-hand thread). Adjust turnbuckle, 3, on linkage until free-play is correct. Lengthening linkage will increase free-play, shortening linkage will reduce free-play.

Secure by retightening lock nuts.

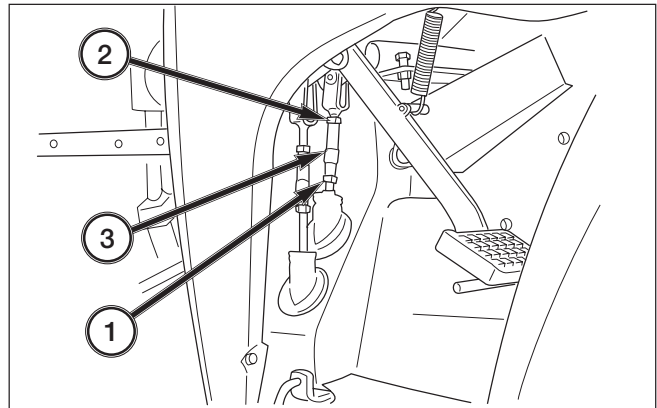


FIG. 6-33

BRAKE ADJUSTMENT

FIG. 6-34: Unlatch pedals and check free-play of each brake pedal. Correct free-play, A, of each individual brake pedal is 1-1/8" to 1-9/16" (30 to 40 mm).

NOTE: Through use, free-play will increase and brake balance will be affected. Adjust and balance brakes before free-play is excessive.

FIG. 6-35: Loosen lock nut, 1 (right-hand thread), and lock nut, 2 (left-hand thread). Adjust turnbuckle, 3, so free-play is correct for respective brake pedal.

Repeat procedure for other brake so free-play in pedals is equal. Secure lock nuts against turnbuckles.

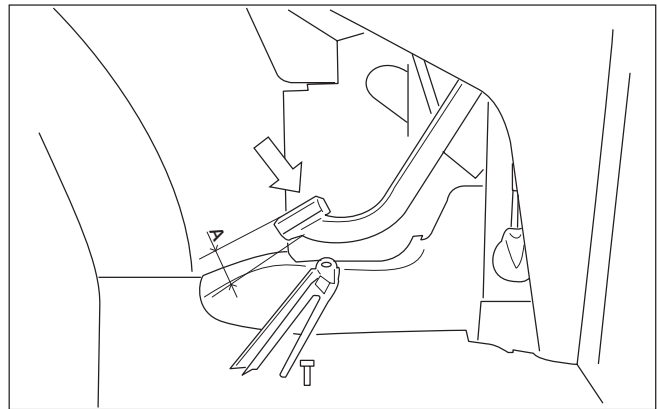


FIG. 6-34

When adjustment is complete, latch pedals together and operate Tractor at low speed. Depress pedals. If Tractor has tendency to pull to one side, slight readjustment of one brake is required.

Make sure lock nuts are secured when brake adjustment is complete. Check operation of parking brakes after adjustment is made.



CAUTION: Brakes must be adjusted evenly to permit equal braking action at both rear wheels when brake pedals are latched together.

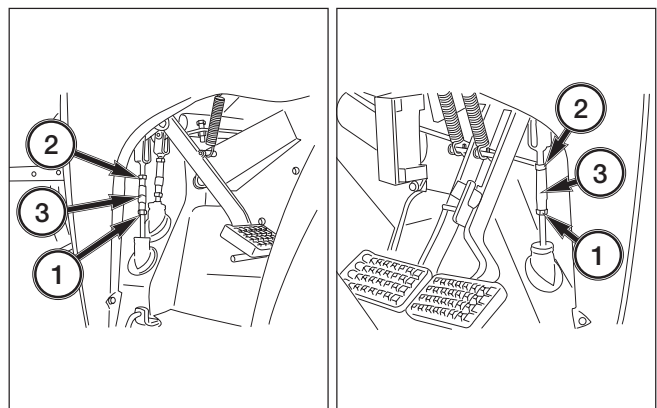


FIG. 6-35

TG5330,5390.5470**WHEELS & TIRES**

Examine wheels and tires periodically for correct inflation pressures, tight wheel bolts, and any physical damage that may be a detriment to Tractor operation and operator safety. Correct condition prior to Tractor operation.

Tire Inflation Pressures

FIG. 6-36: Maintaining correct tire pressure will help insure tire long life. If tires have deep scratches, cuts or punctures, the respective tire should be repaired or replaced by qualified personnel as soon as possible.

IMPORTANT: *If necessary to replace any tire(s), ensure original tire size is used. This is particularly true on 4-WD models to ensure correct amount of front axle overspeed (or lead) is maintained.*

Tractor	TYPE TYRES	TYRE LOCATION/SIZE		PRESSURE PSI(kPa)
TG5330 TG5390	AG	Front	7-16 R1	26(179)
		Rear	12.4-24 R1	14(97)
	AG	Front	8-16 R1	23(159)
		Rear	12.4-24 R1	14(97)
	Turf	Front	212/80D-15PD	23(159)
		Rear	355/80D-20PD	14(97)
TG5470	AG	Front	9.5-16 R1	31(216)
		Rear	13.6-28 R1	21(137)
	Turf	Front	29x12.00-15	14(97)
		Rear	475/65D-20	17(117)

FIG. 6-36**Wheel Bolt Torque**

FIG. 6-37: Periodically check all wheel bolt torques. Correct bolt torques:

Front Wheel Bolts, 1 175 ft.-lbs. (102 N • m)

Rear Wheel Bolts, 2 120 ft.-lbs. (163 N • m)

Rear Wheel Center to Rim Bolts, 3 (Ag. Tires Only)
120 ft.-lbs. (163 N • m)



CAUTION: Correct wheel bolt torque must be maintained. Installation of front or mid-mounted implements (ex; loaders, mowers) impose increased loads and require frequent checking of wheel bolts.

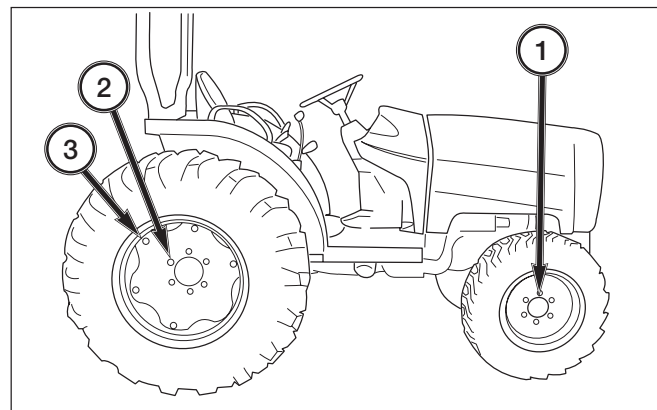
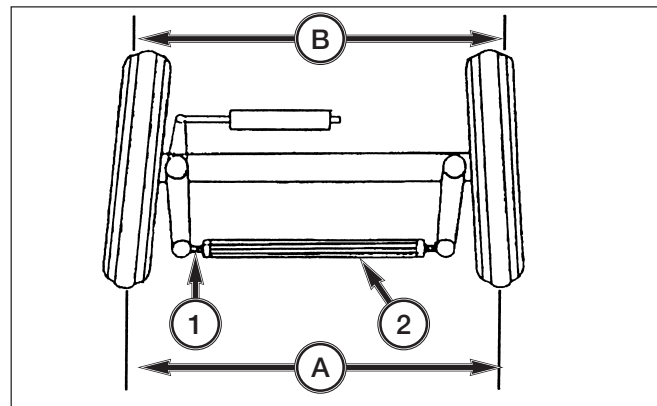
Front Wheel Alignment

FIG. 6-38: Correct toe-in dimensions of front wheels (A minus B) are as follows:

4-WD 0.08 to 0.24" (2-6 mm)

To adjust, loosen lock nuts, 1, and adjust tie rod length by turning turnbuckle, 2. Adjust each side evenly. **Ball joints must move freely after lock nuts are tightened.**

NOTE: Measure toe-in from tire center to tire center at a point halfway up on face of each tire.

**FIG. 6-37****FIG. 6-38**

Front Wheel Spacing

FIG. 6-39: Front 4-WD Wheels - Ag tires, turf tires cannot be reversed.

Tractor	TYPE TYRES		TYRE LOCATION/SIZE	SETTING (mm)
TG5330	Front	AG	7-16 R1	1090
TG5390		AG	8-16 R1	1145
		Turf	212/80D-15PD	1135
TG5470		AG	8-16 R1	1200
		AG	9.5-16 R1	1220
		Turf	29x12.00-15	1215

※

※Except TG5470 Center ROPS type

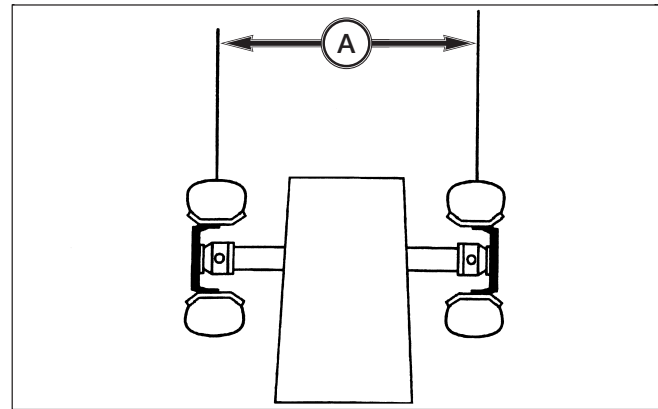


FIG. 6-39

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Rear Wheel Spacing

Agricultural-Type Rear Wheels - Five different rear tread width settings may be achieved by reversing wheel centers, switching rear tires and wheels from side to side, and/or by repositioning wheel rim on the wheel center.

NOTE: Agricultural lug-type tires must always be installed so when viewed from the rear, the V pattern of the tread points upward.

FIG. 6-40: To adjust rear tread width, jack Tractor sufficiently and securely block in raised position.

To change rim offset - Remove rim, 2, from wheel center, 1. Rotate wheel center slightly (so rim brackets can move past outer edge of wheel center) and reposition rim on opposite side of wheel center.

Repeat procedure with remaining side.

To reverse entire wheel and tire assembly - Raise both rear tires of Tractor. Remove bolts securing both rear wheel assemblies to rear axle hubs and switch wheel assemblies to opposite sides of Tractor



CAUTION: Rear wheels are heavy. Use care when moving. Make sure Tractor is blocked securely.

Tighten all wheel bolts securely and recheck after short period of operation.

FIG. 6-41: Agricultural rear tire settings.

Tractor	Ref.	TYPE TYRES	TYRE LOCATION/SIZE	SETTING (mm)
TG5330 TG5390	1	AG	12.4-24 4PR 13.6-24 4PR	1105
	2			1175
	3			1215
	4			1300
	5			1415
TG5470	1	AG	13.6-24 4PR	1115
	2			1200
	3			1245
	4			1315
	5			1355
	1	AG	13.6-28 4PR	1140
	2			1220
	3			1340
	4			1420
	5			1540

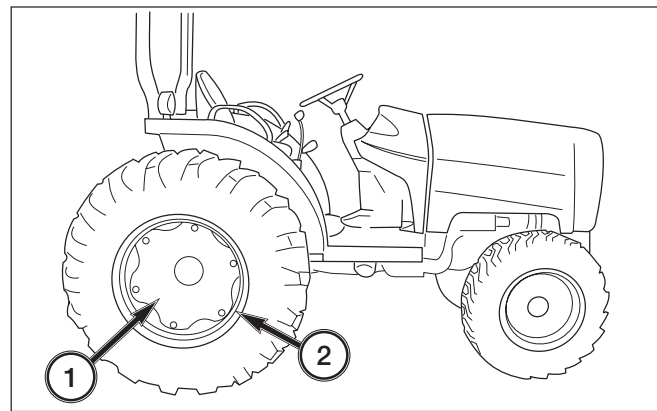


FIG. 6-40

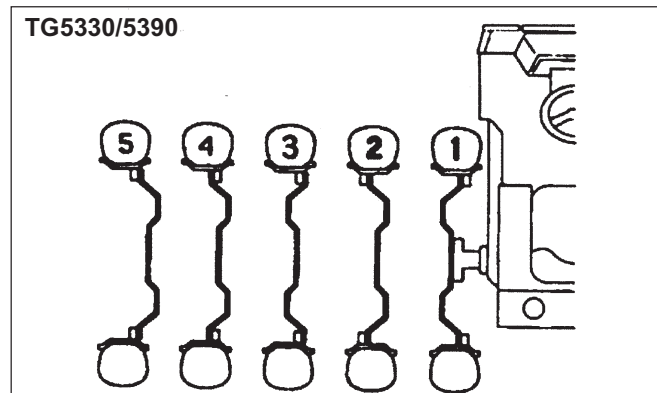


FIG. 6-41a

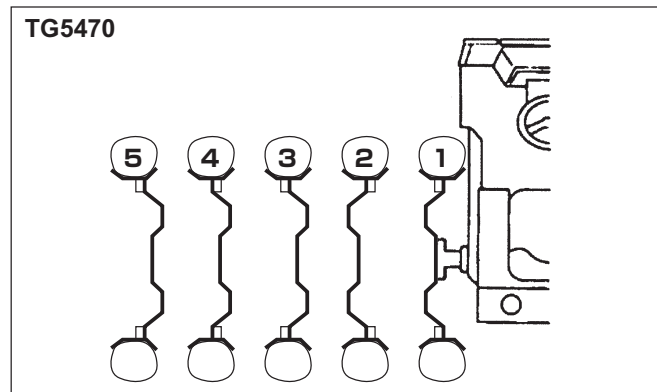


FIG. 6-41b

FIG. 6-42: Turf rear tire settings.

Tractor	Ref.	TYPE TYRES		TYRE LOCATION/SIZE	SETTING (mm)
TG5330	1	Rear	Turf	355/80D-20PD	1170
TG5390	1			475/65D-20PD	1430

NOTE: Except TG5470 Center ROPS type.

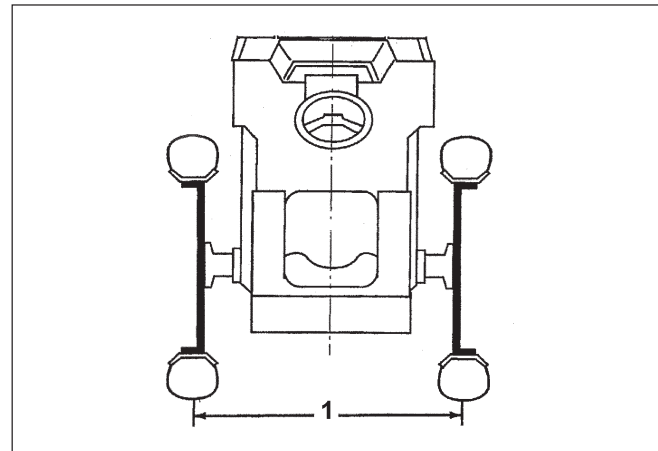


FIG. 6-42

TG5330,5390.5470**Steering Free-Play**

FIG. 6-43: Steering should be checked for excessive looseness, as indicated by steering wheel free-play. Maximum free-play is approximately 1.25" (30 mm) when measured at outside of steering wheel rim.

Excessive free-play can be caused by:

- Loose or worn ball joints
- Worn or damaged steering column shaft/universal joints
- Worn or damaged power steering unit



CAUTION: Excessive steering free-play must be corrected before use. Contact your Dealer.

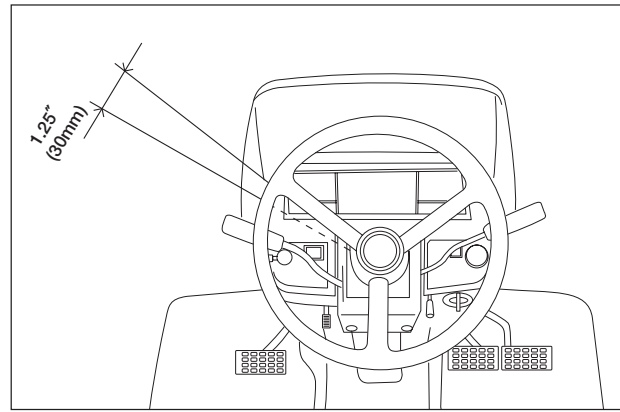
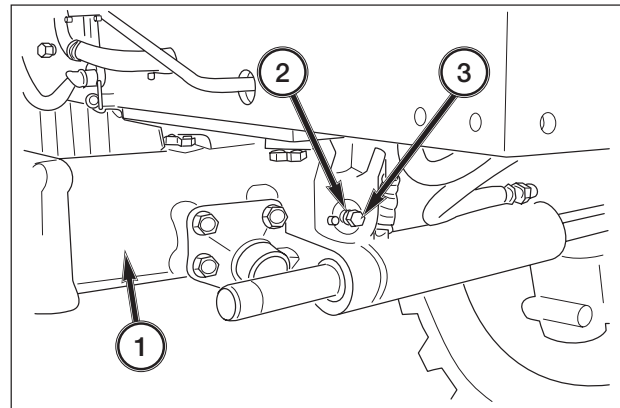
**FIG. 6-43****Front Axle End-Float (4-WD)**

FIG. 6-44: Fore and aft play of front drive axle, 1, in its supports should be 0.004-0.012" (0.1-0.3 mm). End-float is measured with axle raised off ground.

Loosen lock nut, 2, and turn adjusting bolt, 3, as needed to achieve correct measurement. Tighten lock nut.

NOTE: Excessive end-float will cause noise. This noise will be more pronounced when using 4-WD.

**FIG. 6-44****CLUTCH HOUSING PLUG**

Pipe plug should be removed from bottom of clutch housing once a year or when clutch slipping is apparent. Any oil leakage from engine rear crankshaft seal and/or transmission input will be indicated by oil draining through hole. Contact your Dealer if oil leakage is evident.

TORQUE CHART

FIG. 6-45: All fasteners should be tightened in accordance with torque chart unless a specific torque value is called out in relevant maintenance information.

	4T		7T	
	ft.-lbs.	N.m	ft.-lbs.	N.m
M6	4.3-5.7	5.8-7.7	7.2- 9.3	9.8-12.6
M8	9.3-13.0	12.6-17.6	18.0-25.2	24.4-34.2
M10	14.4-21.6	19.5-29.3	39.7-60.5	53.8-68.5
M12	36.1-43.3	48.9-58.7	65.0-79.4	88.1-107.7
M14	50.5-57.8	68.5-78.4	93.9- 108.4	127.3-147.0
M16	72.2-86.7	97.9-117.5	115.6-130.0	156.7-176.3
M18	86.7-101.1	117.5-137.0	144.5-173.4	195.9-235.0
M20	108.4-122.8	146.0-166.5	173.4-187.8	235.0-254.6

CHART

FIG. 6-45

STORAGE

FIG. 6-46: If Tractor is to be stored for extended periods, such as off-season non-use, certain measures should be taken for its preservation during such periods. These measures will vary according to geographical area and storage season.

1. Replace engine oil and filter. Operate at low idle five minutes to lubricate parts.
2. Lubricate all grease fittings and lightly oil control linkage pivots.
3. Detach implements.
4. Store Tractor in enclosed area, if possible, for protection from weather.
5. Block up Tractor to remove weight from tires and to protect tires from oily or damp floor.
6. Raise and lock three-point lift linkage in up position by turning lowering rate control knob, 1, fully clockwise.

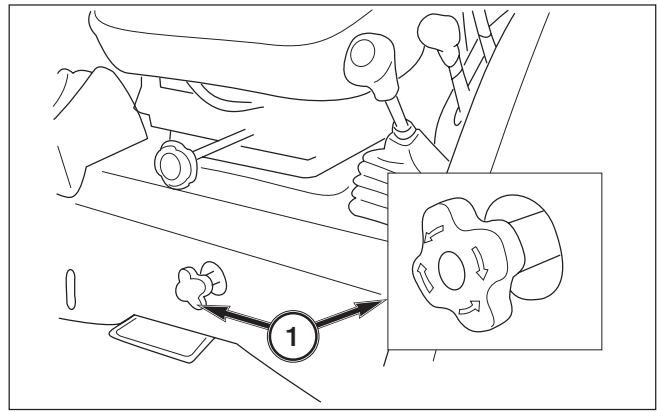


FIG. 6-46

FIG. 6-47: Step 7 - Fill fuel tank to prevent condensation from forming on inside of tank. Turn filter valve, 2, to OFF position.

8. Remove battery and store in cool dry place. Maintain charge during storage period.
9. If Tractor is stored during cold weather season insure that antifreeze is adequate. Alternatively, radiator and engine block may be drained.
10. Check with your diesel fuel supplier on the availability of a diesel fuel additive to place in the fuel system during storage period.
11. If Tractor cannot be placed in an enclosed area place it under some sort of cover and cover exhaust pipe to prevent entrance of rain or snow.

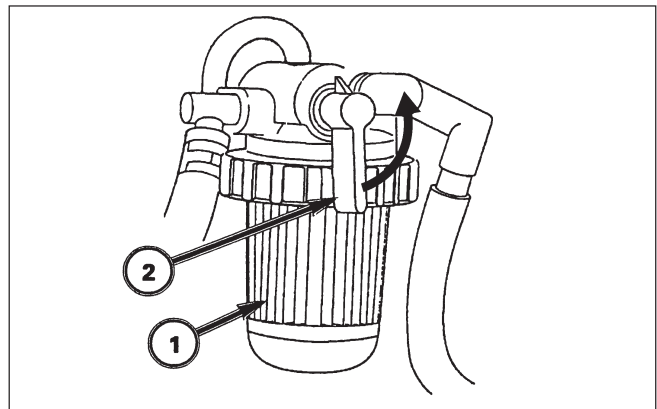


FIG. 6-47

FIG. 6-48: Step 12 - Depress clutch pedal and secure in the disengaged position with hook, 3.

NOTE: This is to prevent clutch seizure during long periods of Tractor storage.

13. Touch up scratches with paint.

At the end of storage period;

Perform appropriate lubrication and maintenance before placing Tractor back in service. See Lubrication and Maintenance section.

- Conduct full pre-start inspection. Make sure all controls operate correctly.
- Allow engine to idle approximately 30 minutes. Check for leaks and repair as required.

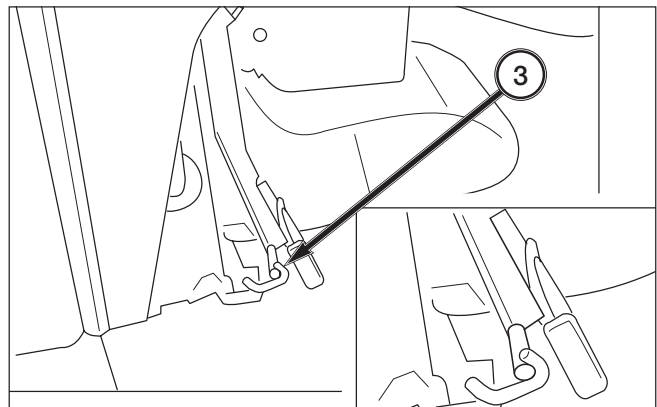


FIG. 6-48

TROUBLESHOOTING

ENGINE

Problem	Possible Cause	Remefy
Starter motor does not operate with key turned to START	Gear shift lever not in neutral PTO clutch engaged Broken safety switch Discharged battery Loose or dirty terminals Broken main switch Broken starter	Place gear shift lever in neutral. Switch off PTO. Consult your Dealer. Charge battery. Clean and retighten securely. Consult your Dealer. Consult your Dealer.
Starter moter operates but not at full speed	Discharged battery Loose or dirty terminals Defective oil viscosity Improper oil viscosity Defective engine	Charge battery. Clean and retighten securely. Clean and tighten starter mounting. Replace with oil of proper viscosity. Consult your Dealer.
Starter motor operates but not at full speed	Electric fuel system Air in fuel system Clogged fuel filter Fuel is not being supplied Incorrect preheating procedure Defective engine	Consult your Dealer. Air-bleed fuel system. Clean filter. Check fuel level, open fuel valve. Longer use of glow plugs. Consult your Dealer
Irregular engine running	Air in fuel system Clogged fuel filter Clogged fuel injectors Fuel line is leaking air Fuel injection pump timing Defective engine	Air-bleed fuel system. Clean filter. Consult your Dealer. Retighten clamps, replace defective pipes. Consult your Dealer. Consult your Dealer.
When decelerated, engine stops	Incorrect low idle setting Malfunctioning fuel injection pump Improper valve clearance	Consult your Dealer. Consult your Dealer. Consult your Dealer.
Engine over-speeds	Defective fuel injectors Defective governor Incorrect high speed setting Engine oil is getting into combustion chambers	Consult your Dealer. Consult your Dealer. Consult your Dealer. Consult your Dealer.

ENGINE

Problem	Possible Cause	Remedy
Engine stops unexpectedly during operation	Insufficient fuel supply Defective fuel injectors Defective fuel injection pump Engine seizure due to low or poor oil	Top up fuel and-bleed fuel system. Consult your Dealer. Consult your Dealer. Consult your Dealer.
Engine overheats	Insufficient coolant Broken or loose fan belt Clogged grille, radiator screens Clogged radiator fins Defective thermostat Insufficient engine oil	Top up coolant. Adjust belt tension or replace. Clean. Clean. Replace. Inspect oil level and replenish if necessary.
Exhaust fumes are white	Clogged air cleaner High engine oil level Insufficient fuel delivery Cold-running engine	Clean or replace element (s). Inspect oil level and correct. Consult your Dealer. Allow to warm, check thermostat.
Exhaust fumes are too black	Poor fuel Excessive fuel delivery Insufficient fuel injector pressure Insufficient combustion air	Replace with better grade. Consult you Dealer. Consult you Dealer. Check clean or replace air filter.
Poor engine output	Seized fuel injectors and/or carbon deposit Insufficient compression or leaking valves Incorrect valve clearances Incorrect fuel injection timing Insufficient fuel supply Clogged air cleaner	Consult your Dealer. Consult your Dealer. Consult your Dealer. Consult your Dealer. Check fuel system. Clean or replace elements (s).
Oil pressure monitor is lit during operation	Insufficient engine oil Too low oil viscosity Defective pressure switch Clogged oil filter Defective oil pump	Replenish. Replace with oil of proper viscosity. Replace. Replace element cartridge. Consult your Dealer.
Charging monitor is lit during operation	Defective wiring Defective alternator Defective regulator Low electrolyte level or defective battery Loose or damaged fan belt	Correct loose or dirty terminals, short circuit, poor etc. Consult your Dealer. Consult your Dealer. Consult electrolyte level or replace battery. Adjust belt tension or replace.

TG5330,5390,5470

CLUTCH

Problem	Possible Cause	Remedy
Clutch slips	Poor clutch pedal adjustment Worn or burnt clutch lining Engine, transmission oil leak	Adjust free-play. Consult your Dealer. Consult your Dealer.
Clutch won't disengage	Poor pedal adjustment Seized clutch lining Transmission shafts seized	Adjust free-play. Consult your Dealer. Consult your Dealer.

BRAKES

Problem	Possible Cause	Remedy
Brakes do not work well or not balanced with each other when applied	Too much free play of pedals Worn or seized linings Different pedal strokes	Adjust free-play. Consult your Dealer. Correct so both pedals are equal.
Brake pedals do not return smoothly	Broken return springs Poor lubrication	Replace broken springs. Remove rust, then lubricate.

HYDRAULIC SYSTEM

Problem	Possible Cause	Remedy
Insufficient oil pressure	Low engine speed Low transmission oil Intake piping is sucking air Clogged oil filter (s) Defective hydraulic oil pump Defective control valve Broken cylinder	Increase speed. Fill to specified level. Retighten clamps or replace cracked pipes and defective o-rings. Clean or replace. Consult your Dealer. Consult your Dealer. Consult your Dealer.
Leaking piping	Loose joints Cracked pipes	Retighten. Replace pipes, o-rings.
With control lever in RAISE position, relief valve blows	Poorly adjusted rod on position control lever	Correct rod adjustment.
Three-point hitch does not lower	Locked lowering speed control knob Defective control valve Broken cylinder Seized lift shaft bearing	Turn counterclockwise to LOWERING position. Consult your Dealer. Consult your Dealer. Consult your Dealer.

STEERING SYSTEM

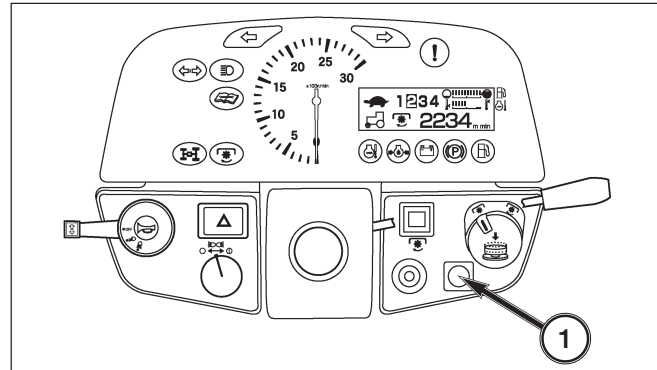
PROBLEM	Possible Cause	Remedy
Steering wheel is hard to turn or turns in one directions	Poorly installed steering column Air in steering hydraulic system Clogged suction filter Improper toe-in Different front tire inflation Loose steering or ball joints Defective steering unit, pump	Correct Air-bleed steering system. Remove and clean. Correct. Inflate both tires to same pressure. Retighten or replace defective parts. Consult your Dealer.
Steering wheel has too much free-play	Worn steering column Loose ball joints Defective steering unit	Consult your Dealer. Retighten. Consult your Dealer.

ELECTRICAL SYSTEM

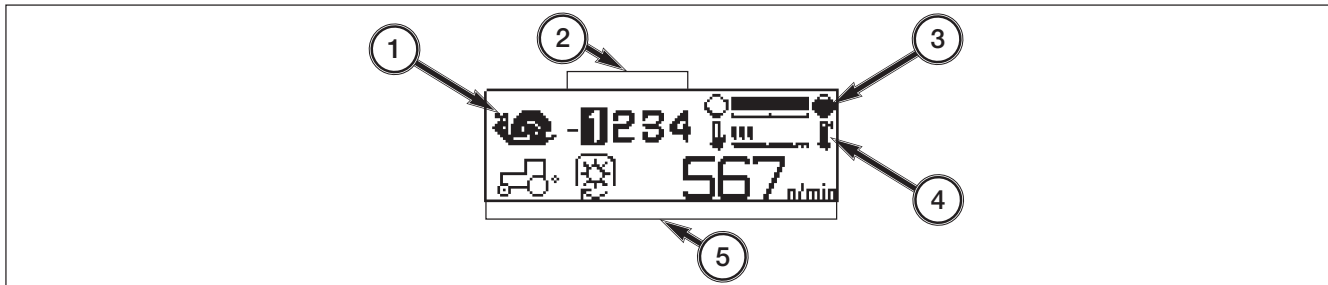
Problem	Problem	Remedy
Battery cannot be charged	Blown fuse Defective wiring Loose or damaged fan belt Defective battery Defective alternator Defective regulator	Check fuse and replace. Correct loose, dirty terminals, short circuit, poor ground, etc. Give belt proper tension or replace. Correct loose terminal connection, corrosion, or electrolyte level. Consult your Dealer. Consult your Dealer.
Head lamps are dim	Discharged battery Poor connections	Charge battery, check charging system Check ground points and terminals. Clean and tighten.
Particular function will not operate	Burnt bulb (as applicable) Blown fuse Poor contact Defective switch	Replace. Check fuse and replace. Inspect ground points and terminals, clean if necessary. Replace as required.

DIGITAL PANEL CONTENTS - POWER SHIFT TYPE -

Digital panel display is used to assist in your operation. Indication of digital panel is changed by pushing selectable switch, 1. Digital panel indicates not only engine revolutions but also traveling speed, rear PTO speed, mid PTO speed, hourmeter, tripmeter, etc.



Normal Display



- 1 Range Shift Lever Position
- 2 Select Gear Shift Position(Power shift type)
- 3 Fuel Gauge
- 4 Coolant Temp Gauge

- 5 Information
 - Traveling speed
 - PTO speed
 - Mid PTO speed(opt)
 - Hourmeter
 - Tripmeter
 - Traveling speed/Rear PTO speed

No	Item	Display Indication	Note
1	Traveling Speed		
2	Rear PTO Speed		Rear PTO lever and PTO switch is ON position
			Rear PTO lever or PTO switch is OFF position
3	Mid PTO Speed(opt) (Display indicates mid PTO speed when mid PTO lever is ON position)		PTO switch is ON position
			PTO switch is OFF position
4	Hourmeter		Hourmeter counts when rotating engine. Hourmeter could not be reset.
5	Tripmeter		Tripmeter counts when rotating engine. Hourmeter could be reset by pushing selectable switch for 2 seconds.

6	Traveling/Rear PTO Speed		Pushing selectable switch for 2 seconds at this monitor, digital panel would indicate traveling speed and rear PTO speed per 5 seconds automatically. Pushing selectable switch again, digital panel would return to normal mode.
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Attention Display

Digital display shows the following indication, when starting engine with shuttle lever 'forward/reverse position' or PTO switch 'ON' position. Before starting engine, confirm that forward/reverse shuttle lever in neutral position and PTO switch is OFF position.

No	Item	Display Indication	Note
1	Shuttle Lever		Shuttle lever is forward position. Shift shuttle lever in neutral position.
			Shuttle lever is reverse position. Shift shuttle lever in neutral position.
2	PTO switch		PTO switch is ON position. Turn PTO switch OFF.

Service Interval

Service Interval Lamp would illuminate when hourmeter indicates 50/100/200/300/400 •••hour.

Digital panel also would inform 'Service inspection' when hourmeter indicates 50/100/200/300/400 •••hour.

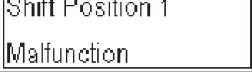
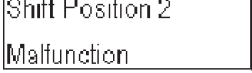
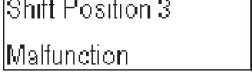
Please inspect your tractor.

No	Item	Display Indication	Note
1	Periodic Maintenance		Digital panel would return to normal mode by pushing selectable switch.

Gear Shift Error

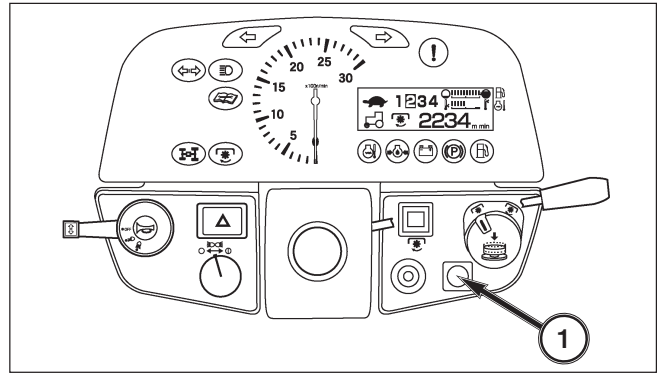
Digital display shows the following indication, when gear shift is problem.

Please consult your dealer.

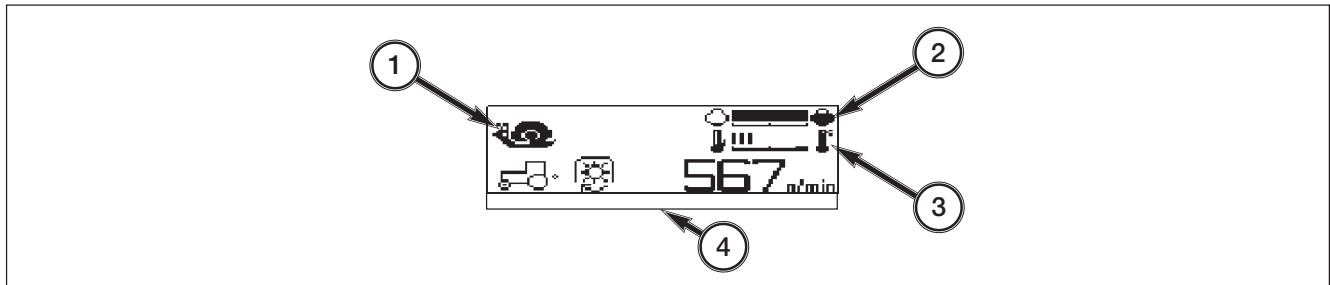
No	Item	Display Indication	Note
1	Gear shift sensor problem		Shift location sensor is not normal, or wiring harness of Shift location sensor is not normal.
2	Gear shift sensor problem		Adjustment of shift location sensor is not normal. Consult your Dealer.
3	Gear shift sensor problem		Shifting gear(1st) is not normal. Consult your Dealer.
4	Gear shift sensor problem		Shifting gear(2nd) is not normal. Consult your Dealer.
5	Gear shift sensor problem		Shifting gear(3rd) is not normal. Consult your Dealer.
6	Gear shift sensor problem		Shifting gear(4th) is not normal. Consult your Dealer.

DIGITAL PANEL CONTENTS - HST TYPE -

Digital panel display is used to assist in your operation. Indication of digital panel is changed by pushing selectable switch, 1. Digital panel indicates not only engine revolutions but also traveling speed, rear PTO speed, mid PTO speed, hourmeter, tripmeter, etc.



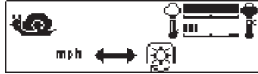
Normal Display



- 1 Range Shift Lever Position
- 2 Fuel Gauge
- 3 Coolant Temp Gauge

- 4 Information
 - Traveling speed
 - PTO speed
 - Mid PTO speed(opt)
 - Hourmeter
 - Tripmeter
 - Traveling speed/Rear PTO speed

No	Item	Display Indication	Note
1	Traveling Speed		
2	Rear PTO Speed		Rear PTO lever and PTO switch is ON position
			Rear PTO lever or PTO switch is OFF position
3	Mid PTO Speed(opt) (Display indicates mid PTO speed when mid PTO lever is ON position)		PTO switch is ON position
			PTO switch is OFF position
4	Hourmeter		Hourmeter counts when rotating engine. Hourmeter could not be reset.
5	Tripmeter		Tripmeter counts when rotating engine. Hourmeter could be reset by pushing selectable switch for 2 seconds.

6	Traveling/Rear PTO Speed		Pushing selectable switch for 2 seconds at this monitor, digital panel would indicate traveling speed and rear PTO speed per 5 seconds automatically. Pushing selectable switch again, digital panel would return to normal mode.
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Attention Display

Digital display shows the following indication, when starting engine with range shift lever 'snail/tortoise/hare position' or PTO switch 'ON' position. Before starting engine, confirm that range shift lever in neutral position and PTO switch is OFF position.

No	Item	Display Indication	Note
1	Range Shift Lever		Set range shift lever in neutral position.
			Set range shift lever in neutral position.
			Set range shift lever in neutral position.
2	PTO switch		PTO switch is ON position. Turn PTO switch OFF.

Service Interval

Service Interval Lamp would illuminate when hourmeter indicates 50/100/200/300/400 • • • hour.

Digital panel also would inform 'Service inspection' when hourmeter indicates 50/100/200/300/400 • • • hour.

Please inspect your tractor.

No	Item	Display Indication	Note
1	Periodic Maintenance		Digital panel would return to normal mode by pushing selectable switch.

SPECIFICATIONS

ENGINE	TG5330	TG5390	TG5470
Make	Iseki Diesel	Iseki Diesel	Iseki Diesel
Model.....	E3CD	E3CDT	E4CG
Type Indirect Injection, ...	Indirect Injection	Indirect Injection	Indirect Injection
	Overhead Valve	Overhead Valve	Overhead Valve
Aspiration	Natural	Exhaust-turbo charger	Natural
Displacement	1498 cm ³	1498 cm ³	2197 cm ³
Number of Cylinders	3	3	4
Bore	87 mm	87 mm	87 mm
Stroke	84 mm	84 mm	92.4 mm
Engine Horsepower (Net).....	23.5kw @ 2600 min-1	27.9kw @ 2600 min-1	33.8kw @ 2600 min-1
PTO Horsepower (Estimate)			
Stanadard and Power shift type	19.4kw @ 578 PTO min-1.....	23.0kw @ 578 PTO min-1	27.9kw@ 578 PTO min-1
HST type		23.0kw @ 578 PTO min-1	27.9kw@ 578 PTO min-1
Firing Order	1-3-2	1-3-2	1-3-4-2
Compression Ratio.....	21.7±0.5	21.7±0.5	21.8±0.5
Low Idle Speed	980-1020 min-1	980-1020 min-1	1010-1050 min-1
High Idle Speed	2760-2860 min-1	2760-2860 min-1	2810-2910 min-1
Valve Clearance (Cold);Intake	0.25 mm	0.25 mm	0.35 mm
Air Cleaner	Dry element.....	Dry element.....	Dry element
Engine Cooling	Liquid, forced circulation	Liquid, forced circulation	Liquid, forced circulation
Cold Starting Aid.....	Glow plugs (3).....	Glow plugs (3).....	Glow plugs (4)
TRANSMISSION-STANDARD type	TG5330/5390	TG5470	
Type: Primary.....	4-speed synchronized mesh	4-speed synchronized mesh	
Gear control	manual	manual	
Range	3-speed sliding mesh	3-speed sliding mesh	
Mechanical Shuttle.....	Synchronized, 95% reverse reduction	Synchronized, 95% reverse reduction	
Gear Speeds	12 gears forward, 12 reverse	12 gears forward, 12 reverse	
Clutch	single stage dry with 240 mm disc.	single stage dry with 275 mm disc.	
TRANSMISSION-POWER SHIFT type			
Type: Primary.....	4-speed synchronized mesh	4-speed synchronized mesh	
Gear control	Electrohydraulic control.....	Electrohydraulic control	
Range	3-speed sliding mesh	3-speed sliding mesh	
Power Shuttle.....	Hydraulically engaged, multi-plate wet disc	Hydraulically engaged, multi-plate wet disc	
Gear Speeds	12 gears forward, 12 reverse	12 gears forward, 12 reverse	
Clutch	single stage dry with 240 mm disc.	single stage dry with 275 mm disc.	
TRANSMISSION-HST TYPE			
Type: Primary.....	Infinite	Infinite	
Range	3-speed sliding mesh	3-speed sliding mesh	
Gear Speeds	3 gears forward, 3 reverse	3 gears forward, 3 reverse	
Clutch	None	None	
POWER TAKE OFF (PTO)			
Type	Independent, engine driven.....	Independent, engine driven	
Control	Electrohydraulic control.....	Electrohydraulic control	
Clutch	Hydraulically engaged, multi-plate wet disc	Hydraulically engaged, multi-plate wet disc	
Rear PTO Shaft	35 mm diameter, six spline	35 mm diameter, six spline	
Output	Clockwise rotation	Clockwise rotation	
Engine Speed @ 540 PTO rpm	2430min-1	2430min-1	
@ 1000 PTO rpm	2500min-1	2500min-1	
Mid-PTO Shaft (Option)	25.4 mm diameter, fifteen spline	35 mm diameter, six spline	
Output	Clockwise rotation	Clockwise rotation	
Mid-PTO Speed @ engine rpm	1916 @ 2600 min-1.....	1916 @ 2600 min-1	

SPECIFICATIONS**HYDRAULIC SYSTEM-STANDARD & HST TYPE****TG5330/5390****TG5470****Steering System**

Type	Hydrostatic	Hydrostatic
Pump	Separate engine-mounted gear pump	Separate engine-mounted gear pump
Maximum Output	18.5 litre/min	18.5 litre/min
Pressure	Relief valve setting 6860 kPa	Relief valve setting 11767 kPa

Main Hydraulic System; Pump

.....	Engine-mounted pump	Engine-mounted pump
Maximum Output	34.4 litre/min	43.8 litre/min
Pressure	Relief valve setting 15695 kPa	Relief valve setting 15695 kPa

Rear Linkage

Type.	Three-point hitch	Three-point hitch
Size	Category I	Category I
Control	Operated by single position control lever	Operated by single position control lever
Lift Capacity measured at ball ends	1270 kg	1580 kg
measured at 24 inches	970 kg	1400 kg

HYDRAULIC SYSTEM-POWER SHIFT type**Steering System**

Type	Hydrostatic	Hydrostatic
Pump	Separate engine-mounted gear pump	Separate engine-mounted gear pump
Maximum Output	22.7 litre/min	22.7 litre/min
Pressure	Relief valve setting 7848 kPa	Relief valve setting 11797 kPa

Main Hydraulic System; Pump

.....	Engine-mounted pump	Engine-mounted pump
Maximum Output	34.4 litre/min	43.8 litre/min
Pressure	Relief valve setting 15695 kPa	Relief valve setting 15695 kPa

Rear Linkage

Type.	Three-point hitch	Three-point hitch
Size	Category I	Category I
Control	Operated by single position control lever	Operated by single position control lever
Lift Capacity measured at ball ends	1270 kg	1580 kg
measured at 24 inches	970 kg	1400 kg

ELECTRICAL SYSTEM

System Voltage 12 volt, negative (-) ground 12 volt, negative (-) ground

Battery cca @ 18 degreesC (0 degreesF) 630 cca (80D26R) 710 cca (115D31R)

Charging

Except CABIN type 40 amp alternator with internal regulator / rectifier 40amp alternator with internal regulator / rectifier

CABIN TYPE 40 amp alternator with internal regulator / rectifier 60amp alternator with internal regulator / rectifier

CAPACITIES

Engine Crankcase with Filter	4.7 litres	8.0 litres
Transmission	31.0 litres	38.0 litres
Fuel Tank	40.0 litres	50.0 litres
Cooling system	6.7 litres	7.6 litres
Front Drive Axle (4WD Only)	7.5 litres	8.5 litres

TG5330,5390,5470

TREAD WIDTH SETTING

TG5330/5390

TG5470

REAR ROPS TYPE

	tyre type location size	Setting(mm)	tyre type location size	Setting(mm)
Front tyres	AG 7-16	1090	AG 9.5-16	1220
	AG 8-16	1150	Turf 29x12.00-15	1215
	Turf 212/80D-15	1135		

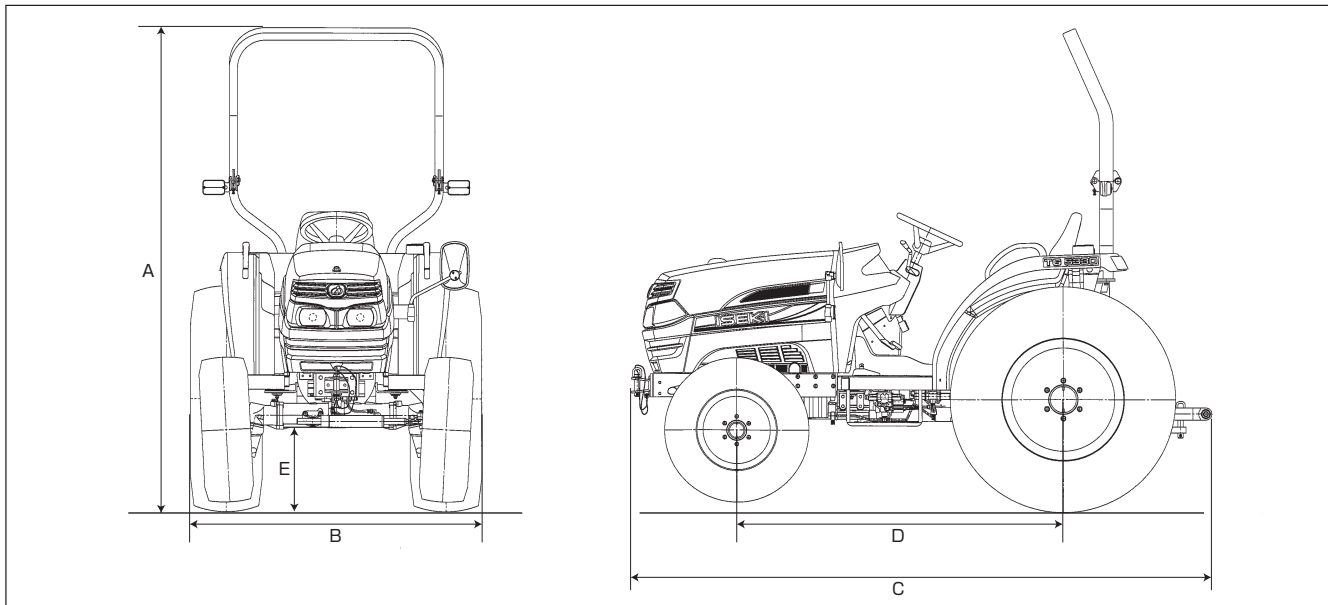
	tyre type location size	Ret.	Setting(mm)	tyre type location size	Ref.	Setting(mm)
Rear tyres	AG 12.4-24	1	1100	AG 13.6-28	1	1140
		2	1175		2	1220
		3	1215		3	1340
		4	1300		4	1420
		5	1415		5	1540
	AG 13.6-24	1	1100			
		2	1175			
		3	1215			
		4	1300			
		5	1415			
	Turf 355/80D-20		1170	Turf 475/65D-20		1430

CENTER ROPS TYPE

	tyre type location size	Setting(mm)	tyre type location size	Setting(mm)
Front tyres	AG 7-16	1090	AG 8-16	1200
	AG 8-16	1145	AG 9.5-16	1220
	Turf 212/80D-15	1135		

	tyre type location size	Ret.	Setting(mm)	tyre type location size	Ref.	Setting(mm)
Rear tyres	AG 12.4-24	1	1105	AG 13.6-24	1	1115
		2	1175		2	1200
		3	1215		3	1245
		4	1300		4	1315
		5	1415		5	1355
	AG 13.6-24	1	1105	AG 13.6-28	1	1140
		2	1175		2	1220
		3	1215		3	1340
		4	1300		4	1420
		5	1415		5	1540
	Turf 355/80D-20		1085			

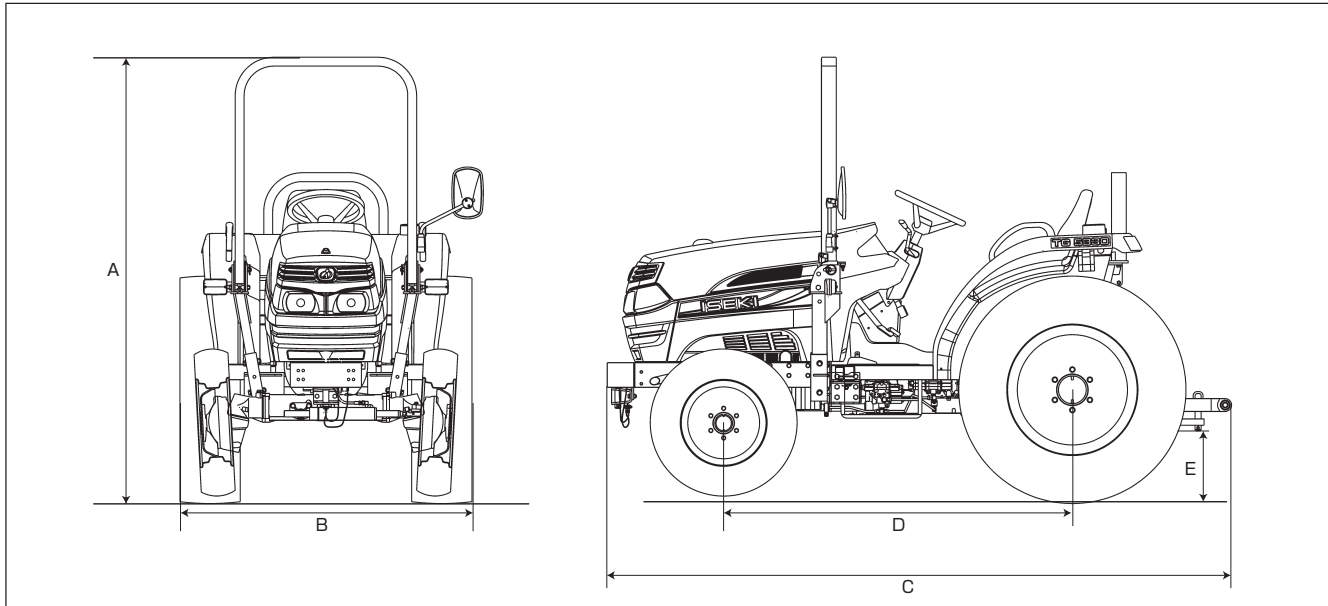
GENERAL DIMENSIONS - REAR ROPS TYPE -



Model			TG5330		TG5390			TG5470	
Reference			AG. 4-WD	Turf	AG. 4-WD		Turf	AG. 4-WD	Turf
A	Height Over ROPS	mm	2570	2530	2570	2595	2530	2655	2560
B	Minimum Width	mm	1410	1440	1410	1450	1440	1535	1690
C1	Overall Length (including front hitch)	mm	3145	3145	3145	3145	3145	3415	3415
C2	Overall Length	mm	3030	3030	3030	3030	3030	3300	3300
D	Wheelbase	mm	1770	1770	1770	1770	1770	1900	1900
E	Minimum Ground	mm	345	305	345	370	305	350	255
Turning Radius wo/Brake			3000	3000	3000	3000	3000	3100	3100
Turning Radius w/Brake			2500	2500	2500	2500	2500	2800	2800
Weight (w/fuel, oil, coolant)			1335	1345	1350	1375	1360	1625	1575
Tire	F		7-16	212/80D-15	7-16	8-16	212/80D-15	9.5-16	29X12.00-15
	R		12.4-24	355/80D-20	12.4-24	13.6-24	355/80D-20	13.6-28	475/65D-20

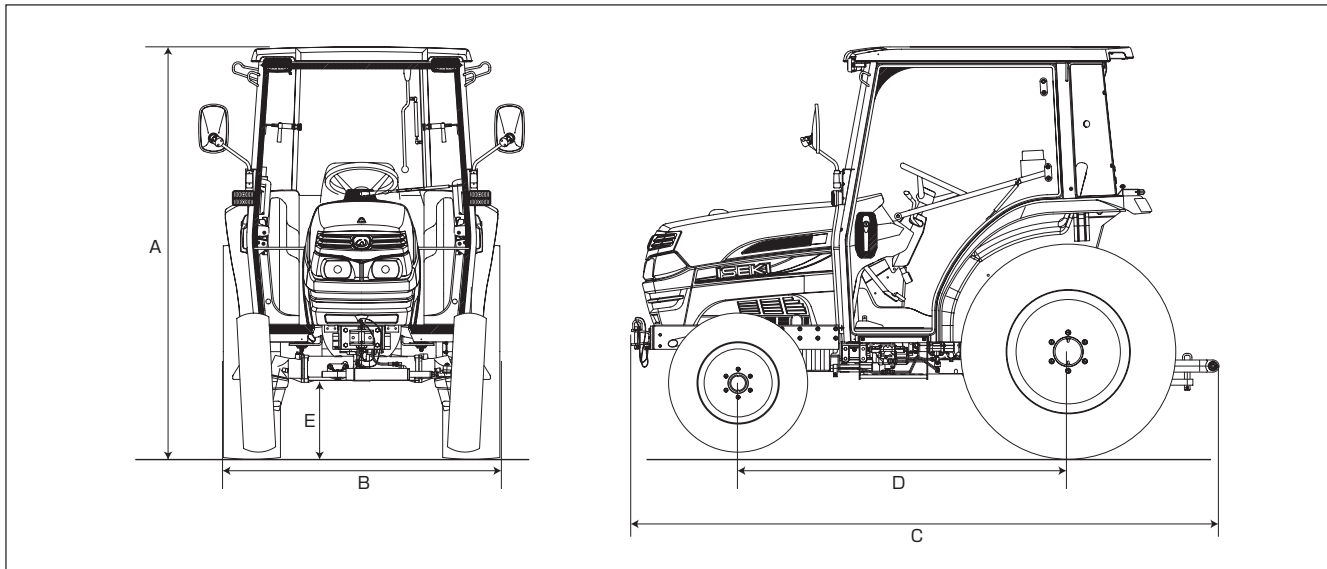
TG5330,5390,5470

GENERAL DIMENSIONS - CENTER ROPS TYPE -



Model			TG5330		TG5390			TG5470	
Reference			AG	Turf	AG		Turf	AG	AG
A	Hight Over ROPS	mm	2205	2165	2205	2230	2165	2330	2385
B	Minimum Width	mm	1410	1440	1410	1450	1440	1470	1535
C	Overall Length (including front hitch)	mm	3150	3150	3150	3150	3150	3435	3435
D	Wheelbase	mm	1770	1770	1770	1770	1770	1900	1900
E	Minimum Ground	mm	335	295	335	360	295	295	350
Turning Radius wo/Brake			mm	3000	3000	3000	3000	3000	3100
Turning Radius w/Brake			mm	2500	2500	2500	2500	2500	2800
Weight (w/fuel, oil, coolant)			kg	1410	1415	1425	1450	1430	1645
Tire			F	7-16	212/80D-15	7-16	8-16	212/80D-15	8-16
			R	12.4-24	355/80D-20	12.4-24	13.6-24	355/80D-20	13.6-24
									13.6-28

GENERAL DIMENSIONS - CABIN TYPE -



Model			TG5330		TG5390			TG5470	
Reference			AG. 4-WD	Turf	AG. 4-WD		Turf	AG. 4-WD	Turf
A	Height Over ROPS	mm	2175	2135	2175	2200	2135	2275	2180
B	Minimum Width	mm	1460	1460	1460	1460	1460	1535	1690
C1	Overall Length (including front hitch)	mm	3145	3145	3145	3145	3145	3415	3415
C2	Overall Length	mm	3030	3030	3030	3030	3030	3300	3300
D	Wheelbase	mm	1770	1770	1770	1770	1770	1900	1900
E1	Minimum Ground (except HST type)	mm	335	295	335	360	295	350	255
E2	Minimum Ground (HST type)	mm	310	—	310	335	—	335	240
Turning Radius wo/Brake			3000	3000	3000	3000	3000	3100	3100
Turning Radius w/Brake			2500	2500	2500	2500	2500	2800	2800
Weight (w/fuel, oil, coolant)			1490	1500	1505	1535	1515	1815	1785
Tire	F		7-16	212/80D-15	7-16	8-16	212/80D-15	9.5-16	29X12.00-15
	R		12.4-24	355/80D-20	12.4-24	13.6-24	355/80D-20	13.6-28	475/65D-20

ASSEMBLY & PRE-DELIVERY INSPECTION

ASSEMBLY

IMPORTANT: *Do not commence assembly of this Tractor until reading these instructions completely and carefully.*

NOTE: *For certain lubrication, adjustments, etc., refer to appropriate section of this booklet. All nuts, bolts, etc., on these Tractors are METRIC dimensions.*

Tractor is shipped in individual container. The Tractor will be partially disassembled to make container as compact as possible. Wheels, fenders, ROPS, steering wheel, lift linkage, drawbar, and some attaching hardware will be removed.

Larger items will be fastened in container and remainder of items will be shipped in sundry boxes also in container.

Certain areas of Tractor may be covered with thin film of protective wax. It may be removed by steam cleaner and detergent solution during assembly.

Tractor will arrive with battery installed.

To assemble and pre-deliver the Tractor, proceed as follows:



CAUTION: Be observant of components (wheels, fenders, ROPS, etc.) that may be attached to, or held in position by container panels.

1. Remove wheels, fenders, and sundry boxes from container.
2. Disassemble container.
3. Inspect Tractor for damage and any evidence of coolant, fuel or lubricant leaks.
4. Inspect and remove all hardware securing Tractor to lower crate panel.
5. Left Fender:
 - a. Remove tie strap holding control levers.
 - b. Install and secure fender to floor pan and rear upright supports.
 - c. Secure PTO lever bracket and transmission control lever guide (quadrant) to inside fender surface. Install with three bolts with lock washers and flat washers. Install one extra washer on each of the rear inside bolts.
 - d. Install knobs on control lever(s).
6. Right Fender:
 - a. Remove tie strap holding control lever(s) for shipping.
 - b. Install and secure fender to floor pan and rear upright.
 - c. Secure hydraulic control lever guide, (quadrant) to inside fender surface. Install using three bolts with lock washers and flat washers. Install one extra washer on each of the rear inside bolts.
 - d. Install knobs on control lever(s).

ASSEMBLY & PRE-DELIVERY INSPECTION

7. Front Bumper —Install front bumper and secure with four bolts supplied in sundry box.
8. Rear Lights —Install red lights at rear of fenders. The hardware and wiring retainer straps are installed on the light for shipment.

After attaching light, attach electrical connectors to connectors located at fender and ROPS support.

Green wire with white stripe will attach to red wire with black stripe. Black ground wire will attach to orange wire with black stripe.

9. Warning Flashers —Install amber turn / warning lights to fenders as follows:
 - a. Remove nut, internal lock washer and ground wire from light.
 - b. Insert bolt with center wire down through hole in ROPS bracket and reinstall ground wire, internal lock washer and nut. Tighten nut.
 - c. There are three wires, with single connectors, coming out at top rear of ROPS, support. Two wires are the same length. They attach to wires from warning / flasher light. Male and female couplers prevent improper installation.
 - d. The remaining connector is used if a work light or radio is installed.
10. Seat —Remove bolts from seat frame and install seat using same hardware.
11. Three-Point Hitch —Three-point hitch is partially assembled, with lift links attached at the top to the lift shaft, and away chains attached to the lower links.
 - a. Attach lower links to Tractor attaching points and secure with lynch pins. Lower links will flare outward rear and retaining rings for spring will locate at underside.
 - b. Connect clevis end of check chains to axle brackets and secure with clevis pin and cotter pin.
 - c. Remove bolts at lower end of lift links and attach lift links to identical positions on lower links using bolts, lock washers and nuts removed. Lift link with turn-buckle adjustment is located on right side.

IMPORTANT: Bolts should be installed with heads to out-side (nuts on inside) of lift link, to prevent tire interference during operation.

- d. Connect top link to anchor point on Tractor using 19 mm x 220 mm pin and lynch pin. Lock nut on top link barrel will locate to rear. Store top link implement pin (19 mm x 86 mm) and clip in rear end of top link.
 - e. Connect spring to retaining rings at underside of lower links.
12. Drawbar —Install drawbar fully into bracket at rear of Tractor and secure with pin and clip provided.
 13. Front Wheels —
 - a. Carefully raise and block front of Tractor.
 - b. Install wheel / tire assemblies and secure using bolts and lock washers. Tighten to 75 ft-lbs. (102 Nm).
 - c. Remove blocking and lower front of Tractor.
 14. Rear Wheels —
 - a. Carefully raise and block rear of Tractor at each side to prevent pivoting of front axle.
 - b. Install wheel / tire assemblies and secure using lock washers and bolts. Tighten to 80 ft-lbs. (120 Nm).
 15. Steering Wheel —After wheels have been installed, place front wheels in a straight forward position.
 - a. Remove cotter pin, nut and flat washer from steering wheel shaft.
 - b. Use a screw driver or flat blade to pry between steering wheel and cap to remove cap.

IMPORTANT: Don't use a punch through hole in steering wheel to remove cap. It will separate the emblem from cap.

TG5330,5390,5470

PRE-DELIVERY INSPECTION

- Check that engine oil level is correct.
- Check that coolant level is correct.
- Check fan belt tension, 14mm deflection, when subjected to a force of thumb pressure.(10kgf)
- Check that transmission oil level is correct.
- Install a sufficient amount of No.2 diesel fuel to complete pre-delivery service.
- Ensure clean and tight cable connections at battery. Battery must be securely mounted.
- Check air cleaner, element, hoses, and clamps for correct installation.
- Check brake pedal linkage for correct free-travel.
- Check steering and brake linkage cotter pins and lock nuts for secure installation.
- Check filter element and, all connections and clamps for hydraulic pump and filter.
- On 4-WD models, check oil level in front drive axle. Place fuel filter shutoff valve in the ON position. Take up position in operator s seat and engage parking brake.
- Place all shift levers in neutral.
- Place rear PTO and mid PTO selector levers in neutral.
- Turn main switch to START to crank the engine. Release key to ON position the moment engine starts. Check that warning lights go out.
- Allow engine to warm up to operating temperature at about 1500 rpm.
- Operate Tractor to confirm it operates smoothly at all speeds including four-wheel drive (if so equipped).
- Operate PTO to see that it functions properly.
- Check that all lights and instruments operate properly.
- Check brakes for balanced operation.
- Check warm engine low idle speed, 980-1020 rpm.
- Check warm engine high idle speed, 2760-2810 rpm.
- Set throttle lever at idle, shut off engine and check Tractor for coolant, lubricating oil or fuel leaks.
- Check that safety start system functions correctly.
- Lubricate all fittings.
- Check tire inflation pressures.
- Check front wheel toe-in.
- Test anti-freeze to see that it is adequate for local climate condition.

NOTE: Engine will not start unless range shift lever is selected to neutral, rear PTO, and mid PTO selector lever are in neutral.

- Set throttle lever at half to full throttle and turn main switch counterclockwise 5-10.
- Turn main switch clockwise to ON . Oil pressure and alternator warning lights will illuminate. Hold in ON position 1-2 seconds.
- Check to see that all safety decals and safety switches are in place.
- Clean and polish sheet metal as necessary.
- Fill fuel tank to prevent moisture accumulation.
- Review this Operator s Manual with the customer when delivering or demonstrating Tractor.

NOTE: Factory fill is set to -30 F(-34 cent-degrees).

**FACTORY RECOMENDED
NEW TRACTOR PRE-DELIVERY INSPECTION CHECK LIST
ISEKI**

USER'S NAME _____ AREA _____ DATE _____
DEALER _____ ADDRESS _____
TRACTOR MODEL _____ SERIAL NO. _____
ENGINE SERIAL NO. _____ COUNTRY _____

THIS PRE-DELIVERY INSPECTION CHECK LIST IS PROVIDED TO IDENTIFY THE CHECKED AND NECESSARY
ADJUST BY THE DEALER PRIOR TO DELIVERY OF THIS MACHINE.

Inspected the following and adjusted if necessary.

ENGINE

- | | |
|--|---|
| ☐ Radiator filled with solution | ☐ Engine RPM (full throttle) |
| ☐ Cooling system connections | ☐ Governor performance |
| ☐ Fan and alternator belt tension | ☐ Electrical connections |
| ☐ Engine oil | ☐ Service air cleaner |
| ☐ All oil drain plugs | ☐ All cleaner connections |
| ☐ Oil pressure | ☐ Fuel line connections |
| ☐ Engine RPM (idle) | ☐ Injection pump oil |

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- | | |
|---|--|
| ☐ Tyre inflation | ☐ Hydraulic system performance |
| ☐ Front wheel hub bolts | ☐ Drive test |
| ☐ Rear wheel hub bolts | ☐ Lubricate all grease fittings |
| ☐ Torque all chassis bolts | ☐ Power-assisted steering operation (if equipped) |
| ☐ Transmission oil | ☐ Front axle oil (4-WD) |
| ☐ Front reduction case | ☐ Front axle operation (4-WD) |
| ☐ Break pedal free-play | ☐ Operation manual with tractor |
| ☐ Clutch pedal free-play | |

Explained the following to the owner.

- | | |
|--|--|
| ☐ Operation manual | ☐ Fuel system servicing and cleanliness |
| ☐ Safety and safety start system | ☐ Draining of engine and radiator |
| ☐ Instruments and controls | ☐ Air cleaner service |
| ☐ Breaking in the new tractor | ☐ Tyre care |
| ☐ Power take-off operation | ☐ Wheel tread adjustment |
| ☐ Lubrication and maintenance schedule | ☐ Storage |
| ☐ Explain use of Rollover Protective Structure (ROPS) | |

TG5330,5390,5470

**FACTORY RECOMENDED
NEW TRACTOR PRE-DELIVERY INSPECTION CHECK LIST
ISEKI**

USER'S NAME _____ AREA _____ DATE _____
DEALER _____ ADDRESS _____
TRACTOR MODEL _____ SERIAL NO. _____
ENGINE SERIAL NO. _____ COUNTRY _____

THIS PRE-DELIVERY INSPECTION CHECK LIST IS PROVIDED TO IDENTIFY THE CHECKED AND NECESSARY
ADJUST BY THE DEALER PRIOR TO DELIVERY OF THIS MACHINE.

Inspected the following and adjusted if necessary.

ENGINE

- | | |
|--|---|
| ☐ Radiator filled with solution | ☐ Engine RPM (full throttle) |
| ☐ Cooling system connections | ☐ Governor performance |
| ☐ Fan and alternator belt tension | ☐ Electrical connections |
| ☐ Engine oil | ☐ Service air cleaner |
| ☐ All oil drain plugs | ☐ All cleaner connections |
| ☐ Oil pressure | ☐ Fuel line connections |
| ☐ Engine RPM (idle) | ☐ Injection pump oil |

CHASSIS

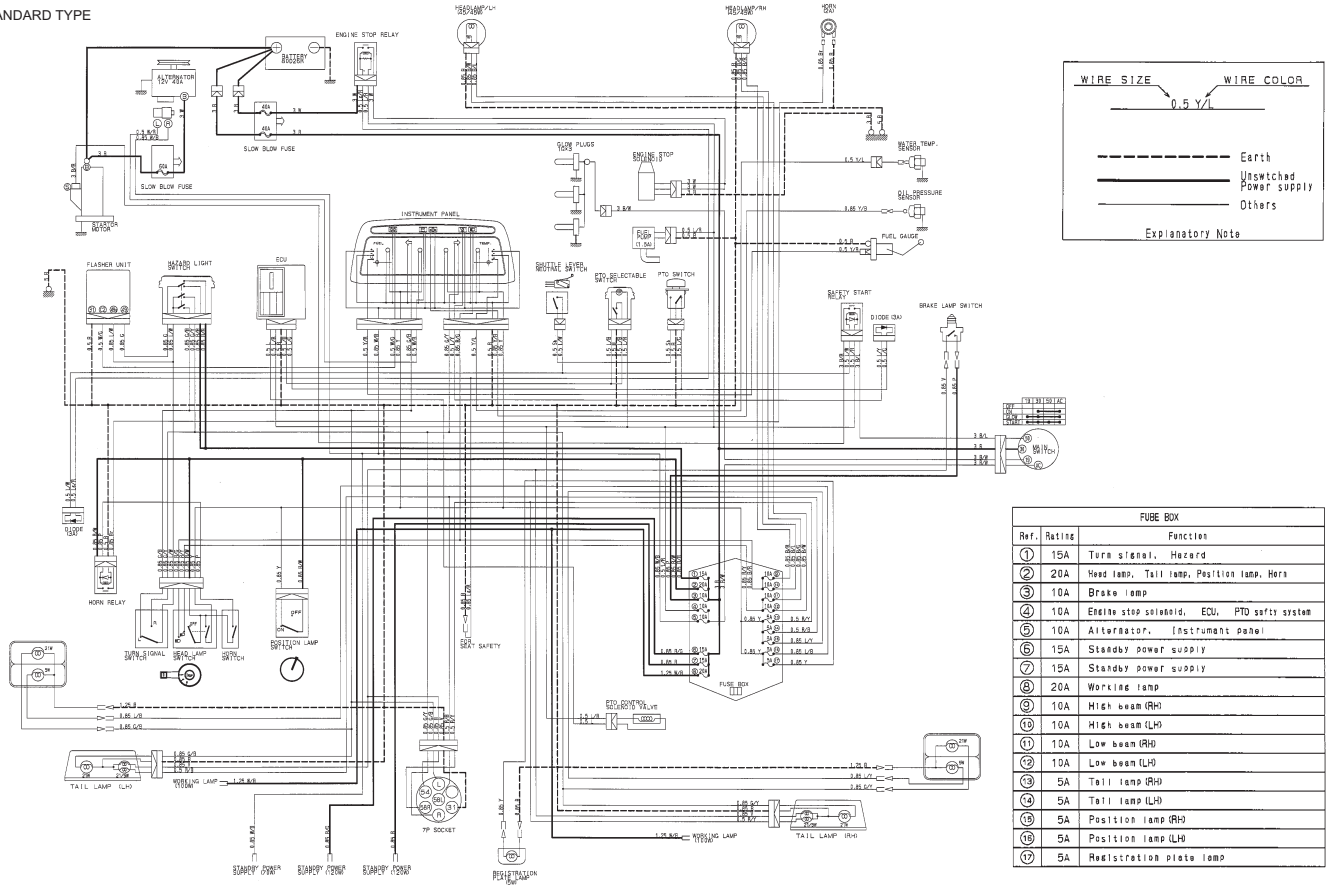
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|---|--|
| ☐ Tyre inflation | ☐ Hydraulic system performance |
| ☐ Front wheel hub bolts | ☐ Drive test |
| ☐ Rear wheel hub bolts | ☐ Lubricate all grease fittings |
| ☐ Torque all chassis bolts | ☐ Power-assisted steering operation (if equipped) |
| ☐ Transmission oil | ☐ Front axle oil (4-WD) |
| ☐ Front reduction case | ☐ Front axle operation (4-WD) |
| ☐ Break pedal free-play | ☐ Operation manual with tractor |
| ☐ Clutch pedal free-play | |

Explained the following to the owner.

- | | |
|--|--|
| ☐ Operation manual | ☐ Fuel system servicing and cleanliness |
| ☐ Safety and safety start system | ☐ Draining of engine and radiator |
| ☐ Instruments and controls | ☐ Air cleaner service |
| ☐ Breaking in the new tractor | ☐ Tyre care |
| ☐ Power take-off operation | ☐ Wheel tread adjustment |
| ☐ Lubrication and maintenance schedule | ☐ Storage |
| ☐ Explain use of Rollover Protective Structure (ROPS) | |

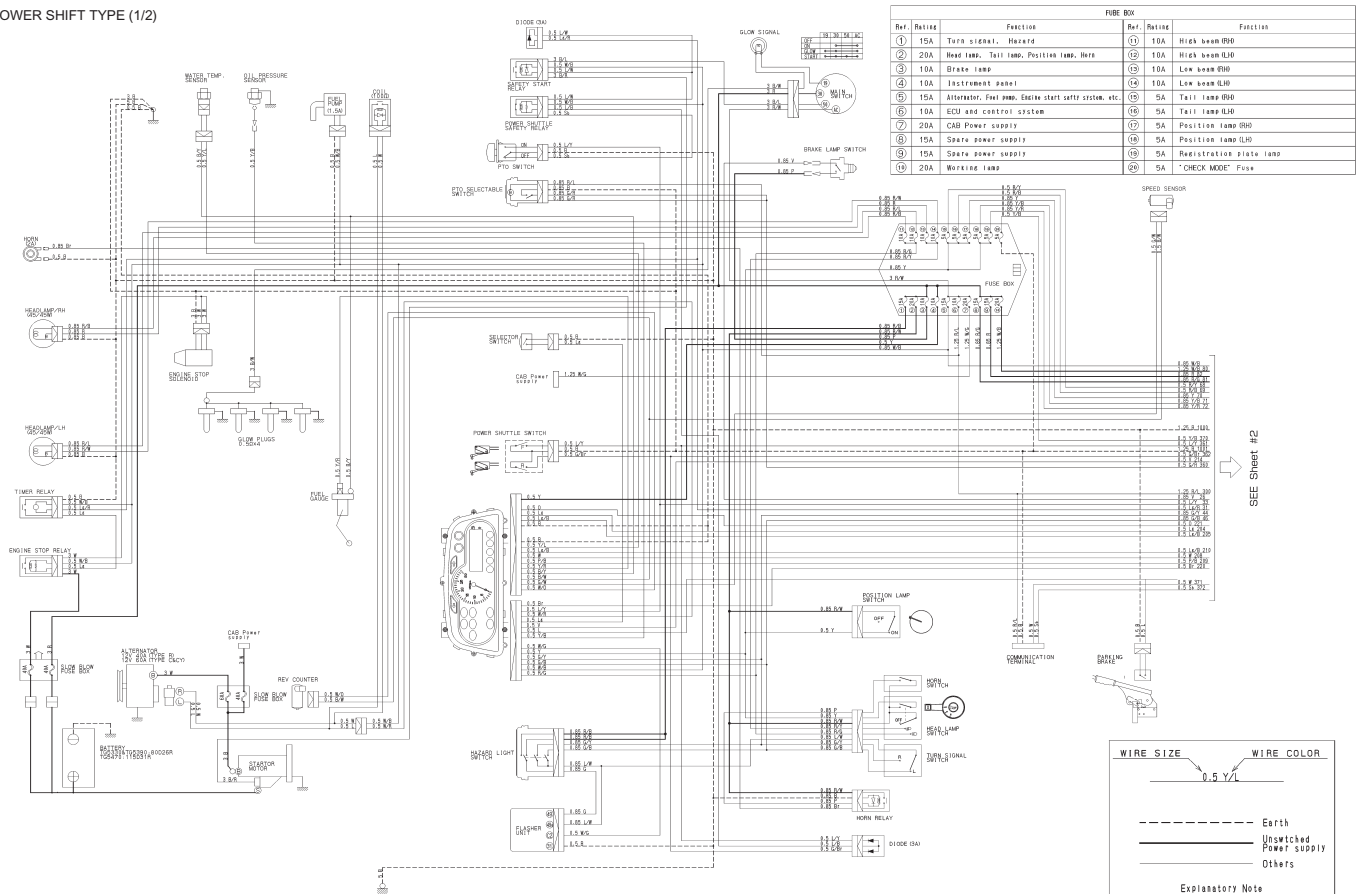
Wiring Harness Cable

TG5330,5390,5470 STANDARD TYPE



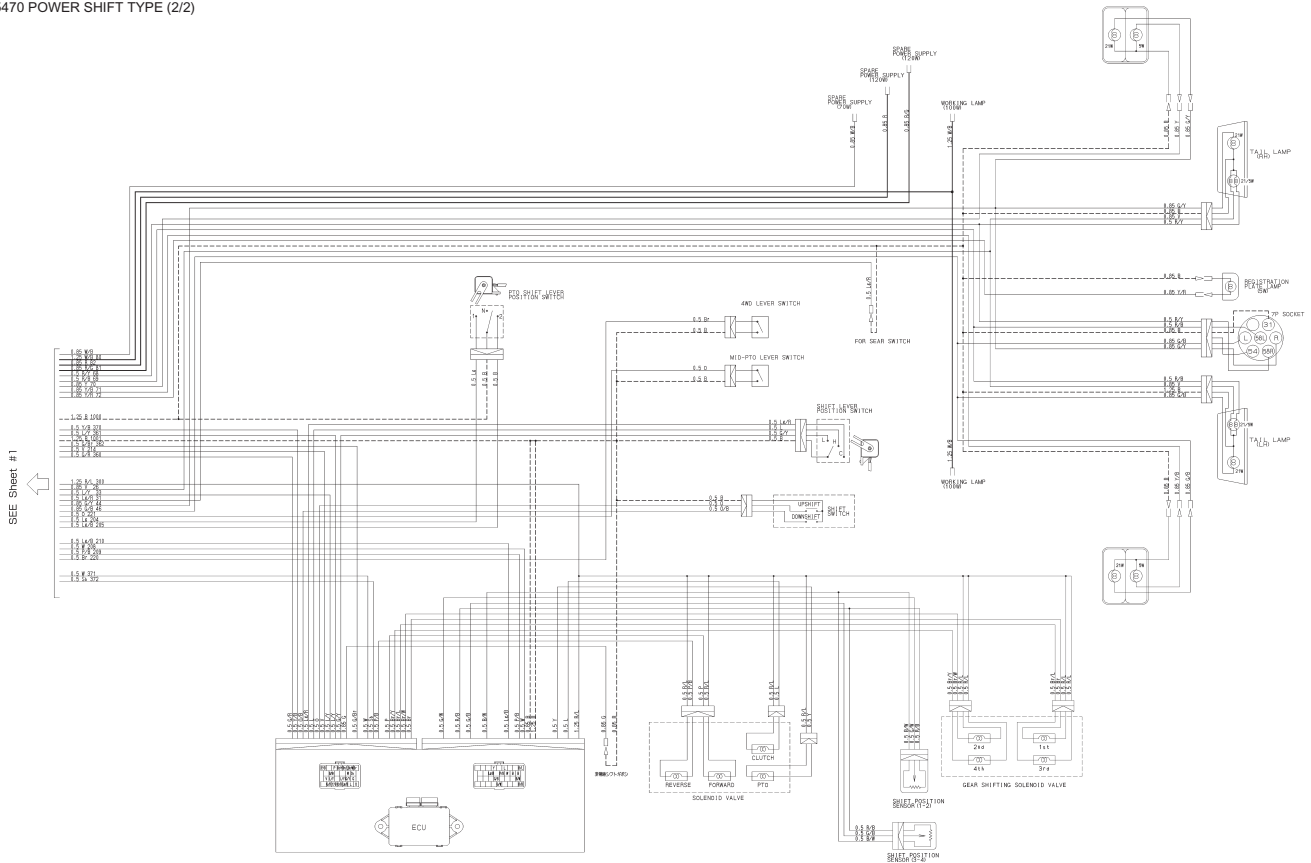
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TG5330,5390,5470 POWER SHIFT TYPE (1/2)

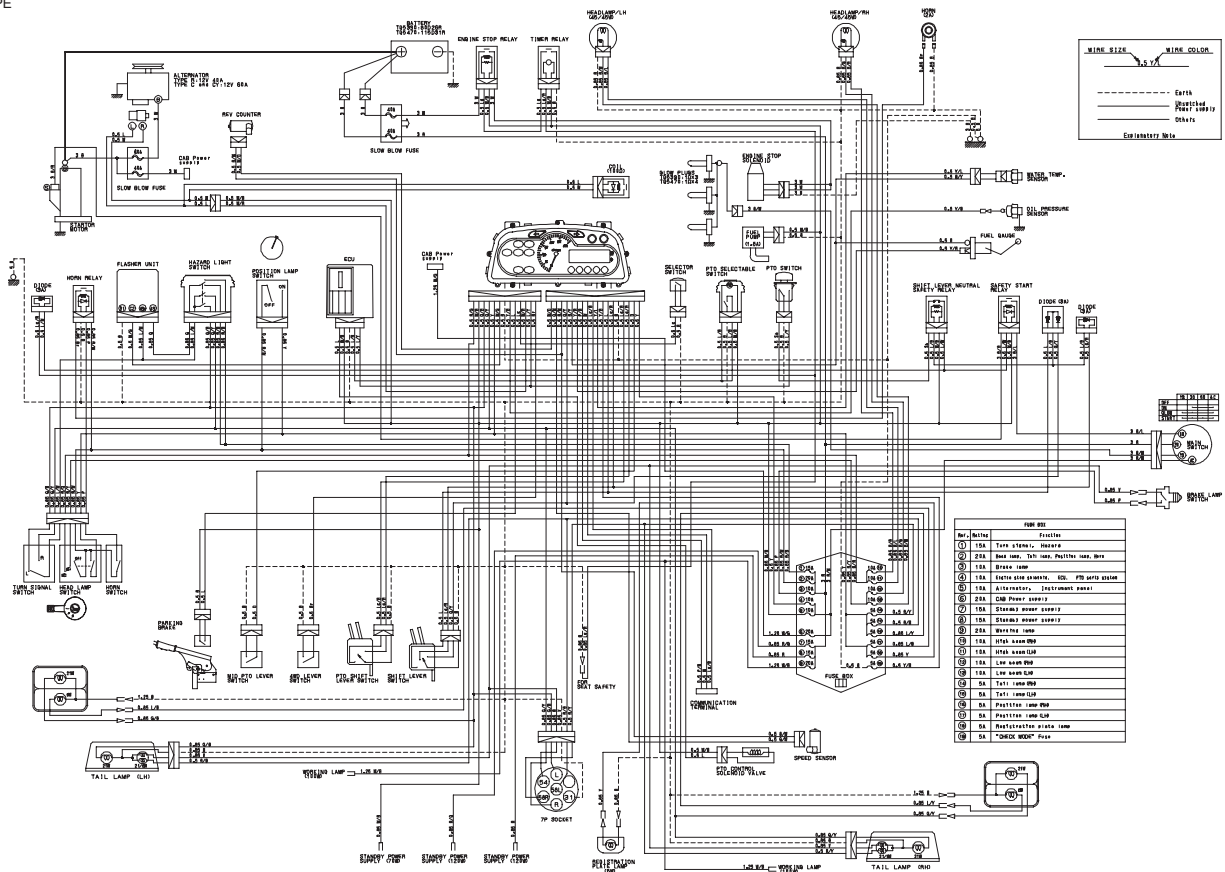


TG5330,5390,5470

TG5330,5390,5470 POWER SHIFT TYPE (2/2)

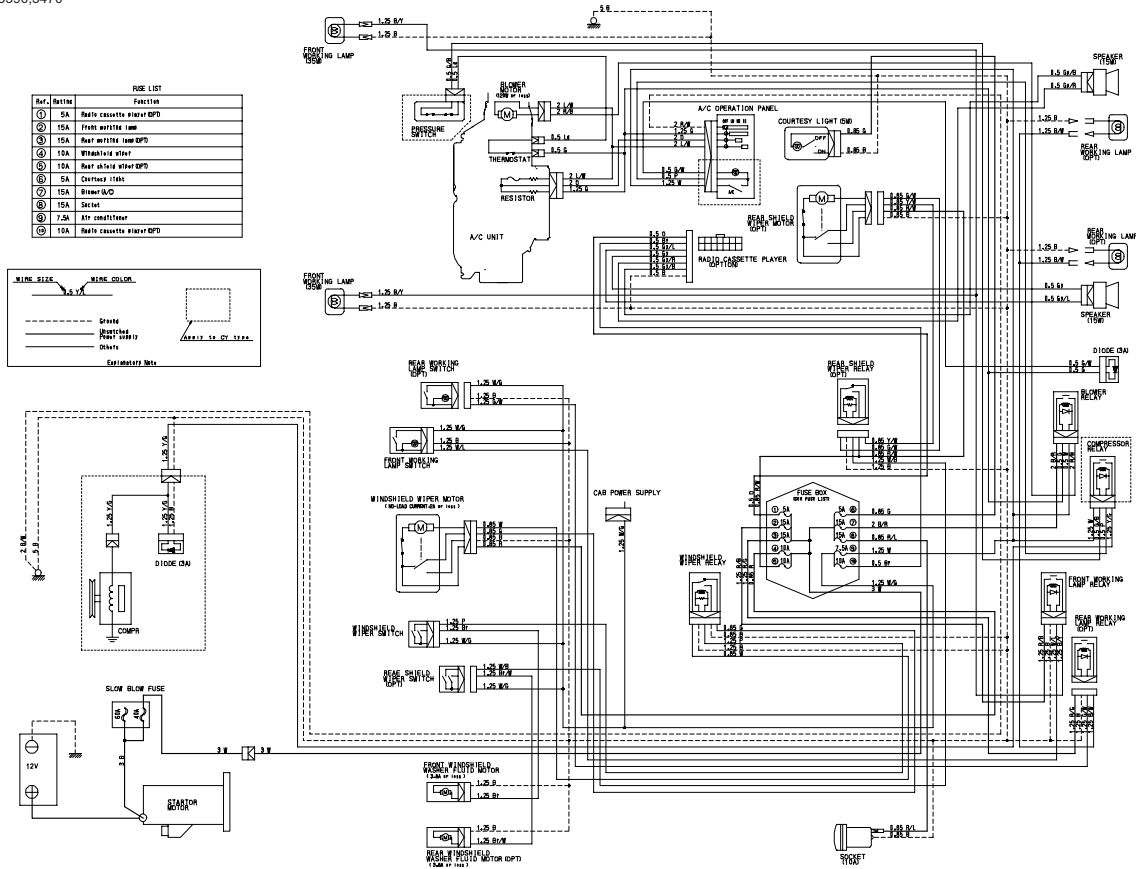


TG5390,5470 HST TYPE



Wiring Harness Cable

CABIN SYSTEM For TG5330,5390,5470



**TG5330
TG5390
TG5470**

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