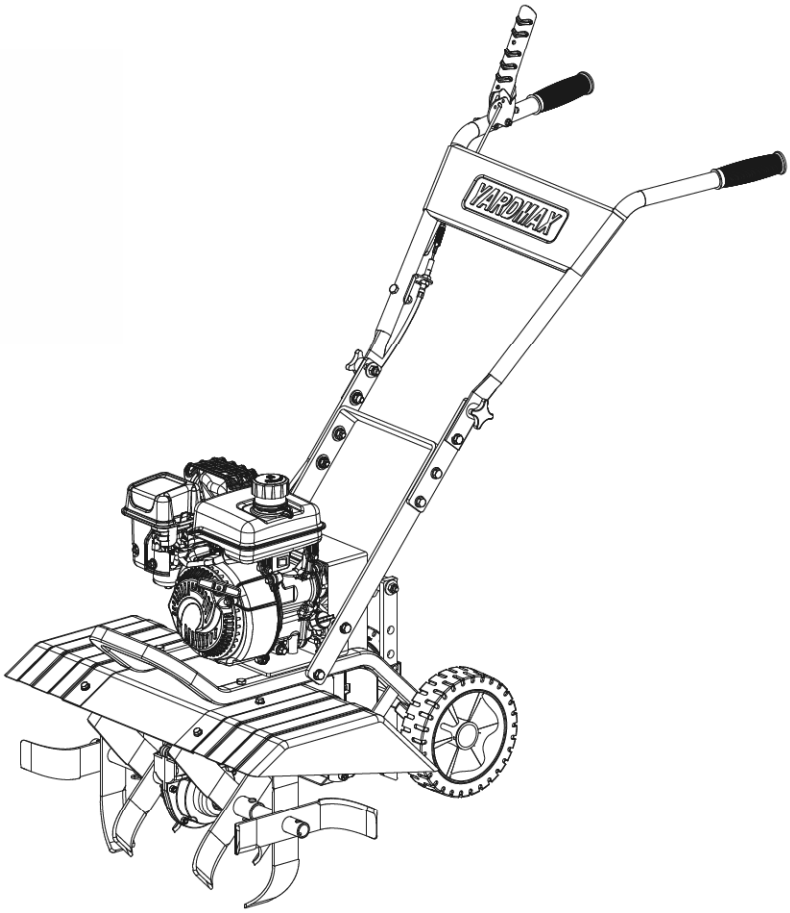
YARDMAX

# Front Tine Tiller

## Operator's Manual




**MODEL NUMBER**
**YT5330**

**SERIAL NUMBER**

**PURCHASE DATE**

Both model number and serial number may be found on the main label (see ***Page 2, Figure 1***). You should record both of them in a safe place for future use.

## FOR YOUR SAFETY

*READ AND UNDERSTAND THE ENTIRE MANUAL BEFORE OPERATING MACHINE*

Your new YARDMAX® front tine tiller offers quality construction, and is easy and safe to operate. With proper use and care, it is designed to give you many years of dependable service.

Take on any job with ease, portability, and convenience while experiencing the durability of your new front tine tiller!

**Discover the YARDMAX Advantage**

At YARDMAX, we understand that land ownership definitely has its privileges, but it also comes with a great deal of responsibility. When duty calls and you need to respond, will you have what it takes to tame the great outdoors?

When looking for outdoor power equipment (OPE) to get the job done right, at the right price, YARDMAX delivers the perfect combination of performance and practicality. YARDMAX has a solution that's right for you.

**MAX Performance, MAX Value, MAX Support — that's YARDMAX**

- √ Backed by decades of proven manufacturing expertise
- √ Enhanced design features come standard
- √ Engineered for the best user experience
- √ Quality metal parts are used instead of plastic
- √ A robust warranty supports all products
- √ Budget-friendly prices make it practical

YARDMAX®

*Up for the job? YARDMAX is.*

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**⚠ WARNING** *Carefully read through this entire operator's manual before using your new unit. Pay attention to all cautions and warnings.*

This machine is a gasoline engine driven front tine tiller. It is a durable, versatile and efficient machine, and it is both easy and safe to operate. With proper use and care, it should give you many years of dependable service.

## ENGINE MANUAL

The **Engine Manufacturer** is responsible for all engine-related issues regarding performance, power rating, specifications, warranty and service. Please refer to the **Engine Manufacturer's** owner/operator's manual, packed separately with your unit, for more information.

## EMISSION CONTROL SYSTEM

This equipment or its engine may include exhaust and evaporative emission control system components required to meet U.S. Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB) regulations. Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by an authorized engine manufacturer's service center.

## CALIFORNIA PROPOSITION 65 WARNING

Engine exhaust, some of its constituents and certain product components contain or emit chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

## ENVIRONMENTAL

*Recycle unwanted materials instead of disposing of them as waste. All tools, hoses, and packaging should be taken to the local recycling center and disposed of in an environmentally safe way.*

## MODEL AND SERIAL NUMBERS

For future reference, record both the model number (see ***Figure 1, Illustration a***) and the serial number (see ***Figure 1, Illustration b***), as well as date and place of purchase. Have this information available when ordering parts, optional accessories and when making technical or warranty inquiries.

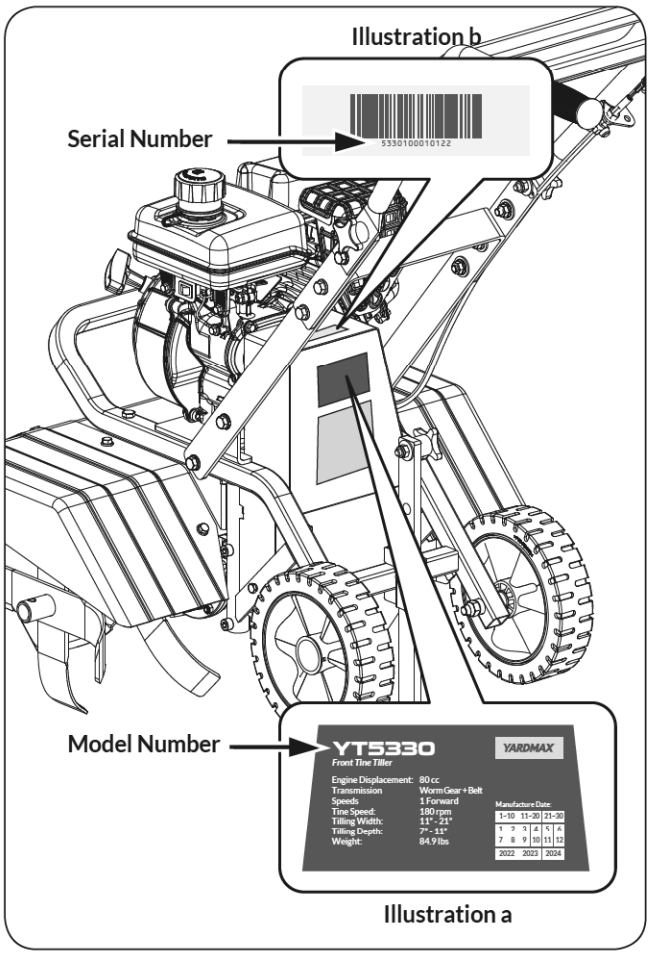


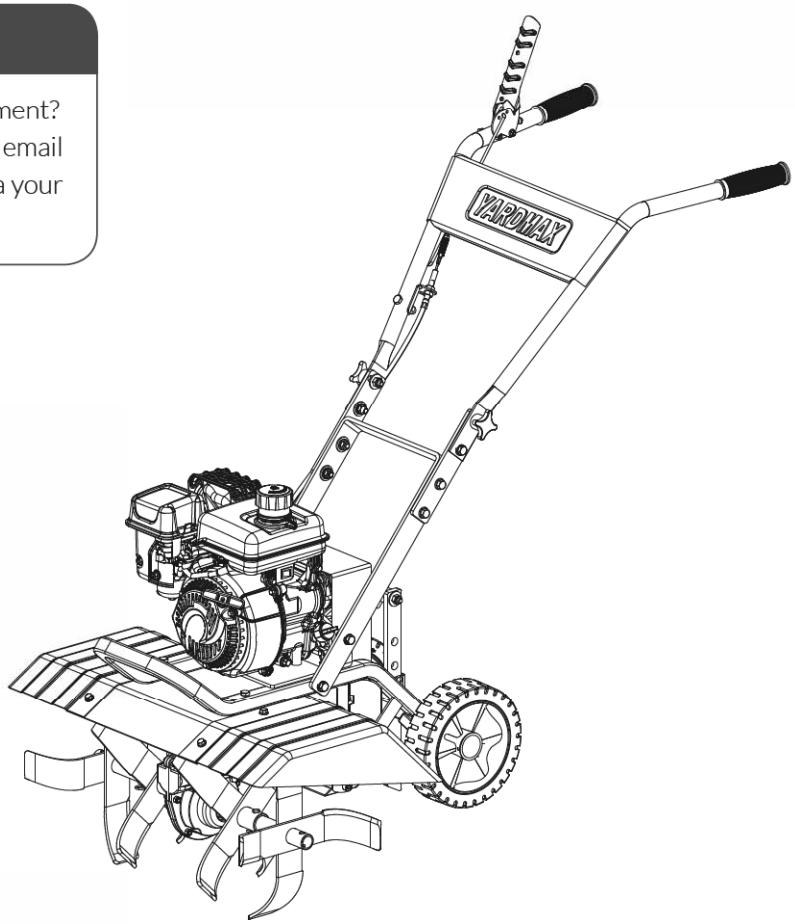

***Figure 1***

## DISCLAIMER

YARDMAX reserves the right to discontinue, change, and improve its products at any time without notice or obligation to the purchaser. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your unit.

## SUPPORT

I lave questions about your YARDMAX equipment? Call us at 847-327-0566 or 844-YARDMAX, email us at support@yardmax.com, or contact us via your favorite social media site.




## *SPECIFICATIONS*

| | |
|---|---|
| Model Number | YT5330 |
| Engine | YARDMAX |
| Displacement | 80 cc |
| Torque (ft-lbs, gross) | 3.32 |
| Start Type | Recoil |
| Transmission | Worm Gear + Belt |
| Speeds | 1 Forward |
| Tire Size | 8" |
| Tines | 4 |
| Tine Direction | Forward Rotation |

| | |
|---|---|
| Model Number | YT5330 |
| Tine Diameter | 11" |
| Depth Adjustments | 4 Positions |
| Tine RPM | 180 RPM |
| Tilling Width | 11" – 21" |
| Tilling Depth | 7" – 11" |
| Dimensions (L × W × H) | 48" × 24" × 40" |
| Product Weight | 84.9 lbs |

## *SYMBOLS*

*The rating plate on your machine may show symbols. These represent important information about the product or instructions on its use.*

Read these instructions carefully.

Wear eye protection.

Wear hearing protection.

Wear protective gloves.

Wear safety footwear.

Do not remove or tamper with the protection and safety devices.

No smoking, sparks, or flames.

Do not touch parts that are hot from operation. Serious burns may result.

Keep your feet clear from all rotating parts.

Be aware, objects may be thrown while in use.

Keep children and bystanders off and away.

# SAFETY

## GENERAL SAFETY RULES

### UNDERSTAND YOUR MACHINE

Read this manual and labels affixed to the machine to understand its limitations and potential hazards.

Be thoroughly familiar with the controls and their proper operation. Know how to stop the machine and disengage the controls quickly.

Make sure to read and understand all the instructions and safety precautions as outlined in the **Engine Manufacturer's** manual packed separately with your unit. Do not attempt to operate the machine until you fully understand how to properly operate and maintain the engine and know how to avoid accidental injuries and/or property damage.

If the unit is to be used by someone other than original purchaser, or is to be loaned, rented, or sold, always provide this manual and any needed safety training before operation. The user can prevent and is responsible for accidents or injuries that may occur to themselves, to other people, or to property.

Do not force the machine beyond its limits. Use the correct machine for your application.

### PERSONAL SAFETY

Do not permit children to operate this machine at any time.

Keep children, pets, and other people not using the unit away from the work area. Be alert and shut off the unit if anyone enters work area. Keep children under the watchful care of a responsible adult.

Do not operate the machine while under the influence of drugs, alcohol, or any medication that could affect your ability to use it properly.

Dress properly: Wear long, heavy pants, work boots, and work gloves. Do not wear loose clothing, short pants, or jewelry of any kind. Secure long hair so it is above shoulder level. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.

Protect eyes, face, and head from objects that may be thrown from the unit. Always wear safety goggles or safety glasses with side shields when operating.

Wear appropriate hearing protection.

Always keep hands and feet away from all moving parts during operation. Moving parts can cut or crush body parts.

Always keep hands and feet away from all pinch points.

Do not touch parts that might be hot from operation. Allow parts to cool before attempting to maintain, adjust, or service.

Stay alert, watch what you are doing, and use common sense when operating the machine.

Do not overreach. Do not operate the machine while barefoot or when wearing sandals or similar lightweight footwear. Wear protective footwear that will protect your feet and improve your footing on slippery surfaces. Keep proper footing and balance at all times. This enables better control of the machine in unexpected situations.

### INSPECT YOUR MACHINE

Check your machine before starting it. Keep guards in place and in working order. Make sure all nuts, bolts, etc., are securely tightened.

Never operate the machine when it is in need of repair or is in poor mechanical condition. Replace damaged, missing, or failed parts before using it. Check for fuel leaks. Keep the machine in safe working condition.

Do not use the machine if the engine's switch does not turn off the engine when running. Any gasoline powered machine that can't be controlled with the engine switch is dangerous and must be replaced.

Regularly check to see that keys and adjusting wrenches are removed from the machine area before starting it. A wrench or a key that is left attached to a rotating part of the machine may result in personal injury.

Avoid accidental starting. Be sure the engine's switch is off before transporting the machine or performing any maintenance or service on the unit. Transporting or performing maintenance or service on a machine with its switch on invites accidents.

If the machine should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning sign of trouble.

### ENGINE SAFETY

This machine is equipped with an internal combustion engine. Do not use on, or near, forest-covered or brush-covered land unless the exhaust system is equipped with a spark arrester meeting applicable local, state, or federal laws.

In the state of California, a spark arrester is required by law. Other states have similar laws. A spark arrester, if used, must be maintained in effective working order by the operator.

Never start or run the engine inside a closed area. The exhaust fumes are dangerous, containing carbon monoxide, an odorless and deadly gas. Operate this unit only in a well-ventilated outdoor area.

Do not tamper with the engine in an effort to get it to run at higher speeds. The maximum engine speed is preset by the manufacturer and is within safety limits. See engine manual.

Keep a Class B fire extinguisher on hand when operating this machine in dry areas as a precautionary measure.

**FUEL SAFETY**

Fuel is highly flammable, and its vapors can explode if ignited. Take precautions when using to reduce the chance of serious personal injury.

When refilling or draining the fuel tank, use an approved fuel storage container while in a clean, well-ventilated outdoor area. While adding fuel or operating the unit, do not smoke, and stay away from sparks, open flames, or other sources of ignition near the area of operation. Never fill the fuel tank indoors.

To avoid sparking or arcing, keep grounded conductive objects – such as tools – away from exposed, live electrical parts and connections. These events could ignite fumes or vapors.

Always stop the engine and allow it to cool before filling the fuel tank. Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot. Do not operate the machine with known leaks in the fuel system.

Loosen the fuel tank cap slowly to relieve any pressure in the tank.

Never overfill the fuel tank. Because engine heat can cause fuel to expand, never fill the tank to more than 1/2" below the bottom of the filler neck. This will provide space for fuel expansion.

Replace all fuel tank and container caps securely and wipe up spilled fuel. Never operate the unit without the fuel cap securely in place.

Avoid creating a source of ignition for spilled fuel. If fuel is spilled, do not attempt to start the engine. Instead, move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.

When fuel is spilled on yourself or your clothes, wash your skin and change clothes immediately.

Store fuel in containers specifically designed and approved for fuel storage.

Store fuel in a cool, well-ventilated area, safely away from sparks, open flames, or other sources of ignition.

Never store fuel – or a machine with fuel in the tank – inside a building where fumes may reach a spark, open flame, or any other source of ignition (such as a water heater, furnace, or clothes dryer). Allow the engine to cool before storing in any enclosure.

## SPECIFIC SAFETY RULES

Thoroughly inspect the area to be tilled, and remove all debris and hard or sharp objects such as stones, sticks, glass, wire, bones, etc. Do not operate tiller in soil with large rocks and foreign objects which can damage the machine.

Do not till above underground electric cables, telephone lines, water lines, gas lines, pipes, or hoses. If in doubt, contact your utility or telephone company to locate underground services.

Keep all bystanders, children, and pets at least 75 feet (23m) away. If you are approached, stop the unit immediately.

This unit has a clutch. Squeeze the drive control handle lever and check that it returns automatically to the neutral position. If it does not, have unit adjusted by a qualified repair personnel.

Disengage drive control handle lever before starting the engine.

Start the engine carefully according to instructions and with feet well away from the tines.

The tines remain stationary when the clutch is disengaged. If it does not, have unit adjusted by a qualified repair personnel.

Always operate the machine from behind, never pass or stand in front of the machine when the engine is running.

Always hold the unit with both hands when operating. Keep a firm grip on the grips. Be aware that the machine may unexpectedly bounce upward or jump forward if the tines should strike buried obstacles such as large stones, roots, or stumps.

If the unit strikes a foreign object, stop the engine, disconnect the spark plug, thoroughly inspect the machine for any damage, and repair the damage before restarting and operating the machine.

Use extreme caution when in reverse or pulling the machine towards you.

Do not overload the machine capacity by tilling too deep in a single pass or at too fast a rate.

Never operate the tiller at high transport speeds on hard or slippery surfaces.

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 caution when tilling near fences, buildings and underground utilities. Rotating tines can cause property damage or personal injury.

Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic. Do not carry passengers.

Never leave the operating position when the engine is running.

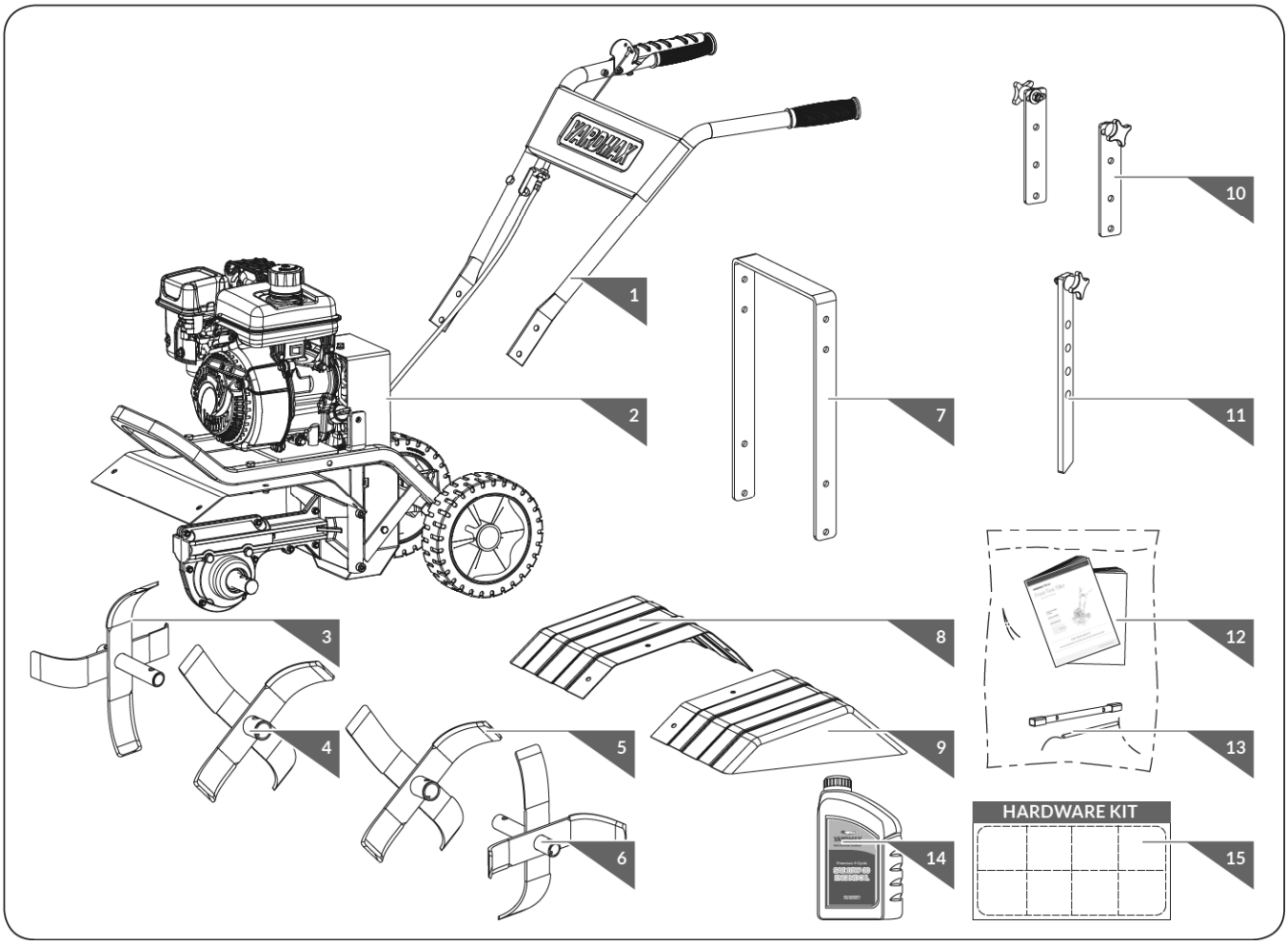
Always stop the engine when tilling is delayed or when walking from one tilling location to another.

Keep unit clean of vegetation and other materials. They may become lodged between the tines. Stop the engine and disconnect the spark plug before unclogging the tines.

To reduce exposure to vibration, limit the hours of operation and take periodic breaks to minimize repetition and rest your hands. Reduce the speed and force in which you do the repetitive movement. Try to fill each day with jobs where operating hand-held power equipment is not required.

# CONTENTS SUPPLIED

Your YARDMAX front tine tiller comes partially assembled and contains the following:




1. Upper Handlebar
2. Main Machine
3. Outer Tine - Right
4. Inner Tine - Right
5. Inner Tine - Left
6. Outer Tine - Left
7. Lower Handlebar
8. Tine Shield - Right
9. Tine Shield - Left
10. Handlebar Adjusting Plates (1 pair)
11. Depth Stake
12. Operator's Manual & Engine Manual
13. Tools for Spark Plug Assembly
14. Engine Oil

15. Hardware Kit, Including:

| | | | |
|---|---|---|---|
| | M10 × 50 | × 2 | 1 |
| | M8 × 45 | × 2 | 2 |
| | M8 × 25 | × 2 | |
| | M8 × 25 | × 4 | 3 |
| | M8 × 25 | × 2 | 4 |
| | M6 × 16 | × 6 | 5 |
| | 8 × 45 | × 2 | 6 |
| | | × 2 | |
| | 8 × 32 | × 1 | 7 |
| | | × 1 | |

# ASSEMBLY

This front tine tiller was partially assembled at the factory. To assemble your machine follow the below instructions.

## INNER TINE

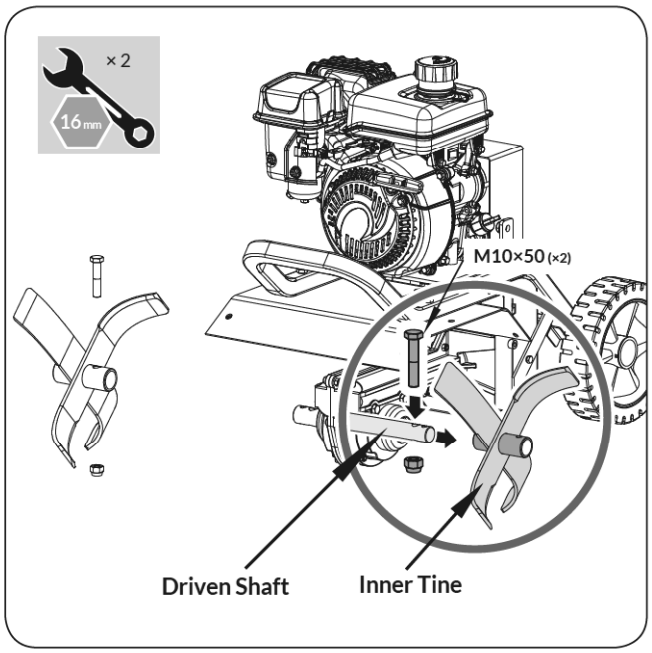



***Figure 2***

| | | | |
|---|---|---|---|
| | M10 × 50 | × 2 | 1 |

Assemble two inner tines with gearbox shafts using two M10×50 bolts and M10 nuts. (See ***Figure 2***)

## LOWER HANDLEBAR

Align the holes in the lower handlebar with the holes in the support bracket. Insert the M8×45 bolts, spring washers, flat washers into the lower holes. Insert M8×25 bolts and screw big washers and M8 nuts from other side. Tighten M8×45 bolts and M8 nuts. (See ***Figure 3***)

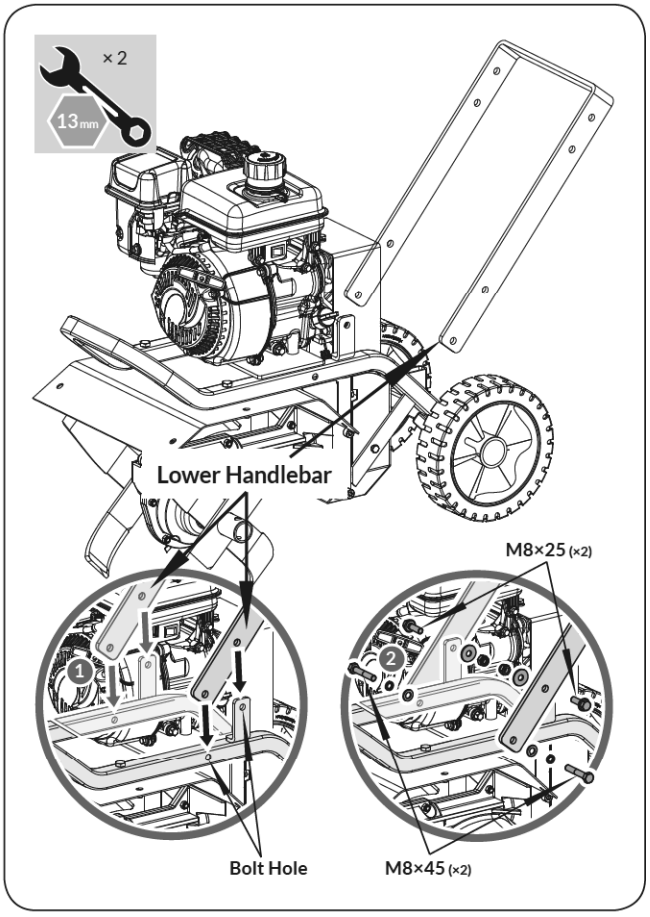



***Figure 3***

| | | | |
|---|---|---|---|
| | M8 × 45 | × 2 | 2 |
| | M8 × 25 | × 2 | |

## HANDLEBAR ADJUSTING PLATE

Align the two lower holes in each adjusting plate with the holes in the lower handlebar. Insert M8×25 bolts and screw big washer, M8 nuts tightly. (See ***Figure 4***)

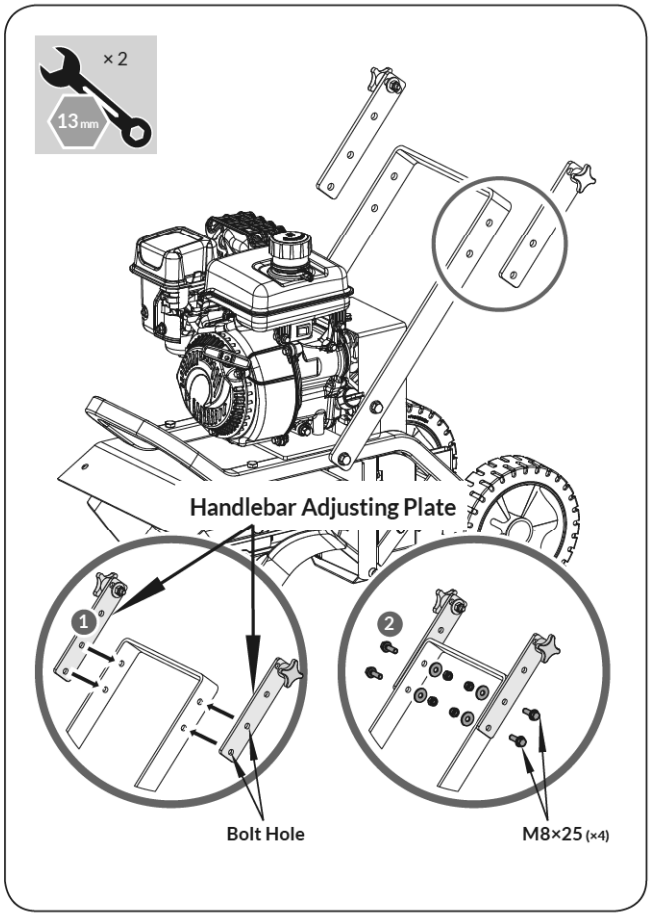



***Figure 4***

| | | |
|---|---|---|
| M8 × 25 | × 4 | 3 |

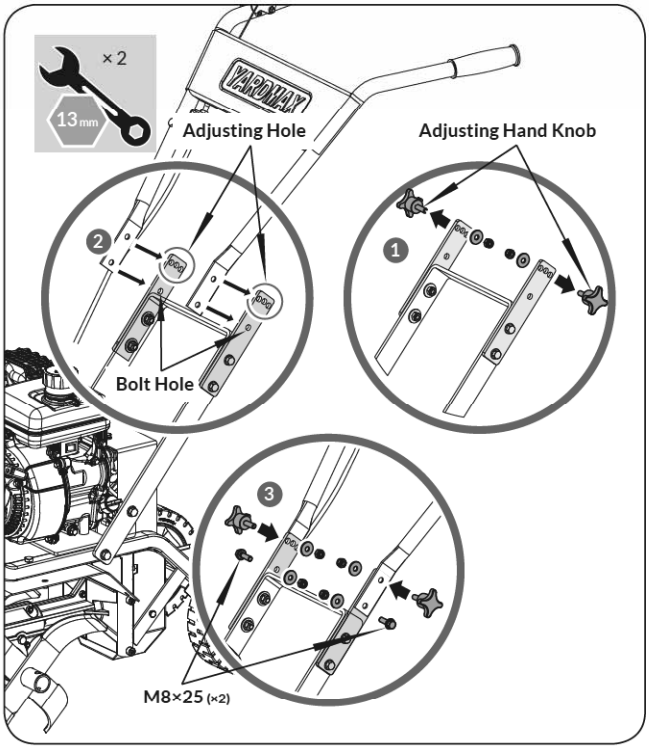



***Figure 5a***

| | | |
|---|---|---|
| M8 × 25 | × 2 | 4 |

» The upper adjusting hand knobs can be used in one of three hole positions for handlebar height adjustment. ( See ***Figure 5a, Illustration 2 & Figure 5b***)

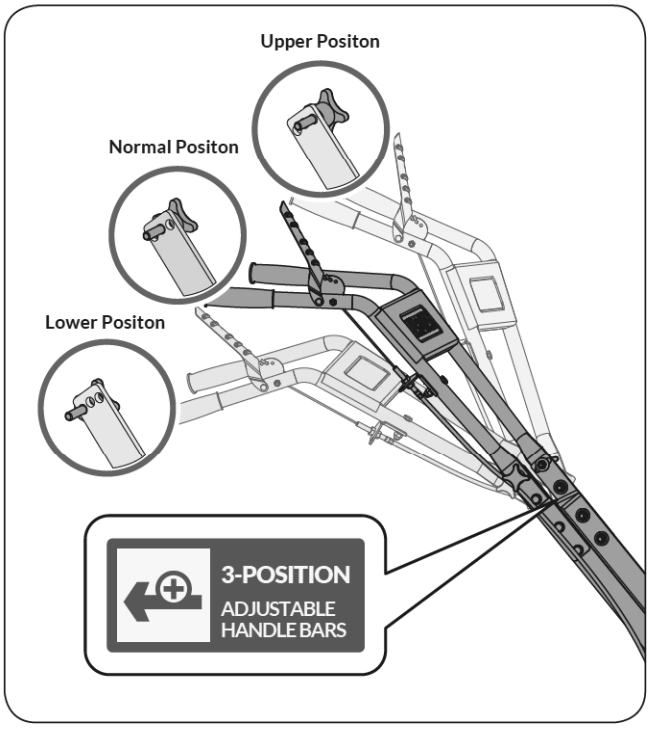



***Figure 5b***

## UPPER HANDLEBAR

1. Remove two adjusting hand knobs, flat washers and nuts from the handlebar adjusting plates. (See ***Figure 5a, Illustration 1***)
2. Align the holes in the upper handlebar with the holes in the adjusting plates. (See ***Figure 5a, Illustration 2***)
3. Insert M8×25 bolts in the lower holes, screw big washer and M8 nuts. Insert adjusting hand knobs into the one of three upper holes, screw big washer and M8 nuts. Tighten all the four M8 nuts. (See ***Figure 5a, Illustration 3***)

## TINE SHIELD

Assemble the tine shields using six M6×16 bolts, flat washers, and M6 lock nuts. (See ***Figure 6***)

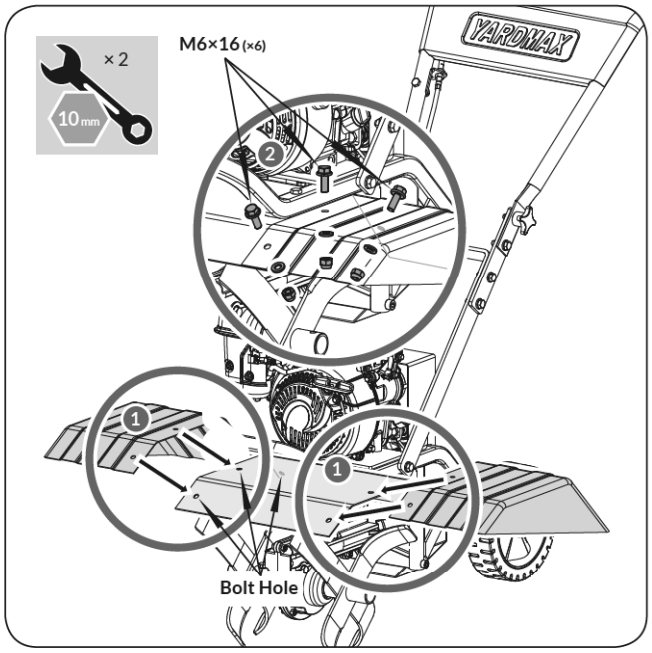



***Figure 6***

| | | | |
|---|---|---|---|
| | M6 × 16 | × 6 | 5 |

## OUTER TINE

Assemble two outer tines with inter tines using axis pins. Lock axis pins with clevis pins. (See ***Figure 7***)

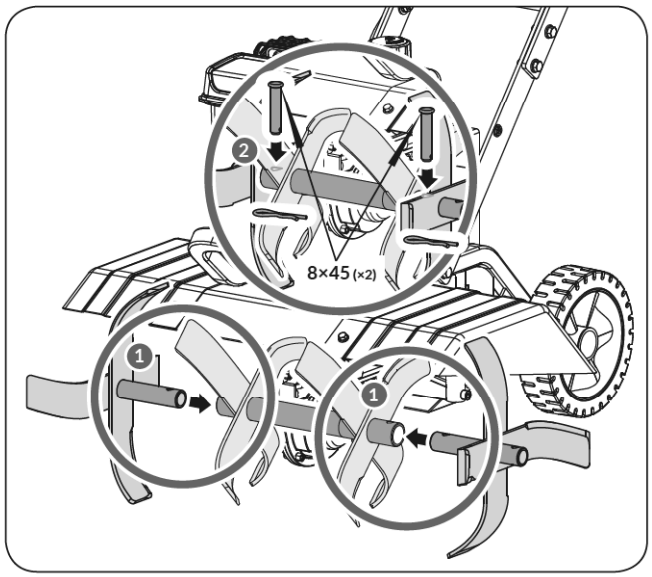



***Figure 7***

| | | | |
|---|---|---|---|
| | 8 × 45 | × 2 | 6 |
| | | × 2 | |

## DEPTH STAKE

Insert the depth stake into the depth stake holder tube.(See ***Illustration 1, Figure 8a***) Adjust the depth stake into the desired depth of tilling (See ***Figure 8b***), then lock it with 8×32 pin and clevis pin. (See ***Illustration 2, Figure 8a***)

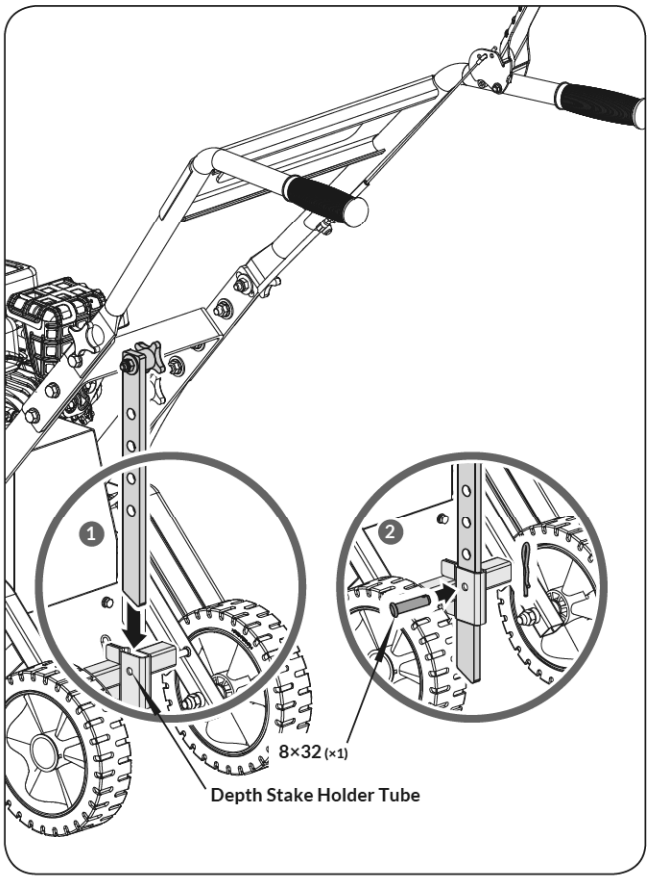



***Figure 8a***

| | | | |
|---|---|---|---|
| | 8 × 32 | × 1 | 7 |
| | | × 1 | |

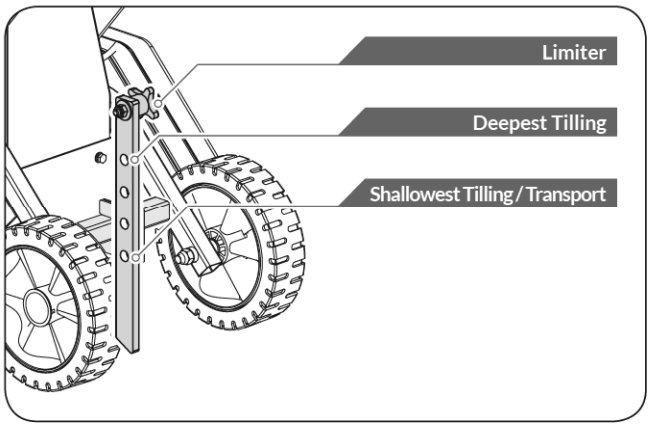
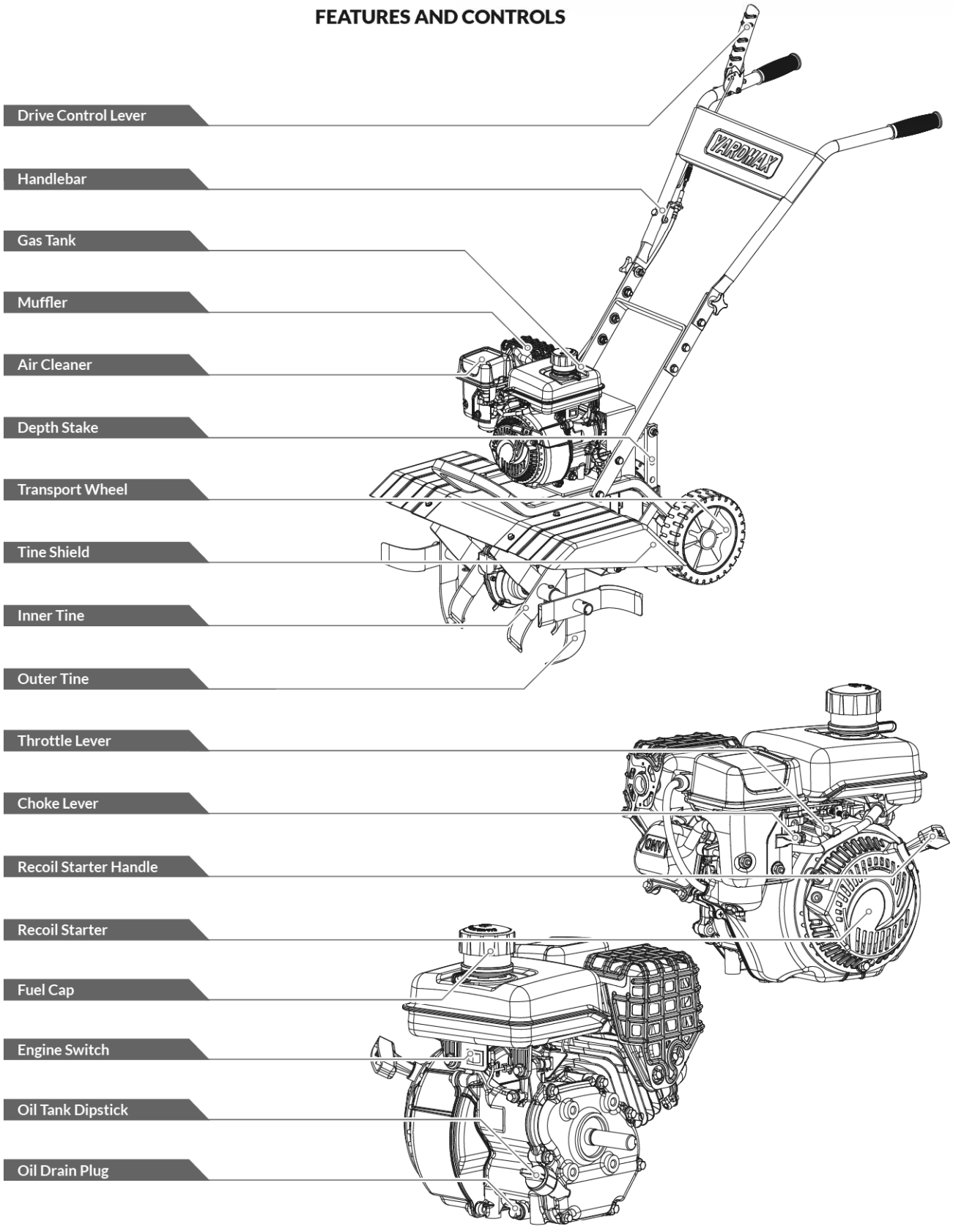



***Figure 8b***

# KNOW YOUR MACHINE

## FEATURES AND CONTROLS



**HANDLEBAR**

» Unscrew this lever, move the handle up or down. Fasten the lever. (See ***Figure 4b***)

**DRIVE CONTROL LEVER**

» Squeeze the lever against the hand grip to engage the tines. Release to disengage tines.

**DEPTH STAKE**

» Controls depth at which tiller will dig.

**TINE SHIELD**

» Adjustable to protect small plants from being buried.

**RECOIL STARTER HANDLE**

» The Recoil Starter Handle is used to start the engine.

**THROTTLE LEVER**

» The throttle lever regulates the speed of the engine, and moves between FAST and SLOW.

**CHOKE LEVER**

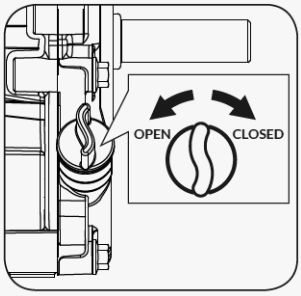
» The choke lever is used to choke the carburetor and assist in starting the engine. The choke lever slides between the **CHOKE CLOSED** and **CHOKE RUN** positions.

**DANGER** *Never use choke to stop engine.*

## ADD OIL TO ENGINE

**⚠ CAUTION** *The engine is shipped without oil. Do not start the engine before adding oil. Refer to your engine manual for the proper oil gauge to use.*

1. Make sure the front tine tiller is on a flat, level surface.
2. Remove the oil fill cap/dipstick to add oil.




3. Using a funnel, add oil up to the **FULL** mark on the dipstick. (See engine manual for oil capacity, oil recommendation, and location of fill cap.)

**⚠ CAUTION** *DO NOT OVERFILL. Check engine oil level daily and add as needed.*

## ADD GASOLINE TO ENGINE

**⚠ DANGER** *Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel. Use extreme care when handling gasoline.*

**⚠ DANGER** *Fill the fuel tank outdoors, never indoors. Gasoline vapors can ignite if they collect inside an enclosure. Explosion can result.*

1. The engine must be off and allowed to cool at least two minutes before adding fuel.
2. Remove the fuel filler cap and fill the tank. (See engine manual for fuel capacity, fuel recommendation, and location of fuel cap.)

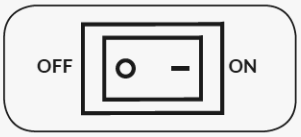
**⚠ CAUTION** *IMPORTANT: DO NOT OVERFILL!*

*This equipment and/or its engine may include evaporative emissions control system components, required to meet EPA and/or CARB regulations, that will only function properly when the fuel tank has been filled to the recommended level. Overfilling may cause permanent damage to evaporative emissions control system components. Filling to the recommended level ensures a vapor gap required to allow for fuel expansion. Pay close attention while filling the fuel tank to ensure that the recommended fuel level inside the tank is not exceeded. Use a portable gasoline container with an appropriately sized dispensing spout when filling the tank. Do not use a funnel or other device that obstructs the view of the tank filling process.*

3. Replace the fuel cap and tighten. Always clean up spilled fuel.

## STARTING ENGINE

1. The engine switch is in the normally "ON" position, and it is unnecessary to operate the engine switch when starting.




2. Move the choke lever to the CHOKE position. (see ***Figure 9***)

   » *If the engine is hot, closing the choke is not necessary.*

3. Move the throttle lever slightly forward to about ¼ of the way (Slightly toward the fast position). (see ***Figure 9***)

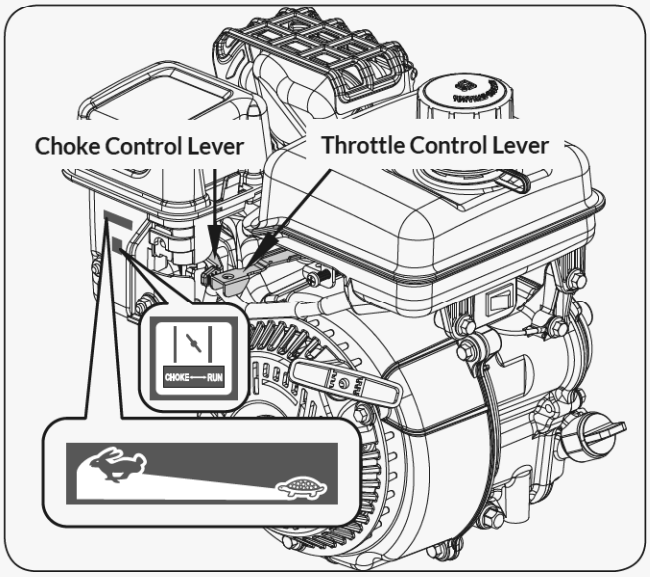



***Figure 9***

4. Pull the recoil starter until the engine starts. Return the recoil to the home position after each pull. Repeat the steps as needed. Once engine has started, set the throttle to the FAST position before you operate the unit.

**⚠ DANGER** *Rapid retraction of the starter cord (kickback) will pull your handand arm toward the engine faster than you can let go. Broken bones, fractures, bruises, or sprains could result.*

## TINE OPERATION

1. Pulling down the drive control lever engages the tines.
2. Releasing the drive control lever to a neutral position disengages the tines.

## DEPTH STAKE

The depth stake (see ***Figure 10***) can be raised or lowered to allow you more versatile tilling and cultivating, or to more easily transport your tiller.

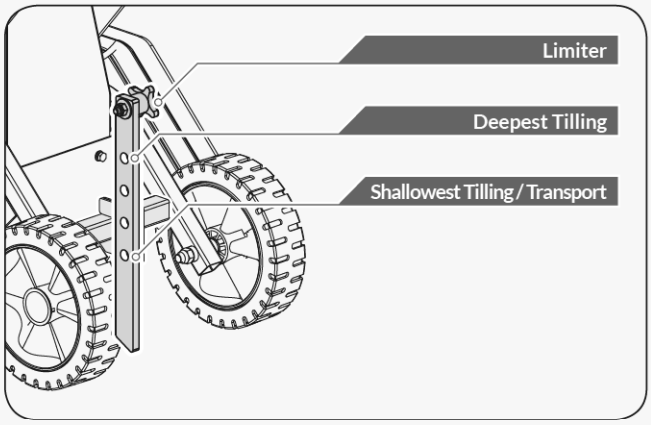



***Figure 10***

## OPERATING SPEED

For normal tilling, set the throttle lever to "FAST" for best tiller action. The throttle should be set to control forward movement to a slow walking speed for cultivating. Set the throttle lever to "LOW" to reduce stress on the engine when tilling is not being performed. Besides depth stake setting, variation of pressure on the handles also helps further control of tilling depth and travel speed. A downward pressure on the handles will reduce the tilling depth and increase the forward speed. An upward pressure on the handles will increase the working depth and reduce the forward speed.

## TILLING

Tilling is digging in, turning over and breaking up garden soil to prepare a seedbed for planting. Best tilling depth is 4" (100mm) to 6" (150mm). A tiller will also clear the soil of unwanted vegetation. The decomposition of this vegetation matter enriches the soil.

Avoid tilling soil that is too dry as it will pulverize and produce a dust that will not hold water. Water a few days before tilling. Also, tilling soil that is too wet will produce unsatisfactory clods. Wait a day or two after heavy rain for the soil to dry.

Better growth will be obtained if an area is tilled properly and used soon after tilling to preserve the moisture content.

The type of soil and working conditions will determine the actual setting of the tilling depth. In some soils, the desired depth is reached first pass over garden. In other soils, the desired depth is obtained by going over the garden two or three times. In later case, the depth regulator rod should be lowered before each succeeding pass over the garden. Passes should be made across the length and width of the garden alternately. Do not try to dig too deeply in the first pass. If the machine jumps or bucks, allow the unit to move forward at a lightly faster rate.

If the tiller stops forward motion and tries to dig in one spot, rock the handles from side to side to start it moving forward again.

Rocks which are turned up should be removed from the garden area.

## CULTIVATING

Cultivating is loosening or digging around growing plants to disrupt weeds and aerate soil. Less than 2" (50mm) depth is always desirable.

## IDLE SPEED

Set the throttle lever to the SLOW position to reduce stress on the engine when work is not being performed. Lowering the engine speed will help extend the life of the engine, and will help conserve fuel and reduce noise level.

## STOP ENGINE

To stop the engine in an emergency, simply turn the engine switch to the OFF position. Under normal conditions, use the following procedure:

1. Move the throttle lever to the SLOW (🐢) position.
2. Let the engine idle for one or two minutes.
3. Keep pressing the "OFF" position of the engine switch until the engine stops, and then release it.

**⚠ WARNING** *Sudden stopping at a high speed under a heavy load is not recommended. Engine damage may result.*

**⚠ WARNING** *Do not move the choke lever to CHOKE position to stop the engine. Backfire or engine damage may occur.*

Maintaining your YARDMAX front tine tiller will ensure long life to the machine and its components.

## PREVENTIVE MAINTENANCE

1. Turn off the engine and disengage all command levers. The engine must be cool.
2. Keep the engine's throttle lever in its SLOW position and remove the spark plug wire from the spark plug and secure.
3. Inspect the general condition of the front tine tiller. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, and any other condition that may affect its safe operation.
4. Use a soft brush, vacuum or compressed air to remove all contaminants from the machine. Then use high quality light oil to lubricate all moving parts.
5. Replace the spark plug wire.

**⚠ WARNING** *Never use a "pressure washer" to clean your unit. Water can penetrate tight areas of the machine and its transmission case and cause damage to spindles, gears, bearings, or the engine. The use of pressure washers will result in shortened life and reduce serviceability.*

## LUBRICATION

Remove the tine assemblies to lubricate the tine shafts at least once every season. The worm gear housing is pre-lubricated and sealed at the factory. At the beginning of each season, make sure enough lubricant inside the worm gear housing. Use portable tool lithium #0 grease such as Lubricate 6300AA , Lubricate GR-132, or Multifak, e.g. EP-O.

1. Remove right side tines and place the tiller on level surface. Allow the transmission to cool before filling with grease.
2. Remove the grease fitting screw and air vent screw to fill the worm gear housing through the lower grease fitting hole until the grease begins to come out from the upper air vent hole. (See ***Figure 11***)
3. Reinstall the grease fitting screw and air vent screw.

**⚠ CAUTION** *Do not overfill. Too much grease can create pressure which could damage seals.*

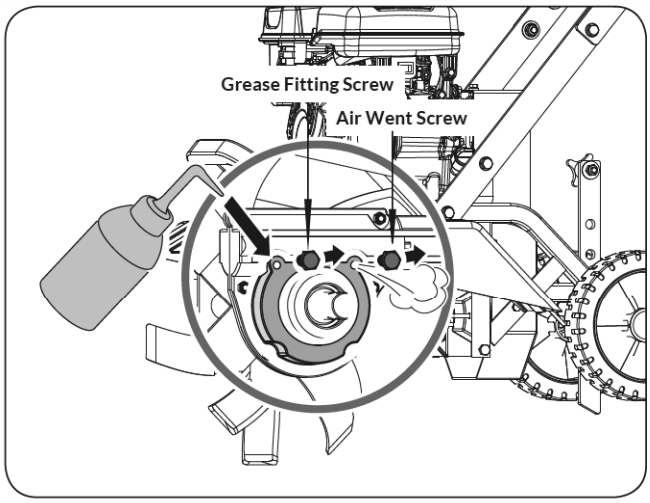



***Figure 11***

## ADJUSTING THE CABLE

» To increase belt tension do as follows:

1. Loosen the jam nut A and jam nut B by turning them with two 12mm wrenches at the same time. (See ***Figure 12, Illustration 1***)
2. Loosen jam nut A enough so the jam nut B can be rotated. Then, screw the jam nut B up until desired cable tightness is reached. (See ***Figure 12, Illustration 2***)
3. Screw the jam nut A down to lock jam nut B. (See ***Figure 12, Illustration 3***)

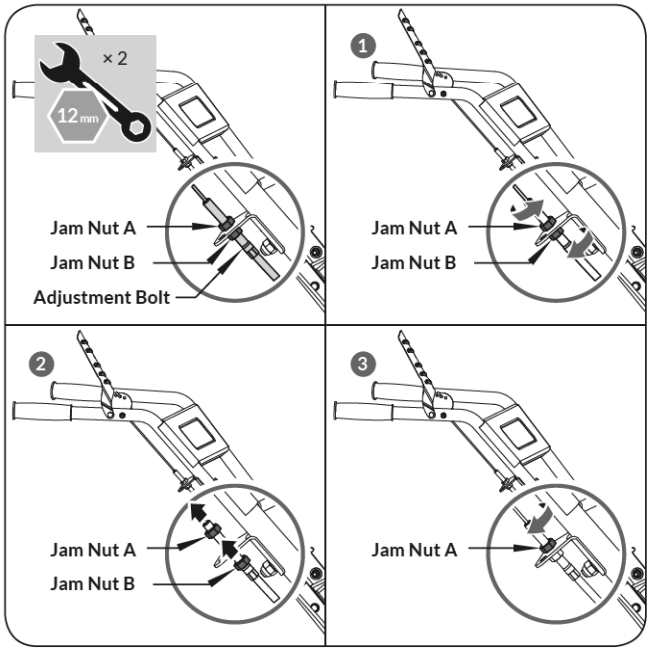



***Figure 12***

## REPLACING THE BELT

1. Remove the one bolt in the upper belt guard and four bolts in the lower belt guard to expose the belt assembly. (See ***Figure 13a***)
2. Loosen the two stud bolts that fix both belt guide rods. (See ***Figure 13b, Illustration 1***)
3. Remove the belt from both the engine pulley and transmission pulley. (See ***Figure 13b, Illustration 2***)

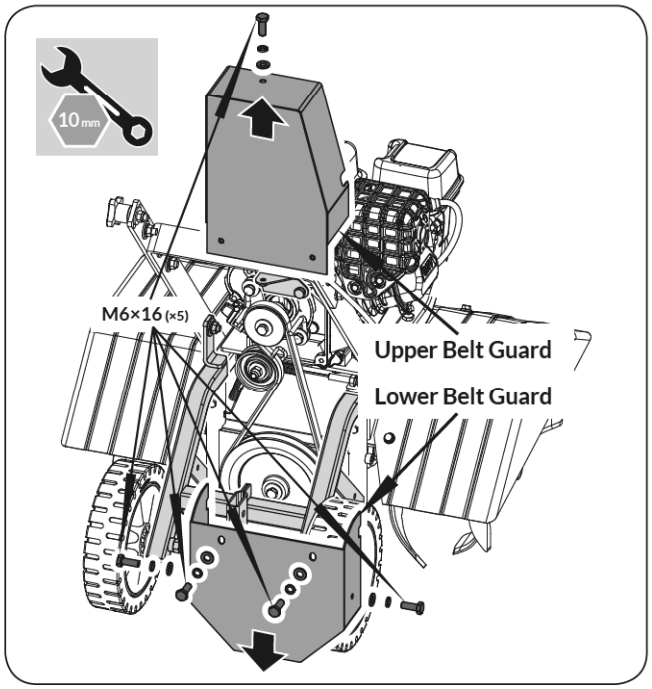



***Figure 13a***

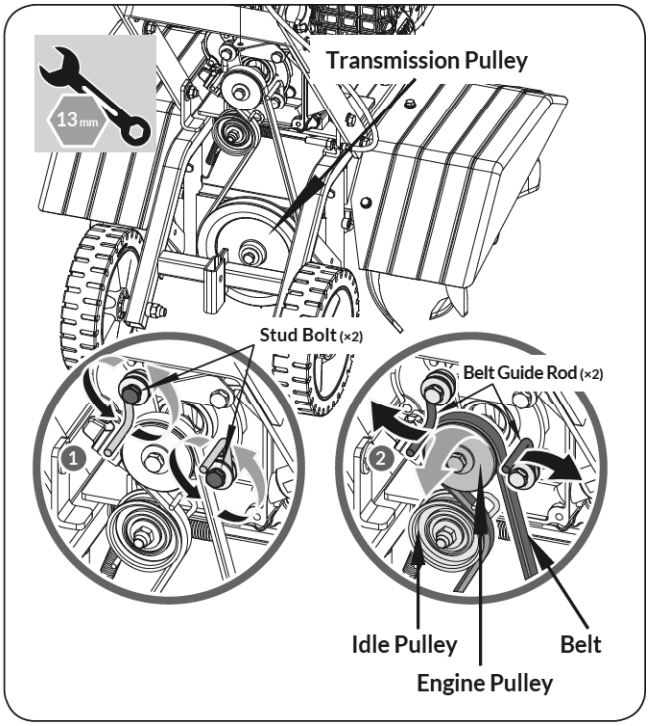



***Figure 13b***

## ENGINE MAINTENANCE

» For information on engine maintenance, refer to the Engine Manual included with your unit. Your engine manual provides detailed information and a maintenance schedule for performing maintenance tasks.

# STORAGE

If the front tine tiller will not be used for a period longer than 30 days, follow the steps below to prepare your unit for storage.

1. Drain the fuel tank completely. Stored fuel containing ethanol or MTBE can start to go stale in 30 days. Stale fuel has high gum content and can clog the carburetor and restrict fuel flow.
2. Start the engine and run until it stops. This helps prevent gum deposits from forming inside the carburetor and possible engine damage.
3. While the engine is still warm, drain the oil from the engine. Refill with fresh oil of the grade recommended in the Engine Manual.
4. Use clean cloths to clean off the outside of the machine and to keep the air vents free of obstructions.

**⚠ WARNING** *Do not use strong detergents or petroleum based cleaners when cleaning plastic parts. Chemicals can damage plastics.*

5. Inspect for any loose or damaged parts. Repair or replace damaged parts and tighten loose screws, nuts or bolts.
6. Store your unit on flat ground in a clean, dry building that has good ventilation.

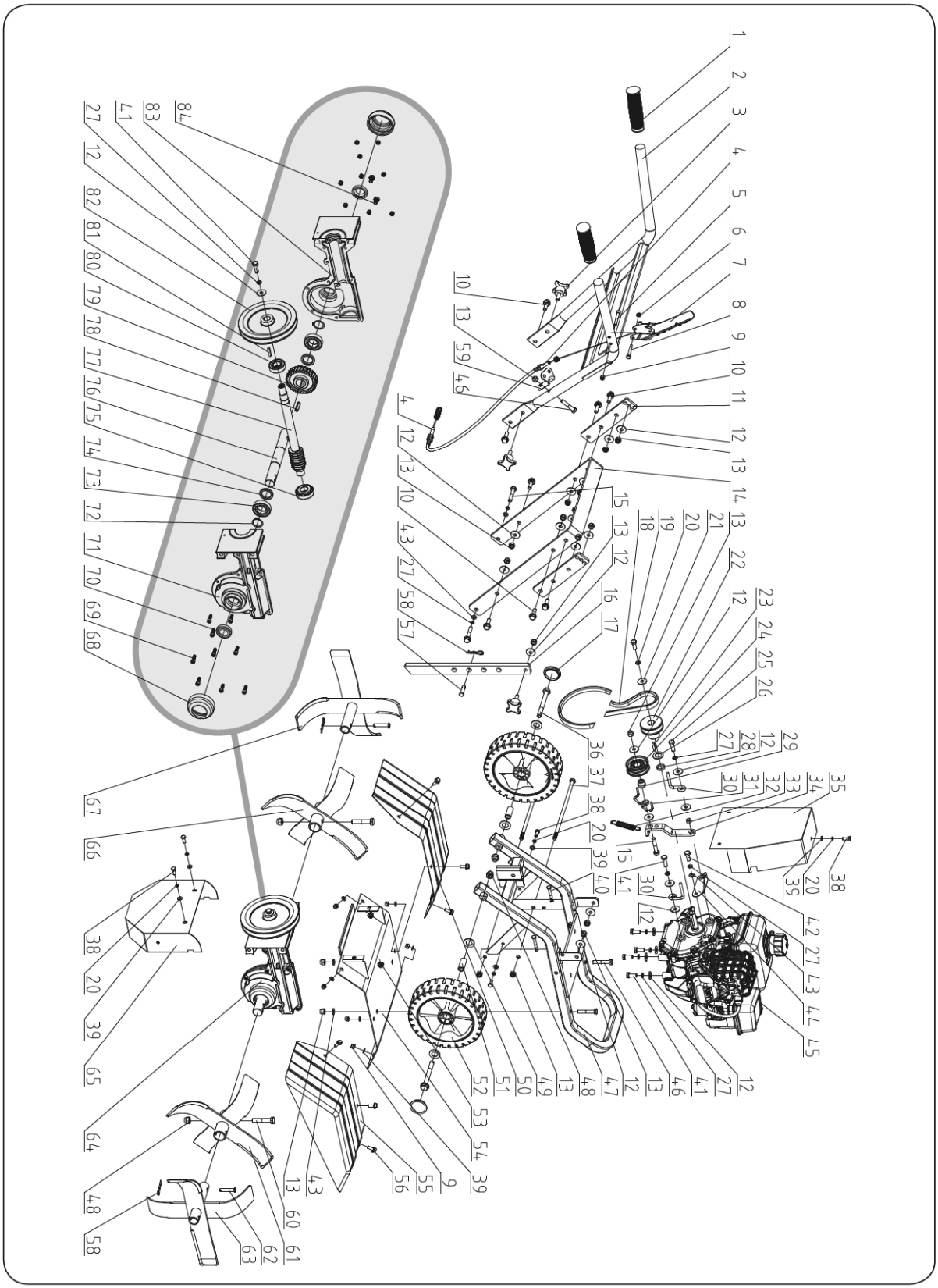
**⚠ WARNING** *Do not store the machine with fuel in a non-ventilated area where fuel fumes may reach flame, sparks, pilot lights or any ignition sources.*

# TROUBLESHOOTING

| Problem | Cause | Remedy |
|---|---|---|
| Engine fails to start | 1. Spark plug wire is disconnected<br>2. Out of fuel or stale fuel<br>3. Engine and/or Fuel valve is not in ON position<br>4. Choke lever is not in CHOKE position<br>5. Blocked fuel line<br>6. Fouled spark plug<br>7. Engine flooding<br>8. Belt tension lever is engaged | 1. Attach spark plug wire securely to spark plug<br>2. Fill with clean, fresh gasoline<br>3. Engine must be in ON position<br>4. Choke level must be in CHOKE position for a cold start<br>5. Clean fuel line<br>6. Clean, adjust gap, or replace<br>7. Wait a few minutes to restart, but do not prime<br>8. Disengage the belt tension lever |

| Problem | Cause | Remedy |
|---|---|---|
| Engine runs erratically | 1. Spark plug wire is loose<br>2. Unit running with Choke lever in CHOKE position<br>3. Blocked fuel line or stale fuel<br>4. Vent plugged<br>5. Water or dirt in fuel system<br>6. Dirty air cleaner<br>7. Improper carburetor adjustment | 1. Connect and tighten spark plug wire<br>2. Move choke lever to RUN position<br>3. Clean fuel line. Fill tank with clean, fresh gasoline<br>4. Clear vent<br>5. Drain fuel tank. Refill with fresh fuel<br>6. Clean or replace air cleaner<br>7. Refer to engine manual |
| Engine overheats | 1. Engine oil level low<br>2. Dirty air cleaner<br>3. Air flow restricted<br>4. Carburetor not adjusted properly | 1. Fill crankcase with proper oil<br>2. Clean air cleaner<br>3. Remove housing and clean<br>4. Refer to engine manual |
| Engine will not stop when throttle lever is positioned at stop, or engine speed does not increase properly when throttle lever is adjusted. | 1. Debris interfering with throttle linkage.<br>2. Improper throttle linkage adjustment | 1. Clean dirt and debris.<br>2. Refer to Engine Manual to check and adjust throttle linkage. |
| Tiller moves forward during starting. | Tine clutch control not in neutral position. | Tine clutch control lever must be released to neutral to start the engine. |
| Tiller is difficult to control when tilling (machine jumps or lurches forward). | 1. Improper tilling depth setting.<br>2. Too high engine speed on hard ground. | 1. Raise the tines for shallower tilling by raising the depth regulator rod.<br>2. Set the throttle lever at lower speed. |
| Tines do not engage. | 1. Foreign object lodged in tines.<br>2. Tine clevis pin(s) missing.<br>3. Belt worn and/or stretched.<br>4. Pulley and idler not in correct adjustment. | 1. Stop tiller completely, check and discard foreign object.<br>2. Replace tine clevis pin(s).<br>3. Replace belt.<br>4. Contact dealer. |

# PARTS DIAGRAM



# *PARTS LIST*

| No. | Description | QTY. |
|---|---|---|
| 1 | Handlebar Grip | 2 |
| 2 | Upper Handlebar | 1 |
| 3 | Adjusting Hand Knob M8×25 | 3 |
| 4 | Tensioning Pulley Cable | 1 |
| 5 | Inner Hexangular Screw M6×35 | 1 |
| 6 | Flange Lock Nut M5 | 1 |
| 7 | Drive Control Lever | 1 |
| 8 | Lever Bolt | 1 |
| 9 | Lock Nut M6 | 16 |
| 10 | Bolt M8×25 | 8 |
| 11 | Handlebar Adjusting Plate | 2 |
| 12 | Big Flat Washer 8 | 23 |
| 13 | Lock Nut M8 | 15 |
| 14 | Lower Handlebar | 1 |
| 15 | Bolt M8×45 | 3 |
| 16 | Depth Stake | 1 |
| 17 | Wheel Cap (Black) | 2 |
| 18 | Belt 4LXP85 | 1 |
| 19 | Bolt M6×20 | 1 |
| 20 | Spring Washer 6 | 6 |
| 21 | Large Flat Washer 6 | 1 |
| 22 | Small Pulley | 1 |
| 23 | Flat Key A 5×5×25 | 1 |
| 24 | Tensioning Pulley | 1 |
| 25 | Bolt M8×30 | 1 |
| 26 | Washer 16 | 1 |
| 27 | Spring Washer 8 | 11 |
| 28 | Lock Ring | 1 |
| 29 | Bearing Bushing | 1 |
| 30 | Belt Guide Rod 1 | 2 |
| 31 | Belt Guide Rod 2 | 1 |
| 32 | Return Spring | 1 |
| 33 | Slide Bushing | 1 |
| 34 | Tensioning Pulley Swing Arm | 1 |
| 35 | Upper Belt Guard | 1 |

| No. | Description | QTY. |
|---|---|---|
| 36 | Bolt M10×100 | 2 |
| 37 | Bolt M8×235 | 2 |
| 38 | Bolt M6×16 | 5 |
| 39 | Flat Washer 6 | 11 |
| 40 | Bolt M6×40 | 2 |
| 41 | Bolt M8×25 | 6 |
| 42 | Bolt M8×20 | 1 |
| 43 | Flat Washer 8 | 7 |
| 44 | Belt Guard Mount Bracket | 1 |
| 45 | Gasoline Engine R80-S | 1 |
| 46 | Bolt M8×40 | 3 |
| 47 | Frame Weldment | 1 |
| 48 | Lock Nut M10 | 4 |
| 49 | Big Flat Washer 10 | 4 |
| 50 | Tine Shield - Left | 1 |
| 51 | Wheel Bushing | 2 |
| 52 | Wheel (Black) | 2 |
| 53 | Lock Nut M6 | 2 |
| 54 | Tine Shield -Middle | 1 |
| 55 | Tine Shield - Right | 1 |
| 56 | Bolt M6×16 | 6 |
| 57 | Pin B8×32 | 1 |
| 58 | Clip 2.5 | 3 |
| 59 | Cable Fixing Plate | 1 |
| 60 | Bolt M10×50 | 2 |
| 61 | Inner Tine - Right | 1 |
| 62 | Pin 8×45 | 2 |
| 63 | Outer Tine - Right | 1 |
| 64 | Transmission Case | 1 |
| 65 | Lower Belt Guard | 1 |
| 66 | Inner Tine - Left | 1 |
| 67 | Outer Tine - Left | 1 |
| 68 | Bearing Sheath | 2 |
| 69 | Screw M6×25 | 9 |
| 70 | Oil Seal FB25×40×8 | 2 |

| No. | Description | QTY. |
|---|---|---|
| 71 | Transmission Case - Right | 1 |
| 72 | Snap Ring 25 | 2 |
| 73 | Bearing 6005-2Z(HCH) | 2 |
| 74 | Worm Wheel Bushing | 2 |
| 75 | Bearing 30204(HCH) | 1 |
| 76 | Worm Axis | 1 |
| 77 | Worm Rod | 1 |

| No. | Description | QTY. |
|---|---|---|
| 78 | Flat Key A6×28 | 1 |
| 79 | Worm Wheel | 1 |
| 80 | Bearing 6004-2RS | 1 |
| 81 | Flat Key 5×5×20 | 1 |
| 82 | Big Pulley | 1 |
| 83 | Transmission Case - Left | 1 |
| 84 | Bolt M8×12 | 2 |

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