



Professional Shop Manual



450 Series Tiller

NOTE: These materials are for use by trained technicians who are experienced in the service and repair of outdoor power equipment of the kind described in this publication, and are not intended for use by untrained or inexperienced individuals. These materials are intended to provide supplemental information to assist the trained technician. Untrained or inexperienced individuals should seek the assistance of an experienced and trained professional. Read, understand, and follow all instructions and use common sense when working on power equipment. This includes the contents of the product's Operators Manual, supplied with the equipment. No liability can be accepted for any inaccuracies or omission in this publication, although care has been taken to make it as complete and accurate as possible at the time of publication. However, due to the variety of outdoor power equipment and continuing product changes that occur over time, updates will be made to these instructions from time to time. Therefore, it may be necessary to obtain the latest materials before servicing or repairing a product. The company reserves the right to make changes at any time to this publication without prior notice and without incurring an obligation to make such changes to previously published versions. Instructions, photographs and illustrations used in this publication are for reference use only and may not depict actual model and component parts.

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Table of Contents

Chapter 1: Introduction 1	
About the text format	1
Safety	2
Fasteners	3
Assembly instructions	3
Understanding model and serial numbers	4
Maintenance chart	5
Chapter 2: Clutch and controls 7	
Clutch Operation	7
Belt Replacement	8
Pulley alignment and travel	10
Idler Pulley Bracket Removal	11
Replacing and Adjusting the Clutch Cable	12
Clutch Cable Adjustment	14
Shift lever and rod	15
Chapter 3: Engine 17	
Engine removal	17
Engine installation	18
Chapter 4: Transmission Removal 19	
Transmission Removal	19
Chapter 5: Chain case 25	
About this chapter	25
Chain Case Operation: Drive paths	25
Wheels Reverse	26
Neutral	26
Wheels Forward	27
Counter Rotation Tilling	28
Standard Rotation Tilling	29
Chain Case Separation	30
Wheel Axle and wheel speed reduction shaft	34
Tine Shaft	37
Main Shaft Assembly	40
Counter shaft	43
Detent shaft	45
Input shaft	46
Shift arm	49
Inspection	53
Final Assembly Notes	55
Chapter 6: tines 63	
Tines	63
Accessing the tines	63

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CHAPTER 1: INTRODUCTION

Professional Service Manual Intent: This manual is intended to provide service dealers with repair and overhaul procedures for the 450 series tiller..

Disclaimer: The information contained in this manual is correct at the time of writing. Both the product and the information about the product are subject to change without notice.

About the text format

Certain flags and key words are used to indicate the nature of the text that accompanies them. They are as follows:



CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.



DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

NOTE: "NOTE" is used to point-out helpful information that may not fit as a step in a procedure.

1. Numbered steps indicate specific things that should be done, and the order in which they should be done.
 - 1a. Sub steps will be lettered and nested within steps. Two or more sub steps may be combined to describe the actions required to complete a step.

- **Bullet points:** Indicate sub-steps or points of interest, without implying order or relative importance.

Disclaimer: This manual is intended for use by trained, professional technicians.

- Common sense in operation and safety is assumed.
- In no event shall MTD be liable for poor text interpretation, or poor execution of the procedures described in the text.
- If the person using this manual is uncomfortable with any procedures they encounter, they should seek the help of a qualified technician.

450 Series Tillers

Safety

This Service Manual is meant to be used along with the Operator's Manual. Read the Operator's Manual and familiarize yourself with the safety and operational instructions for the equipment being worked on. Keep a copy of the Operator's Manual for quick reference. Operator's manuals may be viewed for free at the brand support website. It will be necessary to have the complete model and serial number for the equipment.



- Be prepared in case of emergency:
 - Keep a fire extinguisher nearby
 - Keep a first aid kit nearby
 - Keep emergency contact numbers handy
- Replace any missing or damaged safety labels on shop equipment.
- Replace any missing or damaged safety labels on equipment being serviced.



- Grooming and attire:
 - Do not wear loose fitting clothing that may become entangled in equipment.
 - Long hair should be secured to prevent entanglement in equipment.
 - Jewelry is best removed.
- Protective gear: includes, but is not limited to
 - Clear eye protection _____ while working around any machinery
 - Protective gloves _____ where necessary
 - Armored footwear _____ when working around any machinery
 - Hearing protection _____ in noisy environments
 - Chemically resistant gloves _____ when working with chemicals or solvents
 - Respirator _____ when working with chemical or solvents
 - Appropriate tinted eye protection _____ when cutting or welding



- Remember that some hazards have a cumulative effect. A single exposure may cause little or no harm, but continual or repeated exposure may cause very serious harm.
- Clean spills and fix obviously dangerous conditions as soon as they are noticed.
- Lift and support heavy objects safely and securely.
- Be aware of your surroundings and potential hazards that are inherent to all power equipment. All the labels in the world cannot protect a technician from an instant of carelessness.



Exhaust fumes from running engines contain carbon monoxide (CO). Carbon monoxide is a colorless odorless gas that is fatal if inhaled in sufficient quantity. Only run engines in well ventilated areas. If running engines indoors, use an exhaust evacuation system with adequate make-up air ventilated into the shop.

Fasteners

- The fasteners used on the equipment described in this manual and the engine that powers it, are a combination of metric and fractional inch. For this reason, wrench sizes are frequently identified in the text, and measurements are given in U.S. and metric scales.
- If a fastener has a locking feature that has worn, replace the fastener or apply a small amount of releasable thread locking compound such as Loctite® 242 (blue).
- Some fasteners like cotter pins are single-use items that are not to be reused. Other fasteners such as lock washers, retaining rings, and internal cotter pins (hairpin clips) may be reused if they do not show signs of wear or damage. This manual leaves that decision to the judgement of the technician.

Assembly instructions

- **Torque specifications** may be noted in the part of the text that covers assembly. They may be summarized in tables along with special instructions regarding locking or lubrication. Whichever method is more appropriate will be used. In many cases, both will be used so that the manual is handy as a quick-reference guide as well as a step-by-step procedure guide that does not require the user to hunt for information.
- **Lubricant** quantity and specification may be noted in the part of the text that covers maintenance, and again in the section that covers assembly. They may also be summarized in tables along with special instructions. Whichever method is more appropriate will be used. In many cases, the information will be found in several places in the manual so that the manual is handy as a quick-reference guide as well as a step-by-step procedure guide that does not require the user to hunt for information.
- The level of assembly instructions provided will be determined by the complexity of reassembly, and by the potential for damage or unsafe conditions to arise from mistakes made in assembly.
- Some instructions may refer to other parts of the manual for subsidiary procedures. This avoids repeating the same procedure two or three times in the manual.