

Owner's Manual

**CRAFTSMAN®**

**20 HP**

**ELECTRIC START**

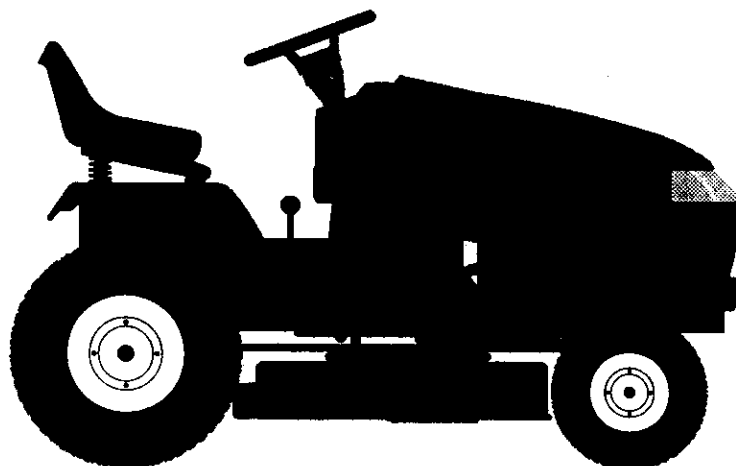
**46" MOWER**

**6 SPEED**

**GARDEN TRACTOR**

Model No.  
**917.272951**

- **Safety**
- **Assembly**
- **Operation**
- **Maintenance**
- **Repair Parts**



This product has a low emission engine which operates differently from previously built engines. Before you start the engine, read and understand this Owner's Manual.

**CAUTION:**

Read and follow all Safety Rules and Instructions before operating this equipment.

For answers to your questions about this product, Call:

**1-800-659-5917**

Sears Craftsman Help Line  
5 am - 5 pm, Mon - Sat

SEARS, ROEBUCK AND CO., HOFFMAN ESTATES, IL 60179  
Visit our Craftsman website: [www.sears.com/craftsman](http://www.sears.com/craftsman)

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## WARRANTY

### LIMITED TWO YEAR WARRANTY ON CRAFTSMAN RIDING EQUIPMENT PARTS

For two (2) years from the date of purchase, if this Craftsman Riding Equipment is maintained, lubricated and tuned up according to the instructions in the owner's manual, Sears will repair or replace, free of charge, any parts found to be defective in material or workmanship. Warranty service is available free of charge by taking your Craftsman riding equipment to your nearest Sears Service Center. In-home warranty service is available but a trip charge will apply. This warranty applies only while this product is in the United States.

This Warranty does not cover:

- Expendable items which become worn during normal use, such as blades, spark plugs, air cleaners, belts and oil filters.
- Tire replacement or repair caused by punctures from outside objects, such as nails, thorns, stumps, or glass.
- Repairs necessary because of operator abuse, including but not limited to, damage caused by towing objects beyond the capability of the riding equipment, impacting objects that bend the frame or crankshaft, or over speeding the engine.
- Repairs necessary because of operator negligence, including but not limited to, electrical and mechanical damage caused by improper storage, failure to use the proper grade and amount of engine oil, failure to keep the deck clear of flammable debris, or the failure to maintain the equipment according to the instructions contained in the owner's manual.
- Engine (fuel system) cleaning or repairs caused by fuel determined to be contaminated or oxidized (stale). In general, fuel should be used within thirty (30) days of its purchase date.
- Riding equipment used for commercial or rental purposes.

### LIMITED 90 DAY WARRANTY ON BATTERY

For ninety (90) days 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. Warranty service is available free of charge by taking your Craftsman riding equipment to your nearest Sears Service Center. In-home warranty service is available but a trip charge will apply. This warranty applies only while this product is in the United States.

To locate the nearest sears service center or to schedule in-home warranty service, simply contact sears at 1-800-4-my-home

This Warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

Sears, Roebuck and Co., D/817 WA, Hoffman Estates, IL 60179

## SAFETY RULES

**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.

### GENERAL OPERATION

- Read, understand, and follow all instructions in the manual and on the machine before starting.
- 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 blade.
- Be sure the area is clear of other people before mowing. 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.
- Be aware of the mower discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass catcher or the guard in place.
- Slow down before turning.
- Never leave a running machine unattended. Always turn off blades, set parking brake, stop engine, and remove keys before dismounting.
- Turn off blades when not mowing.
- Stop engine before removing grass catcher or unclogging chute.
- Mow 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.
- 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.

### SLOPE OPERATION

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

#### DO:

- Mow up and down slopes, not across.
- Remove obstacles such as rocks, tree limbs, etc.
- Watch for holes, ruts, or bumps. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Use slow speed. Choose a low gear so that you will not have to stop or shift while on the slope.
- Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
- Use extra care with grass catchers or other attachments. These can change the stability of the machine.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly straight down the slope.

#### DO NOT:

- *Do not* turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.
- *Do not* mow near drop-offs, ditches, or embankments. The mower could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
- *Do not* mow on wet grass. Reduced traction could cause sliding.
- *Do not* try to stabilize the machine by putting your foot on the ground.
- *Do not* use grass catcher on steep slopes.

### CHILDREN

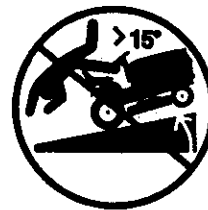
Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. *Never* assume that children will remain where you last saw them.

## SAFETY RULES

- Keep children out of the mowing area and under the watchful care of another responsible adult.
- Be alert and turn machine off if children enter the area.
- Before and when backing, look behind and down for small children.
- Never carry children. They may fall off and be seriously injured or interfere with safe machine operation.
- Never allow children to operate the machine.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
- Never run a machine inside a closed area.
- Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good 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. Allow machine to cool before storing.
- Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
- Never make adjustments or repairs with the engine running.
- Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer's recommended parts, when necessary.

### SERVICE

- Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.
  - Use only an approved container.
  - Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling. Do not smoke.
  - Never refuel the machine indoors.
  - Never store the machine or fuel container inside where there is an open flame, such as a water heater.



- Be sure the area is clear of other people before mowing. Stop machine if anyone enters the area.
- Never carry passengers or children even with the blades off.
- Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
- Never carry children. They may fall off and be seriously injured or interfere with safe machine operation.
- Keep children out of the mowing area and under the watchful care of another responsible adult.
- Be alert and turn machine off if children enter the area.
- Before and when backing, look behind and *down* for small children.
- Mow up and down slopes (15° Max), not across.
- Remove obstacles such as rocks, tree limbs, etc.
- Watch for holes, ruts, or bumps. Uneven terrain could overturn the machine. *Tall grass can hide obstacles*
- Use slow speed. Choose a low gear so that you will not have to stop or shift while on the slope.
- Avoid starting or stopping on a slope. If 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.

## SAFETY RULES

**⚠ Look for this symbol to point out important safety precautions. It means CAUTION!!! BECOME AWARE!!! YOUR SAFETY IS INVOLVED.**

**⚠ CAUTION:** 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.

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

**⚠ CAUTION:** 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.

**⚠ WARNING:** The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

### PRODUCT SPECIFICATIONS

GASOLINE CAPACITY AND TYPE:	3.5 GALLONS UNLEADED REGULAR	
OIL TYPE (API-SF/SG/SH):	SAE 10W30 (ABOVE 32°F) SAE 5W-30 (BELOW 32°F)	
OIL CAPACITY:	W/FILTER:	4.2 PINTS
	W/O FILTER:	3.7 PINTS
SPARK PLUG: (GAP: .030")	CHAMPION RC12YC	
GROUND SPEED (MPH):	LO:	HI:
	0.7	1.7
	1.4	3.3
	2.3	5.4
	REVERSE:	0.9 2.1
TIRE PRESSURE:	FRONT:	14 PSI
	REAR:	10 PSI
CHARGING SYSTEM:	15AMPS @ 3600RPM	
BATTERY:	AMP/HR:	35
	MIN. CCA:	280
	CASE SIZE:	U1R
BLADE BOLT TORQUE:	27-35 FT. LBS	

**CONGRATULATIONS** on your purchase of a Craftsman 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.

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".

### REPAIR AGREEMENT

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

### CUSTOMER RESPONSIBILITIES

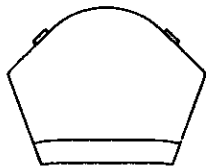
- Read and observe the safety rules.
- Follow a regular schedule in maintaining, caring for and using your tractor.
- Follow the instructions under "Maintenance" and "Storage" sections of this owner's manual.

**⚠ 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.

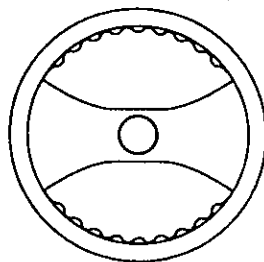
In the state of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest Sears Authorized Service Center/Department (See REPAIR PARTS section of this manual).

# UNASSEMBLE PARTS

## Steering Wheel



Steering  
Wheel Insert

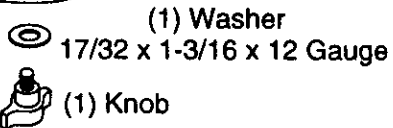
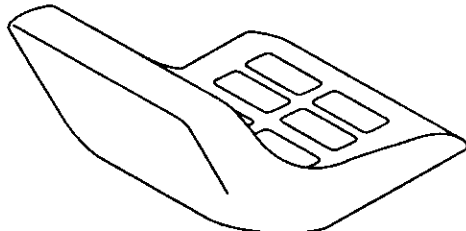


Steering Wheel  
Adapter



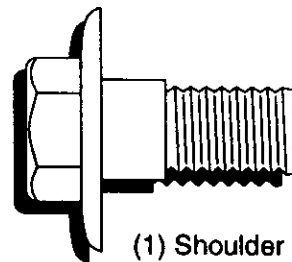
Steering Sleeve

## Seat



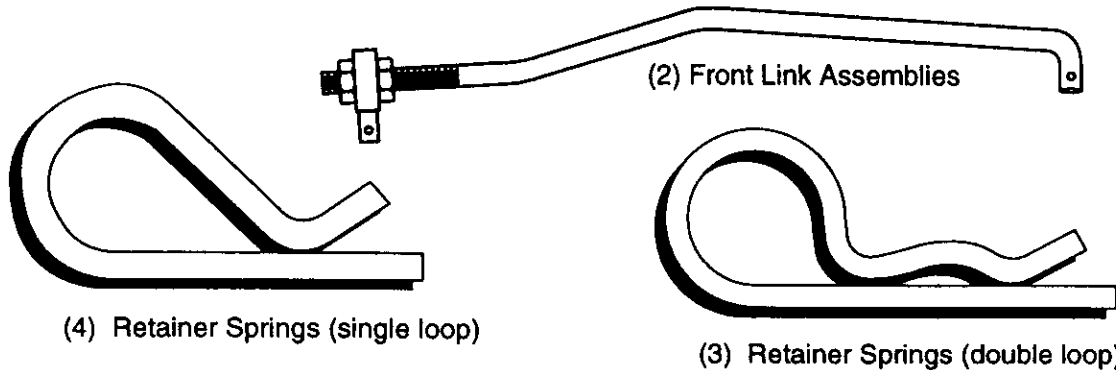
(1) Washer  
17/32 x 1-3/16 x 12 Gauge

(1) Knob



(1) Shoulder  
Bolt 5/16-18

## Mower



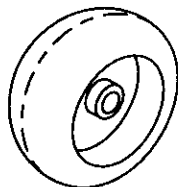
(4) Retainer Springs (single loop)

(3) Retainer Springs (double loop)

## Gauge Wheels



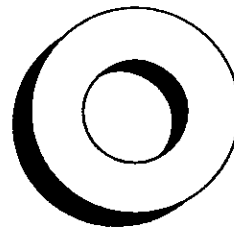
(2) Shoulder Bolts



(2) Wheels



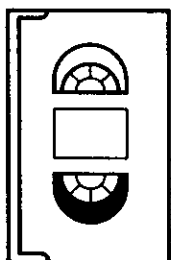
(2) Centerlock Nuts



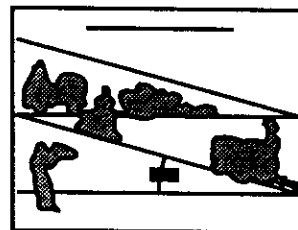
(2) Washers 3/8 x 3/4 x 14 Ga.

## UNASSEMBLE PARTS

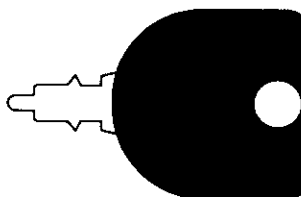
**Video Cassette**



**Slope Sheet**



**Keys**



**(2) Keys**

## 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. Review the video cassette before you begin.

### **TOOLS REQUIRED FOR ASSEMBLY**

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

- |                                       |                   |
|---------------------------------------|-------------------|
| (1) 9/16" wrench                      | (1) Pliers        |
| (1) 1/2" wrench                       | (1) Utility knife |
| (1) 3/4" socket with<br>drive ratchet |                   |
| (1) Tire pressure gauge               |                   |

When right or left hand is mentioned in this manual, it means, from your point of view, 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 boxes from shipping carton.
- Cut, from top to bottom, along lines on all four corners of shipping carton, and lay panels flat.
- Remove mower and packing materials.
- Check for any additional loose parts or boxes and remove.

## ASSEMBLY

### BEFORE REMOVING TRACTOR FROM SKID

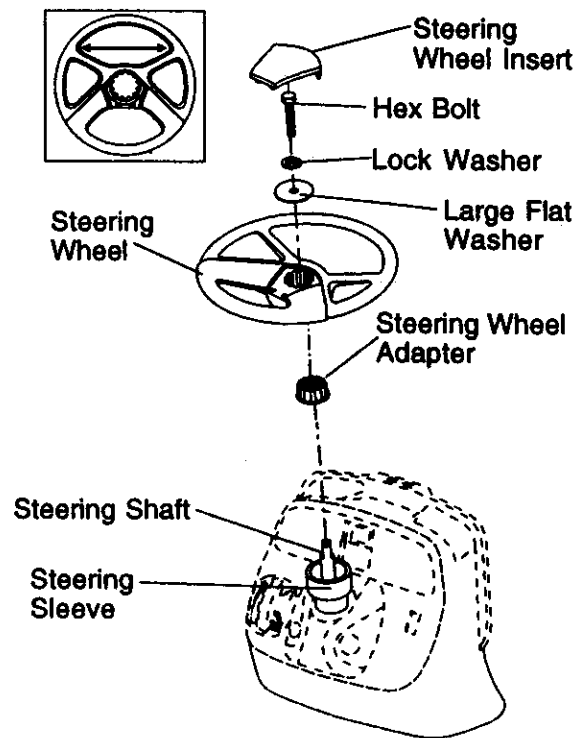
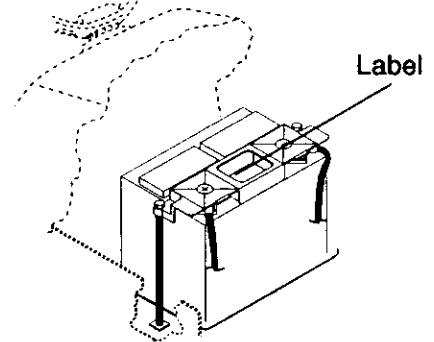
#### ATTACH STEERING WHEEL

- Remove hex bolt, lock washer 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.
- Remove steering wheel adapter from steering wheel and slide adapter onto 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 hex bolt, lock washer 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.

### HOW TO SET UP YOUR TRACTOR CHECK BATTERY

- Lift hood to raised position.
- 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. (See "BATTERY" in Maintenance section of this manual for charging instructions).

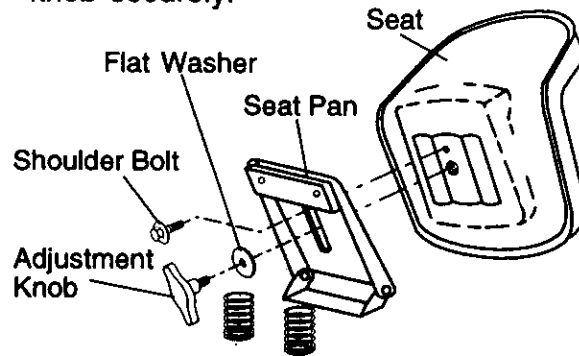




## INSTALL SEAT

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 and assemble shoulder bolt. Tighten shoulder bolt securely.
- Assemble adjustment knob and flat washer loosely. Do not tighten.
- Lower seat into operating position and sit on 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.



**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 clutch/brake pedal.
- Place gearshift lever in neutral (N) position.
- Roll tractor forward off skid.

## TO DRIVE TRACTOR OFF SKID 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.
  - Sit on seat in operating position, depress clutch/brake pedal and set the parking brake.
  - Place gear shift 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.
  - Depress clutch/brake pedal into full "BRAKE" position and hold. Move gearshift lever to 1st gear.
  - Slowly release clutch/brake pedal and slowly drive tractor off skid.
  - Apply brake to stop tractor, set parking brake and place gearshift lever in neutral position.
  - Turn ignition key to "OFF" position.
- Continue with the instructions that follow.

## INSTALL MOWER AND DRIVE BELT

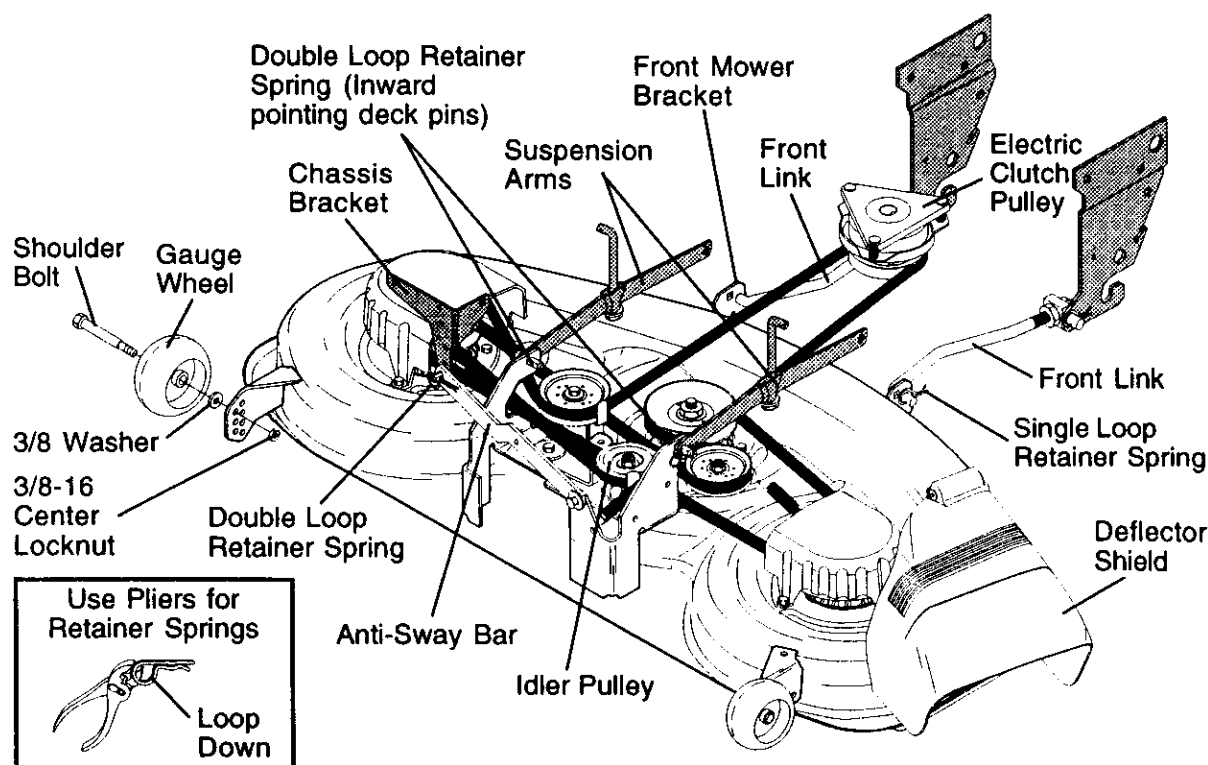
Be sure tractor is on level surface and mower suspension arms are raised with attachment lift control. Engage parking brake.

- 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 discharge guard to right side of tractor.

**IMPORTANT:** Check belt for proper routing in all mower pulley grooves. Install belt into electric clutch pulley groove.

- Install one front link in top hole of the R.H. front mower bracket and R.H. front suspension bracket. Retain with two single loop retainer springs as shown.
- Install second front link in L.H. front suspension bracket only and retain with single loop retainer spring as shown.
- Turn height adjustment knob counter-clockwise until it stops.
- Lower mower linkage with attachment lift control.

- Place the L.H. suspension arm on inward pointing deck pin. If necessary, rock and raise front of mower to align deck pin with the hole in suspension arm. Retain with double loop retainer spring with loops down as shown.
- Slide left side of mower back and install the unattached front link in top hole of the L.H. front mower bracket. Retain with single loop retainer spring as shown.
- Place the R.H. suspension arm on inward pointing deck pin. If necessary, rock and raise front of mower to align deck pin with the hole in suspension arm. Retain with double loop retainer spring with loops down as shown.
- Connect anti-sway bar to chassis bracket under left footrest and retain with double loop retainer spring.
- Turn height adjustment knob clockwise to remove slack from mower suspension.
- Raise mower to highest position.
- Assemble gauge wheels (See "TO ADJUST GAUGE WHEELS" 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 MOWER LEVELNESS**

For best cutting results, mower 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, mower drive, 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 and enjoy your new tractor, we wish to assure that you receive the best performance and satisfaction from this quality product. Please review the following checklist:

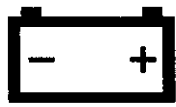
- ✓ All assembly instructions have been completed.
- ✓ No remaining loose parts in carton.
- ✓ Battery is properly prepared and charged. (Minimum 1 hour at 6 amps).
- ✓ Seat is adjusted comfortably and tightened securely.
- ✓ All tires are properly inflated. (For shipping purposes, the tires were overinflated 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.

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.

# OPERATION

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



BATTERY



CAUTION OR WARNING



REVERSE



FORWARD



FAST



SLOW



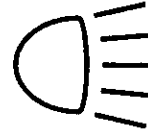
ENGINE ON



ENGINE OFF



OIL PRESSURE



LIGHTS ON



OVER TEMP LIGHT



MOWER LIFT



FUEL



CHOKE



MOWER HEIGHT



PARKING BRAKE LOCKED



UNLOCKED



ATTACHMENT CLUTCH ENGAGED



REVERSE



NEUTRAL



HIGH



LOW



PARKING BRAKE



IGNITION



ATTACHMENT CLUTCH DISENGAGED

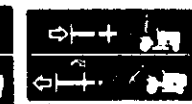
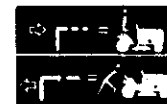


KEEP AREA CLEAR



SLOPE HAZARDS

(SEE SAFETY RULES SECTION)



FREE WHEEL  
(Automatic Models only)

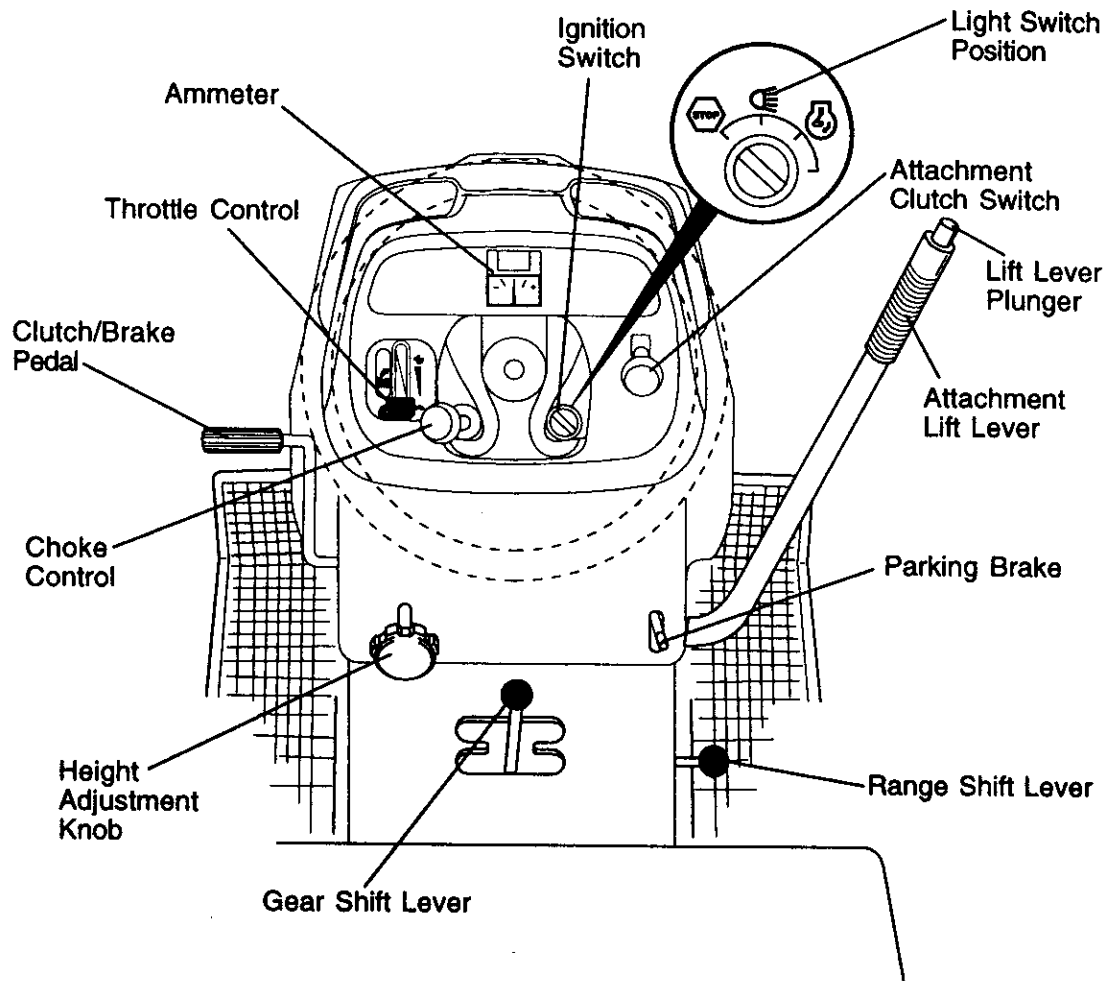


DANGER, KEEP HANDS AND FEET AWAY

## 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 locations of various controls and adjustments. Save this manual for future reference.



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

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**ATTACHMENT CLUTCH SWITCH:** Used to engage the mower blades, or other attachments mounted to your tractor.

**LIGHT SWITCH:** Turns the headlights on and off.

**THROTTLE CONTROL:** Used to control engine speed.

**CLUTCH/BRAKE PEDAL:** Used for declutching and braking the tractor and starting the engine.

**CHOKE CONTROL:** Used when starting a cold engine.

**HEIGHT ADJUSTMENT KNOB:** Used to adjust the mower cutting height.

**GEARSHIFT LEVER:** Selects the speed and direction of the tractor.

**RANGESHIFT LEVER:** Allows high (H) and low (L) speed for all forward and reverse gears.

**ATTACHMENT LIFT LEVER:** Used to raise and lower the mower deck or other attachments mounted to your tractor.

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

**IGNITION SWITCH:** Used for starting and stopping the engine.

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

**PARKING BRAKE:** Locks clutch/brake into the brake position.

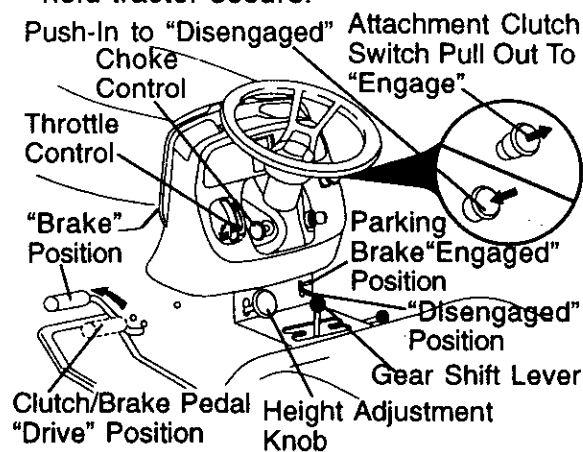


The operation of any tractor can result in foreign objects thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields while operating your tractor or performing any adjustments or repairs. We recommend a wide vision safety mask over spectacles or standard safety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

## HOW TO USE YOUR TRACTOR TO SET PARKING BRAKE

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



## STOPPING

### MOWER BLADES -

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

### GROUND DRIVE -

- To stop ground drive, depress clutch/brake pedal into full "BRAKE" position.
- Move gearshift lever to neutral (N) position.

### ENGINE -

- Move throttle control to slow position.

**NOTE:** Failure to move throttle control to slow position and allowing engine to idle 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.

## THROTTLE CONTROL

Always operate engine at full throttle.

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

## CHOKE CONTROL

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

- To engage choke control, pull knob out. Slowly push knob in to disengage.

## TO MOVE FORWARD AND BACKWARD

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

- Start tractor with clutch/brake pedal depressed and gearshift lever in neutral (N) position.
- Move gearshift and range shift levers to desired position.
- Slowly release clutch/brake pedal to start movement.

**IMPORTANT:** Bring tractor to a complete stop before shifting or changing gears. Failure to do so will shorten the useful life of your transaxle.

## TO ADJUST MOWER CUTTING HEIGHT

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.

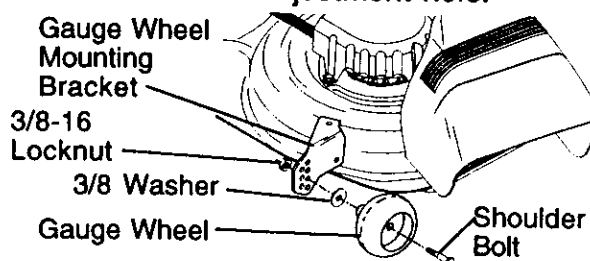
The cutting height range is approximately 1-1/2" to 4-1/2". The heights are measured from the ground to the blade tip with the engine not running. These heights are approximate and may vary depending upon soil conditions, height of grass and types of grass being mowed.

- 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.

### TO ADJUST GAUGE WHEELS

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.

- 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).
- With mower in desired height of cut position, gauge wheels should be assembled so they are slightly off the ground. Install gauge wheel in appropriate hole with shoulder bolt, 3/8 washer, and 3/8-16 locknut and tighten securely.
- Repeat for opposite side installing gauge wheel in same adjustment hole.



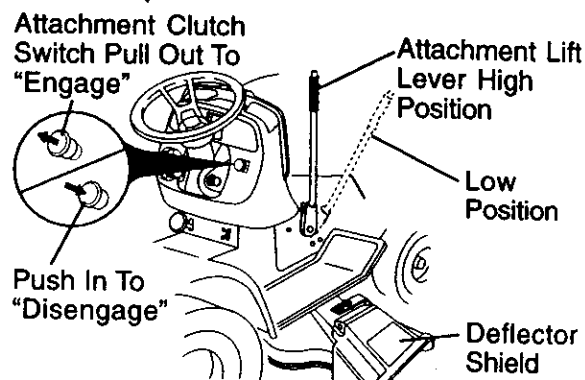
### TO OPERATE MOWER

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.

- 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.



### TO OPERATE ON HILLS

**CAUTION:** Do not drive up or down hills with slopes greater than 15° and do not drive across any slope. Use the slope guide provided at the back of this manual.

- Choose the slowest speed before starting up or down hills.
- Avoid stopping or changing speed on hills.
- If slowing is necessary, move throttle control lever to slower position.
- If stopping is absolutely necessary, push clutch/brake pedal quickly to brake position and engage parking brake.
- Move gearshift lever to 1st gear and range shift lever to low (L) position. Be sure you have allowed room for tractor to roll slightly as you restart movement.
- To restart movement, slowly release parking brake and clutch/brake pedal.
- Make all turns slowly.

### TO TRANSPORT

- Raise attachment lift to highest position with attachment lift control.
- When pushing or towing your tractor, be sure gearshift lever is in neutral (N) position.
- Do not push or tow tractor at more than five (5) MPH.

**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.
- Unthread and remove oil fill cap/dipstick; wipe oil off. Reinsert the dipstick into the tube and rest oil fill cap on the tube. Do not thread the cap onto the tube. 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. 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.

**IMPORTANT:** When operating in temperatures below 32°F(0°C), use fresh, clean winter grade gasoline to help insure good cold weather starting.

**⚠WARNING:** 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. 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.

**⚠CAUTION:** Fill to bottom of gas tank filler neck. Do not overfill. Wipe off any spilled oil or fuel. Do not store, spill or use gasoline near an open flame.

## TO START ENGINE

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.

- Sit on seat in operating position, depress clutch/brake pedal and set parking brake.
- Place gear shift lever in neutral (N) position.
- 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.

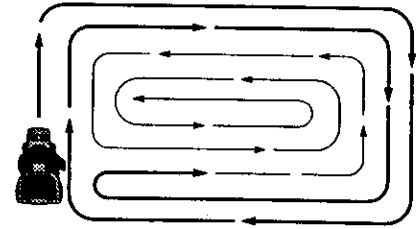
- The attachments can be used during the engine warm-up period and may require the choke control be pulled out slightly.

**NOTE:** 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.

### 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.
- Use the runner on the right side of the mower as a guide. The blade cuts approximately an inch outside the runner.
- 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.
- 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.

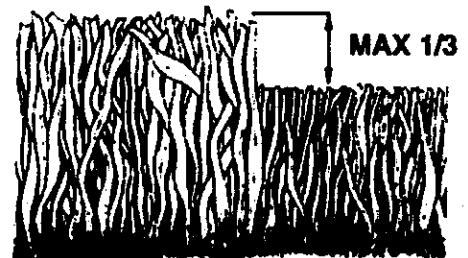
- When operating attachments, select a ground speed that will suit the terrain and give best performance of the attachment being used.



### MULCHING MOWING TIPS

**IMPORTANT:** For best performance, keep mower housing free of built-up grass and trash. Clean after each use.

- The special mulching blade will recut the grass clippings many times and reduce them in size so that as they fall onto the lawn they will disperse into the grass and not be noticed. Also, the mulched grass will biodegrade quickly to provide nutrients for the lawn. Always mulch with your highest engine (blade) speed as this will provide the best recutting action of the blades.
- Avoid cutting your lawn when it is wet. Wet grass tends to form clumps and interferes with the mulching action. The best time to mow your lawn is the early afternoon. At this time the grass has dried and the newly cut area will not be exposed to the direct sun.
- For best results, adjust the mower cutting height so that the mower cuts off only the top one-third of the grass blades. For extremely heavy mulching, reduce your width of cut on each pass and mow slowly.
- Certain types of grass and grass conditions may require that an area be mulched a second time to completely hide the clippings. When doing a second cut, mow across or perpendicular to the first cut path.
- Change your cutting pattern from week to week. Mow north to south one week then change to east to west the next week. This will help prevent matting and graining of the lawn.



# MAINTENANCE

MAINTENANCE SCHEDULE		FILL IN DATES AS YOU COMPLETE REGULAR SERVICE							SERVICE DATES						
TRACTOR	Check Brake Operation	✓	✓												
	Check Tire Pressure	✓	✓												
	Check Operator Presence and Interlock Systems	✓													
	Check for Loose Fasteners	✓				✓ <sub>7</sub>		✓							
	Sharpen/Replace Mower Blades			✓ <sub>4</sub>											
	Lubrication Chart			✓				✓							
	Check Battery Level			✓ <sub>6</sub>											
	Clean Battery and Terminals			✓				✓							
	Check Transaxle Cooling			✓											
	Adjust Blade Belt(s) Tension					✓ <sub>5</sub>									
	Adjust Motion Drive Belt(s) Tension					✓ <sub>5</sub>									
ENGINE	Check Engine Oil Level	✓	✓												
	Change Engine Oil			✓ <sub>1,2,3</sub>				✓							
	Clean Air Filter			✓ <sub>2</sub>											
	Clean Air Screen			✓ <sub>2</sub>											
	Inspect Muffler/Spark Arrester				✓										
	Replace Oil Filter (If equipped)					✓ <sub>1,2</sub>									
	Clean Engine Cooling Fins					✓ <sub>2</sub>									
	Replace Spark Plug					✓	✓								
	Replace Air Filter Paper Cartridge					✓ <sub>2</sub>									
	Replace Fuel Filter							✓							

- 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 - If equipped with oil filter, change oil every 50 hours.  
 4 - Replace blades more often when mowing in sandy soil.

- 5 - If equipped with adjustable system.  
 6 - Not required if equipped with maintenance-free battery.  
 7 - 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.

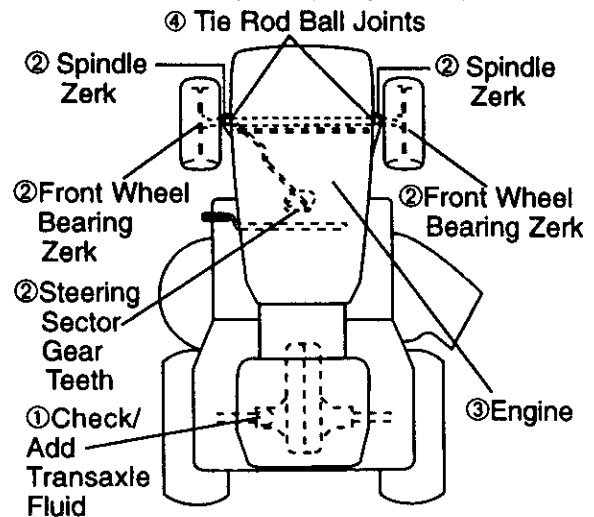
All adjustments in the Service and Adjustments section of this manual should be checked at least once each season.

- 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 interlock systems for proper operation.
- Check for loose fasteners.

## LUBRICATION CHART



- ① SAE 30 or 10w30 motor oil
- ② General Purpose Grease
- ③ Refer to Maintenance "ENGINE" Section
- ④ Spray silicone lubricant (Move Boots to Lubricate)

**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.

## TRACTOR

Always observe safety rules when performing any maintenance.

### BRAKE OPERATION

If tractor requires more than six (6) feet stopping distance at high speed in highest gear, then brake must be 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

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

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

### BLADE CARE

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

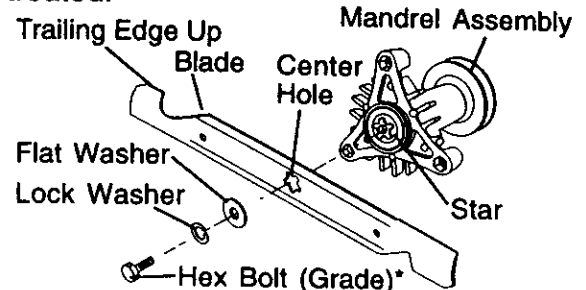
### BLADE REMOVAL

- Raise mower to highest position to allow access to blades.
- Remove hex bolt, lock washer and flat washer securing blade.
- Install new or resharpened blade with trailing edge up towards deck as shown.

**IMPORTANT:** To ensure proper assembly, center hole in blade must align with star on mandrel assembly.

- Reassemble hex bolt, lock washer and flat washer in exact order as shown.
- Tighten bolt securely (27-35 Ft. Lbs. torque).

**IMPORTANT:** Blade bolt is Grade 8 heat treated.



\*A Grade 8 heat treated bolt can be identified by six lines on the bolt head.

### TO SHARPEN BLADE

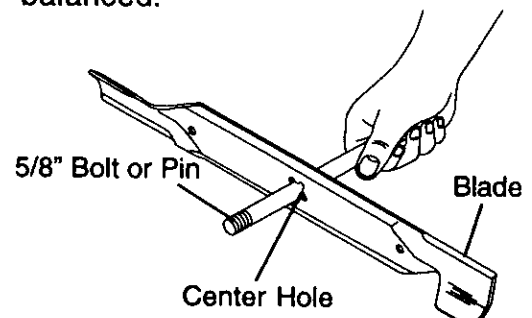
**NOTE:** We do not recommend sharpening blade - but if you do, be sure the blade is balanced.

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.



## 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 "REPLACING BATTERY" in the SERVICE AND ADJUSTMENTS section of this manual).

## V-BELTS

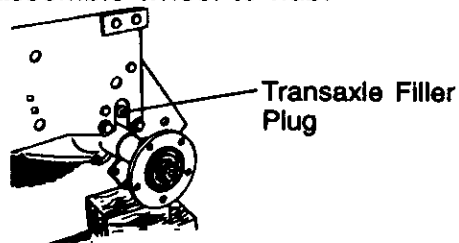
Check V-belts for deterioration and wear after 100 hours of operation and replace if necessary. The belts are not adjustable. Replace belts if they begin to slip from wear.

## TRANSAXLE COOLING

Keep transaxle free from build-up of dirt and chaff which can restrict cooling.

## CHECK TRANSAXLE OIL LEVEL

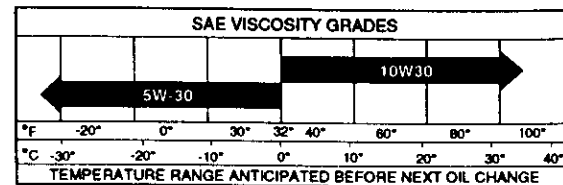
- Block up rear axle securely.
- Remove left rear wheel by removing hub bolts.
- Remove filler plug from transaxle. Oil level must be even with plug threads. If necessary, fill with SAE 30 motor oil, API SF, SG or SH. Replace filler plug.
- Reassemble wheel to hub.



## ENGINE

### LUBRICATION

Only use high quality detergent oil rated with API service classification SF, SG, or SH. Select the oil's SAE viscosity grade according to your expected operating temperature.



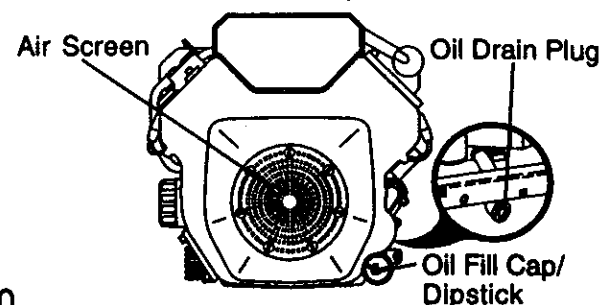
Change the oil after every 50 hours of operation or at least once a year if the tractor is not used for 50 hours in one year.

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

Determine temperature range expected before oil change. All oil must meet API service classification SF, SG, or SH.

- 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.
- Remove drain plug.
- After oil has drained completely, replace oil drain plug and tighten securely.
- 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. Insert dipstick into the tube and rest the oil fill cap on the tube. Do not thread the cap onto the tube when taking 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.

## 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.

## AIR FILTER

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.

- Loosen knob and remove cover.

### TO SERVICE PRE-CLEANER

- Slide foam pre-cleaner off cartridge.
- Wash it in liquid detergent and water.
- Squeeze it dry in a clean cloth. Allow it to dry.
- Saturate it in engine oil. Wrap it in clean, absorbent cloth and squeeze to remove excess oil.

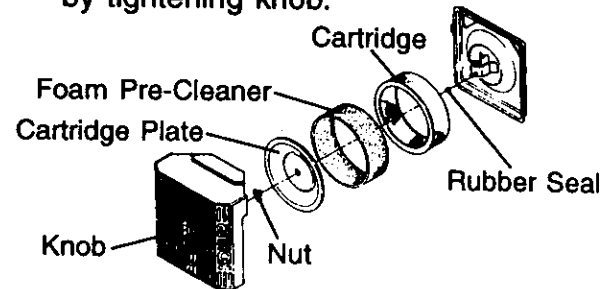
### TO SERVICE CARTRIDGE

- Replace a dirty, bent, or damaged cartridge.

**NOTE:** Do not wash the paper cartridge or use pressurized air, as this will damage the cartridge.

- Remove nut and cartridge plate.
- Reinstall the pre-cleaner (cleaned and oiled) over the paper cartridge.

- Check rubber seal for damage and proper position around stud. Replace if necessary.
- Reassemble air cleaner, cartridge plate, and nut.
- Reinstall air cleaner cover and secure by tightening knob.



## MUFFLER

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

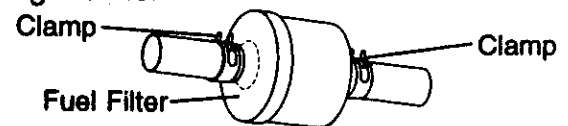
## SPARK PLUGS

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

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.



## 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 to clean your tractor unless the electrical system, muffler, air filter and carburetor are covered to keep water out. Water in engine can result in a shortened engine life.

## SERVICE AND ADJUSTMENTS

### **⚠ CAUTION:** Before performing any service or adjustments:

- Depress clutch/brake pedal fully and set parking brake.
- Place gearshift lever in neutral (N) position.
- Place attachment clutch in "DISENGAGED" position.
- Turn ignition key "OFF" 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

- Place attachment clutch in "DISENGAGED" position.
- Turn height adjustment knob to lowest setting.
- Lower mower to its lowest position.
- Remove retainer spring holding anti-swaybar to chassis bracket and disengage anti-swaybar from bracket.
- Remove retainer springs from suspension arms at deck and disengage arms from deck.
- Raise attachment lift to its highest position.
- Remove two retainer springs from each front link and remove links.
- Slide mower forward and remove belt from electric clutch pulley.
- Slide mower out from under right side of tractor.

**IMPORTANT:** If an attachment other than the mower deck is to be mounted on the tractor, remove the front links.

#### TO INSTALL MOWER

Follow procedure described in "INSTALL MOWER AND DRIVE BELT" in the Assembly section of this manual.

#### TO LEVEL MOWER HOUSING

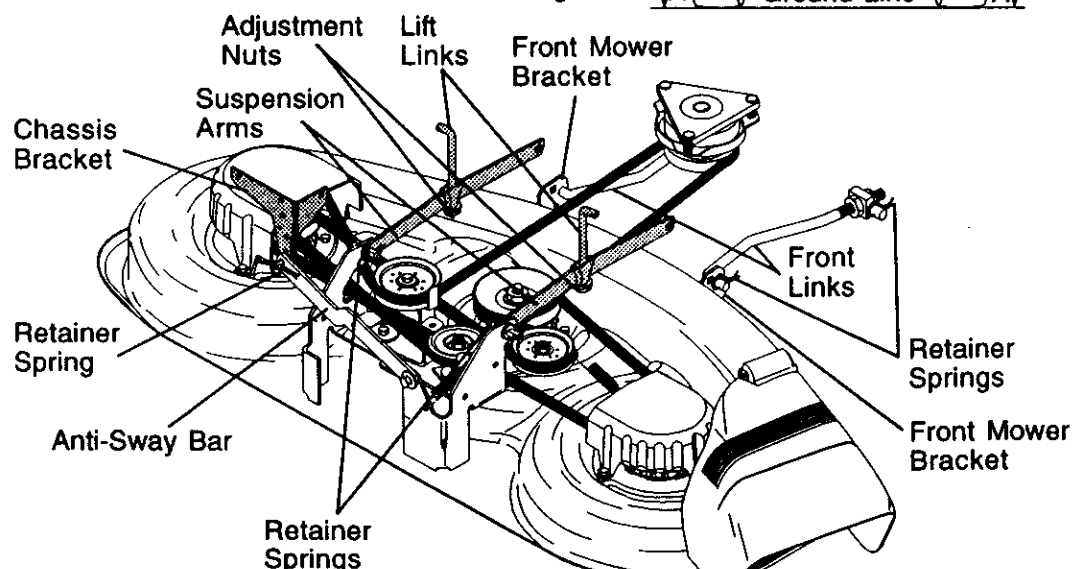
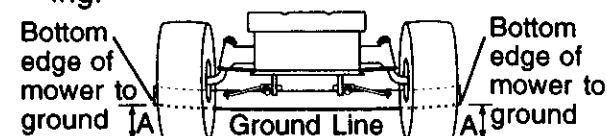
Adjust the mower while tractor is parked on level ground or driveway. Make sure tires are properly inflated (See "PRODUCT SPECIFICATIONS" section of this manual). If tires are over or underinflated, you will not properly adjust your mower.

#### SIDE-TO-SIDE ADJUSTMENT

- Raise mower to its highest position.
- Measure height from bottom of deck curl 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.



## FRONT-TO-BACK ADJUSTMENT

**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.

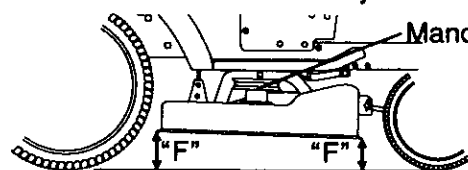
To obtain the best cutting results, the mower housing should be adjusted so the front is approximately 1/8" to 1/2" lower than the rear when the mower is in its highest position.

Check adjustment on right side of tractor. Measure distance "F" directly in front of and behind the mandrel at bottom edge of mower housing as shown.

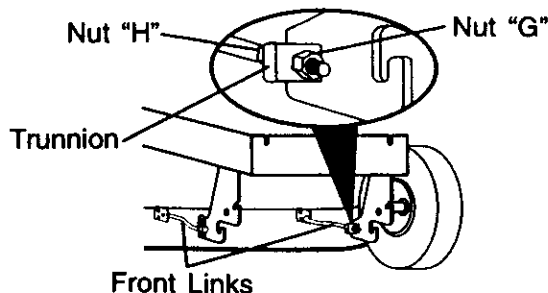
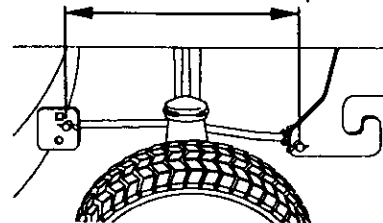
- Before making any necessary adjustments, check that both front links are equal in length.
- If links are not equal in length, adjust one link to same length as other link.
- To lower front of mower housing, loosen nut "G" on both front links an equal number of turns.
- When distance "F" is 1/8" to 1/2" lower at front than rear, tighten nut "H" against trunnion on both front links.
- To raise front of mower housing, loosen nut "H" from trunnion on both front links. Tighten nut "G" on both front links an equal number of turns.
- When distance "F" is 1/8" to 1/2" lower at front than rear, tighten nut "H" against trunnion on both front links.

**NOTE:** Each full turn of nut "G" will change dim. "F" by approximately 3/8".

- Recheck side-to-side adjustment.



Both Front Links Should be Equal in Length



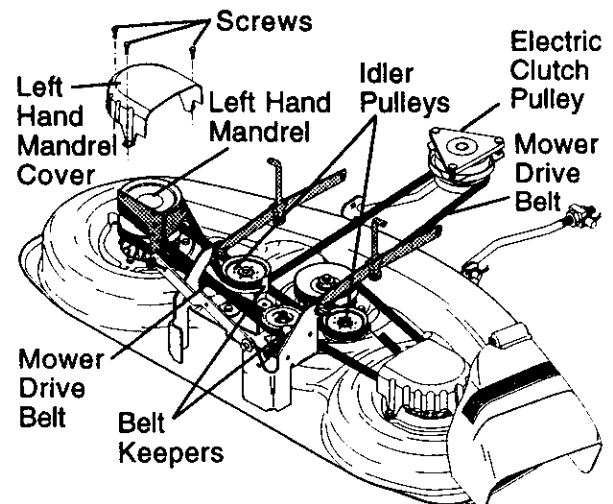
## TO REPLACE MOWER DRIVE BELT

### MOWER DRIVE BELT REMOVAL

- Park tractor on a level surface. Engage parking brake.
- Remove screws from left hand mandrel cover and remove cover.
- Roll belt over the top of left hand mandrel pulley.
- Remove belt from electric clutch pulley.
- Remove belt from idler pulleys.
- Remove any dirt or grass clippings which may have accumulated around mandrels and entire upper deck surface.
- Check primary idler arm and two idlers to see that they rotate freely.
- Be sure spring is securely hooked to primary idler arm and bolt in mower housing.

### MOWER DRIVE BELT INSTALLATION

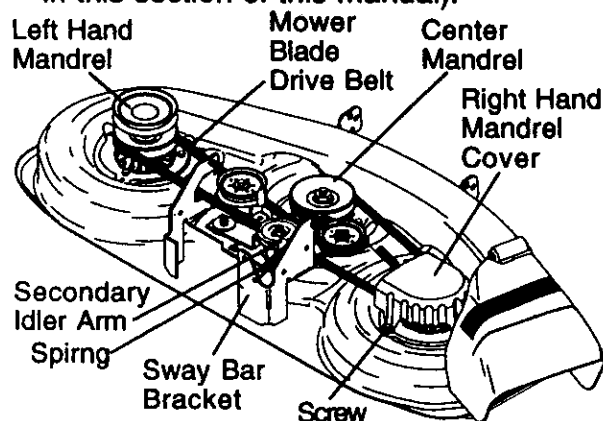
- Install belt in both idlers. Make sure belt is in both belt keepers at the idlers as shown.
- Install new belt onto electric clutch pulley.
- Roll belt into upper groove of left hand mandrel pulley.
- Carefully check belt routing making sure belt is in the grooves correctly and inside belt keepers.
- Reassemble left hand mandrel cover.



## TO REPLACE MOWER BLADE DRIVE BELT

Park the tractor on level surface. Engage parking brake.

- Remove mower drive belt (See "TO REPLACE MOWER DRIVE BELT" in this section of this manual).
- Remove mower (See "TO REMOVE MOWER" in this section of this manual).
- Remove screws from R.H. mandrel cover and remove cover. Unhook spring from bolt on mower housing.
- Carefully roll belt off R.H. mandrel pulley.
- Remove belt from center mandrel pulley, idler pulley, and L.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 to see that they rotate freely.
- Be sure spring is hooked in secondary idler arm and sway-bar bracket.
- Install new belt in lower groove of L.H. mandrel pulley, idler pulley, and center mandrel pulley as shown.
- Roll belt over R.H. mandrel pulley. Make sure belt is in all grooves properly.
- Reconnect spring to bolt in mower housing and reinstall R.H. mandrel cover.
- Reinstall mower to tractor (See "INSTALL MOWER AND DRIVE BELT" in the Assembly section of this manual).
- Reassemble mower drive belt (See "TO REPLACE MOWER DRIVE BELT" in this section of this manual).

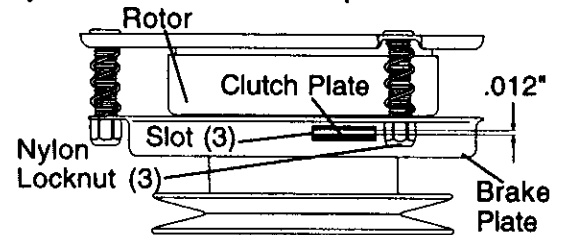


## TO ADJUST ATTACHMENT CLUTCH

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 the 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.



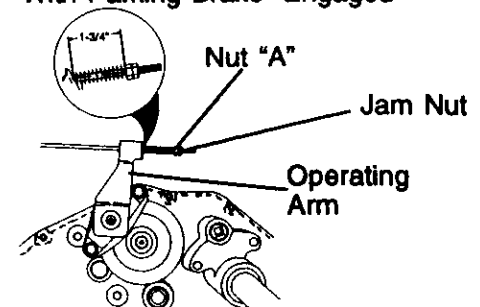
## TO ADJUST BRAKE

Your tractor is equipped with an adjustable brake system which is mounted on the left side of the transaxle.

If tractor requires more than six (6) feet stopping distance at high speed in highest gear, then brake must be adjusted.

- Depress clutch/brake pedal and engage parking brake.
- Measure distance between brake operating arm and nut "A" on brake rod.
- If distance is other than 1-3/4", loosen jam nut and turn nut "A" until distance becomes 1-3/4". Retighten jam nut against nut "A".
- Road test tractor for proper stopping distance as stated above. Readjust if necessary. If stopping distance is still greater than six (6) feet in highest gear, further maintenance is necessary. Contact your nearest authorized service center/department.

With Parking Brake "Engaged"





## TO REPLACE MOTION DRIVE BELT

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. It is not necessary to remove mower.

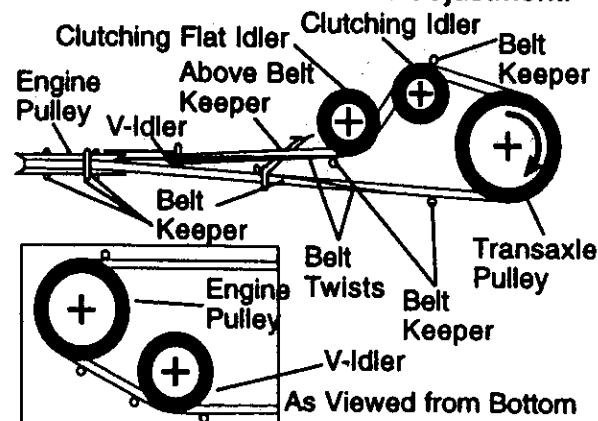
### BELT REMOVAL -

- Engage parking brake (creates slack in belt).
- Remove mower drive belt from electric clutch pulley only (See "TO REPLACE MOWER DRIVE BELT" in this section of this manual).
- Roll motion drive belt off transaxle pulley.
- Roll belt off clutching idler pulleys, then off engine pulley and front V-idler pulley.
- Pull belt out of all belt keepers.

### BELT INSTALLATION -

- Place V part of belt into grooves on engine pulley and front V-idler, making sure to route belt inside of belt keepers.
- Put belt coming from V-idler above midspan belt keeper, then onto clutching idler pulleys as shown.
- Make sure V part of belt engages V-idler.
- Place belt around transaxle pulley, beginning at top. V part of belt should engage transaxle pulley.
- Place long lower section of belt through loop in midspan belt keeper.
- Check to be sure belt is on proper side of all belt keepers.
- Reinstall mower drive belt onto electric clutch pulley.

**IMPORTANT:** Check brake adjustment.



## 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 ADJUSTMENT

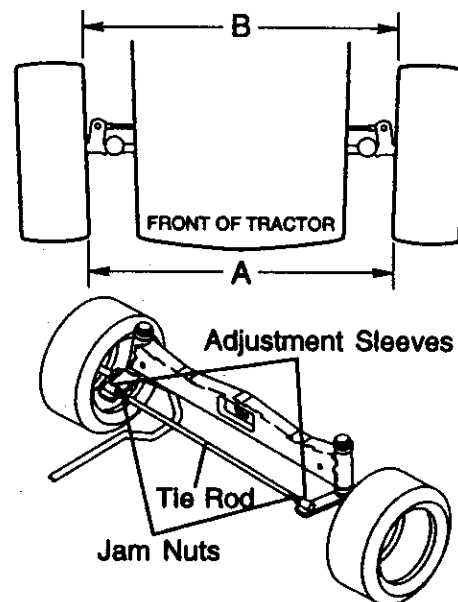
Front wheel toe-in is required for proper steering operation. Toe-in was set at the factory and adjustment should not be necessary. If parts in the front axle or steering mechanism have been replaced or damaged, check toe-in and adjust if necessary.

### TO CHECK TOE-IN

- Position front wheels straight ahead.
- Measure distance between wheels at front and rear of tires (dimensions "A" and "B").
- Front dimension "A" should be 1/8" to 1/4" less than rear dimension "B".

### TO ADJUST TOE-IN

- Loosen jam nuts at adjustment sleeves on tie rod.
- Adjust tie rod until dimension "A" is 1/8" to 1/4" less than dimension "B".
- Tighten jam nuts securely.



### FRONT WHEEL CAMBER

The front wheel camber is not adjustable on your tractor. If damage has occurred to affect the front wheel camber, contact your nearest authorized service center/department.

## TO REMOVE WHEEL FOR REPAIRS

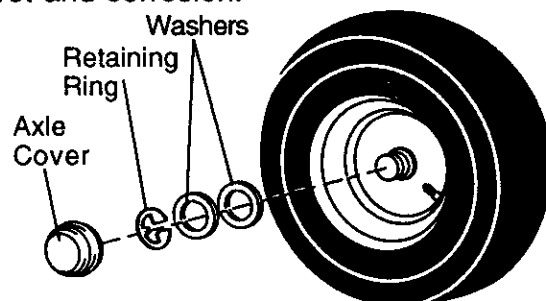
### FRONT WHEEL

- 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.



## TO START ENGINE WITH A WEAK BATTERY

**CAUTION:** 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 negative grounded system. The other vehicle must also be a 12 volt negative grounded system. Do not use your tractor battery to start other vehicles.

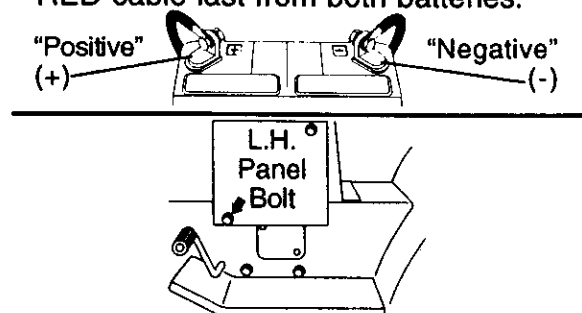
### TO ATTACH JUMPER CABLES -

- Connect each end of the RED cable to the POSITIVE (+) terminal of each battery, taking care not to short against chassis.
- Connect one end of the BLACK cable to the NEGATIVE (-) terminal of fully charged battery.

- Connect the other end of the BLACK cable 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.

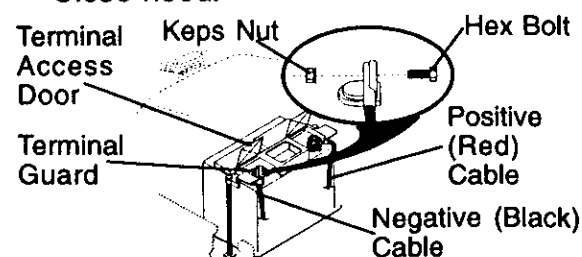


## REPLACING BATTERY

**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.
- Remove terminal guard.
- Disconnect BLACK battery cable then RED battery cable and carefully remove battery from tractor.
- Install new battery with terminals in same position as old battery.
- Reinstall terminal guard.
- 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.
- Close hood.



## 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.

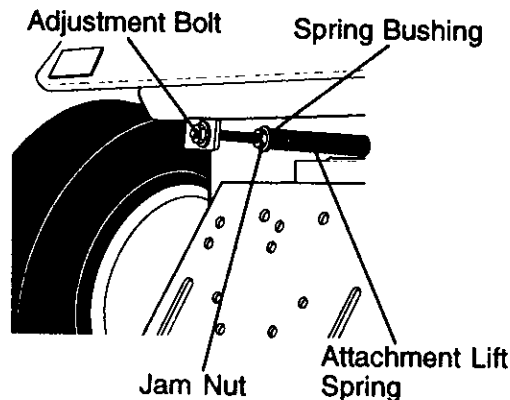
## TO REPLACE FUSE

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

## TO ADJUST ATTACHMENT LIFT SPRING

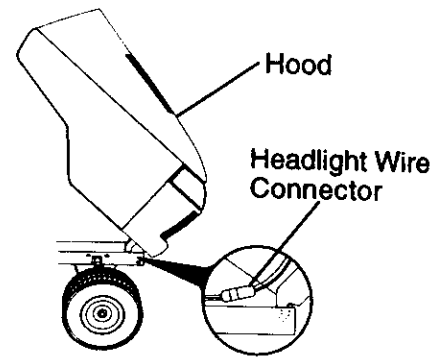
- While holding spring bushing with wrench, loosen jam nut.
- Turn adjustment bolt clockwise to extend spring and reduce lift effort for heavier attachments.
- Turn adjustment bolt counterclockwise for lighter attachments.
- Retighten jam nut against spring bushing.

**IMPORTANT:** Do not adjust for maximum spring tension when using light attachments such as a mower. Adjust lift lever spring to aid in lifting attachment. Do not overpower spring. When removing attachment, always adjust spring tension to its lowest position.



## TO REMOVE HOOD AND GRILL ASSEMBLY

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



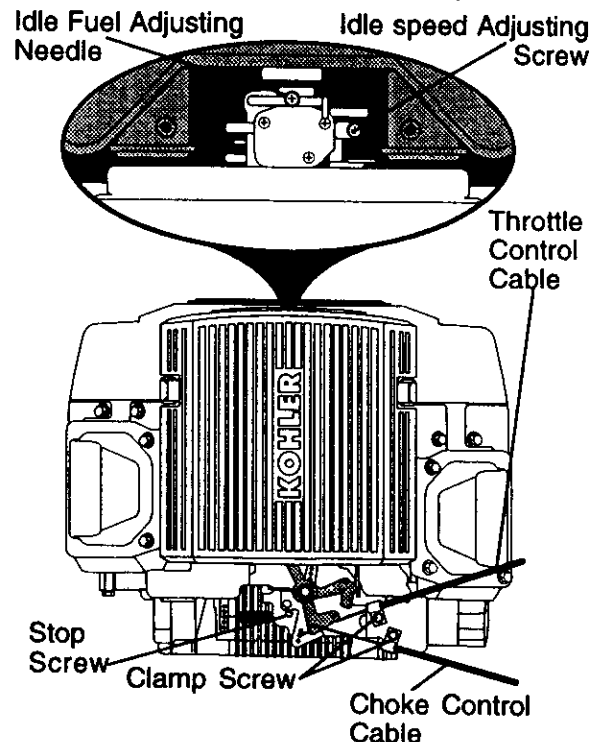
## ENGINE

Maintenance, repair, or replacement of the emission control devices and systems, which are being done at the customer's expense, may be performed by any non-road engine repair establishment or individual. Warranty repairs must be performed by an authorized engine manufacturer's service outlet.

## TO ADJUST THROTTLE CONTROL CABLE

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:

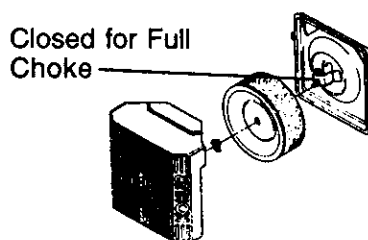
- With engine not running, move throttle control lever to fast position.
- Check that speed control lever is against stop screw. If it is not, loosen casing clamp screw and pull throttle cable until lever is against screw. Tighten clamp screw securely.



## TO ADJUST CHOKE CONTROL

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.
- Remove air cleaner cover, filter and cartridge plate to expose carburetor choke (See "AIR FILTER" in the Maintenance section of this manual).
- 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.
- Reassemble air cleaner.



## TO ADJUST CARBURETOR

The carburetor has been preset at the factory and adjustment should not be necessary. However, minor adjustment may be required to compensate for differences in fuel, temperature, altitude or load. If the carburetor does need adjustment, proceed as follows:

In general, turning the adjusting needles **in** (clockwise) decreases the supply of fuel to the engine giving a leaner fuel/air mixture. Turning the adjusting needles **out** (counterclockwise) increases the supply of fuel to the engine giving a richer fuel/air mixture.

**IMPORTANT:** Damage to the needles and the seats in carburetor may result if screw is turned in too tight.

### PRELIMINARY SETTING -

- Be sure you have a clean air filter, and the throttle control cable is adjusted properly (see "TO ADJUST THROTTLE CONTROL CABLE" in the Service and Adjustments section of this manual).
- With engine off turn idle fuel adjusting needle **in** (clockwise) closing it finger tight and then turn **out** (counterclockwise) 1 turn.

### FINAL SETTING -

- Start engine and allow to warm for five minutes. Make final adjustments with engine running and shift/motion control lever in neutral (N) position.

- The high idle is set at the factory and cannot be adjusted.
- **Idle speed setting** - With throttle control lever in slow position, engine should idle at 1200 RPM. If engine idles too slow or fast, turn idle speed adjusting screw in or out until correct idle is attained.
- **Idle fuel needle setting** - With throttle control lever in slow position, turn idle fuel adjusting needle **in** (clockwise) until engine speed decreases and then turn **out** (counterclockwise) approximately 3/4 turn to obtain the best low speed performance.
- Recheck idle speed. Readjust if necessary.

### ACCELERATION TEST -

- Move throttle control lever from slow to fast position. If engine hesitates or dies turn idle fuel adjusting needle **out** (counterclockwise) 1/8 turn. Repeat test and continue to adjust, if necessary, until engine accelerates smoothly.

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-governor 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.

**⚠ CAUTION:** 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.

- Drain the fuel tank.
- Start 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 drain 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 CHART

PROBLEM	CAUSE	CORRECTION
<b>Will not start</b>	<ul style="list-style-type: none"> <li>• Out of fuel.</li> <li>• Engine not "CHOKED" properly.</li> <li>• Engine flooded.</li> <li>• Bad spark plug.</li> <li>• Dirty air filter.</li> <li>• Dirty fuel filter.</li> <li>• Water in fuel.</li> <li>• Loose or damaged wiring.</li> <li>• Carburetor out of adjustment.</li> <li>• Engine valves out of adjustment.</li> </ul>	<ul style="list-style-type: none"> <li>• Fill fuel tank.</li> <li>• See "TO START ENGINE" in Operation section.</li> <li>• Wait several minutes before attempting to start.</li> <li>• Replace spark plug.</li> <li>• Clean/replace air filter.</li> <li>• Replace fuel filter.</li> <li>• Drain fuel tank and carburetor, refill tank with fresh gasoline and replace fuel filter.</li> <li>• Check all wiring.</li> <li>• See "To Adjust Carburetor" in Service Adjustments section.</li> <li>• Contact an authorized service center/department.</li> </ul>
<b>Hard to start</b>	<ul style="list-style-type: none"> <li>• Dirty air filter.</li> <li>• Bad spark plug.</li> <li>• Weak or dead battery.</li> <li>• Dirty fuel filter.</li> <li>• Stale or dirty fuel.</li> <li>• Loose or damaged wiring.</li> <li>• Carburetor out of adjustment.</li> <li>• Engine valves out of adjustment.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean/replace air filter.</li> <li>• Replace spark plug.</li> <li>• Recharge or replace battery.</li> <li>• Replace fuel filter.</li> <li>• Drain fuel tank and refill with fresh gasoline.</li> <li>• Check all wiring.</li> <li>• See "To Adjust Carburetor" in Service Adjustments section.</li> <li>• Contact an authorized service center/department.</li> </ul>
<b>Engine will not turn over</b>	<ul style="list-style-type: none"> <li>• Clutch/brake pedal not depressed.</li> <li>• Attachment clutch is engaged.</li> <li>• Weak or dead battery.</li> <li>• Blown fuse.</li> <li>• Corroded battery terminals.</li> <li>• Loose or damaged wiring.</li> <li>• Faulty ignition switch.</li> <li>• Faulty solenoid or starter.</li> <li>• Faulty operator presence switch(es).</li> </ul>	<ul style="list-style-type: none"> <li>• Depress clutch/brake pedal.</li> <li>• Disengage attachment clutch.</li> <li>• Recharge or replace battery.</li> <li>• Replace fuse.</li> <li>• Clean battery terminals.</li> <li>• Check all wiring.</li> <li>• Check/replace ignition switch.</li> <li>• Check/replace solenoid or starter.</li> <li>• Contact an authorized service center/department.</li> </ul>

## TROUBLESHOOTING CHART

PROBLEM	CAUSE	CORRECTION
<b>Engine clicks but will not start</b>	<ul style="list-style-type: none"> <li>• Weak or dead battery.</li> <li>• Corroded battery terminals.</li> <li>• Loose or damaged wiring.</li> <li>• Faulty solenoid or starter.</li> </ul>	<ul style="list-style-type: none"> <li>• Recharge or replace battery.</li> <li>• Clean battery terminals.</li> <li>• Check all wiring.</li> <li>• Check/replace solenoid or starter.</li> </ul>
<b>Loss of power</b>	<ul style="list-style-type: none"> <li>• Cutting too much grass/too fast.</li> <li>• Throttle in "CHOKE" position.</li> <li>• Build-up of grass, leaves and trash under mower.</li> <li>• Dirty air filter.</li> <li>• Low oil level/dirty oil.</li> <li>• Faulty spark plug.</li> <li>• Dirty fuel filter.</li> <li>• Stale or dirty fuel.</li> <li>• Water in fuel.</li> <li>• Spark plug wire loose.</li> <li>• Dirty engine air screen/fins.</li> <li>• Dirty/clogged muffler.</li> <li>• Loose or damaged wiring.</li> <li>• Carburetor out of adjustment.</li> <li>• Engine valves out of adjustment.</li> </ul>	<ul style="list-style-type: none"> <li>• Set in "Higher Cut" position/ reduce speed.</li> <li>• Adjust throttle control.</li> <li>• Clean underside of mower housing.</li> <li>• Clean/replace air filter.</li> <li>• Check oil level/change oil.</li> <li>• Clean and regap or change spark plug.</li> <li>• Replace fuel filter.</li> <li>• Drain fuel tank and refill with fresh gasoline.</li> <li>• Drain fuel tank and carburetor, refill tank with fresh gasoline and replace fuel filter.</li> <li>• Connect and tighten spark plug wire.</li> <li>• Clean engine air screen/fins.</li> <li>• Clean/replace muffler.</li> <li>• Check all wiring.</li> <li>• See "To Adjust Carburetor" in Service Adjustments section.</li> <li>• Contact an authorized service center/department.</li> </ul>
<b>Excessive vibration</b>	<ul style="list-style-type: none"> <li>• Worn, bent or loose blade.</li> <li>• Bent blade mandrel.</li> <li>• Loose/damaged part(s).</li> </ul>	<ul style="list-style-type: none"> <li>• Replace blade.</li> <li>• Tighten blade bolt.</li> <li>• Replace blade mandrel.</li> <li>• Tighten loose part(s).</li> <li>• Replace damaged parts.</li> </ul>
<b>Engine continues to run when operator leaves seat with attachment clutch engaged</b>	<ul style="list-style-type: none"> <li>• Faulty operator-safety presence control system.</li> </ul>	<ul style="list-style-type: none"> <li>• Check wiring, switches and connections. If not corrected, contact an authorized service center/department.</li> </ul>

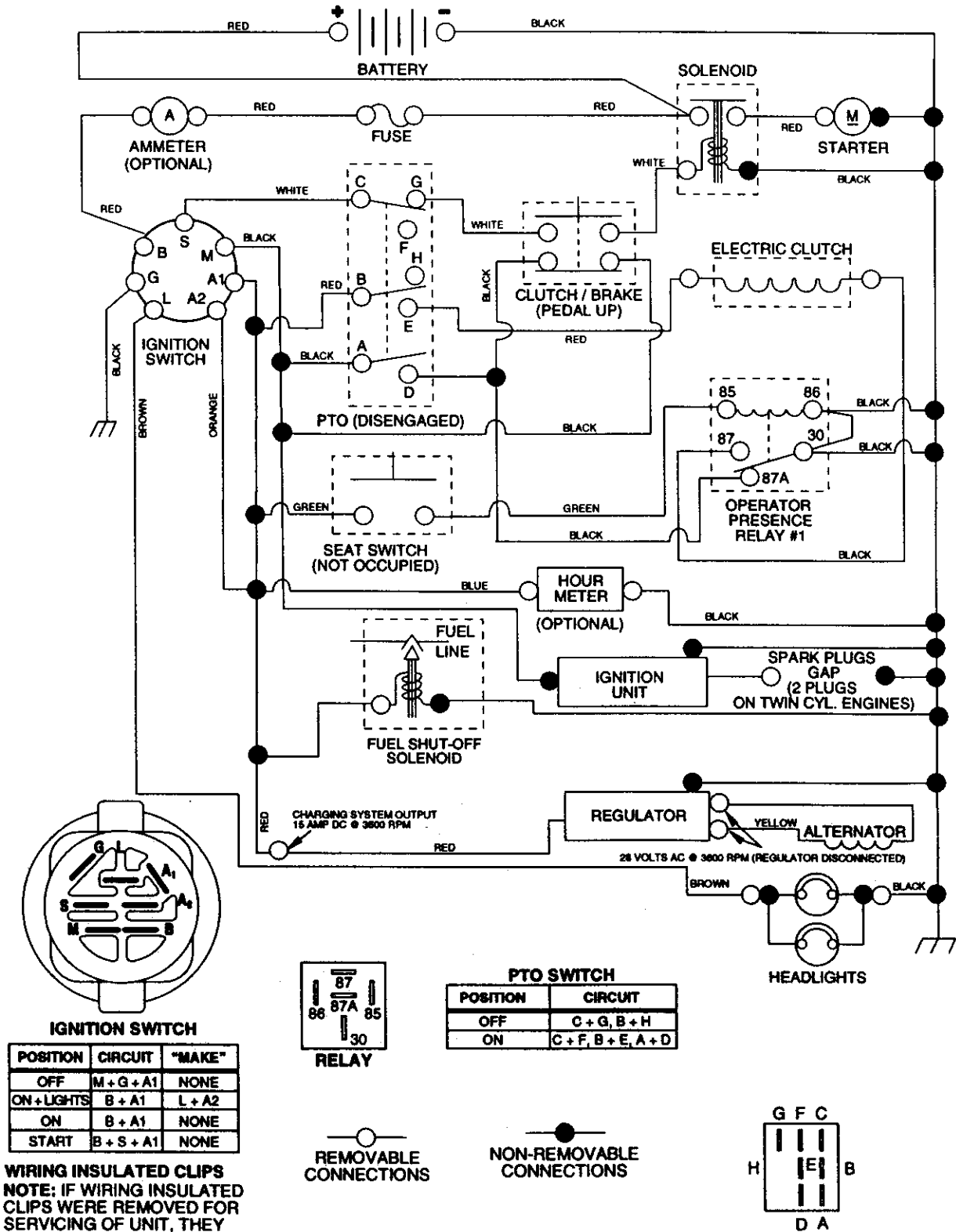
## TROUBLESHOOTING CHART

PROBLEM	CAUSE	CORRECTION
Poor cut - uneven	<ul style="list-style-type: none"> <li>Worn, bent or loose blade.</li> <li>Mower deck not level.</li> <li>Buildup of grass, leaves, and trash under mower.</li> <li>Bent blade mandrel.</li> <li>Clogged mower deck vent holes from buildup of grass, leaves, and trash around mandrels.</li> </ul>	<ul style="list-style-type: none"> <li>Replace blade. Tighten blade bolt.</li> <li>Level mower deck.</li> <li>Clean underside of mower housing.</li> <li>Replace blade mandrel.</li> <li>Clean around mandrels to open vent holes.</li> </ul>
Mower blades will not rotate	<ul style="list-style-type: none"> <li>Obstruction in clutch mechanism.</li> <li>Worn/damaged mower drive belt.</li> <li>Frozen idler pulley.</li> <li>Frozen blade mandrel.</li> </ul>	<ul style="list-style-type: none"> <li>Remove obstruction.</li> <li>Replace mower drive belt.</li> <li>Replace idler pulley.</li> <li>Replace blade mandrel.</li> </ul>
Poor grass discharge	<ul style="list-style-type: none"> <li>Engine speed too slow.</li> <li>Travel speed too fast.</li> <li>Wet grass.</li> <li>Mower deck not level.</li> <li>Low/uneven tire air pressure.</li> <li>Worn, bent or loose blade.</li> <li>Buildup of grass, leaves and trash under mower.</li> <li>Mower drive belt worn.</li> <li>Blades improperly installed.</li> <li>Improper blades used.</li> <li>Clogged mower deck vent holes from buildup of grass, leaves, and trash around mandrels.</li> </ul>	<ul style="list-style-type: none"> <li>Place throttle control in "FAST" position.</li> <li>Shift to slower speed.</li> <li>Allow grass to dry before mowing.</li> <li>Level mower deck.</li> <li>Check tires for proper air pressure.</li> <li>Replace/sharpen blade. Tighten blade bolt.</li> <li>Clean underside of mower housing.</li> <li>Replace mower drive belt.</li> <li>Reinstall blades sharp edge down.</li> <li>Replace with blades listed in this manual.</li> <li>Clean around mandrels to open vent holes.</li> </ul>
Headlight(s) not working (if so equipped)	<ul style="list-style-type: none"> <li>Switch is "OFF".</li> <li>Bulb(s) burned out.</li> <li>Faulty light switch.</li> <li>Loose or damaged wiring.</li> <li>Blown fuse.</li> </ul>	<ul style="list-style-type: none"> <li>Turn switch "ON".</li> <li>Replace bulb(s).</li> <li>Check/replace light switch.</li> <li>Check wiring and connections.</li> <li>Replace fuse.</li> </ul>
Battery will not charge	<ul style="list-style-type: none"> <li>Bad battery cell(s).</li> <li>Poor cable connections.</li> <li>Faulty regulator (if so equipped).</li> <li>Faulty alternator.</li> </ul>	<ul style="list-style-type: none"> <li>Replace battery.</li> <li>Check/clean all connections.</li> <li>Replace regulator.</li> <li>Replace alternator.</li> </ul>
Engine "backfires" when turning engine "OFF"	<ul style="list-style-type: none"> <li>Engine throttle control not set at "SLOW" position for 30 seconds before stopping engine.</li> </ul>	<ul style="list-style-type: none"> <li>Move throttle control to "SLOW" position and allow to idle for 30 seconds before stopping engine.</li> </ul>



# TRACTOR -- MODEL NUMBER 917.272951

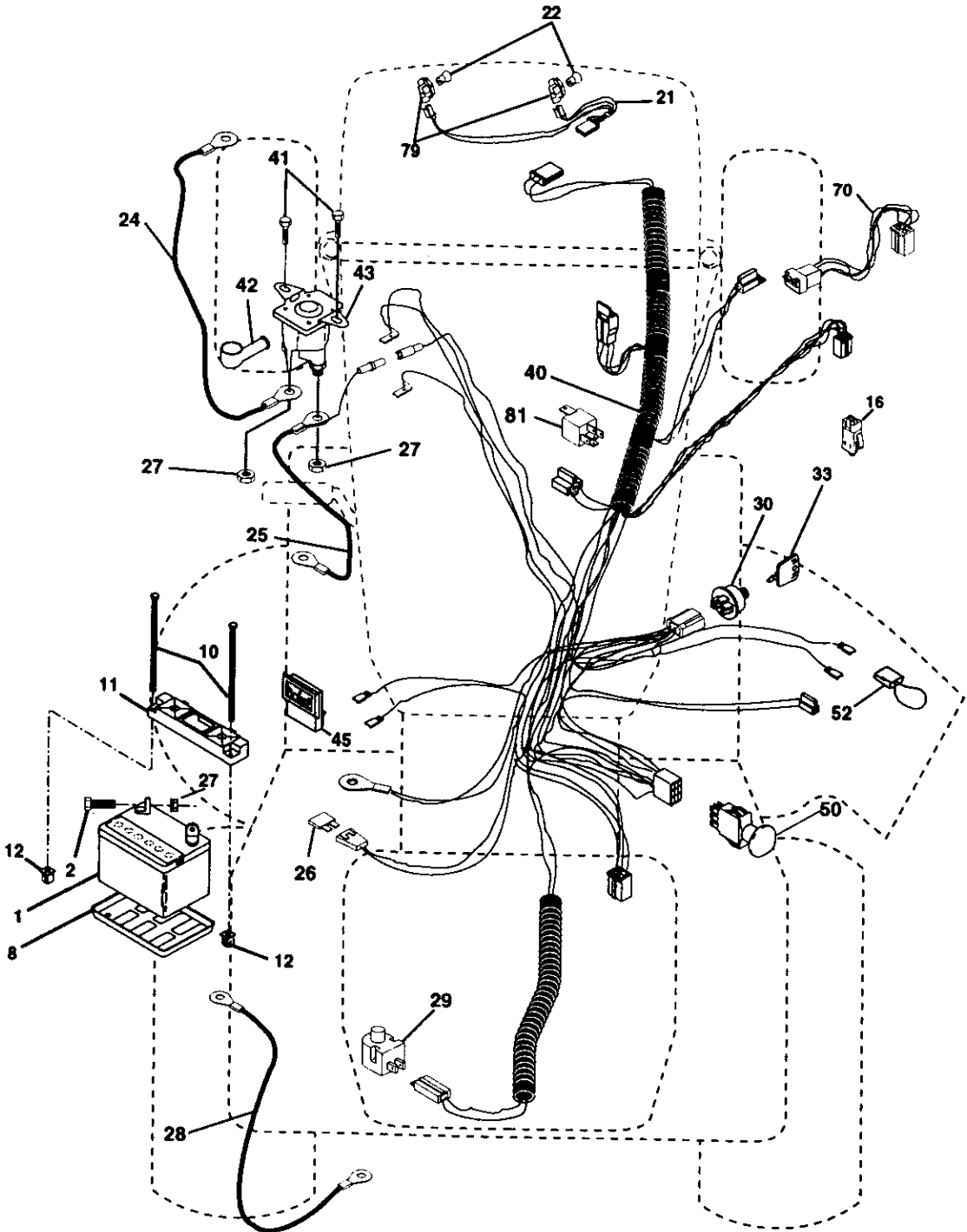
## SCHEMATIC



## REPAIR PARTS

**ELECTRICAL** **TRACTOR -- MODEL NUMBER 917.272951**

## ELECTRICAL



## TRACTOR -- MODEL NUMBER 917.272951

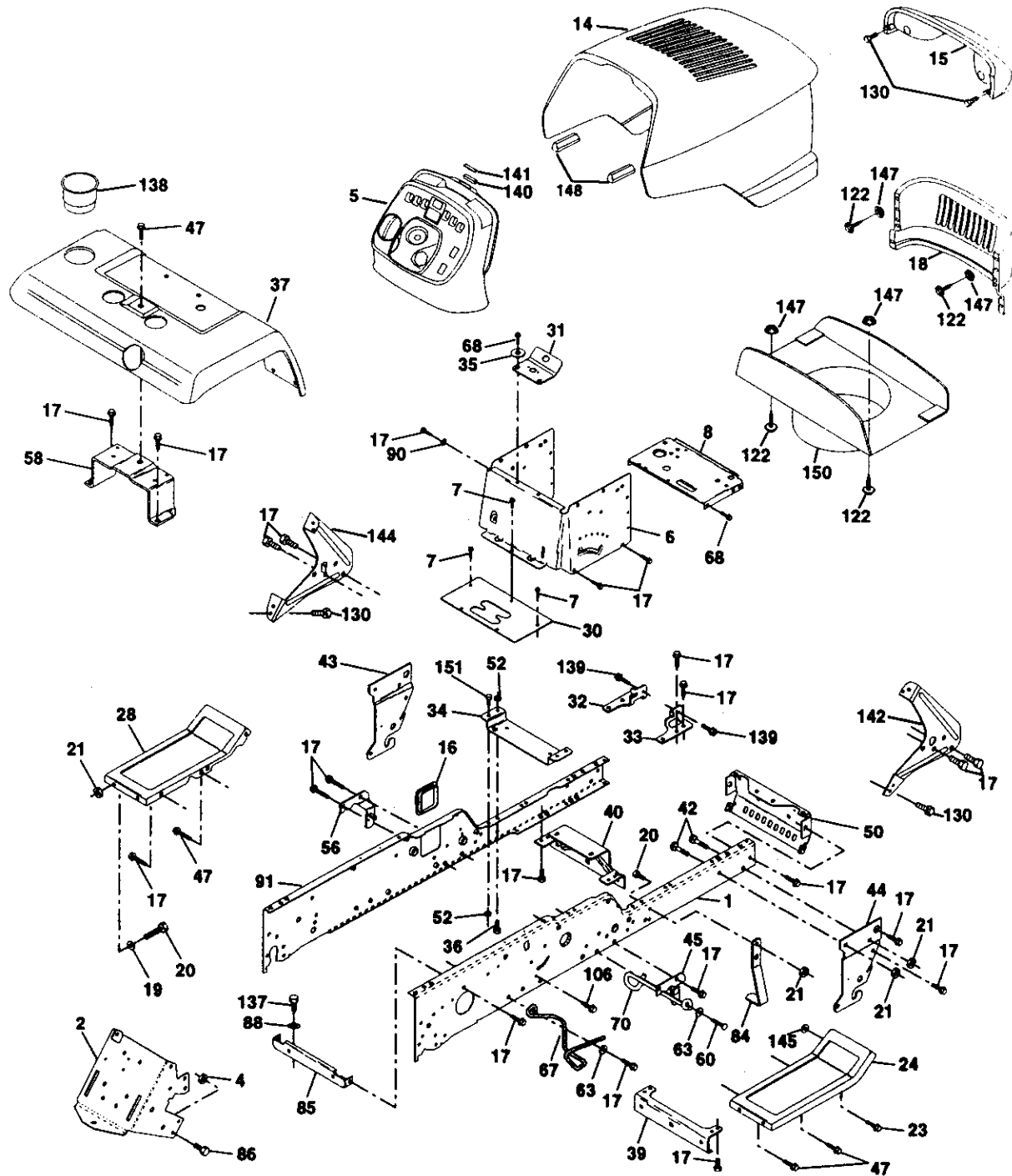
### ELECTRICAL

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 1/4-20 x 7.5 Zinc
11	150109	Hold down Battery Dash Mount
12	145769	Nut Push Nylon 1/4"
16	153664	Switch Interlock Push-In
21	166184	Harness Socket Light W/4152J
22	4152J	Bulb Light
24	4014J	Cable, Battery
25	146686	Cable, Battery
26	108824X	Fuse
27	73510400	Nut Keps Hex 1/4-20 Unc
28	170697	Cable, Ground
29	160784	Switch, Plunger
30	163968	Switch, Ign
33	140403	Key, Ignition
40	170238	Harness Ign.
41	17720408	Screw 1/4-20 x 1/2
42	131563	Cover, Terminal
43	145673	Solenoid
45	122822X	Ammeter
50	169416	Switch, PTO
52	141940	Protection Wire Loop
70	170251	Harness Engine
79	163996	Bulbholder Asm. Incandescent
81	109748X	Relay Asm.

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

# TRACTOR--MODEL NUMBER 917.272951

## CHASSIS AND ENCLOSURES



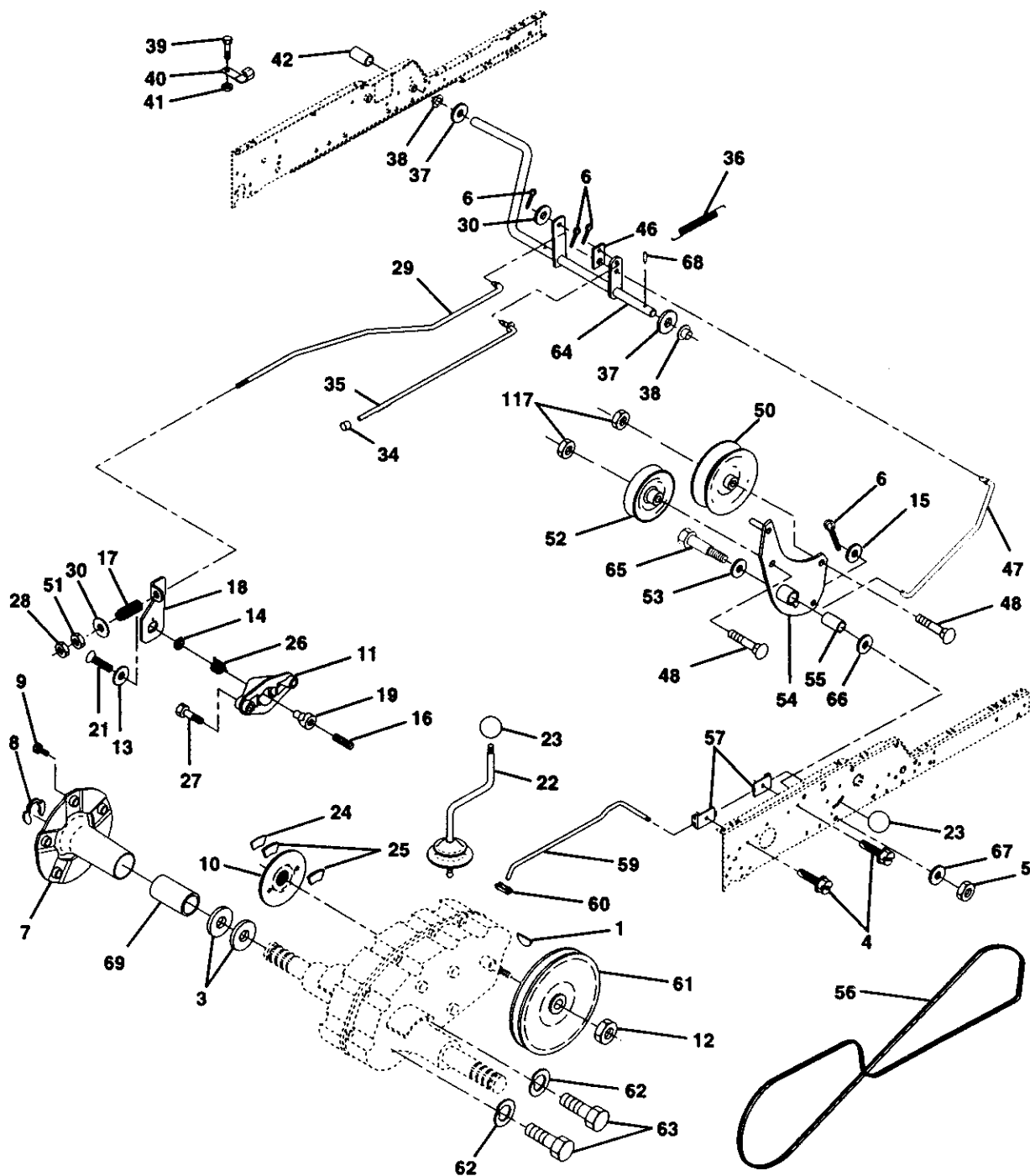
# TRACTOR -- MODEL NUMBER 917.272951

## CHASSIS AND ENCLOSURES

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	150253	Rail, Frame RH	50	152728	Bracket, Chassis Front
2	140506	Drawbar, Gt	52	STD541431	Nut, Crownlock 5/16-18 Unc
4	73680700	Nut, Crownlock Hex 7/16-14 unc	56	154914	Bracket Asm., Susp Chassis Lh
5	163976	Dash YTGT 2 Cyl	58	137113	Bracket Asm., Fender
6	157882	Dash, Lower Vgt One Piece	60	17060620	Screw 3/8-16 x 1-1/4
7	17720408	Screw, Thd Cut 1/4-20 x 1/2	63	19131614	Washer 13/32 x 1 x 14 Ga.
8	145166	Support, Battery	67	156973	Guide, Belt Gear Drive
14	161023X558	Hood Asm., Pnt Stealth YTGT	68	17490508	Screw Thdrol. 5/16-18 x 1/2
15	160568	Lens Asm Headlight Bar	70	137159	Guide, Belt Mid Span
16	121794X	Cover, Access	84	142992	Stop, Over Center Mower
17	17060612	Screw	85	144911	Bracket, Support Transaxle
18	160564X558	Grille	86	74760716	Bolt Fin Hex 7/16-14 UNC x 1
19	19131312	Washer 13/32x13/16x12 Ga.	88	STD551143	Washer, Lock Hvy Hlcl Spr 7/16
20	STD523710	Bolt, Fin Hex 3/8-16 x 1	90	STD551237	Washer, Lock Ext. Tooth 3/8
21	STD541437	Nut Crownlock 3/8-16 Unc	91	170755	Rail, Frame Lh
23	17060616	Screw 3/8-16 x1.5	106	138776	Screw, Thdrol Hex Head Zinc Mwr
24	145243X558	Footrest, RH	122	161464	Screw Hex Wshd 8-18 x 7/8
28	145244X558	Footrest, LH	130	164863	Screw HWHD Hi-Lo #13-16 x 3/4
30	145051X014	Saddle, Slkscr Vgt	137	74780716	Bolt Fin Hex 7/16-14 x1 Gr. 5
31	161419	Brace, Supt 1-pc VGT Strg	139	161330	Bolt Shoulder 5/16-18 TT
32	161327	Bracket, Pivot Chassis Lh	140	163806	Magnet YTGT
33	161326	Bracket, Pivot Chassis Rh	141	163805	Striker Plate YTGT
34	142131	Bracket, Engine Support Rear	142	161897	Bracket Dash Rh
35	19111116	Washer 11/32x11/16x16 Ga.	144	161900	Bracket Dash Lh
36	74780512	Bolt, Fin Hex 5/16-18 x 3/4	145	19131414	Washer Flat 13/32x7/8x7 Ga.
37	167285X558	Fender	147	162967	Fastener Nut Pal
39	136961	Bracket, Axle Front	148	164655	Extrusion Bumper
40	156111	Bracket, Support Axle/Engine	150	161237	Duct Heat Hood
42	72140608	Bolt, Carriage 3/8-16 x 1	151	17060512	Screw 5/16-18 x 3/4
43	136939	Bracket, Spnsn Front Lh	<b>NOTE:</b> All component dimensions given in U.S. inches 1 inch = 25.4 mm		
44	136940	Bracket, Spnsn Front Rh			
45	154913	Bracket Asm., Susp Chassis Rh			
47	17490608	Screw Thdrol. 3/8-16 x 1/2			

# TRACTOR--MODEL NUMBER 917.272951

## GROUND DRIVE



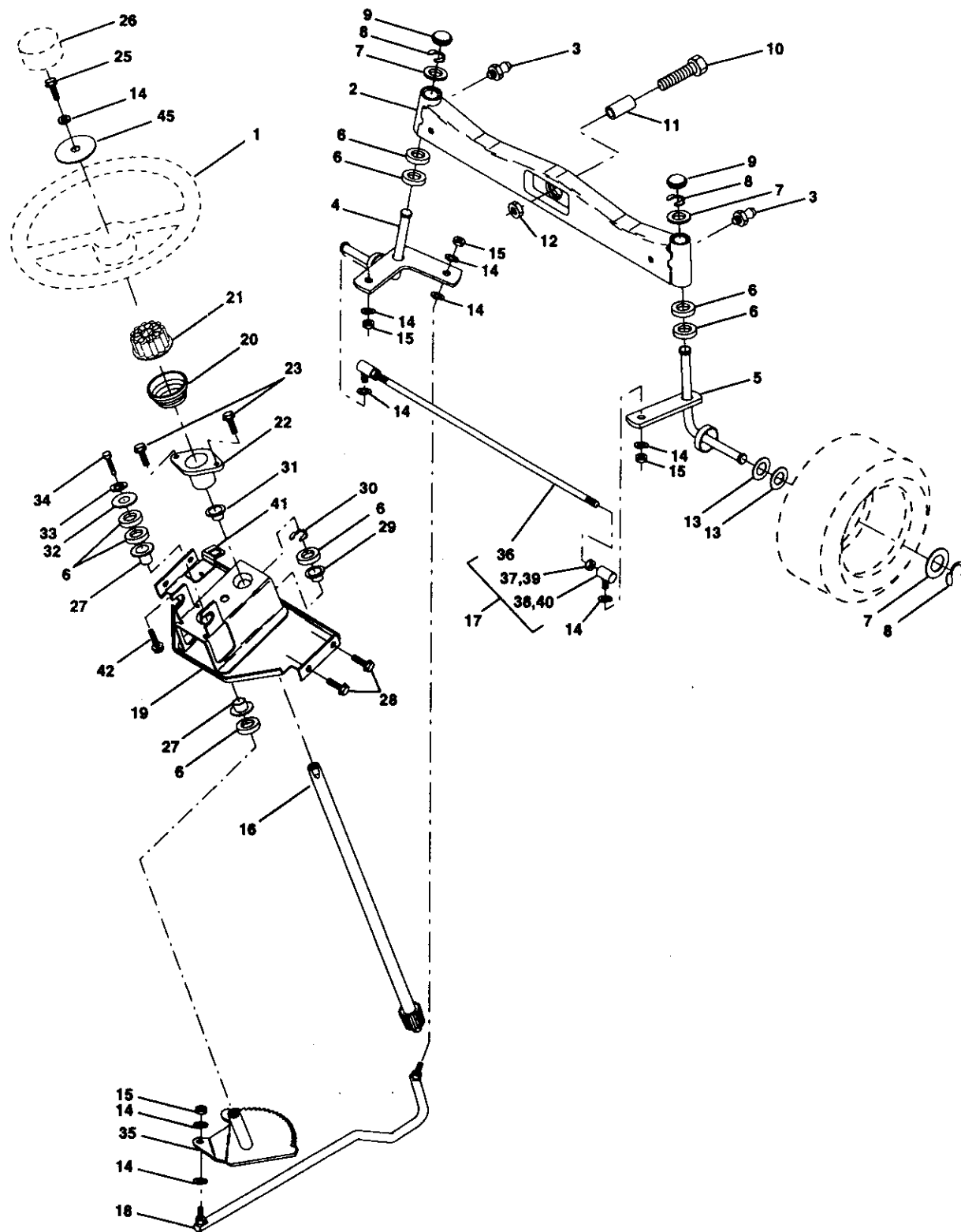
# TRACTOR--MODEL NUMBER 917.272951

## GROUND DRIVE

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	9858M1	Key, Woodruff	37	121749X	Washer 25/32 x1-1/4 x 16 Ga.
3	7563R	Washer, Thrust, Axle	38	150035	Nyliner
4	17490508	Screw Thdrol 5/16-18 x 3/4	39	74321016	Screw, Fin. #10-24 x 1
5	STD541437	Nut, Crownlock 3/8-16	40	5304J	Actuator, Interlock Switch
6	STD561210	Pin, Cotter	41	73661000	Locknut #10-24
7	149176	Wheel, Hub Assembly	42	8883R	Cover, Pedal
8	12000034	Klip, Ring	46	145170	Retainer, Spring
9	140080	Bolt, Hub	47	138228	Clutch Rod
10	142509	Disc, Brake	48	72110612	Bolt, Carr. 3/8-16 x 1-1/2 Gr. 5
11	136927	Yoke, Brake Disc	50	131494	Pulley, Idler, Flat
12	73750800	Nutlock 1/2-20 Unf	51	STD541437	Nut, Crownlock 3/8-16 UNC
13	139419	Washer, Special	52	139123	Pulley, Idler, Grooved
14	138901	Bushing	53	207J	Washer, Hardened
15	STD551037	Washer 13/32x13/16 x 16 Ga.	54	161590	Clutch, Arm Assembly
16	143012	Set, Screw 1/4-28 x 3/4	55	105706X	Bearing, Idler
17	126909X	Spring	56	137153	V-Belt
18	137104	Lever, Brake	57	141756	Bracket, Shift Rod, Hi-Lo
19	136926	Cam, Brake Disc	59	122253X	Shift Rod, Hi-Lo
21	23260412	Screw, Flat Head 1/4-28 x 3/4	60	122268X	Spring Clip, Connecting Link
22	633A109	Gearshift, Lever Assembly	61	137524	Pulley, Transaxle
23	106932X	Knob	62	STD551143	Washer, Lock 7/16
24	136925	Support, Puck Brake	63	74760720	Bolt, Fin Hex 7/16-14 x 1-1/4
25	136923	Puck, Brake Top	64	154752	Shaft, Clutch/Brake Pedal
26	137552	Spring, Return	65	67609	Bolt, Shoulder
27	17490528	Screw, Hex Wsh Thd. 5/16-18 x 1-3/4	66	140296	Washer, Hardened
28	73350600	Nut, Hex Jam 3/8-16	67	19131312	Washer, Flat
29	137213	Brake, Rod	68	5142H	Pin, Roll
30	19131616	Washer 13/32 x 1 x 16 Ga.	69	136327	Hub, Cover
34	71673	Cap, Plunger	117	73900600	Nut, Lock Flg. 3/8-16 Unc
35	137648	Rod, Parking Brake			
36	149412	Spring, Drive Ground			

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

**TRACTOR--MODEL NUMBER 917.272951**  
**STEERING ASSEMBLY**





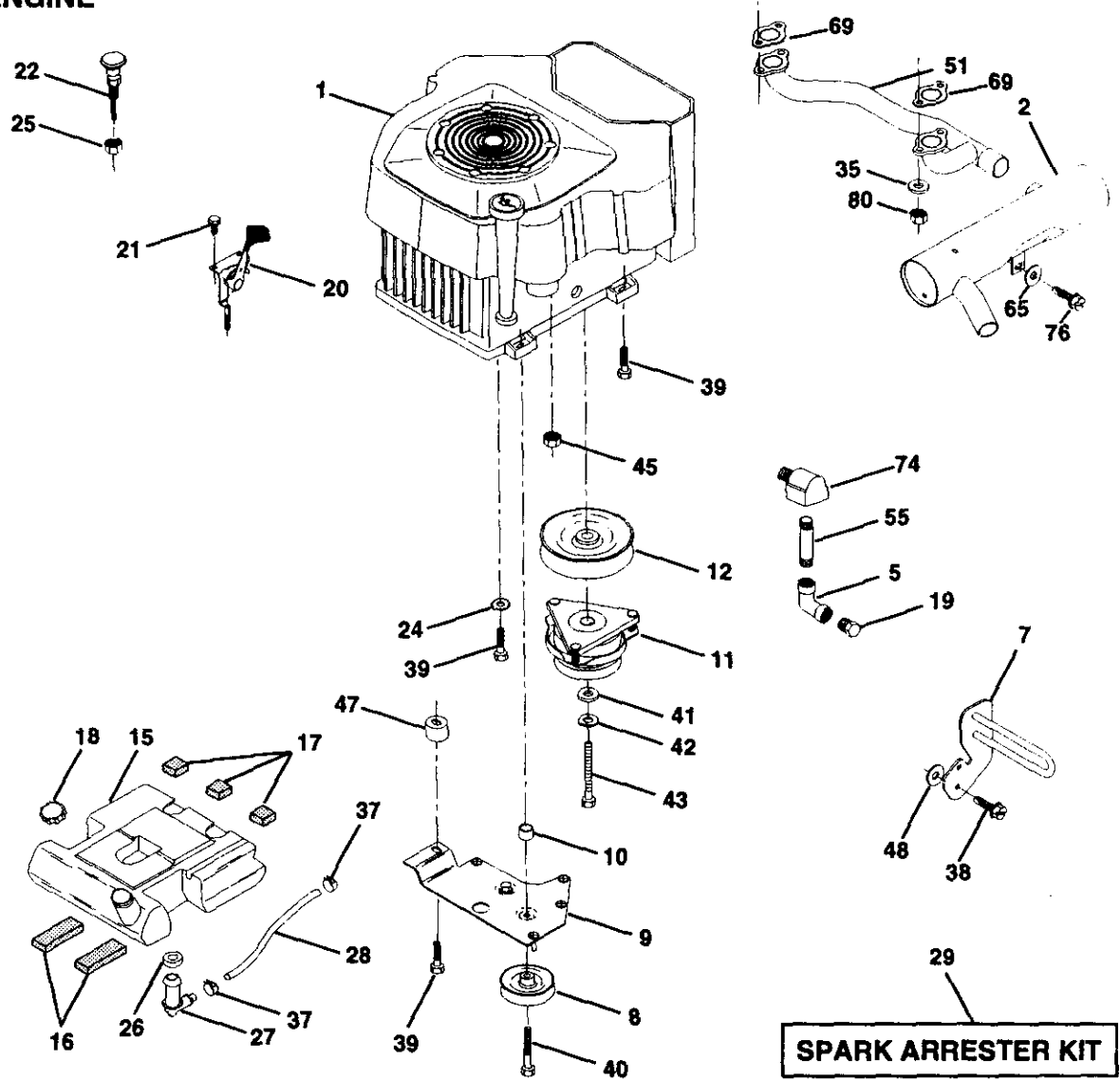
**TRACTOR -- MODEL NUMBER 917.272951**  
**STEERING ASSEMBLY**

<b>KEY NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>
1	139768	Wheel, Steering
2	137094	Axle Asm., Front
3	6855M	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	121232X	Cap, Spindle
10	74781044	Bolt, Fin Hex 5/8-11 x 2-3/4
11	136518	Spacer Bearing 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	STD541537	Nut, Lock Center 3/8-24 UNF
16	145103	Shaft Asm., Steering
17	137347	Rod Asm., Tie Ball J Ball Vgt (Inc. Key No. 36-40)
18	137155	Draglink, Ball Joint Solid Vgt
19	156011	Support Asm., Steering Vgt
20	172020	Boot, Steering
21	100711L	Adapter, Wheel Steering
22	155105	Bushing, Strg. Blk
23	152927	Screw
25	STD523710	Bolt, Fin Hex 3/8-16 x 1 Gr. 5
26	139769	Cap, Wheel Steering
27	3366R	Bearing, Col. Strg.
28	17000612	Screw 3/8-16 x 3/4
29	104239X	Bearing, Flange
30	12000029	Ring, Klip Truarc #5304-75
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	138059	Gear, Sector Steering
36	137156	Tie Rod
37	73360600	Jam Nut RH Thread
38	109850X	Joint Asm. Ball RH Thread
39	73700600	Jam Nut LH Thread
40	109851X	Joint Asm. Ball LH Thread
41	155246	Bracket Switch Interlock VGT 97
42	17490508	Screw Thdrol 5/16-18 x 1/2 Tyl
45	19133812	Washer 13/32 x 2-3/8 x 12 Ga.

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

# TRACTOR -- MODEL NUMBER 917.272951

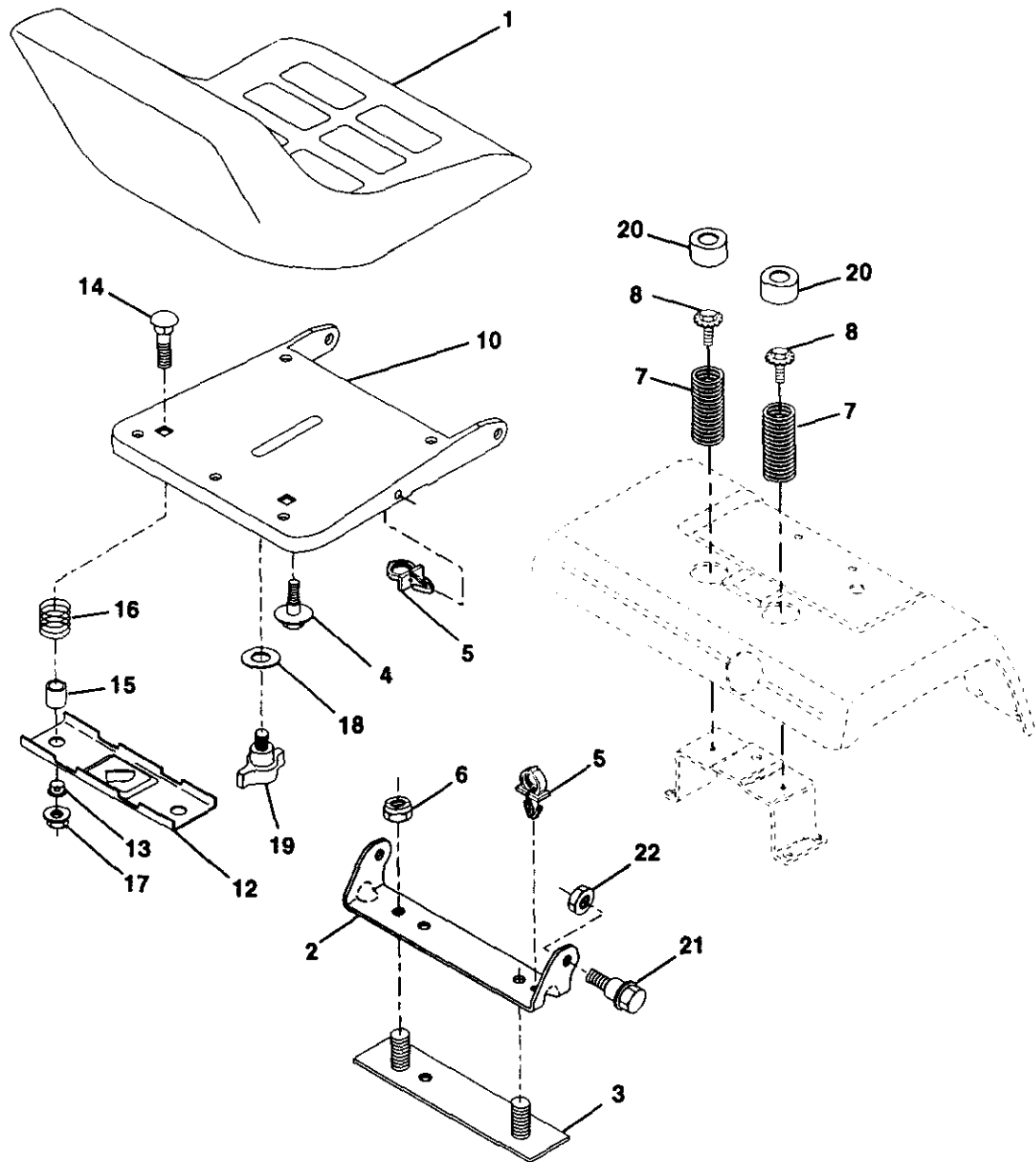
## ENGINE



KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	-----	Engine (See Breakdown) Kohler Model No. CV20S-65551	28	7834R	Fuel Line
2	161063	Muffler Side	29	132920	Spark Arrester Kit
5	13200300	Elbow STD 90 Degree 3/8 - 18 NPT	35	10010500	Washer Split
7	151396	Muffler Asm Guard	37	123487X	Clamp Hose
8	121361X	Pulley V-Idler	38	17060620	Screw 3/8 - 16 x 1-1/4
9	150828	Keeper Asm. Belt Engine	39	17490636	Screw TT 3/8-16 x 2-1/4 UNC
10	105432X	Bushing	40	17490664	Screw TT 3/8-16 x 4 UNC
11	140923	Clutch Electric	41	126197X	Washer 1-1/2 OD x 15/32 ID x .250
12	143996	Pulley Engine VGT Elect Clth	42	STD551143	Washer Lock 7/16
15	151346	Tank Fuel Rear 3.50 Yt/Gt 96	43	150280	Bolt Hex 7/16-20 x 4-1/4 Gr 5
16	109227X	Pad Spacer	45	73510400	Nut Keps H 1/4-20 UNC
17	106082X	Pad Spacer	47	142040	Spacer Engine
18	140527	Cap Asm Fuel W/Gauge	48	19132007	Washer 13/32 x 1-1/4 x 7 Ga.
19	13290300	Plug Oil Drain (Order From Engine Manufacturer)	51	161231	Manifold Pipe VGT
20	164067	Control Throttle	55	13280336	Nipple Pipe 4-1/2
21	164863	Screw Hwhd Hi-Lo #13-16 x 3/4	65	19131614	Washer 13/32 x 1 x 14 Ga.
22	164415	Control Choke	69	24-041-02	Gasket
24	STD551237	Washer Ext Tooth 3/8	74	162295	Elbow Street Brass
25	73920600	Nut Keps 3/8 - 24 UNF	76	17000612	Screw H Thdrol 3/8-16 x 3/4
26	3645J	Bushing	80	M73030800	Nut Flange
27	139277	Stem Tank Fuel	NOTE: All component dimensions given in U.S. inches 1 inch = 25.4 mm		

# TRACTOR--MODEL NUMBER 917.272951

## SEAT ASSEMBLY



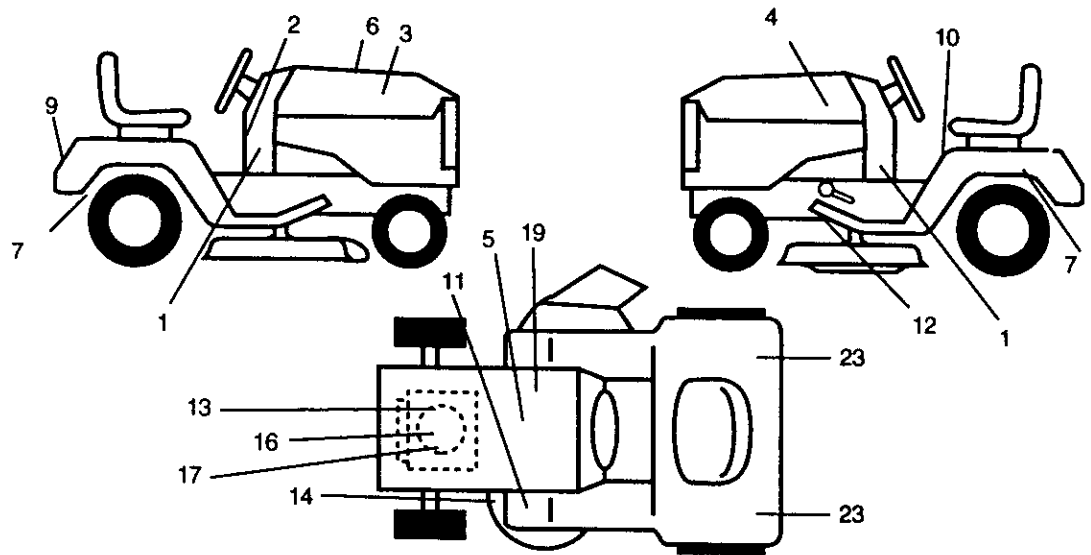
KEY NO.	PART NO.	DESCRIPTION
1	140123	Seat
2	140551	Bracket, Pivot Seat
3	140675	Strap, Fender
4	127018X	Bolt, Shoulder 5/16-18 x .62
5	145006	Clip, Push In, Hinged
6	STD541437	Nut, Crownlock 3/8-16 Unc
7	124181X	Spring, Seat Cprsn
8	171877	Bolt 5/16-18Uncx 3/4 w/Sems
10	155925	Pan, Seat
12	121246X	Bracket, Mounting Switch
13	121248X	Bushing, Snap

KEY NO.	PART NO.	DESCRIPTION
14	72050412	Bolt, Carriage 1/4-20 X 1-1/2
15	134300	Spacer, Split
16	121250X	Spring, Cprsn
17	123976X	Nut, Lock 1/4 Lge Flg Gr. 5
18	19171912	Washer 17/32x1-3/16x12 Ga.
19	166369	Knob, Seat
20	124238X	Cap, Spring Seat
21	171852	Bolt, Shoulder 5/16-18
22	STD541431	Nut, Crownlock 5/16-18 Unc

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

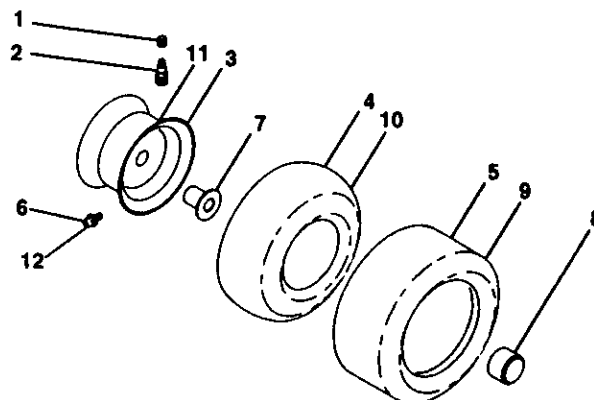
# TRACTOR--MODEL NUMBER 917.272951

## DECALS



KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	172507	Decal, Dash Panel	13	133179	Decal, Blower Housing
2	164085	Decal, Dash	14	160397	Decal, V-Belt Schematic
3	171702	Decal, Hood, Craftsman, RH	16	24-113-18	Decal, Engine Far
4	171703	Decal, Hood, Craftsman, LH	17	24-113-30	Decal HP Engine
5	149516	Decal, Battery DNGR/PSN	19	138047	Decal, Battery
		ENG Asm	23	106202X	Reflector, Taillight
6	133644	Decal, Maintenance	--	138311	Decal, Handle Lft Height
7	163210	Decal, Fender			Adjust (Lift Handle)
9	163204	Decal, Fender, Craftsman	--	157199X428	Pad, Footrest
10	156439	Decal, Fender Danger	--	174593	Manual, Owner's (English)
11	4900J	Decal, Clutch/Brake	--	174594	Manual, Owner's (Spanish)
12	146047	Decal, V-Belt Drive Schematic			

## WHEELS & TIRES

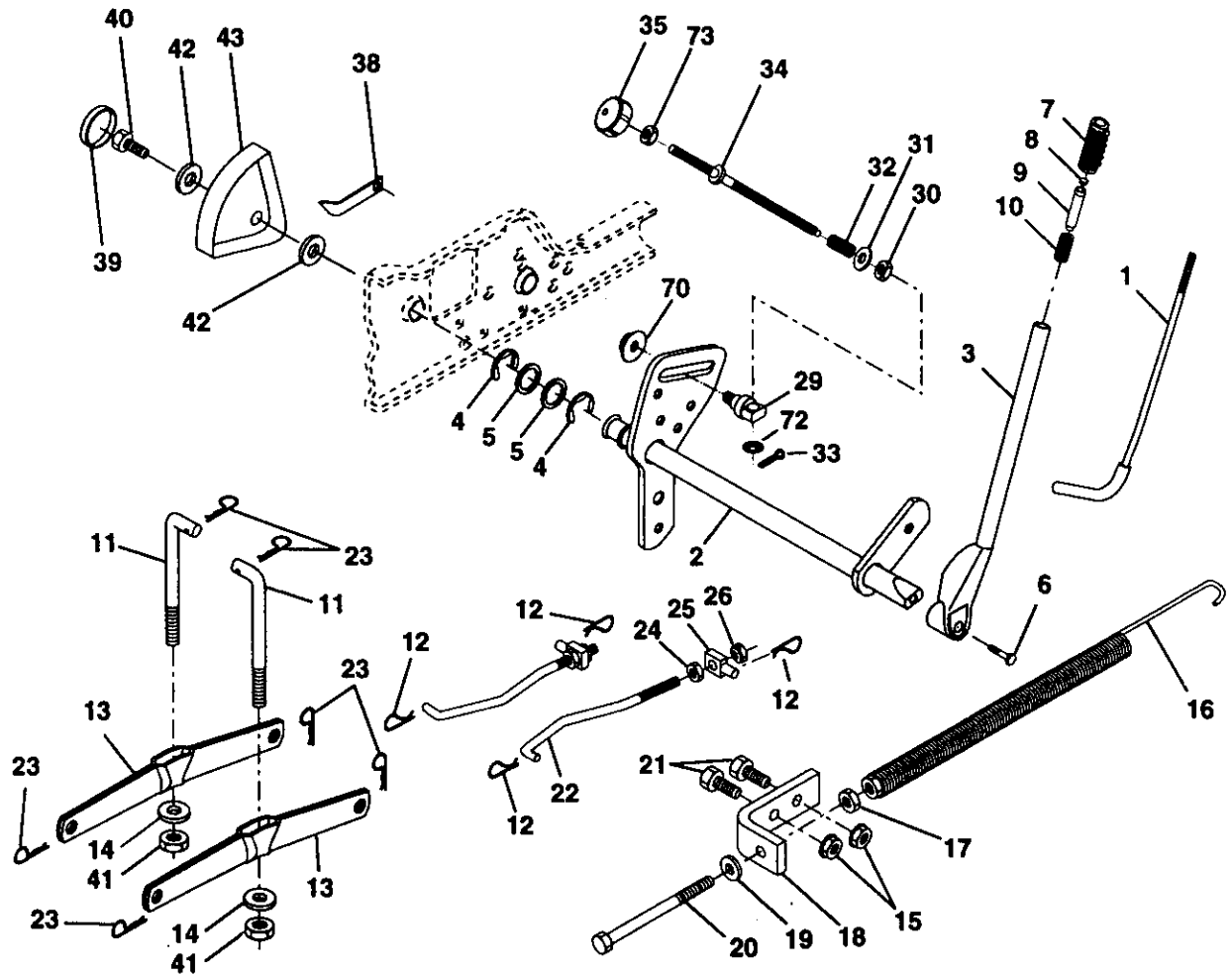


KEY NO.	PART NO.	DESCRIPTION
1	59192	Cap, Valve, Tire
2	65139	Stem, Valve
3	106228X427	Rim Assembly, Front
11	106277X427	Rim Assembly, Rear
4	8134H	Tube, Front (Service Item Only)
10	7154J	Tube, Rear (Service Item Only)
5	106230X	Tire, Front
9	140183	Tire, Rear
6	278H	Fitting, Grease (Front Wheel Only)
12	6856M	Fitting, Grease
7	9040H	Bearing, Flange (Front Wheel Only)
8	104757X	Cap, Axle (Front Wheel Only)
--	144334	Sealant, Tire (10 oz. Tube)

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

# TRACTOR--MODEL NUMBER 917.272951

## LIFT ASSEMBLY



KEY NO.	PART NO.	DESCRIPTION
1	121006X	Rod Asm., Lever
2	159187	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 Fluted
8	122365X	Button, Plunger
9	122364X	Plunger, Button
10	2876H	Spring 2-1/8"
11	146704	Link Lift
12	163552	Retainer, Spring
13	139868	Arm, Suspension Vgt
14	140302	Bearing
15	STD541437	Nut, Crownlock 3/8-16 Unc
16	674A247	Spring Asm., Assist Lift
17	STD541237	Nut, Hex Jam 3/8-16 Unc
18	143363	Bracket, Spring Assist
19	STD551037	Washer 13/32 x 13/16 x 16 Ga.
20	5328J	Bolt, Adjust Spring Assist
21	STD52710	Bolt, Fin Hex 3/8-16 x 1
22	127218	Link, Front

KEY NO.	PART NO.	DESCRIPTION
23	STD624008	Retainer, Spring
24	73350800	Nut, Jam Hex 1/2-13 Unc
25	130171	Trunnion
26	73680800	Nut, Crownlock 1/2-13 Unc
29	150233	Trunnion, Infin 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
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 1
41	73540600	Nut, Crownlock 3/8-24
42	19112410	Washer 11/32 x 1-1/2 x 10 Ga.
43	123934X	Scale, Indicator Height
70	145212	Nut Hex Flange Lock
72	110452X	Nut Push Phos & Oil
73	73350600	Nut Hex Jam 3/8-16

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



# TRACTOR--MODEL NUMBER 917.272951

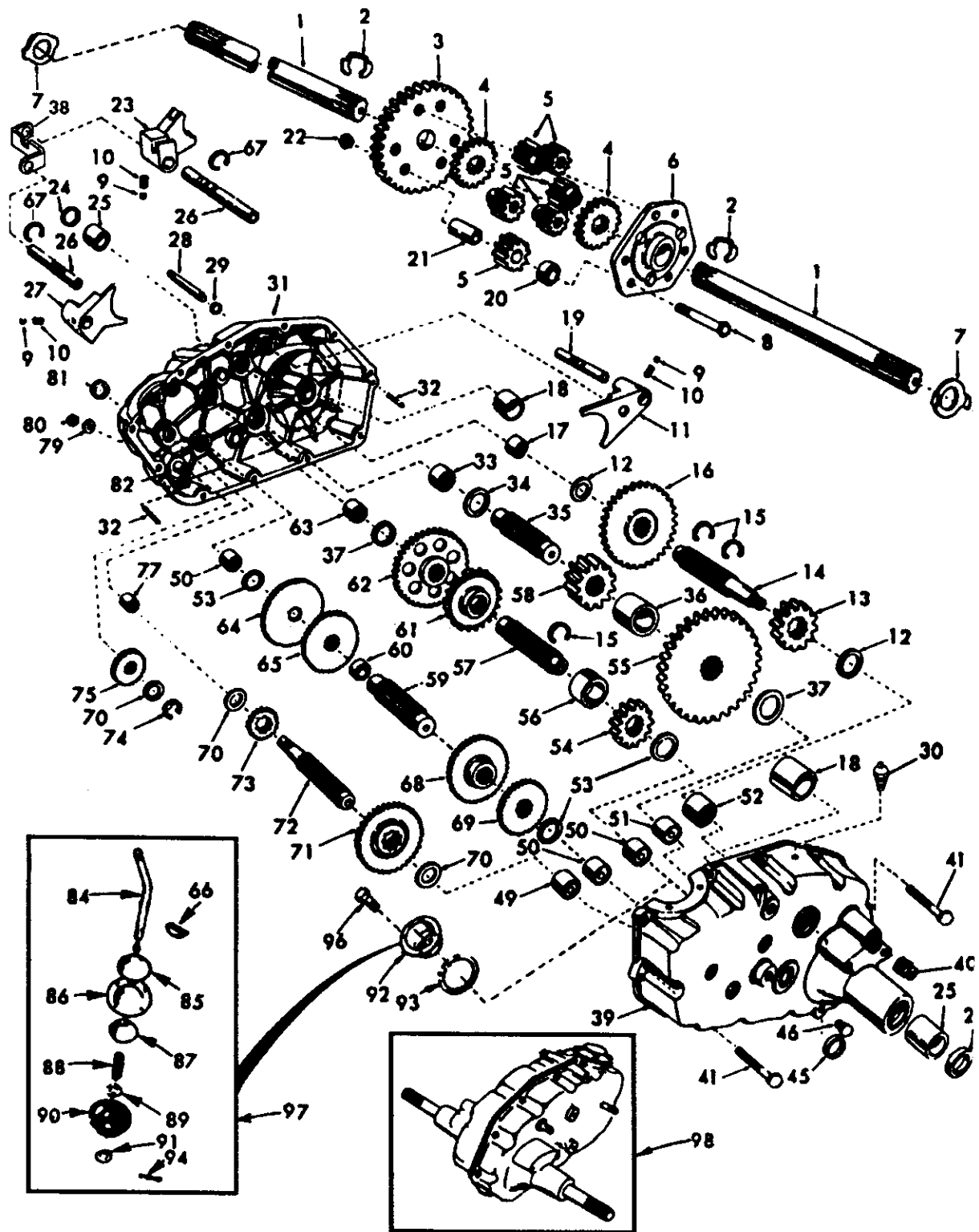
## MOWER DECK

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	156948	Deck Weldment	35	17490628	Screw, 3/8-16 x 1-3/4
3	138457	Bracket Asm., Sway Bar	36	STD551037	Washer 13/32 x 13/16 x 16 Ga.
5	STD624008	Retainer Spring	37	131494	Pulley, Idler, Flat
6	130832	Arm, Suspension, Rear (Sway Bar)	38	156086	Keeper, Belt, Idler
8	850857	Bolt, Patched 3/8-24 x 1-1/4 Gr. 8	39	144917	Pulley, Idler, Driven
9	STD551137	Washer, Lock Hvy., Unplated 3/8	40	137273	Spring, Secondary 44/46/50 Vent
10	140296	Washer, Hard Blade, Mower Vented	41	17060620	Screw 3/8-16 x 1-1/4
11	170698	Blade	42	165723	Spacer, Retainer
12	129895	Bearing, Ball, Mandrel #6204	43	144949	Arm, Idler Secondary
13	137553	Shaft Asm. w/Lower Bearing (Includes Key No. 12)	44	133943	Washer, Hardened
14	137152	Housing, Mandrel	45	145059	Cover, Mandrel Deck
15	110485X	Bearing, Ball, Mandrel	46	137729	Screw, Thdroll. 1/4-20 x 5/8
16	140329	Stripper, Mower Round	47	144959	V-Belt, Mower, Secondary
18	STD533106	Bolt, Carriage 5/16-18 x 5/8	48	148763	V-Belt, Mower, Primary
19	132827	Bolt, Hex Head, Shoulder 5/16-18	49	STD541437	Nut, Crownlock 3/8-16 UNC
20	145055	Baffle, Vortex Mower 46"	50	72110612	Bolt, Carriage 3/8-16 x 1-1/2 Gr. 5
21	STD541431	Nut, Crownlock 5/16-18 UNC	51	153390	Washer Felt
22	134753	Stiffener, Bracket	52	156493	Pulley Idler 46" Prim. Drive
23	131267	Bracket, Deflector	72	19131616	Washer 13/32 x 1 x 16 Ga.
24	105304X	Cap, Sleeve	116	137644	Bolt, Shoulder
25	149287	Spring, Torsion, Deflector	117	133957	Gauge Wheel
26	110452X	Nut, Push	118	73930600	Nut, Centerlock 3/8-16 UNC
27	166883X428	Deflector Clipping	119	19121414	Washer 3/8 x 7/8 x 14 Ga.
28	19111016	Washer 11/32 x 5/8 x 16 Ga.	126	144948	Arm, Idler, Primary Deck 46"
29	131491	Rod, Hinge	127	146763	Pulley, Idler, V-Groove Dim. 4.25
30	157722	Screw, Thd Rolling Washer Hd	--	166209	Mower Service 46" (Standard Deck - Order separately mulching components Key Nos. 101-106)
31	129963	Washer, Spacer Mower Vented	--	143651	Mandrel Asm 44/50 Service (Includes Key Nos. 8-10, 12-15, 31 and 33)
32	153531	Pulley, Mandrel			
33	137266	Nut, Fig. Top Lock Cntr. 9/16			
34	144945	Anchor, Spring Deck 46"			

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

# TRACTOR--MODEL NUMBER 917.272951

## TRANSAXLE





# TRACTOR -- MODEL NUMBER 917.272951

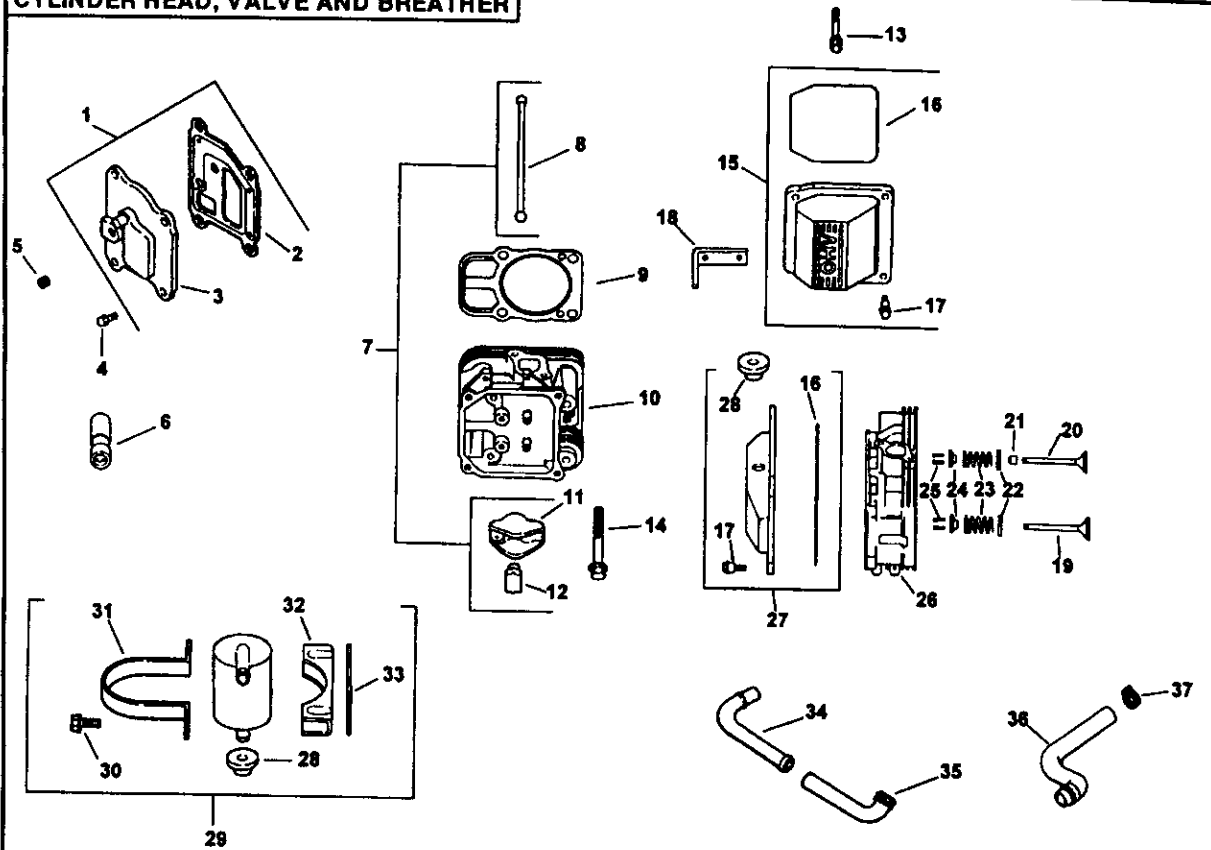
## TRANSAXLE

KEY PART NO. NO.	DESCRIPTION	KEY PART NO. NO.	DESCRIPTION
1 4197R	Axle Shaft	52 8119M	Needle Bearing
2 12000034	Retaining Ring	53 4220R	Thrust Bearing Race
3 4199R	Final Drive Gear	54 4209R	3rd Reduction Pinion, Low
4 4216R	Differential Gear	55 4213R	4th Reduction Gear
5 4215R	Differential Pinion	56 4442R	3rd Reduction Pinion Spacer
6 4217R	Differential Carrier	57 4195R	2nd Reduction Gear Shaft
7 6256H	Axle Thrust Washer	58 4214R	Final Drive Pinion
8 74020652	Bolt, Hex Hd 3/8-24 x 3-1/4 (1" Thread Length)	59 4194R	1st Reduction Gear Shaft
9 7392M	Steel Ball	60 7528R	1st Reduction Shaft Spacer
10 137261	Spring Shift Fork Detent	61 4208R	3rd Reduction Pinion High
11 4985R	Shift Fork, High-Low Range	62 4207R	2nd Reduction Gear
12 6266H	Thrust Bearing Race	63 7398H	Needle Bearing
13 4212R	4th Reduction Pinion	64 4203R	Low Speed Gear and 2nd Reduction Pinion Cluster
14 137125	Shaft, Brake	65 4204R	Reverse Gear
15 6276H	Snap Ring, Crescent Type	66 2898J	Key, Hi-Pro 1/8 x 17/32
16 633A63	High-Low Range Gears	67 12000033	Klip Ring
17 8118M	Needle Bearing	68 4205R	Intermediate Speed Gear
18 8740H1	Sintered Iron Bearing	69 4206R	High Speed Gear
19 122238X	Shift Fork Shaft, High-Low Range	70 1370H	Thrust Bearing Race
20 4218R	Differential Pinion Spacer	71 633A69	Intermediate and High Speed Cluster Pinions
21 6252H1	Differential Pinion Bushing	72 139120	Input Shaft
22 7810H	Gripco Centerlock Nut 3/8-24	73 4201R	Low Speed Pinion
23 6262H	Shift Fork, R.H.	74 12000008	E-Ring
24 7393R	Oil Seal	75 1153R	Reverse Idler Gear
25 992R1	Sintered Iron Bearing	77 6803J	Needle Bearing
26 139111	Shift Fork Shaft	79 1167R	Sealing Washer
27 4986R	Shift Fork, L.H.	80 73360700	Nut, Hex, Jam 7/16-20
28 122254X	Shift Shaft, High-Low Range	81 6270H	Oil Seal
29 6269H	Oil Seal	82 136984	Reverse Idler Shaft
30 5855H	Pressure Relief Valve	84 5384J	Gearshift Lever, Bent
31 139538	Gearcase, Reverse Idler Shaft and Bearings, R.H. (Includes Key No.'s 17, 18, 25, 33, 50, 63, 77 and 82)	85 2978J	Gearshift Cap
32 6277H	Dowel Pin	86 633A85	Gearshift Ball Cover and Pin
33 4225R	Needle Bearing	87 8739H1	Shift Lever Guide Ball, Keyed
34 7396H	Thrust Bearing Race	88 4924H	Spring
35 4198R	4th Reduction Gear Shaft	89 19151516	Washer 15/32 x 15/16 x 16 Gauge
36 4200R	4th Reduction Gear Spacer	90 110542X	Shift Mechanism Seal
37 7395H	Thrust Bearing Race	91 19181511	Washer 9/16 x 15/16 x 12 Gauge
38 160789	Gate, Lower, Shift	92 75J	Gearshift Gate and Reinforcement
39 139536	Gearcase and Bearings, L.H. (Includes Key #'s 18, 25, 49, 50 (2), 51 and 52)	93 6274H	Shift Ball Cover Gasket
40 13320400	Pipe Plug 1/2-14 N.P.T.	94 76020412	Cotter Pin 1/8 x 3/4
41 17580520	Bolt, Hex 5/16-18 x 1-1/4	95 10040500	Washer, Lock 5/16
45 6271H	Oil Seal	96 159783	Screw, Hex, Washer HD. Machine
46 13060200	Pipe Plug 1/4-18 N.P.T.	97 633A109	Gearshift Lever Assembly
49 4895H	Needle Bearing	98 161823	Transaxle, 6 Speed, Complete Assembly
50 4222R	Needle Bearing		
51 1529R	Needle Bearing		

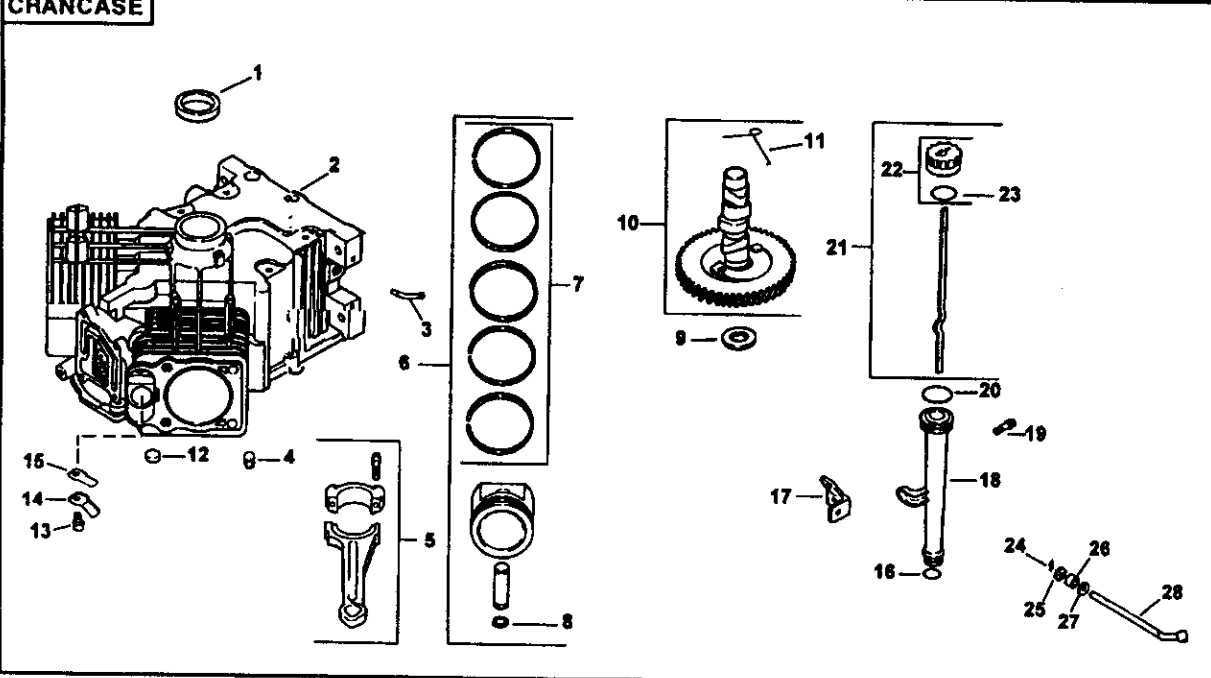
**NOTE:** All component dimensions given in  
U.S. inches 1 inch = 25.4 mm

**TRACTOR -- MODEL NUMBER 917.272951**  
**KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551**

**CYLINDER HEAD, VALVE AND BREATHER**



**CRANCASE**



**TRACTOR--MODEL NUMBER 917.272951**  
**KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551**

**HEAD/VALVE/BREATHER**

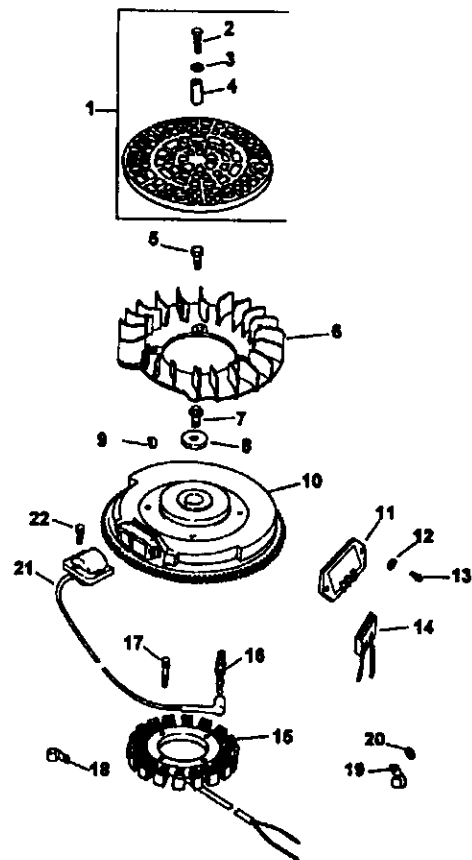
KEY NO.	PART NO.	DESCRIPTION
1	24-033-03	Kit, breather cover w/ gasket (Includes 2,3)
2	24-041-23	Gasket, breather
3	24-096-15	Cover, breather
4	M-0645020	Screw, hex. flange M6x1.0x20 (4)
5	X-75-23	Plug, allen hd. 1/8"
6	12-351-02	Lifter, valve (4)
7	24-755-66	Kit, valve train (Includes 8,11,12)
8	24-411-05	Rod, push (4)
9	24-041-08	Gasket, cylinder head (2)
10	24-318-12	Head assembly, #2 cylinder
11	25-186-01	Arm, rocker (4)
12	24-599-01	Pivot, rocker arm (4)
13	M-0640034	Screw, hex. flange M6x1.0x34 (4)
14	12-086-16	Screw, hex. flange M10x1.5x90 (8)
15	24-755-74	Kit, valve cover - plain (Includes 16,17)
16	24-153-16	O-Ring
17	24-086-32	Screw, shoulder (4)
18	24-445-01	Strap, lifting
19	24-016-01	Valve, exhaust (Std.) (2)
	24-016-02	Valve, exhaust (.25) (2)
20	24-017-01	Valve, intake (Std.) (2)
	24-017-02	Valve, intake (.25) (2)
21	24-032-05	Seal, valve stem (2)
22	235011	Retainer, spring (4)
23	24-089-02	Spring, valve (4)
24	12-173-01	Cap, valve spring (4)
25	12-755-03	Kit, retainer (4)
26	24-318-11	Head assembly, #1 cylinder
27	24-755-76	Kit, valve cover - breather (Incl. 16,17,28)
28	25-313-02	Grommet, rubber
29	24-755-57	Kit, breather separator (Includes 28,30-33)
30	M-0545016	Screw, hex. flange M5x0.8x16 (2)
31	24-445-02	Strap, breather
32	24-126-44	Bracket, breather separator
33	24-112-12	Spacer
34	24-294-06	Fitting
35	24-326-13	Hose, breather
36	24-326-14	Hose, breather
37	X-426-9	Clamp, hose (2)

**CRANKCASE**

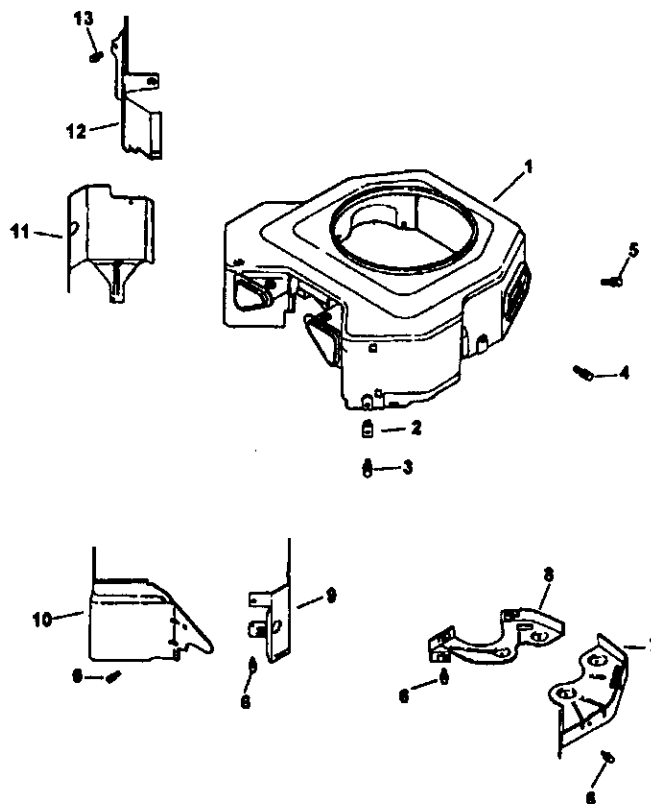
KEY NO.	PART NO.	DESCRIPTION
1	24-032-01	Seal, oil front
2		Crankcase (USE: Miniblock 24 782 05)
3	24-294-13	Fitting
4	12-380-17	Pin, dowel locating (6)
5	24-067-13	Connecting Rod (Std.) (2)
	24-067-14	Connecting Rod (.25) (2)
6	24-874-01	Piston w/Ring Set (Std.) (2) (Includes 7,8)
	24-874-02	Piston w/Ring Set (.25) (2)
	24-874-03	Piston w/Ring Set (.50) (2)
7.	24-108-01	Ring Set (Std.) (2)
	24-108-02	Ring Set (.25) (2)
	24-108-03	Ring Set (.50) (2)
8	24-018-01	Retainer, piston pin (4)
9	12-422-09	Shim, camshaft (A.R.)
	12-422-13	Shim, camshaft (A.R.)
	12-422-07	Shim, camshaft (A.R.)
	12-422-08	Shim, camshaft (A.R.)
	12-422-10	Shim, camshaft
	12-422-11	Shim, camshaft (A.R.)
	12-422-12	Shim, camshaft (A.R.)
10	24-010-03	Camshaft (Includes 11)
11	24-089-21	Spring, actuating (ACR)
12	52-139-09	Plug, cup
13	M-0545010	Screw, hex. flange M5x0.8x10 (2)
14	24-018-04	Retainer, reed (2)
15	24-402-05	Reed, breather (2)
16	12-153-01	O-Ring, lower oil fill tube
17	24-126-19	Bracket, oil fill tube
18	12-123-04	Tube, oil fill
19	M-0545016	Screw, hex. flange M5x0.8x16
20	12-153-02	O-Ring, upper oil fill tube
21	24-038-04	Dipstick assembly (Includes 22,23)
22	24-755-46	Kit, oil fill cap (Includes 23)
23	12-153-03	O-Ring, dipstick
24	12-380-04	Pin, hitch
25	M-0631005	Washer, plain 6 mm
26	12-032-01	Seal, governor cross shaft
27	X-25-102	Washer, plain 1/4"
28	24-144-01	Shaft, governor cross

**TRACTOR--MODEL NUMBER 917.272951**  
**KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551**

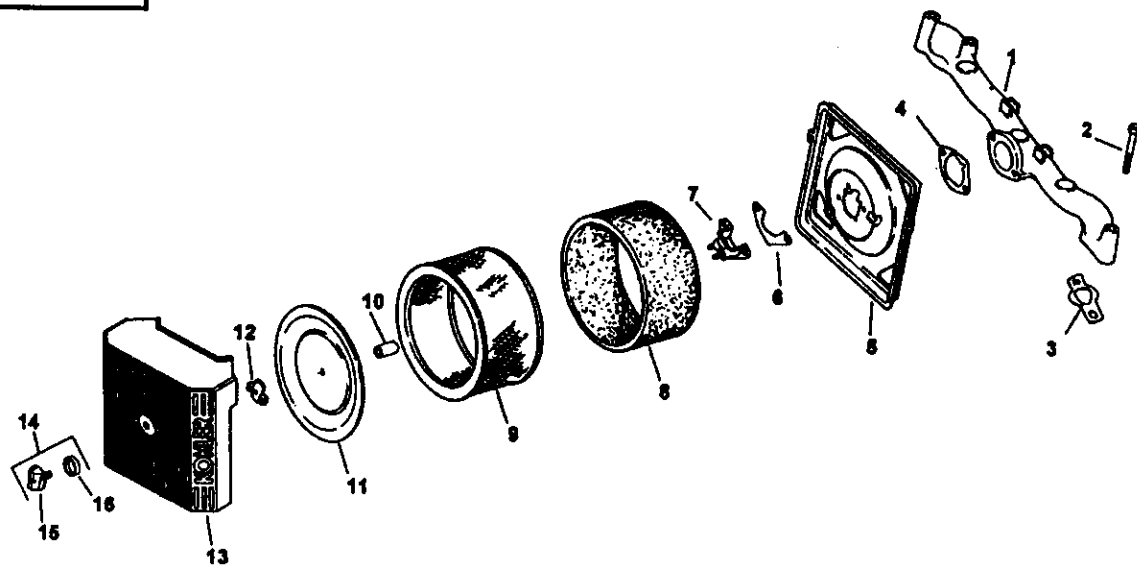
**IGNITION/ELECTRICAL**



**BLOWER HOUSING AND BAFFLES**



**AIR INTAKE**



# TRACTOR--MODEL NUMBER 917.272951

## KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551

### IGNITION/CHARGING

KEY PART NO.	PART NO.	DESCRIPTION
1	54-755-15	Kit, grass screen (Includes 2-4, and 24 113 18)
2	M-0403025	Screw, hex. cap M4x0.7x25 (4)
3	X-25-92	Washer, plain 5/16" (4)
4	24-112-04	Spacer, grass screen (4)
5	25-086-47	Bolt, shoulder (4)
6	24-157-03	Fan
7	12-086-14	Screw, hex. flange M10x1.5x46
8	12-468-03	Washer, plain 3/8"
9	X-42-15	Key
10	24-025-04	Flywheel
11	25-403-03	Rectifier-regulator
12	X-25-92	Washer, plain 3/16" (2)
13	24-086-18	Screw, phillips hd. 11-16x7/8 (2)
14	236602	Connector (3 contact)
15	54-755-09	Kit, 15 amp stator (Includes 24 126 71)
16	12-132-06	Spark Plug (2)
17	M-0548025	Screw, hex. cap M5x0.8x25 (2)
18	235173	Clip, cable
19	48-154-02	Clip, cable
20	X-25-63	Washer, plain 1/4"
21	24-584-01	Module, ignition (2)
22	M-0545020	Screw, hex. flange M5x0.8x20 (4)

#### NOT ILLUSTRATED

--	24-126-71	Bracket, stator wire
--	X-22-11	Washer, lock 1/4"
--	24-176-12	Harness, wiring
--		Lead, black (rect.-reg. 4" - 18 gauge
--	25-518-28	insulated grip barrel eyelets)
--	24-113-18	Decal, grass screen
--	12-454-01	Tie, wire

### BLOWER HOUSING & BAFFLES

KEY PART NO.	PART NO.	DESCRIPTION
1	54-027-95	Housing, blower (Incl. M-0545010 & 24 063 36)
2	24-100-02	Nut, plastic (2)
3	M-0545020	Screw, hex. flange M5x0.8x20 (2)
4	M-0545016	Screw, hex. flange M5x0.8x16 (5)
5	M-0551016	Screw, hex. flange M5x0.8x16
6	M-0645016	Screw, hex. flange M6x1.0x16 (6)
7	24-146-02	Plate, backing - # 2 side
8	24-146-08	Plate, backing - # 1 side
9	24-063-20	Baffle, cylinder barrel- # 2 side
10	24-063-14	Baffle, valley - #2 side
11	24-063-30	Baffle, cylinder barrel- # 1 side
12	24-063-23	Baffle, valley - #1 side
13	M-0545010	Screw, hex. flange M5x0.8x10 (2)

#### NOT ILLUSTRATED

--	24-063-36	Baffle, blower housing
--	M-0545010	Screw, hex. flange M5x0.8x10 (2)
--	N/A	Cover, control
--	24-086-06	Screw, phillips hd. 11-16x3/4" (2)

### AIR INTAKE/FILTRATION

KEY PART NO.	PART NO.	DESCRIPTION
1	24-164-06	Manifold, intake
2	M-0651055	Screw, hex. flange M6x1.0x55 (4)
3	24-041-01	Gasket, intake manifold (2)
4	24-041-14	Gasket, air cleaner base
5	24-094-13	Base, air cleaner
6	24-041-13	Gasket, fuel spitback cup
7	24-109-05	Cup, fuel spitback
8	24-083-05	Precleaner, element
9	24-083-03	Element, air cleaner
10	230046	Seal, breather
11	24-096-01	Cover, inner air cleaner
12	12-100-01	Wing Nut
13	24-096-65	Cover, air cleaner
14	54-755-01	Kit, knob with seal (Includes 15 & 16)
15	24-153-15	O-Ring
16	25-341-03	Knob, cover

**KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551**

**TRACTOR -- MODEL NUMBER 917.272951**  
**KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551**

**STARTING SYSTEM**

KEY NO.	PART NO.	DESCRIPTION
1	M-0839070	Screw, hex. flange M8x1.25x70
2	24-096-05	Cover, pinion
3	M-0839080	Screw, hex. flange M8x1.25x80
4	12-468-01	Washer, plain 11/32" (3)
5	25-098-05	Starter, (Includes 6-11)
6	12-221-01	Kit, brush
7	12-227-13	Cap
8	12-211-01	Bolt, thru (2)
9	12-755-54	Kit, drive
10	12-227-06	Cap, drive end
11	12-170-05	Armature

**ENGINE CONTROLS**

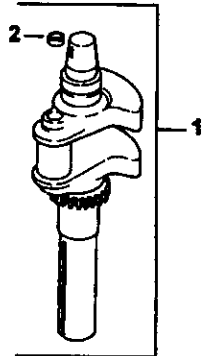
KEY NO.	PART NO.	DESCRIPTION
1	SM-0642025	Screw, hex. flange M6x1.0x25
2	24-090-14	Lever, governor
3	M-0641060	Nut, hex. flange M6x1.0
4	24-089-01	Spring, linkage
5	25-158-08	Bushing, linkage retaining
6	24-079-04	Linkage, throttle
7	25-158-11	Bushing, throttle linkage
8	M-0547050	Nut, hex. lock M5x0.8
9	24-089-03	Spring, throttle
10	24-126-56	Bracket, control
11	M-0645016	Screw, hex. flange M6x1.0x16 (4)
12	12-237-01	Clamp, cable (2)
13	M-0545016	Screw, hex. flange M5x0.8x16 (3)
14	24-090-07	Lever, throttle actuator
15	24-468-01	Washer, plain 5.5 mm (3)
16	24-089-18	Spring, governor
17	M-0446030	Nut, hex M4x0.7
18	24-090-13	Lever, throttle control
19	M-0545020	Screw, hex. flange M5x0.8x20
20	24-089-38	Spring, throttle limiter
21	24-090-05	Lever, choke
22	41-468-03	Washer, spring 1/4"
23	M-0403025	Screw, hex. cap M4x0.7x25
24	24-079-05	Linkage, choke

**OIL PAN/LUBRICATION**

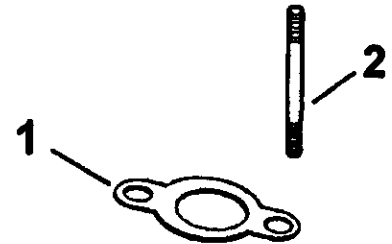
KEY NO.	PART NO.	DESCRIPTION
1	M-0645025	Screw, hex. flange M6x1.0x25 (2)
2	M-0631005	Washer, plain 6 mm (2)
3	24-199-07	Pan, oil assembly (Includes 1,2, & 4-10)
4	24-393-08	Oil pump assembly (Includes 5)
5	24-123-05	Tube, oil pickup
6	24-162-26	Screen, oil
7	24-043-12	Kit, governor gear w/pin (Includes 8)
8	12-380-01	Pin, governor regulating
9	52-448-02	Tab, locking
10	12-144-02	Shaft, governor gear
11	24-153-08	O-Ring
12	X-75-32	Plug, hex. ctsk. 3/8"
13	24-136-01	Nipple, oil filter
14	52-050-02	Filter, oil
15	52-032-08	Seal, oil (PTO end)
16	24-086-17	Screw, hex. flange M8x1.25x45
17	24-086-16	Screw, hex. flange M8x1.25x45 (9)
18	X-75-10	Plug, sq. hd. solid 3/8" N.P.T.F.

TRACTOR -- MODEL NUMBER 917.272951  
KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551

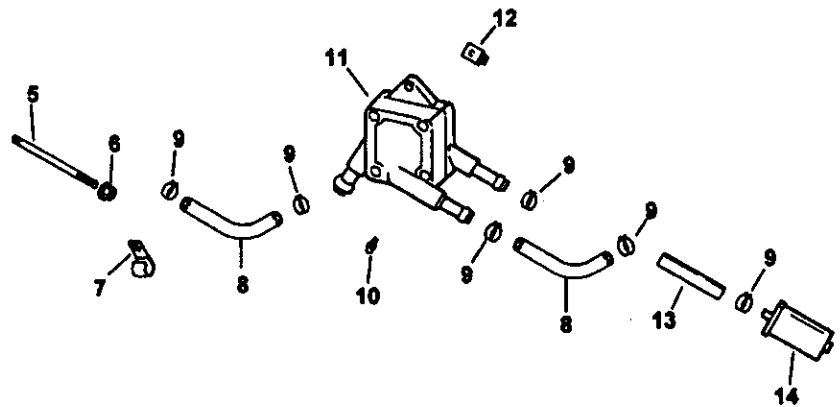
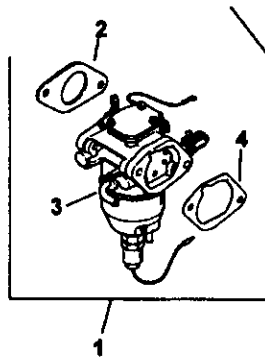
CRANKSHAFT



EXHAUST



FUEL SYSTEM





# TRACTOR--MODEL NUMBER 917.272951

## KOHLER ENGINE-MODEL NUMBER CV20S, TYPE NUMBER 65551

### CRANKSHAFT

KEY NO.	PART NO.	DESCRIPTION
1	24-014-72	Crankshaft (Includes 2)
2	52-139-09	Plug, cup

### EXHAUST

KEY NO.	PART NO.	DESCRIPTION
1	24-041-02	Gasket, exhaust (2)
2	25-072-04	Stud, M8x1.25x33 (4)

### NOT ILLUSTRATED

--	24-522-16	Short Block
--	24-782-05	Miniblock
--	24-755-03	Gasket Set

### FUEL SYSTEM

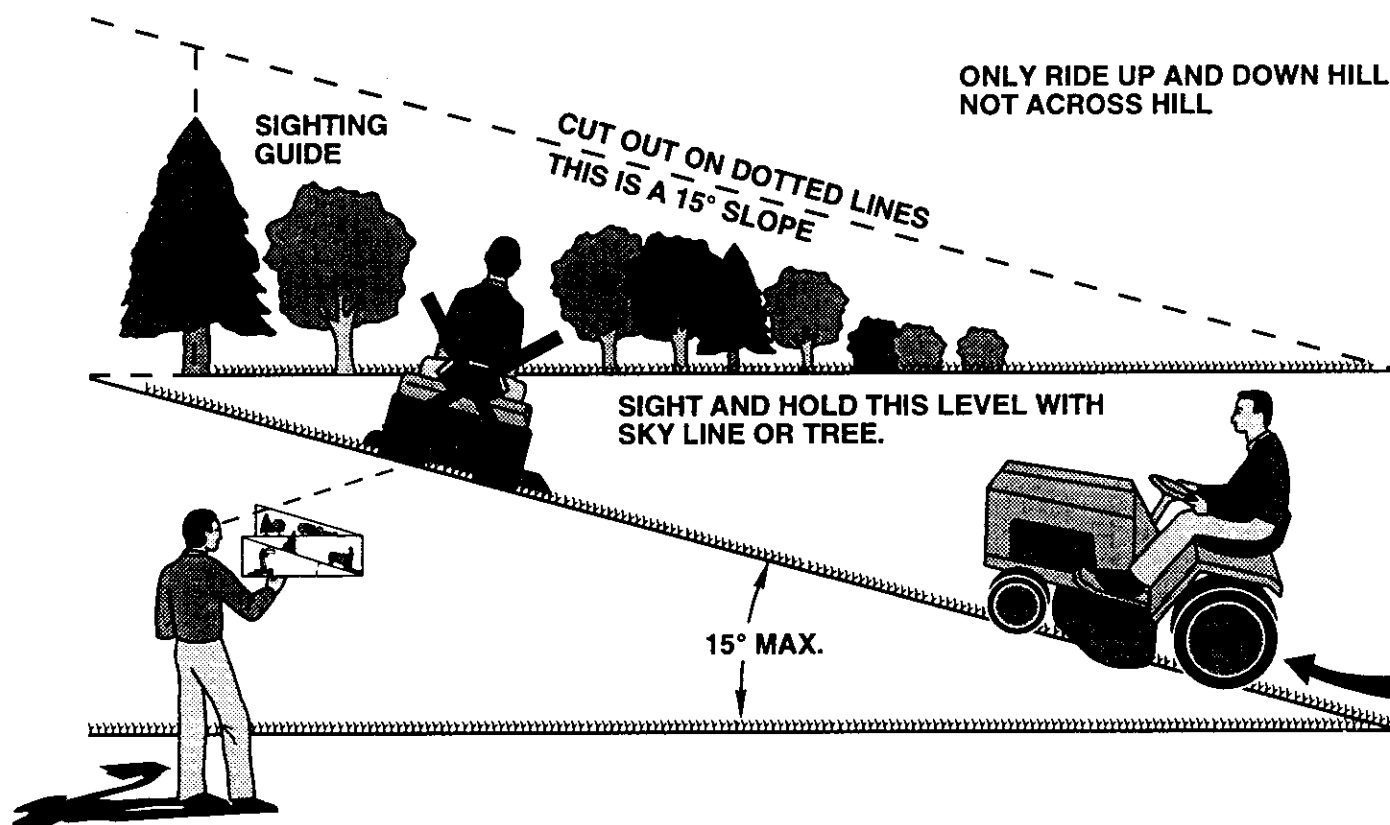
KEY NO.	PART NO.	DESCRIPTION
1	24-853-25	Kit, carburetor w/gaskets (Includes 2-4)
2	24-041-15	Gasket, carburetor
3	--	Carburetor assembly (For information only not available separately) (Includes 24-757-18, 24-053-25, 24-757-19, 24-757-20, 24-757-22)
4	24-041-14	Gasket, air cleaner base
5	M-0629095	Stud, M6x1.0x95 (2)
6	M-0641060	Nut, hex. flange M6 x 1.0 (2)
7	47-154-01	Clip, cable
8	24-353-03	Line, fuel 10-5/8" (2)
9	X-426-9	Clamp, hose (6)
10	24-086-12	Screw, hex. cap. M6x1.7x18 (2)
11	24-393-04	Pump, fuel - pulse
12	24-100-01	Nut, plastic (2)
13	25-353-03	Line, fuel 13-1/2"
14	24-050-02	Filter, fuel

### NOT ILLUSTRATED

--	24-757-18	Kit, overhaul w/gaskets
--	24-757-19	Kit, choke repair w/gaskets
--	24-757-20	Kit, gasket
--	24-757-22	Kit, solenoid replacement w/gaskets



## SUGGESTED GUIDE FOR SIGHTING SLOPES FOR SAFE OPERATION



Operate your Tractor up and down the face of slopes (not greater than 15°), never across the face. Make turns gradually to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.

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