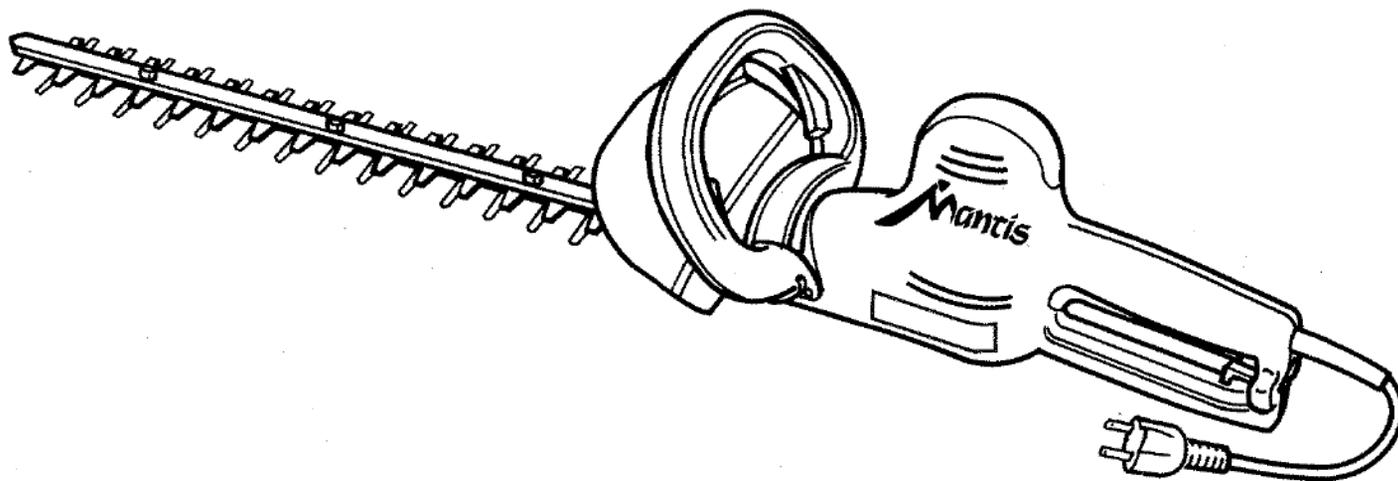


Mantis®



EN

OWNER'S MANUAL and SAFETY INSTRUCTIONS

Double Edged (Models DEHT19, DEHT24)

Electric Hedge Trimmers

▲ WARNING DANGER ▲
BLADES ARE EXTREMELY SHARP.
TO AVOID INJURY WHEN UNPACKING
THE HEDGE TRIMMER,
DO NOT GRASP THE BLADES.

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I. IMPORTANT INFORMATION

A. INTRODUCTION

On behalf of everyone at **Mantis**, we would like to thank you for your purchase of a **Mantis** Electric Powered Hedge Trimmer. This professional trimming machine was designed to the highest standards to ensure you many hours of uninterrupted service.

This manual provides the information necessary for safe and efficient operation and service. For your safety, it is critically important that you read and understand this entire manual before operating your hedge trimmer.

II. GENERAL SAFETY RULES

Warning: When using electric tools, basic safety precautions, including the following, should always be followed to reduce the risk of fire, electric shock and personal injury.

Read all these instructions before operating this product and save these instructions.

For safe operations:

1) Keep work area clean.

Cluttered areas and benches invite injuries.

2) Consider work area environment.

Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use power tools where there is risk of fire or explosion.

3) Guard against electric shock.

Avoid body contact with earthed or grounded surfaces e.g. pipes, radiators, ranges, refrigerators.

4) Keep children away.

Do not let visitors touch the tool or extension cord. All visitors should be kept away from area.

5) Store idle tools.

When not in use, tools should be stored in a dry, high or locked up place, out of reach of children.

6) Do not force the tool.

It will do the job better and safer at the rate for which it was intended.

7) Use the right tool.

Do not force small tools or attachments to do the job of a heavy duty tool. Do not use tools for purposes not intended; for example, do not use circular saws to cut tree limbs or logs.

8) Dress properly.

Do not wear loose clothing or jewelry that can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.

9) Use safety glasses.

Use face or dust mask if the cutting operation is dusty.

10) Do not abuse the cord.

Never carry the tool by the cord or yank it to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges.

11) Secure work.

Use a vice to clamp the frame bar while adjusting blades. It is safer than using your hand and it frees both hands to operate the tools.

12) Do not overreach.

Keep proper footing and balance at all times.

13) Maintain tool with care.

Keep cutting tools sharp and clean for better and safer performance. Follow instructions for lubrication and changing accessories. Inspect tool cord periodically and if damaged have it repaired by Mantis. Inspect extension cords periodically and replace, if damaged. Keep handles dry, clean and free from oil and grease.

14) Disconnect tools.

When not in use, before servicing and when changing accessories such as blades, bits and cutters.

15) Remove adjusting keys and wrenches.

Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.

16) Avoid unintentional starting.

Do not carry a plugged in tool with a finger on the switch. Ensure switch is off when plugging in.

17) Use outdoor extension leads.

When tool is used outdoors, use only extension cords intended for outdoor use.

18) Stay alert.

Watch what you are doing. Use common sense. Do not operate tool when you are tired.

19) Check damaged parts.

Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, free running of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by Mantis unless otherwise indicated in this instruction manual. Have defective switches replaced by Mantis. Do not use the tool if the switch does not turn it on and off.

20) Warning.

The use of any accessory or attachment, other than those recommended in this instruction manual, may present a risk of personal injury.

21) Have your tool repaired by a qualified person.

This electric tool conforms to relevant safety requirements. Repairs should only be carried out by qualified persons using original spare parts, otherwise this may result in considerable danger to the user.

▲ WARNING DANGER ▲
THIS SYMBOL POINTS OUT
IMPORTANT SAFETY INSTRUCTIONS.

WHEN YOU SEE THIS SYMBOL, ▲
HEED IT'S WARNING!!
STAY ALERT!!

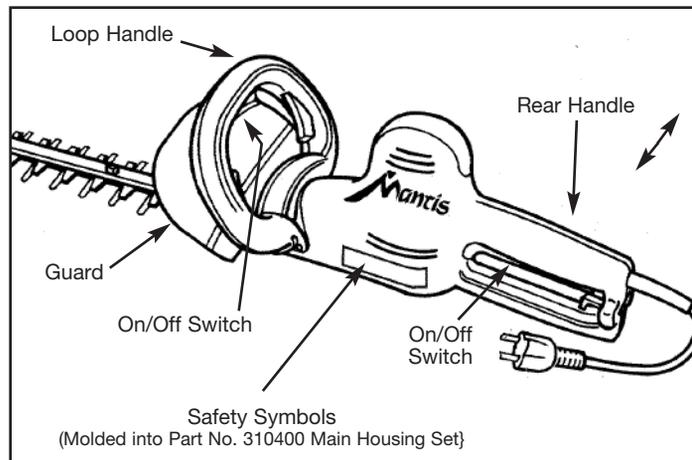
▲ WARNING DANGER ▲
TO REDUCE THE POTENTIAL FOR
ACCIDENTS, COMPLY WITH THE
SAFETY INSTRUCTIONS IN THIS
MANUAL. FAILURE TO COMPLY MAY
RESULT IN SERIOUS PERSONAL
INJURY AND OR EQUIPMENT AND
PROPERTY DAMAGE.

▲ A. SAFETY DECALS AND MOLDED SYMBOLS

Important parts of the safety system incorporated in Double Edge trimmers are the warning and informational decals and molded-in symbols found on various parts of the trimmer. These decals must be replaced in time due to abrasion, etc.

It is your responsibility to replace the decals or molded housing when they become hard to read. The locations of these safety features are shown below. See page 11 for their part numbers when ordering replacements.

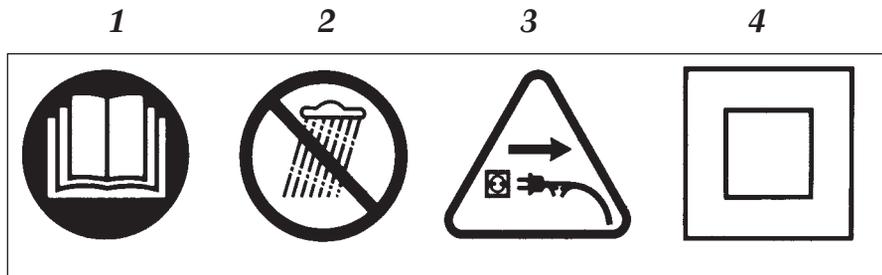
Double Edge Trimmer



▲ B. SAFETY SYMBOLS IDENTIFICATION

WHAT THE SYMBOLS MEAN:

1. Read the instructions.
2. Do not expose to rain.
3. Remove plug from main (electric power source) immediately if cable is damaged or cut.
4. Double insulated.



▲ WARNING DANGER ▲
IF TRIMMER IS USED IMPROPERLY OR SAFETY PRECAUTIONS ARE NOT FOLLOWED,
THE USER RISKS SERIOUS INJURY TO THEMSELVES AND OTHERS.
READ AND UNDERSTAND THE RULES FOR SAFE OPERATION AND ALL
INSTRUCTIONS IN THIS MANUAL.

▲ C. SPECIAL SAFETY RULES

1. Read and understand the owner's manual. Pay particular attention to all sections regarding safety.
2. Always keep a firm grip on both handles while the blades are moving and/or the motor is running. On Double Edged units, one hand grasps the front 'loop' handle, while the other hand grasps the rear handle.
BE AWARE!! The blades coast after triggers are released or motor is switched off. Make sure blades
3. Maintain a firm footing and good balance; do not overreach while trimming. Before you start to trim, check the work area for obstacles that might cause you to lose your footing, balance or control of the machine.
4. Keep area clear of children, pets, and bystanders.

▲ D. WARNINGS — DON'TS

Don't use trimmer with one hand, keep both hands on handles with fingers and thumbs encircling the handles, while blades are moving, and motor is running.

Don't overreach or stand on unstable support. Do not stand on the top of a ladder while trimming. Use proper equipment for reaching higher heights. Keep a good footing at all times.

Don't ever grasp cutting blades for any reason.

Don't attempt to clear cut material while blades are moving, and the motor is running. **Never** try to remove

jammed material before switching the motor off and making sure the blades have stopped completely.

Don't over-ride safety features.

Don't allow children or incapable people to operate this trimmer.

Don't operate this hedge trimmer while under the influence of alcohol or drugs.

Don't attempt to repair this hedge trimmer. Have repairs made by Mantis. See that only original **Mantis** parts are used.

▲ E. WARNINGS — DO'S

Always read and follow all instructions.

Always stay alert. Watch what you are doing and use common sense. Do not operate unit when fatigued.

Always dress properly. Do not wear loose clothing or jewelry, they might get caught in moving parts. Use sturdy proper fitting, non-slip gloves. Gloves reduce the transmission of vibration to your hands. Prolonged exposure to vibration can cause numbness and other ailments. Wear non-skid foot wear to ensure secure and proper footing.

Always wear ear and eye protection. Eye protection must meet ANSI Z 87.1. To avoid hearing damage we recommend hearing protection be worn whenever using the equipment.

Always keep both hands on both handles when trimmer is running. Severe injuries can result if you try to use the hedge trimmer with only one hand or with an insecure grip.

Always keep children, pets, and incapable persons away.

Always use trimmer properly. Cut only types and size of growth described in the Trimming section of this manual. Overloading or abusing your hedge trimmer can cause premature failure and can result in injury. Use common sense.

Always keep a safe distance between two or more operators when working together simultaneously.

Always inspect your unit before each use and ensure that all handles, guards, safety devices and fasteners are secure, operating, and in place.

Always maintain and examine your trimmer with care. Follow maintenance instructions given in manual.

Always store trimmer in a sheltered area (a dry place) not accessible to children. The hedge trimmer should not be stored in a house.

III. UNPACKING AND ASSEMBLY INSTRUCTIONS

▲ WARNING DANGER ▲

BLADES ARE EXTREMELY SHARP. TO AVOID INJURY WHEN UNPACKING THE HEDGE TRIMMER, DO NOT GRASP THE BLADES.

Your **Mantis** hedge trimmer has been assembled for you at the factory. Before operating be sure all fasteners

▲ WARNING DANGER ▲

IF YOU HAVE ANY QUESTIONS, CONTACT YOUR LOCAL DEALER

are secure, and all guards and safety devices are in place and operating properly.

IV. OPERATION

▲ WARNING DANGER ▲

THE OPERATOR OF THIS HEDGE TRIMMER IS RESPONSIBLE FOR ACCIDENTS OR HAZARDS OCCURRING TO HIMSELF, OTHER PEOPLE OR THEIR PROPERTY.

A. INSTRUCTIONS FOR PROPER OPERATION

▲ WARNING DANGER ▲

BLADES COAST AFTER RELEASING THE SWITCHES

KEEP A FIRM GRIP WITH ONE HAND ON EACH HANDLE WHILE BLADES ARE MOVING AND/OR MOTOR IS RUNNING.

DO NOT STAND ON THE TOP OF A LADDER WHILE TRIMMING.

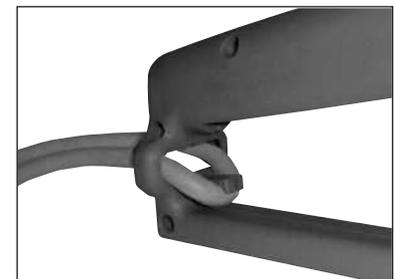
MAKE SURE YOUR LADDER OR OTHER SUPPORT IS STABLE AND ON FIRM GROUND.

**KEEP A SURE FOOTING.
DO NOT OVERREACH.**

IF YOUR TRIMMER BECOMES JAMMED, TURN OFF THE HEDGE TRIMMER. MAKE SURE BLADES HAVE STOPPED COMPLETELY, THEN REMOVE THE OBSTRUCTION.

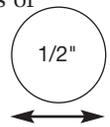
Securing the extension cord.

Bend the extension cord about 6" from the plug end. Push that bend through the oblong opening in the back of the handle. Then loop the bend under the cord retaining clips as shown. This will prevent the extension cord from detaching from the hedge trimmer plug.



Misuse of this Hedge Trimmer will void the warranty. ie: cutting hedges or shrubs over 1/2" in diameter or foreign objects such as wires, rocks, or fences. Before trimming check work area for foreign objects such as wires, cords, glass, fences, or rocks. Be sure to remove any foreign objects from the work area. Failure to properly maintain this hedge trimmer will void the warranty.

1. Read care and safety instructions carefully before attempting to use this trimmer. Only after you are familiar with your hedge trimmer and all of its controls and the functions should you start the trimmer.
2. Before plugging into an electric circuit, be sure that the voltage supply is as specified on hedge trimmer. *Models DEHT19 and DEHT24 are rated at 390 watts at 115 volts.*
3. Be sure the switches are in the "off" (not depressed) position before connecting unit to the applicable current. (120V AC or 220V/240V AC.) Do not carry a plugged-in trimmer with a finger on the switch.
4. The electricity for this hedge trimmer should be supplied through a Residual Current Device (RCD) with a tripping current of not more than 30 mA. These protective devices are also known as Residual Current Circuit Breakers (RCCBs) or Earth Leakage Circuit Breakers (ELCBs).
5. Keep extension cord behind trimmer. Never drape extension cord over hedge being trimmed. On 115V units, use 16 gauge wire extension cord up to 100 feet. Over 100 feet use 14 or heavier gauge wire or extension cord. The use of light gauge lamp cords or sizes lighter than those specified above will result in loss of power, possible motor failure, overheating of cord and the possibility of fire.
6. **Warning!** These trimmers have been designed so they can only be operated when using both hands. Do not attempt to override this important safety feature in any way.
7. Hold trimmer firmly. For Double Edge Models, you can place either hand on either handle. Squeeze both switches. Tilt trimmer so cutting tooth is angled slightly toward the hedge or shrub and proceed to cut. Use overlapping sweeping motions away from your body to achieve a safe and even cut. The unit is designed to cut any type of hedge or shrub; however, thickness of cut should not exceed 1/2 inch in diameter.



V. MAINTENANCE

Remove the plug from the socket before carrying out any adjustment, servicing, or maintenance.

A. LUBRICATION AND MAINTENANCE

1. A few drops of light (#10) oil should be placed on the back edge of each blade at each adjusting screw after approximately every four hours of normal operation.
2. To obtain trouble free trimming, it is necessary to keep the blades lubricated and clean. The gum that collects and builds up on the blades can be removed with 50-50 mixture of kerosene and #10 oil. Since a petroleum product can shorten the life of some plastics, it is necessary to remove excess oil-kerosene mixture from the plastic parts. Blades must be clean before they can be adjusted.
Caution! Kerosene and oil are flammable.
3. A few drops of light (#10) or 3-in-1 oil should be put in the hole indicated on the bottom cover plate. This is necessary only at the beginning of a day's operation.
4. Gear housing and motor bearings have been permanently lubricated with a special grease which should last for the life of the trimmer. When blades are replaced, or any other time that the bottom cover plate is removed, the grease must be checked for proper amount (approximately 3/4 full in the area of the gears), and a new gasket and new screws must be used to insure proper seating of cover plate. Use only Lubrico M3-3K9K grease in the gear housing. Lubrico M24M is to be used on the motor bearings.
5. Before each use, inspect to be sure handles, safety devices and fasteners are secure and in place, and cord is not frayed. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid a hazard.

B. SERVICE MAINTENANCE GUIDE

Area	Maintenance	Frequency
Gear Housing	Check Grease	Monthly
Blades	Inspect / Clean / Lubricate	After Each Use
Fasteners	Inspect / Tighten / Replace	Before Each Use
Labels	Inspect / Replace	Before Each Use
Handles	Inspect / Replace	Before Each Use
Guards / Safety Devices	Inspect / Replace	Before Each Use

IMPORTANT- Time intervals shown are maximum. Actual use and your experience will determine the frequency of required maintenance.

VI. SERVICE

A. TROUBLE SHOOTING

Problem	Cause	Remedy
1. Blades don't cut cleanly.	Blades are dull or not adjusted properly.	Have blades sharpened and adjusted.
2. Blades don't move when turned on.	Blades are adjusted too tight.	Re-adjust blades following service instructions.
3. Excessive electrical arcing from vents in top of trimmer.	Worn brushes.	Replace brushes - follow service instructions.

B. BLADE ADJUSTMENT

The care and adjustment of the blades is very important to the efficient operation of the trimmer and especially to the long life of the motor.

Make sure the trimmer is **NOT** plugged in!

1. Turn trimmer upside down. Place trimmer in vice, clamping on the sides of frame bar. ***Be careful! Blades are sharp!***
2. Using a 7/16" wrench, loosen all blade locknuts and unscrew the large head screws by two turns.
3. Starting with the screw nearest the gear housing, tighten the screw until the protective comb of the

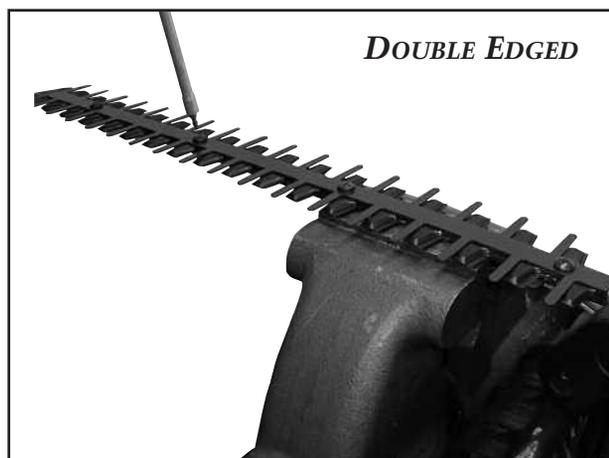
Double Edged trimmer can just be moved with finger pressure. (A .0015" (1 1/2 thou.) feeler gauge just slips under the blade guard or comb when properly adjusted.) Tighten the locknuts while holding the screw stationary in its correct adjusted position. Re-check to make sure the blade guard or comb can still be moved.

4. Repeat Step 3 on each screw in turn until all are correctly adjusted.

NOTE: CORRECT BLADE ADJUSTMENT CAN ONLY BE ACHIEVED ON CLEAN, OILED BLADES.

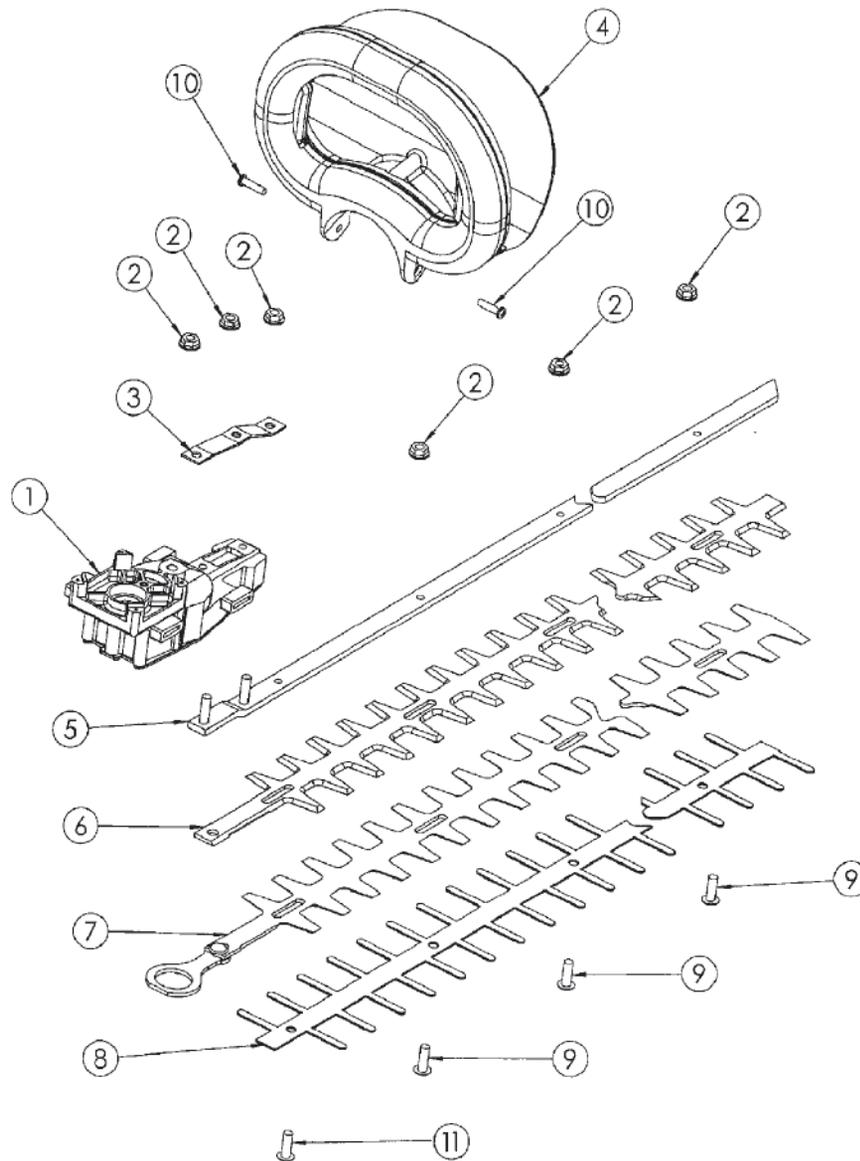
▲ WARNING DANGER ▲

KEEP HANDS AWAY FROM THE BLADES WHILE SERVICING THE HEDGE TRIMMER. BE SURE TRIMMER IS SECURED, UNPLUGGED, AND BLADES ARE GUARDED WHILE MAKING ADJUSTMENTS



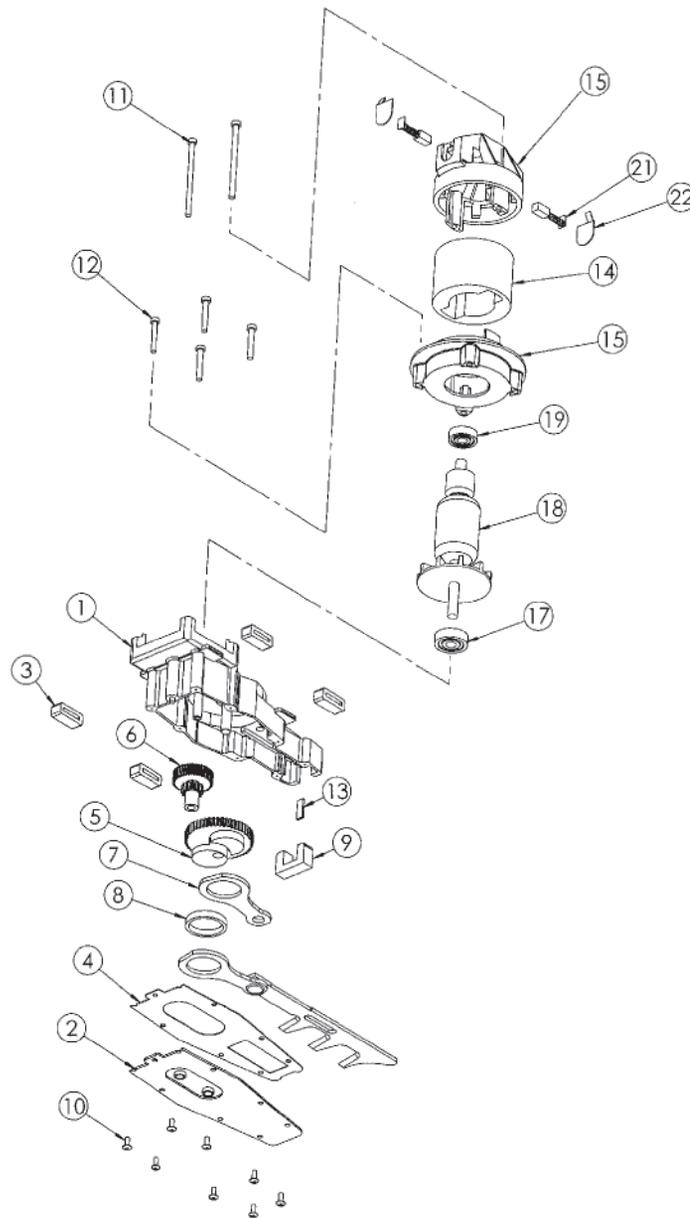
VII. PARTS EXPLOSION

Double Edge Assembly



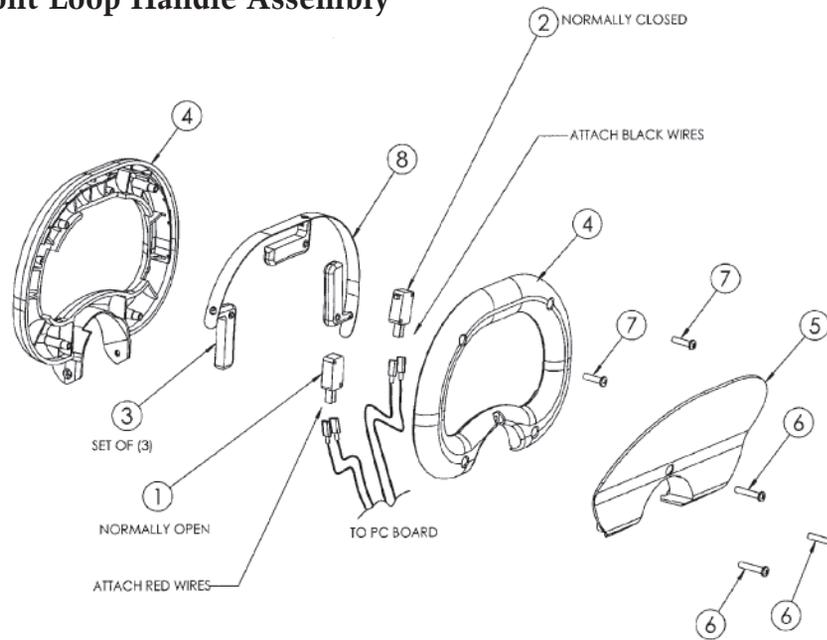
KEY #	PART #	DESCRIPTION	QTY.
1	310100	Gear Housing Assembly (including pressed in pins)	1
2	16-54B	Nut Lock 1/4-28 whiz Flange (for model DEHT24) 24" DE	6
2	16-54B	Nut Lock 1/4-28 whiz Flange (for model DEHT19) 19" DE	5
3	300300	Frame Bar Support	1
4	NA	Loop Handle Assembly (See individual part numbers)	1
5	310320	Frame Bar assembly (for model DEHT24) 24" DE	1
5	310315	Frame Bar assembly (for model DEHT19) 19" DE	1
6	24-2D	Inside Blade (for models DEHT24) 24" DE	1
6	19-2D	Inside Blade (for model DEHT19) 19" DE	1
7	24-1D	Outside Blade (for model DEHT24) 24" DE	1
7	19-1D	Outside Blade (for model DEHT19) 19" DE	1
8	24-42	24" Comb (for model DEHT24) 24" DE	1
8	19-42	19" Comb (for model DEHT19) 19" DE	1
9	16-54A	Large Head Phillips Screw (for model DEHT24) 24" DE	3
9	16-54A	Large Head Phillips Screw (for model DEHT19) 19" DE	2
10	310500	Screw, Plas-Tite #8 x 3/4"	2
11	310505	Screw, 1/4-28 x 1" Large Head	1

Gear/Motor Assembly



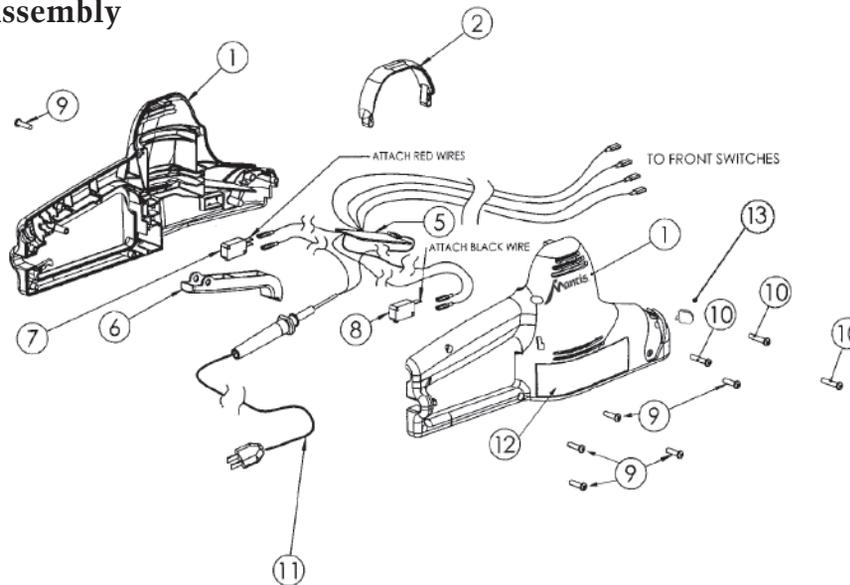
KEY #	PART #	DESCRIPTION	QTY.
1	310100	Gear Housing Assembly	1
2	16-57A	Gear Housing Cover Plate	1
3	310407	Grommet Rubber	4
4	D16-71	Gasket Cover Plate	1
5	16-62	Eccentric Gear	1
6	D16-59	Cluster Gear	1
7	16-64	Connecting Rod	1
8	16-65	Spacer Connecting Rod	1
9	16-67	Felt	1
10	16-81-1	Screw 6-32 x 5/16	8
11	310503	Motor Bolt 8-32 x 2 1/2	2
12	3042	Machine Screw	4
13	D16-56F	Wear Plate	1
14	310903	Stator 120V (For Models DEHT24 and DEHT19)	1
15	310108	Motor Housing Base and Cap Set with Brush Holder	1
17	16-69D	Bearing Lower	1
18	310901	Armature 120V (For Models DEHT24 and DEHT19)	1
19	16-69E	Bearing Upper	1
20	3025	Brush Holder (not shown)	2
21	310105	Brush	2
22	3026	Brush Retaining Plate	2

Double Edge Front Loop Handle Assembly



KEY #	PART #	DESCRIPTION	QTY.
1	3033	Switch Normally Open	1
2	310405	Switch Normally Closed	1
3	310219	Loop Handle Trigger Set	1
4	310203	Loop Handle Set	1
5	310207	Shield	1
6	310504	Screw Plasti-Tite #8 x 1"	3
7	310500	Screw Plasti-Tite #8 x 3/4"	2
8	310218	Loop Handle Trigger Strap	1

Main Housing Assembly



KEY #	PART #	DESCRIPTION	QTY.
1	310450	Main Housing Set Mantis	1
2	310403	Housing Brush Cap Cover Plate	1
5	310437	PC Board Assembly (for Models DEHT19, DEHT24)	1
6	310209	Trigger Rear Housing	1
7	3033	Switch Normally Open	1
8	310405	Switch Normally Closed	1
9	310500	Screw, Plasti-tite #8 x 3/4"	6
10	310504	Screw, Plasti-tite #8 x 1"	3
11	310410	120V Cord Assembly	1
12	310600	Warning Label	1
13	310217	Grommet, Conduit	1

VIII. SPECIFICATIONS

Model	Cutting Length cm (in.)	Weight kg (lb)
DEHT19	48 (19)	3.89 (8.6)
DEHT24	61 (24)	4.04 (8.9)

All listed hedge trimmers are rated for 230 volts AC at 50 hertz.

The A-weighted emission sound pressure level at the operator position has been measured at: $L_{PA} = 80$ dB(A). These measurements were made in accordance with EN ISO 11201:1996 under no-load conditions.

The Hand-Arm weighted r.m.s. vibration measured at the handles in accordance with EN 50144-1 part 13.3 at rated conditions, no load was: 1.0 m/s².

MANTIS HEDGE TRIMMER LIMITED WARRANTY

MANTIS extends this limited warranty against defects in material and workmanship for a period of two (2) years for normal residential purposes and one (1) year for commercial use from the date of purchase, to the first retail purchaser and each subsequent owner, during the warranty period. This warranty covers all portions of the MANTIS HEDGE TRIMMER.

MANTIS will repair or replace, at its option, any part or parts of the product proven to be defective in material or workmanship under normal usage during the warranty period. Warranty repairs and replacements will be made without charge for parts or labor. All parts replaced under warranty will be considered as part of the original product, and any warranty on the replaced parts will expire coincident with the original product warranty. If you think your MANTIS HEDGE TRIMMER is defective in material or workmanship, you must send it, along with your proof of purchase (sales receipt) to:

Mantis
1028 Street Road
Southampton, PA 18966

You are responsible for pickup and delivery charges; the product must be returned to us postage paid.

MANTIS assumes no responsibility in the event that the product was not assembled or used in compliance with any assembly, care, safety, or operating instructions contained in the Owner's Manual or accompanying the product; was not used with reasonable care or requires replacement or repair due to accidents or lack of proper maintenance; or was misused,

altered, used for other than normal or intended purposes. This warranty does not cover damage due to normal wear and tear.

You must maintain your MANTIS HEDGE TRIMMER by following the maintenance procedures described in the owner's manual. Such routine maintenance, whether performed by you or a dealer, is at your expense.

MANTIS MAKES NO EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS EXCEPT THOSE CONTAINED HEREIN. THE DURATION OF ANY IMPLIED WARRANTY, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY. MANTIS DISCLAIMS ALL LIABILITY FOR INDIRECT, INCIDENTAL AND/OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE MANTIS PRODUCTS COVERED BY THIS 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 THAT 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 STATES TO STATE.

MANTIS
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Specifications, descriptions, and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice.

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