POWERHORSE™

212cc Rear Tine Tiller

Owner's Manual

WARNING: Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item #115070

READ & SAVE THESE INSTRUCTIONS

Thank you very much for choosing a Powerhorse product!

For future reference, please complete the owner's record below:

Serial Number/Lot Date Code (if applicable): _____

Purchase Date: _____

Save the receipt, warranty, and this manual. It is important that you read the entire manual to become familiar with this product before you begin using it.

This product is designed for certain applications only. Northern Tool and Equipment is not responsible for issues arising from modification or improper use of this product such as an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed.

For technical questions, please call **1-800-222-5381**.

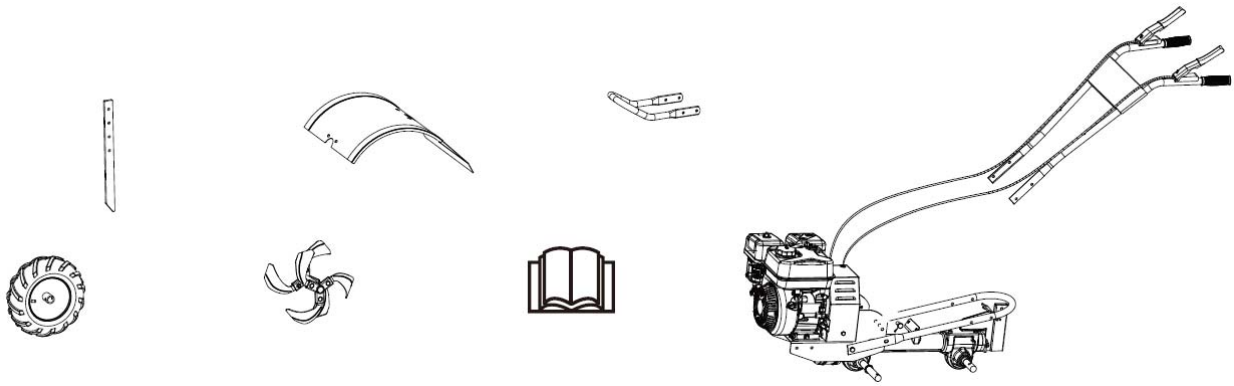
Table of Contents

Intended Use

Main function of the product is tilling and scarifying but plowing is not recommended, it is suitable for hilly land, dry land, orchard, vegetable field, garden and greenhouse, etc.

Packaging Contents

Tiller Body/Upper Handle (1)	Wheel (2)	Depth Regulator (1)
Tiller Protective Shield (1)	Tines (2)	Bumper (1)
Use And Care Guide (1)		



Technical Specifications

Property	Specification
Engine	DH212
Engine Power (kW)	4.3
Engine Displacement (cc)	212
Max speed@ idle(rpm)	3000
Full Tank Capacity (L/Gal)	3.6/0.95
Oil Tank Capacity (L/gal)	0.6/0.16
Working Width (in)	19.68
Working Depth (in)	6.5
Blades qty (pcs)	12
Blades diameter(mm)	330
Blades rotate speed (rpm)	178

Important Safety Information

⚠WARNING

- Read and understand all instructions. Failure to follow all instructions may result in serious injury or property damage.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this tool. Always be aware of the environment and ensure that the tool is used in a safe and responsible manner.
- Do not allow persons to operate or assemble the product until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the product. There are specific applications for which the product was designed.
- Use the right tool for the job. DO NOT attempt to force small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. This product will be safer and do a better job at the capacity for which it was intended. DO NOT use this equipment for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.
- This machine is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrestor meeting applicable local or state laws (if any).

GENERAL SAFETY

Read this operator's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manual(s) before operation. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.

- Be completely familiar with the controls and the proper use of this machine before operating it.
- This machine is a precision piece of power equipment. Therefore, exercise extreme caution at all times.
- Regularly inspect the tiller. Make sure parts are not bent, damaged, or loose.
- Use this equipment for its intended purpose only.
- Operate the unit only with guards, shields, and other safety items in place and working correctly.
- Service the unit only with authorized or approved replacement parts.
- Complete all unit maintenance and adjustments according to the instructions in this manual.
- To prevent accidental starting when setting up, transporting, adjusting or making repairs, always disconnect spark plug wire.
- Be thoroughly familiar with the controls and the proper use of the tiller before starting. Know how to stop the engine quickly.
- To help avoid tiller tines contact or a thrown object injury, stay in operator zone behind handles and keep children, bystanders, helpers and pets at least 75 feet from tiller while it is in operation. Stop machine if anyone enters area.
- Always wear safety glasses or safety goggles during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.

- Wear sturdy, rough-soled work shoes and close-fitting pants and shirts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended. Never operate this machine while barefoot, in sandals, slippery or lightweight (e.g. canvas) shoes.
- Do not put hands or feet near or under rotating parts. Keep clear of discharge area at all times as the rotating tines can cause injury.
- Never operate the tiller without proper shields, guards, control lever or other safety protective devices in place and working.
- Never operate the tiller with damaged safety devices. Failure to do so, can result in personal injury.
- Familiarize yourself with all the safety and operating decals on this equipment.
- Thoroughly inspect the area where the tiller is to be used and remove all foreign objects. Your equipment can propel small objects at high speed causing personal injury or property damage.
- Check that all nuts and bolts are tight and equipment is in good condition before each use.
- Never allow children or young teenagers to operate the tiller.
- Only allow responsible individuals, who are familiar with the instructions, to operate the tiller.
- Do not operate the tiller while under the influence of alcohol or drugs.
- The control lever is a safety device. Never attempt to bypass its operation. Doing so makes the safety device inoperative and may result in personal injury through contact with the rotating tines. The control lever must operate easily in both directions and automatically return to the disengaged position when released.
- Do not put hands or feet near or under rotating parts.
- Operate only in daylight or good artificial light. Walk, never run.
- 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. Always be sure of your footing; keep a firm hold on the handle and walk; never run. Never operate the tiller at high transport speeds on slippery surfaces.
- If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
- Never leave the tiller unattended when the engine is running. Stop the engine and make sure all moving parts have stopped. Remove the wire from the spark plug.
- Muffler and engine become hot and can cause a burn. Do not touch.
- Do not run the engine indoors or inside a closed area. The exhaust fumes are dangerous, containing CARBON MONOXIDE, an ODORLESS AND DEADLY GAS.
- Watch for holes, roots, bumps, or other rough ground. Tall grass can hide obstacles.
- Always look behind and down and use caution when using reverse or pulling the tiller towards you.
- Never attempt to start the tiller unless both wheels are in the locked position. This acts as a brake for the tiller.
- Always start the tiller on the level surface.
- Only use parts and accessories made for this machine by the manufacturer. Failure to do so can result in personal injury.
- When starting engine, pull cord slowly until resistance is felt, then pull rapidly. Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go. Broken bones, fractures, bruises or sprains could result.

- Disengage clutch lever and stop engine before leaving the tiller in operating position. Wait until the tines come to a complete stop before removing debris or making any adjustments to the tiller.
- Do not attempt to till hard soil, till too deep or till at too fast a rate that can overload the tiller.
- Gasoline is extremely flammable, and gasoline vapors can explode if ignited. Handle with care.
- Use an approved container.
- Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your balance, release the control lever immediately and the tine will stop rotating.
- Do not till near drop-offs, ditches or embankments, you could lose your footing or balance.
- Before cleaning, repairing, or inspecting, make certain the tines and all moving parts have stopped. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
- Check the tines and engine mounting bolts at frequent intervals for proper tightness. Also, visually inspect tines for damage. Replace with the original equipment manufacture's (O.E.M.) parts only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- After striking a foreign object, stop the engine, disconnect the spark plug wire and ground against the engine. Thoroughly inspect the tiller for any damage.
- Repair the damage before starting and operating the tiller.
- Tiller components, guards and shields are subject to wear and damage which could expose moving parts or allow objects to be thrown. For safety protection, frequently check components and replace immediately with original equipment manufacturers (O.E.M.) parts only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
- Do not change the engine's governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
- Check fuel line, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.
- Do not crank engine with spark plug removed.
- Maintain or replace safety and instruction labels, as necessary.
- Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment.
- To avoid serious injury or death, do not modify engine in any way. Tampering with the governor setting can lead to a runaway engine and cause it to operate at unsafe speeds. Never tamper with factory setting of engine governor.

CHILDREN SAFETY

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the tiller. They do not understand the dangers. Never assume that children will remain where you last saw them.

- Keep children out of the tilling area and under watchful care of a responsible adult other than the operator.
- Be alert and turn tiller off if a child enters the area.
- Before and while moving backwards, look behind and down for small children.
- Use extreme care when approaching blind corners, doorways, shrubs, trees, or other objects that may obscure your vision of a child who may run into the tiller.

- Keep children away from hot or running engines. They can suffer burns from a hot muffler.
- Never allow children to operate this machine.

SAFETY WHILE SERVICING

Safe Handling of Gasoline:

- To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes, which can ignite. Wash your skin and change clothes immediately.
- Use only an approved gasoline container.
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
- Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
- Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
- Extinguish all cigarettes, cigars, pipes and other sources of ignition.
- Never fuel machine indoors because flammable vapors will accumulate in the area.
- Never remove gas cap or add fuel while engine is hot or running. Allow engine to cool at least two minutes before refueling.
- Never over fill fuel tank. Fill tank to no more than 1 inch below bottom of filler neck to provide for fuel expansion.
- Replace gasoline cap and tighten securely.
- If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting engine.
- Never store the machine or fuel container near an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.
- To reduce fire hazard, keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
- Allow machine to cool at least 5 minutes before storing.
- Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
- If situations occur which are not covered in this manual, use care and good judgement. Contact Customer Support for assistance or the name of the nearest service dealer.

⚠WARNING

PROP 65

- This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to www.p65warnings.ca.gov.
- Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm. Some examples of these chemicals are:
  - - lead from lead-based paints,

- - crystalline silica from bricks and cement and other masonry products, and
- - arsenic and chromium from chemically-treated lumber.

- Your risk from these exposures varies depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.
- Handling power cords on corded products may expose you to lead, a chemical known to the state of California to cause cancer and birth defects or other reproductive harm. Wash your hands after handling.

⚠WARNING

WORK AREA SAFETY

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well-lit. Cluttered, wet, or dark work areas can result in injury. Using the product in confined work areas may put you dangerously close to cutting tools and rotating parts.
- Do not use the product where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. The product can create sparks, which may ignite the flammable liquids, gases, or dust.
- Do not allow the product to come into contact with an electrical source. The tool is not insulated and contact will cause electrical shock.
- Keep children and bystanders away from the work area while operating the tool. Do not allow children to handle the product.
- Be aware of all power lines, electrical circuits, water pipes, and other mechanical hazards in your work area. Some of these hazards may be hidden from your view and may cause personal injury and/or property damage if contacted.

⚠WARNING

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when operating the tool. Do not use the tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.
- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Use ANSI Z87.1 compliant safety goggles (not safety glasses) with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
- Do not overreach. Keep proper footing and balance at all times.
- Remove keys or wrenches before connecting the tool to an air supply, power supply, or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may cause personal

injury.

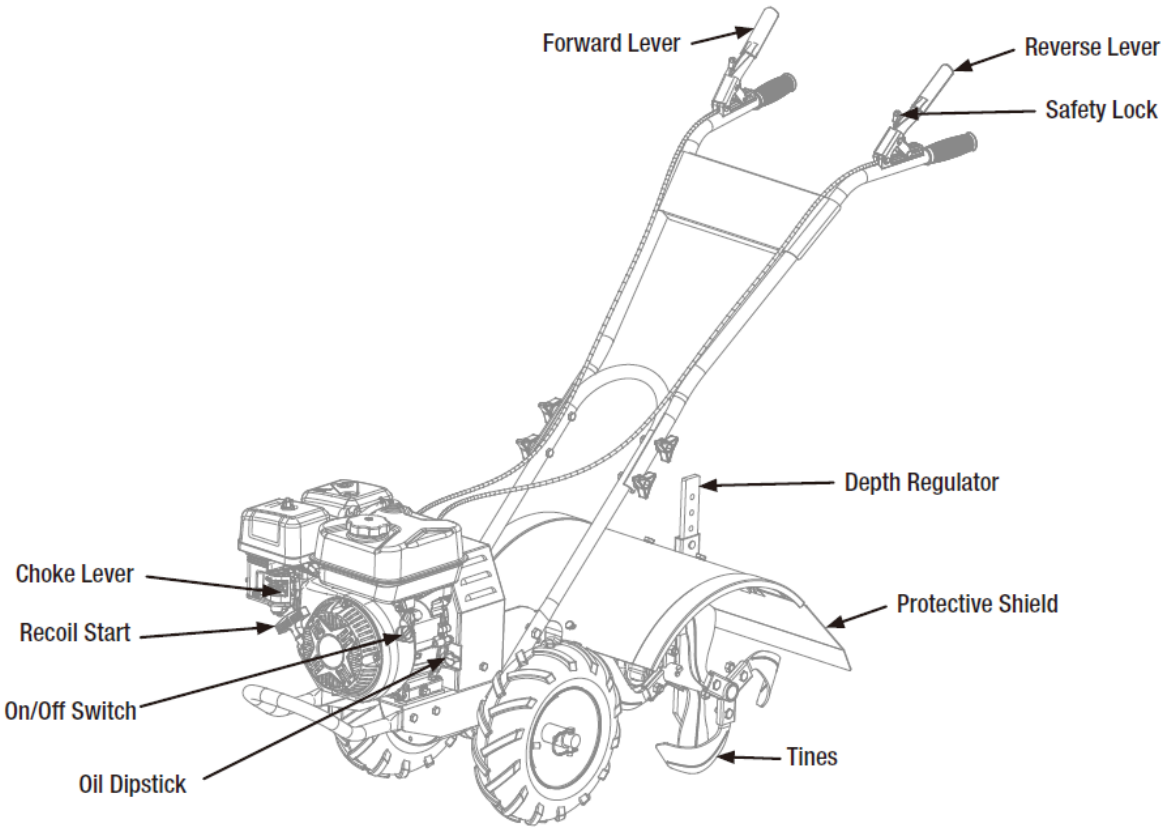
- Secure the work with clamps or a vise instead of your hand when practical. This safety precaution allows for proper tool operation using both hands.

⚠CAUTION

PRODUCT USE AND CARE

- Do not force the product. Products are safer and do a better job when used in the manner for which they are designed. Plan your work and use the correct product for the job.
- Check for damaged parts before each use. Carefully check that the product will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the product with a damaged part.
- Do not use a product with a malfunctioning switch. Any power tool that cannot be controlled with the power switch is dangerous and must be repaired by an authorized service representative before using.
- Disconnect the power/air supply from the product and place the switch in the locked or off position before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
- Store the product when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the tool for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your product. Accessories that may be suitable for one product may create a risk of injury when used with another tool. Never use an accessory that has a lower operating speed or operating pressure than the tool itself.
- Keep guards in place and in working order. Never operate the product without the guards in place.
- Do not leave the tool running unattended.

Main Parts of Product



Subassembly	
RECOIL STARTER	The recoil starter is attached to the right side of the upper handle. Stand behind the unit and pull the recoil starter rope to start the unit.
PROTECTIVE SHIELD	The tiller shield is located in the rear of the tiller and it is used to shield you from debris being thrown.
FORWARD/REVERSE/ SAFETY LOCK LEVERS	The forward/reverse lever located on the upper handle controls the tillers direction. The safety lock ensures that when using the tiller the operator does not accidently start the forward or reverse action until they are ready to operate the tiller.
ON/OFF SWITCH	The On/Off switch is needed to start and stop the tiller.
DEPTH REGULATOR	In hard compacted soil, it helps restrain the tiller's forward motion. In looser soil, it controls how deeply the tines can dig into the ground.
TINES	Tines are rotating metal blades that dig into the soil.
CHOKE LEVER	A carburetor choke lever engages or disengages the choke, sub sequentially adjusting the amount of air that is enabled to flow through the intake of the carburetor.
OIL DIPSTICK	Located on the engine is used to fill oil and measure oil. This tiller does not come with oil. Oil must be added before operating it.

Assembly Instructions

Assembling the Depth Regulator

NOTICE: This tiller is shipped without gasoline or oil in the engine. Fill up the gasoline and oil BEFORE operating your machine.

- insert the depth regulator (C) through the protective shields (D) opening into the top of the depth regulator bracket with handle facing to the rear.

- Insert depth regulator clevis pin (LL) through the depth regulator bracket. Then insert the cotter pin (FF) to secure. The top hole of the depth regulator tines should clear the ground. See Figure 1-1.

Assembling the Protective Shield to the Tiller Body

Locate the plates with the pre-drilled holes on the rear part of the tiller body. Align the protective shield (D) holes to the plate holes. Insert M8x20 bolts (AA) with spring washers (HH) and regular washers (MM) and tighten with a wrench. See Figure 1-2.

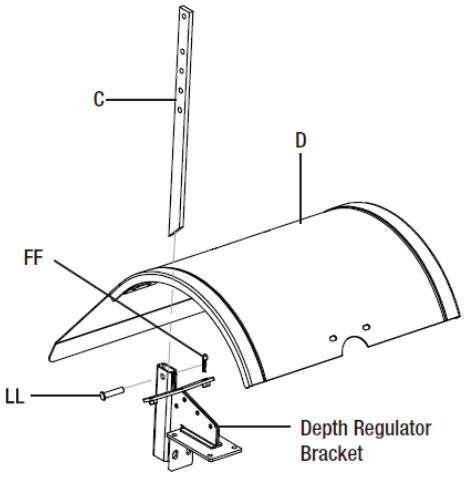


Figure 1-1

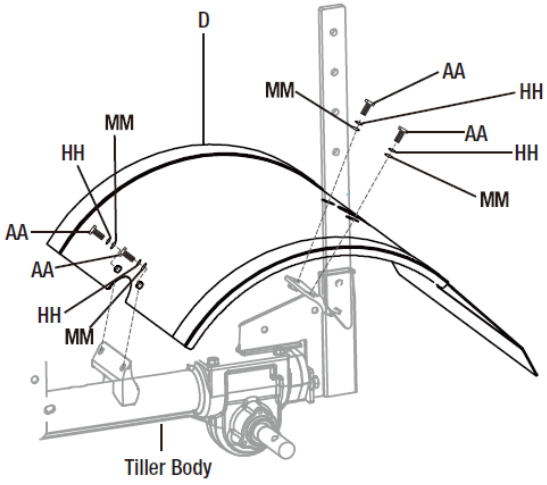


Figure 1-2

⚠WARNING

Make sure the tiller protective shield is installed in place before starting the machine.

Assembling the Lower Handle

The lower handle is attached to the outside of the transmission cover. Align the lower holes to the desired angle and insert M10x25 bolts (CC) and M10 Nuts (DD) to secure the handle on both sides. See Figure 1-3.

NOTICE: There are 3 pre-drilled holes on the transmission cover to choose from for angle height.

Assembling the Upper Handle

Align the upper handle pre-drilled holes to the lower handle pre-drilled holes. Insert M8x50 bolts (JJ) through the inside of the handle. Insert washers (GG) and hand tighten with star knob (II). See Figure 1-4.

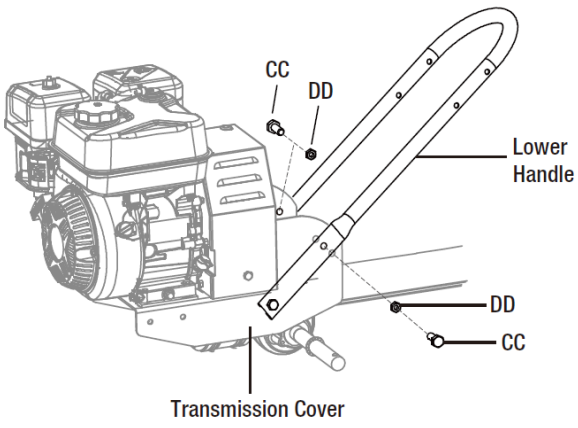


Figure 1-3

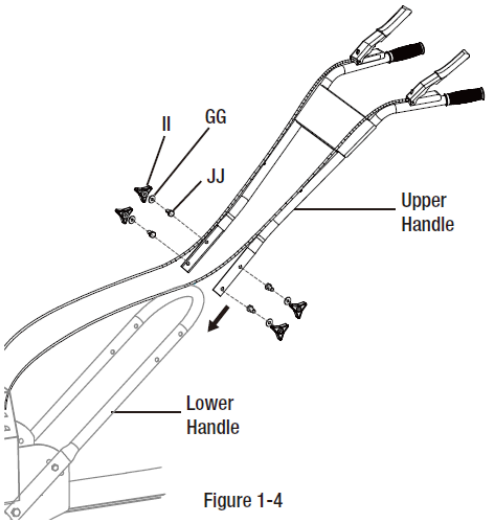


Figure 1-4

Assembling the Wheels

Insert the wheel (B) through the axle on the tiller body. Then place the wheel pin (KK) through the hole on wheel through the hole on the axle to secure the wheel in place. See Figure 1-5.

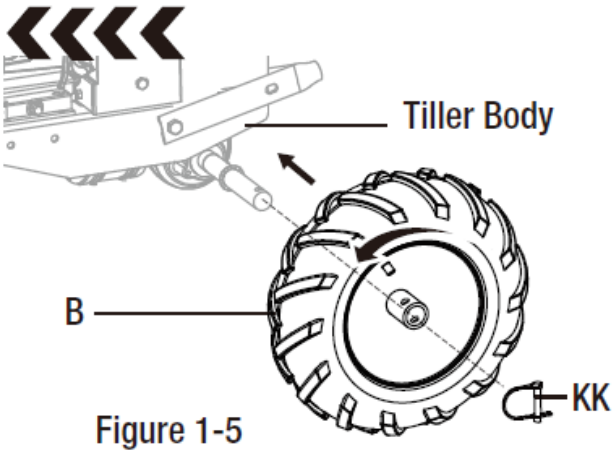


Figure 1-5

Wheel Direction

Make sure to install the wheel in the correct direction. See bottom left graphic for correct wheel direction.

Wheel Drive Pins

Each wheel is equipped with a locking pin that secures the wheel to the wheel shaft. The wheels can be positioned in either a WHEEL DRIVE or a FREEWHEEL mode.

Before starting the engine, put both wheels in the WHEEL DRIVE position by inserting the wheel drive pins through the wheel hubs and axle shaft. Doing so “locks” the wheels to the axle shaft, causing the wheels to turn when either the forward or reverse lever is engaged.

Use the FREEWHEEL mode only when the engine is not running. In FREEWHEEL, the wheel locking pins are placed only through the holes in the wheel shaft (not the wheel hubs), thus allowing the wheels to turn freely when you manually move the tiller.

⚠WARNING

Never allow either of the wheels to be in the FREEWHEEL position when the engine is running. Always put both wheels in the WHEEL DRIVE position before starting the engine. Failure to comply could cause loss of tiller control, property damage, or personal injury.

TO REPLACE THE WHEELS IN THE WHEEL DRIVE OR FREEWHEEL POSITION

- Stop the engine, disconnect the spark plug wire from the spark plug and allow engine to cool.
- Raise one wheel about 1 in. (2.5 cm) off the ground and place a sturdy support under the transmission.

⚠WARNING

Do not place tiller on its side when changing wheel drive positions. Doing so could result in gasoline leaking from the fuel tank. Failure to follow this instruction could result in personal injury or property damage.

- FOR WHEEL DRIVE MODE: Slide wheel outward and align the holes. Insert locking pin (KK) through wheel hub and wheel sh aft. Secure wheel locking pin (KK) by pushing in as far as it will go then wrapping ring around the wheel shaft as shown. Repeat with the other wheel and then remove the support from beneath the transmission.
- FOR FREEWHEEL MODE: Slide the wheel inward and insert the wheel drive locking pin (KK) only through the hole in the axle shaft. Secure wheel locking pin (KK) by pushing in as far as it will go then wrapping the ring around the wheel shaft as shown. Repeat for the other wheel and then remove the support from beneath the transmission.

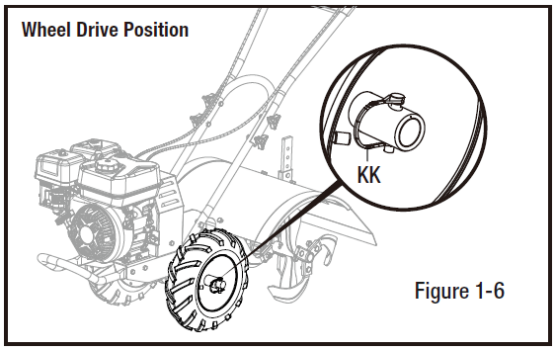


Figure 1-6

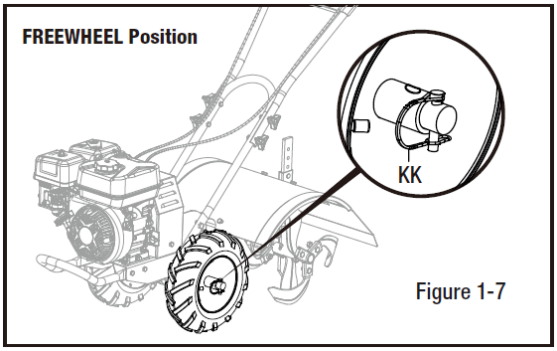


Figure 1-7

⚠WARNING

- Before starting engine, be sure that both wheels are in WHEEL DRIVE position. See Wheel Drive Pins for instructions.
- Engaging the Forward Lever when the wheels are not in WHEEL DRIVE could allow the tines to rapidly propel the tiller forward or backward. Failure to comply could cause loss of tiller control, property damage, or personal injury

Check Tire Pressure

- (Models with pneumatic tires) Check the air pressure in both tires before each use. The air pressure should be between 20 PSI and 25 PSI (pounds per square inch).
- If the air pressure is lower than 20 PSI, inflate the tires air pressure with air pump.
- Keep both tires equally inflated to help prevent machine from pulling to one side.

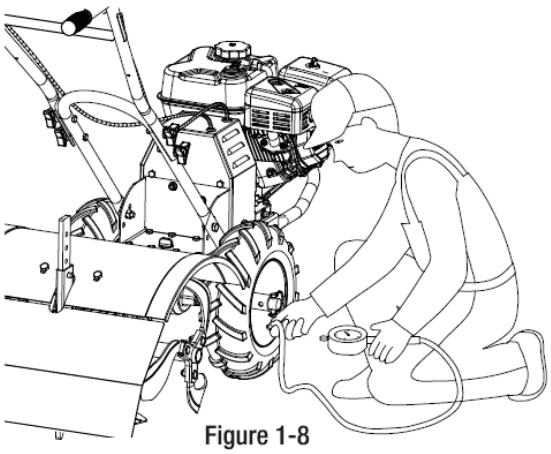


Figure 1-8

Assembling the Bumper

Insert the bumper (F) into the front end of the tiller body just below the engine. Align the pre-drilled holes and insert M8x20 bolts (AA) and M8 nuts (BB) and tighten. See Figure 1-9

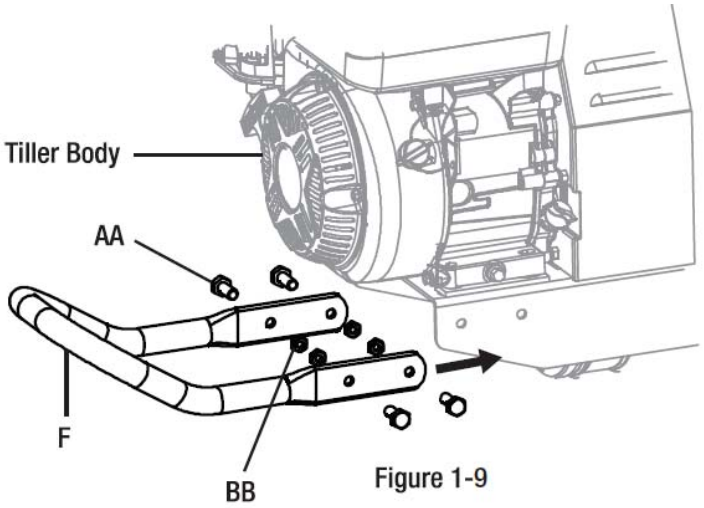


Figure 1-9

Assembling the Tines

- Check the orientation of the tine blade. The sharp cutting edge should be facing the direction of tine rotation for your tiller.
- Insert tines (E) on each side through the tine axle located on the rear of the tiller. Align pre-drilled holes and insert clevis pin (EE) then insert cotter pin (FF) to secure in place. See Figure 1-10.

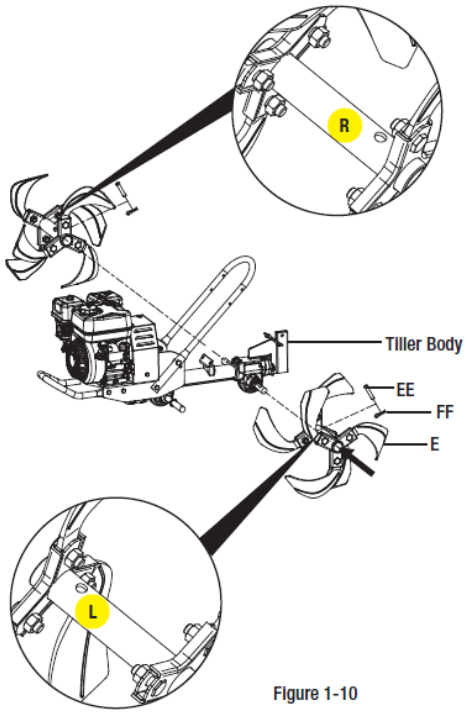


Figure 1-10

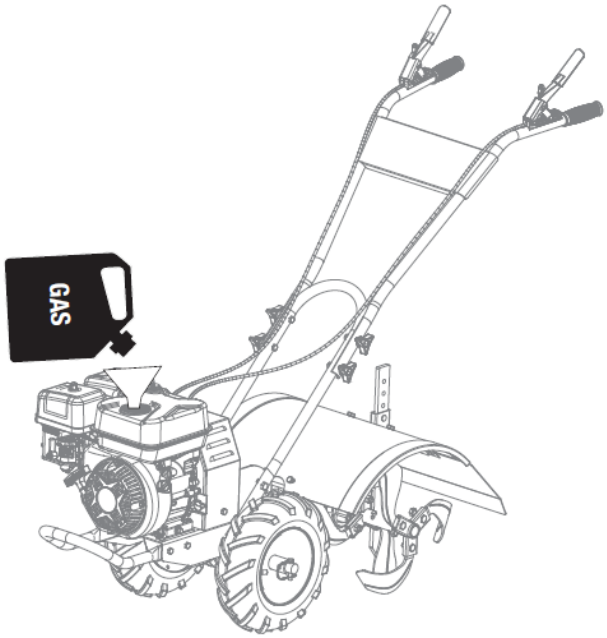


Figure 1-11

Adding Gas and Oil

⚠WARNING

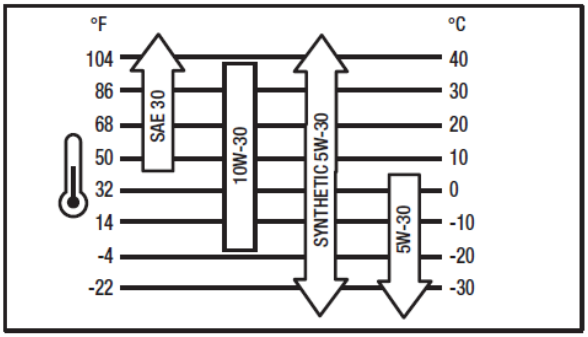
Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel the machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes and any other sources of ignition.

- Remove gas cap. Place funnel securely and add fuel. Do not top off. Fuel tank capacity is approx. 0.9 gallon. Do not overfill.
- Secure the gas cap and wipe off any excess fuel. See Figure 1-11.

IMPORTANT: Use only Regular Octane Fuel.

- We recommend the use of 10W-30 oil. Other high-quality detergent oils are acceptable if classified for service SF, SG, SH. SJ or higher.
- Do not use special additives.
- Outdoor temperatures determine the proper oil viscosity for the engine. Use the chart to select the best viscosity for the outdoor temperature range expected.
- Place the tiller on a level surface.

- Remove the filler cap. Place the funnel securely and add oil. Do not top off. Oil capacity is approx. 0.6 liters. Check dipstick to confirm adequate amount of oil.
- Secure the oil cap and wipe off any excess oil. See Figure 1-12.



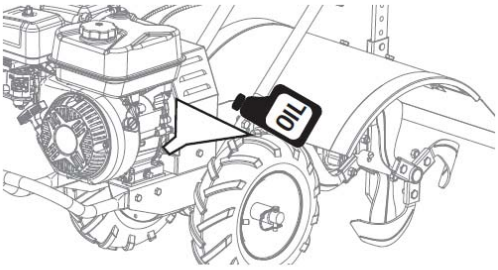


Figure 1-12

IMPORTANT: We recommend using 10W-30 Oil.

Before Each Use

- Make sure all safety guards are in place and all nuts and bolts are secure.
- Check oil level in engine crankcase. Add oil if necessary.
- Check the fuel supply. Fill the fuel tank no closer than 1 inch from top of tank to provide space for expansion.
- This tiller already comes with the proper amount of Transmission Gear Oil. Check Transmission Gear Oil before starting if you notice a leak.
- Be sure the spark plug wire is attached and the spark plug is tightened securely.
- Check position of wheels and wheel lockouts.
- Check depth regulator lever position.
- Examine underneath and around engine for signs of oil or fuel leaks.
- Inspect fuel hoses for tightness and fuel seepage. Look for signs of engine damage.
- Remove excessive debris from muffler area and recoil starter.

⚠CAUTION

Please do not start your tiller until you have read the manual that came with your tiller, and the sections in this manual tiller controls and safety. If you have read these, follow the steps below to start your tiller. Always perform this pre-start checklist before starting the engine.

⚠WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is hot or running. Always move outdoors to fill tank.

- Always set the wheels in tilling position before starting engine.
- Always put depth regulator lever in the transport position before starting engine. Tines should clear ground.

⚠WARNING

Always keep hands and feet clear of rotating machine parts.

Operating Instructions

Starting the Tiller

The controls required to start and run the tiller are located on the engine and are marked with the icon for choke, slow and fast for the throttle, and on/off fuel valve. Location for these controls can be found on the controls and features page.

COLD STARTS

- Move the fuel lever to the “Open” position.
- Move the choke lever to the full “Closed” position.
- Move the On/Off switch to the “On” position
- Pull starting rope out slowly one time and allow to return slowly.
- Pull starting rope out rapidly, to start the engine.
- When the engine starts, gradually move choke lever to the “Open” position and increase throttle speed.

NOTICE: Restarting an engine that is already warm from previous running does not normally require use of the choke.

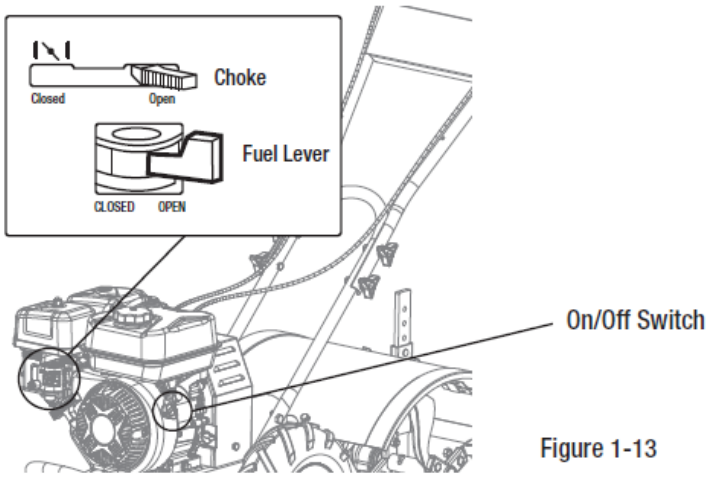


Figure 1-13

RESTARTING A WARM ENGINE

- Move the On/Off switch to the “On” position.
- Pull the starter grip lightly until resistance is felt then pull rapidly until engine starts. Allow rope to return normally. Repeat until engine starts.

Shutting Down the Tiller

- To stop the engine at any time, turn engine ON/OFF switch to the off position. To stop wheels and tines at any time, release drive safety control levers to neutral position. Check oil level in engine crankcase. Add oil if necessary.
- Make sure you return the choke lever to its original position and you close the fuel lever

Tilling

Adjust the depth regulator lever to desired tilling depth. Insert the clevis (EE) and cotter pin (FF) to secure depth regulator to desired depth. See Figure 1-14.

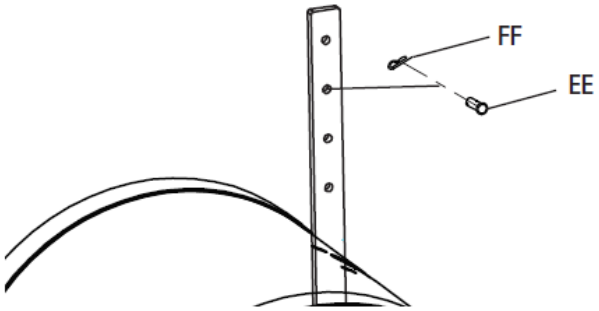


Figure 1-14

⚠WARNING

Raise depth regulator up one hole at a time, testing tiller operation after each raise. Raising depth regulator too high can result in loss of control of tiller!

- Move the choke control to the closed position.
- Place the tiller in forward by pushing down on the drive safety control lever (FORWARD)--this will engage the wheels and tines.
- NOTICE: You can slow the tiller’s forward advance at any time by putting slight downward pressure on the handlebars. You can stop the tiller by releasing the drive safety control levers to the neutral position.

⚠WARNING

Temperature of muffler and nearby areas may exceed 150°F. Avoid these areas. Do not move choke control to stop engine, backfire or engine damage may occur. To stop wheels and tines at any time, release drive safety control levers to neutral position. Always release drive safety control levers to neutral position AND STOP THE ENGINE before adjusting the depth of the regulator lever.

Drive Safety Control Levers

FORWARD LEVER

- Engages wheels and tines into forward.
- Pushing down the drive safety control lever (FORWARD) toward the handlebar engages the wheels and tines. Releasing the lever stops the wheels and tines and brings the tiller to a complete stop.

REVERSE LEVER

- Engages wheels and tines into reverse. See Figure 1-15

- Pulling the drive safety control lever (REVERSE) toward the handlebar reverses tiller. Releasing the lever stops the wheels and tines.

- To unlock the forward and reverse handles first press the handle lock and then press the handle.

⚠WARNING

Do not operate both “FORWARD” and “REVERSE” drive safety control levers at the same time. This information is provided here only to introduce the controls. Do not start the engine at this time. Starting and operating instructions are given on page 11. Please read this section and all operating and safety instructions before starting your tiller.

IMPORTANT: Practice operating the controls and tiller with tines out of ground before beginning to till. It is important that you know how to use the tiller properly, keep control at all times, stop the tines and wheels from turning, and stop the engine if necessary. If you do not know how to do these things, read the controls, adjustments and safety sections before proceeding.

Handle Height Adjustment

- The ideal height of the handlebar varies with operator height and the depth of tilling.

- Unscrew nuts (DD) and remove top and bottom bolts (CC) on each side of the lower handle.

- Align lower handle to desired height holes on the transmission cover mount.

- Install bolts (CC) and nuts (DD). Retighten. See Figure 1-16

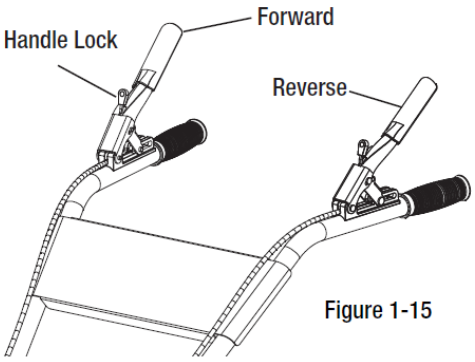


Figure 1-15

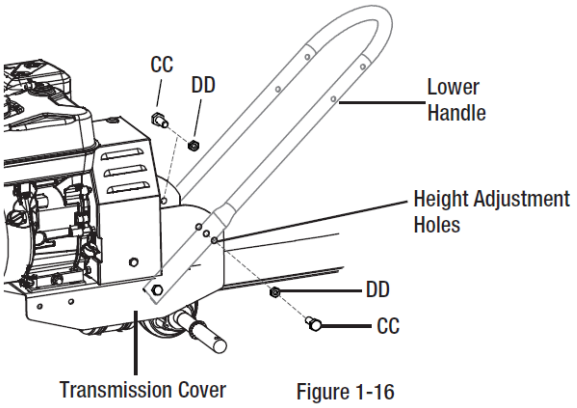


Figure 1-16

Wire Tension Adjustment

Proper wire tension is critical to good performance. After 1/2 hour of operation, all cables may have to be adjusted. After using the tiller for the first time check tension after every 2 hours of operation.

TO INCREASE WIRE TENSION

- Loosen upper jam nut (1)
- Turn the adjusting nut counterclockwise in 1/8” increments (2)
- Tighten upper jam nut (1)
- Check adjustment.
- This procedure can be repeated until conduit adjustment bolts are fully adjusted. If no more adjustment can be made, the wire may have to be replaced. See Figure 1-17

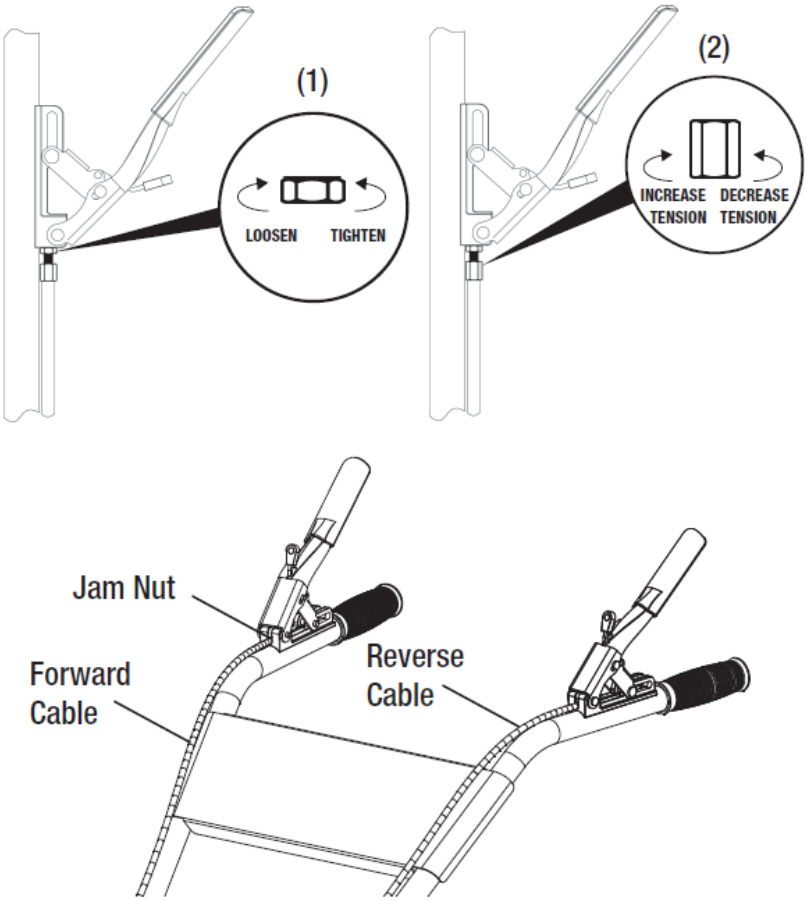


Figure 1-17

Tilling Tips

- The key to successful tilling is to begin with a shallow cut on the first pass, and then work an inch or two deeper on each successive pass.
- Tilling depth will vary with ground conditions.
- When beginning to till in unbroken ground or in extremely hard soil, set the clseves pin in the highest hole of the depth regulator. This will allow for shallow tilling. With the depth regulator in this position, make several light passes over the area to be tilled. Reset for deeper depths with successive passes.

- If tiller jumps or skids uncontrollably, lower the depth regulator by placing the cleves pin in a higher hole. This will allow for shallower tilling. Hold firmly to the handlebars to control sudden lurches.

- If weeds, tall grasses, vines, or other materials clog or jam the tines, reverse the tiller to unwind vegetation.

- Immediately release the drive control levers if the tines jam or you strike a foreign object. With the drive control levers in the neutral position, push throttle control to the stop position to stop the engine. Disengage the spark plug wire. When tines have stopped, remove foreign objects and check for damage.

CULTIVATING

- Plant rows on 20" - 22" centers for ease of turning.

- Set the depth regulator lever with the detent pin in one of the higher holes. This will allow for shallow cultivation necessary to turn over weeds, and break up and aerate the soil.

HIGH ALTITUDE OPERATION

If operating equipment with engines regularly at altitudes over 5,000 feet, the carburetor's air-fuel mixture will be too rich and emissions may increase. On engines not built for the United States the carburetor can be adjusted to operate under this condition. The carburetor should be returned to its normal setting if regular operation is less than 5,000 feet. Contact your service center to modify the carburetor.

After Each Use

⚠WARNING

Do not store tiller in an unventilated area where fuel fumes may reach flame, sparks, pilot lights or an ignited object. Drain fuel outdoors away from any ignition sources. Use only approved fuel containers.

Follow the steps below to prepare your tiller for storage.

- Protect wheels and axles from rust by removing the lock pin and sliding the wheel off the hub.

- Coat the axles lightly with axle grease.

- Slide wheel back on hub and insert lock pin.

- Drain fuel system completely or add fuel stabilizer to prevent fuel from gumming up during extended storage period.

- While engine is still warm, drain the oil from the engine. Refill with fresh oil of the recommended grade.

- Clean external surfaces, engine and cooling fan.

- Remove spark plug, pour one ounce of SAE 30 oil into spark plug hole.

- Plug hole and pull starter cord slowly to distribute oil evenly in cylinder head area.

- Reinstall spark plug.

- Transport unit to a suitable storage location. If you have chosen to use a fuel stabilizer and have not drained the fuel system, follow all safety instructions storage precautions in this manual to prevent the possibility of fire from the ignition of gasoline fumes. Remember, gasoline fumes can travel to distant sources of ignition and ignite, causing risk of explosion and fire.

- If there is any possibility of unauthorized use or tampering, remove the spark plug and store it in a safe place before storing the rototiller unit.

- Be sure to plug the spark plug hole to prevent foreign material from entering.

Maintenance

Always observe safety rules when performing any maintenance.

- The warranty on this tiller does not cover items that have been subjected to operator abuse or negligence. To receive full value from warranty, operator must maintain the string trimmer as instructed here.
- Changing of engine-governed speed will void engine warranty.
- All adjustments should be checked at least once each season.
- Periodically check all fasteners and make sure these are tight.
- Good maintenance is your responsibility; poor maintenance is an invitation to trouble.
- Follow good shop practices.
- Keep service area clean and dry.
- Use adequate light for the job at hand. Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards.
- Be sure there is adequate ventilation whenever you operate the engine to avoid carbon monoxide poisoning.
- Never operate the engine in a closed building.
- Let the engine and exhaust system cool before touching.
- Do not run the engine unless instructed to do so.
- Read the instructions before you begin, and make sure you have the tools and skills required.
- To reduce the possibility of fire or explosion, be careful when working around gasoline.
- Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks and flames away from all fuel related parts.
- Lubricate the wheels at least once a season with light oil (or motor oil). If wheels are removed for any reason, lubricate surface of the axle bolt and inner surface of the wheel with light oil.
- Always use personal protection devices such as eye, hand and hearing protectors when performing any service or maintenance.
- Frequently check tiller tines. They should be free of nicks and cracks and securely fastened in place.
- Periodically tighten all bolts, nuts, screws, and check that all pins are properly installed to make certain the tiller is safe to operate.
- When completing maintenance or service, make sure all safety guards and devices are installed before using the tiller.
- Where replacement parts are necessary for periodic maintenance and servicing, use only new, original replacement parts or their equivalents for repair and replacement to restore your equipment to original specifications.

- The manufacturer and/or distributor will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
- A first aid kit should be kept readily accessible while performing maintenance on this equipment.

MAINTENANCE SCHEDULE

Maintain the product by adopting a program of conscientious repair and maintenance in accordance with the following recommended procedures. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good repair. Keep all cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control. Keep handles dry, clean, and free from oil and grease. Also refer to the engine manufacturer's instruction manual for additional information about engine maintenance. The following chart is based on a normal operation schedule.

Maintenance Operation		Before Each Use	First Month or 20 Hours	Every 3 Months or 50 Hours	Every 6 Months or 100 Hours	Every Year or 300 Hours
Drive Belt Tension	Check	√				
Engine Oil	Change	√				
	Check Level	√				
	Change		√		√	
Air Filter	Check	√				
	Clean			√ *	√ *	
	Replace					√
Tiller Transmission	Check			√		
Gear Oil	Replace					
Tire Pressure	Check	√				
Tine Shaft	Clean	√				
Wheel Axle Shaft	Lubricate			√		

*Service more frequently when used in dusty areas.

⚠WARNING

Use only genuine replacement parts. Other parts may damage the tiller or result in injury.

The following information will help you make the necessary checks and perform the procedures required to follow the normal care recommendations made for your tiller.

Changing Forward/Reverse Belt

- Turn off engine. Engine must be cool.
- Remove spark plug wire and secure from spark plug. See Figure 1-18
- Remove belt guard.
- Remove the forward belt from the forward engine pulley. Gently pull the engine recoil rope to rotate

the pulley.

- With the pulley turning, force the forward belt out of the V-groove and slide the belt free of the engine pulley.
- Pull the forward belt down and out of the way.
- Remove the reverse belt from the reverse engine pulley and gently pull the engine recoil rope to rotate the pulley.
- With the pulley turning, force the reverse belt out of the V-groove and slide the belt free from the engine pulleys and reverse belt guides.
- Pull belt down and away from the transmission pulley and install new reverse belt.
- Thread the belt up from bottom and place belt around transmission pulley in the groove.
- Place belt under reverse belt guides and gently pull the engine recoil rope while forcing the belt over the edge of the engine pulley into the V-groove.
- Install new forward belt.
- Place forward belt in the transmission pulley groove and gently pull the engine recoil rope to rotate the pulley while forcing the forward belt into the V-groove. See Figure 1-19
- Replace belt guard.
- Attach spark plug wire.

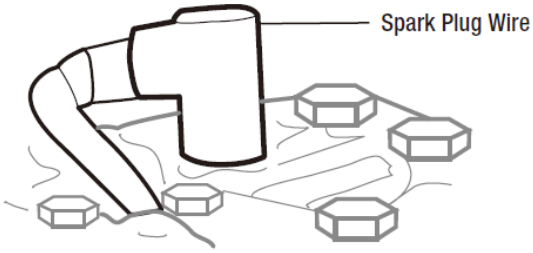


Figure 1-18

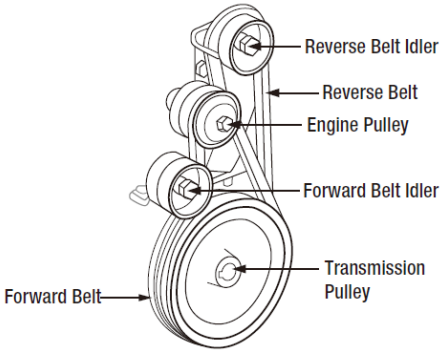


Figure 1-19

ENGINE MAINTENANCE

- Check oil level before each use or after every 8 hours of operation.
- Change oil after first 5-8 hours of operation. Change oil while engine is warm. Refill with new oil of recommended grade.
- Check spark plug yearly or every 100 hours of operation.
- Service air cleaner.
- Keep engine and parts clean.
- Check engine and equipment often for loose nuts and bolts, keep these items tightened.

CHECK OR FILL ENGINE CRANKCASE

- Add oil. Do not overfill. Use a clean, high quality detergent oil. Do not mix oil with gasoline. Oil level must be full.
- Check the oil level by removing oil fill plug. Oil level should be up to the bottom of the fill plug opening.
- Always check oil level before starting engine.

IMPORTANT: Engine is shipped from factory without oil. You must add engine oil before starting engine.

CHECK TRANSMISSION GEAR OIL

- Check the transmission gear oil level after every 50 hours of operation or whenever you notice any oil leak. Operating the tiller when the transmission is low on oil can result in severe damage.
- CHECK THE TRANSMISSION GEAR OIL LEVEL

  1. Check the gear oil level when the transmission is cool. Gear oil will expand in warm operating temperatures and this expansion will provide an incorrect oil level reading.

  2. With the tiller on level ground, pull the Depth Regulator Lever all the way up.

  3. Remove the oil fill plug from the transmission housing and look inside the oil fill hole to locate the main drive shaft situated below the hole.

  4. If the transmission gear oil is on low oil level, add gear oil (SAE 85W-140,80W-90 or 80W

-90), the tiller transmission holds 24 ounces. Do not overfill. See Figure 1-20.

5.If the gear oil level is okay, securely replace the oil fill plug.

IMPORTANT: The tiller ships from the factory with transmission gear oil installed. Operating the tiller when the transmission is low on oil can result in severe damage. Do not operate the tiller if the gear oil level is low. Doing so will result in severe damage to the transmission components.

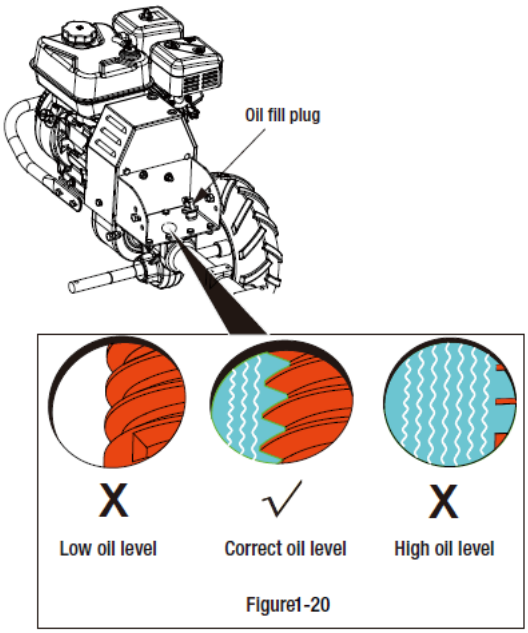


Figure1-20

CHECK TIRE PRESSURE

- (Models with pneumatic tires) Check the air pressure in both tires. The air pressure should be between 20 PSI and 25 PSI (pounds per square inch).
- If the air pressure is lower than 20 PSI, inflate the tires air pressure with air pump.
- Keep both tires equally inflated to help prevent machine from pulling to one side.

LUBRICATION

Proper lubrication of moving mechanical parts is critical for proper care and maintenance. Oil the moving parts shown at 10 hour intervals using a 30 weight oil.

CLEAN TINE AXLE SHAFT

- Turn off engine. Engine must be cool.
- Remove spark plug wire and secure from spark plug.
- Tip the tiller forward. Block the tiller in position so that it rests on the engine mount and the tines are exposed.
- Remove all vegetation, string, wire, and other material that may have accumulated on the axle between the inside set of tines and the seal on the transmission housing.
- Tip the tiller back to a level position.

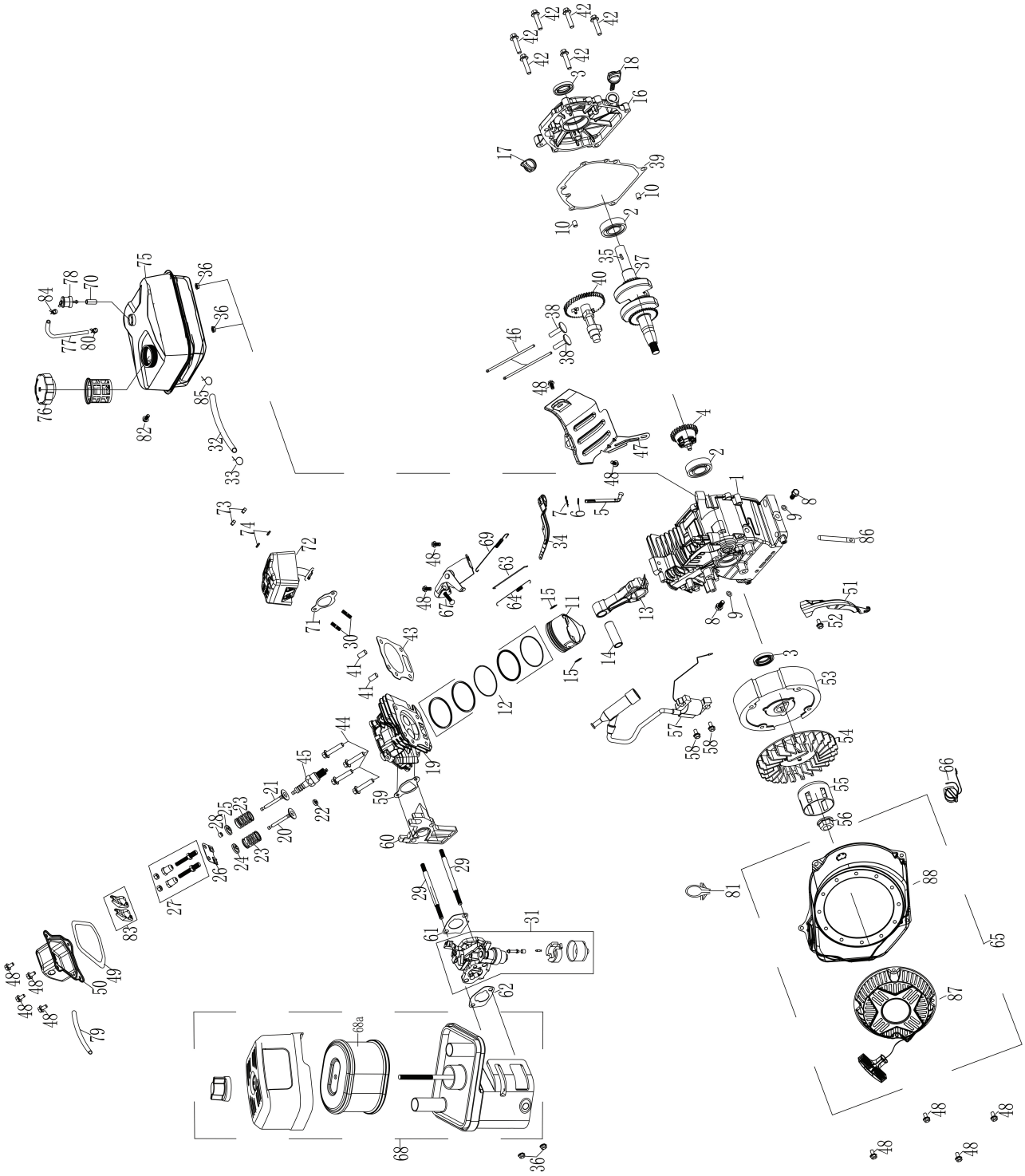
Replace spark plug wire.

Troubleshooting

Use the table below to troubleshoot problems before contacting service personnel or your local dealer. If the problem continues after troubleshooting, call your local dealer for assistance.

Failure	Possible Cause	Corrective Action
The engine is difficult to start.	Out of fuel.	Add fresh fuel.
	The engine switch is Off.	Turn the engine switch on.
	The engine is not primed.	Move the choke lever to the ON position.
	The spark plug wire is disconnected.	Attach spark plug wire to the spark plug.
	The spark plug is fouled.	Remove spark plug and inspect. Replace if necessary.
	The carburetor is dirty.	Take the tiller to an authorized service center to clean the carburetor.
	The air filter is clogged.	Remove and clean the air filter.
	The fuel is contaminated.	Drain and clean the fuel tank. Fill with fresh fuel.
Engine Problems The engine smokes excessively, runs very “rough,” runs erratically, or cannot maintain full speed.	No Engine Oil.	Add engine oil.
	Engine oil is not at proper level.	Check engine oil, add or drain engine oil if necessary.
	The spark plug is fouled.	Remove spark plug, inspect or replace if necessary.
	The air filter is clogged.	Remove and clean air filter.
	The fuel is contaminated.	Drain and clean the fuel tank. Fill with fresh fuel.
	The carburetor is out of adjustment.	Take the tiller to an authorized service center to clean the carburetor.
Excessive vibration and noise.	Loose parts.	Tighten all fasteners.
	Engine problems (above).	Refer to engine solutions (above).
	Abnormal noise or squeal coming from belt drive.	Normally due to belt/pulley break in period. Refer to belt tension adjustment section.
Tines will not rotate.	Debris interfering with the tines.	Remove debris from around tines.
	Tines are loose.	Replace tine bolts and nuts.
	Improper drive cable adjustment.	Refer to “Belt Tension Adjustment” section to decrease belt tension.
	Damaged drive belts.	Replace drive belts.
Tines continue to rotate when drive lever is not engaged.	Improper drive cable adjustment.	Refer to “Belt Tension Adjustment” Section to decrease belt tension.
	Damaged drive belts.	Replace drive belts.
Engine will not stop.	Check the switch.	Replace the switch.
Tines will not cut properly.	The tines assembled incorrectly.	Refer to “Install the Tines” Section.
Frequent engine stalling.	Excessive tilling speed / depth.	Till at a moderate pace.
	Engine problems (above).	Make multiple passes. Refer to engine solutions (above).

Parts Diagram

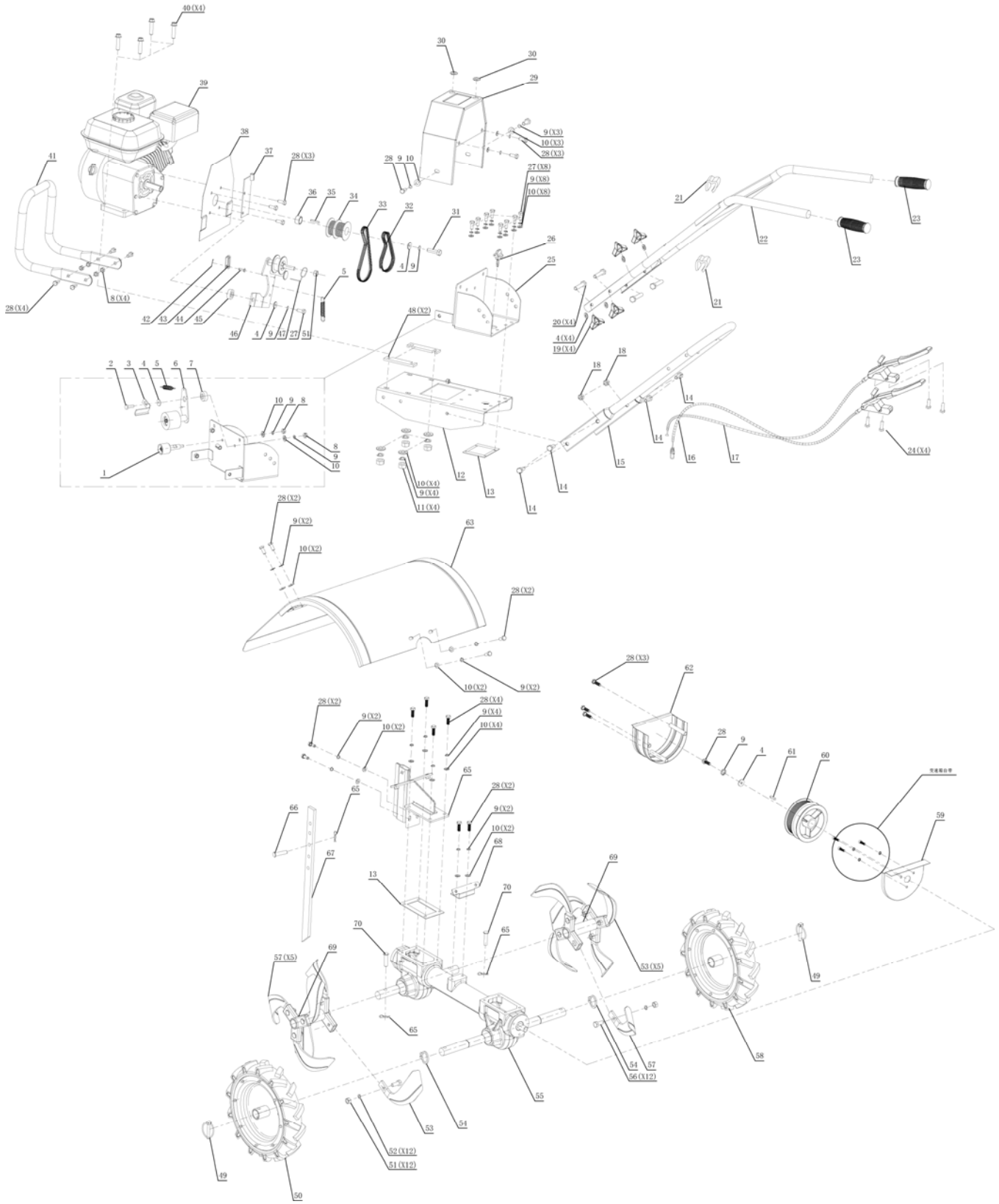


Parts List

Reference	Part or Kit Number	Part Description	Quantity
1	N/A	CRANKCASE	1
2	PH115070.EK11	BALL BEARING	2
3	PH115070.EK11	OIL SEAL	2
4	N/A	GOVERNOR ASSEMBLY	1
5	PH115070.EK4	SHAFT, GOVERNOR ARM	1
6	PH115070.EK4	WASHER, GOVERNOR ARM SHAFT	1
7	PH115070.EK4	PIN, LOCK	1
8	PH115070.EK1	BOLT, DRAIN PLUG	2
9	PH115070.EK1	WASHER, DRAIN PLUG	2
10	PH115070.EK11	DOWEL PIN, CASECOVER	2
11	N/A	PISTON	1
12	N/A	SCRAPER RING SET, PISTON	1
13	N/A	ROD ASSEMBLY., CONNECTING	1
14	N/A	PIN, PISTON	1
15	N/A	CLIP, PISTON	2
16	PH115070.EK11	COVER ASSEMBLY, CRANKCASE	1
17	PH115070.E17	OIL PLUG	1
18	PH115070.E18	DIPSTICK	1
19	N/A	CYLINDER HEAD	1
20	N/A	VALVE, IN	1
21	N/A	VALVE EXHAUST	1
22	N/A	RETURNER, INTAKE VALVE	1
23	N/A	SPRING, VALVE	2
24	N/A	SEAT, VALVE SPRING, IN	1
25	N/A	SEAT, VALVE SPRING, EX	1
26	N/A	PLATE, PUSH ROD GUIDE	1
27	N/A	ADJUSTER ROCKER ARM	2
28	N/A	ROTATOR	1
29	PH115070.EK10	BOLT	2
30	PH115070.EK12	BOLT	2
31	PH115070.EK10	CARBURETOR ASSEMBLY	1
32	PH115070.EK6	FUEL LINE	1
33	PH115070.EK6	CLIP	1
34	PH115070.EK4	GOVERNOR ARM	1
35	N/A	FLAT KEY	1
36	PH115070.EK6 PH115070.EK7	NUT M6	4
37	N/A	CRANKSHAFT	1
38	N/A	LIFTER, VALVE	2
39	PH115070.EK11	PACKING, CASECOVER	1
40	N/A	CAMSHAFT ASSEMBLY	1
41	N/A	PIN, DOWEL	2
42	PH115070.EK11	BOLT M8*30	6
43	N/A	GASKET, CYLINDER HEAD	1
44	N/A	BOLT M8*60	4
45	PH115070.E45	SPARK PLUG	1
46	N/A	ROD, PUSH	2
47	N/A	SHROUD	1

Reference	Part or Kit Number	Part Description	Quantity
48	PH115070.EK2 PH115070.EK3 PH115070.EK5	BOLT M6*12	12
49	PH115070.EK3	PACKING, HEADCOVER	1
50	PH115070.EK3	COVER COMP, CYLINDER HEAD	1
51	N/A	WIND SHIEL COMP.	1
52	N/A	BOLT M6*20	1
53	N/A	FLYWHEEL ASSEMBLY	1
54	PH115070.EK8	FAN, RECOIL STARTER	1
55	PH115070.EK8	PULLEY, STARTER	1
56	PH115070.EK8	NUT M14*1.5	1
57	PH115070.EK9	IGNITION COIL ASSY	1
58	PH115070.EK9	BOLT M6*25	2
59	PH115070.EK10	PACKING, INTAKE	1
60	PH115070.EK10	INSULATOR, CARBURETOR	1
61	PH115070.EK10	PACKING, CARBURETOR	1
62	PH115070.EK7 PH115070.EK10	SPACER, CARBURETOR	1
63	PH115070.EK4	ROD, GOVERNOR	1
64	PH115070.EK4	SPRING, THROTTLE RETURN	1
65	PH115070.EK5	RECOIL STARTER ASSEMBLY	1
66	PH115070.E66	SWITCH ASSEMBLY	1
67	PH115070.EK2	SHROUD ASSY, UPPER	1
68	PH115070.EK7	AIR CLEANER ASSEMBLY	1
68a	PH115070.E68A	AIR FILTER ELEMENT	1
69	PH115070.EK4	SPRING, GOVERNOR	1
70	PH115070.EK6	BUMPER, BREATHER PIPE	1
71	PH115070.EK12	PACKING, EXHAUST	1
72	PH115070.EK12	MUFFLER COMP	1
73	PH115070.EK12	NUT M8	2
74	PH115070.EK12	SPRING WASHER	2
75	PH115070.EK6	FUEL TANK ASSEMBLY	1
76	PH115070.E76 PH115070.EK6	FUEL TANK CAP COMP	1
77	PH115070.EK6	CONNECTING PIPE	1
78	PH115070.EK6	MANUAL CHOKE ASSEMBLY	1
79	PH115070.EK7	TUBE, BREATHER	1
80	PH115070.EK6	CLIP	1
81	N/A	CLIP	1
82	PH115070.EK6	BOLT M6*28	1
83	N/A	ARM, ROCKER	2
84	PH115070.EK6	φ9 FOR FUEL PIPE CLAMP RING	1
85	PH115070.EK6	CLIP	1
86	N/A	CLIP, WIRE HARNESS	1
87	PH115070.E87	RECOIL	1
88	PH115070.E88	ENGINE SHROUD	1

Parts Diagram



Reference	Part Number	Part Description	Quantity
1	PH115070.1	BELT BLOCK ASSEMBLY	1
2	PH115070.2	SCREW, M8×30	1
3	PH115070.3	SPACER	1
4	PH115070.4	FLANGE WASHER Φ8.4×24×2 ,ZINC	8
5	PH115070.5	SPRING	2
6	PH115070.6	FORWARD DRIVE TENSION PULLEY ASSEMBLY	1
7	PH115070.7	BUSHING	1
8	PH115070.8	NUT M8	12
9	PH115070.9	SPACER 8.1X2.1	33
10	PH115070.10	FLANGE WASHER 8×16×1.5 ,ZINC	30
11	PH115070.11	SCREW, M8×45	4
12	PH115070.12	FRAME，ENGINE MOUNTING	1
13	PH115070.13	SEALING GASKET	2
14	PH115070.14	SCREW, M10×25	4
15	PH115070.15	LOWER PUSH ROD	1
16	PH115070.16	CLUTCH HANDLE ASSEMBLY	1
17	PH115070.17	CLUTCH HANDLE ASSEMBLY	1
18	PH115070.18	NUT M10×1.5	2
19	PH115070.19	TRIANGLE KNOB	4
20	PH115070.20	SCREW, M8	4
21	PH115070.21	CLIP	2
22	PH115070.22	UPPER PUSH ROD	1
23	PH115070.23	GRIP, HANDLE	2
24	PH115070.24	SCREW, M6×28	4
25	PH115070.25	ARMREST SEAT	1
26	PH115070.26	OIL PLUG	1
27	PH115070.27	SCREW, M8×25	9
28	PH115070.28	SCREW, M8×20	33
29	PH115070.29	BELT COVER	1
30	PH115070.30	PROTECTIVE SLEEVE	2
31	PH115070.31	BRITISH SYSTEM SCREW	1
32	PH115070.32	BELT	1
33	PH115070.33	BELT	1
34	PH115070.34	SMALL BELT PULLEY	1
35	PH115070.35	CRANK SHAFT FLAT KEY	1
36	PH115070.36	SHAFT SLEEVE	1
37	PH115070.37	REVERSE CABLE PLATE ASSY	1
38	PH115070.38	PROTECTIVE PLATE	1
39	PH115070.39	ENGINGE DH212	1
40	PH115070.40	NUT M8	4
41	PH115070.41	BUMPER	1
42	PH115070.42	PIN	1
43	PH115070.43	PRESS PLATE	1
44	PH115070.44	PIN	1
45	PH115070.45	BUSHING	1
46	PH115070.46	REVERSE TENSION WHEEL ASSY	1
47	PH115070.47	REVERSE GEAR BELT LEVER	1
48	PH115070.48	ADJUSTING PLATE	2
49	PH115070.49	PIN	2
50	PH115070.50	WHEEL	1
51	PH115070.51	NUT M10×1.5	13
52	PH115070.52	GASKET Φ10	12
53	PH115070.53	TILLER BLADE,RIGHT	6

Reference	Part Number	Part Description	Quantity
54	PH115070.54	SHAFT RING	2
55	PH115070.55	GEARBOX	1
56	PH115070.56	SCREW, M10×25×1.5	12
57	PH115070.57	TILLER BLADE,LEFT	6
58	PH115070.58	WHEEL	1
59	PH115070.59	PROTECTIVE PLATE	1
60	PH115070.60	BIG BELT WHEEL	1
61	PH115070.61	CRANK SHAFT FLAT KEY	1
62	PH115070.62	BELT COVER	1
63	PH115070.63	FENDER	1
64	PH115070.64	DRAG BAR SEAT ASSY	1
65	PH115070.65	R PIN	3
66	PH115070.66	PIN	1
67	PH115070.67	DRAG BAR	1
68	PH115070.68	BRACKET	1
69	PH115070.69	TILLER BLADE BRACKET	2
70	PH115070.70	PIN	2

Replacement Parts

- For replacement parts and technical questions, please call Customer Service at **1-800-222-5381**.
- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following information will be required: item description, item model number, item serial number/item lot date code, and the replacement part reference number.
- The distributor reserves the rights to make design changes and improvements to product lines and manuals without notice.

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Powerhorse product purchased will be free from material defects in both materials and workmanship, normal wear and tear excepted, for a period of two year from date of purchase. The foregoing warranty is valid only if the installation and use of the product is strictly in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with this limited warranty, your sole and exclusive remedy is that We will, at our sole option and within a commercially reasonable time, either replace the product or product component without charge to You or refund the purchase price (less shipping). This limited warranty is not transferable.

Limitations on the Warranty

This limited warranty does not cover: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation; (d) improper maintenance and repair; and (e) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser

You must retain your product purchase receipt to verify date of purchase and that You are the original purchaser. To make a warranty claim, contact Us at 1-800-222-5381, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs or costs related to Your return visit to a retail store.

Remedy Limits

Product replacement or a refund of the purchase price is your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for: service or labor charges or damage to Your property incurred in removing or replacing the product; any damages, including, without limitation, damages to tangible personal property or personal injury, related to Your improper use, installation, or maintenance of the product or product component; or any indirect, incidental or consequential damages of any kind for any reason.

Assumption of Risk

You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at our own risk.

Governing Law

This limited warranty gives You specific legal rights, and You also may have other rights which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of Minnesota, without regard to rules pertaining to conflicts of law. The state courts located in Dakota County, Minnesota shall have exclusive jurisdiction for any disputes relating to this warranty.

POWERHORSE™

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Burnsville, Minnesota 55306

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