



XP TILLER/ CULTIVATOR

**PARTS / OPERATOR'S /
SAFETY MANUAL**

**MODEL:
7566A**



MAN 802-0006

Rev. A

S SCHILLER GROUNDS
CARE

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PREFACE

CONTACT AND DISCLAIMER

This Operation / Parts Manual (the "Manual") is part of the machine and provides the information necessary for safe and efficient operation and service of this product. Suppliers of both new and second-hand machines are required to make sure this manual is provided with the machine. The information in this Manual affects your safety, your legal rights and your legal responsibilities. Read this entire Manual carefully to ensure proper configuration before use. Failure to read and follow instructions and warnings in this Manual may result in serious injury to yourself or others, damage to your SCHILLER GROUNDS CARE INC. product, or damage to other persons or objects in the vicinity. This Manual and all other collateral documents are subject to change at the sole discretion of SCHILLER GROUNDS CARE INC. For up-to-date product information, visit Mantis.com and click on the product page for this product.

By using this product, you hereby signify that you have read the Manual, this disclaimer and warning carefully and that you understand and agree to abide by their terms and conditions. You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof. You agree to use this product only for purposes for which it was intended, that are proper and are in accordance with all applicable laws, rules, and regulations, and all terms, conditions, precautions, practices, policies and guidelines that SCHILLER GROUNDS CARE INC. has made and may make available.

If the equipment is operated other than strictly in accordance with the provision of this Manual, as updated from time to time on our website, SCHILLER GROUNDS CARE INC. accepts no liability, including without limitation strict liability, for loss, damage or injury incurred directly or indirectly from the use of this product. The user shall observe all safe and lawful practices including, but not limited to, those set forth in this document.

Unauthorized modifications create extreme safety hazards for operators and bystanders along with potential product damage. Schiller Grounds Care, Inc. strongly warns against, rejects and disclaims any modifications, accessories or product alterations that are not designed, developed, tested and approved by the Schiller Grounds Care, Inc. Engineering Department. Any Schiller Grounds Care, Inc. warranty is voided if a product is altered, modified or changed in any manner without approval from Schiller Grounds Care, Inc. Any and all liability for personal injury and/or property damage caused by unauthorized modifications, accessories or product alterations are considered the responsibility of the individual(s) or company designing and/or making such changes. Schiller Grounds Care, Inc. will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.

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**THIS OPERATOR MANUAL IS PART OF THE MACHINE AND MUST
BE PROVIDED WITH ALL NEW AND SECOND-HAND MACHINES.**

DESCRIPTION OF PRODUCT

PURPOSE



Please read this entire manual before installation and use. Schiller Grounds Care reserves the right to change, alter or improve the product and this document at any time without prior notice. Due to continuous product improvements, product images may not be exact. Some assembly may be required.

Read and keep this manual for future reference. This manual contains important information regarding safety, assembly, operation, and maintenance. The owner must be certain that all the product information is included with the unit. This information includes the manual, the replacement parts, and the warranties. This information must be included to make sure state laws and other laws are followed. All persons who rent/loan this unit must have access to and understand this information. This manual should remain with the product even if it is resold.

NOTICE

THIS IS A MOTORIZED ROTARY TILLER THAT WORKS THE SOIL BY MEANS OF ROTATING TINES. IT IS PEDESTRIAN-CONTROLLED, BUT NOT SELF-PROPELLED, WITH A GASOLINE-FUELED INTERNAL COMBUSTION ENGINE TO POWER THE TINES. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE.

TECHNICAL DATA

Product	7566A (XP model)
Engine	4-cycle Honda
Displacement (cc)	35
Fuel Capacity (qt. / L)	0.67 / 0.63 No mixing of gas and oil required
Tilling Width, in (cm)	16 (40.6)
Tilling Depth, in (cm)	10 (25.4)
Max Tine Speed	240 rpm
Dimensions L x W x H, in (cm)	54 x 18 x 20 (138 x 46 x 51)
Dry Weight, lbs (kg)	34 (16)
Starting/Operation	Recoil, Variable speed throttle
Warranty*	2-Year Consumer / 2-Year Commercial / Rental

PRODUCT COMPLIANCE

EMISSIONS

Refer to the engine owners' operating manual for further details related to this Honda statement: Your new Honda engine complies with both the U.S. EPA and State of California emission regulations. American Honda provides the same emission warranty coverage for Honda Power Equipment engines sold in all 50 states. In all areas of the United States, your Honda Power Equipment engine is designed, built, and equipped to meet the U.S. EPA and California Air Resources Board emission standard for spark ignited engines.

SPARK ARRESTOR

This unit is factory equipped with a spark arrestor. Some federal, state, and local authorities require, by law, that certain internal combustion engines operated on forest brush and/or grass-covered areas be equipped with a spark arrestor, maintained in effective working order, or the engine be constructed, equipped and maintained for the prevention of fire. Check for regulations pertaining to these requirements. Failure to follow these requirements could subject you to liability or a fine. If it requires replacement, contact your local service dealer to install the appropriate muffler assembly.

SAFETY INSTRUCTIONS

SIGNAL WORDS






**This symbol means:
ATTENTION!
BECOME ALERT!**

Your safety and the safety of others is involved.









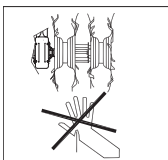
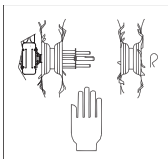
SIGNAL WORD DEFINITIONS:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Schiller Grounds Care, Inc. machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

Signal Word	Description
 DANGER	DANGER INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.
 WARNING	WARNING INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.
 CAUTION	CAUTION INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.
NOTICE	NOTICE INDICATES INFORMATION OR PROCEDURES THAT RELATE DIRECTLY OR INDIRECTLY TO THE SAFETY OF PERSONNEL OR EQUIPMENT/PROPERTY.

SAFETY INSTRUCTIONS

SAFETY LABELS & SYMBOLS

Symbol	Description
	Cutting hazard; keep feet and hands away from rotating tines.
	Do not carry the tiller in this position.
	Read owner's manual before using tiller, or performing any repair or maintenance. Keep owners manual in a safe place and replace if missing or damaged.
	Don't operate indoors.
	Don't fuel, refuel, or check fuel while the engine is hot, while smoking, or near an open flame or other ignition source.
	Wear ear and eye protection.
	When assembling the handles, make sure fuel tank faces away from operator. Refer to assembly instructions.
	Incorrect assembly.
	Do not reach your fingers and/or hands in between the tine blades.
	Always remove the outer tines before removing the inner tines.

SAFETY INSTRUCTIONS

OPERATOR PREPARATION

READ THE OPERATION & SAFETY MANUAL

- If an operator or mechanic cannot read English, it is the owner’s responsibility to explain this material to them.
- Contact your factory representative for clarification if any portion of this material is unclear.
- Adhere to the warnings and instructions depicted in the safety decals on the machines.
- Replace any missing or damaged labels.
- Keep warning labels and this operator’s manual legible and intact.
- Become familiar with the safe operation of the equipment, operator controls and safety signs.
- Know how to stop the engine and attachments quickly in an emergency.
- Do not operate or allow another person to operate this machine if there are any questions about safety
- Never attempt to use a machine that is damaged or has unauthorized modifications
- All operators and mechanics should be trained. The owner is responsible for training the users.
- Wear appropriate clothing, including safety goggles or safety glasses with side shields when operating.
- Wear substantial footwear. Do not operate barefoot or wearing open sandals. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Wear appropriate hearing protection.
- Wear dust mask to avoid breathing dust.
- Wear safety glasses.
- Wear gloves to reduce the transmission of vibration to the hands.
- Never allow children, unskilled or improperly trained people to operate this equipment. Local regulations can restrict the age of the operator.
- Do not operate machine when fatigued.
- Do not operate machine while under the influence of drugs or alcohol, or any other condition of impairment.
- Always operate the machine using two hands. Keep a firm grip on both handles.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.
- Always operate the machine in daylight or good artificial light.

MULTIPLE OPERATORS

- Keep a safe distance between operators when working together.

 **WARNING**

SERIOUS INJURY CAN RESULT FROM IMPROPER USE AND CARE OF THIS MACHINE OR FAILURE TO WEAR PROPER PROTECTIVE GEAR FOR EYES AND EARS.

 **WARNING**

USERS RISK SERIOUS INJURY TO THEMSELVES AND OTHERS IF THE MACHINE IS USED IMPROPERLY OR WITH DISREGARD FOR SAFETY PRECAUTIONS.

SAFETY INSTRUCTIONS

SITE PREPARATION

- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job.
- Only use accessories and attachments approved by the manufacturer.
- Identify and mark buried objects such as sprinkler heads, stakes, water valves, sewer pipes, water pipes, electric wires, masonry, metal, etc
- Remove all objects or debris from the area that may be picked up or thrown by the machine.
- Keep pets and people, especially young children, away from the area and immediately cease operation of the equipment if any enter the area.
- Operate only in daylight or in good artificial light.
- Evaluate the terrain to determine how to safely perform the job.

MACHINE PREPARATION

- Do not tamper with or defeat safety devices. Keep guards, shields and interlock safety devices in place and in proper working condition. They are for your protection.
- Keep all fasteners such as nuts, bolts and pins well secured.
- Visually verify that machine and attachments, if any, are in good operating condition. Immediately replace worn or damaged parts.
- Always follow maintenance instructions given in manual.
- Do not engage the tines until ready to use.
- Never attempt to adjust the machine while the engine is running; wait until the engine and/or tines comes to a complete stop or injury may result

 **WARNING**

FAILURE TO COMPLY WITH SAFETY INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY, AND/OR EQUIPMENT AND PROPERTY DAMAGE

STARTING

- Start the engine carefully, according to all manufacturer's instructions and with feet well away from tool(s)
- Always pull starter cord slowly until resistance is felt to avoid kickback and prevent arm or hand injury.
- Keep hands and feet clear of the tines
- Don't attempt to start the engine if fuel is spilled. Move the machine away from the area of spillage and avoid creating any spark or source of ignition until fuel vapors have dissipated or spill has been cleared.

 **WARNING**

FUELING A HOT ENGINE OR NEAR AN IGNITION SOURCE CAN CAUSE A FIRE AND RESULT IN SERIOUS PERSONAL INJURY AND/OR PROPERTY DAMAGE.

SAFETY INSTRUCTIONS

GENERAL OPERATION

- Never pick up or carry the machine when the engine is running.
- Maintain firm footing and good balance when operating the machine.
- Walk with the machine, do not run.
- Do not run the engine in an enclosed area where dangerous fumes can collect.
- Never leave a machine unattended. Always stop the engine when leaving the operator position.
- Use extreme caution when reversing or pulling machine towards you.
- Do not stand in front of tiller when tines are rotating.
- Remove debris from mufflers and engine to help prevent fires.
- Do not attempt to remove jammed material or clear tines while they are moving or while the engine is running.
- Always remove the outer set of tines before removing the inner set of tines.
- Do not operate tiller without two sets of tines in place.

WARNING

OPERATION OF THIS EQUIPMENT MAY CREATE A SPARKS THAT CAN START FIRES AROUND DRY VEGETATION. A SPARK ARRESTOR IS INSTALLED. THE OPERATOR SHOULD CONTACT LOCAL FIRE AGENCIES FOR LAWS OR REGULATIONS RELATING TO FIRE PREVENTION REQUIREMENTS.

WARNING

THE ENGINE EXHAUST FROM THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. FOR MORE INFORMATION, GO TO WWW.P65WARNINGS.CA.GOV.

OPERATING ON SLOPES

- All slopes require extra caution.
- Evaluate the risks involved before operating on slopes
- Do not operate on slopes if uneasy or uncertain. Ultimate responsibility for safe operation on slopes rests with the operator.
- Do not operate on steep slopes.
- Keep all movement and change of direction on slopes slow and gradual.
- Be sure of your footing on slopes.

INTERRUPTING OPERATION

- Before leaving the operator's position:
 - Shut off the engine
- Wait until all parts stop moving, stop the engine, and allow the engine to cool before:
 - refueling
 - making adjustments
 - clearing or unclogging blockages
 - inspecting the machine
 - maintaining or repairing the machine
 - transporting the machine

SAFETY INSTRUCTIONS

MAINTENANCE

TINES

- The tines are sharp and can cut. Use extra caution when handling.
- Remove obstructions with care.
- Wrap the tines or wear gloves.
- Only replace tines. Never straighten or weld.

FUEL

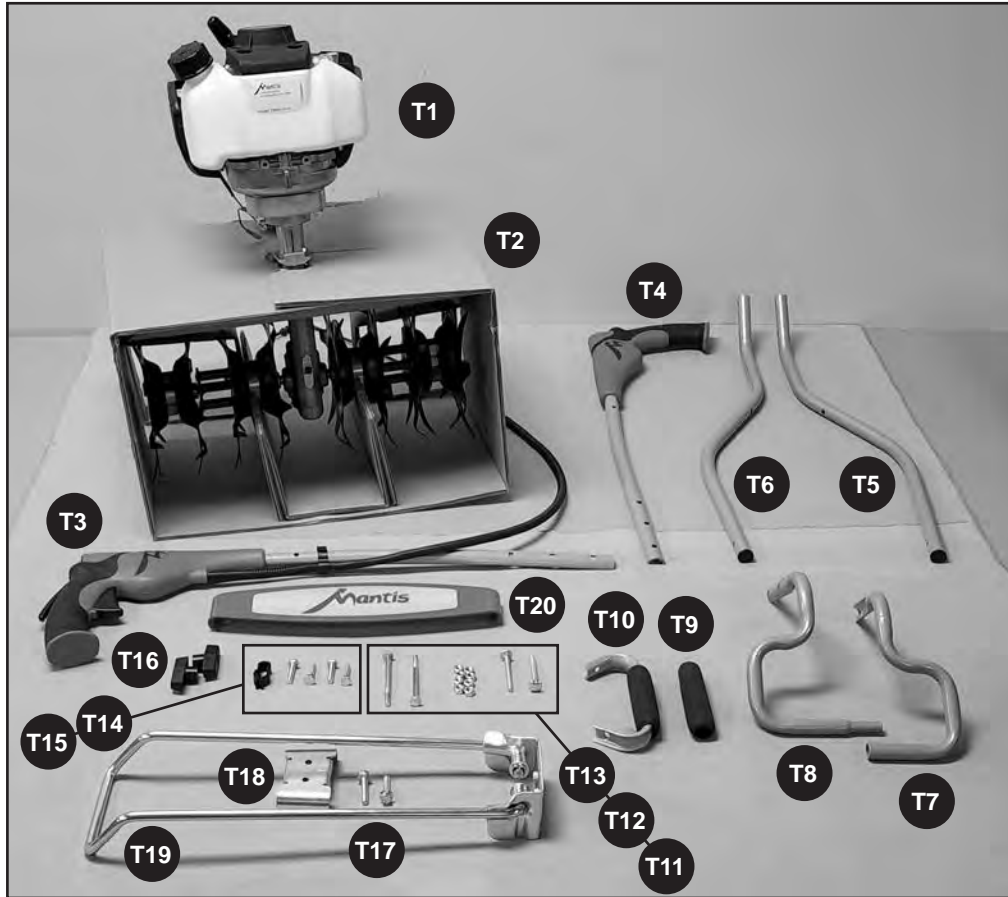
- Gasoline and diesel fuels are flammable; gasoline vapors are explosive. Use extra care when handling.
- Always use fresh gasoline. Stale gasoline can cause damage.
- Always store fuel in containers specifically designed for this purpose.
- Do not store fuel in a house.
- Always add fuel before starting the engine.
- Always replace all fuel tank and container caps securely.
- Never remove the fuel cap or add fuel while the engine is running or when the engine is hot.
- Don't use starter fluids they will cause permanent engine damage.
- When refueling or checking fuel level:
 - Stop the engine and allow to cool
 - Do not smoke
 - Refuel outdoors only
 - Use a funnel
 - Do not overfill
 - If fuel is spilled, do not attempt to start the engine until the spill is cleaned up and vapors have cleared.

MAINTENANCE AND ADJUSTMENTS

- Don't run engine if electrical system causes sparks outside the cylinder. During periodical checks of the spark plug, keep plug a safe distance from cylinder to avoid burning evaporated fuel from cylinder.
- Don't check for spark with spark plug or plug wire removed. Use an approved tester.
- Don't crank engine with spark plug removed unless spark plug wire is disconnected. Sparks can ignite fumes.
- Don't operate your tiller if there is an accumulation of debris around the muffler or cooling fins.
- Don't touch hot mufflers, cylinders or cooling fins; contact may cause serious burns.
- Don't change the engine governor setting or over throttle the engine.
- Don't attempt to remove spark plug while engine is hot. Removing a spark plug from a hot engine can cause irreparable damage to the engine and will void your warranty.
- Always operate engine with spark arrestor installed and operating properly.

PREPARATION

UNPACKING



Key	Qty.	Description
T1	1	Engine Assembly (includes Fender Guard & Worm Gear Transmission)
T2	1	Tine Assembly (includes Left & Right Inner Tine Assembly, Left & Right Outer Tine Assembly, 2-Retaining Pins)
T3	1	Right Upper Handle Assembly with Throttle Cable Attached to Engine
T4	1	Upper Handle, Left
T5	1	Upper Handle, Right
T6	1	Lower Handle, Left
T7	1	Front Carry Handle, Right
T8	1	Front Carry Handle, Left
T9	1	Foam Grip

Key	Qty.	Description
T10	1	Rear Carry Handle w/ Grip
T11	2	Carriage Bolt (2.25")
T12	8	Hex 2-Way Lock Nut
T13	2	Hex Bolt (3.25")
T14	4	Hex Head Cap Screw (1.25")
T15	2	Throttle Clip
T16	2	Knob
T17	2	Kickstand: Flange Bolt (1.25")
T18	1	Kickstand: Bracket
T19	1	Kickstand
T20	1	Handle Brace

WHAT YOU WILL NEED TO ASSEMBLE THE TILLER

Prior to removing the contents and assembling, it is important to:

- Have a clean work area.
- Make sure all necessary tools are handy.
- Ratchet wrench with an extension to reach deep-seated bolts
- 7/16" wrench
- 7/16" socket
- 3/8" socket or crescent wrench

PREPARATION

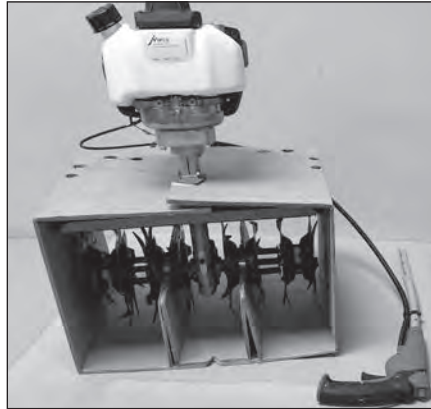
LOWER HANDLE ASSEMBLY

1



Open the box and remove the inserts and loose parts found on top of the tiller cradle

2



IMPORTANT: Keep the engine within the cardboard cradle during Lower Handle Assembly

3



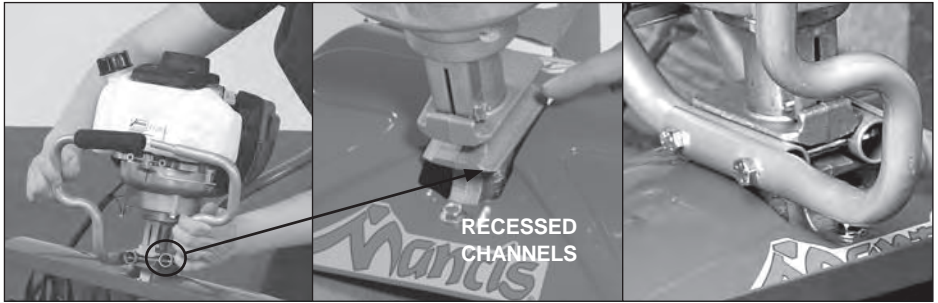
Open the cradle by pulling the sides apart

5



Slide the foam grip onto the front right carry handle handle

6



Slide the front left carry handle into the foam grip on the front right carry handle. Position this assembly onto the outside of the lower left and right handles and slide into the recessed channels. Secure with the two 3.25" bolts and lock nuts. Fasten finger tight.

7



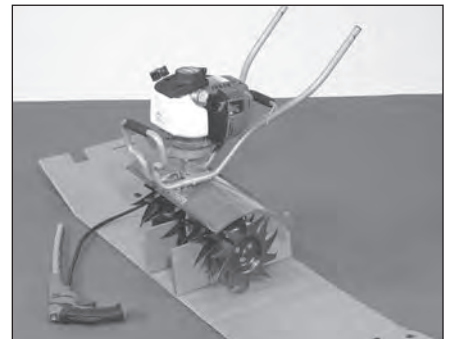
Secure the rear carry handle between the lower handles with two 1.125" bolts - keep with hex head on inside of the rear carry handle. Fasten with two lock nuts and tighten with wrench and socket

8



Tighten all handle bolts with the wrench and socket.

9



Completed Lower Handle Assembly for the Mantis XP Tiller

PREPARATION

KICKSTAND ASSEMBLY

1



Locate the kickstand hardware

2



Locate the UP arrow on the kickstand bracket and keep the arrow pointing up. Position the bracket just above the bend of the lower handles and connect the kickstand with the bolts. Tighten with 3/8" wrench.

3



Completed Lower Handle Assembly with Kickstand for the Mantis XP Tiller

UPPER HANDLE ASSEMBLY

1



With the kickstand down, the cardboard cradle can be removed. NOTE: the tiller handles kit for the XP Tiller has extra hardware not needed for assembly: two clamps and two tine retaining pins.

2



Lay the upper handles on the ground with the right upper handle on the gas-cap side of the engine.

3



Install the handle brace using the supplied bolts and nuts.

PREPARATION

UPPER HANDLE ASSEMBLY (CONT)

4



Select the desired height and attach each upper handle to the lower handle using the supplied bolts and plastic knobs.

5



NOTE: be sure the bolt head is seated securely in the square hole.

6



Loosen and tighten the adjustable handle knobs as necessary to fold or extend the Mantis handles.

7



Secure the throttle cable clip, making sure the cable is not twisted and there is proper throttle movement.

8



NOTE: Prior to starting the engine, test the throttle connection by depressing the lockout trigger, and fully squeezing the throttle trigger. If you don't hear the throttle click on both the full squeeze and the release you should follow the instructions for Visual Check for Throttle Assembly

9



Position extra throttle cable length as shown above

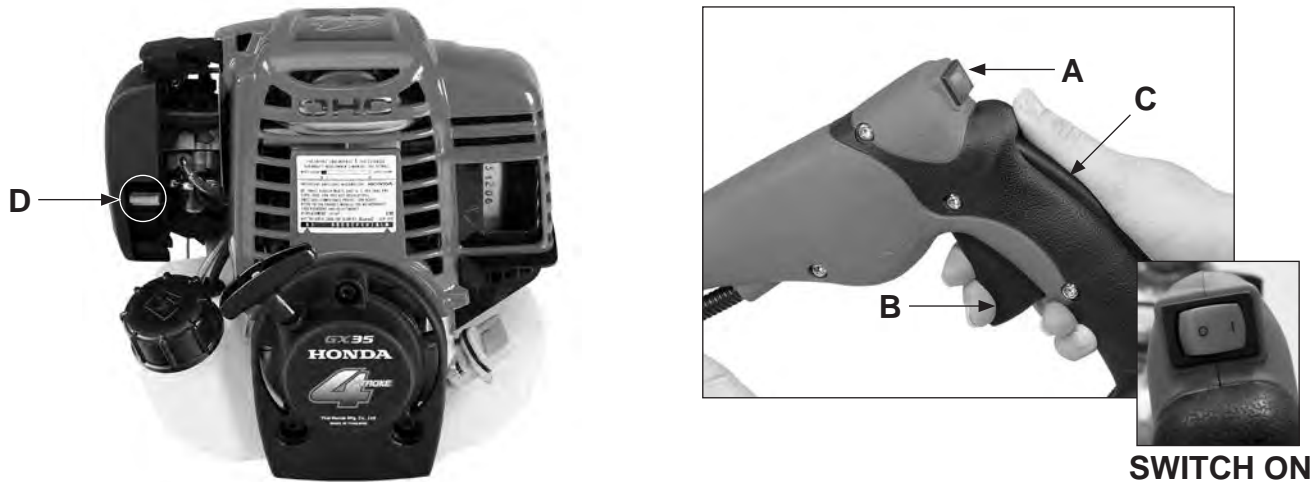
10



Fully-assembled Mantis XP Tiller.

PREPARATION

CONTROLS



SWITCH (A) Move to the “OFF” position to stop the engine. Move to the “ON” position before starting engine.

THROTTLE TRIGGER (B) Controls engine speed

LOCKOUT TRIGGER (C) Depress to unlock throttle

CHOKE (D) UP = Closed DOWN = Open

TRANSPORTATION

CARRY

– Use the carry handles to lift the tiller, keeping the sharp tines to either side of the body.

WALK

– While the tiller is running, slowly squeeze the throttle to move at a comfortable forward pace across the ground.

IN AN AUTOMOBILE

– Remove the fuel from the tank before transporting the tiller in a vehicle.

– Fold down the handles if necessary.

– Transport the tiller in an upright position. Never lay the tiller on its side or fluids may leak out.

PREPARATION

STORAGE

ENGINE

- Before storing the tiller for any period longer than two weeks, consult the engine manufacturer’s operating manual for instructions regarding fuel tank draining, engine oil, air filter, and spark plug. Failure to properly prepare the engine for storage may result in engine damage.

TINES

- Wipe the tines with oil or spray them with a protective lubricant like WD-40 to prevent rust
- Remove tines or attachments and lightly oil tine shaft at least once a year.

TRANSMISSION

- Check the grease level in the worm gear transmission housing. Add grease if needed.

POSITION

- Store your Tiller in an upright position in a clean, dry place.

⚠ WARNING

ENGINE DAMAGE MAY OCCUR IF THE MACHINE IS STORED IN ANYTHING OTHER THAN AN UPRIGHT POSITION.

⚠ WARNING

DO NOT STORE IN AN AREA WHERE FUEL FUMES MAY ACCUMULATE AND REACH A FLAME OR SPARK

FUELING, STARTING, AND STOPPING

NOTICE

MANTIS TILLERS ARE SHIPPED DRY: WITHOUT OIL AND WITHOUT GAS. ATTEMPTING TO RUN THE TILLER WITHOUT OIL AND GAS WILL RESULT IN ENGINE DAMAGE.

ADDING OIL

- Rock the tiller forward so that it rests on its front carry handle. (Figure 1)

NOTICE

PROPERLY FILL THE CRANKCASE DURING THE INITIAL SETUP. FAILURE TO FILL THE CRANKCASE WILL RESULT IN ENGINE DAMAGE.

- Remove the oil plug and fill the reservoir with the entire bottle of pre-measured (3.4 oz) 4-cycle engine oil (included).
- Replace the oil plug.
- Return the unit to the upright position and put the kickstand down.



FIGURE 1

FUELING, STARTING, AND STOPPING (CONT)

ADDING FUEL

- Fill the gas tank to four-fifths capacity with midgrade 89 octane unleaded gasoline.

STARTING (COLD ENGINE)

- Turn on the tiller by pressing the rocker switch on the throttle handle so the “I” position is down.
- Close the choke by moving the choke lever to the UP position.
- Press the primer bulb until the bulb is filled with gas, then press it two more times.
- Pull the starter cord lightly until you feel resistance, then give it a short, sharp pull.

NOTE: do not fully extend the cord or let the cord snap back into the starter housing.

- After the engine is running, open the choke by moving the lever to the DOWN position.
- Let the engine run for a minute before use.

STARTING (WARM ENGINE)

- Turn on the tiller by pressing the rocker switch on the throttle handle so the “I” position is down.
- Open the choke by moving the lever to the DOWN position.
- Pull the starter cord lightly until you feel resistance, then give it a short, sharp pull.
- Let the engine run for a minute before use.

STOPPING

- Let the engine run briefly to cool down before shutting off.
- Turn off the tiller by pressing the rocker switch on the throttle handle so the “O” position is down.

EMISSIONS

- Engines which are certified to comply with California and federal EPA emission regulations are certified to operate on regular unleaded gasoline. Refer to the engine operating manual for more details.

ETHANOL

- Do not use gasoline containing more than 10% ethanol.

 **WARNING**

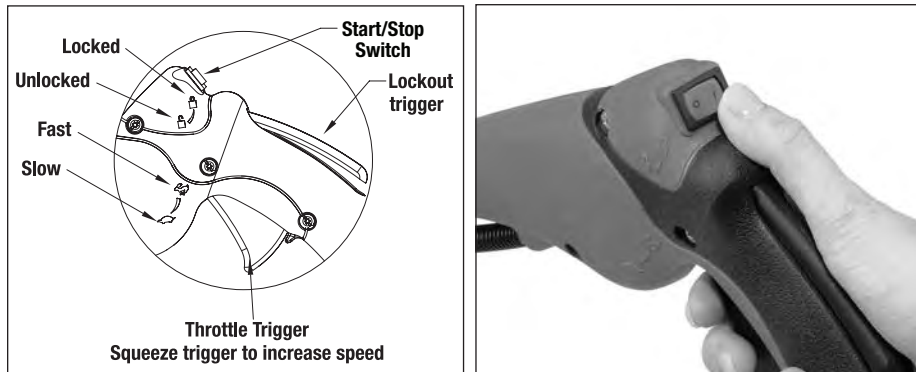
**FUELING A HOT ENGINE OR NEAR AN IGNITION SOURCE
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INJURY AND/OR PROPERTY DAMAGE.**

 **WARNING**

**TO AVOID PERMANENT ENGINE DAMAGE, DO NOT USE
STARTING FLUIDS.**

OPERATION

MOVING THE POWERED TILLER



- Move the start/stop switch to ON which is indicated by the “I” symbol.
- Depress the Lockout Trigger.
- Squeeze the Throttle Trigger slowly.
- Maintain a firm grip on the both handles.



MOVING THE TILLER FORWARD (NOT TILLING)

- Walk behind the powered tiller at a forward pace necessary to avoid digging into the soil.

TILLING

- Position the tiller in the work area
- Stand behind the powered tiller and walk backward to provide resistance for the tines to dig into the soil.
- Provide less resistance to allow the tiller to move forward and more resistance to dig.
- Use the tiller in the same motion as an upright vacuum cleaner - continuously walk forward and pull back.

DEEP TILLING

- Provide resistance to the powered tiller in the same area until the desired depth is achieved.

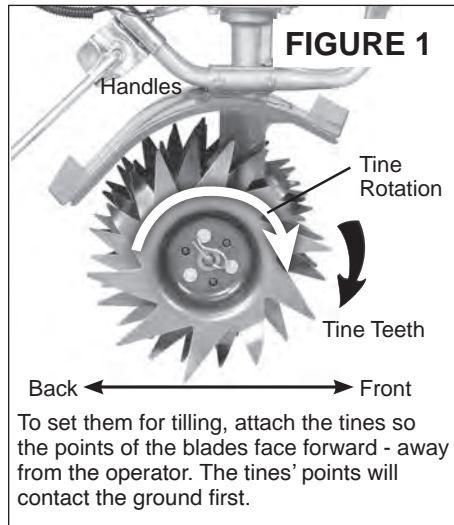
OPERATION

OPERATION (CONT)

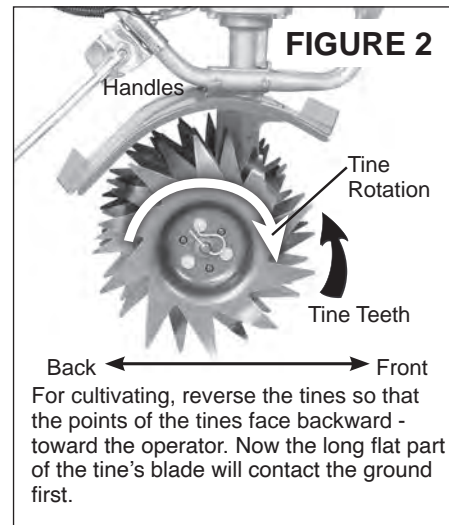
SHALLOW TILLING / CULTIVATING

– Switch the tine positions from the default tilling position. (Figure 1)

TILLING POSITION



SHALLOW TILLING/ CULTIVATING POSITION

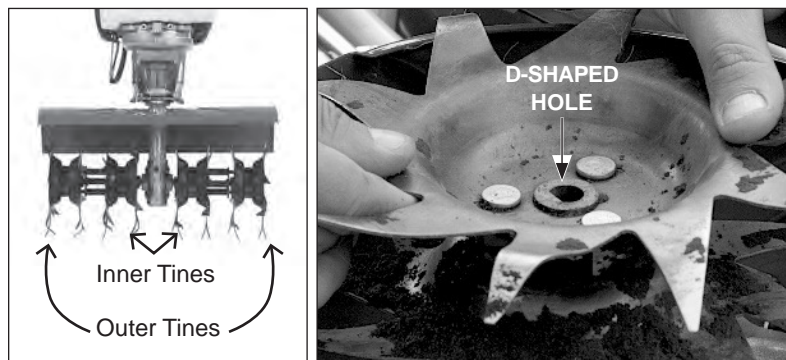


STEPS

1. Turn off the tiller and allow to cool.
2. Push the tiller forward and allow it to rest on the front carry handle.



3. Remove the retaining pins and remove both the left and right outer tines.
4. Remove the retaining pins and remove both the left and right inner tines from the transmission axle.



5. Place the right-side inner tines on the left side of the transmission axle.
6. Place the left-side inner tines on the right side of the transmission axle.

NOTE: The D-shaped hole should be visible and away from the transmission axle.

7. Install the retaining pins.

MAINTENANCE AND CLEANING

MAINTENANCE

⚠ WARNING

TO AVOID PERSONAL INJURY, STOP THE MACHINE, TURN OFF THE ENGINE, ALLOW ALL MOVING PARTS TO STOP, AND DISCONNECT THE SPARK PLUG WIRE BEFORE PERFORMING ANY MAINTENANCE OR MAKING ADJUSTMENTS.

GENERAL

- Check engine oil level and air filter element daily.
- Check for loose bolts and connections.
- Refer to the engine operating manual for more details.

CLEANING THE TINES

⚠ CAUTION

WEAR GLOVES TO AVOID INJURY WHEN WORKING ON TILLER TINES.

- Turn off the engine.
- Use an optional Tine Detangler or other tool to pull the tangled weeds.
- Follow the steps shown within the Shallow Tilling/Cultivating section to remove the tines for cleaning tightly bound material.

AIR FILTER

⚠ WARNING

TO AVOID ENGINE DAMAGE, DO NOT OPERATE THE MACHINE WITHOUT A PROPER AIR FILTER ELEMENT.

- Locate the air filter in the black plastic housing behind the gas tank cap.
- Remove the cover by squeezing the two locking tabs and swing open towards the front of the engine.
- Check the air filter for moisture or dirt.
- Remove and replace the filter if necessary.
- Consult the engine manufacturer's manual for more information.

FUEL FILTER

- Refer to your Honda® engine manual for more details.

TRANSMISSION CARE

NOTE: Factory production includes Lithium EP #1 grease added to properly lubricate the transmission for the first 10 hours of operation. Add grease as needed or after approximately 50 hours of use.

- Remove the tines.
- Lean the tiller forward to expose the transmission housing cover and remove the cover and gasket.



MAINTENANCE AND CLEANING

MAINTENANCE (CONT)

- Check the grease level inside the worm gear transmission housing.
- If grease level is below the edge of the gear housing, add Lithium #1 grease.



- The XP tiller has a grease fitting located opposite the transmission cover.



- Remove the protective cap from the grease fitting, attach the grease gun, and slowly add grease until the level is flush with the edge of the transmission housing.
- Pay attention to the size of the grease gun. Different guns distribute different amounts of grease per pump. No more than 0.06 oz (two pumps from a 14-ounce grease gun cartridge) should be added through the grease fitting. Additional grease can be added as needed through the opening left by removing the housing cover.



- Wipe off excess grease and replace the transmission gasket and housing cover.
- Return the grease fitting protective cover.
- Replace tines.

! WARNING

PREMATURE TRANSMISSION FAILURE CAN OCCUR IF PROPER GREASE LEVEL IS NOT MAINTAINED

! WARNING

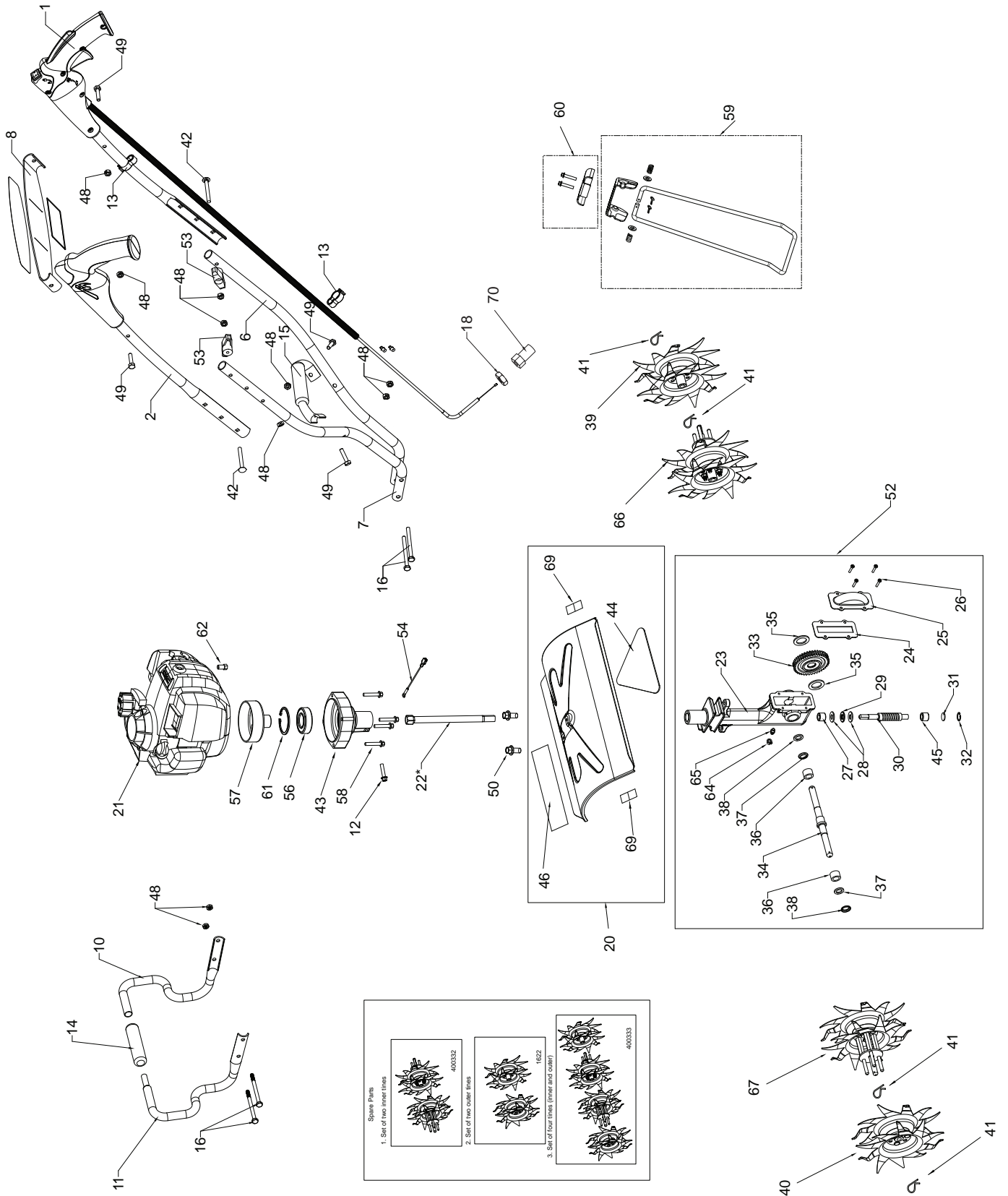
DO NOT OVERFILL. SERIOUS DAMAGE CAN OCCUR.

TROUBLESHOOTING AND REPAIR

Problem	Cause	Remedy
Tines don't turn when throttle is depressed	Engine is not seated properly on the gear housing	Refer to "How to Reseat the Flange" instructions
	Debris blocking tines	Remove tines and clean debris
	Throttle cable disconnected	Refer to "Attaching Throttle Cable" instructions
Engine fails to start	O/I switch is in "O" position	Move switch to "I"
	No fuel in tank	Fill Tank
	Fuel filter is clogged	Replace fuel filter
	Spark plug shorted, fouled, or broken	Replace spark plug
	Ignition inoperative	Contact your local authorized dealer
Engine hard to start	Water in gasoline or stale fuel mixture	Drain entire system and refill with fresh fuel
	Engine under choked	Move choke lever to CLOSED position and crank two or three times
	Weak spark at spark plug	Contact your local authorized dealer.
Engine is smoking	Oil is overfilled	Refer to "Corrective Action for Overfilled Oil" instructions
	Debris is blocking engine ports	Remove dust, dirt, and debris from all engine openings
Engine runs rough or lacks power	Choke partially engaged	Move choke to OPEN position
	Dirty air filter	Check and clean or replace air filter
	Spark plug fouled, broken or incorrect gap setting	Clean or replace spark plug - set gap to .024-.028 in. (0.6-0.7 mm)
	Weak or intermittent spark at spark plug	Contact your local authorized dealer
	Spark Arrestor Clogged	Clean Spark Arrestor
Engine overheats	Air flow obstructed	Remove dust and dirt from between fins
Engine stalls under load	Air filter clogged	Check and clean or replace air filter
	Other	Contact your local authorized service dealer
Engine does not stop when switched off	Multiple causes	Release the throttle, allow engine to idle, slide choke to closed position. Contact your local authorized service dealer
Engine oil leaking	Engine oil is overfilled	Refer to Corrective "Corrective Action for Overfilled Oil" instructions

APPENDIX A DRAWINGS & PARTS LISTS

PARTS EXPLOSION



APPENDIX A DRAWINGS & PARTS LISTS

PARTS LIST

Key	Qty.	Part No.	Description
37	2	434	Bearing
38	2	435SH	Bearing Seal Retainer
39	1	438RA	Tine Assembly, Outer Right
40	1	438LA	Tine Assembly, Outer Left
41	2	418-1	Tine Retaining Pin
42	2	430039	Carriage Bolt 1/4-20 X 2.25"
43	1	400307	Clutch Hub Adapter
44	1	430226	Triangle Warning Label (4 Cycle Engine)
45	1	458SH	Roller Bearing
46	1	430058	Mantis Logo Label
47	2	395	Acorn Nut
48	6	940-0002**	1/4-20 Two-Way Lock Nut
49	4	940-0002**	1/4-20 X 1.125 Hex Head Cap Screw
50	2	400516	Bolt 1/4-20x1/2" Long
51	1	430057	Warning Label
52	1	400302	Transmission Assembly*
53	2	940-0002**	Knob, Two Prongs, Female
54	1	430043	Ground Wire Jumper, 4 Cycle Engine
56	1	400132SH	Bearing
57	1	400308	Clutch Drum
58	4	400529	M6x33mm Flange Bolt
59	1	410158	Kickstand, Stand Assembly
60	1	430037	Kickstand, Bracket And Hardware
61	1	400524	Retaining Ring
62	1	400310	Throttle Stop, Honda® 34cc
64	1	400313	Dust Cap for Grease Fitting
65	1	400300	Grease Fitting
66	1	400330	Tine Assembly, Inner Right
67	1	400329	Tine Assembly, Inner Left
69	2	400635	Label XP Tine Warning
70	1	400310	Throttle Stop

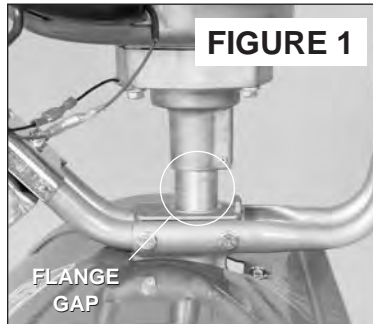
Key	Qty.	Part No.	Description
1	1	940-0002**	Trigger Handle Assembly, 4 Cycle Engine, Right
2	1	940-0002**	Handle Assembly, Left
6	1	940-0002**	Lower Handle W/Plug, Right
7	1	940-0002**	Lower Handle W/Plug, Left
8	1	940-0002**	Handle Brace
9	1	940-0002**	Label, Handle Brace
10	1	430023	Front Carry Handle, Right
11	1	430022	Front Carry Handle, Left
12	1	910502	10-32 X 3/4" Flange Bolt
13	2	940-0002**	Throttle Clip
14	2	940-0002**	Foam Grip
15	1	940-0002**	Rear Carry Handle W/Grip
16	2	940-0002**	Bolt 1/4-20 X 3.25"
18	1	940-0002**	M6 Jam Nut
20	1	430209	Fender Guard with Labels
21	1	400916	Engine Assembly-35cc Honda®
22	1	468	Drive Shaft
23	1	400301	Worm Gear Housing
24	1	436	Gasket
25	1	437A	Gear Housing Cover
26	4	651	#8 Self Tapping Screw
27	1	423	Roller Bearing
28	2	425	Worm Bearing Race
29	1	424SH	Worm Thrust Bearing
30	1	422	Worm Shaft
31	1	426	Worm Disk
32	1	428	Retaining Ring
33	1	429	Worm Gear
34	1	431	Tine Shaft
35	2	430	Worm Gear Thrust Washer
36	2	432	Worm Gear Bearing

* Includes Key #22 ** Included with service kit 940-0002

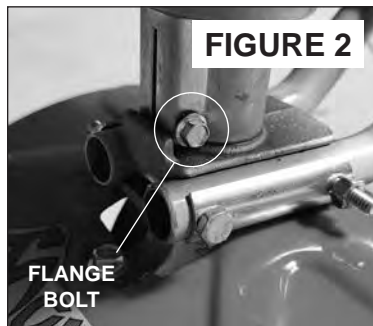
APPENDIX B RELATED DOCUMENTATION

HOW TO RESEAT THE FLANGE

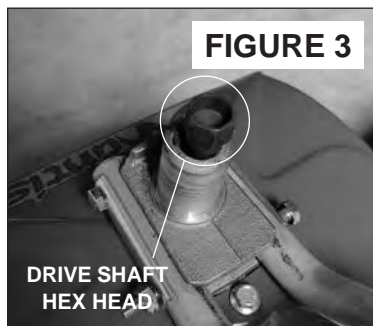
1. If you notice a gap between the bottom of the engine flange and the top of the drive shaft (Figure 1), you can reseal the flange.



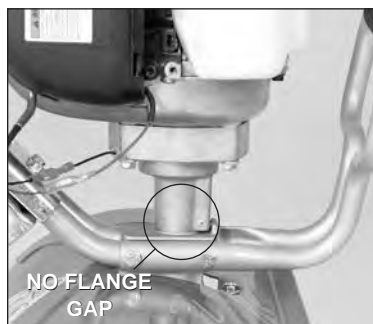
2. Find and loosen the flange bolt. (Figure 2)



3. Carefully lift the engine approximately one inch and move it side-to-side in small increments to seat it back onto the hex head of the drive shaft. (Figure 3)



4. Push the engine back onto the drive shaft and verify the original gap is corrected.



5. Tighten the flange bolt.

APPENDIX B RELATED DOCUMENTATION

AIR FILTER MAINTENANCE

CHECK AND CHANGE THE AIR FILTER

NOTICE

A DIRTY AIR FILTER RESTRICTS AIR FLOW TO THE CARBURETOR AND REDUCES ENGINE PERFORMANCE.

1. The air filter is held in the air cleaner in a black housing on the side of the tiller, behind the gas tank cap.
2. Squeeze the two locking tabs at the rear of the air cleaner cover (Figure 1) and swing the cover towards the front of the engine.



NOTICE

VERIFY THE COVER OF THE AIR CLEANER IS INTACT. IF IT IS CHIPPED OR BROKEN IT SHOULD BE REPLACED TO PREVENT DIRT FROM ENTERING THE ENGINE

3. The air filter is the sponge-like material on the inside of the air cleaner. Inspect it for any dirt, damage, or debris. If it is damaged, replace it.
4. Wipe the inside of the air cleaner cover to remove any dirt.
5. Insert the new air filter and seat it properly within the air cleaner.
6. Reattach the air cleaner cover.

NOTICE

THE FILTER MUST FIT SNUGLY AND IN THE CORRECT POSITION TO AVOID ENGINE DAMAGE

CAUTION

OPERATING THE ENGINE WITHOUT AN AIR FILTER OR WITH A DAMAGED AIR FILTER MAY CAUSE PREMATURE ENGINE WEAR THAT IS NOT COVERED BY THE LIMITED WARRANTY

CLEAN THE AIR FILTER

1. Refer to the engine operating manual for current recommendations.
2. Clean the filter element in warm soapy water, rinse and allow to dry thoroughly.
3. Dip the filter element in clean engine oil, then squeeze out all excess oil. The engine will smoke when started if too much oil remains.
4. Follow the above steps to insert the clean air filter.

APPENDIX B RELATED DOCUMENTATION

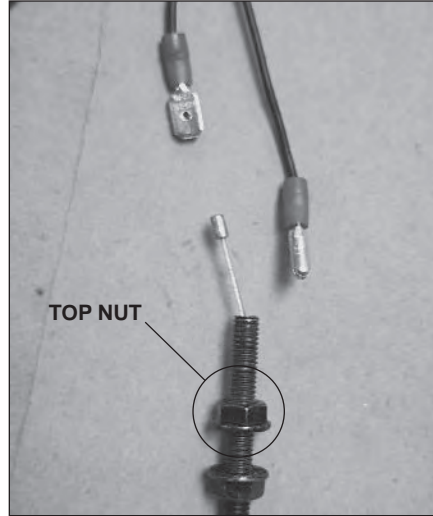
ATTACHING THROTTLE CABLE

1



Throttle connections on XP tiller engine

2



Wire terminations on the right handle throttle cable. Top nut on the throttle cable should be replaced with the throttle stop

3



Throttle Stop oriented in the correct position for installation

5



Engine throttle assembly with air cleaner cover removed

6



After the throttle stop has been installed, position the cable in the silver throttle swivel as shown above

7



Pull the cable so the tip is secure within the swivel slot

APPENDIX B RELATED DOCUMENTATION

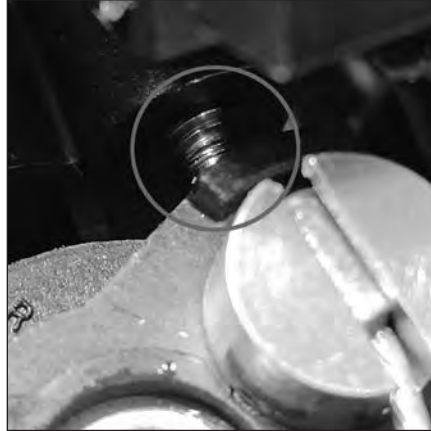
ATTACHING THROTTLE CABLE (CONT)

8



Position the cable in the shroud channel. Adjust the throttle stop and lower nut so they are snug against the shroud and the cable is taut and the throttle lever is in the disengaged position.

9



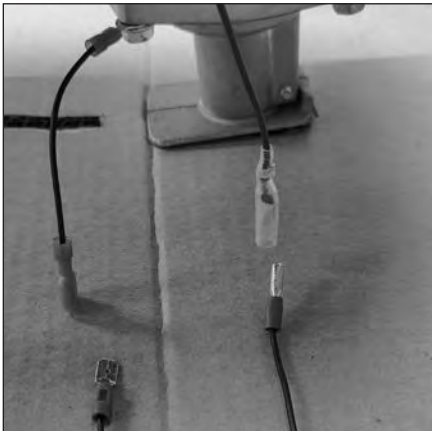
Disengaged throttle position – firm against top screw.

10



Depress the throttle trigger to see the throttle lever travel to the engaged position. Adjust the lower, metal nut as needed before final tightening. **NOTE:** Final tightening with a wrench should only be performed on the metal nut.

11



Connect the wire terminations from the right handle throttle cable to the connections on the engine.

12



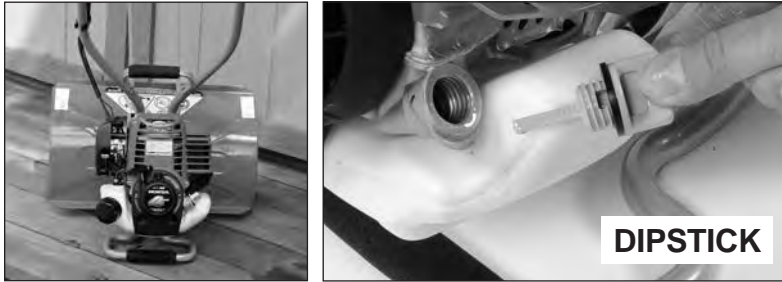
Replace the air cleaner cover and position the throttle cable loop as shown.

APPENDIX B RELATED DOCUMENTATION

CORRECTIVE ACTION FOR OVERFILLED OIL

If you suspect the engine oil is overfilled, the following procedure should remove the excess oil. The excess oil must be pumped out as the engine runs and cannot be removed by simply pouring out of the oil fill opening. Checking the oil level and draining any excess between multiple 30-second running intervals will bring the oil back to the proper level.

1. Place the engine on a level surface resting flat on the front carry handle and remove the oil fill cap/dipstick. Use a catch basin for any oil that overflows from the oil fill opening.



2. Replace the oil fill cap / dipstick, position the machine in an upright position, and run the engine for approximately 30 seconds then repeat step one. Continue steps 1 & 2 until oil no longer overflows when the oil fill cap/ dipstick is removed.
3. Once the oil level is corrected, the engine may continue to smoke while running for several minutes while the residual oil burns off.

APPENDIX B RELATED DOCUMENTATION

VISUAL CHECK FOR THROTTLE ASSEMBLY XP TILLER

During the initial assembly of a new machine, it is important to visually check the throttle connection before running the machine for the first time.

1



Remove the air cleaner cover to expose the throttle connections. A disengaged throttle looks like the above image with the throttle cable exposed.

2



Disengaged throttle position – firm against top screw

3



Depress the throttle trigger to see the throttle lever travel to the engaged position (above). Adjust the lower, metal nut as needed before final tightening. **NOTE:** Final tightening with a wrench should only be performed on the metal nut.

WARRANTY STATEMENT

Limited Warranty

Products Covered by This Warranty	LENGTH OF WARRANTY: From Date of Original Purchase
Mantis 7000 Series Tiller/Cultivator	2 years
Mantis 3000 Series Electric Tiller/Cultivator	1 year
Mantis Composters	2 years
Mantis Battery Operated Blower	1 year
Mantis Battery Operated String Trimmer w/o battery	1 year
Mantis Blower and String Trimmer Combo w/ battery	1 year
Mantis Attachments (for 7000 Series Tillers)	90 days

Mantis products are warranted against defects in materials and workmanship for a period of time shown in the above table from the date of purchase from an authorized dealer or retailer (as shown on mantis.com) by the original purchaser only, and under the following terms and conditions. Schiller Grounds Care's responsibility under this limited warranty is restricted to repairing or replacing, at its option, any covered part found to be defective in material or workmanship during the warranty period. All parts replaced under warranty will be considered as part of the original product and any warranty on the replaced parts will expire coincidentally with the original product warranty.

SCHILLER GROUNDS CARE, INC. MAKES NO EXPRESS OR IMPLIED WARRANTIES, REPRESENTATIONS, OR PROMISES EXCEPT THOSE CONTAINED HEREIN. THERE ARE NO OTHER WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. ALL WARRANTIES OTHER THAN THE EXPRESS WARRANTY SET FORTH ABOVE ARE SPECIFICALLY DISCLAIMED. THE DURATION OF ANY IMPLIED WARRANTY, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY.

To Obtain Warranty Service - If you think your Mantis Product is defective in material or workmanship, use the following information to determine your solution. Warranty service must be performed by an authorized Mantis service dealer or authorized service center. *Note: authorized Mantis service dealers and service centers are under NO OBLIGATION to perform warranty work on products not sold through their business.*

Mantis Product Purchased From:	Contact Instructions
Online Retailer (all except Mantis.com)	Contact Customer Support for the Online Retailer
Mantis.com	Schiller Grounds Care, Inc. 1-800-366-6268 or 215-355-9700 www.mantis.com/contact www.mantis.com/mantis-owners-product-support/
Retail Store	Contact Customer Support for the Retail Store
Authorized Mantis Dealership	Contact the Mantis Dealership

ABOUT YOUR WARRANTY

The warranty period begins on the date of purchase by the original customer from an authorized Mantis dealer, retailer, or from Mantis.com and is not transferable. Warranty service must be performed by an authorized Mantis service dealer or authorized service center. If a warranty replacement becomes necessary, the authorized dealer or service center must be prepared to provide the physical component for verification (freight prepaid) upon request from Schiller Grounds Care. Warranty service will be performed without charge to the original purchaser for parts and labor. The original purchaser is responsible for the expense of delivering the equipment, part, or accessory to and from an authorized dealer's service center. The purchaser is responsible for any premium charged for overtime labor requested by the purchaser and for any service and/or maintenance not directly related to any defect covered under this limited

WARRANTY STATEMENT

warranty. Proof of purchase will be required to substantiate any warranty claim. Without proof of the initial purchase date from an authorized dealer or seller, the manufacturing date of the product will be used to establish the warranty period. Warranty communication and transactions are limited to the authorized service center staff and Schiller Grounds Care.

EXCLUSIONS

This warranty only covers defects in materials or workmanship.

Engines and Other Manufacturers - Schiller Grounds Care makes no warranty with respect to engines or engine parts such as spark plugs, lubricants, starters, and carburetors. The engine warranty is covered by the engine manufacturer. Consult the Operator's Manual for the engine provided with your product or ask an authorized dealer for the terms and conditions of these warranties. Schiller Grounds Care makes no warranty with respect to other parts not of its manufacture such as tires, batteries, gearboxes, or similar. These other parts may be covered by the warranties of their respective manufacturers.

Wear Items - This limited warranty does not cover damages or defects from normal wear and tear. This limited warranty does not include routine maintenance and normal maintenance parts, including but not limited to wheels, blades, tines, handles, housing, panels, gears, legs, cables, bearings, or accessories.

Negligence and Improper Maintenance or Repair - This limited warranty does not cover any equipment that has been subject to lack of reasonable and proper maintenance, misuse, lack of proper storage, or accidents. This limited warranty does not cover any damage to the equipment that is caused by a freight carrier or is the result of failure to follow the operating instructions within the Owner's Manual. This limited warranty does not cover any defects due to repairs, modifications, or alternations made to the product by anyone other than Schiller Grounds Care, Inc. or its authorized dealers or authorized service centers. In addition, this limited warranty does not cover repairs made necessary due to a lack of proper protection during storage. This limited warranty does not cover damage caused by the use of parts, supplies, or accessories, including, without limitation, filters, spark plugs, carburetors, ignition, drive belts, brakes, gasoline, fuel, oil, or lubricants, which in the reasonable judgment of Schiller Grounds Care, are either incompatible with the product, adversely affect its operation, performance, durability or are other than as recommended in the Operator's Manual or other operational instructions provided by Schiller Grounds Care.

Improper Use - This limited warranty does not cover any Mantis Product, part, or accessory that (i) has been subject to misuse, abuse, neglect, negligence, or accident, or that has not been assembled, operated, or maintained in accordance with the operating or maintenance instructions specified in the Operator's Manual; or (ii) has been altered or modified so as to adversely affect its operation, performance or durability, or that has been altered or modified in ways not approved by Schiller Grounds Care. To the extent permitted by law, neither Schiller Grounds Care nor any company affiliated with it makes any warranties, representations, or promises as to the quality, performance, or freedom from defect of the Mantis Product, part, or accessory covered by this limited warranty. The authorized dealer makes no warranty of its own and such dealer has no authority to make any representation, warranty, or promise on behalf of Schiller Ground Care or to modify the terms or limitations of this limited warranty in any way.

Other Exclusions - This limited warranty does not include reconditioned, refurbished, used, or demonstration equipment. This limited warranty excludes failures due to acts of nature beyond the manufacturer's control.

Extended Warranty - Schiller Grounds Care disclaims responsibility for any separately purchased extended warranty. ALL WARRANTIES OTHER THAN THE EXPRESS WARRANTY SET FORTH ABOVE ARE SPECIFICALLY DISCLAIMED. THE DURATION OF ANY IMPLIED WARRANTY, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY.

Disclaimer of Consequential Damage - Schiller Grounds Care disclaims any responsibility for incidental or consequential damages including, but not limited to, the expense for gasoline, the expense of delivering the product to an authorized service dealer, the expense of returning the product to the purchaser, mechanic's travel time, telephone charges, rental of a like product during the repair timeframe, travel, loss of revenue, loss of time, or inconvenience. SCHILLER GROUNDS CARE, INC. DISCLAIMS ALL LIABILITY FOR INDIRECT, INCIDENTAL, AND/OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE MANTIS PRODUCTS COVERED BY THIS LIMITED WARRANTY. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

MAY 2022

Schiller Grounds Care, Inc.

P/N 802-0006