



## Instruction Book - Model CT20

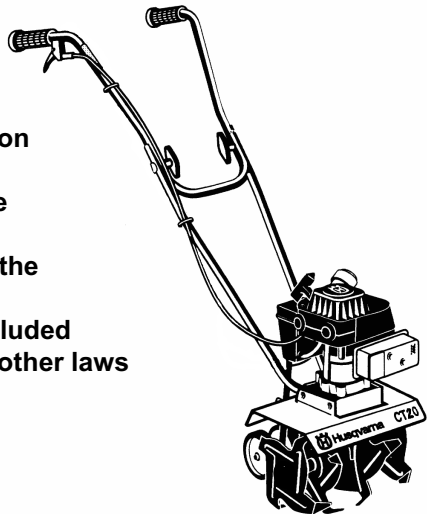
Read and keep this book for future reference.  
This book contains important information on  
***SAFETY, ASSEMBLY, OPERATION, and MAINTENANCE.***

### **PRODUCT INFORMATION**

The owner must be certain that all the product information is included with the unit.

This information includes the **INSTRUCTION BOOKS**, the **REPLACEMENT PARTS** and the **WARRANTIES**.

This information must be included to make sure state laws and other laws are followed.



MS-3615MA

# Husqvarna **WARRANTY STATEMENT**

## **SECTION 1: LIMITED WARRANTY**

Husqvarna Forest & Garden Company ("Husqvarna") warrants Husqvarna product to the original purchaser to be free from defects in material and workmanship from the date of purchase for the "Warranty Period" of the product as set forth below:

**Lifetime Warranty (Parts and Labor):** All tiller tines and trimmer shafts against breakage. Proof of purchase required.

**Lifetime Warranty ("PARTS ONLY" after initial warranty expiration):** Ignition coils and modules on handheld product. Proof of purchase required.

**WARRANTY SCHEDULE FOR TURF CARE Equipment** – Zero Turn Riders (New warranty applies to units sold after August 1, 2005. Also applies to units factory-equipped with R.O.P.S.)

**EZ Zero Turn Riders:** 3 year consumer warranty or 600 hours of use (when used solely at the owner's residence.)

**EZ Zero Turn Riders:** 1 year commercial warranty or 600 hours of use.

**IZ, LZ & BZ Zero Turn Riders:** 5 year consumer warranty or 1,500 hours of use (when used solely at the owner's residence.)

**IZ, LZ & BZ Zero Turn Riders:** 1 year commercial warranty or 1,500 hours of use.

**3 Year or 1,500 Hour Commercial Use Warranty:** spindles on zero turn riders, hydraulic pumps and wheel motors.

**Warranty Schedule for Turf Care Walk Behind Units** – W, WG & WH Zero Turn Riders - 3 year consumer and commercial warranty. New warranty applies to units sold after August 1, 2005. Also applies to units factory-equipped with R.O.P.S.

**2 Year COMMERCIAL and CONSUMER Warranty:** all Husqvarna ground-engaging commercial equipment.

### **WARRANTY SCHEDULE FOR CONSUMER TURF CARE EQUIPMENT:**

**2 Year Consumer Warranty:** Automatic mower, all Residential Zero Turn Riders, all lawn, yard and garden tractors, all noncommercial walk behind mowers, tillers, chain saws, trimmers, brushcutters, clearing saws, snow blowers, handheld blowers, backpack blowers, hedge trimmers, electrical products and power-assist collection systems for noncommercial, nonprofessional, noninstitutional or nonincome producing use, except as herein stated. All consumer product use must have been limited to the owner's residence.

### **WARRANTY SCHEDULE FOR CONSUMER FOREST & GARDEN EQUIPMENT:**

**2 Year Consumer Warranty:** all consumer chain saws, trimmers, brushcutters, clearing saws, handheld blowers, backpack blowers, hedge trimmers, and electrical products for noncommercial, nonprofessional, noninstitutional or nonincome producing use, except as herein stated. All consumer product use must have been limited to the owner's residence.

**2 Year or 2,000 Hour & 1 Year or 1,000 Hour Warranty:** Husqvarna Utility Vehicles

**1 Year Warranty:** Power cutters, stump grinder, pole pruners and pole saws for noncommercial, nonprofessional, noninstitutional or nonincome producing use. All 300 series trimmers, brushcutters, clearing saws, hovering trimmers, stick edgers, backpack blowers, handheld blowers, hedge trimmers, power-assist collection systems for commercial, institutional, professional or income producing purposes or use.

**1 Year Conditional Component Warranty:** Chain saw crankshafts for commercial/professional use (parts and labor). Saw must be operated with Husqvarna XP 2 cycle oil.

**90 Day Commercial Warranty:** Automatic mower, chain saws, 100 series trimmers, power cutters, stump grinders, pole saws, pole pruners, snow throwers, model series 580 & 600 walk-behind mowers, or any Husqvarna product used for commercial, institutional, professional, municipality or income producing purposes or use except as otherwise provided herein.

**Batteries:** 1 year prorated limited warranty with 100% replacement during the first 6 months.

**Rental Warranty:** 90 days on all applicable professional equipment reference warranty time period charts located in the back of the Retailer Warranty Policy & Procedure Manual.

**Husqvarna Safety Apparel** carries as 90-day warranty from the date of the customer's original purchase for defects in material and workmanship. Normal wear, tear or abuse is not covered under the warranty. Product must be returned to Charlotte with a warranty claim form. All care and maintenance instructions must be followed as stated by the manufacturer on the care label. The fit of the product apparel/boot is not covered under warranty.

**30 Day Warranty:** Replacement parts, accessories including bars and chains, tools and display items. Emission control system components necessary to comply with CARB-TIER II and EPA regulations, except for those components which are part of engine systems manufactured by third part engine manufacturers for which the purchaser has received a separate warranty with product at time of purchase.

## **SECTION 2: HUSQVARNA'S OBLIGATIONS UNDER THE WARRANTY**

Husqvarna will repair or replace defective components without charge for parts or labor if a component fails because of a defect in material or workmanship during the warranty period.

### **SECTION 3: ITEMS NOT COVERED BY THIS WARRANTY**

The following items are not covered by this warranty:

1. Normal customer maintenance items which become worn through normal regular use, including, but not limited to, belts, blades, blade adapters, bulbs, clutches, clutch drums, filters, guide bars, lubricants, rewind springs, saw chain, spark plugs, starter ropes and tines.
2. Natural discoloration of material due to ultraviolet light.
3. Engine and drive systems not manufactured by Husqvarna; these items are covered by the respective manufacturer's warranty as provided in writing with the product information supplied at the time of purchase; all claims must be sent to the appropriate manufacturer.
4. Lawn and garden attachments are covered by a third party which gives a warranty, all claims for warranty should be sent to the manufacturer.
5. Commercial or consumer mowing decks with sand abrasion damage.
5. Emission Control System components necessary to comply with CARB-TIER III and EPA regulations which are manufactured by third party engine manufacturer.

### **SECTION 4: EXCEPTIONS AND LIMITATIONS**

This warranty shall be inapplicable to defects resulting from the following:

1. Accident, abuse, misuse, negligence and neglect, including stale fuel, dirt, abrasives, moisture, rust, corrosion, or any adverse reaction due to incorrect storage or use habits;
2. Failure to operate or maintain the unit in accordance with the Owner's/Operator 's manual or instruction sheet furnished by Husqvarna;
3. Alterations or modifications that change the intended use of the product or affects the product's performance, operation, safety, or durability, or causes the product to fail to comply with any applicable laws; or:
4. Additional damage to parts or components due to continued use occurring after any of the above.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. HUSQVARNA SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THESE PRODUCTS EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THESE PRODUCTS IS LIMITED IN DURATION TO THE WARRANTY PERIOD AS DEFINED IN THE LIMITED WARRANTY STATEMENT. HUSQVARNA RESERVES THE RIGHT TO CHANGE OR IMPROVE THE DESIGN OF THE PRODUCT WITHOUT NOTICE, AND DOES NOT ASSUME OBLIGATION TO UPDATE PREVIOUSLY MANUFACTURED PRODUCTS.

Some states do not allow the exclusion of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### **SECTION 5: CUSTOMER RESPONSIBILITIES**

The product must exhibit reasonable care, maintenance, operation, storage and general upkeep as written in the maintenance section of the Owner's/Operator 's manual. Should an operational problem or failure occur, the product should not be used, but delivered as is to an authorized Husqvarna retailer for evaluation. Proof of purchase, as explained in section 6, rests solely with the customer.

### **SECTION 6: PROCEDURE TO OBTAIN WARRANTY CONSIDERATION**

It is the Owner's and Retailer's responsibility to make certain that the Warranty Registration Card is properly filled out and mailed to Husqvarna Forest & Garden Company. This card should be mailed within ten (10) days from the date of purchase in order to confirm the warranty and to facilitate post-sale service.

Proof of purchase must be presented to the authorized Husqvarna retailer in order to obtain warranty service. This proof must include date purchased, model number, serial number, and complete name and address of the selling retailer.

To obtain the benefit of this warranty, the product believed to be defective must be delivered to an authorized Husqvarna retailer in a timely manner, no later than thirty (30) days from date of the operational problem or failure. The product must be delivered at the owner's expense. Downtime, pick-up and delivery charges are not covered by this warranty. An authorized Husqvarna retailer can be normally located through the "Yellow Pages" of the local telephone directory or by calling 1-800-HUSKY62 for a dealer in your area.

**HUSQVARNA**  
**7349 Statesville Road**  
**Charlotte, NC 28269**

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Record the following information about your unit so that you will be able to provide it in case of loss or theft.

MODEL NUMBER:  -  (Enter complete 8 digit number from model plate on unit)

PURCHASE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ CODE NO.: \_\_\_\_\_ SERIAL NO.: \_\_\_\_\_

DEALER'S NAME AND ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ TELEPHONE: \_\_\_\_\_

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**IMPORTANT:** This unit is equipped with an internal combustion engine and must 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 must be maintained in effective working order by the operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer.

# OWNER'S INFORMATION

This instruction book is written for a person with some mechanical ability. Like most service books, not all the steps are described. Steps on how to loosen or tighten fasteners are steps anyone can follow with some mechanical ability. Read and follow these instructions before you use the unit.

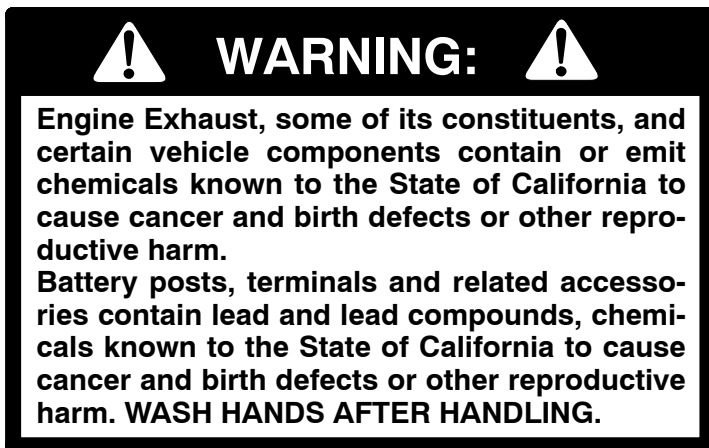
**Know your product:** If you understand the unit and how the unit operates, you will get the best performance. As you read this manual, compare the illustrations to the unit. Learn the location and the function of the controls. To help prevent an accident, follow the operating instructions and the safety rules. Keep this manual for future reference.

**IMPORTANT:** Many units are not assembled and are sold in cartons. It is the responsibility of the owner to make sure the assembly instructions in this manual are exactly followed. Other units are purchased in an assembled condition. On assembled units, it is the responsibility of the owner to make sure the unit is correctly assembled. The owner must carefully check the unit according to the instructions in this manual before it is first used.

## RESPONSIBILITY OF THE OWNER

**The responsibility of the owner is to follow the instructions below.**

1. Carefully read and follow the rules for safe operation.
2. Follow all the assembly and preparation instructions.
3. Inspect the unit.
4. Make sure that the operator of the unit knows how to correctly use all standard and accessory equipment.
5. Operate the unit only with guards, shields, and other safety items in place and working correctly.
6. Correctly adjust the unit.
7. Service the unit only with authorized or approved replacement parts.
8. Complete all maintenance on the unit.



# SAFETY RULES

## Safe Operation Practices for Cultivator



**WARNING:** Look for this symbol to point out important safety precautions. It means: "Attention! Become Alert! Your Safety Is Involved."



**WARNING:** To prevent accidental starting when setting-up, transporting, adjusting or making repairs, always disconnect spark plug wire and put wire where it cannot contact the spark plug .

**IMPORTANT:** Safety standards require operator presence controls to minimize the risk of injury. Your cultivator is equipped with such controls. Do not attempt to defeat the function of the operator presence control under any circumstances.

### Before Use

- Read the owner's manual carefully. Be thoroughly familiar with the controls and the proper use of the cultivator. Know how to stop the cultivator and disengage the controls quickly.
- Do not operate the cultivator without wearing adequate outer garments. Wear footwear that will improve footing on slippery surfaces.
- Keep the area of operation clear of all persons, particularly small children and pets.
- Thoroughly inspect the area where the cultivator is to be used and remove all foreign objects.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people, their property, and themselves.
- Disengage all clutches and shift into neutral before starting the engine (motor).

### Fuel Safety

- Handle fuel with care; it is highly flammable.
- Use an approved container.
- Check fuel supply before each use, allowing space for expansion as the heat of the engine and/or sun can cause fuel to expand.

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- Fill fuel tank outdoors with extreme care. Do not smoke while refueling. Never fill fuel tank indoors. Replace fuel tank cap securely and wipe up spilled fuel.
- If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
- Never remove the fuel tank cap or add fuel to a running or hot engine.
- Never store fuel or cultivator with fuel in the tank inside a building where fumes may reach an open flame.

### Operating Safety

- Never allow children or young teenagers to operate the cultivator. Keep them away while it is operating. Never allow adults to operate the cultivator without proper instruction.
- Do not operate this machine if you are taking drugs or other medication which can cause drowsiness or affect your ability to operate this machine.
- Do not use this machine if you are mentally or physically unable to operate this machine safely.
- Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect your eyes from foreign objects that may be thrown from the cultivator.
- Do not put hands or feet near or under rotating parts.
- Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
- Exercise caution to avoid slipping or falling.
- Never operate the cultivator without proper guards, plates, or other safety protective devices in place.

**Continued: following page**

# SAFETY RULES

- Use only attachments and accessories approved by the manufacturer of the machine (such as wheel weights, counterweights, and the like).
- Never operate the cultivator at high transport speeds on hard or slippery surfaces. Look behind and use care when backing.
- Never allow bystanders near the cultivator.
- Keep children and pets away while operating.
- Never operate the cultivator without good visibility or light.
- Be careful when tilling in hard ground. The tines may catch in the ground and propel the tiller forward. If this occurs, let go of the handlebars and do not restrain the machine.
- Use extreme care when reversing or pulling the machine towards you.
- Do not change the engine governor settings or overspeed the engine.
- Start the engine or switch on the motor carefully according to instructions and with feet well away from the tines.
- Never pick up or carry a machine while the engine is running.
- Do not run the engine indoors. The exhaust fumes are dangerous, containing CARBON MONOXIDE, an ODORLESS and DEADLY GAS.
- Take all possible precautions when leaving the cultivator unattended. Stop the engine, and if equipped, remove the key.
- Do not overload the cultivator capacity by attempting to till too deep at too fast a rate.

## Safe Storage

- Always refer to the owner's manual instructions for important details if the cultivator is to be stored for an extended period.
- Never store the cultivator with fuel in the fuel tank inside a building where ignition sources are present such as water and space heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.
- If the fuel tank has to be drained, do this outdoors.
- Keep the cultivator in safe working condition. Check all fasteners at frequent intervals for proper tightness.












## Repair / Adjustments Safety

- After striking a foreign object, stop the engine. Remove the wire from the spark plug, and keep the wire away from the plug to prevent accidental starting. Thoroughly inspect the cultivator for any damage, and repair the damage before restarting and operating it.
- If cultivator should start to vibrate abnormally, stop engine and check immediately for the cause. Vibration is generally a warning of trouble.
- Stop the engine whenever you leave the operating position. Also, disconnect the spark plug wire before unclogging the tines and when making any repairs, adjustments, or inspections.
- When cleaning, repairing, or inspecting, shut off the engine and make certain all moving parts have stopped.
- Never attempt to make any adjustments while the engine is running except when specifically recommended by the manufacturer.

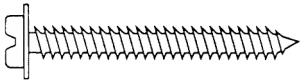
# SAFETY RULES

## INTERNATIONAL SYMBOLS

**IMPORTANT:** Many of the following symbols are located on your unit or on literature supplied with the product. Before you operate the unit, learn and understand the purpose for each symbol.

Control And Operating Symbols				
				
Slow	Fast	Fuel	Oil	Choke OFF Half Choke Full Choke
Safety Warning Symbols				
				
<b>WARNING</b> Thrown Objects. Keep Bystanders Away.	<b>WARNING</b> Rotating Parts. Stop Engine. Disconnect Spark Wire Before Making Adjustments.	<b>WARNING</b>		
				
<b>IMPORTANT</b> Read Owner's Manual Before Operating This Machine.	<b>WARNING</b> Wear Eye Protection	<b>STOP</b>		

## Contents of Parts Bag



1 - 10-16 x 1-1/2 inch  
Screw



1 - Tie Strap



# ASSEMBLY

## ASSEMBLY

### PARTS PACKED SEPARATELY IN CARTON

- 1 – Owner's Manual (not shown)
- 1 – Upper Handle
- 1 – Right Lower Handle
- 1 – Left Lower Handle
- 1 – Parts Bag



**WARNING:** Always wear safety glasses or eye shields while assembling the cultivator.

Figure 1 shows the cultivator completely assembled.

References to the right or left side of the cultivator are from the viewpoint of the operator's position behind the unit.

### HOW TO REMOVE THE CULTIVATOR FROM THE CARTON

1. Remove the parts bag from the carton.
2. Remove the handles from the carton.
3. Remove the packing material positioned around the unit.
4. Lift the cultivator out of the carton and place on a hard level surface.
5. Remove the packing material from the tines.

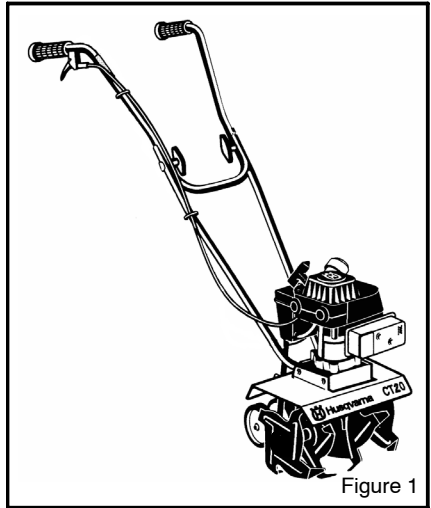


Figure 1

### HOW TO ASSEMBLE THE HANDLE

The lower handles have a short bend at the bottom and have been flattened at the top.

1. Unwind the throttle control from around the engine. Straighten the throttle cable. Make sure that you do not bend or kink the cable.
2. Remove the **locknuts**, **spacers**, and **screws** from the **tine shield** (see Figure 2).

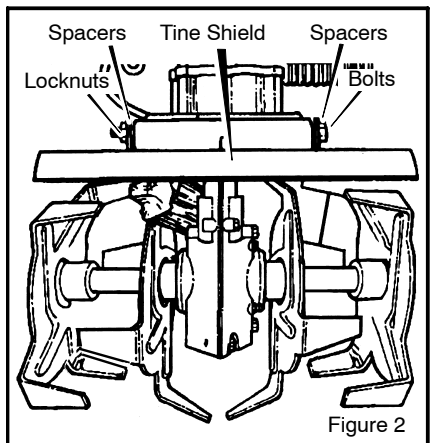


Figure 2

## ASSEMBLY

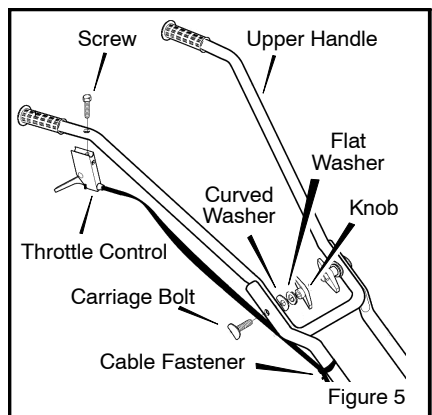
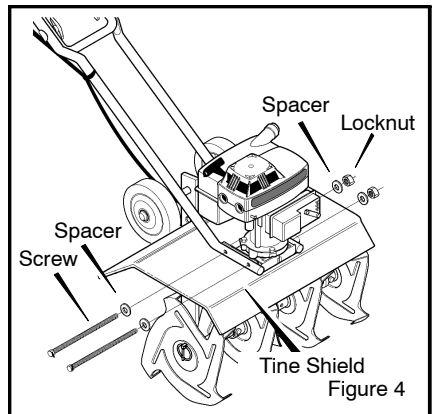
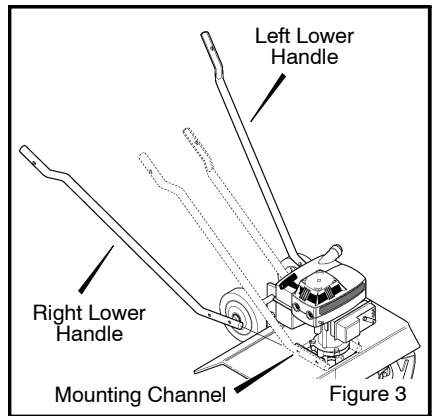
3. Insert the **right lower handle** into the **mounting channel** (see Figure 3). Make sure the flat end at the top of the handle is facing inward.
4. Mount a **spacer** on each **screw**. Push the **screws** through the **tine shield**, the **lower handle**, and half way through the engine casing (see Figure 4).
5. Insert the **left lower handle** into the **mounting channel** (see Figure 3). Make sure the flat end at the top of the handle is facing inward.
6. Push the **screws** through the engine casing, the **lower handle**, and the **tine shield**. Secure with **spacers** and **locknuts** as shown in Figure 4. Do not tighten at this time.
7. Remove the fasteners from the **upper handle** (see Figure 5).
8. Assemble the **upper handle** to the lower handles with the fasteners removed in step 7.
9. Tighten the **knobs**.

**NOTE:** To tighten the knobs, hold the curved carriage bolt head against the outside of the lower handle as you tighten the knobs.

10. Tighten the **locknuts** that hold the ends of the lower handles (see Figure 4). Tighten only enough to firmly hold the handles.

**CAUTION:** Over tightening the locknuts can change the shape of the handle and damage the engine casing.

11. Mount the **throttle control** on the right side of the **upper handle** with the **screw** as shown in Figure 5.
12. Attach the throttle control cable to the lower handle with the **cable fastener**. Make sure the throttle control cable is routed to the outside of the handles.



# ASSEMBLY

## ✓ CHECKLIST

For the best performance and satisfaction from this quality product, please review the following checklist before you operate the cultivator:

- ✓ All assembly instructions have been completed.
- ✓ Check carton. Make sure no loose parts remain in the carton.
- ✓ All fasteners have been properly tightened.

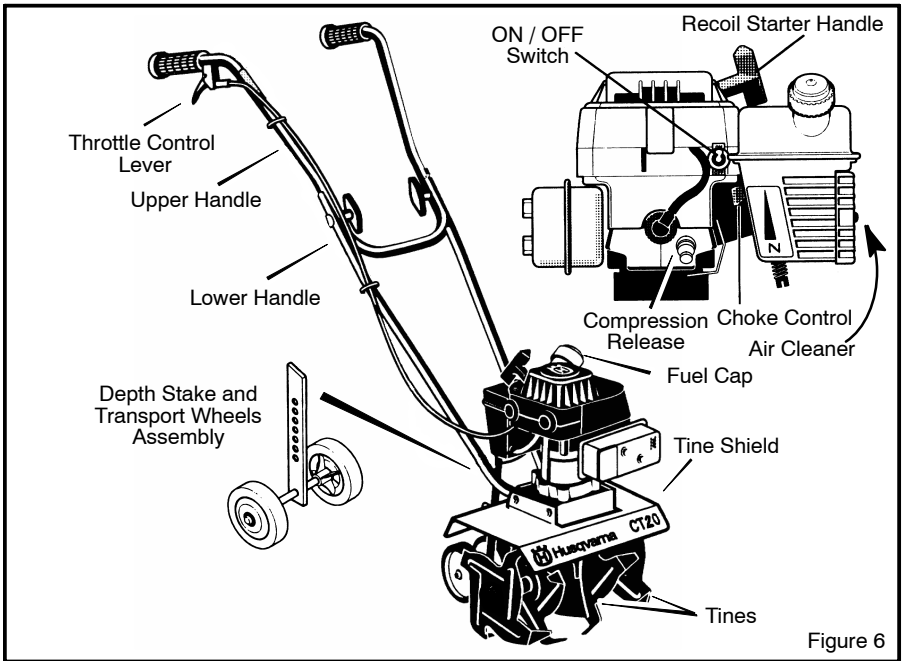
As you learn how to use the cultivator, pay extra attention to the following important items:

- ✓✓ Fuel tank is filled with a fresh, clean, oil and fuel mixture.
- ✓✓ Become familiar and understand the function of all controls. Before you start the engine, operate all controls.

# OPERATION

## KNOW YOUR CULTIVATOR

READ THE OWNER'S MANUAL AND ALL SAFETY RULES BEFORE YOU OPERATE the cultivator. To familiarize yourself with the location of the controls, compare the illustrations with your cultivator. **Save this manual for future reference.**



**Throttle Control** – Controls the engine speed and the tine rotation. The cultivator is equipped with a centrifugal clutch that engages the tine drive system when the engine speed is increased.

**Choke Control Lever** – Use to assist when starting a cold engine.

**ON / OFF Switch** – The ON position allows the engine to start. The OFF position stops the engine and keeps the engine from starting.

**Recoil Starter Handle** – The engine is equipped with an easy pull recoil starter.

**Compression Release** – Before each pull of the recoil starter handle, push the compression release.

**Depth Stake** – Mount with the wheels up to adjust the depth of cut. Also use to help control the direction and speed of the cultivator.

**Transport Wheels** – Mount with the wheels down when transporting the cultivator.

## EYE PROTECTION

Always wear safety glasses. If you wear eye glasses, put a Wide Vision Safety Mask over your eye glasses.



**WARNING:** Debris thrown from the cultivator can result in foreign objects being thrown into the eyes, which can cause severe eye damage. Always wear safety glasses or eye shields when operating the cultivator.

# OPERATION

## HOW TO USE THE CULTIVATOR

### How To Stop The Cultivator

1. Release the throttle control to stop the tines.
2. Move the ON/OFF switch, on the engine, to the OFF position.

### How To Set The Depth

Use the **depth stake** to control the tilling depth and the forward speed. Set the **depth stake** or the **depth rod** to the desired tilling position as follows:

1. Remove the **hairpin** and the **clevis pin** from the **depth stake** or **depth rod** (see Figure 7).
2. Adjust the **depth stake** upward to dig shallower or downward to dig deeper.
3. Reinstall the **clevis pin** and **hairpin**.

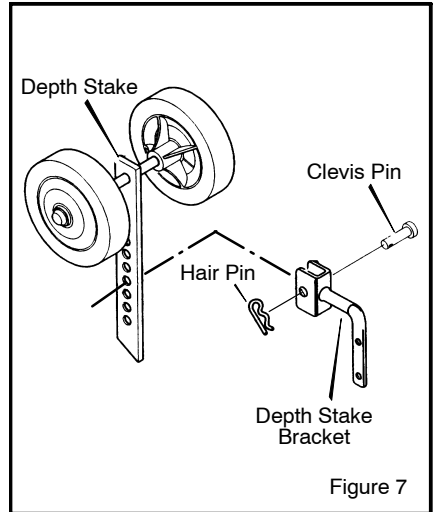


Figure 7

### How To Operate The Cultivator

1. Start the engine. See "How To Start The Engine".
2. Tilt the unit back on the depth stake or depth rod until the tines are off the ground. Squeeze the throttle control all the way up against the hand grip. The engine is governor controlled and must be run at full throttle while tilling.
3. Hold the handle firmly and slowly tilt the unit forward to begin the tilling action.
4. As the tines begin to make contact with the ground, hold back on the handles so that the tines will dig into the soil and not ride forward over the ground.
5. Avoid tilling soil that is too dry as it will pulverize and produce a dust that will not hold water. Also, tilling soil that is too wet will be hard on the machine and produce unsatisfactory clods.
6. Lowering the depth stake will slow the cultivator and make it till deeper. Raising the depth bar will allow it to move faster and till more shallow. See "How To Set The Depth Stake or Depth Rod".



**WARNING: Keep away from the rotating tines. Rotating tines can cause injury.**

# OPERATION

## BEFORE STARTING THE ENGINE

## FUEL MIXTURE CHART (mixture 24:1)

### How To Prepare The Engine



**WARNING:** Always use a safety fuel container. Do not smoke when adding the fuel mixture to the engine. When inside an enclosure, do not fill the fuel tank. Before you add the fuel mixture, stop the engine. Let the engine cool for several minutes.

### How To Mix The Fuel Mixture

The two cycle engine, used on this cultivator, requires a mixture of gasoline and oil for lubrication of the bearings and other moving parts. The correct fuel mixture ratio is 24:1 (5.3 oz. oil per one gallon of gas – see the Fuel Mixture Chart). Gasoline and oil must be pre-mixed in a clean gasoline container. Always use fresh, clean, unleaded gasoline.

Mix gasoline and oil as follows:

1. Pour one (1) U.S. quart of fresh, clean, unleaded automotive gasoline into a one gallon size gasoline container.
2. Add 5.3 ounces of clean, high quality, two-cycle oil to the gasoline container.

**IMPORTANT:** Do not use outboard motor oil or multi-viscosity oils, such as 10W-30 or 10W-40.

3. Install the fuel cap onto the gasoline container. Vigorously shake the gasoline container to mix the oil with the gasoline.
4. Add an additional three (3) U.S. quarts of gasoline to the gallon container. Again shake the gasoline container.
5. This completes the gasoline mixing procedure. The gasoline can now be added to the fuel tank.

U.S.		SI. (Metric)	
GAS	OIL	GAS	OIL
1 Gal.	5.3 oz.	4 Liters	.167 L
2 Gal.	11 oz.	8 Liters	.333 L
5 Gal.	27 oz.	20 Liters	.833 L



**CAUTION:** Gasoline is flammable and caution must be used when handling or storing it. Do not fill fuel tank while cultivator is running, hot, or when cultivator is in an enclosed area. Keep away from open flame, electrical spark, and do not smoke while mixing fuel or filling the fuel tank. Never fill fuel tank completely; but fill the tank to within 1/2 inch from the top to provide space for expansion of fuel. Always fill fuel tank outdoors and use a funnel or spout to prevent spilling. Make sure to wipe up any spilled fuel before starting engine.

**CAUTION:** Experience indicates that alcohol blended fuels (called gasohol, 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 for 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 can occur.

Do not fill the fuel tank with gasoline that does not have oil mixed in it. Shake the gasoline container before each filling of the fuel tank.

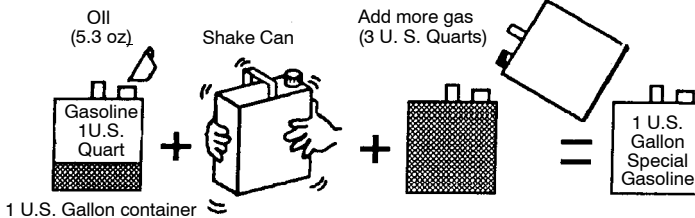


Figure 8

# OPERATION

## HOW TO START THE ENGINE

Before you start the engine, make sure that you have read and understand all the instructions on the preceding pages.

**WARNING:** Do not touch the throttle control while starting the engine. The cultivator will propel itself if the engine speed is advanced from idle.

1. Fill the fuel tank to 1/2 inch below the bottom of the fill neck. Reinstall the fuel tank cap securely. Always use fresh fuel. Never use fuel that could be stale from long periods of storage.
2. Move the on-off switch to the ON position (see Figure 9).
3. If the engine is cold, move the choke control to the FULL CHOKE position (all the way down).

**NOTE:** Do not choke a hot or warm engine.

4. Put the unit firmly on the tines in an open area away from by-standers.
5. Push the **compression release** and hold the right handle firmly with your left hand.

**CAUTION:** DO NOT start the engine without FIRST pushing in the yellow compression relief valve. Failure to do so can result in bruised fingers

and sudden equipment movement which could result in minor or moderate injury.

6. Hold the rope handle with your right hand and pull to start the engine.
7. If the engine does not start, do not repeat steps 5 and 6 more than three times before you move the choke off or on.
8. When the engine starts, move the choke lever to the HALF CHOKE position. When the engine runs smoothly, move the choke lever to the NO CHOKE position.

**NOTE:** If the tines do not stop when the throttle control is released, adjust the carburetor idle speed. See "How To Adjust The Carburetor" in the Service And Adjustments section.

9. To stop the engine, release the throttle control and move the on-off switch to the OFF position.
10. If the engine becomes flooded remove and dry the spark plug. See "Spark Plug Maintenance" in the Maintenance section of this manual. Then, pull the starter rope with the choke lever in the NO CHOKE position.

**WARNING:** The muffler and surrounding areas become hot after running the engine. Avoid these areas.

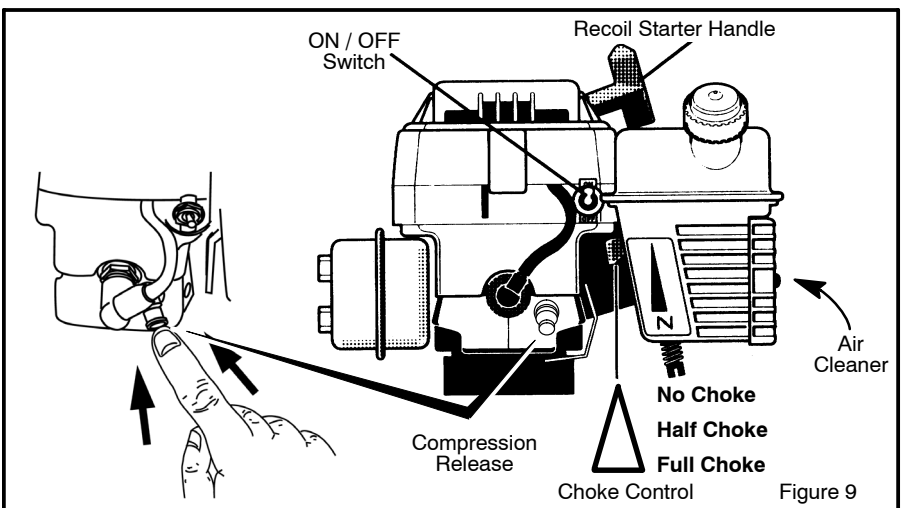


Figure 9

# OPERATION

## CULTIVATING TIPS

- Tilling is digging in, turning over and breaking up packed soil before planting. Loose unpacked soil helps root growth. Best tilling depth is 4 to 6 inches. A tiller will also clear the soil of unwanted vegetation. The decomposition of this vegetation matter enriches the soil. Depending on the climate (rainfall and wind), it may be advisable to till the soil at the end of the growing season to further condition the soil.
- Avoid tilling soil that is too dry as it will pulverize and produce a dust that will not hold water. Also, tilling soil that is too wet will be hard on the machine and produce unsatisfactory clods.
- Better growth will be obtained if an area is tilled properly and used soon after tilling to preserve the moisture content.
- The depth stake (on the back of the cultivator) serves a dual purpose. It helps regulate the depth of the cut and also acts as a brake to help the operator control the speed of the cultivator.
- Lowering the depth stake will slow the cultivator and make it till deeper. Raising the depth stake will allow it to move faster and till more shallow.
- If the cultivator stops forward motion and tries to dig deeper than necessary, move the handles from side to side to start forward motion.
- Cultivating is loosening or digging around growing plants which allows the plants to flourish.
- When using the cultivator to remove weeds, it is best to cultivate no deeper than 1–1/2 inches. Cultivating deeper will only pull to the surface ungerminated weed seeds. Raising the depth stake will allow it to move faster and till more shallow.
- When cultivating around plants or close areas, you may want to remove the outside tines. See “Tine Replacement” in the Service/Adjustments section.



**WARNING: Read the Owner’s manual. Know location and functions of all controls. Keep all safety devices and shields in place. Never allow children or un instructed adults to operate cultivator. Shut off engine before unclogging tines or making repairs. Keep bystanders away from machine. Keep away from rotating parts and tines. They can cause injury.**

---

## HINTS FOR DEPTH STAKE OR WHEEL ADJUSTMENT

### Light cultivation (about 1 to 2 inches depth) with moderate growth

Adjust the wheels upward to their highest or next to their highest position. Make sure the handles are at a comfortable height for operating the cultivator.

### Seed bed preparation (4 to 6 inches depth)

Use the depth stake. Adjust the depth stake downward for deeper cultivation.

### Heavy soil (4 inch depth or greater)

Remove the depth stake and work the tines down with a back and forth motion to at least a depth of 4 inches. Slowly pull the cultivator backward allowing the soil to feed forward over the tines.



# MAINTENANCE

## CUSTOMER RESPONSIBILITIES

<b>SERVICE RECORDS</b> Fill in dates as you complete regular service.	<b>Before Each Use</b>	<b>After First 2 Hours</b>	<b>Every 25 Hours</b>	<b>Every 75 Hours</b>	<b>Before Storage</b>	<b>Before Each Season</b>	<b>SERVICE DATES</b>
Tighten All Screws and Nuts	√	√					
Lubricate Tine Shaft			√		√		
Lubricate Transmission			√			√	
Check Spark Plug			√		√		
Clean and Oil Air Cleaner Filter			√		√		
Clean Cylinder Exhaust Ports				√			
Drain Fuel					√		

## PRODUCT SPECIFICATIONS

<b>Model No.:</b>	See Nameplate
<b>Date Of Purchase:</b>	
<b>Horse Power:</b>	2
<b>Displacement:</b>	3.0 cu. in. (49.2 cc.)
<b>Gasoline Capacity:</b>	20 oz.
<b>Fuel/Oil Mix Ratio:</b>	24:1 Oil To Gas (5.3 oz. oil to 1 gal. gas (use unleaded regular)
<b>Spark Plug:</b>	Champion RCJ-8Y
<b>Spark Plug Gap:</b>	0.035 inch
<b>Idle RPM:</b>	1700-3000

## GENERAL RECOMMENDATIONS

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

Some adjustments must be made periodically to properly maintain your cultivator.

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

# MAINTENANCE

## LUBRICATION

Every 25 hours and/or at the beginning of each season, make sure the gear box is filled with lubricant (see Figure 10). Tubes of gear lubricant are available from most automotive supply stores. Use portable tool grease such as Lubriplate 630AA (Product No. 06787, 1-3/4 oz. tube) or Lubriplate GR-132 (Product No. 15892, 10 oz. tube).

After cleaning and before storage, apply oil to the **tine shaft** (see Figure 10).

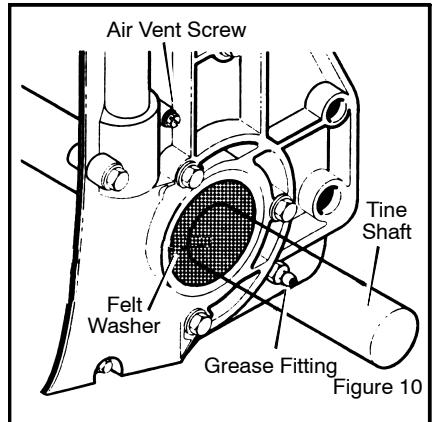


**WARNING:** Allow the transmission to cool before filling with grease.

1. Remove both left side tines. See "How To Replace The Tines" in the Service and Adjustments section.
2. Remove the **air vent screw** (see Figure 10).
3. Mount a grease gun onto the **grease fitting**. Fill the transmission until the grease begins to come out of the air vent screw hole.
4. Reinstall the **air vent screw**.
5. Check the condition of the **felt washer** (see Figure 10). Replace the **felt wash-**

**er** if it is damaged (see the Repair Parts section in this manual).

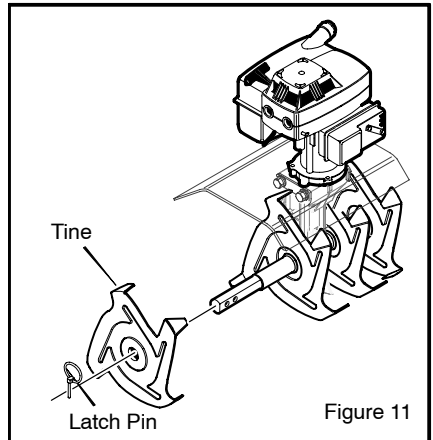
6. Clean and lubricate the **tine shaft** with a few drops of oil.
7. Reinstall the left side tines.
8. Remove the right side tines. Check the **felt washer** for damage. Clean and oil the **tine shaft**. Reinstall the right side tines.



## HOW TO CLEAN THE TINES

Always remove dirt and debris from the cultivator after each use. Remove any string, wire or vegetation that may become lodged in the mechanism and stop the tines from rotating.

1. Release the throttle control and move the on-off switch to the OFF position. Disconnect the spark plug wire from the spark plug.
2. While wearing gloves, remove the **latch pins** that secure the tine assemblies to the shaft (see Figure 11). Remove the tines from the shaft.
3. Remove any lodged debris from the shaft and tines. Clean and lubricate the tine shaft with a few drops of oil.
4. Reassemble the tines on the shaft and secure with the **latch pins**.
5. Connect the spark plug wire to the spark plug.



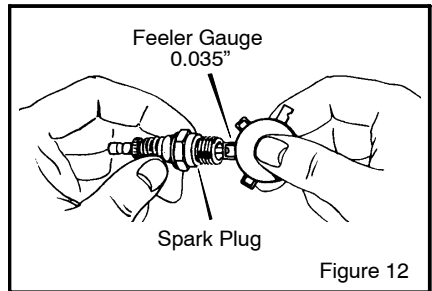
# MAINTENANCE

## SPARK PLUG

Check the **spark plug** every 25 hours. Replace the **spark plug** if the electrodes are pitted or burned or if the porcelain is cracked.

1. Make sure the **spark plug** is clean. Clean the **spark plug** by carefully scraping the electrodes (do not sand blast or use a wire brush).
2. Check the **spark plug** gap with a **feeler gauge**. See "Product Specifications" for the correct **spark plug** gap and replacement **spark plug**.

3. Before installing the **spark plug**, coat the threads lightly with oil for easy removal. Tighten the spark plug to a torque of 15 foot-pounds.



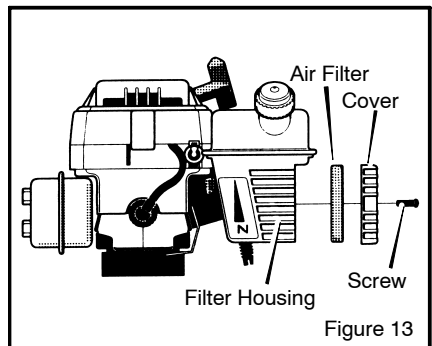
## HOW TO CLEAN THE AIR FILTER

The engine uses a foam air filter that can be cleaned and reused. Clean and oil the air filter every 25 hours. Clean more often in dusty conditions. Remove and clean the air filter as follows:

**CAUTION: Never run the engine without the air filter installed. An air filter clogged with dust can result in loss of engine power and can cause excessive wear or damage to the engine. If the air filter is clogged, clean or replace immediately.**

1. Disconnect the spark plug wire from the spark plug.
2. Remove the **screws** from the **air filter cover** (see Figure 13). Remove the **air filter cover** and the **air filter**.
3. Wipe the **cover** and the inside of the **air filter housing** with a clean cloth.
4. Clean the **air filter** in a solution of water and household detergent. Rinse thoroughly in clean water.
5. Wrap the **air filter** in a dry clean cloth. Squeeze out (do not twist) all solution until dry.

6. Cover the outside of the **air filter** with oil. Use the same type of oil as used to make the fuel mixture. Lightly squeeze the **air filter** to distribute and remove any excess oil.
7. Put the clean **air filter** into the **air filter housing**.
8. Install the **air filter cover** and secure with the **screws** as shown.
9. Connect the spark plug wire to the spark plug.



## CYLINDER EXHAUST PORTS

Clean the cylinder exhaust ports after every 75 hours of operation. For this procedure, we recommend that you take your unit to a Authorized Service Center.

MS-3615MA

# SERVICE AND ADJUSTMENT

## HOW TO REMOVE AND INSTALL THE TINES

References to the right or left side of the cultivator are from the viewpoint of the operator's position behind the unit.

All four tines are different and cannot be interchanged. The tines must be correctly installed or the cultivator will not function properly.

To till around plants or in small areas, the outside tines can be removed to reduce the tilling width to approximately 7 inches.



**WARNING: The tines are self sharpening and will become quite sharp from use. Handle carefully.**

The tines will all wear evenly. If the tines are being replaced because of wear, we recommend that all four tines be replaced at the same time. To replace the tines, do the following:

### Tine Removal

1. Put the on-off switch in the OFF position.

2. Disconnect the spark plug wire from the spark plug.
3. While wearing gloves, remove the **latch pins** that secure the tine assemblies to the shaft (see Figure 14). Remove the **tines** from one side of the unit.

### Tine Installation

1. Clean and lubricate the tine shaft with a few drops of oil.
2. First, install the inside tines onto the tine shafts. Next, install the outside tines onto the tine shafts and secure with the latch pins.
3. When the tines are properly installed, the cutting tips on the outside tines will all curve toward the inside. The letter R will be visible on the outside of the right tine (see Figure 14). The letter L will be visible on the outside of the left tine.

**NOTE: Make sure the tines are installed on the correct side of the unit.**

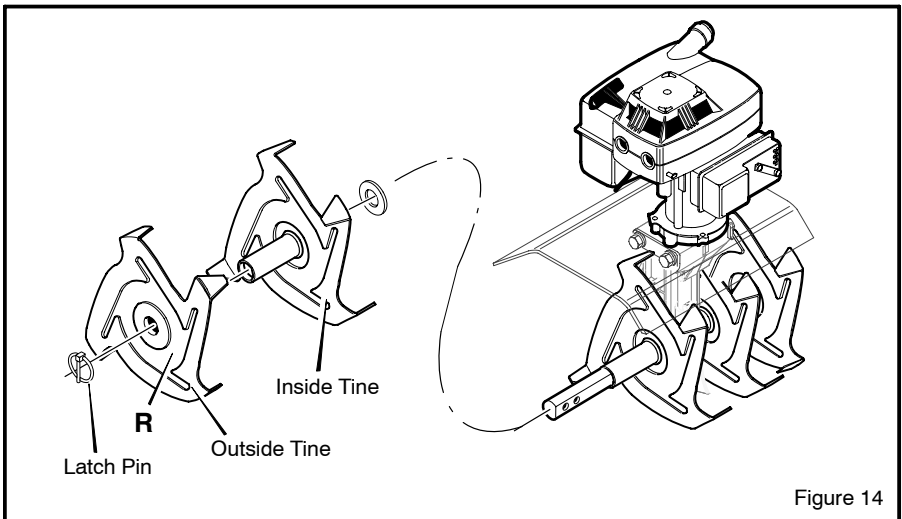


Figure 14

# SERVICE AND ADJUSTMENT

## HOW TO ADJUST THE CARBURETOR

A dirty air cleaner will cause the engine to run improperly or to smoke excessively. Before adjusting the carburetor, make sure the air cleaner is clean. Never make unnecessary adjustments to the carburetor. The carburetor was set at the factory to operate efficiently under most applications. However, if adjustments are required, we recommend you contact an Authorized Service Center. If you feel that you are competent to make carburetor adjustment proceed as follows.

1. Lower the wheels to the transport position.
2. Locate the **idle speed adjustment screw** (see Figure 15). Turn the **idle adjustment screw** 1/4 turn counterclockwise (to the left).

3. Start the engine and release the throttle control.
4. Tilt the cultivator back on the wheels or stake so that the tines are off the ground. In correct adjustment, the tines will not rotate when the throttle is released. If the tines turn, repeat step 2.



**WARNING: The engine governor is set at the factory. Do not change the governor setting. Over speeding the engine above the factory setting can be dangerous. If you think the engine governor needs an adjustment, contact an Authorized Service Center.**

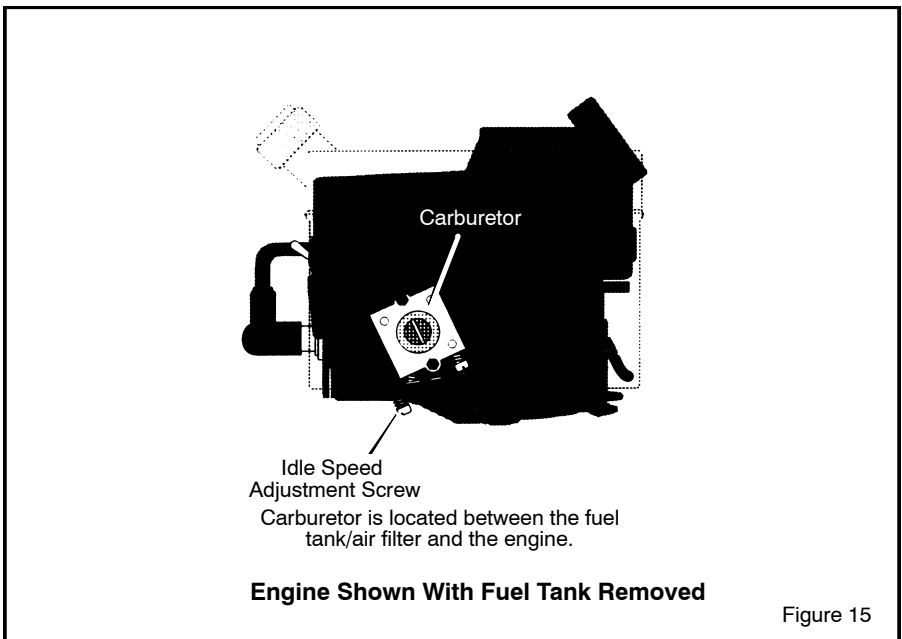


Figure 15

# SERVICE AND ADJUSTMENT

## STORAGE



**WARNING:** Never store the cultivator indoors with fuel in the fuel tank. Never store in an enclosed, poorly ventilated area where fumes could reach an open flame, a spark or a pilot light as on a furnace, water heater or clothes dryer.



**WARNING:** Do not remove gasoline while inside a building, near a fire, or while you smoke. Gasoline fumes can cause an explosion or a fire.

When the cultivator is put in storage for thirty days or more, follow the steps below to make sure the cultivator is in good condition the following season.

### Cultivator

- Completely clean the cultivator.
- Remove the tines. Clean and apply oil to the tine shafts. Mount the tines onto the tine shafts. See "How To Remove And Install The Tines" in the Service And Adjustments section.
- Loosen the knobs that secure the upper handle to the lower handle. Carefully fold the upper handle. Make sure the throttle cable is not bent. Tighten the knobs.
- The cross piece of the upper handle (between the lower handles) can now be used as a carry handle. To store the cultivator up off the floor and out of the way, the cross piece can also be hooked over a wall hook.
- Put the cultivator in a building that has good ventilation.
- Cover the cultivator with a suitable protective cover that does not retain moisture. Do not use plastic.

**IMPORTANT:** Never cover the cultivator while the engine and exhaust areas are still warm.

**NOTE:** A yearly checkup or tune-up by a Authorized Service Center is a good way

to make sure that your cultivator will provide maximum performance for the next season.

### Engine



**WARNING:** Store gasoline in a clean, approved container, and keep the cap in place on the container. Keep gasoline in a cool, well ventilated place; never in the house. Never buy more than a 30 day supply of gasoline to assure volatility. Gasoline is intended to be used as a fuel for internal combustion engines; therefore, do not use gasoline for any other purpose. Since many children like the smell of gasoline, keep it out of their reach because the fumes are dangerous to inhale, as well as being explosive.

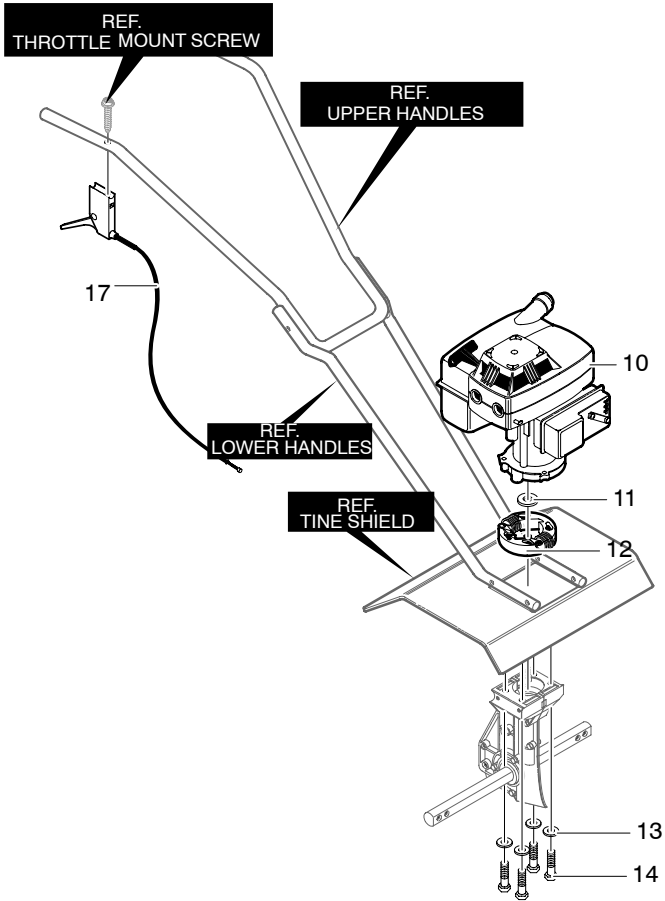
**CAUTION:** Experience indicates that alcohol blended fuels (called gasohol, ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be emptied before storage for 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 can occur.

To prevent engine damage when the cultivator is in storage for 30 days or more, follow the steps below:

- Let the engine run until it is out of gasoline.
- Slowly pull the starter handle until you feel resistance due to compression in the cylinder, then stop.
- Slowly release the starter rope. This position will close both the intake and the exhaust ports and help prevent corrosion of the piston and cylinder.

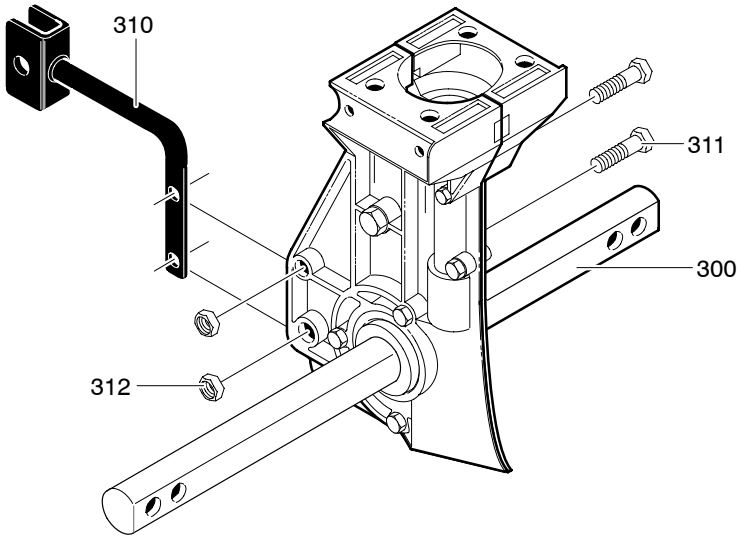
# TROUBLE SHOOTING CHART

<b>TROUBLE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
<b>Engine difficult to start</b>	Stale fuel mixture	Drain fuel tank. Fill with fresh fuel mixture.
<b>or</b>	Too much oil in fuel mixture	Check fuel mixture chart and mix fresh fuel.
<b>Engine runs erratically</b>	Dirt in fuel tank or out of fuel	Clean fuel tank.
<b>or</b>	Carburetor out of adjustment	See Carburetor Adjustment section.
<b>Engine will not run at full speed</b>	Fouled spark plug	Clean and set spark plug gap.
	Dirty air filter	Clean and oil air filter.
<b>Engine speed does not increase properly</b>	Debris interfering with throttle linkage	Clean dirt and debris off top of carburetor.
<b>Engine smokes excessively</b>	Plugged air filter	Clean and oil air filter.
	Too much oil in fuel mixture	Check fuel mix chart and mix fresh fuel.
<b>Tines continue to rotate when throttle control is released</b>	Carburetor out of adjustment	Adjust carburetor idle speed. See "How To Adjust The Carburetor" in the Maintenance section.
<b>Tines will not turn</b>	Debris lodged in tine	Remove debris. See "How To Clean The Tines" in the Maintenance section.
<b>Unit does not till properly</b>	Incorrect tine installation	Check the tines for proper installation. See "How To Remove And Install The Tines" in the Service And Adjustments section.

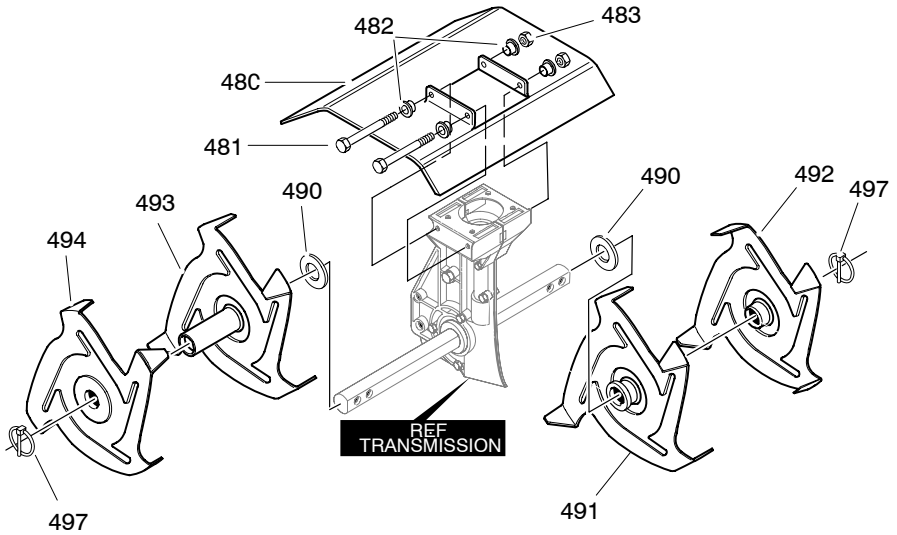


KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
10	----	Engine (2.0 HP)	14	601 00 12 83	Screw
11	601 00 06 17	Flat washer	17	601 00 12 84	Cable, Throttle
12	601 00 19 50	Rotor	--	MS-3615MA	Instruction Manual
13	601 00 00 14	Washer			



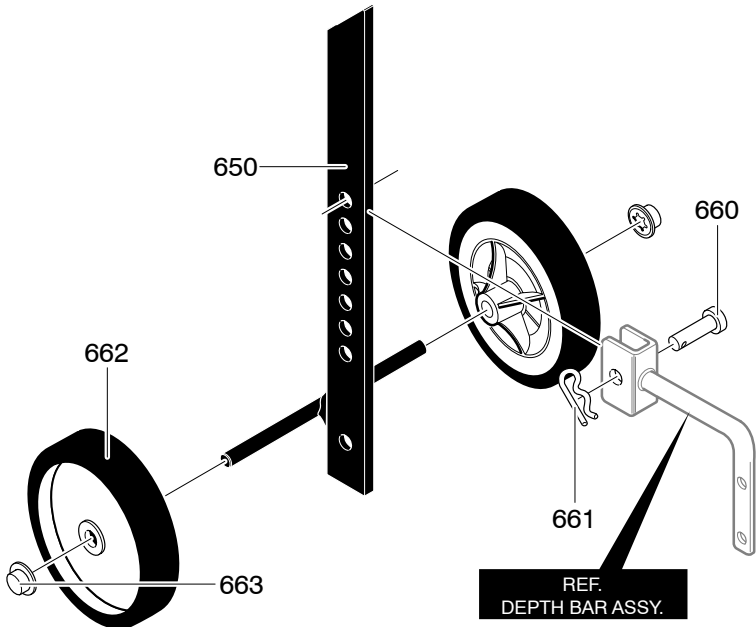


<b>KEY NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>
300	601 00 24 64	Transmission
310	601 00 20 06	Bracket, Depth Rod
311	601 00 00 69	Screw, 1/4-20x1.25
312	601 00 23 18	Nut, 1/4-20



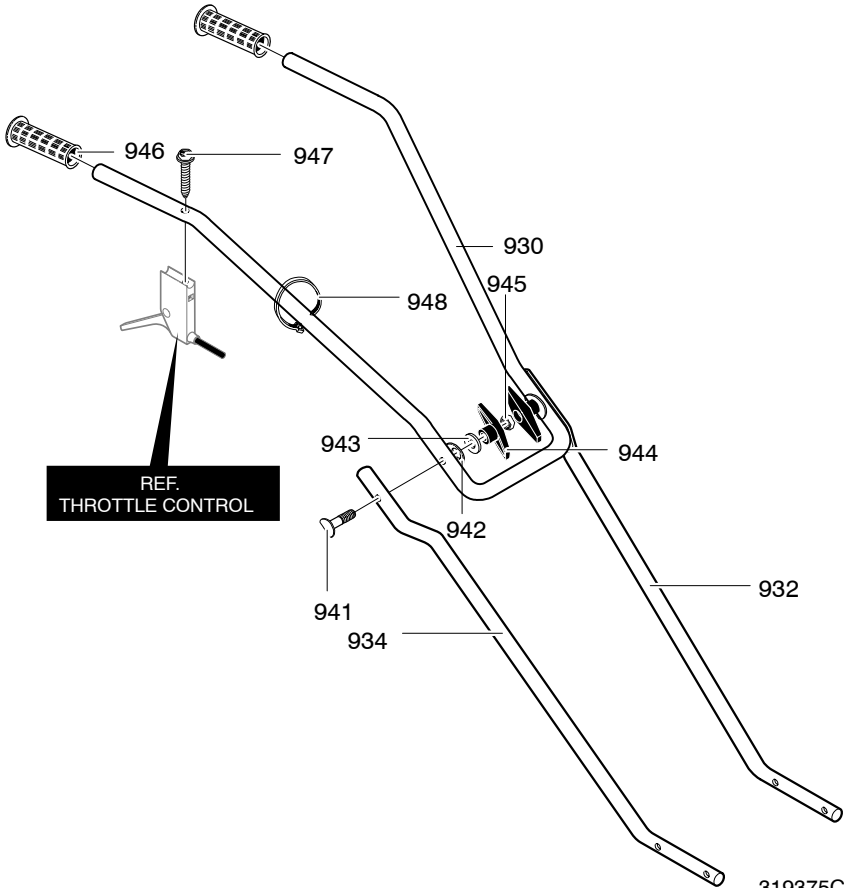
**KEY**

KEY NO.	PART NO.	DESCRIPTION
480	601 00 25 01	Shield, Tine
481	601 00 12 87	Screw, 1/4-20x5.50
482	601 00 00 18	Spacer, Flange
483	601 00 23 18	Nut, 1/4-20
490	601 00 06 02	Washer, Felt
491	531 30 74-52	Tine Assy. Inner LH
492	531 30 74-53	Tine Assy. Outer RH
493	531 30 74-54	Tine Assy. Inner RH
494	531 30 74-55	Tine Assy. Outer LH
497	531 30 74-56	Pin, Latch



318852G

KEY NO.	PART NO.	DESCRIPTION
650	601 00 12 88	Wheel Support Assy.
660	601 00 18 60	Clevis Pin
661	601 00 06 04	Hair Pin
662	601 00 22 57	Tire & Rim
663	601 00 12 91	Push On Nut

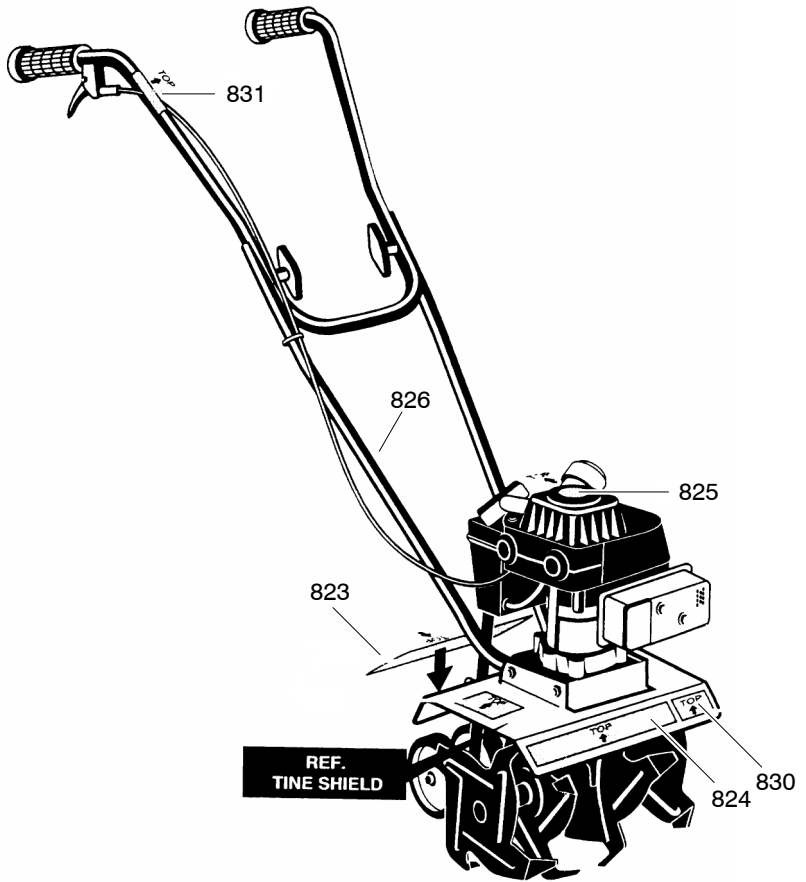


319375C

KEY NO.	PART NO.	DESCRIPTION
930	601 00 22 62	Upper Handle
932	601 00 22 63	Lower Handle LH
934	601 00 22 64	Lower Handle RH
941	601 00 12 94	Bolt 5/16-18x1.63
942	601 00 23 12	Formed Washer
943	601 00 00 19	Flat washer
944	601 00 06 84	T Knob
945	601 00 00 12	Nut, 5/16-18
946	601 00 06 18	Hand Grip
947	601 00 12 15	Screw
948	601 00 06 28	Tie, Cable

# MODEL CT20

# FACTORY NO. 11054x37NA



KEY NO.	PART NO.	DESCRIPTION
823	601 00 12 96	Decal, Caution
824	601 00 20 96	Decal, Husqvarna
825	601 00 22 00	Decal, Engine Recoil
826	601 00 11 95	Decal, Hold Grip
830	601 00 24 67	Decal, CT20
831	601 00 25 02	Decal, Throttle Control



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