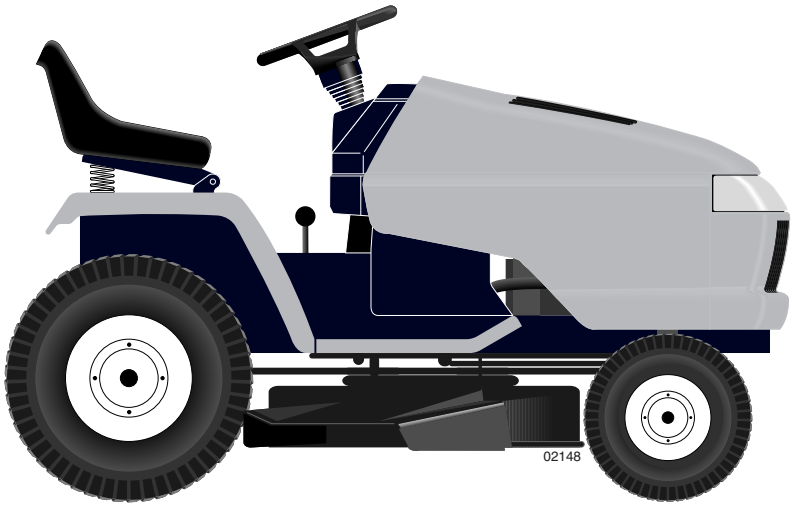
SEARS

OWNER'S MANUAL

MODEL NO. 944.605070

Important:
Read and follow all Safety Rules and Instructions Before Operating This Equipment



CRAFTSMAN®

24.0 HP ELECTRIC START 48" MOWER AUTOMATIC GARDEN TRACTOR

- Assembly
- Operation
- Maintenance
- Service and Adjustments
- Repair Parts

Sears Canada, Inc., Toronto, Ontario M5B 2B8

SAFETY RULES

Safe Operation Practices for Ride-On Mowers

IMPORTANT: THIS CUTTING MACHINE IS CAPABLE OF AMPUTATING HANDS AND FEET AND THROWING OBJECTS. FAILURE TO OBSERVE THE FOLLOWING SAFETY INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING: In order to prevent accidental starting when setting up, transporting, adjusting or making repairs, always disconnect spark plug wire and place wire where it cannot contact spark plug.

WARNING: Do not coast down a hill in neutral, you may lose control of the tractor.

WARNING: Tow only the attachments that are recommended by and comply with specifications of the manufacturer of your tractor. Use common sense when towing. Operate only at the lowest possible speed when on a slope. Too heavy of a load, while on a slope, is dangerous. Tires can lose traction with the ground and cause you to lose control of your tractor.

I. GENERAL OPERATION

- Read, understand, and follow all instructions on the machine and in the manual before starting.
- Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
- Only allow responsible adults, who are familiar with the instructions, to operate the machine.
- Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blades.
- Be sure the area is clear of bystanders before operating. Stop machine if anyone enters the area.
- Never carry passengers.
- Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
- Never direct discharged material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Stop the blades when crossing gravel surfaces.
- Do not operate machine without the entire grass catcher, discharge guard, or other safety devices in place and working.
- Slow down before turning.
- Never leave a running machine unattended. Always turn off blades, set parking brake, stop engine, and remove keys before dismounting.
- Disengage blades when not mowing. Shut off engine and wait for all parts to come to a complete stop before cleaning the machine, removing the grass catcher, or unclogging the discharge guard.
- Operate machine only in daylight or good artificial light.
- Do not operate the machine while under the influence of alcohol or drugs.
- Watch for traffic when operating near or crossing roadways.
- Use extra care when loading or unloading the machine into a trailer or truck.
- Always wear eye protection when operating machine.
- Data indicates that operators, age 60 years and above, are involved in a large percentage of riding mower-related injuries. These operators should evaluate their ability to operate the riding mower safely enough to protect themselves and others from serious injury.
- Follow the manufacturer's recommendation for wheel weights or counterweights.
- Keep machine free of grass , leaves or other debris build-up which can touch hot exhaust / engine parts and burn. Do not allow the mower deck to plow leaves or other debris which can cause build-up to occur. Clean any oil or fuel spillage before operating or storing the machine. Allow machine to cool before storage.

II. SLOPE OPERATION

Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it.

- Mow up and down slopes, not across.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Choose a low ground speed so that you will not have to stop or shift while on the slope.
- Do not mow on wet grass. Tires may lose traction. Always keep the machine in gear when going down slopes. Do not shift to neutral and coast downhill.
- Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the blades and proceed slowly straight down the slope.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to roll over.
- Use extra care while operating machine with grass catchers or other attachments; they can affect the stability of the machine. Do no use on steep slopes.
- Do not try to stabilize the machine by putting your foot on the ground.
- Do not mow near drop-offs, ditches, or embankments. The machine could suddenly roll over if a wheel is over the edge or if the edge caves in.

III. CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. *Never* assume that children will remain where you last saw them.

- Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.
- Be alert and turn machine off if a child enters the area.
- Before and while backing, look behind and down for small children.
- Never carry children, even with the blades shut off. They may fall off and be seriously injured or interfere with safe machine operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
- Never allow children to operate the machine.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.

SAFETY RULES

Safe Operation Practices for Ride-On Mowers

IV. TOWING

- Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the hitch point.
- Follow the manufacturer's recommendation for weight limits for towed equipment and towing on slopes.
- Never allow children or others in or on towed equipment.
- On slopes, the weight of the towed equipment may cause loss of traction and loss of control.
- Travel slowly and allow extra distance to stop.

V. SERVICE

SAFE HANDLING OF GASOLINE

To avoid personal injury or property damage, use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.

- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only approved gasoline container.
- Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling.
- Never fuel the machine indoors.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water heater or other appliances.
- Never fill containers inside a vehicle or on a truck or trailer bed with plastic liner. Always place containers on the ground away from your vehicle when filling.
- Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather than from a gasoline dispenser nozzle.
- Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
- If fuel is spilled on clothing, change clothing immediately.
- Never overfill fuel tank. Replace gas cap and tighten securely.

GENERAL SERVICE

- Never operate machine in a closed are.
- Keep all nuts and bolts tight to be sure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- Keep machine free of grass, leaves, or other debris build-up. Clean oil or fuel spillage and remove any fuel-soaked debris. Allow machine to cool before storing.
- If you strike a foreign object, stop and inspect the machine. Repair, if necessary, before restarting.
- Never make any adjustments or repairs with the engine running.
- Check grass catcher components and the discharge guard frequently and replace with manufacturer's recommended parts, when necessary.
- Mower blades are sharp. Wrap the blade or wear gloves, and use extra caution when servicing them.
- Check brake operation frequently. Adjust and service as required.
- Maintain or replace safety and instruction labels, as necessary.

- Be sure the area is clear of bystanders before operating. Stop machine if anyone enters the area.
- Never carry passengers.
- Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
- Never carry children, even with the blades shut off. They may fall off and be seriously injured or interfere with safe machine operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
- Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.
- Be alert and turn machine off if a child enters the area.
- Before and while backing, look behind and down for small children.
- Mow up and down slopes (15° Max), not across.
- Be alert and turn machine off if a child enters the area.
- Choose a low ground speed so that you will not have to stop or shift while on the slope.
- Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the blades and proceed slowly straight down the slope.
- If machine stops while going uphill, disengage blades, shift into reverse and back down slowly.
- Do not turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.

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PRODUCT SPECIFICATIONS

Gasoline Capacity and type:	5.0 Gallons Unleaded Regular
Oil Type (API-SF-SJ):	SAE 30 (above 32°F) SAE 5W-30 (below 32°F) Synthetic (below 0°F)
Your tractor was shipped from the factory with non-synthetic SAE 10W30 motor oil	
Oil Capacity:	W/ Filter: 4.0 Pints W/O Filter: 3.75 Pints
Spark Plug: (GAP: .040")	Champion QC12YC
Ground Speed (MPH):	Forward: 5.8 Reverse: 2.1
Tire Pressure:	Front: 14 PSI Rear: 10 PSI
Chargine System:	16 AMPS @ 3600 RPM
Battery:	AMP/HR: 35 Min. CCA: 280 Case Size: U1R
Blade Bolt Torque:	45–55 FT. LBS.

CONGRATULATIONS on your purchase of a new Tractor. It has been designed, engineered and manufactured to give you the best possible dependability and performance.

Should you experience any problem you cannot easily remedy, please contact your nearest authorized service center/department. We have competent, well-trained technicians and the proper tools to service or repair this tractor.

Please read and retain this manual. The instructions will enable you to assemble and maintain your tractor properly. Always observe the "SAFETY RULES".

MAINTENANCE AGREEMENT

A Maintenance Agreement is available on this product. Contact your nearest Sears store for details.

CUSTOMER RESPONSIBILITIES

- Read and observe the safety rules.
- Follow a regular schedule in maintaining, caring for and using your tractor.
- Follow the instructions under "Maintenance" and "Storage" sections of this owner's manual.

WARNING: This tractor is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

A spark arrester for the muffler is available through your nearest authorized service center/department (See REPAIR PARTS section of this manual).

WARRANTY

LIMITED TWO (2) YEAR WARRANTY ON CRAFTSMAN TRACTOR (RIDING EQUIPMENT)

For two (2) years from date of purchase Sears Canada, Inc. will repair or replace at Sears option free of charge parts which are defective as a result of material or workmanship.

FULL ONE (1) YEAR WARRANTY ON BATTERY

For one (1) year from date of purchase, if any battery included with this riding equipment proves defective in material or workmanship and our testing determines the battery will not hold a charge, Sears will replace the battery at no charge.

COMMERCIAL OR RENTAL USE

Warranty on Riding Equipment used for commercial or rental purposes is limited to ninety (90) days.

This Warranty does NOT cover:

1. **Pre-delivery set-up.**
2. **Tire replacement or repair caused by punctures from outside objects (such as nails, thorns, stumps, or glass).**
3. **Expendable items which become worn during normal use, such as blades, spark plug, air cleaners and belts.**
4. **Repairs necessary because of operator abuse or negligence, including damaged jackshaft or mandrel and the failure to operate and maintain the equipment according to the instructions contained in the Owner's Manual.**

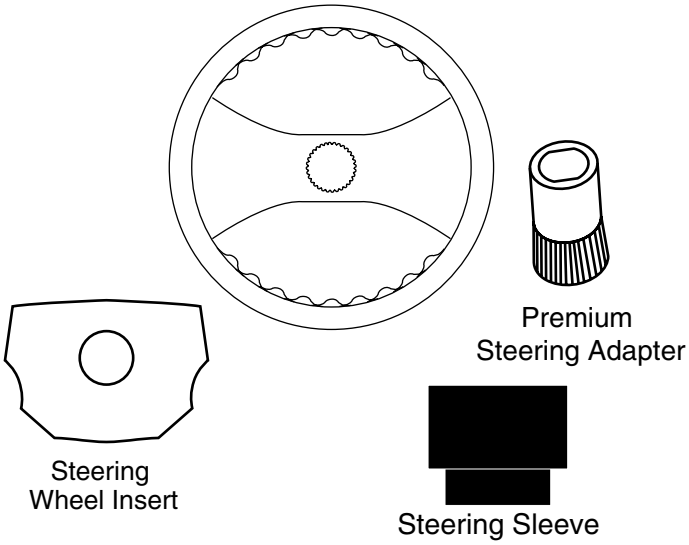
Warranty service is available by returning the Craftsman Riding Equipment to the nearest Sears Service Centre/Department in Canada. This warranty applies only while this product is in use in Canada.

This warranty is in addition to any statutory warranty and does not exclude or limit legal rights you may have but shall run concurrently with applicable provincial legislation. Furthermore, some provinces do NOT allow limitation on how long an implied warranty will last so the above limitations may not apply to you.

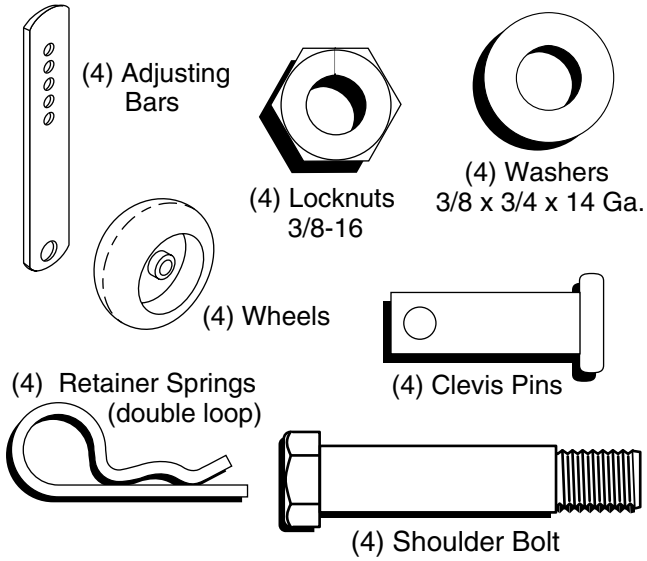
SEARS CANADA, INC., TORONTO, ONTARIO M5B 2B8

UNASSEMBLED PARTS

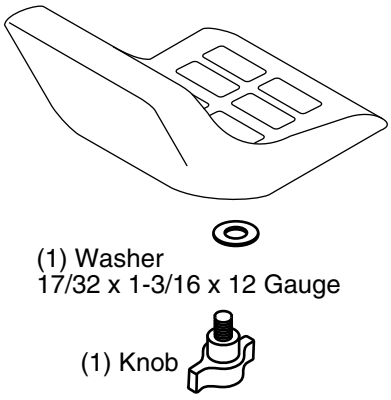
Steering Wheel



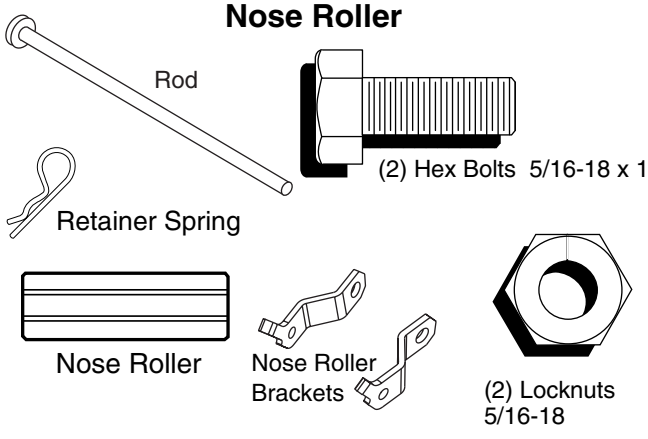
Gauge Wheels



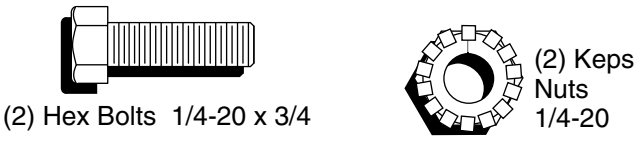
Seat



Nose Roller

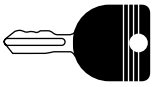


Battery

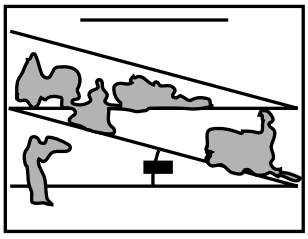


Mower

Keys



Slope Sheet



ASSEMBLY

Your new tractor has been assembled at the factory with exception of those parts left unassembled for shipping purposes. To ensure safe and proper operation of your tractor all parts and hardware you assemble must be tightened securely. Use the correct tools as necessary to insure proper tightness.

TOOLS REQUIRED FOR ASSEMBLY

A socket wrench set will make assembly easier. Standard wrench sizes are listed.

(1) 1/2" wrench
(1) 9/16" wrenches
(1) Pliers
(1) Tire pressure gauge
(1) Utility knife
(1) 3/4" socket w/drive ratchet

When right or left hand is mentioned in this manual, it means when you are in the operating position (seated behind the steering wheel).

TO REMOVE TRACTOR FROM CARTON

UNPACK CARTON

- Remove all accessible loose parts and parts cartons from carton.
- Cut along dotted lines on all four panels of carton. Remove end panels and lay side panels flat.
- Remove mower and packing materials.
- Check for any additional loose parts or cartons and remove.

BEFORE REMOVING TRACTOR FROM SKID

ATTACH STEERING WHEEL (See Fig. 1)

- Remove locknut and large flat washer from steering shaft.
- Position front wheels of the tractor so they are pointing straight forward.
- Slide the steering sleeve over the steering shaft.
- Position steering wheel so cross bars are horizontal (left to right) and slide onto steering wheel adapter.
- Secure steering wheel to steering shaft with locknut and large flat washer previously removed. Tighten securely.
- Snap steering wheel insert into center of steering wheel.
- Remove protective materials from tractor hood and grill.

IMPORTANT: CHECK FOR AND REMOVE ANY STAPLES IN SKID THAT MAY PUNCTURE TIRES WHERE TRACTOR IS TO ROLL OFF SKID.

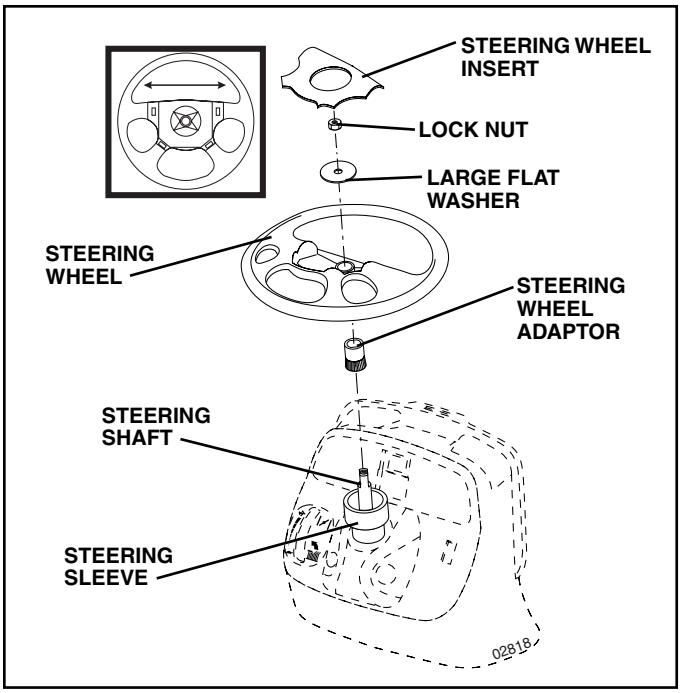


FIG. 1

CONNECT BATTERY (See Fig. 2)

CAUTION: Do not short battery terminals by allowing a wrench or any other object to contact both terminals at the same time. Before connecting battery, remove metal bracelets, wristwatch bands, rings, etc.

Positive terminal must be connected first to prevent sparking from accidental grounding.

- Lift hood to raised position.
- Open terminal access doors, remove terminal protective caps and discard.
- If this battery is put into service after month and year indicated on label (label located between terminals) charge battery for minimum of one hour at 6-10 amps.
- First connect RED battery cable to positive (+) battery terminal with hex bolt and keps nut as shown. Tighten securely.
- Connect BLACK grounding cable to negative (-) battery terminal with remaining hex bolt and keps nut. Tighten securely.
- Close terminal access doors.

Use terminal access doors for:

- Inspection for secure connections (to tighten hardware).
- Inspection for corrosion.
- Testing battery.

- Jumping (if required).
- Periodic charging.

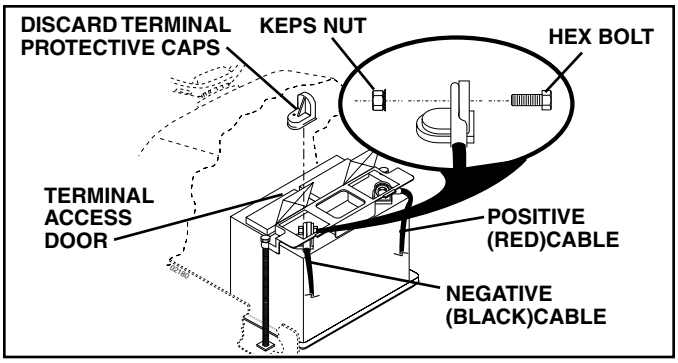


FIG. 2

INSTALL SEAT (See Fig. 3)

Adjust seat before tightening adjustment knob.

- Remove adjustment knob and flat washer securing seat to cardboard packing and set aside for assembly of seat to tractor.
- Pivot seat upward and remove from the cardboard packing. Remove the cardboard packing and discard.
- Place seat on seat pan so head of shoulder bolts are positioned over the large slotted holes in pan.
- Push down on seat to engage shoulder bolts in slots and pull seat towards rear of tractor.
- Pivot seat and pan forward and assemble adjustment knob and flat washer loosely. Do not tighten.
- Lower seat into operating position and sit in seat.
- Slide seat until a comfortable position is reached which allows you to press clutch/brake pedal all the way down.
- Get off seat without moving its adjusted position.
- Raise seat and tighten adjustment knob securely.

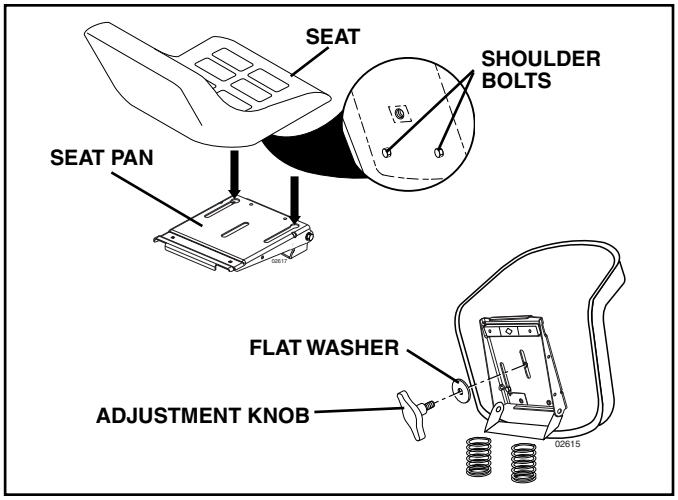


FIG. 3

NOTE: You may now roll or drive your tractor off the skid. Follow the appropriate instruction below to remove the tractor from the skid.

TO ROLL TRACTOR OFF SKID (See Operation section for location and function of controls)

- Press lift lever plunger and raise attachment lift lever to its highest position.
- Release parking brake by depressing brake pedal.
- Place freewheel control in "transmission disengaged position" (See “TO TRANSPORT” in the Operation section of this manual).
- Roll tractor forward off skid.

TO DRIVE TRACTOR OFF SKID (See Operation section for location and function of controls)

⚠**WARNING:** Before starting, read, understand and follow all instructions in the Operation section of this manual. Be sure tractor is in a well-ventilated area. Be sure the area in front of tractor is clear of other people and objects.

- Be sure all the above assembly steps have been completed.
- Check engine oil level and fill fuel tank with gasoline.
- Place freewheel control in "transmission engaged" position (see "TO TRANSPORT" in Operation section of this manual).
- Sit on seat in operating position, depress brake pedal and set the parking brake.
- Place motion control lever in neutral (N) position.
- Press lift lever plunger and raise attachment lift lever to its highest position.
- Start the engine. After engine has started, move throttle control to idle position.
- Release parking brake.
- Slowly move the motion control lever forward and slowly drive tractor off skid.
- Apply brake to stop tractor, set parking brake and place motion control lever in neutral position.
- Turn ignition key to "STOP" position.

Continue with the instructions that follow.

ASSEMBLE GAUGE WHEELS TO MOWER DECK (See Fig. 4)

The gauge wheels are designed to keep the mower deck in proper position when operating mower. Be sure they are properly adjusted to ensure optimum mower performance.

- Slide gauge wheel bar down into bracket channel, Be sure that gauge wheel bar aligning holes are on top. Assemble gauge wheels as shown using shoulder bolts, 3/8 washers and 3/8-16 center locknuts and tighten securely.
- For ease of mower to tractor assembly, raise gauge wheels to highest position and retain with clevis pins and spring retainers.
- Adjust gauge wheels before operating mower. See “TO ADJUST GAUGE WHEELS” in the Operation section of this manual.

ASSEMBLY

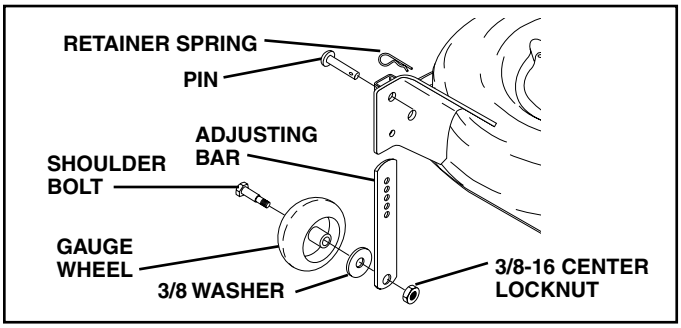


FIG. 4

TO ATTACH NOSE ROLLER (See Fig. 5)

- Assemble brackets "A" and "B" to the inside of mower mounting brackets as shown. Tighten securely.

NOTE: Be sure bracket tabs are positioned in tab holes in mower brackets.

- Position nose roller between brackets and install rod and retainer spring.

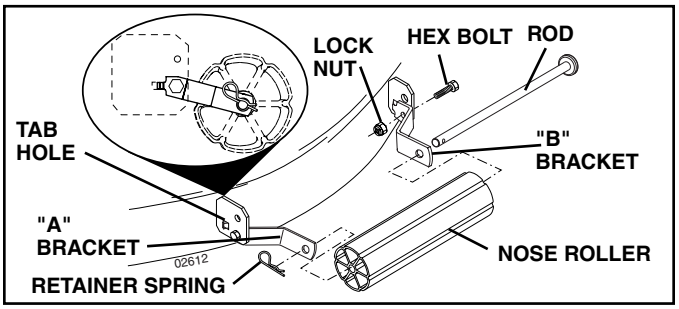


FIG. 5

INSTALL MOWER AND DRIVE BELT (See Figs. 6 and 7)

Be sure tractor is on level surface and mower suspension arms are raised with attachment lift control. Engage parking brake.

- Cut and remove ties securing anti-sway bar and belts. Swing anti-sway bar to left side of mower deck.
- Slide mower under tractor with deflector shield to right side of tractor.

IMPORTANT: Check belt for proper routing in all mower pulley grooves.

- If equipped, turn height adjustment knob counterclockwise until it stops.
- Lower mower linkage with attachment lift control.
- Be sure belt tension rod is in disengaged position.
- Install belt into electric clutch pulley groove.
- Place the suspension arms on outward pointing deck pins. Retain with double loop retainer spring with loops up as shown.
- Install front plate assembly to tractor suspension brackets and retain with single loop retainer springs as shown.
- Position front plate assembly between front mower brackets. Raise deck and plate assembly to align holes and insert flanged pins. Secure pins with double loop retainer springs between the plate assembly and mower brackets.

NOTE: To assist in locating hole in flanged pin, the hole in pin is inline with notch on head of pin. If necessary, move mower side-to-side to give space between plate and mower brackets.

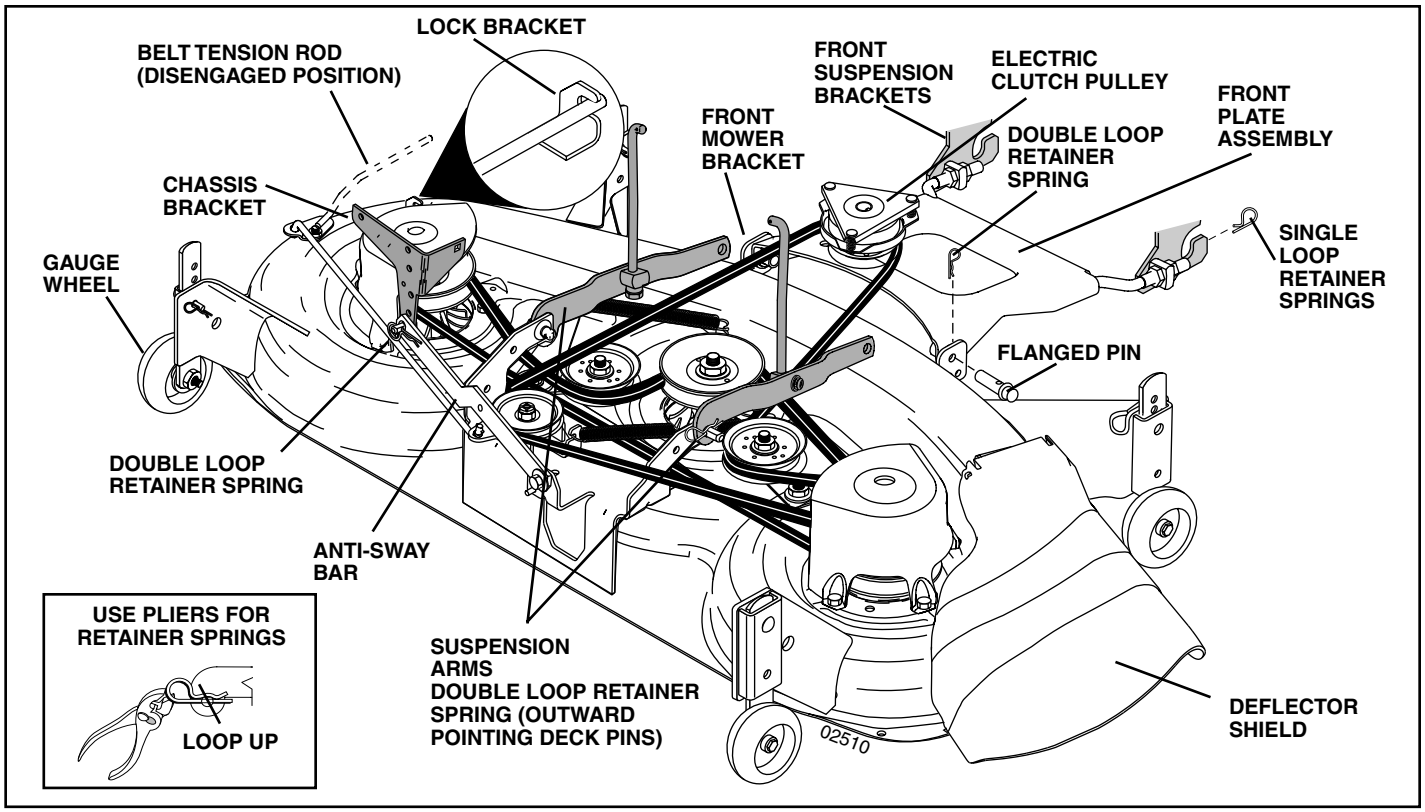


FIG. 6

ASSEMBLY

IMPORTANT: Check belt for proper routing in all mower pulley grooves.

- Engage belt tension rod by pushing rod into locking bracket.

CAUTION: Belt tension rod is spring loaded. Have a tight grip on rod and engage slowly.

- Connect anti-sway bar to chassis bracket under left footrest and retain with double loop retainer spring.
- If equipped, turn height adjustment knob clockwise to remove slack from mower suspension.
- Raise deck to highest position.
- Adjust gauge wheels before operating mower as shown in the Operation section of this manual.

CHECK TIRE PRESSURE

The tires on your tractor were overinflated at the factory for shipping purposes. Correct tire pressure is important for best cutting performance.

- Reduce tire pressure to PSI shown in "PRODUCT SPECIFICATIONS" section of this manual.

CHECK DECK LEVELNESS

For best cutting results, mower housing should be properly leveled. See "TO LEVEL MOWER HOUSING" in the Service and Adjustments section of this manual.

CHECK FOR PROPER POSITION OF ALL BELTS

See the figures that are shown for replacing motion and mower blade drive belts in the Service and Adjustments section of this manual. Verify that the belts are routed correctly.

CHECK BRAKE SYSTEM

After you learn how to operate your tractor, check to see that the brake is properly adjusted. See "TO ADJUST BRAKE" in the Service and Adjustments section of this manual.

✓CHECKLIST

BEFORE YOU OPERATE YOUR NEW TRACTOR, WE WISH TO ASSURE THAT YOU RECEIVE THE BEST PERFORMANCE AND SATISFACTION FROM THIS QUALITY PRODUCT.

PLEASE REVIEW THE FOLLOWING CHECKLIST:

✓ All assembly instructions have been completed.

✓ No remaining loose parts in carton.

✓ Battery is properly prepared and charged. (Minimum 1 hour at 6 amps).

✓ Seat is adjusted comfortably and tightened securely.

✓ All tires are properly inflated. (For shipping purposes, the tires were overinflated at the factory).

✓ Be sure mower deck is properly leveled side-to-side/ front-to-rear for best cutting results. (Tires must be properly inflated for leveling).

✓ Check mower and drive belts. Be sure they are routed properly around pulleys and inside all belt keepers.

✓ Check wiring. See that all connections are still secure and wires are properly clamped.

✓ Before driving tractor, be sure freewheel control is in "transmission engaged" position (see "TO TRANSPORT" in the Operation section of this manual).

WHILE LEARNING HOW TO USE YOUR TRACTOR, PAY EXTRA ATTENTION TO THE FOLLOWING IMPORTANT ITEMS:

✓ Engine oil is at proper level.

✓ Fuel tank is filled with fresh, clean, regular unleaded gasoline.

✓ Become familiar with all controls, their location and function. Operate them before you start the engine.

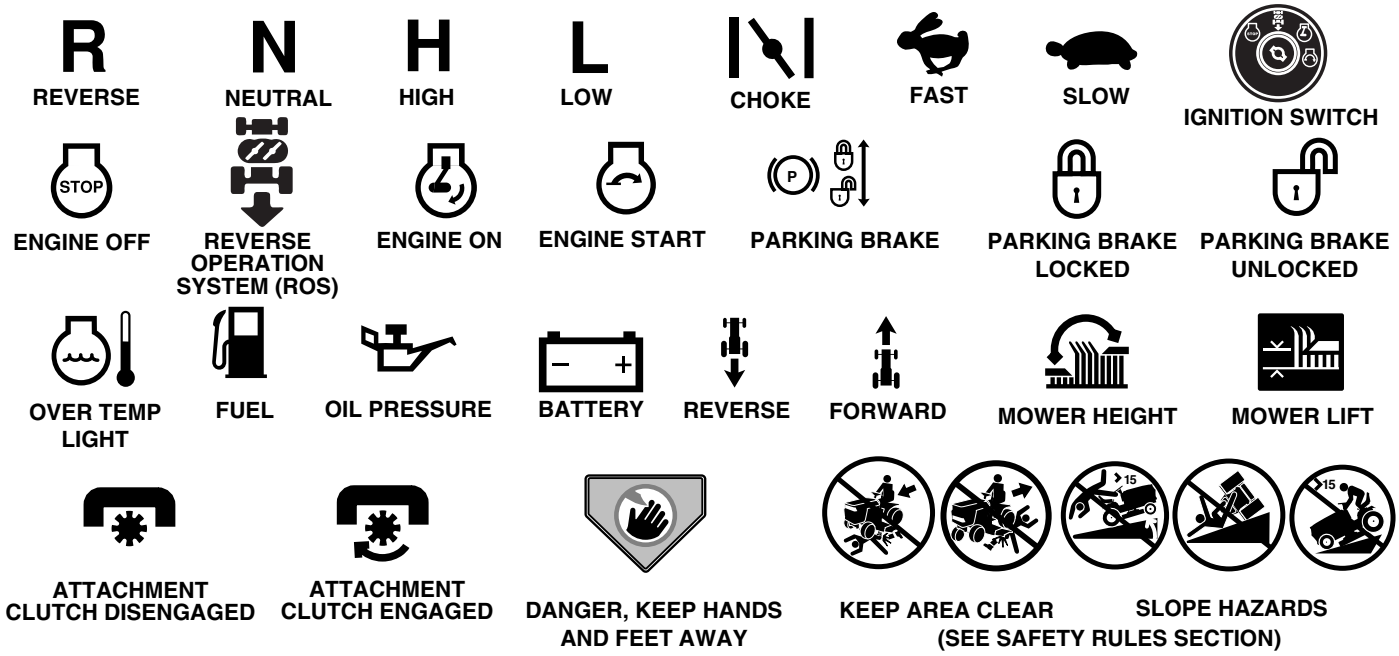
✓ Be sure brake system is in safe operating condition.

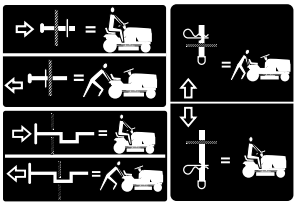
✓ Be sure Operator Presence System and Reverse Operation System (ROS) are working properly (See the Operation and Maintenance sections in this manual).

✓ It is important to purge the transmission before operating your tractor for the first time. Follow proper starting and transmission purging instructions (See "TO START ENGINE" and "PURGE TRANSMISSION" in the Operation section of this manual).

OPERATION

These symbols may appear on your tractor or in literature supplied with the product. Learn and understand their meaning.





FREE WHEEL
(Automatic Models only)

LIGHTS ON

Failure to follow instructions could result in serious injury or death. The safety alert symbol is used to identify safety information about hazards which can result in death, serious injury and/or property damage.

DANGER indicates a hazard which, if not avoided, **will result in death or serious injury.**

WARNING indicates a hazard which, if not avoided, **could result in death or serious injury.**

CAUTION indicates a hazard which, if not avoided, **might result in minor or moderate injury.**

CAUTION when used **without** the alert symbol, indicates a situation that **could result in damage to the tractor and/or engine.**

HOT SURFACES indicates a hazard which, if not avoided, **could result in death, serious injury and/or property damage.**

FIRE indicates a hazard which, if not avoided, **could result in death, serious injury and/or property damage.**

OPERATION

KNOW YOUR TRACTOR

READ THIS OWNER'S MANUAL AND SAFETY RULES BEFORE OPERATING YOUR TRACTOR.

Compare the illustrations with your tractor to familiarize yourself with the location of various controls and adjustments. Save this manual for future reference.

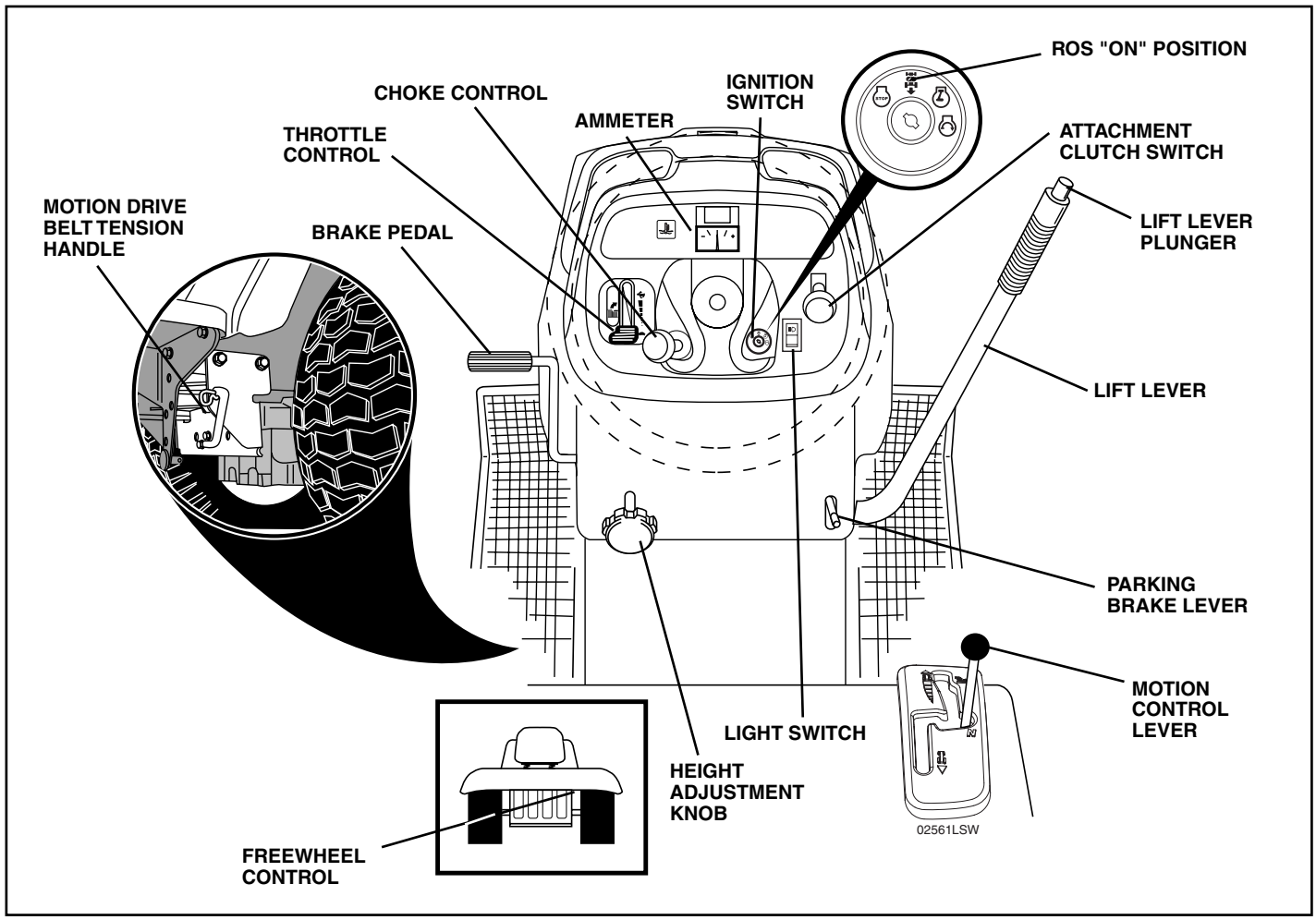


FIG. 7

Our tractors conform to the safety standards of the American National Standards Institute.

AMMETER - Indicates battery charging(+) or discharging(-).

ATTACHMENT CLUTCH SWITCH - Used to engage mower blades or other attachments mounted to your tractor.

BRAKE PEDAL - Used for braking the tractor and starting the engine.

CHOKE CONTROL - Used when starting a cold engine.

FREEWHEEL CONTROL - Disengages transmission for pushing or slowly towing the tractor with the engine off.

HEIGHT ADJUSTMENT KNOB - Used to adjust the mower height.

IGNITION SWITCH - Used to start and stop the engine.

LIFT LEVER - Used to raise and lower mower deck or other attachments mounted to your tractor.

LIFT LEVER PLUNGER - Used to release attachment lift lever when changing its position.

LIGHT SWITCH - Turns the headlights on and off.

MOTION CONTROL LEVER - Selects the speed and direction of tractor.

MOTION DRIVE BELT TENSION HANDLE - Used when changing motion drive belt and, if necessary, starting engine under extremely cold conditions.

PARKING BRAKE LEVER - Locks brake pedal into the brake position.

REVERSE OPERATION SYSTEM (ROS) "ON" POSITION - Allows operation of mower deck or other powered attachment while in reverse.

THROTTLE CONTROL - Used to control engine speed.

OPERATION

The operation of any tractor can result in foreign objects thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields while operating your tractor or performing any adjustments or repairs. We recommend a wide vision safety mask over spectacles or standard safety glasses.

HOW TO USE YOUR TRACTOR

TO SET PARKING BRAKE (See Fig. 8)

Your tractor is equipped with an operator presence sensing switch. When engine is running, any attempt by the operator to leave the seat without first setting the parking brake will shut off the engine.

- Depress brake pedal into full “BRAKE” position and hold.
- Place parking brake lever in “ENGAGED” position and release pressure from brake pedal. Pedal should remain in “BRAKE” position. Make sure parking brake will hold tractor secure.

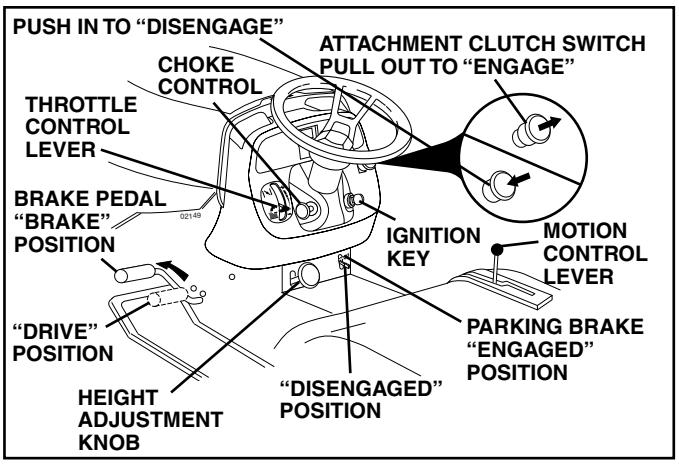


FIG. 8

STOPPING (See Fig. 8)

MOWER BLADES -

- To stop mower blades,move attachment clutch switch to “DISENGAGED” position.

GROUND DRIVE -

- To stop ground drive, depress brake pedal into full “BRAKE” position.

IMPORTANT: THE MOTION CONTROL LEVER RETURNS TO NEUTRAL (N) POSITION WHEN THE BRAKE PEDAL IS FULLY DEPRESSED.

ENGINE -

- Move throttle control between half and full speed (fast) position.

NOTE: Failure to move throttle control between half and full speed (fast) position, before stopping may cause engine to “backfire”.

- Turn ignition key to “OFF” position and remove key. Always remove key when leaving tractor to prevent unauthorized use.
- Never use choke to stop engine.

IMPORTANT: LEAVING THE IGNITION SWITCH IN ANY POSITION OTHER THAN "OFF" WILL CAUSE THE BATTERY TO BE DISCHARGED, (DEAD).

NOTE: Under certain conditions when tractor is standing idle with the engine running, hot engine exhaust gases may cause “browning” of grass. To eliminate this possibility, always stop engine when stopping tractor on grass areas.

CAUTION: Always stop tractor completely, as described above, before leaving the operator's position; to empty grass catcher, etc.

TO USE THROTTLE CONTROL (See Fig. 8)

Always operate engine at full throttle.

- Operating engine at less than full throttle reduces the battery charging rate.
- Full throttle offers the best mower performance.

TO USE CHOKE CONTROL (See Fig. 8)

Use choke control whenever you are starting a cold engine. Do not use to start a warm engine.

- knob in to disengage.

TO MOVE FORWARD AND BACKWARD (See Fig. 8)

CAUTION: Do not attempt to operate motion control lever when the parking brake is set or when the brake pedal is depressed. Doing so may result in misadjustment to the drive control system.

The direction and speed of movement is controlled by the motion control lever.

- Start tractor with motion control lever in neutral (N) position.
- Release parking brake.
- Slowly move motion control lever to desired position.

TO ADJUST MOWER CUTTING HEIGHT (See Fig. 8)

The cutting height is controlled by turning the height adjustment knob in desired direction.

- Turn knob clockwise (↷) to raise cutting height.
- Turn knob counterclockwise (↶) to lower cutting height.

The cutting height range is approximately 1-1/2" to 4-1/2". The heights are measured from the ground to the blade tip with the engine not running. These heights are approximate and may vary depending upon soil conditions, height of grass and types of grass being mowed.

- The average lawn should be cut to approximately 2-1/2 inches during the cool season and to over 3 inches during hot months. For healthier and better looking lawns, mow often and after moderate growth.
- For best cutting performance, grass over 6 inches in height should be mowed twice. Make the first cut relatively high; the second to desired height.

OPERATION

TO ADJUST GAUGE WHEELS (See Fig. 9)

Gauge wheels are properly adjusted when they are slightly off the ground when mower is at the desired cutting height in operating position. Gauge wheels then keep the deck in proper position to help prevent scalping in most terrain conditions.

NOTE: Adjust gauge wheels with tractor on a flat level surface.

- Adjust mower to desired cutting height (See "TO ADJUST MOWER CUTTING HEIGHT" in the Operation section of this manual).
- Remove retainer spring and clevis pin which secure each gauge wheel bar.
- Lower gauge wheels to ground. Raise gauge wheels slightly to align holes in bracket and gauge wheel bar and insert clevis pin. Gauge wheels should be slightly off the ground.
- Replace retainer spring into clevis pin.
- Be sure all gauge wheels are in the same setting.

IMPORTANT: BE SURE TO READJUST GAUGE WHEELS IF YOU CHANGE THE CUTTING HEIGHT OF THE MOWER DECK.

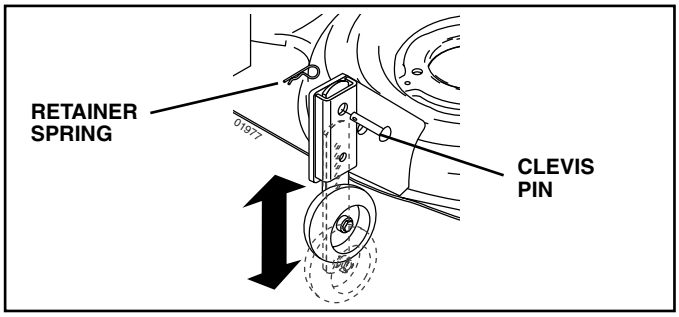


FIG. 9

TO OPERATE MOWER (See Fig. 10)

Your tractor is equipped with an operator presence sensing switch. Any attempt by the operator to leave the seat with the engine running and the attachment clutch engaged will shut off the engine. You must remain fully and centrally positioned in the seat to prevent the engine from hesitating or cutting off when operating your equipment on rough, rolling terrain or hills.

- Select desired height of cut.
- Lower mower with attachment lift control.
- Start mower blades by engaging attachment clutch control.
- TO STOP MOWER BLADES - disengage attachment clutch control.

CAUTION: Do not operate the mower without either the entire grass catcher, on mowers so equipped, or the deflector shield in place.

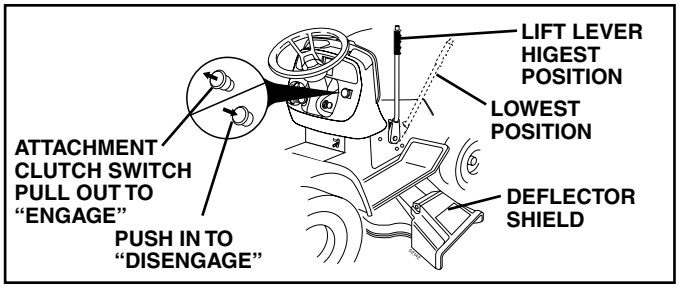


FIG. 10

REVERSE OPERATION SYSTEM (ROS)

Your tractor is equipped with a Reverse Operation System (ROS). Any attempt by the operator to travel in the reverse direction with the attachment clutch engaged will shut off the engine unless ignition key is placed in the ROS "ON" position.

⚠WARNING: Backing up with the attachment clutch engaged while mowing is strongly discouraged. Turning the ROS "ON", to allow reverse operation with the attachment clutch engaged, should only be done when the operator decides it is necessary to reposition the machine with the attachment engaged. **Do not mow in reverse unless absolutely necessary**.

USING THE REVERSE OPERATION SYSTEM -

- Move motion control lever to neutral (N) position.
- With engine running, turn ignition key counterclockwise to ROS "ON" position.
- Look down and behind before backing.
- Slowly move motion control lever to reverse (R) position to start movement.
- When use of the ROS is no longer needed, turn the ignition key clockwise to engine "ON" position.

ROS "ON" POSITION

ENGINE "ON" POSITION (NORMAL OPERATING)

TO OPERATE ON HILLS

CAUTION: Do not drive up or down hills with slopes greater than 15° and do not drive across any slope.

- Choose the slowest speed before starting up or down hills.
- Avoid stopping or changing speed on hills.
- If stopping is absolutely necessary, push brake pedal quickly to brake position and engage parking brake.

IMPORTANT: THE MOTION CONTROL LEVER RETURNS TO NEUTRAL (N) POSITION WHEN THE BRAKE PEDAL IS FULLY DEPRESSED.

- To restart movement, slowly release parking brake and brake pedal.
- Slowly move motion control lever to slowest setting.
- Make all turns slowly.

TO TRANSPORT (See Figs. 7 and 11)

When pushing or towing your tractor, be sure to disengage transmission by placing freewheel control in freewheeling position. Free wheel control is located at the rear drawbar of tractor.

- Raise attachment lift to highest position with attachment lift control.
- Pull freewheel control out and into the slot and release so it is held in the disengaged position.

- Do not push or tow tractor at more than two (2) MPH.
- To reengage transmission, reverse above procedure.

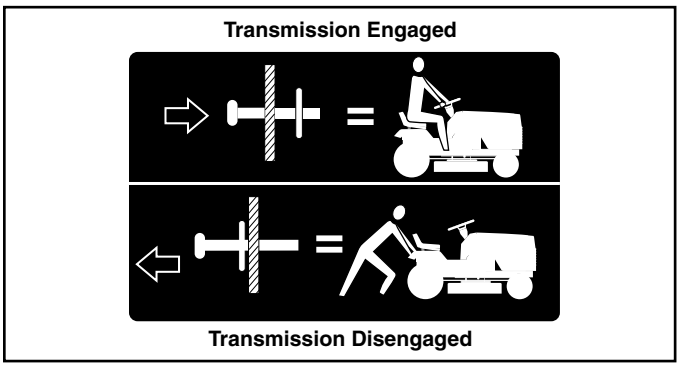


FIG. 11

NOTE: To protect hood from damage when transporting your tractor on a truck or a trailer, be sure hood is closed and secured to tractor. Use an appropriate means of tying hood to tractor (rope, cord, etc.).

TOWING CARTS AND OTHER ATTACHMENTS

Tow only the attachments that are recommended by and comply with specifications of the manufacturer of your tractor. Use common sense when towing. Too heavy of a load, while on a slope, is dangerous. Tires can lose traction with the ground and cause you to lose control of your tractor.

BEFORE STARTING THE ENGINE

CHECK ENGINE OIL LEVEL

The engine in your tractor has been shipped, from the factory, already filled with summer weight oil.

- Check engine oil with tractor on level ground.
- Remove oil fill cap/dipstick and wipe clean, reinsert the dipstick and screw cap tight, wait for a few seconds, remove and read oil level. If necessary, add oil until "FULL" mark on dipstick is reached. Do not overfill.
- For cold weather operation you should change oil for easier starting (See "OIL VISCOSITY CHART" in the Maintenance section of this manual).
- To change engine oil, see the Maintenance section in this manual.

ADD GASOLINE

- Fill fuel tank to bottom of filler neck. Do not overfill. Use fresh, clean, regular unleaded gasoline with a minimum of 87 octane. (Use of leaded gasoline will increase carbon and lead oxide deposits and reduce valve life). Do not mix oil with gasoline. Purchase fuel in quantities that can be used within 30 days to assure fuel freshness.

CAUTION: Wipe off any spilled oil or fuel. Do not store, spill or use gasoline near an open flame.

IMPORTANT: WHEN OPERATING IN TEMPERATURES BELOW32°F(0°C), USE FRESH, CLEAN WINTER GRADE GASOLINE TO HELP INSURE GOOD COLD WEATHER STARTING.

CAUTION: Alcohol blended fuels (called gasohol or using ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be emptied before storage of 30 days or longer. Drain the gas tank, start the engine and let it run until the fuel lines and carburetor are empty. Use fresh fuel next season. See Storage Instructions for additional information. Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.

TO START ENGINE (See Fig. 8)

When starting the engine for the first time or if the engine has run out of fuel, it will take extra cranking time to move fuel from the tank to the engine.

- Be sure freewheel control is in the transmission engaged position.
- Sit on seat in operating position, depress brake pedal and set parking brake.
- Move attachment clutch to "DISENGAGED" position.
- Move throttle control to fast position
- Pull choke control out for a cold engine start attempt. For a warm engine start attempt the choke control may not be needed.

NOTE: Before starting, read the warm and cold starting procedures below.

- Insert key into ignition and turn key clockwise to "START" position and release key as soon as engine starts. Do not run starter continuously for more than fifteen seconds per minute. If the engine does not start after several attempts, push choke control in, wait a few minutes and try again. If engine still does not start, pull the choke control out and retry.

WARM WEATHER STARTING (50° F and above)

- When engine starts, slowly push choke control in until the engine begins to run smoothly. If the engine starts to run roughly, pull the choke control out slightly for a few seconds and then continue to push the control in slowly.
- The attachments and ground drive can now be used. If the engine does not accept the load, restart the engine and allow it to warm up for one minute using the choke as described above.

COLD WEATHER STARTING (50° F and below)

- When engine starts, slowly push choke control in until the engine begins to run smoothly. Continue to push the choke control in small steps allowing the engine to accept small changes in speed and load, until the choke control is fully in. If the engine starts to run roughly, pull the choke control out slightly for a few seconds and then continue to push the control in slowly. This may require an engine warm-up period from several seconds to several minutes, depending on the temperature.

NOTE: In extreme cold conditions, if engine will not start, you may need to disengage the motion drive belt as follows:

- Be sure parking brake is engaged.
- Remove retainer spring from the drive belt tension handle to relieve belt tension.
- Start engine and allow it to warm up for three (3) minutes.
- Shut-off engine and engage parking brake.
- Engage drive belt tension handle and replace the retainer spring.

AUTOMATIC TRANSMISSION WARM UP

- Before driving the unit in cold weather, the transmission should be warmed up as follows:
  - Be sure the tractor is on level ground.
  - Place the motion control lever in neutral. Release the parking brake and let the brake slowly return to operating position.
  - Allow one minute for transmission to warm up. This can be done during the engine warm up period.
- The attachments can be used during the engine warm-up period after the transmission has been warmed up and may require the choke control be pulled out slightly.

NOTE: If at a high altitude (above 3000 feet) or in cold temperatures (below 32 F) the carburetor fuel mixture may need to be adjusted for best engine performance. See "TO ADJUST CARBURETOR" in the Service and Adjustments section of this manual.

PURGE TRANSMISSION

CAUTION: Never engage or disengage freewheel lever while the engine is running.

To ensure proper operation and performance, it is recommended that the transmission be purged before operating tractor for the first time. This procedure will remove any trapped air inside the transmission which may have developed during shipping of your tractor.

IMPORTANT: SHOULD YOUR TRANSMISSION REQUIRE REMOVAL FOR SERVICE OR REPLACEMENT, IT SHOULD BE PURGED AFTER REINSTALLATION BEFORE OPERATING THE TRACTOR.

- Place tractor safely on level surface with engine off and parking brake set.
- Disengage transmission by placing freewheel control in freewheeling position (See "TO TRANSPORT" in this section of manual).
- Sitting in the tractor seat, start engine. After the engine is running, move throttle control to slow position. Disengage parking brake
- Move motion control lever to full forward position and hold for five (5) seconds. Move lever to full reverse position and hold for five (5) seconds. Repeat this procedure three (3) times.

NOTE: During this procedure there will be no movement of drive wheels. The air is being removed from hydraulic drive system.

- Move motion control lever to neutral (N) position. Shut-off engine and set parking brake.
- Engage transmission by placing freewheel control in engaged position (See "TO TRANSPORT" in this section of manual).
- Sitting in the tractor seat, start engine. After the engine is running, move throttle control to half (1/2) speed. Disengage parking brake.
- Slowly move motion control lever forward, after the tractor moves approximately five (5) feet, slowly move motion control lever to reverse position. After the tractor moves approximately five (5) feet return the motion control lever to the neutral (N) position. Repeat this procedure with the motion control lever three (3) times.
- Your transmission is now purged and now ready for normal operation.

MOWING TIPS

- Tire chains cannot be used when the mower housing is attached to tractor.
- Mower should be properly leveled for best mowing performance. See "TO LEVEL MOWER HOUSING" in the Service and Adjustments section of this manual.
- The left hand side of mower should be used for trimming.
- Drive so that clippings are discharged onto the area that has been cut. Have the cut area to the right of the tractor. This will result in a more even distribution of clippings and more uniform cutting.
- When mowing large areas, start by turning to the right so that clippings will discharge away from shrubs, fences, driveways, etc. After one or two rounds, mow in the opposite direction making left hand turns until finished (See Fig. 12).

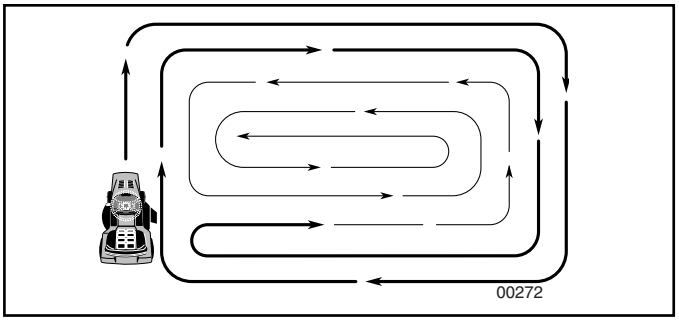


FIG. 12

- If grass is extremely tall, it should be mowed twice to reduce load and possible fire hazard from dried clippings. Make first cut relatively high; the second to the desired height.
- Do not mow grass when it is wet. Wet grass will plug mower and leave undesirable clumps. Allow grass to dry before mowing.
- **Always operate engine at full throttle when mowing** to assure better mowing performance and proper discharge of material. Regulate ground speed by selecting a low enough gear to give the mower cutting performance as well as the quality of cut desired.
- When operating attachments, select a ground speed that will suit the terrain and give best performance of the attachment being used.

MAINTENANCE

MAINTENANCE SCHEDULE
FILL IN DATES
AS YOU COMPLETE
REGULAR SERVICE

		BEFORE EACH USE	EVERY 8 HOURS	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	EVERY SEASON	BEFORE STORAGE	SERVICE DATES		
TRACTOR	Check Brake Operation	✔	✔								
	Check Tire Pressure	✔	✔								
	Check Operator Presence and ROS Systems	✔									
	Check for Loose Fasteners	✔				✔5		✔			
	Sharpen/Replace Mower Blades			✔3							
	Lubrication Chart			✔				✔			
	Check Battery Level			✔4							
	Clean Battery and Terminals			✔				✔			
	Check Transaxle Cooling			✔							
	Check V-Belts					✔					
ENGINE	Check Engine Oil Level	✔	✔								
	Change Engine Oil (with oil filter)				✔1,2			✔			
	Change Engine Oil (without oil filter)			✔1,2				✔			
	Clean Air Filter			✔2							
	Clean Air Screen			✔2							
	Inspect Muffler/Spark Arrester				✔						
	Replace Oil Filter (If equipped)					✔1,2					
	Clean Engine Cooling Fins					✔2					
	Replace Spark Plug					✔	✔				
	Replace Air Filter Paper Cartridge					✔2					
	Replace Fuel Filter						✔				

maint_sch-tractor-ROS.e

1 - Change more often when operating under a heavy load or in high ambient temperatures.
2 - Service more often when operating in dirty or dusty conditions.
3 - Replace blades more often when mowing in sandy soil.
4 - Not required if equipped with maintenance-free battery.
5 - Tighten front axle pivot bolt to 35 ft.-lbs. maximum. Do not overtighten.

GENERAL RECOMMENDATIONS

The warranty on this tractor does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, operator must maintain tractor as instructed in this manual.

Some adjustments will need to be made periodically to properly maintain your tractor.

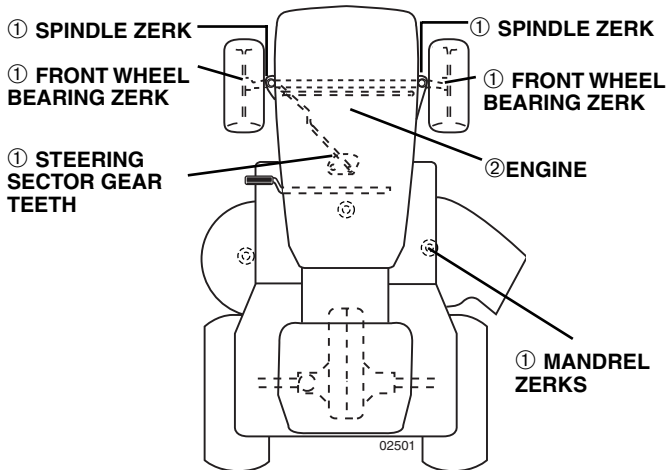
At least once a season, check to see if you should make any of the adjustments described in the Service and Adjustments section of this manual.

- At least once a year you should replace the spark plug, clean or replace air filter, and check blades and belts for wear. A new spark plug and clean air filter assure proper air-fuel mixture and help your engine run better and last longer.

BEFORE EACH USE

- Check engine oil level.
- Check brake operation.
- Check tire pressure.
- Check operator presence and ROS systems for proper operation.
- Check for loose fasteners.

LUBRICATION CHART



① General Purpose Grease
② Refer to Maintenance “ENGINE” Section

IMPORTANT: DO NOT OIL OR GREASE THE PIVOT POINTS WHICH HAVE SPECIAL NYLON BEARINGS. VISCOUS LUBRICANTS WILL ATTRACT DUST AND DIRT THAT WILL SHORTEN THE LIFE OF THE SELF-LUBRICATING BEARINGS. IF YOU FEEL THEY MUST BE LUBRICATED, USE ONLY A DRY, POWDERED GRAPHITE TYPE LUBRICANT SPARINGLY.

MAINTENANCE

TRACTOR

Always observe safety rules when performing any maintenance.

BRAKE OPERATION

If tractor requires more than five (5) feet to stop at highest speed in highest gear on a level, dry concrete or paved surface, then brake must be checked and adjusted. (See "TO ADJUST BRAKE" in the Service and Adjustments section of this manual).

TIRES

- Maintain proper air pressure in all tires (See "PRODUCT SPECIFICATIONS" section of this manual).
- Keep tires free of gasoline, oil, or insect control chemicals which can harm rubber.
- Avoid stumps, stones, deep ruts, sharp objects and other hazards that may cause tire damage.

NOTE: To seal tire punctures and prevent flat tires due to slow leaks, tire sealant may be purchased from your local parts dealer. Tire sealant also prevents tire dry rot and corrosion.

OPERATOR PRESENCE SYSTEM AND REVERSE OPERATION SYSTEM (ROS)

Be sure operator presence and reverse operation systems are working properly. If your tractor does not function as described, repair the problem immediately.

- The engine should not start unless the brake pedal is fully depressed, and the attachment clutch control is in the disengaged position.

CHECK OPERATOR PRESENCE SYSTEM

- When the engine is running, any attempt by the operator to leave the seat without first setting the parking brake should shut off the engine.
- When the engine is running and the attachment clutch is engaged, any attempt by the operator to leave the seat should shut off the engine.
- The attachment clutch should never operate unless the operator is in the seat.

ROS "ON" POSITION **ENGINE "ON" POSITION (NORMAL OPERATING)**

CHECK REVERSE OPERATION (ROS) SYSTEM

- When the engine is running with the ignition switch in the engine "ON" position and the attachment clutch engaged, any attempt by the operator to shift into reverse should shut off the engine.
- When the engine is running with the ignition switch in the ROS "ON" position and the attachment clutch engaged, any attempt by the operator to shift into reverse should NOT shut off the engine.

BLADE CARE

For best results mower blades must be kept sharp. Replace bent or damaged blades.

CAUTION: Use only a replacement blade approved by the manufacturer of your tractor. Using a blade not approved by the manufacturer of your tractor is hazardous, could damage your tractor and void your warranty.

BLADE REMOVAL (See Fig. 13)

- Raise mower to highest position to allow access to blades.

NOTE: Protect your hands with gloves and/or wrap blade with heavy cloth.

- Remove blade bolt by turning counterclockwise.
- Install new or resharpened blade with stamped "THIS SIDE UP" facing deck and mandrel assembly.

IMPORTANT: TO ENSURE PROPER ASSEMBLY, CENTER HOLE IN BLADE MUST ALIGN WITH STAR ON MANDREL ASSEMBLY.

- Install and tighten blade bolt securely (45-55 Ft. Lbs. torque).

IMPORTANT: SPECIAL BLADE BOLT HEAT TREATED.

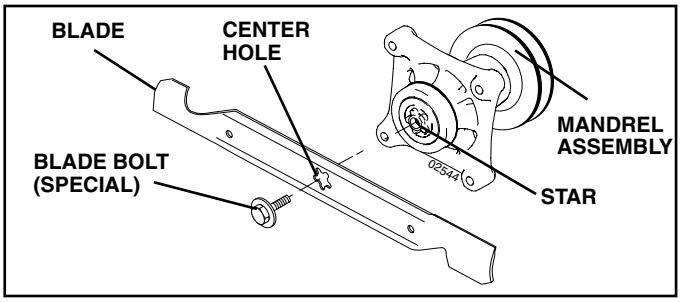


FIG. 13

TO SHARPEN BLADE (See Fig. 14)

NOTE: We do not recommend sharpening blade - but if you do, be sure the blade is balanced.

Care should be taken to keep the blade balanced. An unbalanced blade will cause excessive vibration and eventual damage to mower and engine.

- The blade can be sharpened with a file or on a grinding wheel. Do not attempt to sharpen while on the mower.
- To check blade balance, you will need a 5/8" diameter steel bolt, pin, or a cone balancer. (When using a cone balancer, follow the instructions supplied with balancer.)

NOTE: Do not use a nail for balancing blade. The lobes of the center hole may appear to be centered, but are not.

- Slide blade on to an unthreaded portion of the steel bolt or pin and hold the bolt or pin parallel with the ground. If blade is balanced, it should remain in a horizontal position. If either end of the blade moves downward, sharpen the heavy end until the blade is balanced.

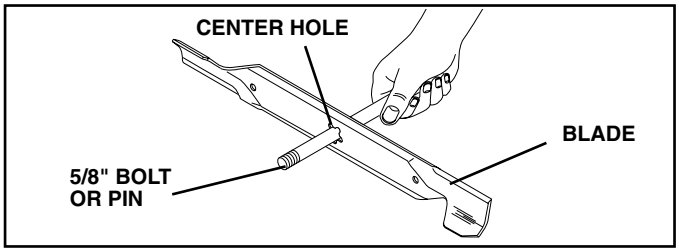


FIG. 14

MAINTENANCE

BATTERY

Your tractor has a battery charging system which is sufficient for normal use. However, periodic charging of the battery with an automotive charger will extend its life.

- Keep battery and terminals clean.
- Keep battery bolts tight.
- Keep small vent holes open.
- Recharge at 6-10 amperes for 1 hour.

NOTE: The original equipment battery on your tractor is maintenance free. Do not attempt to open or remove caps or covers. Adding or checking level of electrolyte is not necessary.

TO CLEAN BATTERY AND TERMINALS

Corrosion and dirt on the battery and terminals can cause the battery to "leak" power.

- Remove terminal guard.
- Disconnect BLACK battery cable first then RED battery cable and remove battery from tractor.
- Rinse the battery with plain water and dry.
- Clean terminals and battery cable ends with wire brush until bright.
- Coat terminals with grease or petroleum jelly.
- Reinstall battery (See "CONNECT BATTERY" in the Assembly section of this manual).

V-BELTS

Check V-belts for deterioration and wear after 100 hours of operation and replace if necessary. The belts are not adjustable. Replace belts if they begin to slip from wear.

TRANSAXLE COOLING

The transmission fan and cooling fins should be kept clean to assure proper cooling.

Do not attempt to clean fan or transmission while engine is running or while the transmission is hot. To prevent possible damage to seals, do not use high pressure water or steam to clean transaxle.

- Inspect cooling fan to be sure fan blades are intact and clean.
- Inspect cooling fins for dirt, grass clippings and other materials. To prevent damage to seals, do not use compressed air or high pressure sprayer to clean cooling fins.

TRANSAXLE PUMP FLUID

The transaxle was sealed at the factory and fluid maintenance is not required for the life of the transaxle. Should the transaxle ever leak or require servicing, contact your nearest authorized service center/department.

ENGINE

LUBRICATION

Only use high quality detergent oil rated with API service classification SG-SL. Select the oil's SAE viscosity grade according to your expected operating temperature. When operating in temperatures below 0° F (-18° C) synthetic oil must be used.

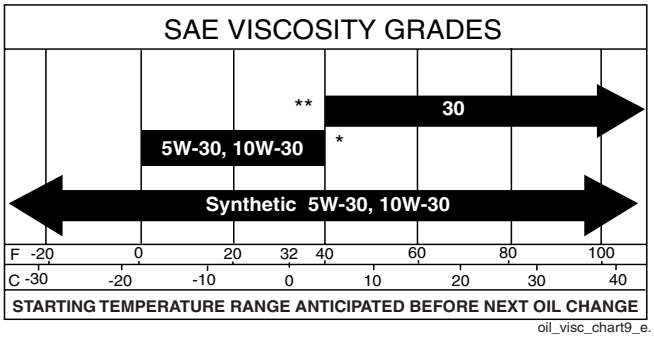


FIG. 15

*** CAUTION:** Air cooled engines run hotter than automotive engines. The use of non-synthetic multi-viscosity oils (5W30, 10W30 etc.) in temperatures above 40° F (4° C) will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently.

**** CAUTION:** SAE 30 oil, if used below 40° F (4° C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

NOTE: Synthetic oil meeting ILSAC GF-2, API certification mark and API service symbol (shown at left) with "SJ/CF ENERGY CONSERVING" or higher, is an acceptable oil at all temperatures. **Use of synthetic oil does not alter required oil change intervals.**

Change the oil after every 50 hours of operation or at least once a year if the tractor is not used for 50 hours in one year.

Check the crankcase oil level before starting the engine and after each eight (8) hours of operation. Tighten oil fill cap/dipstick securely each time you check the oil level.

TO CHANGE ENGINE OIL (See Figs. 15 and 16)

Determine temperature range expected before oil change. All oil must meet API service classification SG-SL.

- Be sure tractor is on level surface.
- Oil will drain more freely when warm.
- Catch oil in a suitable container.
- Remove oil fill cap/dipstick. Be careful not to allow dirt to enter the engine when changing oil.
- Install the drain tube onto the valve.
- Open drain valve by using a 7/16" (11mm) wrench turning counterclockwise.

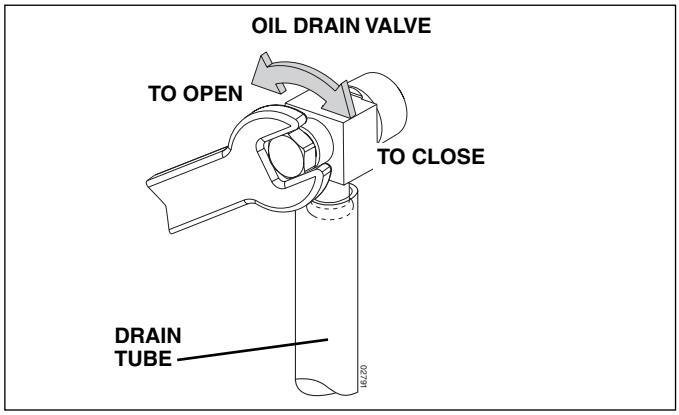


FIG. 16

- After oil has drained completely, close the drain valve turning clockwise. Use the 7/16" (11mm) wrench to apply a small amount of torque to keep it closed. Do not over tighten.
- Remove the drain tube and store in a safe place.
- Refill engine with oil through oil fill dipstick tube. Pour slowly. Do not overfill. For approximate capacity see "PRODUCT SPECIFICATIONS" section of this manual.
- Use gauge on oil fill cap/dipstick for checking level. Be sure dipstick cap is tightened securely for accurate reading. Keep oil at "FULL" line on dipstick. Tighten cap onto the tube securely when finished.

CLEAN AIR SCREEN

Air screen must be kept free of dirt and chaff to prevent engine damage from overheating. Clean with a wire brush or compressed air to remove dirt and stubborn dried gum fibers.

CLEAN AIR INTAKE/COOLING AREAS

To insure proper cooling, make sure the grass screen, cooling fins, and other external surfaces of the engine are kept clean at all times.

Every 100 hours of operation (more often under extremely dusty, dirty conditions), remove the blower housing and other cooling shrouds. Clean the cooling fins and external surfaces as necessary. Make sure the cooling shrouds are reinstalled.

NOTE: Operating the engine with a blocked grass screen, dirty or plugged cooling fins, and/or cooling shrouds removed will cause engine damage due to overheating.

AIR FILTER (See Fig. 17)

Your engine will not run properly using a dirty air filter. Clean the foam pre-cleaner after every 25 hours of operation or every season. Service paper cartridge every 100 hours of operation or every season, whichever occurs first.

Service air cleaner more often under dusty conditions.

- Remove cover.

TO SERVICE PRE-CLEANER

- Wash it in liquid detergent and water.
- Squeeze it dry in a clean cloth.
- Saturate it in engine oil. Wrap it in clean, absorbent cloth and squeeze to remove excess oil.
- If very dirty or damaged, replace pre-cleaner.

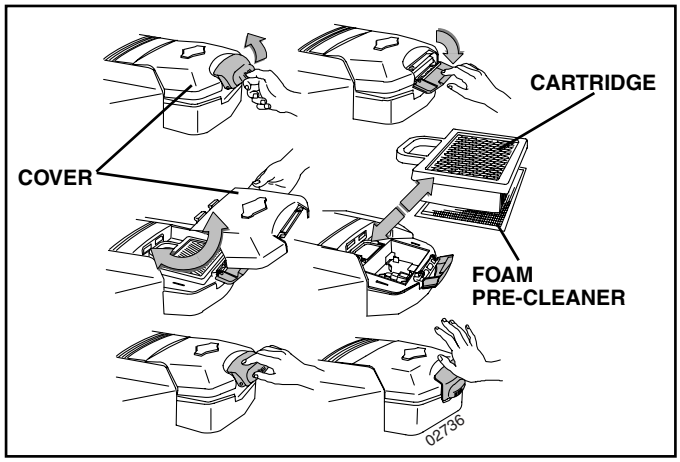


FIG. 17

TO SERVICE CARTRIDGE

- Clean cartridge by tapping gently on flat surface. If very dirty or damaged, replace cartridge.
- Reinstall precleaner cartridge, cover and secure.

IMPORTANT: PETROLEUM SOLVENTS, SUCH AS KEROSENE, ARE NOT TO BE USED TO CLEAN THE CARTRIDGE. THEY MAY CAUSE DETERIORATION OF THE CARTRIDGE. DO NOT OIL CARTRIDGE. DO NOT USE PRESSURIZED AIR TO CLEAN OR DRY CARTRIDGE.

ENGINE OIL FILTER

Replace the engine oil filter every season or every other oil change if the tractor is used more than 100 hours in one year.

MUFFLER

Inspect and replace corroded muffler and spark arrester (if equipped) as it could create a fire hazard and/or damage.

SPARK PLUGS

Replace spark plugs at the beginning of each mowing season or after every 100 hours of operation, whichever occurs first. Spark plug type and gap setting are shown in "PRODUCT SPECIFICATIONS" section of this manual.

IN-LINE FUEL FILTER (See Fig. 18)

The fuel filter should be replaced once each season. If fuel filter becomes clogged, obstructing fuel flow to carburetor, replacement is required.

- With engine cool, remove filter and plug fuel line sections.
- Place new fuel filter in position in fuel line with arrow pointing towards carburetor.
- Be sure there are no fuel line leaks and clamps are properly positioned.
- Immediately wipe up any spilled gasoline.

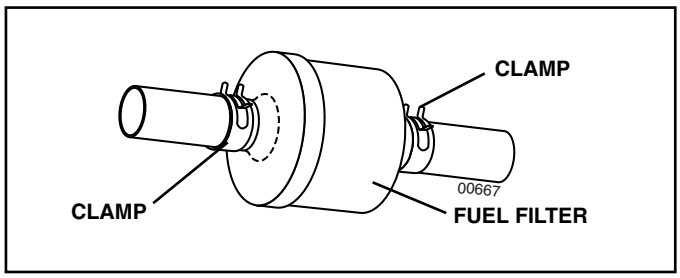


FIG. 18

CLEANING

- Clean engine, battery, seat, finish, etc. of all foreign matter.
- Keep finished surfaces and wheels free of all gasoline, oil, etc.
- Protect painted surfaces with automotive type wax.

We do not recommend using a garden hose or pressure washer to clean your tractor unless the engine and transmission are covered to keep water out. Water in engine or transmission will shorten the useful life of your tractor. Use compressed air or a leaf blower to remove grass, leaves and trash from tractor and mower.

SERVICE AND ADJUSTMENTS

WARNING: TO AVOID SERIOUS INJURY, BEFORE PERFORMING ANY SERVICE OR ADJUSTMENTS:

- **Depress brake pedal fully and set parking brake.**
- **Place attachment clutch in "DISENGAGED" position.**
- **Turn ignition key to "STOP" and remove key.**
- **Make sure the blades and all moving parts have completely stopped.**
- **Disconnect spark plug wire from spark plug and place wire where it cannot come in contact with plug.**

TRACTOR

TO REMOVE MOWER (See Fig. 19)

- Place attachment clutch in "DISENGAGED" position.
- If equipped, turn height adjustment knob to lowest setting.
- Lower mower to its lowest position.
- Disengage belt tension rod from lock bracket.

CAUTION: Rod is spring loaded. Have a tight grip on rod and release slowly.

- Remove retainer spring holding anti-swaybar to chassis bracket and disengage anti-swaybar from bracket.
- Remove four retainer springs from front plate assembly and remove plate.
- Remove retainer springs from suspension arms at deck and disengage arms from deck.
- Raise attachment lift to its highest position.
- Slide mower forward and remove belt from electric clutch pulley.
- Slide mower out from under right side of tractor.

TO INSTALL MOWER

Be sure tractor is on level surface and mower suspension arms are raised with attachment lift control. Engage parking brake.

- Swing anti-sway bar to left side of mower deck.
- Slide mower under tractor with deflector shield to right side of tractor.

IMPORTANT: CHECK BELT FOR PROPER ROUTING IN ALL MOWER PULLEY GROOVES.

- If equipped, turn height adjustment knob counterclockwise until it stops.
- Lower mower linkage with attachment lift control.
- Be sure belt tension rod is in disengaged position.
- Install belt into electric clutch pulley groove.
- Place the suspension arms on outward pointing deck pins. Retain with double loop retainer spring with loops up as shown.
- Install front plate assembly to tractor suspension brackets and retain with single loop retainer springs as shown.
- Position front plate assembly between front mower brackets. Raise deck and plate assembly to align holes and insert flanged pins. Secure pins with double loop retainer springs between the plate assembly and mower brackets.

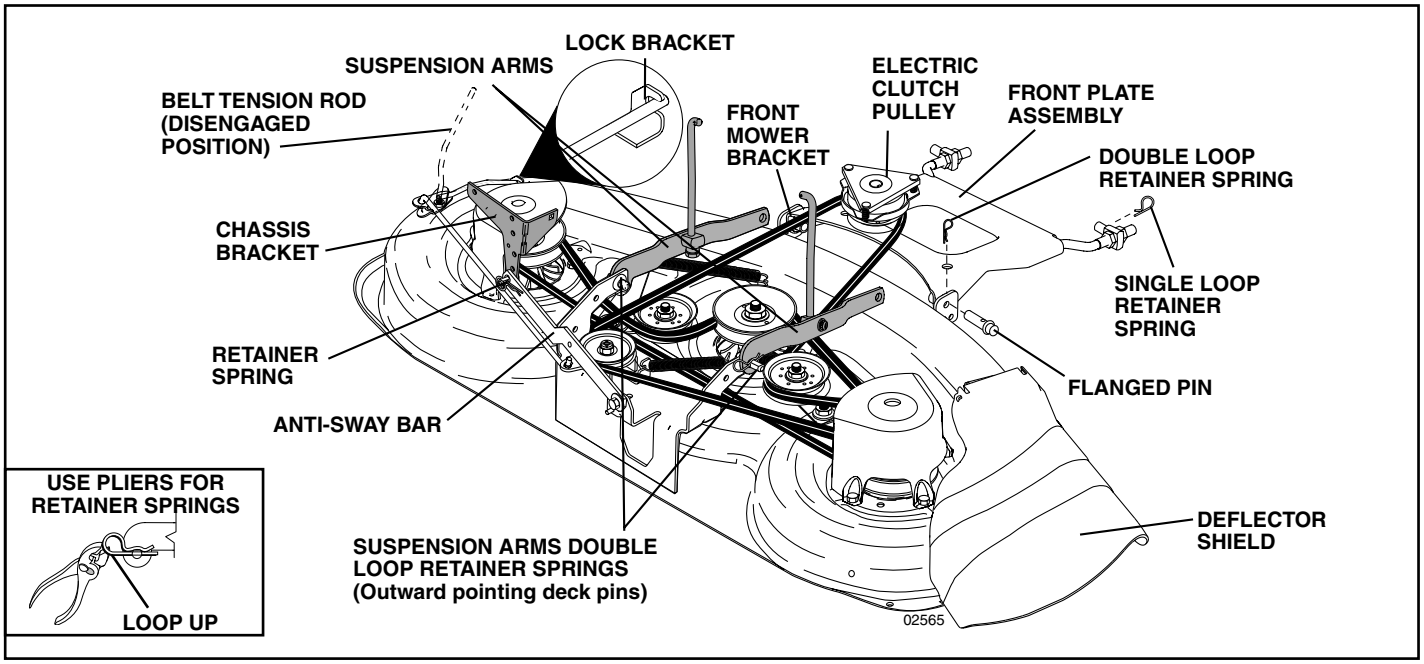


FIG. 19

NOTE: To assist in locating hole in flanged pin, the hole in pin is inline with notch on head of pin. If necessary, move mower side-to-side to give space between plate and mower brackets.

IMPORTANT: CHECK BELT FOR PROPER ROUTING IN ALL MOWER PULLEY GROOVES.

- Engage belt tension rod by pushing rod into locking bracket.

CAUTION: Belt tension rod is spring loaded. Have a tight grip on rod and engage slowly.

- Connect anti-sway bar to chassis bracket under left footrest and retain with double loop retainer spring.
- If equipped, turn height adjustment knob clockwise to remove slack from mower suspension.
- Raise deck to highest position.

TO LEVEL MOWER HOUSING

Adjust the mower while tractor is parked on level ground or driveway. Make sure tires are properly inflated (See "PRODUCT SPECIFICATIONS" section of this manual). If tires are over or underinflated, you will not properly adjust your mower.

SIDE-TO-SIDE ADJUSTMENT (See Figs. 20 and 21)

- Raise mower to its highest position.
- Measure height from bottom edge of mower to ground level at front corners of mower. Distance "A" on both sides of mower should be the same.
- If adjustment is necessary, make adjustment on one side of mower only.
- To raise one side of mower, tighten lift link adjustment nut on that side.
- To lower one side of mower, loosen lift link adjustment nut on that side.

NOTE: Each full turn of adjustment nut will change mower height about 3/16".

- Recheck measurements after adjusting.

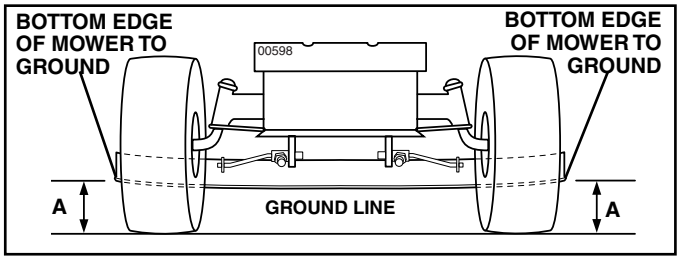


FIG. 20

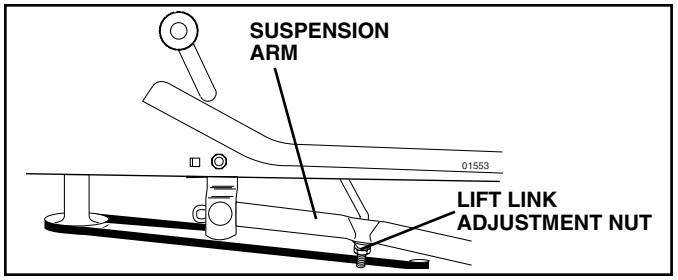


FIG. 21

FRONT-TO-BACK ADJUSTMENT (See Figs. 22 and 23)

IMPORTANT: DECK MUST BE LEVEL SIDE-TO-SIDE. IF THE FOLLOWING FRONT-TO-BACK ADJUSTMENT IS NECESSARY, BE SURE TO ADJUST BOTH FRONT LINKS EQUALLY SO MOWER WILL STAY LEVEL SIDE-TO-SIDE.

To obtain the best cutting results, the mower blades should be adjusted so the front tip is approximately 1/8" to 1/2" lower than the rear tip when the mower is in its highest position.

CAUTION: Blades are sharp. Protect your hands with gloves and/or wrap blade with heavy cloth.

Check adjustment on right side of tractor. Position any blade so the tip is pointing straight forward. Measure distance "B" at front and rear tip of the blade.

- Before making any necessary adjustments, check that both front plate links are equal in length.
- If links are not equal in length, adjust one link to same length as other link.
- To lower front of blade, loosen nut "C" on both front links an equal number of turns.

NOTE: Each full turn of nut "C" will change distance. "B" by approximately 3/16".

- When distance "B" is 1/8" to 1/2" lower at front than rear, tighten nut "D" against trunnion on both front links.
- To raise front of blade, loosen nut "D" from trunnion on both front links. Tighten nut "C" on both front links an equal number of turns. The two front links must remain equal in length.
- When distance "B" is 1/8" to 1/2" lower at front than rear, tighten nut "D" against trunnion on both front links.
- Recheck side-to-side adjustment.

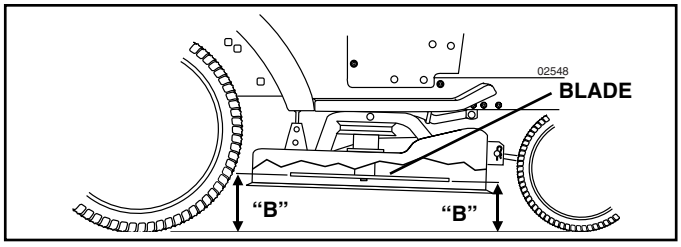


FIG. 22

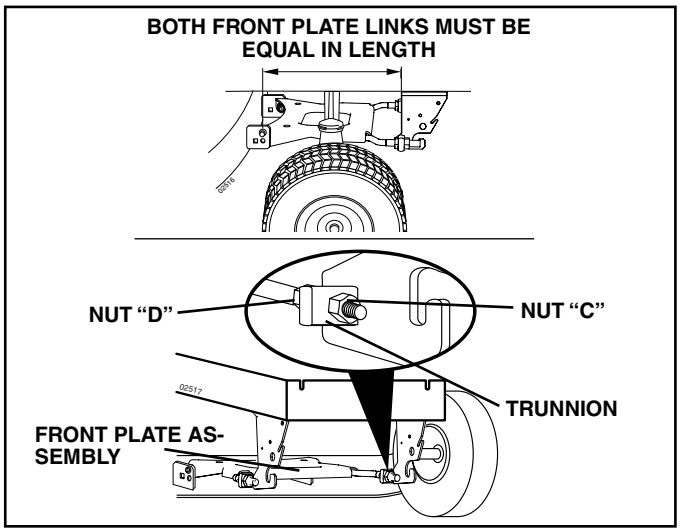


FIG. 23

TO REPLACE MOWER DRIVE BELT

MOWER DRIVE BELT REMOVAL (See Fig. 24)

- Park tractor on a level surface. Engage parking brake.
- Lower mower to its lowest position.
- Disengage belt tention rod from lock bracket.

CAUTION: Rod is spring loaded. Have a tight grip on rod and release slowly.

- Remove screws from R.H. mandrel cover and remove cover.
- Remove any dirt or grass clippings which may have accumulated around mandrels and entire upper deck surface.
- Disconnect R.H. suspension arm from rear deck bracket by removing retainer spring.
- Roll belt over the top of R.H. mandrel pulley carefully.
- Remove belt from electric clutch pulley.
- Remove belt from idler pulleys.
- Check primary idler arm and two idlers to see that they rotate freely.
- Be sure spring is securely hooked to primary idler arm and spring arm.

MOWER DRIVE BELT INSTALLATION (See Fig. 24)

- Install belt in both idlers.
- Install new belt onto electric clutch pulley.
- Roll belt into upper groove of R.H. mandrel pulley carefully.
- Carefully check belt routing making sure belt is in the grooves correctly.
- Reconnect R.H. suspension arm to rear deck bracket with retainer spring.
- Reassemble R.H. mandrel cover.
- Engage belt tension rod by pushing rod into locking bracket.

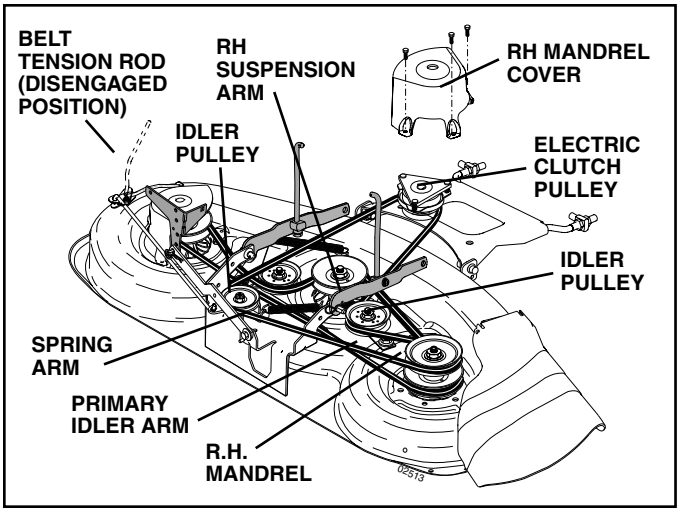


FIG. 24

TO REPLACE MOWER BLADE (SECONDARY) DRIVE BELT (See Fig. 25)

Park the tractor on level surface. Engage parking brake.

- Remove mower (See "TO REMOVE MOWER" in this section of manual).
- Remove screws from R.H. and L.H. mandrel covers and remove covers.

REMOVE MOWER DRIVE BELT

(Refer to "TO REMOVE MOWER DRIVE BELT" illustration in this section of manual).

- Carefully roll belt over the top of R.H. mandrel pulley.
- Remove belt from idler pulleys.
- Check primary idler arm and two idlers to see that they rotate freely.
- Be sure spring is securely hooked to primary idler arm and spring arm.

REMOVE MOWER BLADE (SECONDARY) DRIVE BELT

- Carefully roll belt off L.H. mandrel pulley.
- Remove belt from center mandrel pulley, idler pulley, and R.H. mandrel pulley.
- Remove any dirt or grass which may have accumulated around mandrels and entire upper deck surface.
- Check secondary idler arm and idler pulley to see that they rotate freely.
- Be sure spring is hooked in secondary idler arm and secondary spring arm.

INSTALL NEW MOWER BLADE (SECONDARY) DRIVE BELT

- Install new belt in lower groove of R.H. mandrel pulley, idler pulley, and center mandrel pulley as shown.
- Carefully roll belt over L.H. mandrel pulley. Make sure belt is in all grooves properly.

REINSTALL MOWER DRIVE BELT

(Refer to "TO REMOVE MOWER DRIVE BELT" illustration in this section of manual).

- Install belt into upper groove of R.H. mandrel pulley and around both idlers. Pull belt to front of mower to remove slack.
- Reinstall mandrel covers and securely tighten all screws.
- Carefully check belt routing making sure belt is in all grooves correctly.
- Reinstall mower to tractor (See "TO INSTALL MOWER" in this section of manual).

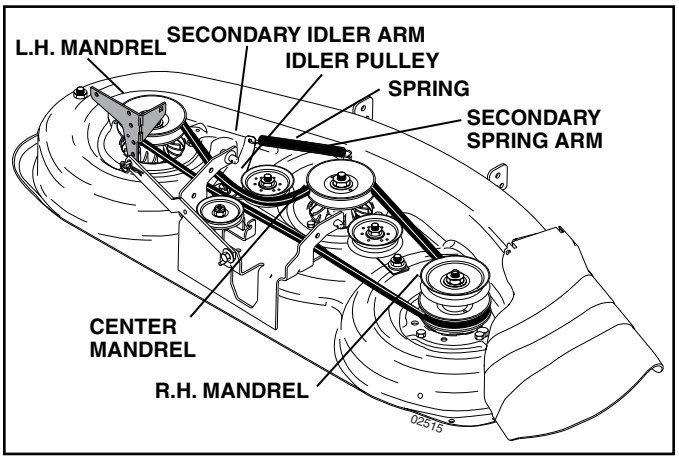


FIG. 25

TO ADJUST ATTACHMENT CLUTCH (See Fig. 26)

The electric clutch should provide years of service. The clutch has a built-in brake that stops the pulley within 5 seconds. Eventually, the internal brake will wear which may cause the mower blades to not engage, or, to not stop as required. Adjustments should be made by your nearest authorized service center/department.

- Make sure attachment clutch and ignition switches are in “OFF” position.
- Adjust the three nylon locknuts until space between clutch plate and rotor measures .012" at all three slot locations cut in side of brake plate.

NOTE: After installing a new electric clutch, run tractor at full throttle and engage and disengage electric clutch 10 cycles to wear in clutch plate.

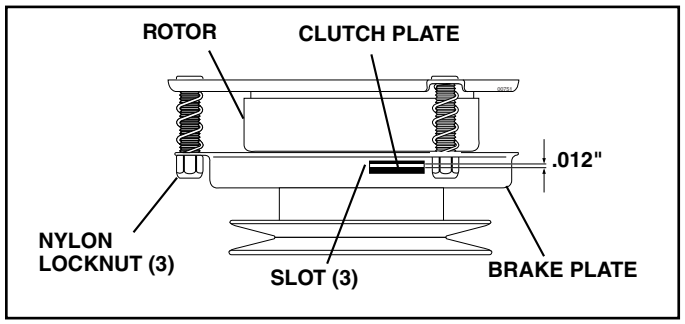


FIG. 26

TO CHECK AND ADJUST BRAKE

If tractor requires more than five (5) feet to stop at highest speed in highest gear on a level, dry concrete or paved surface, then brake must be checked and adjusted.

TO CHECK BRAKE

- Park tractor on a level, dry concrete or paved surface, depress clutch/brake pedal all the way down and engage parking brake.
- Disengage transmission by placing freewheel control in “transmission disengaged” position. Pull freewheel control out and into the slot and release so it is held in the disengaged position.

The rear wheels must lock and skid when you try to manually push the tractor forward. If the rear wheels rotate, the brake needs to be adjusted or the pads need to be replaced.

TO ADJUST BRAKE/REPLACE PADS

Contact a qualified service center.

TO REPLACE MOTION DRIVE BELT (See Fig. 27)

Park the tractor on level surface. Engage parking brake. For ease of service there is a belt installation guide decal on bottom of left footrest.

- Remove mower (See “TO REMOVE MOWER” in this section of this manual.)

BELT REMOVAL -

- Create slack in belt by removing retainer spring from drive belt tension handle.
- Remove belt from all idler pulleys, transaxle pulley and then from engine pulley.

BELT INSTALLATION -

- Install new belt around engine pulley first, then around transaxle pulley and lastly into all the idler pulleys.
- Check to be sure belt is positioned correctly and is on proper side of all belt keepers.
- Engage the drive belt tension handle and replace the retainer spring.
- Reinstall mower.

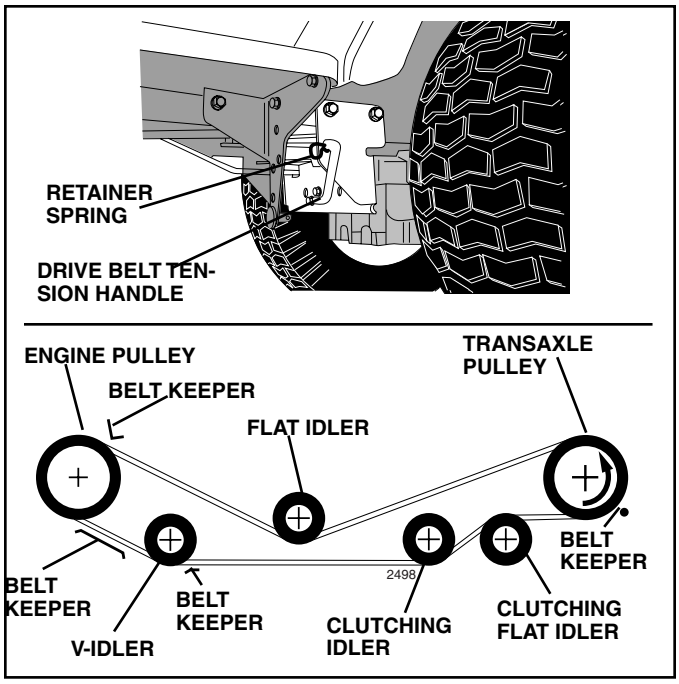


FIG. 27

TRANSAXLE MOTION CONTROL LEVER NEUTRAL ADJUSTMENT (See Fig. 28)

The motion control lever has been preset at the factory and adjustment should not be necessary.

- Park tractor on level surface. Stop tractor by turning ignition key to “OFF” position and engage parking brake.
- Loosen the adjustment bolt in front of the right rear wheel.
- Move motion control lever to the neutral position (N).
- Tighten the adjustment bolt.

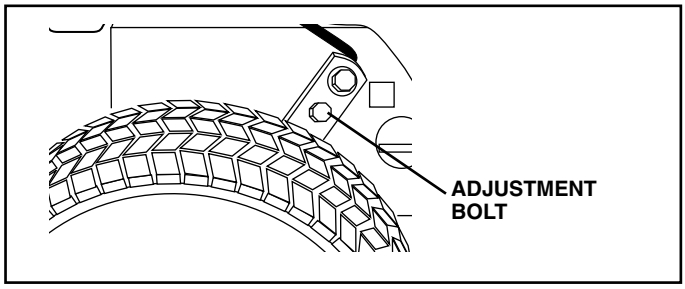


FIG. 28

TRANSMISSION REMOVAL/REPLACEMENT

Should your transmission require removal for service or replacement, it should be purged after reinstallation and before operating the tractor. See "PURGE TRANSMISSION" in the Operation section of this manual.

TO ADJUST STEERING WHEEL ALIGNMENT

If steering wheel crossbars are not horizontal (left to right) when wheels are positioned straight forward, remove steering wheel and reassemble per instructions in the Assembly section of this manual.

FRONT WHEEL TOE-IN/CAMBER

The front wheel toe-in and camber are not adjustable on your tractor. If damage has occurred to affect the front wheel toe-in or camber, contact your nearest authorized service center/department.

TO REMOVE WHEEL FOR REPAIRS

FRONT WHEEL (See Fig. 29)

- Block up axle securely.
- Remove axle cover, retaining ring and washers to allow wheel removal.
- Repair tire and reassemble.
- Replace washers and snap retaining ring securely in axle groove.
- Replace axle cover.

REAR WHEEL -

- Block rear axle securely.
- Remove five (5) hub bolts to allow wheel removal.
- Repair tire and reassemble. Replace and tighten hub bolts securely.

NOTE: To seal tire punctures and prevent flat tires due to slow leaks, tire sealant may be purchased from your local parts dealer. Tire sealant also prevents tire dry rot and corrosion.

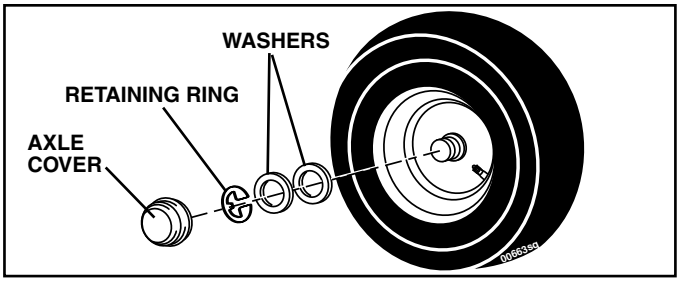


FIG. 29

TO START ENGINE WITH A WEAK BATTERY (See Fig. 30)

WARNING: **Lead-acid batteries generate explosive gases. Keep sparks, flame and smoking materials away from batteries. Always wear eye protection when around batteries.**

If your battery is too weak to start the engine, it should be recharged. (See "BATTERY" in the Maintenance section of this manual).

If "jumper cables" are used for emergency starting, follow this procedure:

IMPORTANT: YOUR TRACTOR IS EQUIPPED WITH A 12 VOLT SYSTEM. THE OTHER VEHICLE MUST ALSO BE A 12 VOLT SYSTEM. DO NOT USE YOUR TRACTOR BATTERY TO START OTHER VEHICLES.

TO ATTACH JUMPER CABLES -

- Connect one end of the RED cable to the POSITIVE (+) terminal of each battery(A-B), taking care not to short against tractor chassis.
- Connect one end of the BLACK cable to the NEGATIVE (-) terminal (C) of fully charged battery.
- Connect the other end of the BLACK cable (D) to good chassis ground, away from fuel tank and battery.

TO REMOVE CABLES, REVERSE ORDER -

- BLACK cable first from chassis and then from the fully charged battery.
- RED cable last from both batteries.

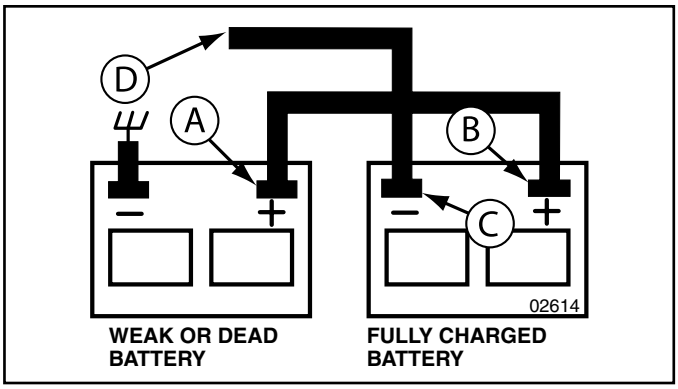


FIG. 30

TO REPLACE HEADLIGHT BULB

- Raise hood.
- Pull bulb holder out of the hole in the backside of the grill.
- Replace bulb in holder and push bulb holder securely back into the hole in the backside of the grill.
- Close hood.

INTERLOCKS AND RELAYS

Loose or damaged wiring may cause your tractor to run poorly, stop running, or prevent it from starting.

- Check wiring. See electrical wiring diagram in the Repair Parts section of this manual.

TO REPLACE FUSE

Replace with 30 amp automotive-type plug-in fuse. The fuse holder is located behind the dash.

TO REMOVE HOOD AND GRILL ASSEMBLY (See Fig. 31)

- Raise hood.
- Unsnap headlight wire connector.
- Stand in front of tractor. Grasp hood at sides, tilt toward engine and lift off of tractor.
- To replace, reverse above procedure.

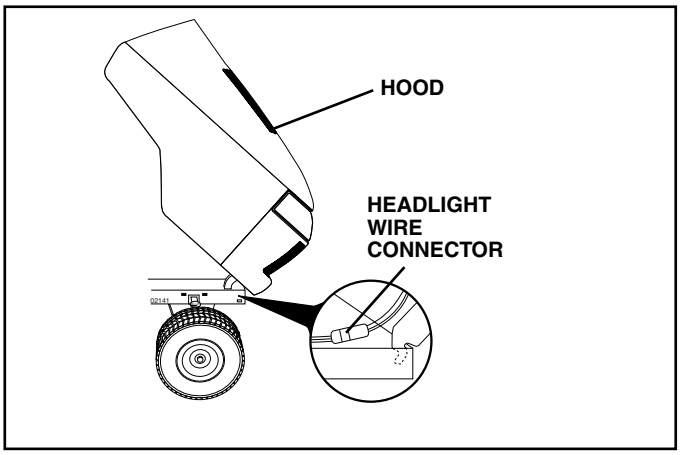


FIG. 31

ENGINE

TO ADJUST THROTTLE CONTROL CABLE (See Fig. 32)

The throttle control has been preset at the factory and adjustment should not be necessary. Check adjustment as described below before loosening cable. If adjustment is necessary, proceed as follows:

- With engine not running, move throttle control lever to fast position.
- Check that swivel is against stop. If it is not, loosen cable clamp screw and pull cable back until swivel is against stop. Tighten cable clamp screw securely.

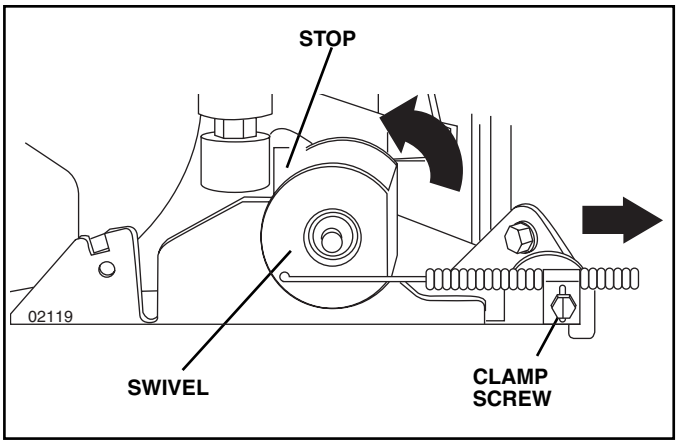


FIG. 32

TO ADJUST CHOKE CONTROL (See Fig. 33)

The choke control has been preset at the factory and adjustment should not be necessary. Check adjustment as described below before loosening cable. If adjustment is necessary, proceed as follows:

- With engine not running, move choke control (located on dash panel) to full choke position.
- Loosen knob and remove cover assembly from air cleaner.
- Choke should be closed. If it is not, loosen casing clamp screw and move choke cable until choke is completely closed. Tighten casing clamp screw securely.
- Replace air cleaner cover assembly and tighten knob.

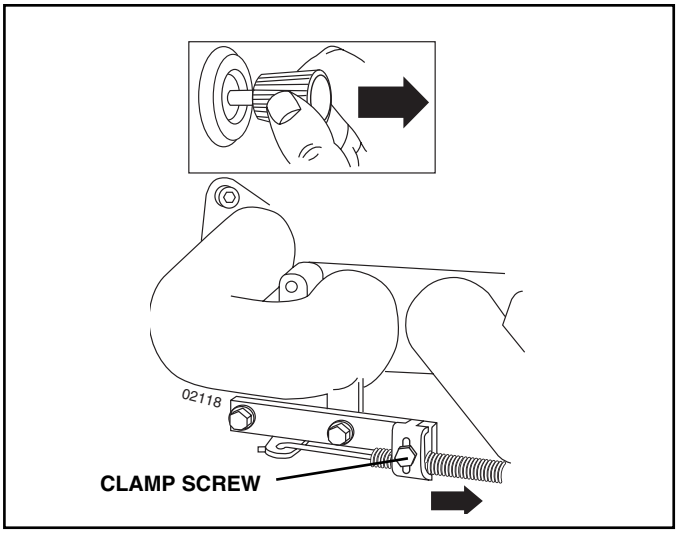


FIG. 33

TO ADJUST CARBURETOR

Your carburetor is not adjustable. If your engine does not operate properly due to suspected carburetor problems, take your tractor to an authorized service center for repair and/or adjustment.

High speed stop is factory adjusted. Do not adjust - damage may result.

IMPORTANT: NEVER TAMPER WITH THE ENGINE GOVERNOR, WHICH IS FACTORY SET FOR PROPER ENGINE SPEED. OVERSPEEDING THE ENGINE ABOVE THE FACTORY HIGH SPEED SETTING CAN BE DANGEROUS. IF YOU THINK THE ENGINE-GOVERNED HIGH SPEED NEEDS ADJUSTING, CONTACT YOUR NEAREST AUTHORIZED SERVICE CENTER/ DEPARTMENT, WHICH HAS PROPER EQUIPMENT AND EXPERIENCE TO MAKE ANY NECESSARY ADJUSTMENTS.

STORAGE

Immediately prepare your tractor for storage at the end of the season or if the tractor will not be used for 30 days or more.

WARNING: Never store the tractor with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

TRACTOR

Remove mower from tractor for winter storage. When mower is to be stored for a period of time, clean it thoroughly, remove all dirt, grease, leaves, etc. Store in a clean, dry area.

- Clean entire tractor (See "CLEANING" in the Maintenance section of this manual).
- Inspect and replace belts, if necessary (See belt replacement instructions in the Service and Adjustments section of this manual).
- Lubricate as shown in the Maintenance section of this manual.
- Be sure that all nuts, bolts and screws are securely fastened. Inspect moving parts for damage, breakage and wear. Replace if necessary.
- Touch up all rusted or chipped paint surfaces; sand lightly before painting.

BATTERY

- Fully charge the battery for storage.
- After a period of time in storage, battery may require recharging.
- To help prevent corrosion and power leakage during long periods of storage, battery cables should be disconnected and battery cleaned thoroughly (see "TO CLEAN BATTERY AND TERMINALS" in the Maintenance section of this manual).
- After cleaning, leave cables disconnected and place cables where they cannot come in contact with battery terminals.
- If battery is removed from tractor for storage, do not store battery directly on concrete or damp surfaces.

ENGINE

FUEL SYSTEM

IMPORTANT: IT IS IMPORTANT TO PREVENT GUM DEPOSITS FROM FORMING IN ESSENTIAL FUEL SYSTEM PARTS SUCH AS CARBURETOR, FUEL FILTER, FUEL HOSE, OR TANK DURING STORAGE. ALSO, EXPERIENCE INDICATES THAT ALCOHOL BLENDED FUELS (CALLED GASOHOL OR USING ETHANOL OR METHANOL) CAN ATTRACT MOISTURE WHICH LEADS TO SEPARATION AND FORMATION OF ACIDS DURING STORAGE. ACIDIC GAS CAN DAMAGE THE FUEL SYSTEM OF AN ENGINE WHILE IN STORAGE.

- Empty the fuel tank by starting the engine and let it run until the fuel lines and carburetor are empty.
- Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.
- Use fresh fuel next season.

NOTE: Fuel stabilizer is an acceptable alternative in minimizing the formation of fuel gum deposits during storage. Add stabilizer to gasoline in fuel tank or storage container. Always follow the mix ratio found on stabilizer container. Run engine at least 10 minutes after adding stabilizer to allow the stabilizer to reach the carburetor. Do not empty the gas tank and carburetor if using fuel stabilizer.

ENGINE OIL

Drain oil (with engine warm) and replace with clean engine oil. (See "ENGINE" in the Maintenance section of this manual).

CYLINDER(S)

- Remove spark plug(s).
- Pour one ounce of oil through spark plug hole(s) into cylinder(s).
- Turn ignition key to "START" position for a few seconds to distribute oil.
- Replace with new spark plug(s).

OTHER

- Do not store gasoline from one season to another.
- Replace your gasoline can if your can starts to rust. Rust and/or dirt in your gasoline will cause problems.
- If possible, store your tractor indoors and cover it to give protection from dust and dirt.
- Cover your tractor with a suitable protective cover that does not retain moisture. Do not use plastic. Plastic cannot breathe which allows condensation to form and will cause your tractor to rust.

IMPORTANT: NEVER COVER TRACTOR WHILE ENGINE AND EXHAUST AREAS ARE STILL WARM.

TROUBLESHOOTING POINTS

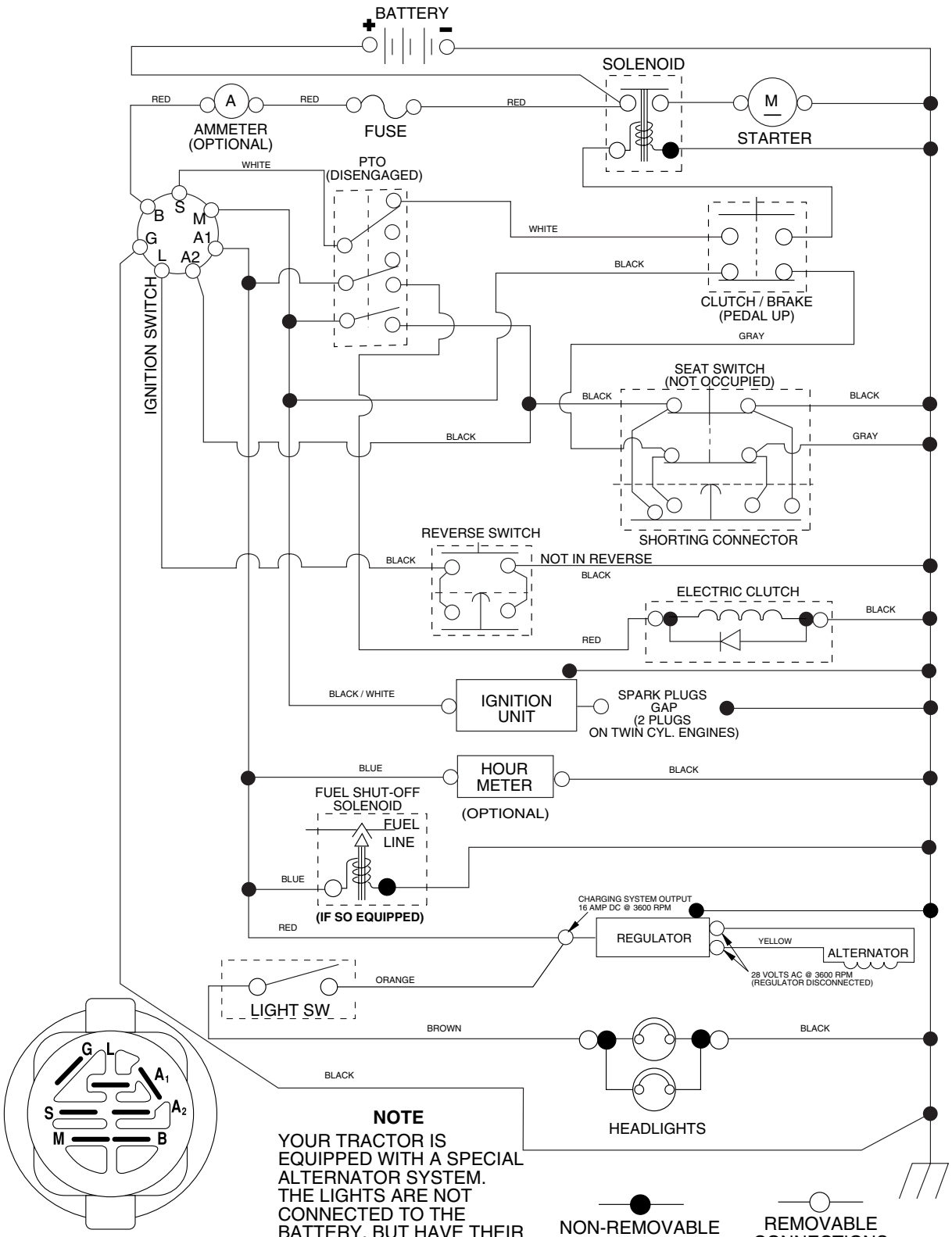
PROBLEM	CAUSE	CORRECTION
Will not start	1. Out of fuel. 2. Engine not “CHOKED” properly. 3. Engine flooded. 4. Bad spark plug. 5. Dirty air filter. 6. Dirty fuel filter. 7. Water in fuel. 8. Loose or damaged wiring. 9. Carburetor out of adjustment. 10. Engine valves out of adjustment.	1. Fill fuel tank. 2. See “TO START ENGINE” in Operation section. 3. Wait several minutes before attempting to start. 4. Replace spark plug. 5. Clean/replace air filter. 6. Replace fuel filter. 7. Empty fuel tank and carburetor, refill tank with fresh gasoline and replace fuel filter. 8. Check all wiring. 9. See “To Adjust Carburetor” in Service Adjustments section. 10. Contact an authorized service center/department.
Hard to start	1. Dirty air filter. 2. Bad spark plug. 3. Weak or dead battery. 4. Dirty fuel filter. 5. Stale or dirty fuel. 6. Loose or damaged wiring. 7. Carburetor out of adjustment. 8. Engine valves out of adjustment.	1. Clean/replace air filter. 2. Replace spark plug. 3. Recharge or replace battery. 4. Replace fuel filter. 5. Empty fuel tank and refill tank with fresh, clean gasoline. 6. Check all wiring. 7. See “To Adjust Carburetor” in Service Adjustments section. 8. Contact an authorized service center/department.
Engine will not turn over	1. Clutch/brake pedal not depressed. 2. Attachment clutch is engaged. 3. Weak or dead battery. 4. Blown fuse. 5. Corroded battery terminals. 6. Loose or damaged wiring. 7. Faulty ignition switch. 8. Faulty solenoid or starter. 9. Faulty operator presence switch(es).	1. Depress clutch/brake pedal. 2. Disengage attachment clutch. 3. Recharge or replace battery. 4. Replace fuse. 5. Clean battery terminals. 6. Check all wiring. 7. Check/replace ignition switch. 8. Check/replace solenoid or starter. 9. Contact an authorized service center/department.
Engine clicks but will not start	1. Weak or dead battery. 2. Corroded battery terminals. 3. Loose or damaged wiring. 4. Faulty solenoid or starter.	1. Recharge or replace battery. 2. Clean battery terminals. 3. Check all wiring. 4. Check/replace solenoid or starter.
Loss of power	1. Cutting too much grass/too fast. 2. Throttle in “CHOKE” position. 3. Build-up of grass, leaves and trash under mower. 4. Dirty air filter. 5. Low oil level/dirty oil. 6. Faulty spark plug. 7. Dirty fuel filter. 8. Stale or dirty fuel. 9. Water in fuel. 10. Spark plug wire loose. 11. Dirty engine air screen/fins. 12. Dirty/clogged muffler. 13. Loose or damaged wiring. 14. Carburetor out of adjustment. 15. Engine valves out of adjustment.	1. Raise cutting height/reduce speed. 2. Adjust throttle control. 3. Clean underside of mower housing. 4. Clean/replace air filter. 5. Check oil level/change oil. 6. Clean and regap or change spark plug. 7. Replace fuel filter. 8. Empty fuel tank and refill tank with fresh, clean gasoline. 9. Empty fuel tank and carburetor, refill tank with fresh gasoline and replace fuel filter. 10. Connect and tighten spark plug wire. 11. Clean engine air screen/fins. 12. Clean/replace muffler. 13. Check all wiring. 14. See “To Adjust Carburetor” in Service Adjustments section. 15. Contact an authorized service center/department.
Excessive vibration	1. Worn, bent or loose blade. 2. Bent blade mandrel. 3. Loose/damaged part(s).	1. Replace blade. Tighten blade bolt. 2. Replace blade mandrel. 3. Tighten loose part(s). Replace damaged parts.

TROUBLESHOOTING POINTS

PROBLEM	CAUSE	CORRECTION
Engine dies when tractor is shifted into reverse	1. Reverse operation system (ROS) is not "ON" while mower or other attachment is engaged.	1. Turn ignition key to ROS "ON" position. See Operation section.
Engine continues to run when operator leaves seat with attachment clutch engaged	1. Faulty operator-safety presence control system.	1. Check wiring, switches and connections. If not corrected, contact an authorized service center/ department.
Poor cut - uneven	1. Worn, bent or loose blade. 2. Mower deck not level. 3. Buildup of grass, leaves, and trash under mower. 4. Bent blade mandrel. 5. Clogged mower deck vent holes from buildup of grass, leaves, and trash around mandrels.	1. Replace blade. Tighten blade bolt. 2. Level mower deck. 3. Clean underside of mower housing. 4. Replace blade mandrel. 5. Clean around mandrels to open vent holes.
Mower blades will not rotate	1. Obstruction in clutch mechanism. 2. Worn/damaged mower drive belt. 3. Frozen idler pulley. 4. Frozen blade mandrel.	1. Remove obstruction. 2. Replace mower drive belt. 3. Replace idler pulley. 4. Replace blade mandrel.
Poor grass discharge	1. Engine speed too slow. 2. Travel speed too fast. 3. Wet grass. 4. Mower deck not level. 5. Low/uneven tire air pressure. 6. Worn, bent or loose blade. 7. Buildup of grass, leaves and trash under mower. 8. Mower drive belt worn. 9. Blades improperly installed. 10. Improper blades used. 11. Clogged mower deck vent holes from buildup of grass, leaves, and trash around mandrels.	1. Place throttle control in “FAST” position. 2. Shift to slower speed. 3. Allow grass to dry before mowing. 4. Level mower deck. 5. Check tires for proper air pressure. 6. Replace/sharpen blade. Tighten blade bolt. 7. Clean underside of mower housing. 8. Replace mower drive belt. 9. Reinstall blades sharp edge down. 10. Replace with blades listed in this manual. 11. Clean around mandrels to open vent holes.
Headlight(s) not working (if so equipped)	1. Light switch is “OFF”. 2. Bulb(s) or lamp(s) burned out. 3. Faulty light switch. 4. Loose or damaged wiring. 5. Blown fuse.	1. Turn light switch “ON”. 2. Replace bulb(s) or lamp(s). 3. Check/replace light switch. 4. Check wiring and connections. 5. Replace fuse.
Battery will not charge	1. Bad battery cell(s). 2. Poor cable connections. 3. Faulty regulator (if so equipped). 4. Faulty alternator.	1. Replace battery. 2. Check/clean all connections. 3. Replace regulator. 4. Replace alternator.
Engine “backfires” when turning engine “OFF”	1. Engine throttle control not set between half and full speed (fast) position before stopping engine.	1. Move throttle control between half and full speed (fast) position before stopping engine.

TRACTOR - - MODEL NUMBER 944.605070

SCHEMATIC



IGNITION SWITCH

POSITION	CIRCUIT "MAKE"	
OFF	M+G+A1	
RUN/OVERRIDE	B+A1	
RUN	B+A1	L+A2
START	B + S + A1	

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NOTE

YOUR TRACTOR IS EQUIPPED WITH A SPECIAL ALTERNATOR SYSTEM. THE LIGHTS ARE NOT CONNECTED TO THE BATTERY, BUT HAVE THEIR OWN ELECTRICAL SOURCE. BECAUSE OF THIS, THE BRIGHTNESS OF THE LIGHTS WILL CHANGE WITH ENGINE SPEED. AT IDLE THE LIGHTS WILL DIM. AS THE ENGINE IS SPEEDED UP, THE LIGHTS WILL BECOME THEIR BRIGHTEST.

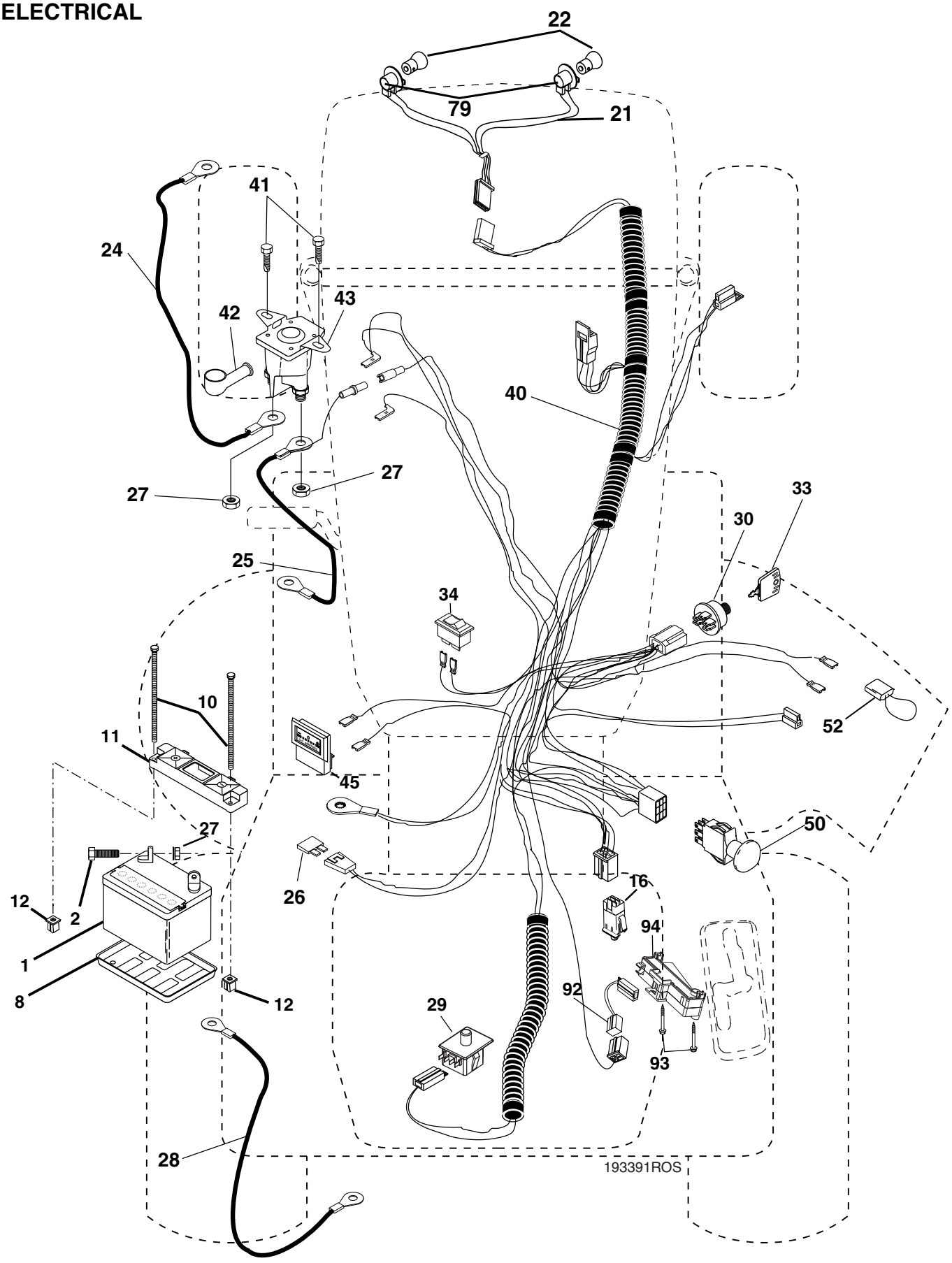
WIRING INSULATED CLIPS

NOTE: IF WIRING INSULATED CLIPS WERE REMOVED FOR SERVICING OF UNIT, THEY SHOULD BE REPLACED TO PROPERLY SECURE YOUR WIRING.

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

ELECTRICAL



REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

ELECTRICAL

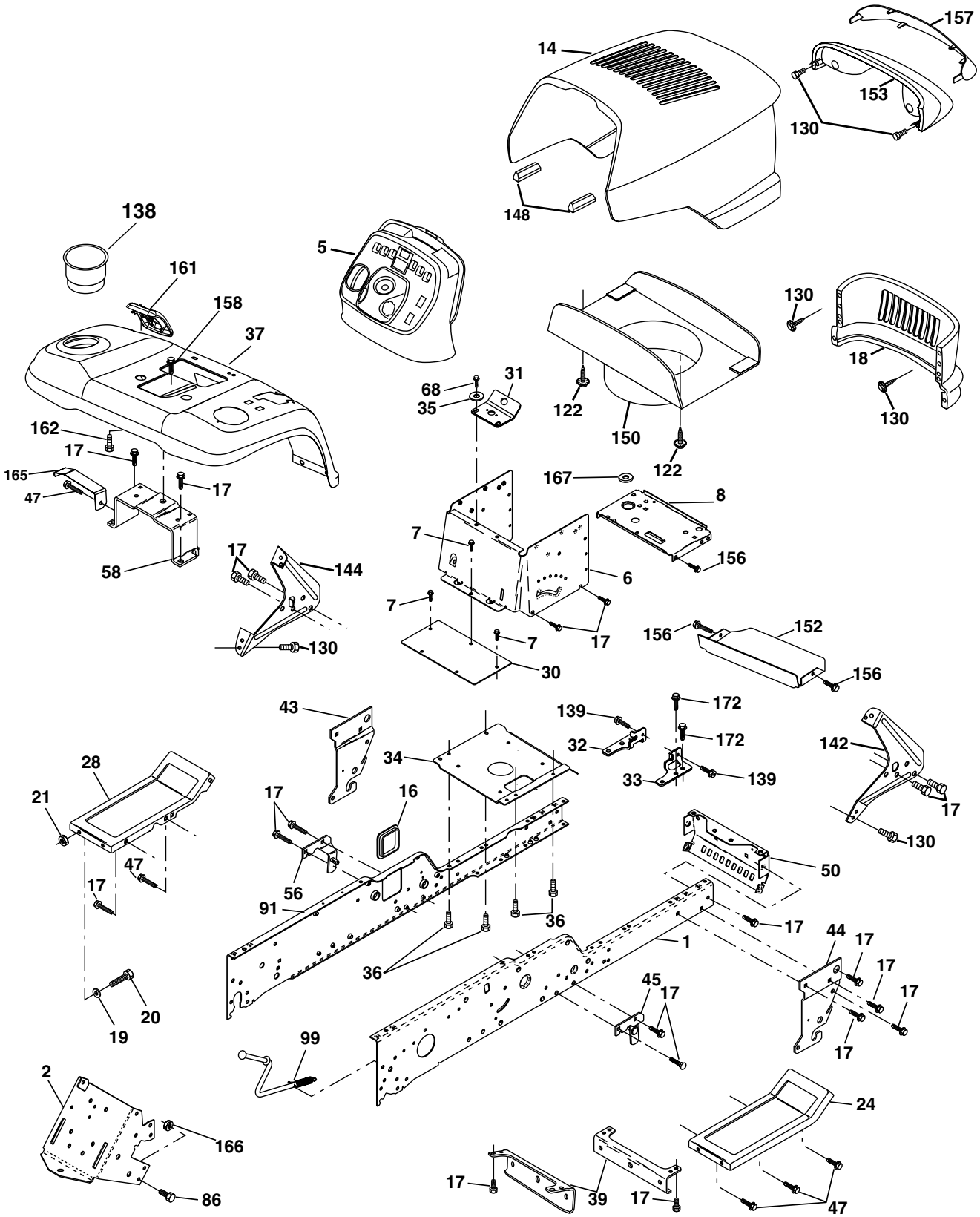
KEY NO.	PART NO.	DESCRIPTION
1	144927	Battery
2	74760412	Bolt Hex Head 1/4-20 x 3/4
8	7603J	Tray, Battery
10	145211	Bolt Btr Frt 1/4-20 x 7.5 zinc
11	150109	Holdown Battery Front Mount
12	145769	Nut Push Nylon 1/4"
16	176138	Switch Interlock Push-In
21	175688	Harness Headlight
22	4152J	Bulb Light
24	185464	Cable Starter
25	146149	Cable, Battery
26	108824X	Fuse
27	73510400	Nut Keps Hex 1/4-20 unc
28	170697	Cable, Ground
29	192749	Switch Seat DP w/Ramps
30	193350	Switch, Ign
33	140403	Key
34	110712X	Switch Light/Reset
40	193391	Harness, Ignition
41	17720408	Screw Thd Cut 1/4-20 x 1/2
42	131563	Cover, Terminal
43	178861	Solenoid
45	122822X	Ammeter
50	174652	Switch, PTO
52	141940	Protection Wire Loop
79	175242	Socket, Light Bulb
92	193465	Harness Pigtail Reverse Switch
93	192540	Screw Plastite Reverse Switch
94	191834	Module reverse ROS

NOTE: All component dimensions given in U.S. inches 1 inch = 25.4 mm

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

CHASSIS AND ENCLOSURES



chassis-stealth_43-vgt

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

CHASSIS AND ENCLOSURES

KEY NO.	PART NO.	DESCRIPTION
1	180375	Rail, Frame RH
2	175282	Drawbar, Gt
5	193636X428	Dash
6	157882	Dash Asm., Lower
7	17720408	Screw, Thd Cut 1/4-20 x 1/2
8	184668	Support, Battery
14	175260X613	Hood Asm., Pnt
16	121794X	Cover, Access
17	17000612	Screw, 3/8-16 x 3/4
18	174515X613	Grille
19	19131312	Washer 13/32 x 13/16 x 12 Ga.
20	STD523710	Bolt, Fin Hex 3/8-16 x 1
21	STD541437	Nut, Crownlock 3/8-16 unc
24	179717X613	Footrest, RH
28	179716X613	Footrest, LH
30	145052	Saddle, Hydro 1995
31	161419	Bracket, Supt 1-pc VGT Steering
32	161327	Bracket, Pivot Chassis LH
33	161326	Bracket, Pivot Chassis RH
34	177018	Bracket, Engine Support Rear
35	19111116	Washer 11/32 x 11/16 x 16 Ga.
36	17060512	Screw 5/16-18 x 3/4
37	192397X613	Fender, Pnt.
39	175278	Bracket, Axle Front
43	136939	Bracket, Spnsn Front Lh
44	136940	Bracket, Spnsn Front Rh
45	176018	Bracket Asm., Susp Chassis Rh
47	17490608	Screw Thdrol 3/8-16 x 1/2 TYT
50	175476	Bracket, Chassis Front
56	176016	Bracket Asm. Susp. Chassis LH
58	183569	Bracket Asm., Fender
68	17490508	Screw, Thd 5/16-18 x 1/2
86	74780720	Bolt, Fin Hex 7/16-14 unc x 1-1/4 Gr. 5
91	180374	Rail, Frame Lh
99	177143	Rod By Pass
122	192512	Screw Hex Wshd 10-32 x 5/8
130	191611	Screw 10 x 3/4 Single Lead Hex
138	191121X428	Cupholder YTGT
139	171873	Bolt Shoulder 5/16-18 TT
142	161897	Bracket Dash RH
144	161900	Bracket Dash LH
148	164655	Extrusion Bumper
150	175352	Duct Heat Hood
152	177956	Shield Browning
153	179761	Light Box Bar W/Lens
156	17000512	Screw 5/16-18 x 3/4
157	161840	Lens Bar Stealth
158	17670608	Screw Thdr 3/8-16 x 1/2
161	179612X428	Console Fuel Window
162	142432	Screw Hex Wsh Hi-Lo 1/4-1/2
165	183554	Bracket Support Tank
166	73680700	Nut 7/16-14
167	184672	Bushing Snap
172	17120614	Screw 3/8-16 x .875

NOTE: All component dimensions given in U.S. inches
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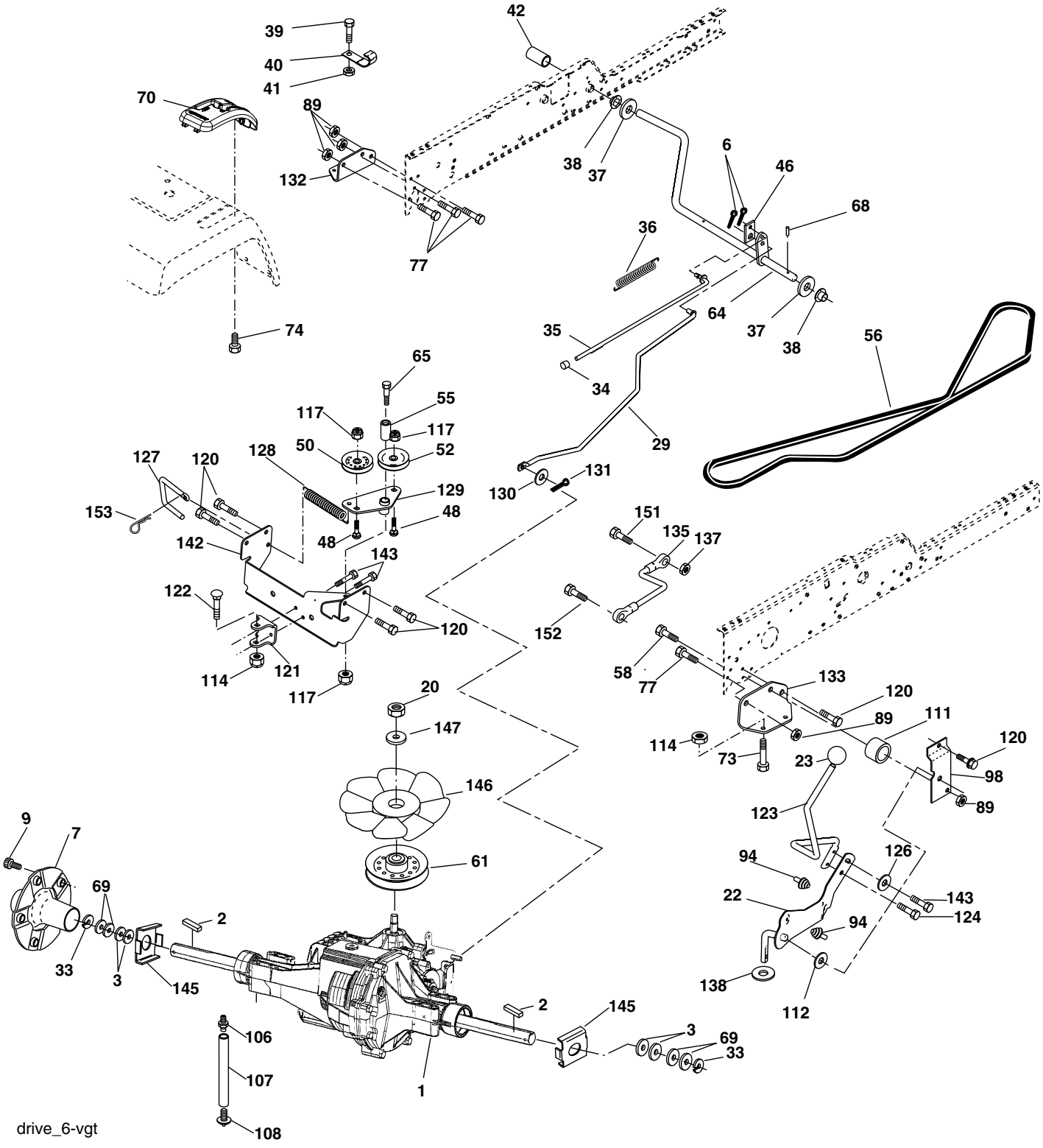
REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

GROUND DRIVE



REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

GROUND DRIVE

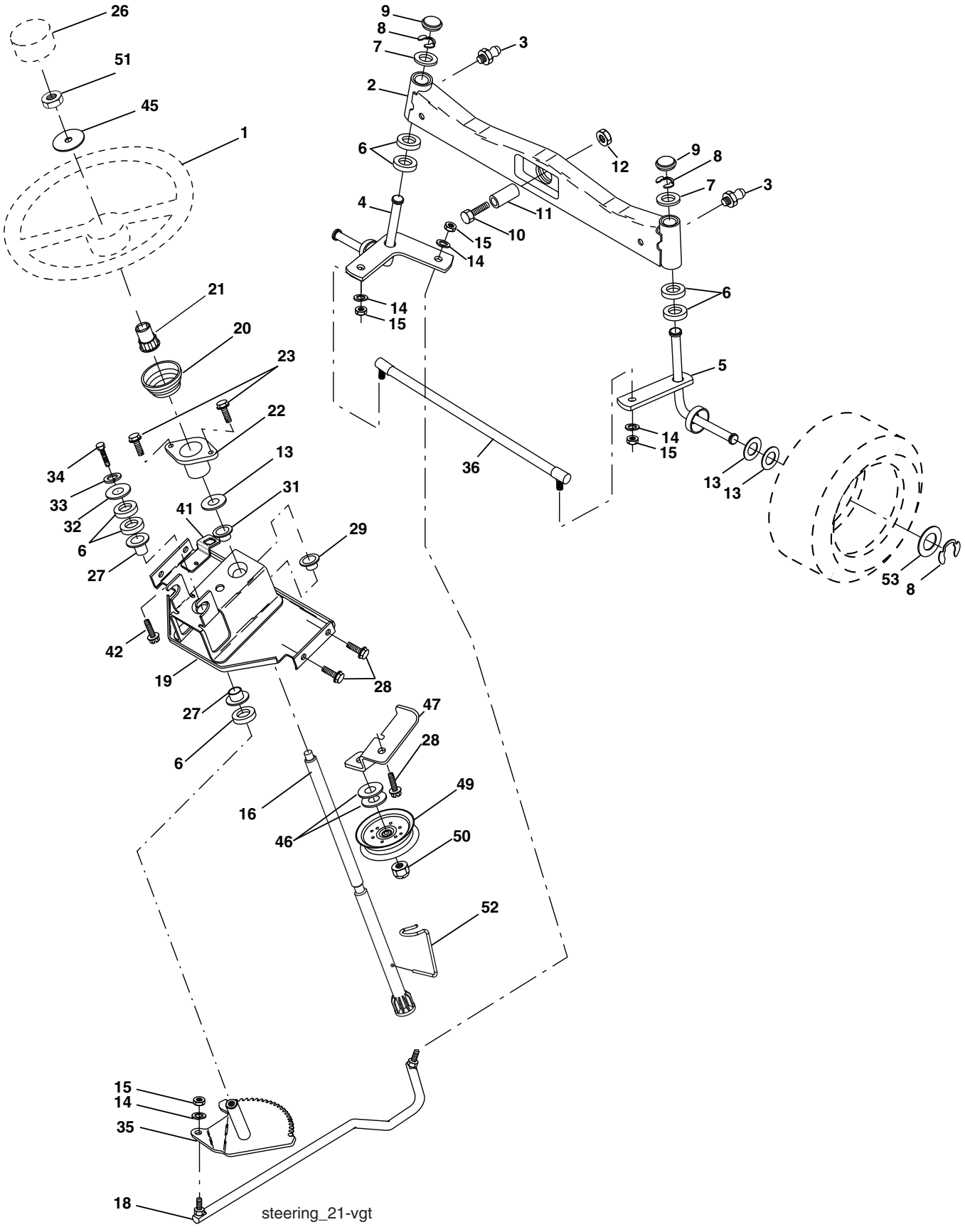
KEY NO.	PART NO.	DESCRIPTION
1	- - - - - - -	Transaxle Hydro Gear 331-3000 (See Breakdown)
2	7070E	Key Sq. 1/4 x 2.5
3	7563R	Washer Thrust Axle Harden
6	76020412	Pin, Cotter
7	140507	Wheel, Hub Assembly
9	140080	Bolt, Hub
20	73940800	Nut
22	180235	Lever Asm. Shift Lower
23	140845	Knob
29	176600	Brake, Rod
33	12000053	Ring E
34	71673	Cap, Parking Brake
35	137648	Rod, Parking Brake
36	149412	Spring, Drive Ground
37	121749	Washer 25/32 x 1-1/4 x 16 Ga.
38	150035	Nyliner
39	74321016	Screw, Fin. #10-24 x 1
40	178575	Actuator, Interlock Switch
41	73931000	Nut Centerlock 10-24 unc
42	8883R	Cover, Pedal
46	145170	Retainer, Spring
48	72110614	Bolt Rdhd 3/8-16 x 1-3/4 Gr 5
50	131494	Pulley, Idler, Flat
52	127783	Pulley, Idler, Grooved
55	105706X	Bearing, Idler
56	161597	V-Belt
58	74760724	Bolt Fin Hex 7/16-14 x 1-1/2
61	143995	Pulley, Transaxle
64	176601	Shaft, Brake Pedal
65	179613	Bolt, Shoulder
68	5142H	Pin, Roll
69	123800X	Washer
70	192390X428	Console
73	74490548	Bolt Hex Flghd 5/16-18 x 3 Gr. 5
74	142432	Screw Hex Wsh. Hi-Lo 1/4-1/2
77	74780716	Bolt Fin Hex 7/16-14 x 1
89	73680700	Nut Crownlock 7/16-14 unc
94	133835	Fastener Christmas Tree
98	141004	Bracket Shift
106	142918	O-Ring Asm Hydro Gear
107	154739	Line Fuel Hydro 15" VGT
108	142917	Cap Asm Vent Hydro Gear
111	156240	Spacer Shift Lever VGTH
112	178558	Washer Nylon High Temp
114	73800500	Nut Lock Hex W/Ins 5/16-18 unc
117	73900600	Nut, Lock Flg. 3/8-16
121	175611	Bracket Strap Torque
122	72010520	Bolt RDHDSQ 5/16-18 unc x 2-1/2
123	192438	Rod Shift
124	165492	Bolt Shoulder 5/16-18 x .561
126	166002	Washer SRRTD 5/16 ID x 1.0 x .125
127	177362	Link Control Clutch
128	176624	Spring Drive GRND
129	179473	Bracket Asm Idler Tensioning
130	19131016	Washer 13/32 x 5/8 x 16 Ga.
131	76020312	Pin Cotter 3/32 x 3/4
132	175467	Bracket Mtg Hydro 3500 LH VGT
133	175468	Bracket Mtg Hydro 3500 RH VGT
135	177364	Link Asm Control Hydro 3500
137	1685H	Nut Lock 5/16-18
138	1370H	Washer Thrust 5/8 x 1.10 x 1/32
142	175469	Strap Torque HG-3500
143	17000512	Screw Thdrol 5/16-18 x 3/4
145	163168	Washer Axle Flange HG-3000
146	140462	Fan 7" Hydro
147	141322	Washer
148	17000612	Bolt
151	74760514	Bolt Hx 5/16-18 x 7/8
152	178705	Bolt Hex 5/16-18 x 1 w/Patch
153	4497H	Spring, Retainer

NOTE: All component dimensions given in U.S. inches
1 inch = 25.4 mm

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

STEERING ASSEMBLY



REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

STEERING ASSEMBLY

KEY NO.	PART NO.	DESCRIPTION
1	186093X428	Wheel, Steering
2	178557	Axle Asm., Front
3	183226	Fitting, Grease
4	161849	Spindle Asm, LH
5	161848	Spindle Asm., RH
6	6266H	Bearing, Race Thrust Harden
7	121748X	Washer 25/32 x 1-5/8 x 16 Ga.
8	12000029	Ring, Klip #T5304-75
9	184946X505	Cap, Spindle
10	74781044	Bolt, Fin Hex 5/8-11 x 2-3/4
11	136518	Spacer, Brg. Axle Front
12	73901000	Nut, Lock Flange 5/8-11 unc
13	121749X	Washer 25/32 x 1-1/4 x 16 Ga.
14	STD551137	Washer, Lock Hvy Hlcl Spr 3/8
15	73540600	Nut 3/8-24 unf
16	186814	Shaft Asm., Steering
18	175772	Draglink Vgt
19	156011	Support Asm., Steering Vgt
20	163887X428	Boot Steering Stealth GTYT
21	186737	Adapter, Wheel Steering
22	155105	Bushing, Strg.
23	152927	Screw
26	186095X428	Insert Cap Strg WH
27	3366R	Bearing, Col. Strg.
28	17000612	Screw Hexwsh thdr 3/8-16 x 3/4
29	104239X	Bearing, Flange
31	138136	Bushing, Nyliner Snap
32	19111610	Washer 11/32 x 1 x 10 Ga.
33	STD551131	Washer, Lock Hvy Hlcl Spr 5/16
34	STD523107	Bolt, Hex Hd 5/16-18 x 3/4
35	187039	Gear, Sector Steering
36	186799	Tie Rod
41	155246	Bracket Switch Interlock Vgt 97
42	17490508	Screw Thdrol 5/16-18 x 1/2 Tyt
45	19183812	Washer 9/16 ID x 2-3/8 OD x 12 Ga.
46	19131610	Washer Flat 13/32 x 1 x 10 Ga.
47	179471	Bracket Asm Idler Stationary
49	175820	Pulley Idler
50	73900600	Nut Lock Flg 3/8-16 unc
51	73940800	Nut Hex Jam Toplock 1/2-20 unf
52	175553	Clip Steering
53	188967	Washer Hardened

NOTE: All component dimensions given in U.S. inches
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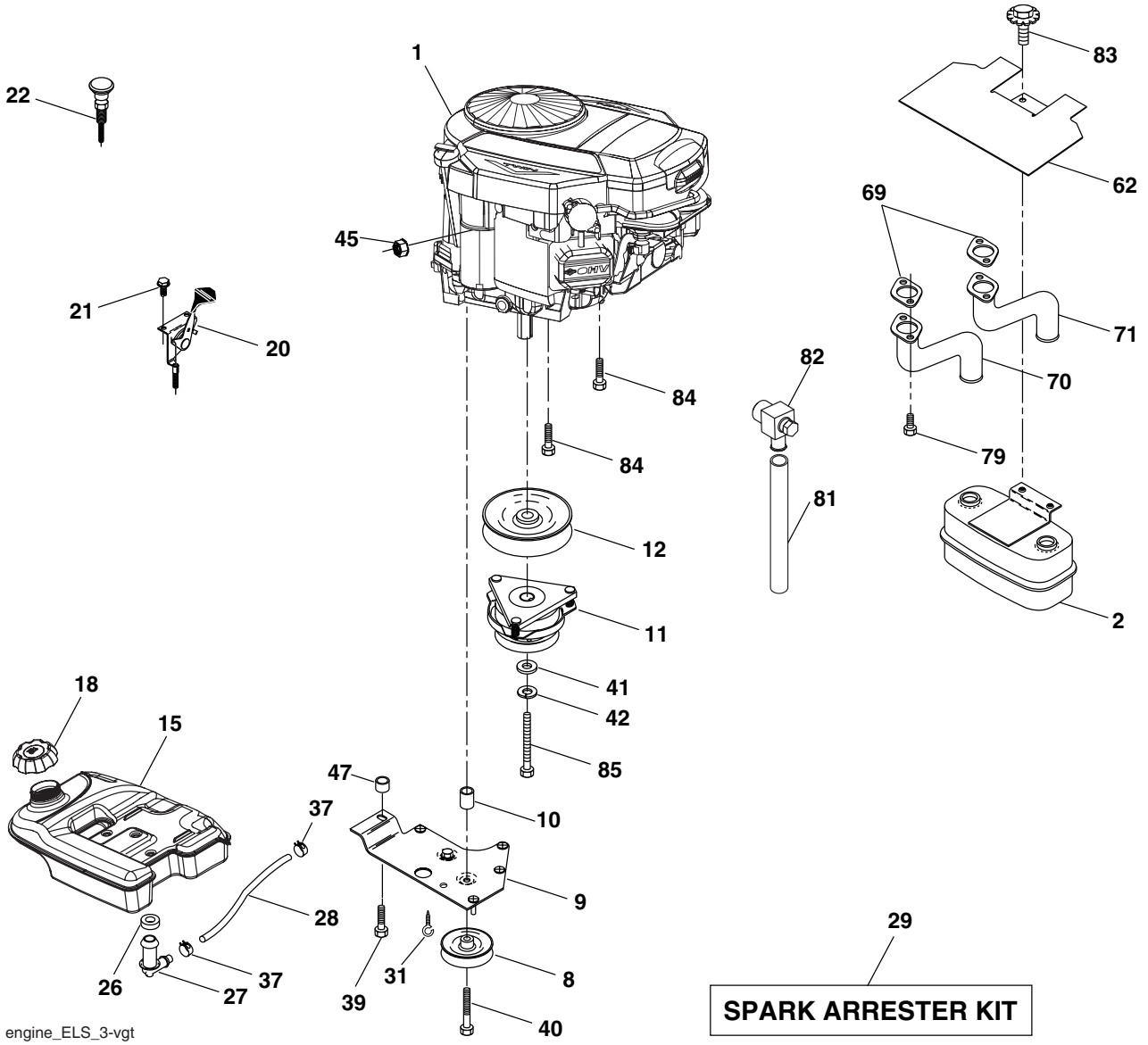
REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

ENGINE



engine_ELS_3-vgt

KEY NO.	PART NO.	DESCRIPTION
1	- - - - - - -	Engine (See Breakdown) B&S 446677-0470-E1
2	149723	Muffler
8	121361X	Pulley V-Idler
9	177748	Keeper Asm Belt Engine Vgt
10	175287	Bushing
11	179335	Clutch Electric
12	143996	Pulley Engine Grnd Drive
15	179115	Tank Fuel Rear
18	179124X428	Cap Asm Fuel
20	175437X505	Control Throttle
21	191611	Screw 10 x 3/4 Single Lead Hex
22	187767X505	Control Choke
26	3645J	Bushing
27	139277	Stem Tank Fuel
28	7834R	Fuel Line
29	137180	Spark Arrester Kit
31	145006	Clip
37	123487X	Clamp Hose

KEY NO.	PART NO.	DESCRIPTION
39	17490636	Screw 3/8 - 16 x 2-1/4 unc TT
40	17490664	Screw 3/8 - 16 x 4 unc TT
41	126197X	Washer 1-1/2 OD x 15/32 ID x .250
42	STD551143	Washer Lock 7/16
45	73510400	Nut Keps Hex 1/4-20 unc
47	175288	Bushing
62	146629	Shield Heat Muffler
69	165391	Gasket
70	176069	Tube Exhaust LH
71	176070	Tube Exhaust RH
79	183906	Screw Socket Head 5/16-18 x 1
81	188800	Tube Drain Oil
82	188799	Valve Oil Drain
83	171877	Bolt 5/16-18 unc x 3/4
84	17060624	Screw 3/8-16 x 1-1/2
85	179953	Bolt Hex 7/16-20 x 3.75 Gr.5

NOTE: All component dimensions given in U.S. inches
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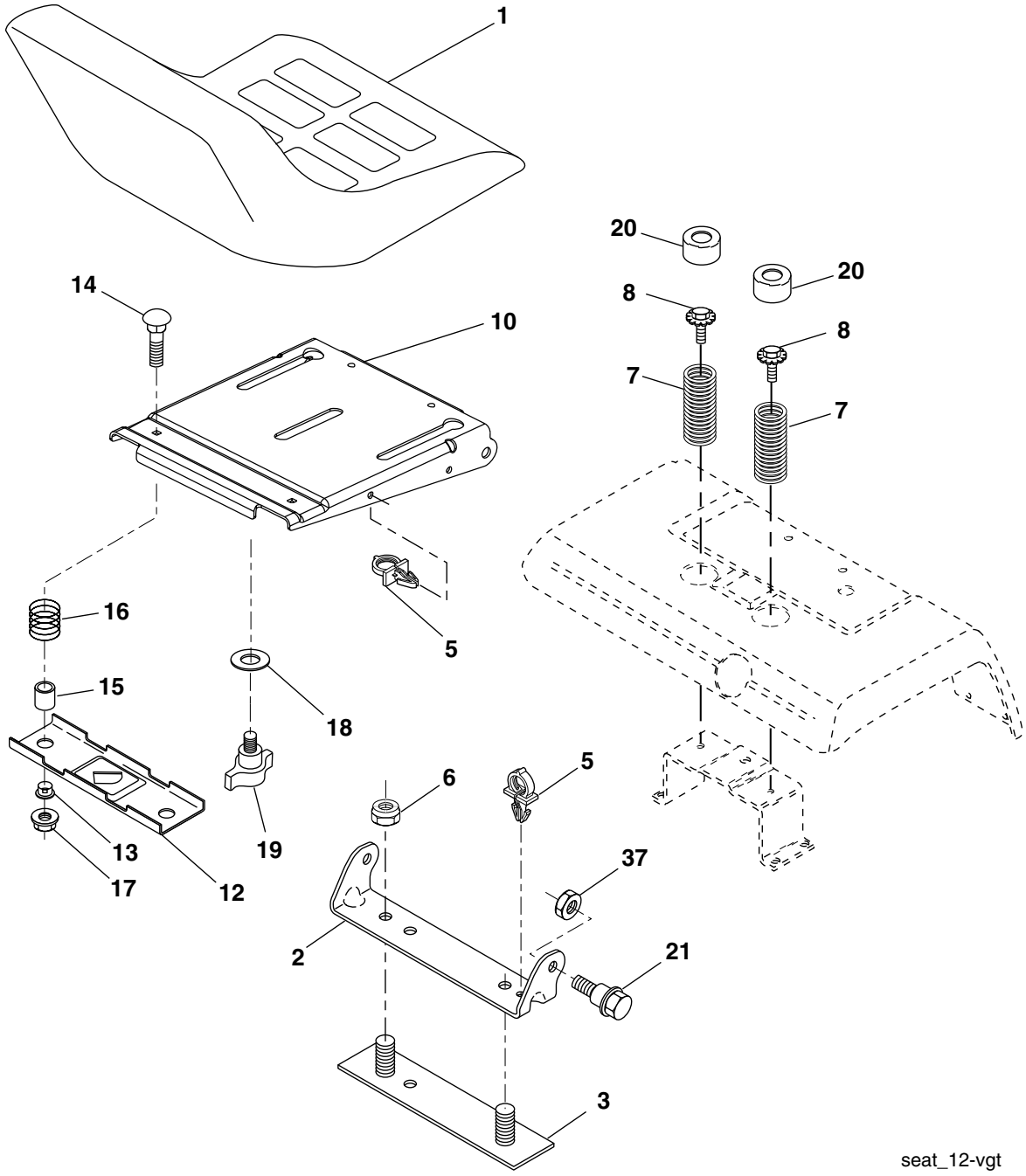
REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

SEAT ASSEMBLY



seat_12-vgt

KEY NO.	PART NO.	DESCRIPTION
1	180598	Seat
2	180166	Bracket, Pivot Seat
3	140675	Strap, Fender Assembly
5	145006	Clip, Push-In Hinged
6	STD541437	Nut, Crownlock 3/8-16
7	124181X	Spring, Seat Cprsn.
8	171877	Bolt 5/16-18 unc x 3/4 w/Sems
10	180186	Pan, Seat
12	174648	Bracket, Mounting Switch
13	121248X	Bushing, Snap
14	72050412	Bolt, Carriage 1/4-20 x 1-1/2
15	121249X	Spacer, Split
16	123740X	Spring, Cprsn.
17	123976X	Nut, Lock 1/4 Lg. Flg. Gr. 5
18	19171912	Washer 17/32 x 1-3/16 x 12 Ga.
19	166369	Knob, Seat
20	124238X	Cap, Spring Seat Blk
21	171852	Bolt 5/16-18 unc-2A
37	STD541431	Nut, Crownlock 5/16-18

NOTE: All component dimensions given in U.S. inches
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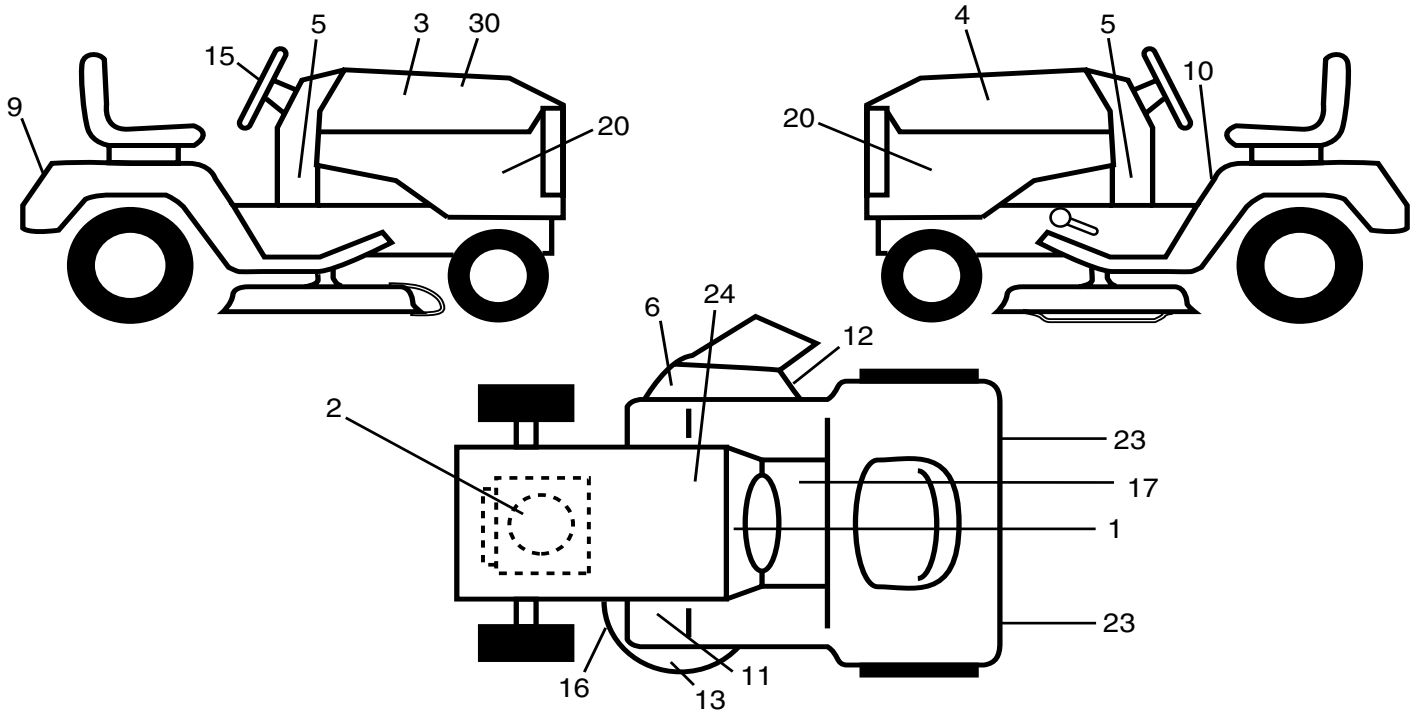
REPAIR PARTS

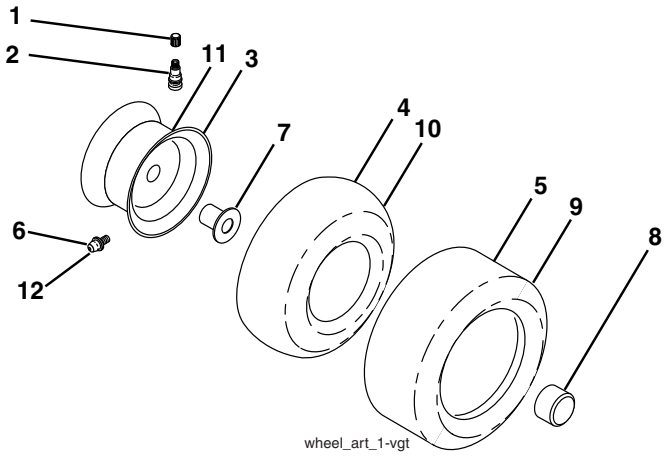
TRACTOR - - MODEL NUMBER 944.605070

DECALS



KEY NO.	PART NO.	DESCRIPTION
1	169029	Decal, Dash
2	191066	Decal, Engine
3	186316	Decal, Hood, RH
4	186317	Decal, Hood, LH
5	195838	Decal, Dash
6	170563	Decal, Warning
9	186282	Decal, Craftsman
10	157140	Decal, Danger
11	181253	Decal, F/Rest
12	175291	Decal, V-Belt Drive Schematic
13	178482	Decal, Deck Hvy Dty
15	164065	Decal, Ins. Whl. Strg.
16	178502	Decal, Deck Caution
17	140837	Decal, Saddle Brake Parking
20	186318	Decal, Hood Side Panel
23	106202X	Reflector, Taillight
24	149517	Decal, Btry Dngr/Psn
30	196027	Decal, Replacement Parts
- -	179768X428	Pad, Footrest LH
- -	179769X428	Pad, Footrest RH
- -	195903	Manual, Owner's (English)
- -	195904	Manual, Owner's (French)

WHEELS & TIRES



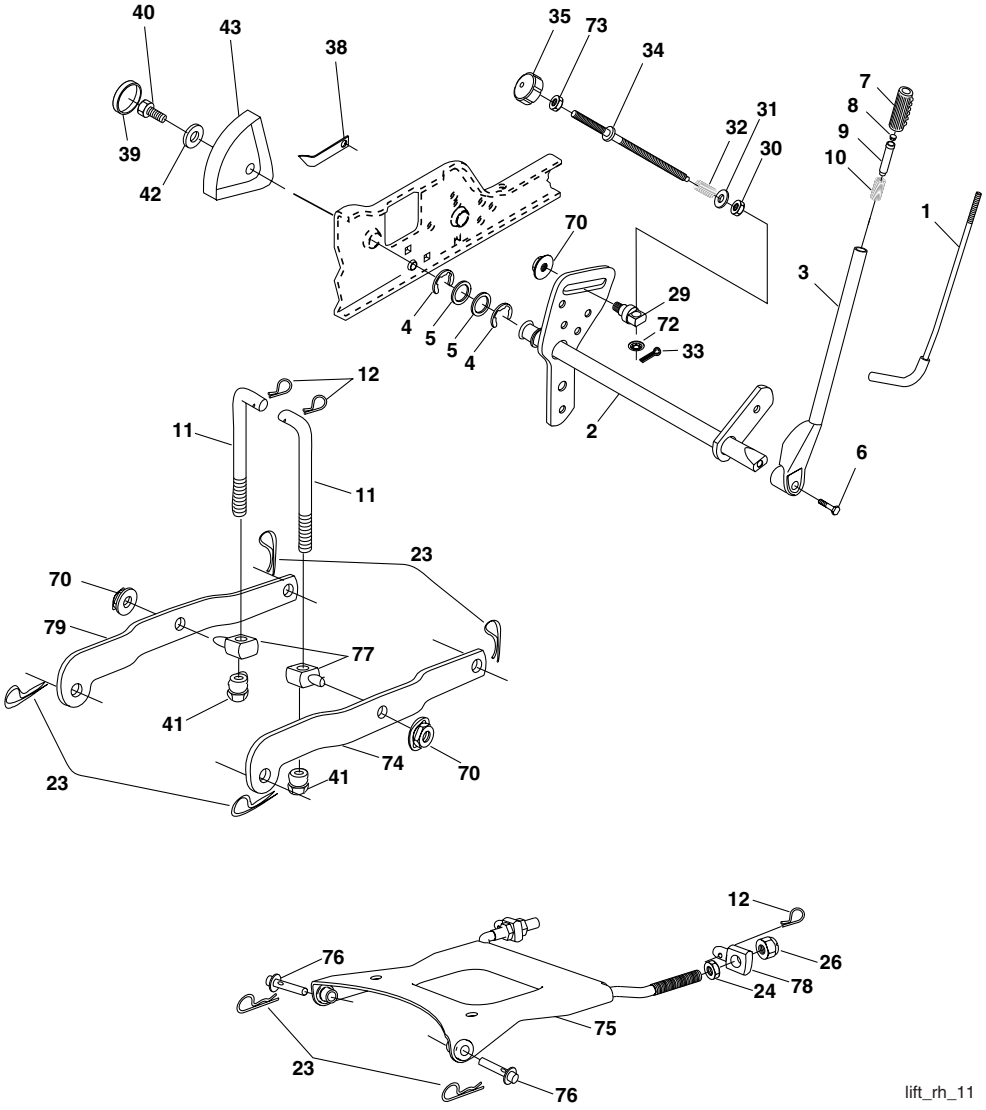
KEY NO.	PART NO.	DESCRIPTION
1	59192	Cap, Valve, Tire
2	65139	Stem, Valve
3	106228X624	Rim Assembly, Front
4	8134H	Tube, Front (Service Item Only)
5	106230X	Tire, Front
6	278H	Fitting, Grease (Front Wheel nly)
7	9040H	Bearing, Flange (Front Wheel Only)
8	104757X428	Cap, Axle (Front Wheel Only)
9	105588X	Tire, Rear
10	7154J	Tube, Rear (Service Item Only)
11	106277X624	Rim Assembly, Rear
12	6856M	Fitting, Grease
- -	144334	Sealant, Tire (10 oz. Tube)

NOTE: All component dimensions given in U.S. inches
1 inch = 25.4 mm

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

LIFT ASSEMBLY



KEY NO.	PART NO.	DESCRIPTION
1	121006X	Rod Asm., Lever
2	180045	Shaft Asm., Lift Vgt
3	159189	Lever Asm., Lift Rh
4	12000022	E-Ring Truarc #5133-87
5	19292016	Washer 29/32 x 1-1/4 x 16 Ga.
6	71110624	Bolt, Fin Hex 3/8-16 x 1-1/2
7	125631X	Grip, Handle
8	122365X	Button, Plunger
9	122364X	Plunger, Lever Lift
10	183894	Spring 0.62 OD x 2.125
11	175375	Link Lift
12	163552	Retainer, Spring
23	STD624008	Retainer, Spring
24	73350800	Nut, Jam Hex 1/2-13 unc
26	73680800	Nut, Crownlock 1/2-13 unc
29	150233	Trunnion Inf. Height
30	110807X	Nut, Special
31	19131016	Washer 13/32 x 5/8 x 16 Ga.
32	137150	Spring, Compression Inf Hgt
33	STD560907	Pin, Cotter 3/32 x 1/2

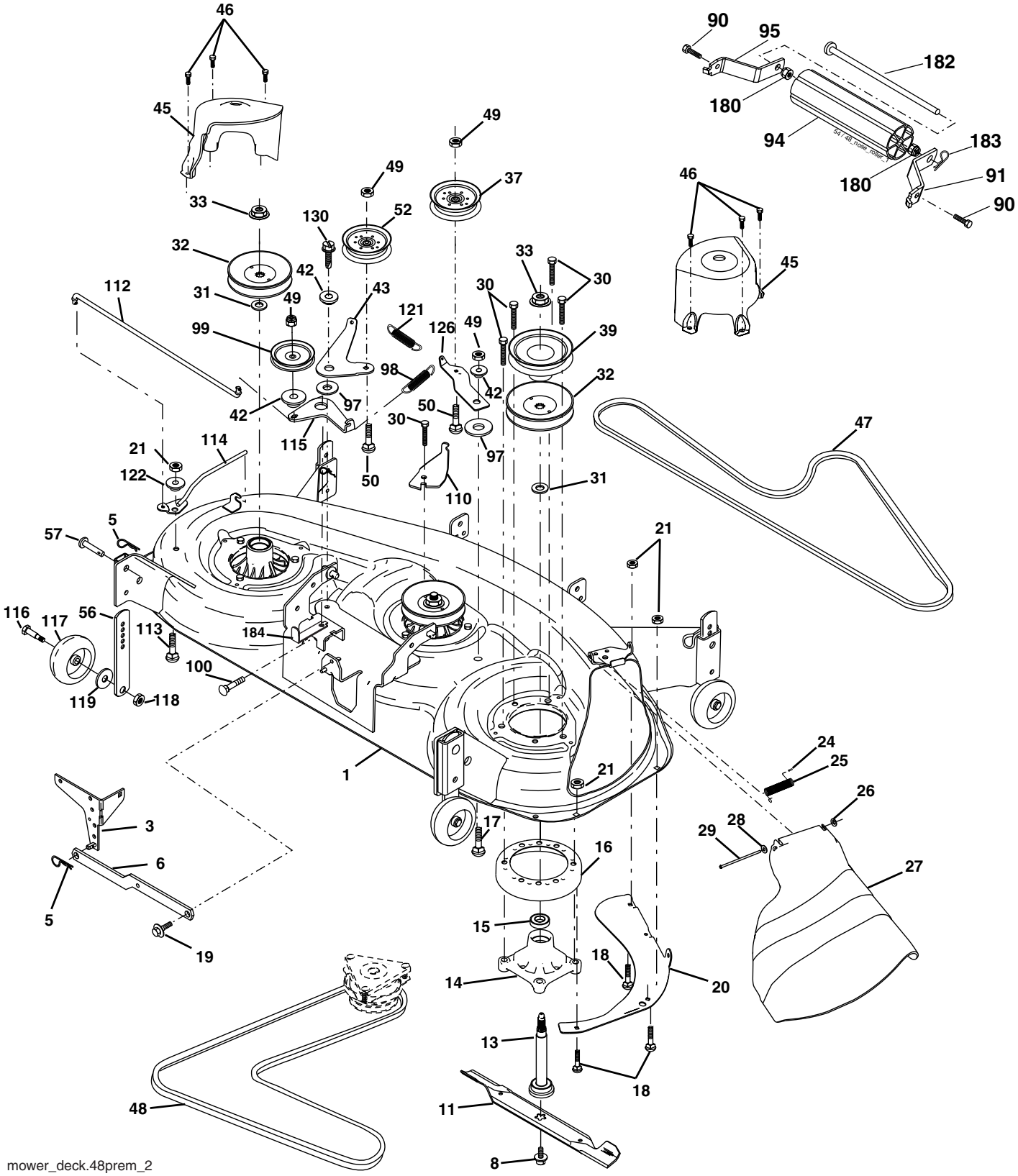
KEY NO.	PART NO.	DESCRIPTION
34	137167	Rod, Adj Lift
35	138057	Knob, Inf 3/8-16 unc
38	155097	Pointer, Height Indicator
39	123935X	Plug, Hole
40	17060516	Screw 5/16-18 x 3/4
41	175994	Nut, Lift Link 7/16-20
42	19112410	Washer 11/32 x 1-1/2 x 10 Ga.
43	123934X	Scale, Indicator Height
70	145212	Nut, Hexflange Lock
72	110452X	Nut, Push Phos & Oil
73	73350600	Nut Hex Jam 3/8-16 unc
74	175802	Arm Susp. Rear RH
75	175805	Plate Asm Susp. Front
76	175560	Pin Flange
77	176205	Trunnion Susp. Arm
78	175689	Trunnion Susp. Front
79	175378	Arm Susp. Rear LH

NOTE: All component dimensions given in U.S. inches
1 inch = 25.4 mm

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

MOWER DECK



mower_deck.48prem_2

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

MOWER DECK

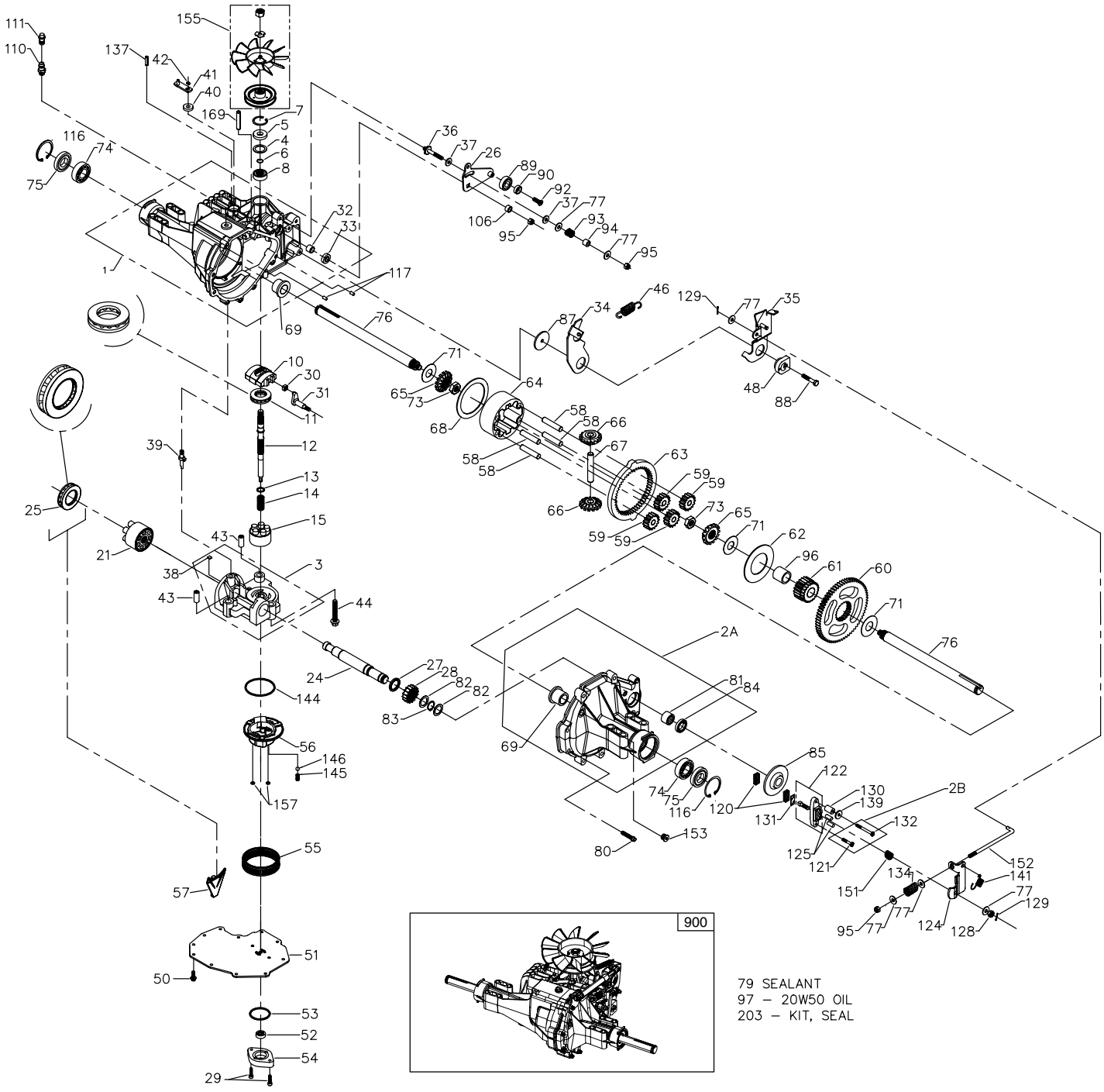
KEY NO.	PART NO.	DESCRIPTION
1	180358	Deck Weldment Mower 48
3	178915	Bracket Asm., Sway Bar
5	4939M	Retainer Spring
6	178024	Arm, Suspension, Rear (Sway Bar)
8	174365	Bolt 7/16 Asm. Blade
		(The following blades are available)
11	180054	Blade, 48" Hi-Lift
		(For bagging and discharging)
- -	173921	Blade, 48" Mulching
		(For mulching mowers only)
13	174360	Shaft Asm.
14	174358	Mandrel Asm.
15	110485X	Bearing, Ball, Mandrel
16	174493	Stripper Mandrel Deck
17	72110610	Bolt RDHD Sq Neck 3/8-16 x 1.25
18	72140505	Bolt, Carriage 5/16-18 x 5/8
19	132827	Bolt, Hex Hd, Shoulder 5/16-18
20	174378	Baffle, Vortex Mower
21	73680500	Nut, Crownlock 5/16-18 unc
24	105304X	Cap, Sleeve
25	178102	Spring, Torsion
26	110452X	Nut, Push
27	180655X428	Deflector Shield
28	19111016	Washer 11/32 x 5/8 x 16 Ga.
29	131491	Rod, Hinge
30	173984	Screw, Thdroll
31	187690	Washer, Spacer Mower Vented
32	153535	Pulley, Mandrel
33	178342	Nut, Flg. Top Lock Cntr. 9/16
37	177968	Pulley, Idler, 48" Primary
39	174375	Pulley, Idler, Driven
42	165723	Spacer, Retainer
43	174373	Arm, Idler Secondary
45	180806	Cover, Mandrel Deck
46	137729	Screw, Thdroll. 1/4-20 x 5/8
47	180808	V-Belt, Mower, Secondary
48	174368	V-Belt, Mower, Primary
49	73900600	Nut 3/8-16 unc
50	72110612	Bolt, Carr. 3/8-16 x 1-1/2 Gr. 5
52	175820	Pulley Idler Flat
56	155986	Bar Adj.
57	156941	Pin Head Rivet
90	74760516	Bolt Hex Head 5/16-18 unc x 1
91	180535	Bracket Asm N Roller RH
94	176066	Roller Nose 48"
95	180534	Bracket Asm N Roller LH
97	178515	Washer Hardened
98	179479	Spring Primary Drive
99	189993	Pulley Idler"V"
100	72110616	Bolt RD. HD. SQNK. 3/8-16 unc x 2
110	175016	Arm Spring Secondary
112	174387	Link Tension Relief Lever
113	72110506	Bolt RDHD. SQNK. 5/16-18 unc x 3/4
114	174384	Tension Asm Relief Lever
115	174609	Arm Spring Tension Relief
116	193406	Bolt, Shoulder 3/8-16 x 3-5/8 Gr. 5
117	174873	Gauge Wheel, Rally
118	73930600	Nut, Centerlock 3/8-16 unc
119	19121414	Washer 3/8 x 7/8 x 14 Ga.
121	174371	Spring Secondary Drive
122	174606	Bushing Pivot Tension Relief
126	174372	Arm, Idler, Primary Deck
130	17000616	Screw 3/8-16 x 1.0
180	73800500	Nut Lock Hex w/ins 5/16-18 unc
182	179127	Rod Nose Roller
183	163552	Retainer Spring
184	173979	Keeper Belt Idler
- -	174356	Mandrel Asm. Service (Includes Key Nos. 13-15)
- -	181579	Replacement Deck, Complete (Std. Deck-Order separately nose roller components Key Nos. 90 - 95 and 180 - 183.)

NOTE: All component dimensions given in U.S. inches
1 inch = 25.4 mm

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

HYDRO GEAR TRANSAXLE - - MODEL NUMBER 331-3000



REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

HYDRO GEAR TRANSAXLE - - MODEL NUMBER 331-3000

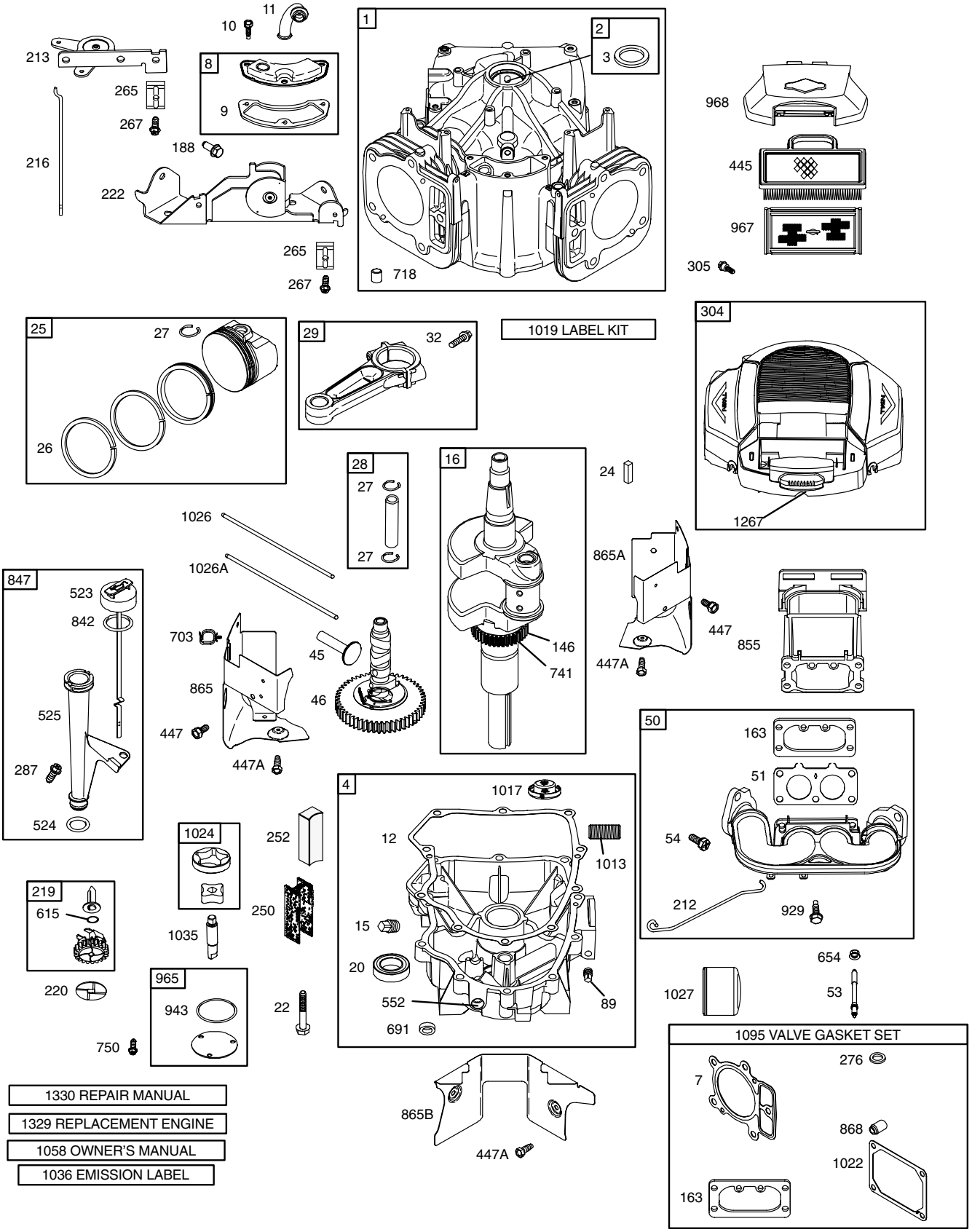
KEY NO.	PART NO.	DESCRIPTION
1	161122	Kit, housing main Main housing, Lip seal, Flange bearing, Trunnion bushing, Cradle bearing
2A	193015	Kit, housing r/h R.H. Housing, Flange bearing Needle bearing (sce1412) Lip seal (.875 ID x l.3 0D x .25)
2B	193016	Kit, brake bolt Bolt, hex hd 1/4-20 x 1.25 W/patch Bolt, hex hd 1/4-20 x 2.25 W/patch
3	184703	Kit, center section Center section, Bushing .50 X .60 X .50 Bushing .90 X l.02 X .75, Plate, bypass Check plug assembly,.044 Check plug assembly, no bleed
4	161125	Spacer (BDP, BDU 10)
5	142932	Seal, lip
6	142928	Retaining ring
7	142933	Retaining ring
8	142934	Bearing, ball
10	169524	Swash plate (BDP, BDU 10)
11	173159	Bearing, thrust (10cc)
12	161126	Shaft, input (310-3000)
13	142978	Washer, block thrust
14	142977	Spring, helical compression
15	169898	Kit, cylinder block (10cc) 10CC cylinder block, 10CC piston 10CC piston spring, Piston seat washer
21	150786	Block, (BD-21& IHT) 21CC Cylinder block, Piston seat washer, 21CC piston, 21CC piston spring
24	161127	Shaft, motor (310-3000)
25	169526	Bearing, thrust (21cc)
26	161128	Control arm (310-3000)
27	161129	Spacer (310-3000)
28	161130	Gear, 16t pinion
29	169527	Capscrew
30	142941	Guide block (BD-21)
31	169887	Trunnion, tapered square
32	161133	Bearing, journal
33	142940	Seal, lip
34	178318	Return arm (310-3000)
35	178319	Actuating arm (310-3000)
36	170421	Bolt, stud 5/16-24
37	142967	Friction puck
38	184694	Kit, bypass plate
39	169529	Bypass actuator (IHT)
40	142945	Seal, lip
41	142952	Bypass arm
42	142953	Retaining ring
43	142965	Pin
44	150797	Bolt 3/8-24 x 2-1/2
46	184702	Spring, neutral (310-3000)
48	178320	Puck, adjusting (310-3000)
50	178343	Screw, hex head washer cap screw (IZT) 1/4-20 x 3/4
51	169530	Lower cover
52	169531	Geroter assembly
53	144581	O-ring
54	161139	Charge pump housing
55	178321	Kit, filter Gasket .10 X .16 X 4.24, Filter
56	169533	Charge manifold 310-3000
57	161142	Retainer, motor bearing (310-3000)
58	161143	Pin, carrier (310-3000)
59	161144	Gear, 15t planet (310-3000)
60	161145	Gear, 67t spur (310-3000)
61	161146	Gear, 21t sun (310-3000)
62	161147	Plate, planet thrust (310-3000)
63	161148	Gear, 51t ring (310-3000)
64	161149	Carrier, planetary (310-3000)
65	161150	Gear, differential bevel (310-3000)
66	161151	Gear, differential bevel pinion (310-3000)
67	161152	Shaft, differential (310-3000)
68	161153	Plate, differential thrust (310-3000)
69	169534	Bearing, flange (310-3000)
71	161155	Washer, flat (1.00 Id) (310-3000)
73	161156	Nut, 5/8-18 hex jam (310-3000)
74	169535	Bearing, ball (310-3000)
75	161157	Seal, lip (310-3000)
76	161158	Shaft, axle (310-3000)
77	142884	Washer, flat
79	178322	Sealant tube
80	161159	Screw, torx head 5/16-18 (310-3000)
81	161160	Bearing, needle (210-3000)
82	161161	Washer, flat (0.880 ID) (310-3000)
83	161162	Ring, retaining (310-3000)
84	161163	Seal, lip (.875 ID x 1.38 OD x .25) (310-3000)
85	161164	Brake disc (310-3000)
87	178323	Washer (310-3000)
88	178784	Screw, 5/16-24x 1 1/2 socket head cap (310-3000)
89	178783	Bearing, ball
90	178326	Spacer, locating (310-3000)
92	178787	Screw (310-3000)
93	142969	Spring
94	142980	Spacer
95	169537	Nut, nylon insert hex lock 5/16-24
96	169538	Bearing, sleeve (310-3000)
97	--- --- --	20W-50 oil 122 oz
106	161166	Spacer, trunnion (310-3000)
108	150800	Plug, plastic shipping
110	150813	O-ring Fitting, plastic hose, O-ring
111	150812	Breather vent, plastic Vent, plastic, Vent, cap
116	169539	Ring, retaining (310-3000)
117	161168	Pin
120	142883	Brake puck
121	193019	Bolt, hex hd 1/4-20 x 1.25 W/patch
122	178329	Kit, brake yoke
124	178330	Brake arm
125	170409	Pin, brake actuating
128	170415	Nut, castle 5/16-24
129	170416	Pin, cotter 3/32x3/4
130	170411	Spacer, brake torsion spring
131	142882	Brake puck plate
132	193020	Bolt, hex hd 1/4-20 x 2.25 W/patch
134	178331	Brake comp. Spring
137	178333	Pin, spring (310-3000)
139	161176	Washer, flat
141	178335	Spring, brake arm bias
144	169545	O-ring
145	169546	Spring, relief
146	169547	Steel ball 7/16
151	170417	Brake spring
152	178336	Brake pull rod
153	170434	Plug, straight thread 9/16-18
155	178337	Kit, fan/pulley Nut, jam 1/2-20, Washer, OD slotted .53 X 1.63 X .06, Pulley, Fan
157	169548	O-ring
169	184701	Pin, spring 5/16 x 1.75
203	178338	Kit, seal Lip seal 15 x 5 x 37, Lip seal 12 x 25 x 7 Lip seal 10 x 25 x 7, O-ring .103 X 1.862 Seal 25 x 52 x 10, Lip seal .875 ID x l.3 OD x .25, O-ring .070 X .239, Kit, o-ring, manifold, Pin, spring 5/16 x 1.75 Pin, spring 1/4 x 1.00
900	176056	Transaxle

NOTE: All Component Dimensions Given In U.s. Inches 1 Inch = 25.4 MM

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

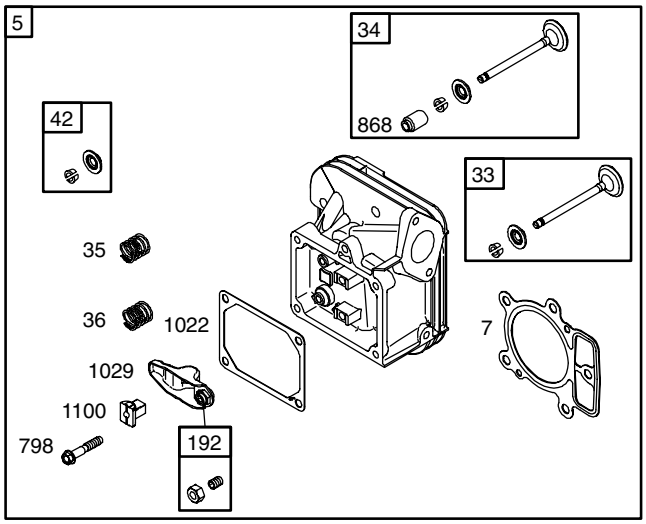
BRIGGS ENGINE - MODEL NUMBER 446677, TYPE NUMBER 0470-E1

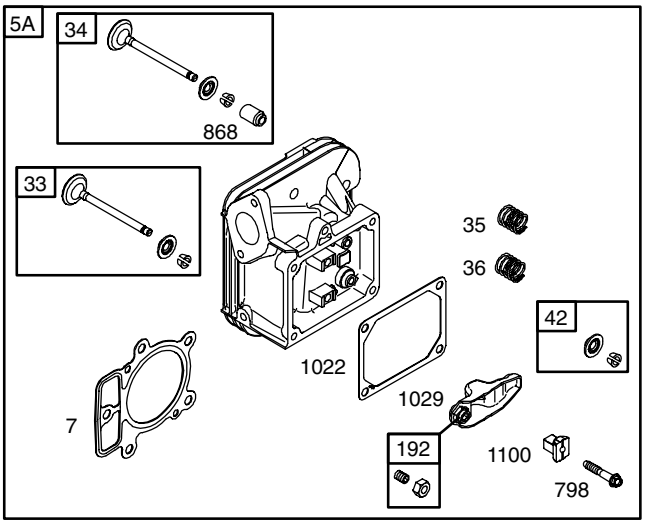


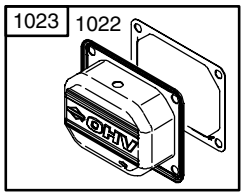
REPAIR PARTS

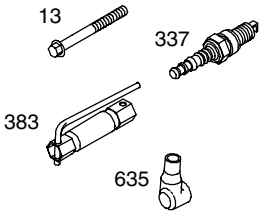
TRACTOR - - MODEL NUMBER 944.605070

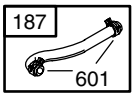
BRIGGS ENGINE - MODEL NUMBER 446677, TYPE NUMBER 0470-E1

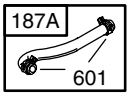


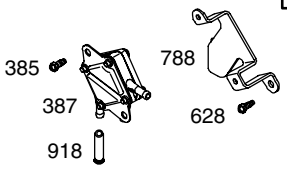


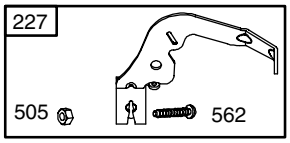


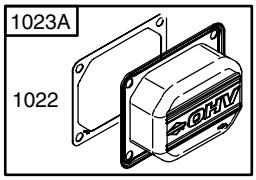


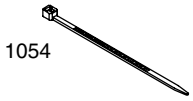


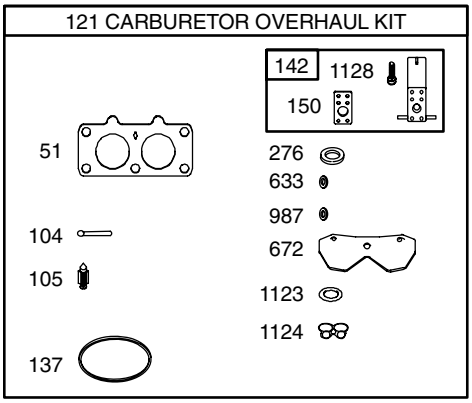


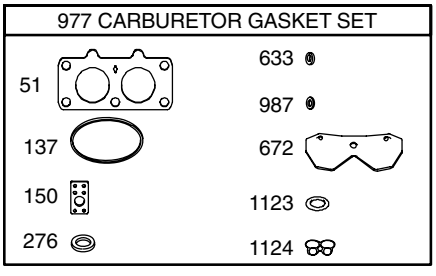


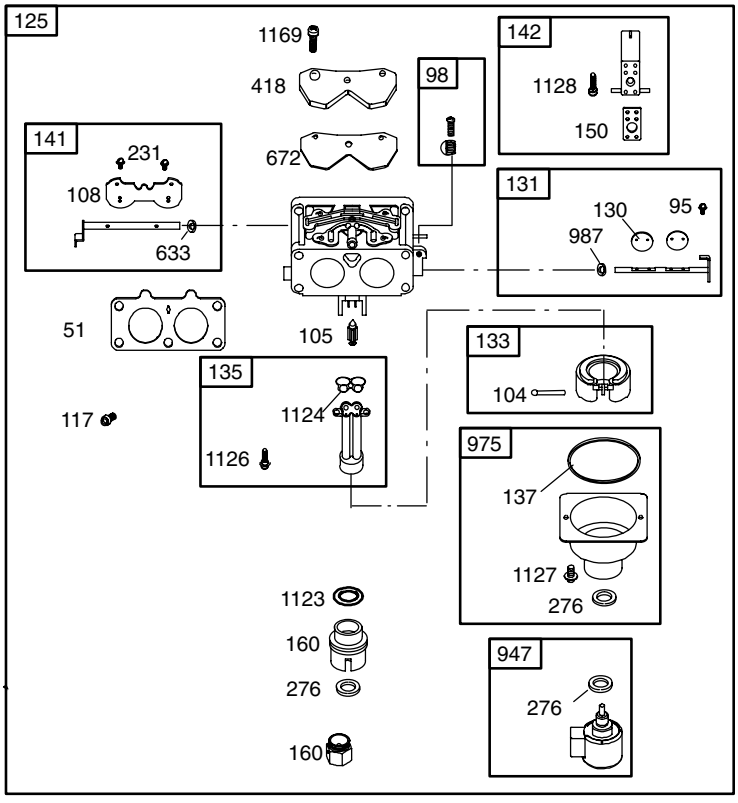








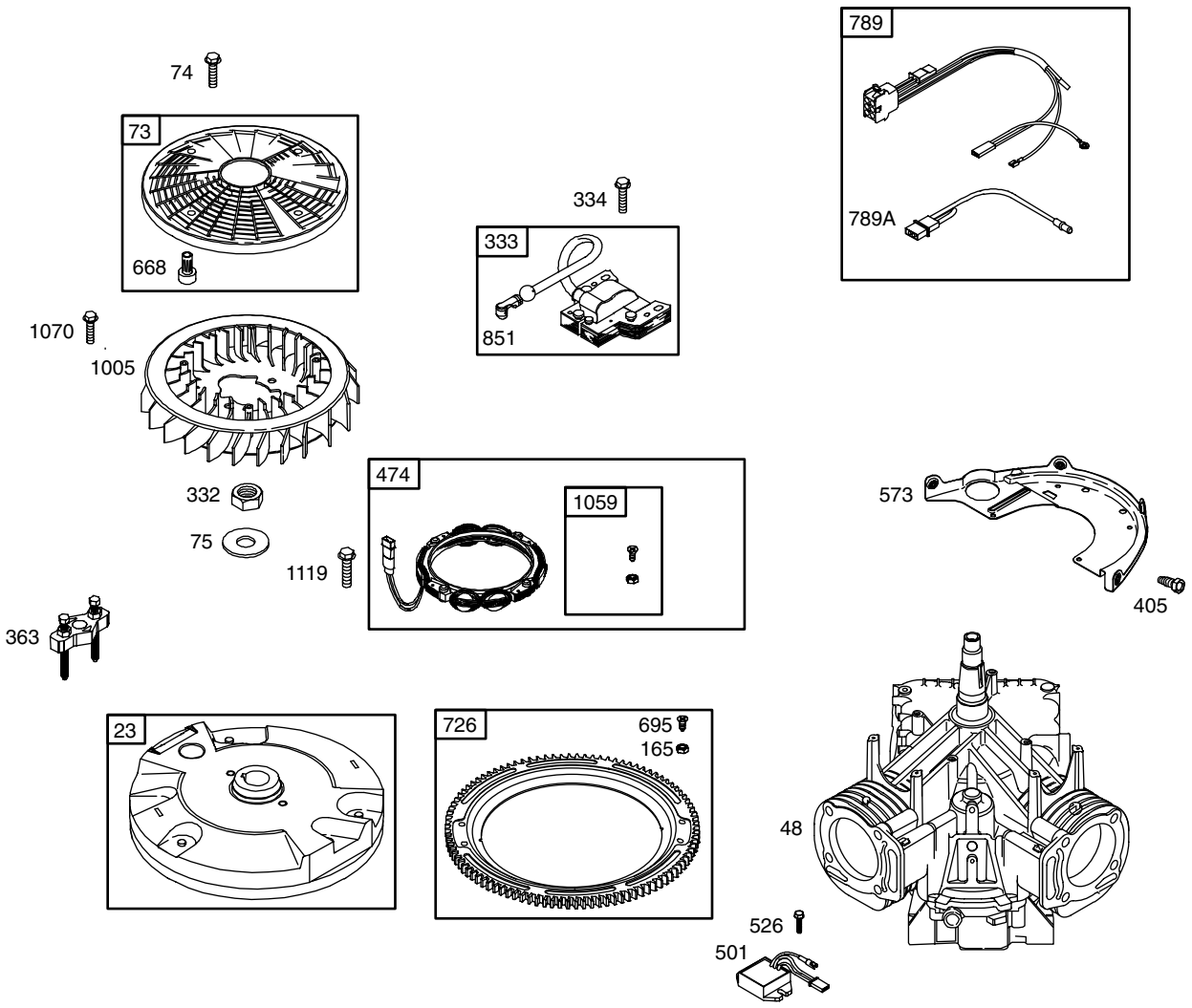


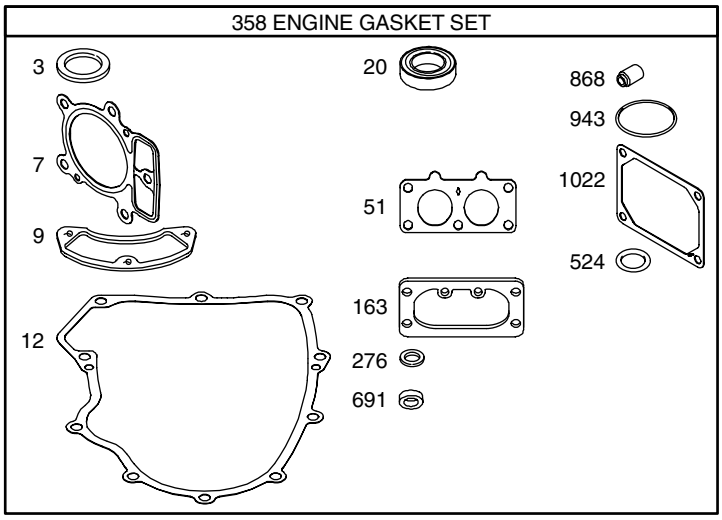


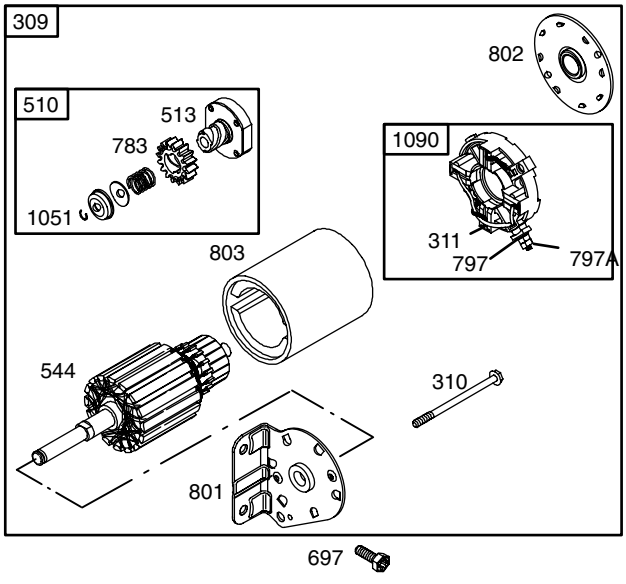
REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

BRIGGS ENGINE - MODEL NUMBER 446677, TYPE NUMBER 0470-E1







REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

BRIGGS ENGINE - MODEL NUMBER 446677, TYPE NUMBER 0470-E1

KEY NO.	PART NO.		DESCRIPTION
1	699753		Cylinder Assembly
2	499585		Kit-Bushing/Seal (Magneto Side)
3	391086	•	Seal-Oil (Magneto Side)
4	699747		Sump-Engine
5	697580		Head-Cylinder (Cylinder 1)
5A	697581		Head-Cylinder (Cylinder 2)
7	693997	•+	Gasket-Cylinder Head
8	499601		Breather Assembly
9	690937	•	Gasket-Breather
10	691108		Screw (Breather Assembly)
11	690942		Tube-Breather
12	697227	•	Gasket-Crankcase
13	791130		Screw (Cylinder Head)
15	690946		Plug-Oil Drain
16	790132		Crankshaft
20	690947	•	Seal-Oil (PTO Side)
22	694966		Screw (Engine Sump)
23	691053		Flywheel
24	222698		Key-Flywheel
25	697679		Piston Assembly (Standard)
25	697681		Piston Assembly (.020” Oversize)
26	697683		Ring Set-Piston (Standard)
26	697685		Ring Set-Piston (.020” Oversize)
27	690975		Lock-Piston Pin
28	690229		Pin-Piston
29	699699		Rod-Connecting
32	690976		Screw (Connecting Rod)
33	697576		Valve-Exhaust
34	499597		Valve-Intake
35	690963		Spring-Valve (Intake)
36	690963		Spring-Valve (Exhaust)
42	499586		Keeper-Valve
45	690977		Tappet-Valve
46	790562		Camshaft
48	698173		Short Block
50	695241		Manifold-Intake
51	690950	• Ø‡	Gasket-Intake
53	690951		Stud (Carburetor)
54	699816		Screw (Intake Manifold)
73	494439		Screen-Rotating
74	698425		Screw (Rotating Screen)
75	691056		Washer (Flywheel)
89	690283		Plug-Oil
95	690718		Screw (Throttle Valve)
98	499802		Kit-Idle Speed
104	690984	Ø	Pin-Float Hinge
105	690985	Ø	Valve-Float Needle
108	690986		Valve-Choke
117	690986		Jet-Main (Standard)
118	690989		Jet-Main (High Altitude)
121	499811		Kit-Carburetor Overhaul
125	499804		Carburetor
130	690993		Valve-Throttle
131	499805		Kit-Throttle Shaft
133	499803		Float-Carburetor
135	699729		Tube-Fuel Transfer
137	690994	Ø‡	Gasket-Float Bowl
141	499807		Kit-Choke Shaft
142	499808	Ø	Nozzle-Carburetor
146	690979		Key-Timing
150	690995	Ø‡	Gasket-Nozzle
160	690996		Retainer-Solenoid
163	691001	•+	Gasket-Air Cleaner
165	693148		Nut (Ring Gear)
187	698472		Line-Fuel (Molded)
187A	691049		Line-Fuel (Molded)
188	691108		Screw (Control Bracket)
192	690083		Adjuster-Rocker Arm
209	697674		Spring-Governor
211	691019		Spring-Governed Idle
212	695238		Link-Throttle
213	691021		Bracket-Choke Control
216	691022		Link-Choke
219	698231		Gear-Governor
220	690412		Washer (Governor Lever)
222	698761		Bracket-Control
227	691048		Lever-Governor Control
231	690718		Screw (Choke Valve)
240	695666		Filter-Fuel
250	690957		Retainer-Breather
252	690956		Collector-Oil
265	691024		Clamp-Casing
267	695134		Screw (Casing Clamp)
276	690997	•Ø+‡	Washer-Sealing
287	691108		Screw (Dipstick Tube)
304	698073		Housing-Blower
305	691005		Screw (Blower Housing)
309	691262		Motor-Starter
310	691263		Bolt-Starter Motor
311	497608		Brush Set
332	691059		Nut (Flywheel)
333	691060		Armature-Magneto
334	691061		Screw (Magneto Armature)
337	491055		Spark Plug
358	694012		Set-Engine Gasket
363	19203		Flywheel Puller
383	19374		Wrench-Spark Plug
385	691108		Screw (Fuel Pump)
387	808656		Pump-Fuel
404	690442		Washer (Governor Crank)

•	Included in Engine Gasket Set, Key. No. 358
Ø	Included in Carburetor Overhaul Kit, Key. No. 121
‡	Included in Carburetor Gasket Set, Key. No. 977
+	Included in Valve Gasket Set, Key. No. 1095

NOTE: All component dimensions given in U.S. inches 1 inch = 25.4 mm

REPAIR PARTS

TRACTOR - - MODEL NUMBER 944.605070

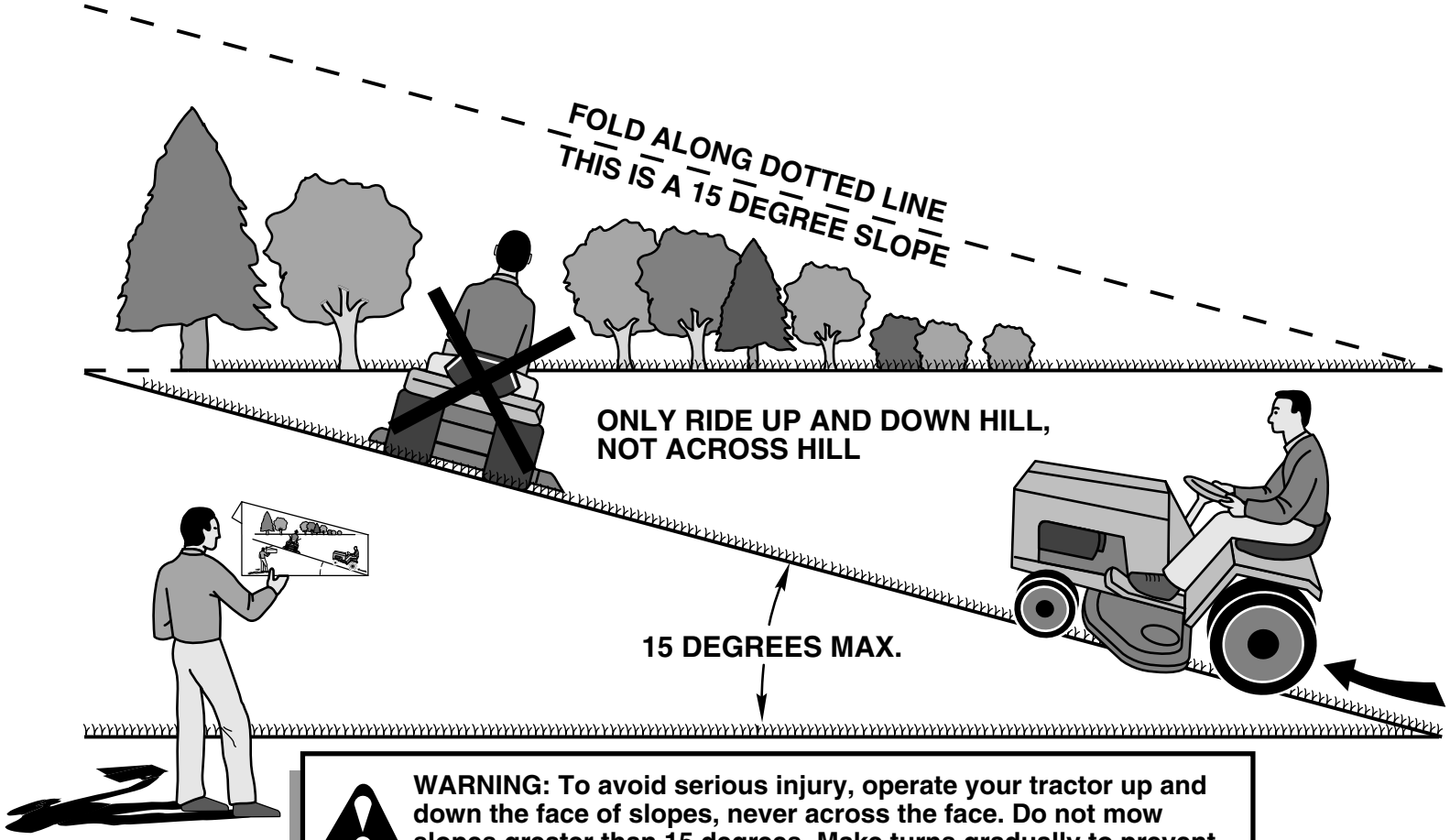
BRIGGS ENGINE - MODEL NUMBER 446677, TYPE NUMBER 0470-E1

KEY NO.	PART NO.		DESCRIPTION
405	697820		Screw (Back Plate)
418	690999		Plate-Carburetor
445	698754		Filter-Air Cleaner Cartridge
447	691003		Screw (Air Guide Cover)
447A	691108		Screw (Air Guide Cover)
474	696458		Alternator
501	691185		Regulator
505	691029		Nut (Governor Control Lever)
510	497606		Drive-Starter
513	692024		Clutch-Drive
523	691036		Dipstick
524	691032	•	Seal-Dipstick Tube
525	691037		Tube-Dipstick
526	691108		Screw (Regulator)
544	----		Armature-Starter (Service with 691262 Starter Motor)
552	690552		Bushing-Governor Crank
552A	690553		Bushing-Governor Crank
562	690311		Bolt (Governor Control Lever)
573	691009		Plate-Back
601	691038		Clamp-Hose
615	698290		Retainer-Governor Shaft
616	691045		Crank-Governor
628	691108		Screw (Fuel Pump Bracket)
633	690998	Ø‡	Seal-Choke/Throttle Shaft
635	66538		Boot-Spark Plug
654	690958		Nut (Carburetor)
668	691215		Spacer
672	690234	Ø‡	Gasket-Carburetor Plate
691	690657	•	Seal-Governor Shaft
695	693149		Screw (Ring Gear)
697	690372		Screw (Drive Cap)
703	691010		Clip
718	690959		Pin-Locating
726	499612		Gear-Ring
741	690980		Gear-Timing
742	690328		Retainer-E Ring
750	696999		Screw (Oil Pump Cover)
783	693058		Gear-Pinion
788	691039		Bracket-Fuel Pump
789	698330		Harness-Wiring
789A	790544		Harness-Wiring
797	691029		Nut (Brush Retainer)
797A	693167		Nut (Brush Retainer)
798	697890		Screw (Rocker Arm)
801	691283		Cap-Drive
802	691286		Cap-End
803	----		Housing-Starter (Service with 691262 Starter Motor)
842	691031	•	Seal-Dipstick/Tube
847	499602		Dipstick/Tube Assembly
851	493880		Terminal-Spark Plug
855	698072		Adapter-Air
865	691012		Cover-Air Guide
865A	691014		Cover-Air Guide
865B	691015		Cover-Air Guide
868	690968	•+	Seal-Valve
914	691127		Screw (Rocker Cover)
918	694000		Hose-Vacuum
929	695239		Screw (Choke Control Bracket)
943	690589	•	Seal-O Ring (Oil Pump Cover)
947	499809		Solenoid-Fuel
965	499613		Cover-Oil Pump
967	273638		Filter-Pre Cleaner
968	790096		Cover-Air Cleaner
975	499810		Bowl-Float
977	694013		Gasket Set-Carburetor
987	691000	Ø‡	Seal-Throttle Shaft
1005	698760		Fan-Flywheel
1013	690954		Nipple-Oil Filter
1017	690770		Screen-Oil Pump
1019	790094		Kit-Label
1022	690971	•+	Gasket-Rocker Cover
1023	499599		Cover-Rocker (Cylinder 1)
1023A	499600		Cover-Rocker (Cylinder 2)
1024	499054		Pump-Oil
1026	690981		Rod-Push (Steel)
1026A	690982		Rod-Push (Aluminum)
1027	696854		Filter-Oil
1029	690972		Arm-Rocker
1035	691042		Shaft-Pump
1036	790626		Label-Emission
1051	691265		Ring-Retaining
1054	280275		Cable-Tie
1058	275475		Owner's Manual
1059	698516		Kit-Screw/Washer
1070	690372		Screw (Flywheel Fan)
1090	691293		Retainer-Brush
1095	694013		Gasket Set-Valve
1100	690973		Pivot-Rocker Arm
1119	691183		Screw (Alternator)
1123	690987	Ø‡	Seal-O Ring (Solenoid Retainer)
1124	690988	Ø‡	Seal-O Ring (Fuel Transfer Tube)
1126	690991		Screw (Fuel Transfer Tube)
1127	690992		Screw (Float Bowl)
1128	690990		Screw (Carburetor Nozzle)
1169	693140		Screw (Carburetor Cover Plate)
1267	698440		Latch-Blower Housing
1329	446777-0126		Replacement Engine (Transfer 6 pin and Exhaust)
1330	273521		Repair Manual

• Included in Engine Gasket Set, Key. No. 358
Ø Included in Carburetor Overhaul Kit, Key. No. 121
‡ Included in Carburetor Gasket Set, Key. No. 977
\+ Included in Valve Gasket Set, Key. No. 1095

NOTE: All component dimensions given in U.S. inches 1 inch = 25.4 mm

SUGGESTED GUIDE FOR SIGHTING SLOPES FOR SAFE OPERATION



WARNING: To avoid serious injury, operate your tractor up and down the face of slopes, never across the face. Do not mow slopes greater than 15 degrees. Make turns gradually to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.

1. Fold this page along dotted line indicated above.
2. Hold page before you so that its left edge is vertically parallel to a tree trunk or other upright structure.
3. Sight across the fold in the direction of hill slope you want to measure.
4. Compare the angle of the fold with the slope of the hill.

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