

# OWNER'S MANUAL MODEL NO. CHD185H46A 18.5 HP 46 Inch Lawn Tractor

- Assembly
  - Operation
    - Customer Responsibilities
      - Service and Adjustments
        - Storage
          - Troubleshooting
            - Repair Parts

For Parts and Service, contact our authorized distributor: call 1-800-849-1297 For Technical Assistance: call 1-800-829-5886



159515 2.13.97 TR PRINTED IN U.S.A.

## SAFETY RULES



Safe Operation Practices for Ride-On Mowers



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

#### I. 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
- 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.

#### II. 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

#### 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 slidina.
- Do not try to stabilize the machine by putting your foot on the ground.
- Do not use grass catcher on steep slopes.

#### III. CHILDREN

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

- Keep children out of the mowing area and 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
- Never carry children. They may fall off and be seriously injured or interfere with safé 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.

#### IV. 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.
- 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
- 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 necessarv
- Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.
- Check brake operation frequently. Adjust and service as required.



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



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



A WARNING A



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

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

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

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

MODEL				
NUMBER	CHD185H46A			
SERIAL				
NUMBER				
DATE OF PURCHASE				
THE MODEL AND SERIAL NUMBERS WILL BE FOUND ON A PLATE UNDER THE SEAT.				
YOU SHOULD RECORD BOTH SERIAL NUMBER AND DATE OF PURCHASE AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.				

### **CUSTOMER RESPONSIBILITIES**

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

### PRODUCT SPECIFICATIONS

HORSEPOWER:	18.5
GASOLINE CAPACITY AND TYPE:	3.5 GALLONS UNLEADED REGULAR
OIL TYPE (API-SF/SG/SH):	SAE 30 (above 32°F) SAE 5W-30 (below 32°F)
OIL CAPACITY:	3.5 PINTS 3.0 PINTS
SPARK PLUG: (GAP: .030 )	CHAMPION RJ19LM
VALVE CLEARANCE:	INTAKE: .004"006" EXHAUST: .007"009"
GROUND SPEED (MPH):	FORWARD: 0.0 - 5.5 REVERSE: 0.0 - 2.3
TIRE PRESSURE:	FRONT: 14 PSI REAR: 10 PSI
CHARGING SYSTEM:	3 AMPS BATTERY 5 AMPS HEADLIGHTS
BATTERY:	AMP/HR: 25 MIN. CCA: 190 CASE SIZE: U1R
BLADE BOLT TORQUE:	30-35 FT. LBS.

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

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

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.

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## LIMITED WARRANTY

The Manufacturer warrants to the original consumer purchaser that this product as manufactured is free from defects in materials and workmanship. For a period of two (2) years from date of purchase by the original consumer purchaser, we will repair or replace, at our option, without charge for parts or labor incurred in replacing parts, any part which we find to be defective due to materials or workmanship. This Warranty is subject to the following limitations and exclusions.

1. This warranty does not apply to the engine, other than AYP manufactured transaxle/transmission components battery (except as noted below) or components parts thereof. Please refer to the applicable manufacturer's warranty on these items.

 Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser. Transportation charges for any parts submitted for replacement under this warranty must be paid by the purchaser unless such return is requested by American Yard Products.

3. Battery Warranty: On products equipped with a Battery, we will replace, without charge to you, any battery which we find to be defective in manufacture, during the first ninety (90) days of ownership. After ninety (90) days, we will exchange the Battery, charging you 1/12 of the price of a new Battery for each full month from the date of the original sale. Battery must be maintained in accordance with the instructions furnished.

4. The Warranty period for any products used for rental or commercial purposes is limited to 90 days from the date of original purchase.

5. This Warranty applies only to products which have been properly assembled, adjusted, operated, and maintained in accordance with the instructions furnished. This Warranty does not apply to any product which has been subjected to alteration, misuse, abuse, improper assembly or installation, delivery damage, or to normal wear of the product.

6. Exclusions: Excluded from this Warranty are belts, blades, blade adapters, normal wear, normal adjustments, standard hardware and normal maintenance.

7. In the event you have a claim under this Warranty, you must return the product to an authorized service dealer. Should you have any unanswered questions concerning this Warranty, please contact:

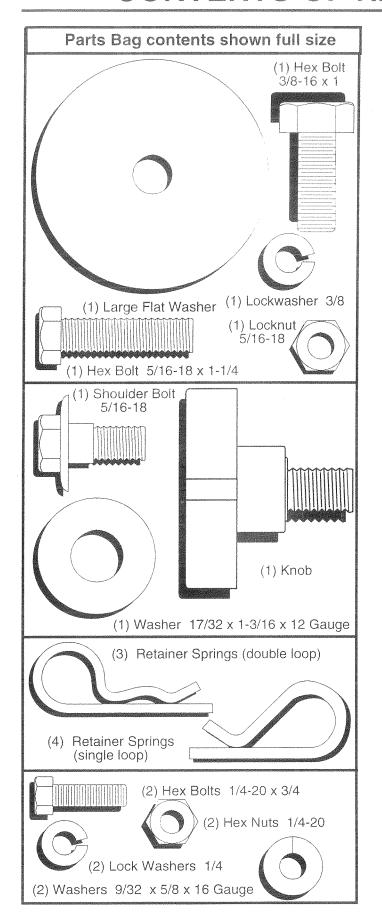
American Yard Products Service Department P.O. Box 1687 Orangeburg, SC 29116 USA In Canada contact:
American Yard Products
1580 Trinity Drive, Units 5-8
Mississauga, Ontario
L5T 1L6

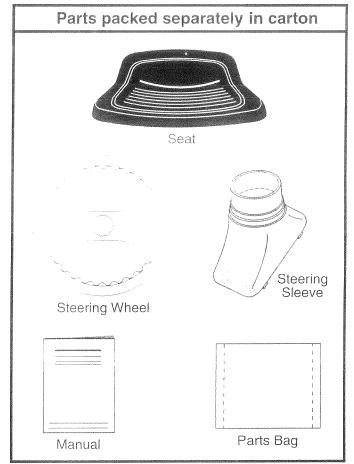
giving the model number, serial number and date of purchase of your product and the name and address of the authorized dealer from whom it was purchased.

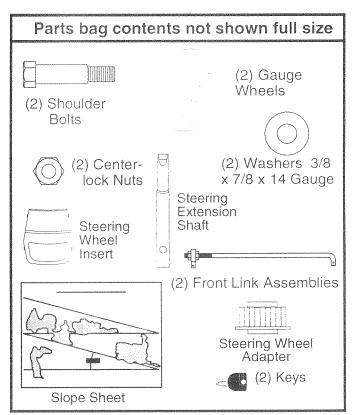
THIS WARRANTY DOES NOT APPLY TO INCIDENTAL OR CONSEQUENTIAL DAMAGES AND ANY IMPLIED WARRANTIES ARE LIMITED TO THE SAME TIME PERIODS STATED HEREIN FOR OUR EXPRESSED WARRANTIES. Some areas do not allow the limitation of consequential damages or limitations of how long an implied Warranty may last, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights, and you may have other rights which vary from locale to locale.

This is a limited Warranty within the meaning of that term as defined in the Magnuson-Moss Act of 1975.

# **CONTENTS OF HARDWARE PACK**







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

### **TOOLS REQUIRED FOR ASSEMBLY**

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

(1) 3/4" Socket w/drive rachet Utility knife

(2) 7/16" wrenches

Tire pressure gauge

(2) 1/2" wrenches

Pliers

(1) 9/16" wrench

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

## TO REMOVE TRACTOR FROM CARTON

#### **UNPACK CARTON**

- Remove all accessible loose parts and parts cartons from carton (See page 5).
- Cut, from top to bottom, along lines on all four corners of carton, and lay panels flat.
- Check for any additional loose parts or cartons and remove.

### BEFORE ROLLING TRACTOR OFF SKID

## ATTACH STEERING WHEEL (See Fig. 1)

#### ASSEMBLE EXTENSION SHAFT AND BOOT

 Slide extension shaft onto lower steering shaft. Align mounting holes in extension and lower shafts and install 5/16 hex bolt and locknut. Tighten securely.

IMPORTANT: TIGHTEN BOLT AND NUT SECURELY TO 18-22 FT. LBS TORQUE.

 Place tabs of steering boot over tab slots in dash and push down to secure.

#### INSTALL STEERING WHEEL

- Position front wheels of the tractor so they are pointing straight forward.
- Slide steering wheel adapter onto steering shaft extension.
- Position steering wheel and sleeve assembly so cross bars are horizontal (left to right) and slide onto adapter.
- Assemble large flat washer, 3/8 lock washer, 3/8 hex bolt and tighten securely.
- Snap steering wheel insert into center of steering wheel.
- Remove protective plastic from tractor hood and grill.

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

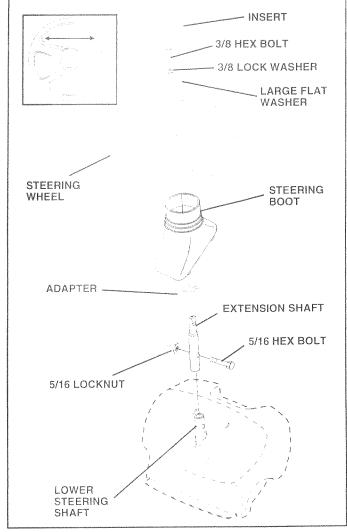


FIG. 1

# 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 freewheel control in freewheeling position to disengage transmission (See "TO TRANSPORT" in the Operation section of this manual).
- · Roll tractor backwards off skid.
- Remove banding holding discharge guard up against tractor.

### HOW TO SET UP YOUR TRACTOR

### **CONNECT BATTERY (See Fig. 2)**



CAUTION: Do not short battery terminals. Before connecting battery, remove metal bracelets, wristwatch bands, rings, etc.

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

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

Use terminal access doors for:

- Inspection for secure connections (to tighten hardware).
- Inspection for corrosion.
- Testing battery.
- Jumping (if required).
- Periodic charging.

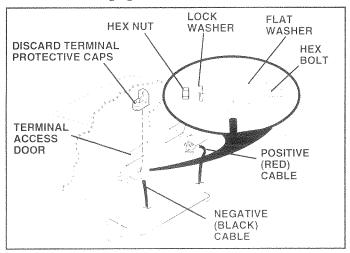


FIG. 2

## **INSTALL SEAT (See Fig. 3)**

Adjust seat before tightening adjustment knob.

- Remove cardboard packing on seat pan.
- · · Place seat on seat pan and assemble shoulder bolt.
- Assemble adjustment knob and flat washer loosely.
   Do not tighten.
- Tighten shoulder bolt securely.
- 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.

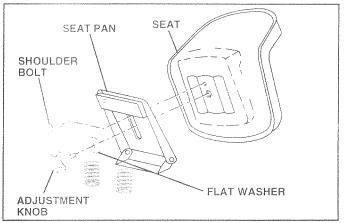


FIG. 3

#### 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" on page 3 of this manual.

### **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.
- ✓ Before driving tractor, be sure freewheel control is in drive position.

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

### INSTALL MOWER AND DRIVE BELT (See Figs. 4 and 5)

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 ENGINE PULLEY GROOVE.

- Install one front link in top hole of the L.H. front mower bracket and L.H. front suspension bracket. Retain with two single loop retainer springs as shown.
- Install second front link in R.H. front suspension bracket and retain with single loop retainer spring as shown.
- Slide right side of mower back and install link in top hole of R.H. front mower bracket. Retain with single loop retainer spring as shown.
- Turn height adjustment knob counterclockwise until it stops.
- Lower mower linkage with attachment lift control.
- Place the suspension arms on outward pointing deck pins. If necessary, rock and raise front of mower to

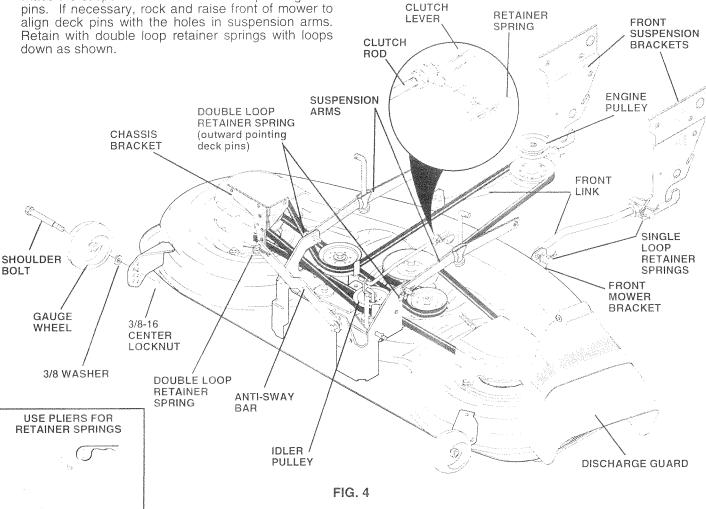
- Connect anti-sway bar to chassis bracket under left footrest and retain with double loop retainer spring.
- Install clutch rod in clutch lever. Secure with retainer spring.
- Turn height adjustment knob clockwise to remove slack from mower suspension.
- Raise deck to highest position.
- Assemble gauge wheels as shown using long shoulder bolts. 3.8 washers, and 3.8-16 center locknuts. Tighten securely.
- Adjust gauge wheels before operating mower as shown in the Operation 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.



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



CLUTCH



LIGHTS ON



LIGHTS OFF



FUEL



CHOKE



MOWER HEIGHT



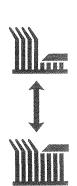
DIFFERENTIAL LOCK



PARKING BRAKE LOCKED



UNLOCKED



MOWER LIFT



REVERSE



NEUTRAL



HIGH



LOW



PARKING BRAKE



ATTACHMENT CLUTCH ENGAGED



ATTACHMENT CLUTCH DISENGAGED



IGNITION



DANGER, KEEP HANDS AND FEET AWAY



HYDROSTATIC FREE WHEEL (Hydro Models only)

#### 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.

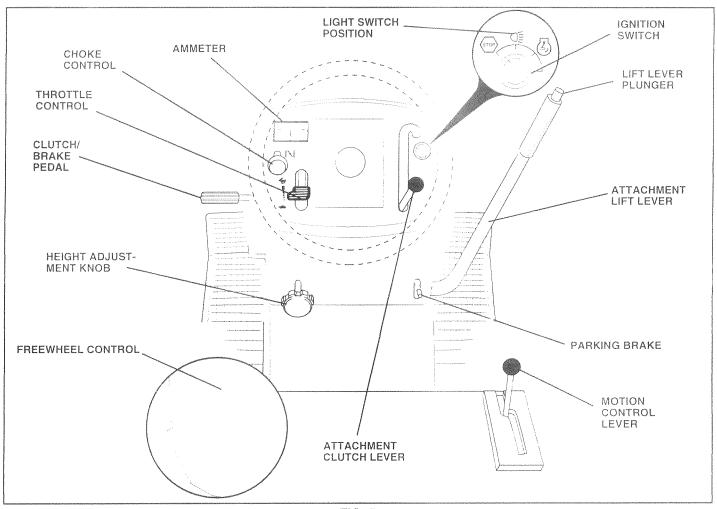


FIG. 5

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

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

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

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

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

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

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

**PARKING BRAKE -** Locks clutch/brake pedal into the brake position.

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

**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.

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

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



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 the spectacles or standard safety glasses.

#### **HOW TO USE YOUR TRACTOR**

### TO SET PARKING BRAKE (See Fig. 6)

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.

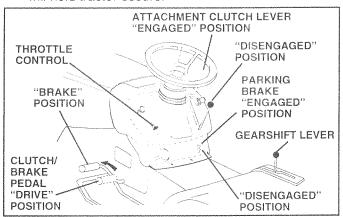


FIG. 6

## STOPPING (See Fig. 6)

MOWER BLADES

Move attachment clutch lever to "DISENGAGED" position.

GROUND DRIVE -

- Depress clutch/brake pedal into full "BRAKE" position.
- Move motion control lever to neutral (N) position.

IMPORTANT: THE MOTION CONTROL LEVER DOES NOT RETURN TO NEUTRAL (N) POSITION WHEN THE CLUTCH/BRAKE PEDAL IS DEPRESSED. 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.

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



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

### TO USE THROTTLE CONTROL (See Fig. 6)

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.

### TO USE CHOKE CONTROL (See Fig. 6)

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 (See Fig. 6)

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

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

# TO ADJUST MOWER CUTTING HEIGHT (See Fig. 6)

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". 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 (See Fig. 7)

Adjust gauge wheels with tractor on a flat level surface.

- Adjust mower to desired cutting height (See "TO AD-JUST 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.

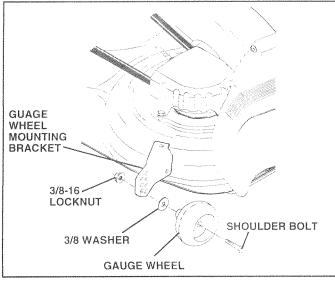


FIG. 7

### TO OPERATE MOWER (See Fig. 8)

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 discharge guard in place.

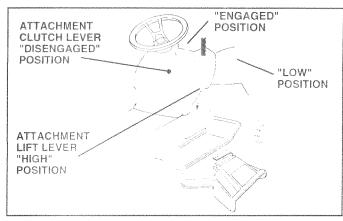


FIG. 8

#### TO OPERATE ON HILLS



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

- Choose the slowest speed before starting up or down hills.
- Avoid stopping or changing speed on hills.
- If 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 motion control lever to neutral (N) position.

IMPORTANT: THE MOTION CONTROL LEVER DOES NOT RETURN TO NEUTRAL (N) POSITION WHEN THE CLUTCH/BRAKE PEDAL IS DEPRESSED.

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

### TO TRANSPORT (See Figs. 9 and 5)

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

- Raise attachment lift to highest position with attachment lift control.
- Pull freewheel control knob out and hold in position by inserting retainer spring into forward hole of control rod
- Do not push or tow tractor at more than two (2) MPH.
- To reengage transmission, reverse above procedure.

**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.).

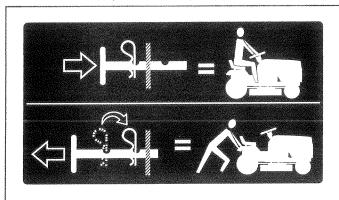


FIG. 9

## **BEFORE STARTING THE ENGINE**

## CHECK ENGINE OIL LEVEL (See Fig. 16)

- 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 Customer Responsibilities section of this manual).
- To change engine oil, see the Customer Responsibilities 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 (See Fig. 6)

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

- Be sure freewheel control is in the transmission engaged position.
- Sit on seat in operating position, depress clutch/brake pedal and set parking brake.
- Place motion control 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.

#### HYDROSTATIC TRANSMISSION WARM UP

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

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

#### **PURGE TRANSMISSION**



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

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

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

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

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

- Move motion control lever to neutral (N) position. Shutoff engine and set parking brake.
- Engage transmission by placing freewheel control in driving position (See "TO TRANSPORT" in this section of manual).
- Sitting in the tractor seat, start engine. After the engine is running, move throttle control to half (1/2) speed. With motion control lever in neutral (N) position, slowly disengage clutch/brake pedal.

- Slowly move motion control lever forward, after the tractor moves approximately five (5) feet, slowly move motion control lever to reverse position. After the tractor moves approximately five (5) feet return the motion control lever to the neutral (N) position. Repeat this procedure with the motion control lever three (3) times.
- Your tractor is now purged and now ready for normal operation.

### **MOWING TIPS**

- Tire chains cannot be used when the mower housing is attached to tractor.
- Mower should be properly leveled for best mowing performance. See "TO LEVEL MOWER HOUSING" in the Service and Adjustments section of this manual.
- The left hand side of mower should be used for trimming.
- Drive so that clippings are discharged onto the area that has been cut. Have the cut area to the right of the tractor. This will result in a more even distribution of clippings and more uniform cutting.
- When mowing large areas, start by turning to the right so that clippings will discharge away from shrubs, fences, driveways, etc. After one or two rounds, mow in the opposite direction making left hand turns until finished (See Fig. 10).
- 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.

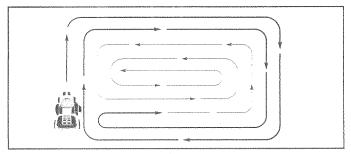


FIG. 10

MAINTENANCE SCHEDULE FILL IN DATES AS YOU COMPLETE REGULAR SERVICE  Check Brake Operation  MAINTENANCE SCHEDULE  ### OFFICE ### SERVICE ### SERVICE DATES												
	Check Brake Operation	V										
	Check Tire Pressure	<b>V</b>		1					:			
T	Check for Loose Fasteners	V					<b>V</b>		Basel			
IR	Sharpen/Replace Mower Blades				<b>V</b> 4				AND ADDRESS OF THE OWNER OWNER OF THE OWNER OW			
IA C	Lubrication Chart				Service Contraction				<b>V</b>			
ΙŤ	Check Battery Level/Recharge				6							
o	Clean Battery and Terminals				V				<b>W</b>		:	
R	Check Transaxle Cooling				4							
	Adjust Blade Belt(s) Tension						<b>W</b> 5		1			
	Adjust Motion Drive Belt(s) Tension						<b>1</b> 5					
	Check Engine Oil Level	7		V			the particular and the same of					
	Change Engine Oil		1		<b>V</b> 1,2,3				6/			
J	Clean Air Filter				2							
E	Clean Air Screen				2							
G	Inspect Muffler/Spark Arrester					Barrel 1						
V-mates Electronistics	Replace Oil Filter (If equipped)						V	1				
N	Clean Engine Cooling Fins						<b>V</b> 2			i		
E	Replace Spark Plug						V	6				
	Replace Air Filter Paper Cartridge						<b>V</b> 2					
	Replace Fuel Filter							<b>/</b>				

- 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.

## **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.

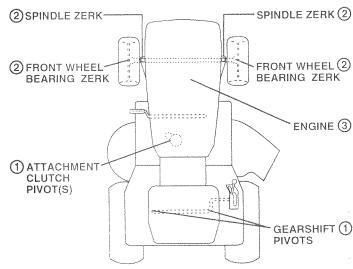
All adjustments in the Service and Adjustments section of this manual should be checked at least once each season.

 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 for loose fasteners.

#### **LUBRICATION CHART**



- 1) SAE 30 OR 10W30 MOTOR OIL
- (2) GENERAL PURPOSE GREASE
- (3) REFER TO CUSTOMER RESPONSIBILITIES "ENGINE" SECTION

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

### 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 "PROD-UCT SPECIFICATIONS" on page 3 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.

#### **BLADE CARE**

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

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

### **BLADE REMOVAL** (See Fig. 11)

- 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.
- Reassemble hex bolt, lock washer and flat washer in exact order as shown.
- Tighten bolt securely (30-35 Ft. Lbs. torque).

IMPORTANT: BLADE BOLT IS GRADE 8 HEAT TREATED.

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

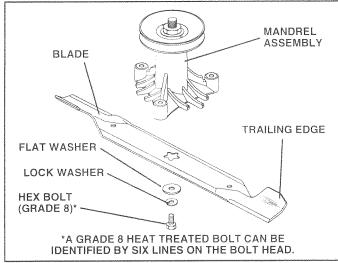


FIG. 11

#### TO SHARPEN BLADE (See Fig. 12)

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).
- 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.

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

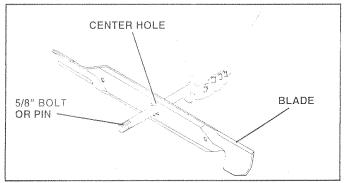


FIG. 12

#### **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.

#### TO CLEAN BATTERY AND TERMINALS

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

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

#### **V-BELTS**

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

#### TRANSAXLE COOLING

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

Do not attempt to clean fan or transmission while engine is running or while the transmission is hot.

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

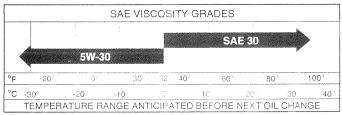
#### TRANSAXLE PUMP FLUID

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

### **ENGINE**

#### LUBRICATION

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



**NOTE:** Although multi-viscosity oils (5W30, 10W30 etc.) improve starting in cold weather, these multi-viscosity oils will result in increased oil consumption when used above 32°F. Check your engine oil level more frequently to avoid possible engine damage from running low on oil.

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

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

#### TO CHANGE ENGINE OIL (See Fig. 13)

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" on page 3 of this manual.
- Use gauge on oil fill cap/dipstick for checking level. Be sure dipstick cap is tightened securely for accurate reading. Keep oil at "FULL" line on dipstick.

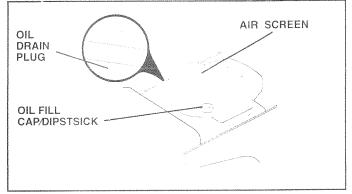


FIG. 13

### AIR FILTER (See Fig. 14)

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

Service air cleaner more often under dusty conditions.

· Remove knob(s) and 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.
- Saturate it in engine oil. Wrap it in clean, absorbent cloth and squeeze to remove excess oil.
- If very dirty or damaged, replace pre-cleaner.
- Reinstall pre-cleaner over cartridge.
- Reinstall cover and secure with knob(s).

#### TO SERVICE CARTRIDGE

- · Remove wing nuts and cartridge plate.
- Carefully remove cartridge to prevent debris from entering carburetor.
- Clean cartridge by tapping gently on flat surface. If very dirty or damaged, replace cartridge.
- Reinstall cartridge plate, wing nuts, precleaner, cover and secure with knob(s).

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

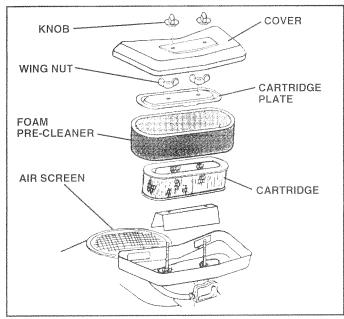


FIG. 14

## CLEAN AIR SCREEN (See Fig. 14)

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.

### ENGINE COOLING FINS (See Fig. 5)

Remove any dust, dirt or oil from engine cooling fins to prevent engine damage from overheating. Air guide covers must be removed. Remove side panels and hood (See "TO REMOVE HOOD AND GRILL ASSEMBLY" in the Service and Adjustments section of this manual).

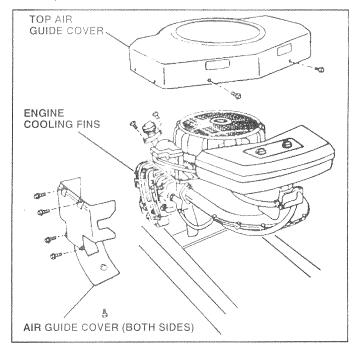


FIG. 15

### **ENGINE OIL FILTER (See Fig. 16)**

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

- Unscrew old filter by turning counterclockwise. Use a suitable container to catch oil.
- Apply a thin coating of new engine oil to rubber gasket on replacement oil filter.
- Install replacement oil filter by turning clockwise until rubber gasket contacts mounting surface, then tighten filter an additional 1/2 to 3/4 turn.
- Fill crankcase with new oil (See "TO CHANGE EN-GINE OIL" in this section of this manual). For approximate capacity see "PRODUCT SPECIFICATIONS" on page 3 of this manual.
- Start engine and check for oil leaks. Correct any leaks before placing engine into full operation.

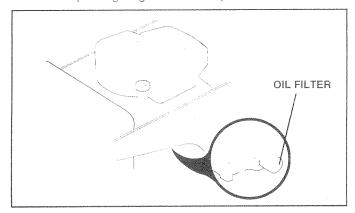


FIG. 16

#### **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" on page 2 of this manual.

### IN-LINE FUEL FILTER (See Fig. 17)

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

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

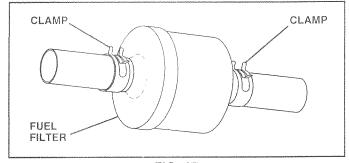


FIG. 17

#### **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.



#### **CAUTION: BEFORE PERFORMING ANY SERVICE OR ADJUSTMENTS:**

- Depress clutch/brake pedal fully and set parking brake.
- Place motion control 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 (See Fig. 18)

- Place attachment clutch in "DISENGAGED" position.
- Turn height adjustment knob to lowest setting.
- · Lower mower to its lowest position.
- Disconnect clutch rod from clutch lever by removing retainer spring.
- 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.

- Slide mower forward and remove belt from engine 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.

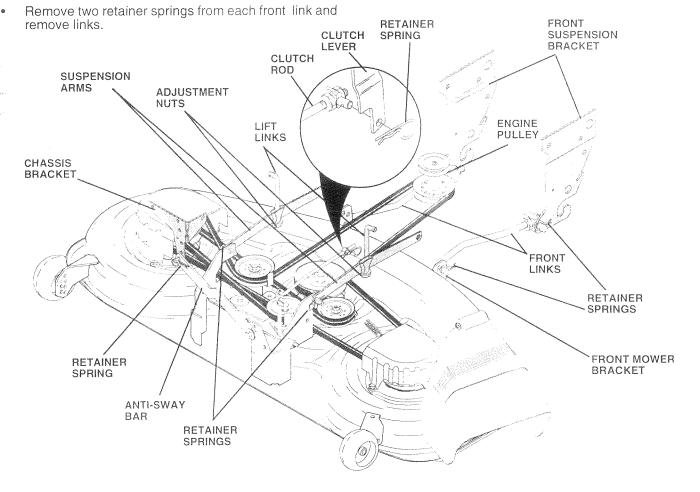


FIG. 18

#### 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" on page 2 of this manual). If tires are over or underinflated, you will not properly adjust your mower.

SIDE-TO-SIDE ADJUSTMENT (See Figs. 19 and 20)

- · Raise mower to its highest position.
- At the midpoint of both sides of mower, measure height from bottom edge of mower to ground. Distance "A" on both sides of mower should be the same or within 1/4" of each other.
- 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**: Three full turns of adjustment nut will change mower height about 1/8".

Recheck measurements after adjusting.

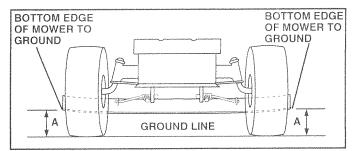


FIG. 19

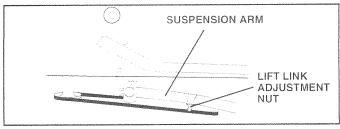


FIG. 20

FRONT-TO-BACK ADJUSTMENT (See Figs. 21 and 22)

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 that 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 "D" directly in front 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. Both links should be approximately 10-3/8"

- If links are not equal in length, adjust one link to same length as other link.
- To lower front of mower loosen nut "E" on both front links an equal number of turns.
- When distance "D" is 1/8" to 1/2" lower at front than rear, tighten nuts "F" against trunnion on both front links
- To raise front of mower, loosen nut "F" from trunnion on both front links. Tighten nut "E" on both front links an equal number of turns.
- When distance "D" is 1/8" to 1/2" lower at front than rear, tighten nut "F" against trunnion on both front links.
- · Recheck side-to-side adjustment.

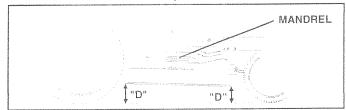


FIG. 21

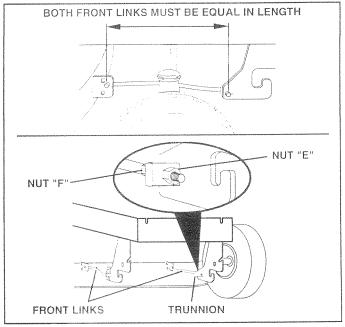


FIG. 22

#### TO REPLACE MOWER DRIVE BELT

MOWER DRIVE BELT REMOVAL (See Fig. 23) -

- Park tractor on a level surface. Engage parking brake.
   Disengage attachment clutch control.
- Remove four screws from L.H. mandrel cover and remove cover.
- Roll belt over the top of L.H. mandrel pulley.
- Remove belt from engine 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.

#### MOWER DRIVE BELT INSTALLATION (See Fig. 23) -

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

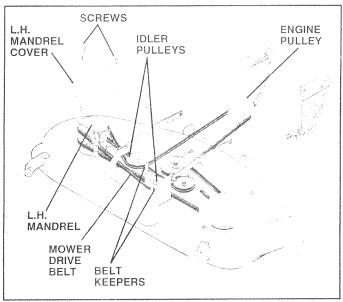


FIG. 23

# TO REPLACE MOWER BLADE DRIVE BELT (See Fig. 24)

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 four screws from R.H. mandrel cover and remove cover.
- 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 secondary clutch rod to pivot rod with retainer spring.
- 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).

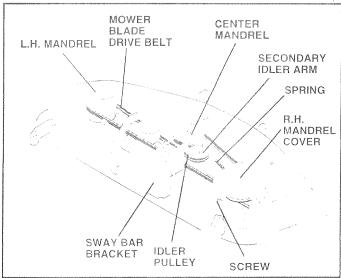


FIG. 24

### TO ADJUST BRAKE (See Fig. 25)

Your tractor is equipped with an adjustable brake system which is mounted on the 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.

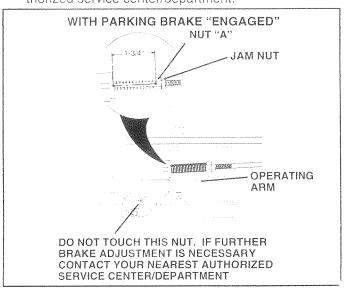


FIG. 25

# TO REPLACE MOTION DRIVE BELT (See Fig. 26)

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

- Remove mower (See "TO REMOVE MOWER" in this section of this manual.)
- Remove upper belt keeper.
- Remove belt from stationary idler and clutching idler.
- Pull belt slack toward rear of tractor. Carefully remove belt upwards from transmission input pulley and over cooling fan blades.
- Pull belt toward front of tractor and remove downward from around engine pulley.
- Install new belt by reversing above procedure.

IMPORTANT: MAKE SURE UPPER BELT KEEPER IS POSITIONED PROPERLY BETWEEN LOCATOR TABS.

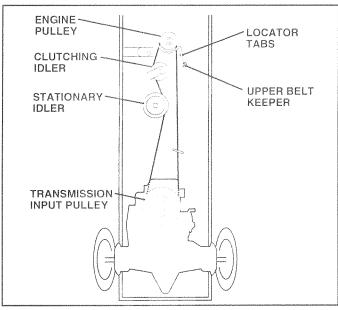


FIG. 26

# TO ADJUST MOTION CONTROL LEVER (See Fig. 27)

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

If for any reason the motion control lever will not hold its position while at a selected speed, it may be adjusted at the friction pack located on the right side of transmission.

- Park tractor on level surface. Stop tractor by turning ignition key to "OFF" position, and engage parking brake.
- Adjust motion control lever by tightening adjustment locknut one half (1/2) turn.

**NOTE:** If for any reason the effort to move the motion control lever becomes too excessive, reverse the above adjustment procedure by loosening locknut 1/4 to 1/2 turn. Road test tractor after adjustment and repeat procedure if necessary.

#### TRANSMISSION REMOVAL/REPLACEMENT

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

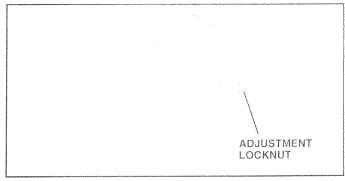


FIG. 27

#### TO ADJUST STEERING WHEEL ALIGNMENT

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

#### FRONT WHEEL TOE-IN/CAMBER

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

# TO REMOVE WHEEL FOR REPAIRS (See Fig. 28)

- Block up axie securely.
- Remove axle cover, retaining ring and washers to allow wheel removal (rear wheel contains a square key - Do not lose).
- · Repair tire and reassemble.
- On rear wheels only: align grooves in rear wheel hub and axle. Insert square key.
- Replace washers and snap retaining ring securely in axle groove.
- Replace axle cover.

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

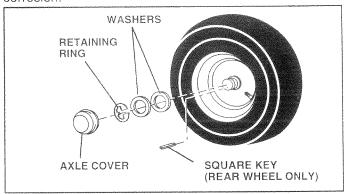


FIG. 28

# TO START ENGINE WITH A WEAK BATTERY (See Fig. 29)



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. 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 NEGA-TIVE (-) 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.

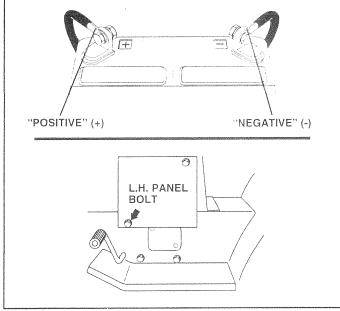


FIG. 29

#### TO REPLACE HEADLIGHT BULB

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

#### INTERLOCKS AND RELAYS

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

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

#### TO REPLACE FUSE

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

# TO REMOVE HOOD AND GRILL ASSEMBLY (See Fig. 30)

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

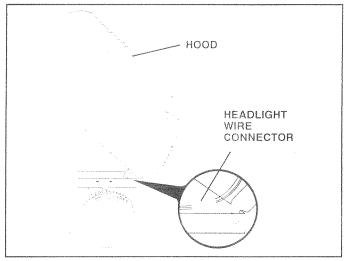


FIG. 30

#### **ENGINE**

# TO ADJUST THROTTLE CONTROL CABLE (See Fig. 31)

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

- With engine not running, move throttle control lever to fast (�) position.
- Check that swivel is against side of quarter circle. If it is not, loosen cable clamp screw and pull cable back until swivel is against quarter circle. Tighten cable clamp screw securely.

### TO ADJUST CHOKE CONTROL (See Fig. 32)

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 Customer Responsibilities 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.

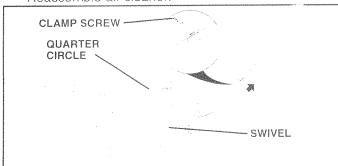


FIG. 31

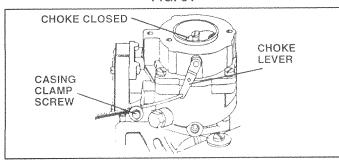


FIG. 32

# TO ADJUST CARBURETOR (See Figs. 33 & 34)

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 mixture screw in (clockwise) decreases the supply of fuel to the engine giving a leaner fuel/air mixture. Turning the mixture screw 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 and choke are adjusted properly (see above).  With engine off turn idle mixture screw in (clockwise) closing it finger tight and then turn out (counterclockwise) 1-1/4 to 1-1/2 turns.

#### 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.
- With throttle control lever in slow (\*\*) position, hold throttle lever against idle speed screw and adjust idle speed screw to obtain 1200 to 1400 RPM.
- While still holding throttle lever against idle speed screw, turn idle mixture screw in (clockwise) until engine begins to die and then turn out (counterclockwise) until engine runs rough. Turn screw to a point midway between those two positions.
- Continue to hold throttle lever against idle speed screw and adjust idle speed screw to obtain 900 to 1200 RPM. Release throttle lever.

#### **ACCELERATION TEST -**

Move throttle control lever from slow ( ) to fast ( )
position. If engine hesitates or dies, turn idle mixture
screw 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-GOVERNED HIGH SPEED NEEDS ADJUSTING, CONTACT YOUR NEAREST AUTHORIZED SERVICE CENTER/DEPARTMENT, WHICH HAS PROPER EQUIPMENT AND EXPERIENCE TO MAKE ANY NECESSARY ADJUSTMENTS.

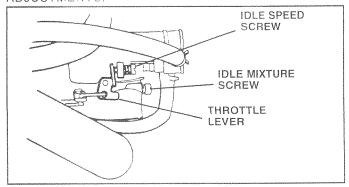


FIG. 33

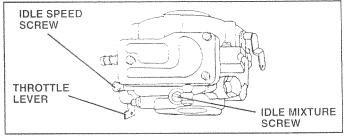


FIG. 34

# 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 Customer Responsibilities 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 Customer Responsibilities 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 Customer Responsibilities section of this manual).
- After cleaning, leave cables disconnected and place cables where they cannot come in contact with battery terminals.
- Be sure battery drain tube is securely attached.
- 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. Aiways follow the mix ratio found on stabilizer container. Bun 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 Customer Responsibilities section of this manual).

#### **CYLINDERS**

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

#### OTHER

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

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

# TROUBLESHOOTING POINTS

PROBLEM	CAUSE	CORRECTION				
Will not start	<ol> <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> </ol>	<ol> <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> </ol>				
Hard to start	<ol> <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> </ol> 8. Engine valves out of adjustment.	<ol> <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> </ol>				
Engine will not turn over	<ol> <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> </ol>	<ol> <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> </ol>				
Engine clicks but will not start	Weak or dead battery.     Corroded battery terminals.     Loose or damaged wiring.     Faulty solenoid or starter.	1. Recharge or replace battery. 2. Clean battery terminals. 3. Check all wiring. 4. Check/replace solenoid or starter.				
Loss of power	<ol> <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>Dirty engine air screen/fins.</li> <li>Dirty/clogged muffler.</li> <li>Loose or damaged wiring.</li> <li>Carburetor out of adjustment.</li> </ol>	<ol> <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> </ol>				
Excessive vibration	Worn, bent or loose blade.   Bent blade mandrel.   Loose/damaged part(s).	Replace blade. Tighten blade bolt.     Replace blade mandrel.     Tighten loose part(s). Replace damaged parts.				

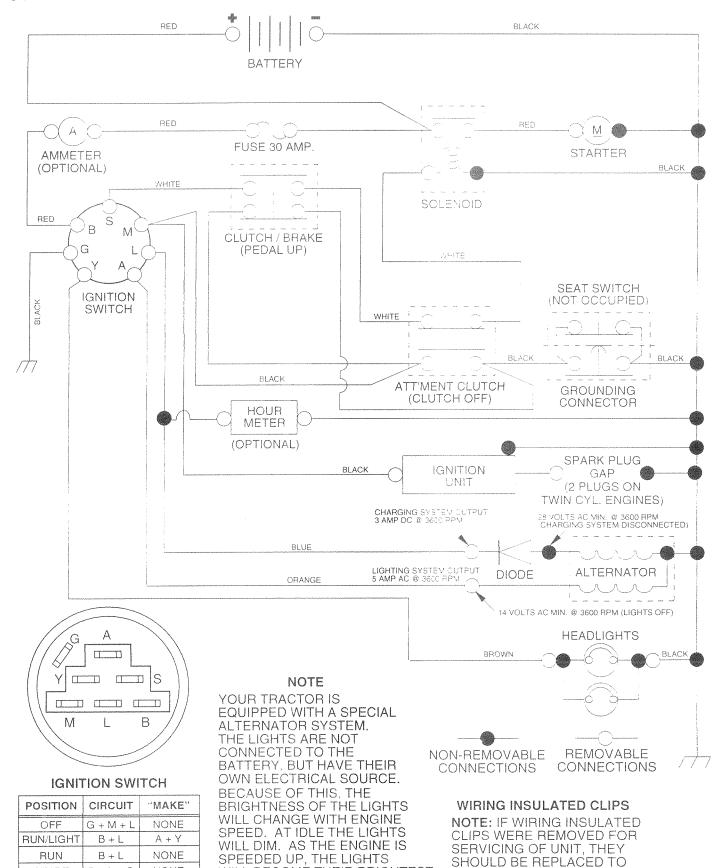
# TROUBLESHOOTING POINTS

PROBLEM	CAUSE	CORRECTION
Engine continues to run when operator leaves seat with attachment clutch engaged	Faulty operator-safety presence control system.	Check wiring, switches and connections. If not corrected, contact an authorized service center/department.
Poor cut - uneven	<ol> <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> </ol>	Pepiace blade. Tighten blade bolt. Level mower deck. Clean underside of mower housing. Pepiace blade mandrel. Clean around mandrels to open vent holes.
Mower blades will not rotate	<ol> <li>Obstruction in clutch mechanism.</li> <li>Worn/damaged mower drive belt.</li> <li>Frozen idler pulley.</li> <li>Frozen blade mandrel.</li> </ol>	Remove obstruction.     Replace mower drive belt.     Replace idler pulley.     Replace blade mandrel.
Poor grass discharge	<ol> <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> </ol>	<ol> <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> </ol>
Headlight(s) not working (if so equipped)	<ol> <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> </ol>	1. Turn switch "ON". 2. Replace bulb(s). 3. Check/replace light switch. 4. Check wiring and connections. 5. Replace fuse.
Battery will not charge	<ol> <li>Bad battery cell(s).</li> <li>Poor cable connections.</li> <li>Faulty regulator (if so equipped).</li> <li>Faulty alternator.</li> </ol>	Replace battery.     Check/clean all connections.     Replace regulator.     Replace alternator.
Loss of drive	<ol> <li>Freewheel control in "disengaged" position.</li> <li>Motion drive belt worn, damaged, or broken.</li> <li>Air trapped in transmission during shipment or servicing.</li> </ol>	Place freewheel control in "engaged" position.     Replace motion drive belt.     Purge transmission.
Engine "backfires" when turning engine "OFF"	Engine throttle control not set at "SLOW"     position for 30 seconds before stopping engine.	Move throttle control to "SLOW" position and allow to idle for 30 seconds before stopping engine.

# SERVICE NOTES

#### TRACTOR - - MODEL NUMBER CHD185H46A

#### **SCHEMATIC**



PROPERLY SECURE YOUR WIRING.

WILL BECOME THEIR BRIGHTEST.

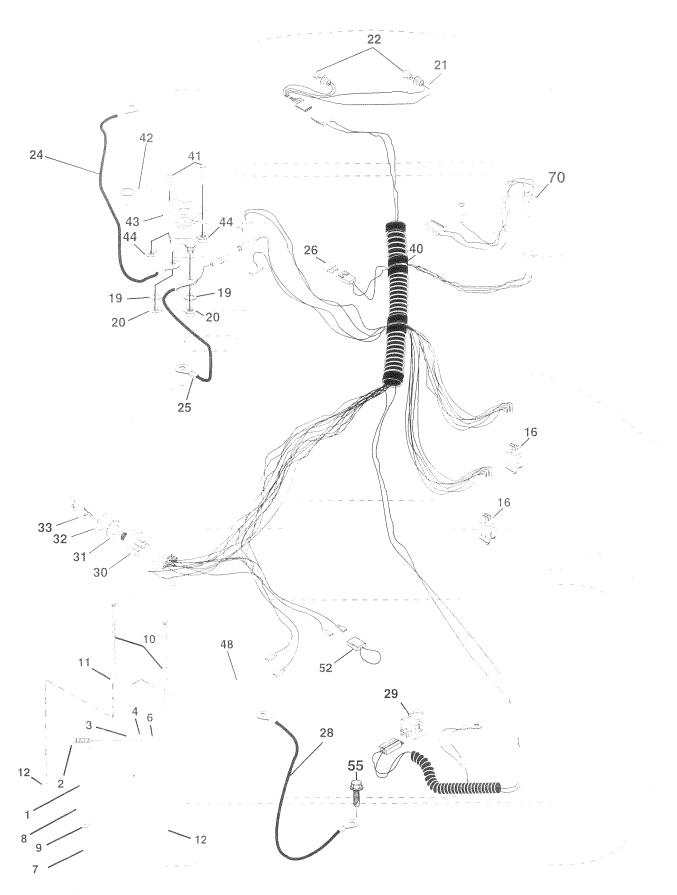
NONE

B + L + S

START

# TRACTOR - - MODEL NUMBER CHD185H46A

### ELECTRICAL



## TRACTOR - - MODEL NUMBER CHD185H46A

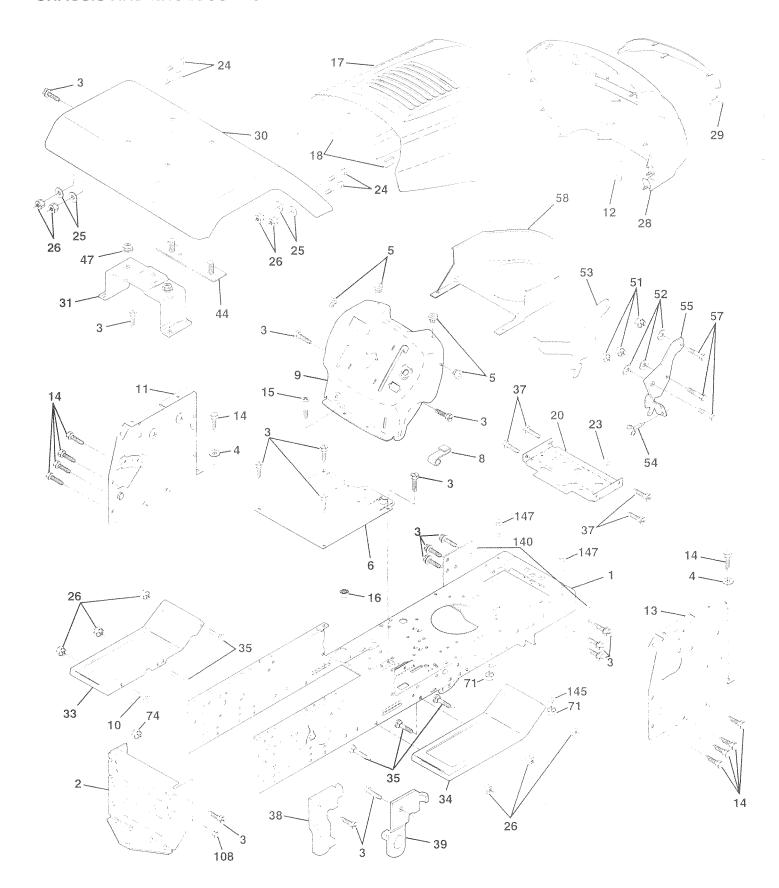
### ELECTRICAL

KEY	PART	
NO.	NO.	DESCRIPTION
1 2 3 4 6 7 8 9 10 1 12 6 19 2 2 2 2 2 2 2 3 3 3 3 3 4 4 4 4 4 5 2	146140 74760412 19091016 10040400 73220400 7697J 7603J 109596X 145211 150109 145769 153664	DESCRIPTION  Battery 12 Volt 30 amp Bolt Hex Hd 1/4-20unc X 3/4 Washer 9/32 X 5/8 X 16 Ga Washer Lock Hvy Heilcai 1/4 Nut Fin Hex 1/4-20 Unc Tube Plastic 46" Tray Battery 7 80 X 5 25 Blk Clamp Hose Olive Bolt RdHd Sqnk 1/4-20 x 7-1/2 Holddown Battery Front Mount Nut Push Nylon 1/4 Battery Switch Interlock Push-In Washer Lock 1/4 Nut Jam Hex 1/4-20 Unc Harness Asm Light W/4152j Bulb Light #1156 Cable Ground 6 Ga black Cable Battery 6 Ga 22" red Fuse 30 AMP Auto Green Cable Battery 6 Ga 21" black Switch Plunger Switch Ign 3 pos Nut Ignition Cover Sw Key Blk 1 25 Text SLT Key Ign Molded Harness Ign Bolt Fin Hex 1/4-20 uncx1/2 Gr5 Cover Terminal Red Solenoid Nut Keps Hex 1/4-20 Unc Ammeter Rectangular Protection Wire Loop Screw Thdrol 5/16-18 x 1/2 Tyt
70	140413	Harness Engine B&S

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

## TRACTOR - - MODEL NUMBER CHD185H46A

## **CHASSIS AND ENCLOSURES**



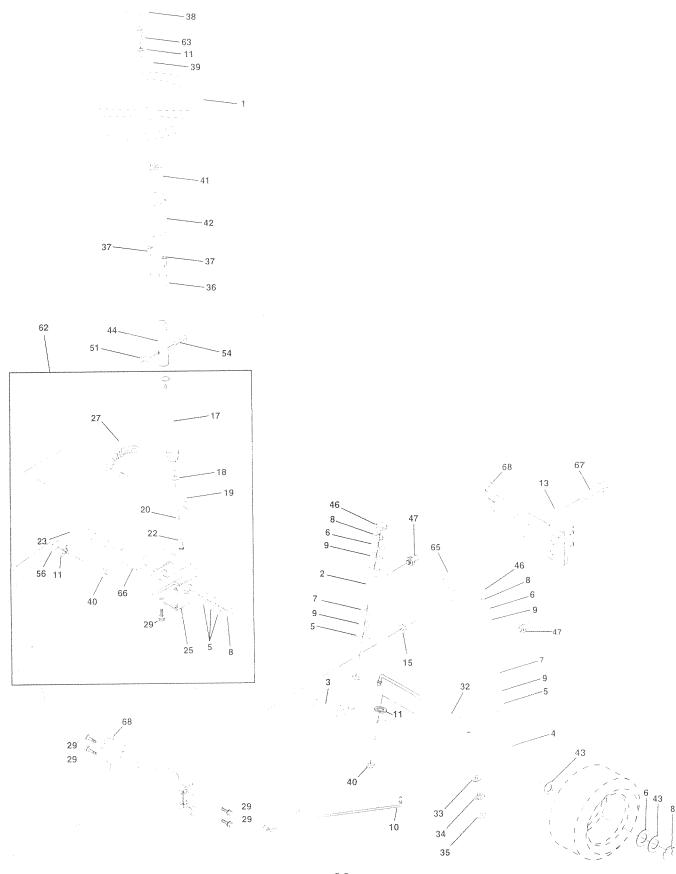
# TRACTOR - - MODEL NUMBER CHD185H46A CHASSIS AND ENCLOSURES

KEY NO.	PART NO.	DESCRIPTION
1 2 3 4 5 6 8 9 10 11 2 3 14 5 6 7 1 12 3 14 5 6 8 9 10 11 12 13 14 5 6 8 9 10 11 12 13 14 5 6 7 10 10 10 10 10 10 10 10 10 10 10 10 10	159530 140356 17490612 19131216 155272 155923 126471X 147633X011 72140608 156682 145660 157230 17490608 74180512 73510500 159639X428 126938X 156437 124028X 74780616 19131312 73800600 157373 14002X428 137113 145244X428 145243X428 72110606 17490508 139886 139887 140675 105531X 73800400 19091416 144697 17030814 144696 74780412 140547 73680400 73680400 73680400 73680400 73680400 73680400 73680400 73680400 73680400 73680400 73680400 73680400 73680600 74760612 158418 156524 74760412	Chassis Wldmt. Drawbar Stretch 94 Screw Thdrol. 3/8-16 x 3/4 Ty-Tt Washer 13/32 x 3/4 x 16 Ga. Bumper Hood/Dash Saddle Fender Shift F at Clip Insulator Dash Private Label Bolt RdHd Sqnk. 3/8-16 Unc x 1 Panel Asm. Dash Lh Clip Tinnerman Grile P L Panel Dash Rh Screw Thdrol. 3/8-16 x 1/2 Ty-Tt Screw Mach Trhd 5/16-18 Unc x 3/4 Nut Keps 5/16-18 Unc Hood Pnt Steel Private Label Bumper Hood Plate Mtg Battery/Fuel Tank Bushing Snap Nyl. Blk Fuel Line Bolt Fin Hex 3/8-16 Unc x 1 Gr. 5 Washer 13/32 x 13/16 x 12 Ga. Nut Lock Hex w/Insert 3/8-16 UNC Grill Private Lable Blk Lens Grille Private label Fender Asm LT w/Shift MS-428 Bracket Fender Footrest Pnt. Lh Ms-428 Bolt RdHd Sht. Sqnk. 3/8-16 x 3/4 Screw Thdrol. 5/16-18 x 1/2 Tyt Bracket Asm. Pvt. Lh Mwr. Rear Bracket Asm. Pvt. Rh Mwr. Rear Strap Asm. Fender Nut Push Nylon Nut Lock Hex W/Ins. 1/4-20 Washer 9/32 x 7/8 x 16 Ga. Bracket Grille LH Screw Lock Spider #8 x 7/8 Bracket, Grille RH Bolt Fin Hex 1/4-20 x .75 Air Duct Private Label Nut Crownlock 1/4-20 UNC Nut Crownlock 3/8-16 UNC Bolt, Fin Hex 1/4-20 UNC Nut Crownlock 3/8-16 UNC Bolt, Fin Hex 3/8-16 UNC Bolt Hex Hd 1/4-20 UNC x 3/4

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

# TRACTOR - - MODEL NUMBER CHD185H46A

## STEERING ASSEMBLY



# TRACTOR - - MODEL NUMBER CHD185H46A

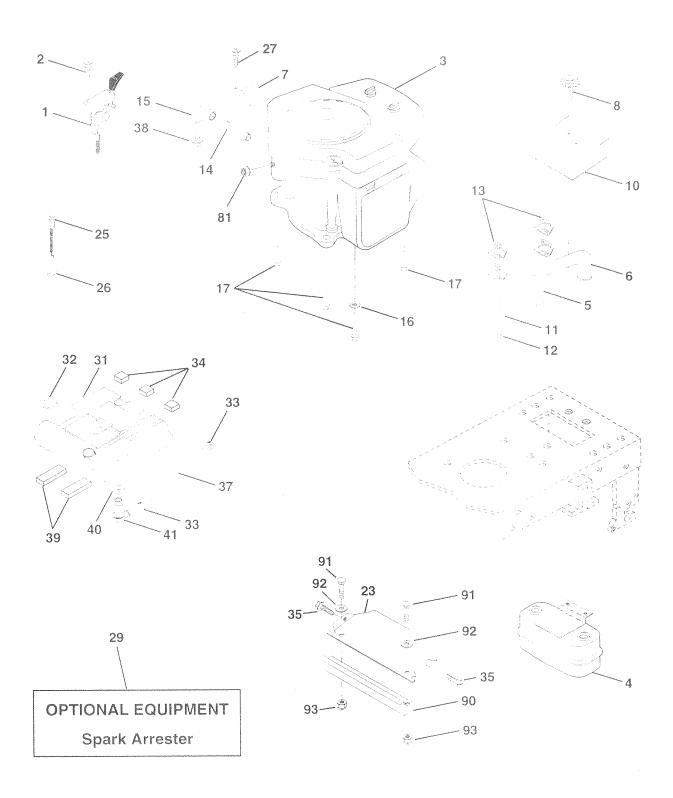
### STEERING ASSEMBLY

KE' NO.		DESCRIPTION
123456789011357890235792334567890113578902357923345678901235566666666666666666666666666666666666	140044 154427 156486 157475 6266H 121748X 19272016 12000029 3366R 156438 10040600 154779 73901000 156546 57079 124035X 126684X 71200410 127501 154406 136874 17490612 139929 19111216 10040500 73810500 155099 152927 140045 19133808 7810H 100711L 145054 121749X 153720 121232X 6855M 73800500 74780520 19131210 156594 74780616 154780 154404 74781044 154429	Wheel Steering Ayp/kelch Blk Axle Asm Fr Spindle Asm LH Spindle Asm RH Bearing Race Thrust Harden Washer 25/32 X 1-5 8 X 16 Ga Washer 27/32 X 1-1 4 X 16 Ga Ring Klip #t5304-75 Bearing Col Strg Blk Link Drag Extended Stamped Washer Lock Hvy Hicl Spr 3/8 Bearing Axle Nut Lock Flange 5/8-11 Unc Shaft Asm Strg Washer Thrust 515x 750x 033 Support Shaft Washer Shim 1/4 X 5/8 X 062 Screw Hex Socket 1/4-20 x 5/8 Shaft Asm Pittman Bracket Steering Gear Sector 22 Teeth Screw Thdrol 3/8-16x3/4 Ty-tt Rod Tie Wire Form 19 75 Mech Washer 11/32 x 3/4 x 16 Ga. Washer Lock Hvy Hicl Spr 5/16 Locknut 5/16-24 UNF Bushing Steering Screw Cap Wheel Steer Ayp Washer 13/32 x 2-3 8 x 8 Ga Nut Lock Center 3/8-24 Unf Adapter Wheel Strg Boot Dash P/L Steering Washer 25/32 X 1 1/4 X 16 Ga Extension Steering Cap Spindle Fr Top Blk Fitting Grease Nut Lock Hex W/Ins. 5/16-18 Unc P Washer 13/32 x 3/4 x 10 Ga. Kit Steering Assembly Service Bolt Fin Hex 5/16-18 Unc P Washer 13/32 x 3/4 x 10 Ga. Kit Steering Assembly Service Bolt Fin Hex 3/8-16unc x 1 Gr. 5 Spacer Axle Bearing Arm Pittman Bolt Fin Hex 5/8-11 Unc x 2-3/4 Brace Axle

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

# TRACTOR - - MODEL NUMBER CHD185H46A

### **ENGINE**



### TRACTOR - - MODEL NUMBER CHD185H46A

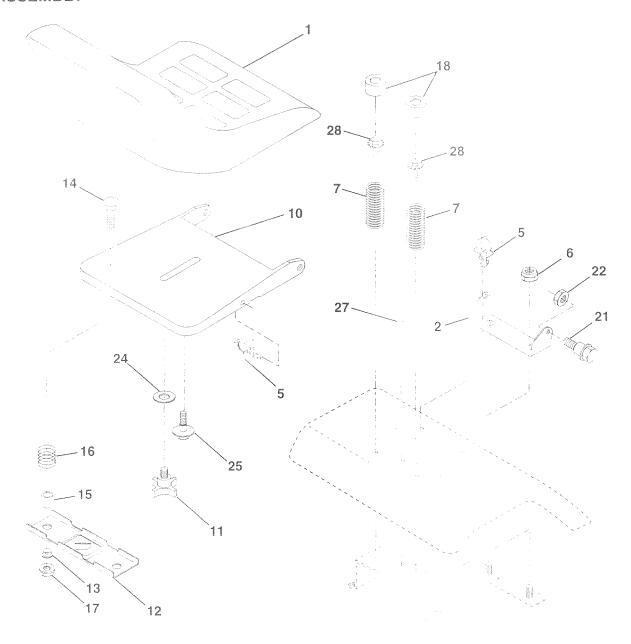
### **ENGINE**

KEY PA		SCRIPTION
1 14129 2 17720 3 4 14973 5 14406 6 14406 7 13812 8 1501 10 14553 11 10040 12 74780 13 27223 14 13280 15 13200 16 11050 17 17490 23 15612 25 14593 26 73920 27 15292 29 13718 31 15134 32 14052 33 12348 34 10608 35 17490 37 8543F 38 39 10922 40 36450 41 13927 81 12886 90 15952 91 71104	0410 Scre Eng 23 Muf 68 Exh 69 Exh 29 Clar 76 Bolt 52 Shie 0400 Was 0412 Bolt 50 Gas 0336 Nipp 0300 Elbo 0600 Was 0624 Scre 23 Shie 0600 Nut 27 Scre 380 Kit S 46 Tanl 27 Cap 37X Clar 382X Pad 0512 Scre 382X Pad 0512 Scre 37 Clar 37 Cap 37X Clar 37 Cap 37X Clar 37 Cap 37X Clar 37 Cap 37X Clar 37 Ster 37 Ster 37 Ster 31 Nut 20 Gua 408 Bolt	atrol Throt 35.5 LH Flag w Hex Thd Cut 1 4-20x5 8 T ine, Briggs Model No. 42D777 fler Asm Twin Lo-Tone aust Asm RH B&S 18 HP Vert aust Asm LH B&S 18 HP Vert mp Tube Double Engine 5/16-18 UNC x 3/4 w/ Sems eld Heat sher Lock Hvy Helical 1/4 Fin Hex 1/4-20unc X .75 ket Muffler #272250 ble Pipe 4-1/2" bw Std 90 Degree 3/8-18 Npt sher Lock Ext Tooth 3/8 ew Thdrol 3/8-16 X 1-1/2 Tt eld Browning trol Choke Keps 3/8-24 Unf ew TT #10-32 x 5 x 3/8 Flange Spark Arrestor k Fuel Asm Fuel mp Hose Blk Spacer ew Thdrol 5/16-18 x 3/4 Fuel 54" g Oil Drain (Order From Engine uifacturer) Idler hing n Fuel Tank Flange 1/4-20 Starter Nut rd Debris 97 Blk Fin Hex 1/4-20 UNC x 1/2 sher 9/32 x 5/8 x 16 Ga.
93 12397	/bx Nut	Lock 1/4 Lge Flg Gr. 5

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

# TRACTOR - - MODEL NUMBER CHD185H46A

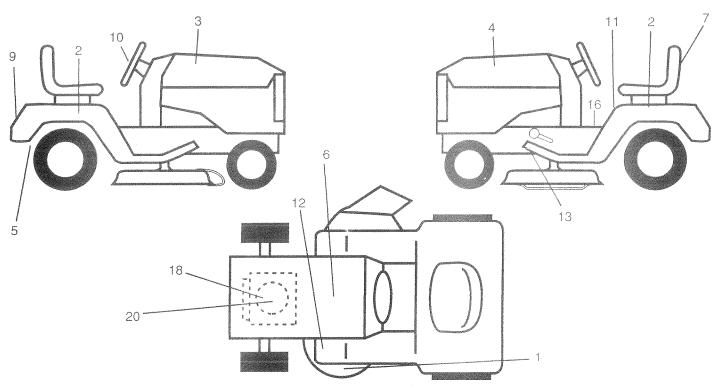
### SEAT ASSEMBLY



KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1 2 5 6 7 10 11 12 13 14 15	140118 140551 145006 73800600 124181X 155925 120068X 121246X 121248X 72050411 121249X	Seat Bracket Pnt Pivot Seat (blk ) Clip Push-In Nut Lock Hex W/Ins 3/8 -16 UNC Spring Seat Cprsn 2 250 Blk Zi Pan Pnt Seat (blk ) Knob Seat 1/2-1/3 UNC Bracket Pnt Mounting Switch Bushing Snap Blk Nyl 50 Id Bolt Rdhd Sht Nk 1/4-20x1-3/8 Spacer Split 28 X 88	16 17 18 21 22 24 25 27 28 <b>NOT</b>	123740X 123976X 124238X 153236 73800500 19171912 127018X 17490608 150176 <b>E:</b> All compon 1 inch = 25	Spring Cprsn Nut Lock 1/4 Lge Flg Gr 5 Zinc Cap Spring Seat Bolt Shoulder 5/16-18 Unc Blkz-2A Nut Lock Hex W/Ins 5/16-18 Washer 17/32 X 1-3/16 X 12 Ga Bolt Shoulder 5/16-18 X 62 Screw Thdrol. 3/8-16 x 1/2 Bolt 5/16 -18 UNC X 3/4 W/Sems ent dimensions given in U.S. inches 4 mm

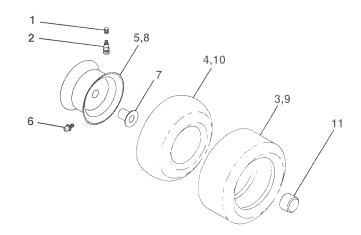
### TRACTOR - - MODEL NUMBER CHD185H46A

### **DECALS**



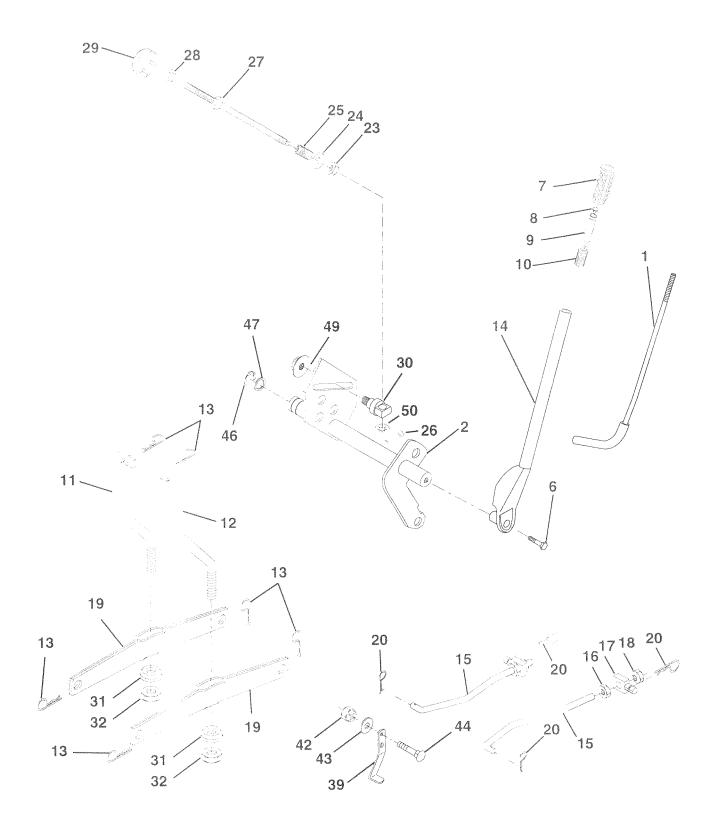
KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1 2 3 4 5 6 7 9	158169 158434 158432 158433 142341 145005 158317 158166 158168	Decal Deck Mul/Bag Decal Fend Side Auto Decal Hood RH Decal Hood LH Decal Drawbar Cntrl Mvt Hyd Lt Decal Bat Dan/Poi P/L Sym Decal Seat Reploment Decal Fender Logo Decal Cap Strg		157140 101892X 139346 156993 273284 158318 133671 138311 159515	Decal Danger English/French Decal Clutch/Brake English/French Decal V-Belt Dr Sch Tractor E Decal Sdl Oper Inst. Decal HP Engine Decal Reploment Engine Pad Footrest Decal Handle Lft Height Adjust Manual Owner's English Manual Owner's Spanish

### WHEELS AND TIRES



KEY NO.	PART NO.	DESCRIPTION
1 2 3 4 5 6 7	59192 65139 106230X 59904 106228X427 278H 9040H	Cap Valve Tire Stem Valve Tire F Ts 16 X 6 5 - 8 Service Tube Front (Service Item Only) Rim Asm 8" front White Service Fitting Grease (Front Wheel Only) Bearing Flange (Front Wheel Only)
8 9 10 11	124074X427 124106X 7154J 104757X 144334	Rim Asm 12" rear White Service Tire R Ts 23 x 8.5 x 12 C Service Tube Rear (Service Item Only) Cap Axle Blk 1 50 X 1 00 Sealant, Tire (10 oz. Tube)

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



# TRACTOR - - MODEL NUMBER CHD185H46A

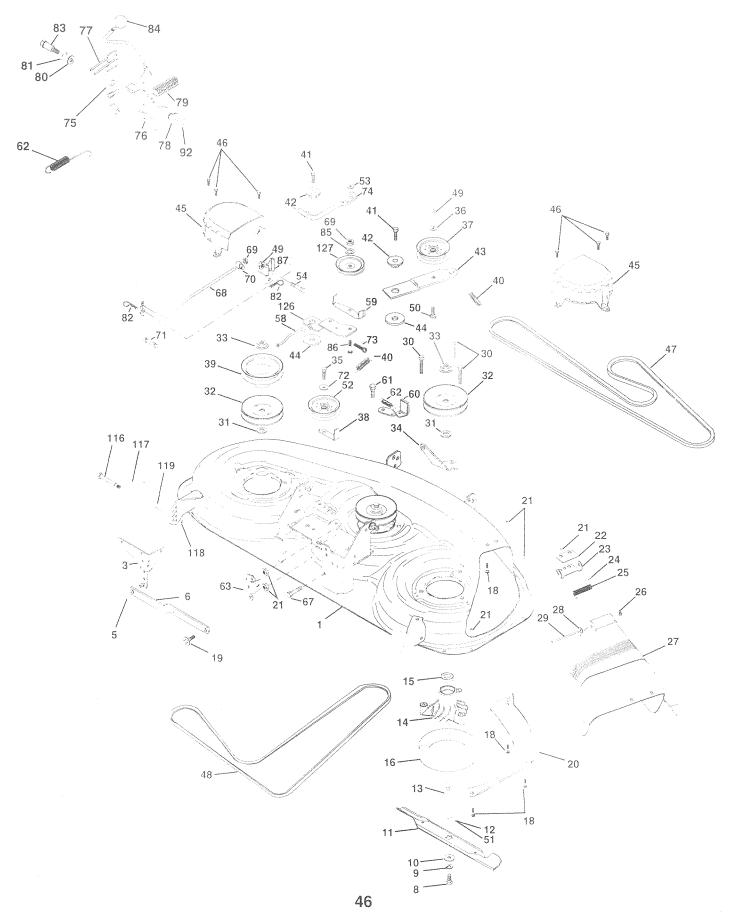
### LIFT

KE`	PART NO.	DESCRIPTION
14 15 16 17 18 19 20 23 24 25 26 27 28 29 30 31 32 43 44 46 47	110807X 19131016 2876H 7602308 126971X 73350600 138057 150233 140302	Rod, Lever Shaft, Lift Bolt Hex 3/8-16 x 1-12 Grip, Handle Button, Plunger Plunger, Lever Spring Link, Lift, LH Link, Lift, RH Retainer, Spring Lever, Lift (Includes Key No. 1) Link Front Nut, Hex, Jam 1/3-13 UNC Trunnion, Blk Zinc Nut, Lock W/Wsh 1/2-13 Arm, Suspension Retainer Spring Nut, Hex, Special Washer 13/32 x 5/8 x 16 Gauge Spring Pin, Cotter 3/32 x 1/2 Rod, Adjust, Lift Nut, Hex, Jam 3/8-16 Knob, Infinite Height Adjustment Trunnion Bearing Pvt Lift Spherical Nut, Crownlock 3/8-24 Stop Over Center Nut Crownlock 3/8-16 UNC Washer 13/32 x 1 x 12 Ga. Bolt Carriage 3/8-16 x 1.00 E-Ring Washer 29/32 x 1-1/4 x 16 Gauge Nut Hex Flange Lock Nut Push Phos & Oil

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

# TRACTOR - - MODEL NUMBER CHD185H46A

### MOWER DECK



### TRACTOR - - MODEL NUMBER CHD185H46A

### **MOWER DECK**

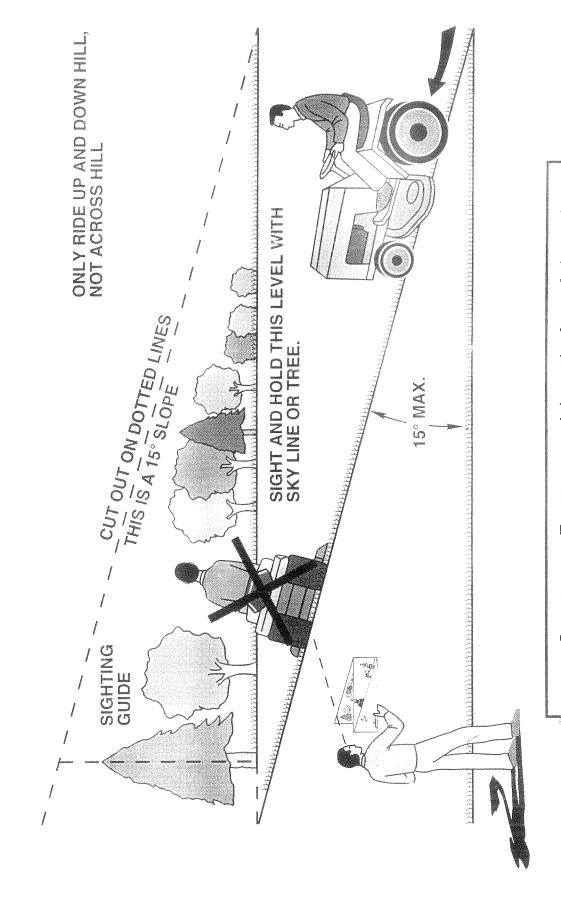
KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1 3 5 6 8 9 9 1 1 1 2 3 1 4 5 6 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 2 3 3 3 3	156948 138457 4939M 130832 850857 10030600 140296 157353 129895 137553 137152 110485X 140329 72140505 132827 145055 73680500 134753 131267 105304X 123713X 110452X 157788 19111016 131491 138776 129963 153531 137266 144945 17490628 19131316 131494 156086 144917 137273 17490620 122052X 144949 133943 145059 137729 144959 158818	Deck Asm., Mower 46" Bracket Asm., Sway Bar Retainer Spring Arm, Suspension, Rear (Sway Bar) Bolt, Patched 3/8-24 x 1-1/4 Gr. 8 Washer, Lock Hvy., Unplated 3/8 Washer, Hard Blade, Mower Vented Blade, 46" Mower Deck Bearing, Ball, Mandrel #6204 Shaft Asm. w/Lower Bearing (Includes Key No. 12) Housing, Mandrel Bearing, Ball, Mandrel Stripper, Mower Round Bolt, Carriage 5/16-18 x 5/8 Bolt, Hex Head, Shoulder 5/16-18 Baffle, Vortex Mower 46" Nut, Crownlock 5/16-18 UNC Stiffiner, Bracket Bracket, Deflector Cap, Sleeve Spring, Torsion, Deflector Nut, Push Shield, Deflector Mower Washer 11/32 x 5/8 x 16 Ga. Rod, Hinge Screw, Hex Head, Thdroll Washer, Spacer Mower Vented Pulley, Mandrel Nut, Fig. Top Lock Cntr. 9/16 Anchor, Spring Deck 46" Screw, Thdroll 3/8-16 x 1-3/4 Tytt Washer 13/32 x 13/16 x 16 Ga. Pulley, Idler, Flat Keeper, Belt, Idler Pulley, Idler, Flat Keeper, Belt, Idler Pulley, Idler, Secondary Vasher, Hardened Cover, Mandrel Deck Screw, Thdroll. 1/4-20 x 5/8 V-Belt, Mower, Secondary V-Belt, Mower, Primary	53 58 59 60 61 62 63 67 68 69 70 71 72 73 74 75 76 77 78 80 81 82 83 84 85 86 87 88 92 116 117 118 119 126 127 127 127 127 127 127 127 127 127 127	73680600 72110612 153390 156493 19131312 156488 157034 156722 139888 131870 156473 74760512 156487 73350600 142028 133551 19131616 76020412 156474 127847 154809 127845 127498 153701 121748X 12000029 4497H 128903 106932X 10040600 158565 158373 74780616 73800600 146851 146850 73930600 19121414 156472 146763 157162	Nut. Crownlock 3/8-16 UNC Bolt. Carriage 3/8-16 x 1-1/2 Gr. 5 Washer Felt Pulley Idler Washer 13/32 x 13/16 x 12 Ga. Link Brake 46" Guide Belt 46" Arm Asm Brake Bolt Shld 5/16-18 Ty TT Spring Return Bracket Clutch Rod Pivot Bolt Hex Hd 5/16-18 UNC x 3/4 Rod Clutch Nut Hex Jam 3/8-16 UNC Trunnion Adj Rod Pivot w/Nibs Washer 13/32 x 1 x 16 Ga. Pin Cotter 1/8 x 3/4 Link Clutch 46" Arm Clutch Secondary Lever Asm. Clutch Pri Plm Stlt Keeper Spring Bushing .747 O.D. x .794 Lg Brass Spring Mower Clutch Washer 25/32 x 1-5/8 x 16 Ga. Ring Klip Retainer Spring 1" Bolt Shoulder 3/8-16 UNC Knob Rd 3/8-16 Plstc Thds Washer Lock Hvy Hlcl Spr. 3/8 Bolt Carr Sh 3/8-16 x 2 Gr. 5 Bracket Extension Bolt Fin Hex 3/8-16 UNC x 1 Gr. 5 Nut Lock Hex w/ Ins 3/8-16 UNC Bolt, Shoulder Gauge Wheel, Medium Nut, Centerlock 3/8-16 UNC Washer 3/8 x 7/8 x 14 Ga. Arm, Idler, Primary Deck 46" Pulley, Idler, V-Groove Dim. 4.25 Deck Complete (Std. Deck-Order separately gauge wheel components Key Nos. 116-118) Mandrel Asm Service

# **SERVICE NOTES**

# SERVICE NOTES

# SERVICE NOTES

# 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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