ELECTRIC TRIMMER/WEEDER SERVICE MANUAL

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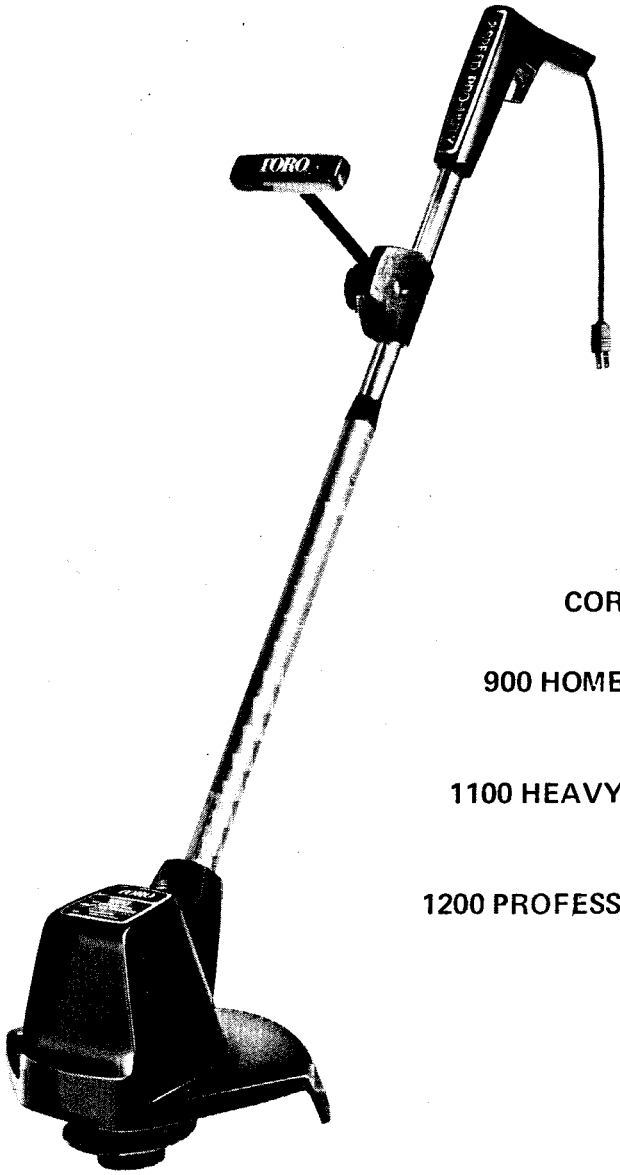
TORO®

OUTDOOR
APPLIANCE
DIVISION

Electric Trimmer/Weeder

SERVICE MANUAL



CORDLESS TRIMMER/WEEDER
Model Number 51550

900 HOME DUTY TRIMMER/WEEDER
Model Numbers 51200
and 51225

1100 HEAVY DUTY TRIMMER/WEEDER
Model Numbers 51300
and 51325

1200 PROFESSIONAL TRIMMER/WEEDER
Model Numbers 51400
and 51425

MARCH 1979

FOREWORD

This service repair manual is written for use by Authorized Toro Appliance Service Dealers. Complete Trouble Shooting Guides, Wiring Diagrams and Service Instructions are included.

The manual is divided into five sections. The first section concerns itself with the automatic line feeding devices used in the four different trimmers. The second section deals with the 900 and 1100 Trimmers, the third with the 1200 and the fourth with the Cordless. The fifth section contains an illustrated Parts Catalog for each model.

The Trouble Shooting Guides at the beginning of the first four sections follow a systematic pattern which will enable you to find a problem quickly. Each section of the Trouble Shooting Guide is numbered in the lower right hand corner. After finding the problem, you need only refer to this same number in the service section for complete repair instructions.

TABLE OF CONTENTS

TOOL REQUIREMENTS

No. 2 Phillips Screwdriver
Small Standard Screwdriver
Medium Standard Screwdriver
Large Standard Screwdriver
Long Nose Pliers
Diagonal Cutting Pliers
Electrical Terminal Crimping Pliers
Scribe or Awl

No. 54 Drill Bit (or object similar in size and hardness)
VOM Multimeter
Continuity Tester (or use mulitimeter)
1/8" Pin Punch
Small Hammer
Vise (or similar support system)
Extension Cord
110 Volt A.C. Power Source

TORO

AUTOMATIC LINE FEED ASSEMBLY

900 Home Duty Trimmer/Weeder

Model Numbers 51200 and 51225

1100 Heavy Duty Trimmer/Weeder

Model Numbers 51300 and 51325

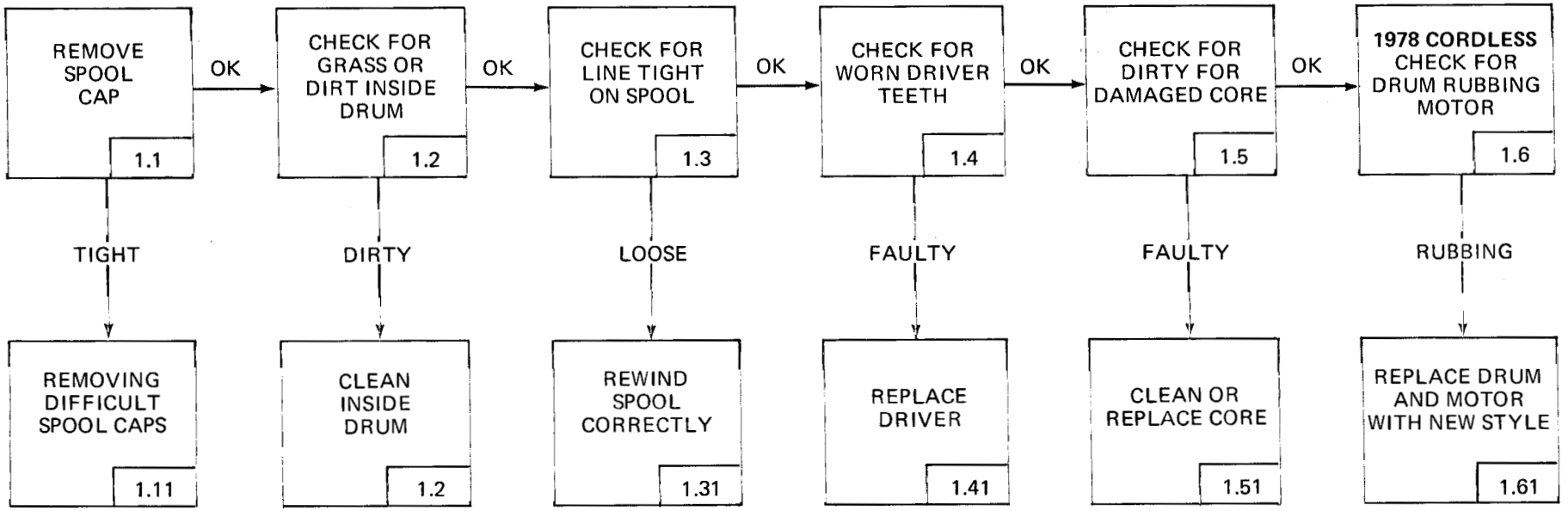
1200 Professional Trimmer/Weeder

Model Numbers 51400 and 51425

Cordless Trimmer/Weeder

Model Number 51550

AUTOMATIC LINE FEED ASSEMBLY DOES NOT FEED LINE PROPERLY



AUTOMATIC LINE FEED ASSEMBLY SERVICE INSTRUCTIONS

CAUTION: THIS TOOL IS DOUBLE INSULATED. TO MAINTAIN ITS ENGINEERED SAFETY STANDARDS USE **ONLY** GENUINE TORO REPLACEMENT PARTS.

CAUTION: ALWAYS DISCONNECT THESE APPLIANCES FROM ALL POWER SOURCES BEFORE ATTEMPTING ANY REPAIRS.

1.1 REMOVE SPOOL CAP (fig. 1.1)

Insert widest possible blade screwdriver snugly into one of the two window slots on the spool hub and twist the screwdriver 1/4 turn.

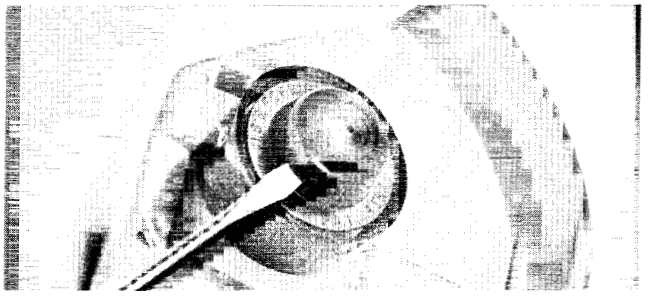


Figure 1.1

1.11 REMOVING DIFFICULT SPOOL CAPS CORDLESS TRIMMERS (fig. 1.11a)

If the spool is difficult to remove, pry or break the spool cap out with a screwdriver.

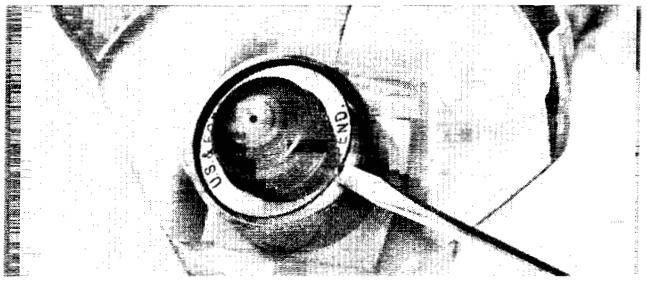


Figure 1.11a

900, 1100, AND 1200 TRIMMERS (fig. 1.11b)

Hold the drum steady and unscrew the spool in counter-clockwise direction. With the spool and core removed, pry the spool off the core.

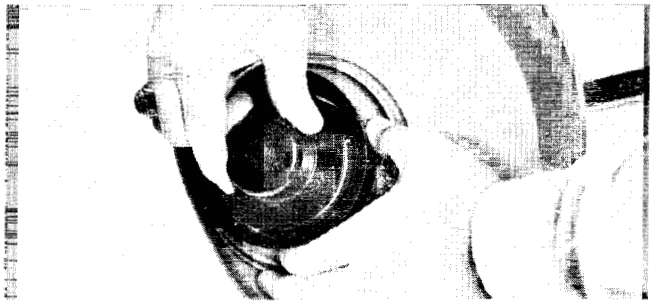


Figure 1.11b

1.2 CHECK FOR GRASS OR DIRT INSIDE DRUM. CLEAN INSIDE DRUM.

With the spool cap removed, thoroughly clean out the drum area and visually inspect for any damage.

1.3 CHECK FOR LINE TIGHT ON SPOOL

The line must be wrapped firmly but free to unwind easily during use. There should be no loose line protruding from the wrapped line.

1.31 REWIND SPOOL CORRECTLY (fig. 1.31)

Hook one end of the line into a groove on the spool, allowing no more than 1/8 inch of line to protrude. Wind line in direction of arrows on spool. Wind in level rows between spool flanges.

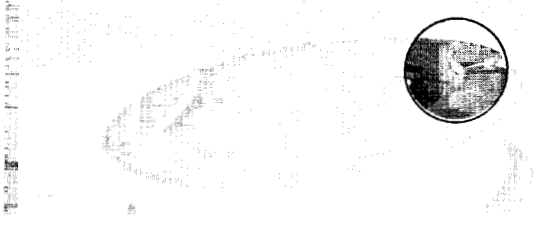


Figure 1.31

1.4 CHECK FOR WORN DRIVER TEETH (fig. 1.4)

Remove the spool cap to check the driver. Inspect the driver teeth to insure that they are not severely rounded off or completely missing.

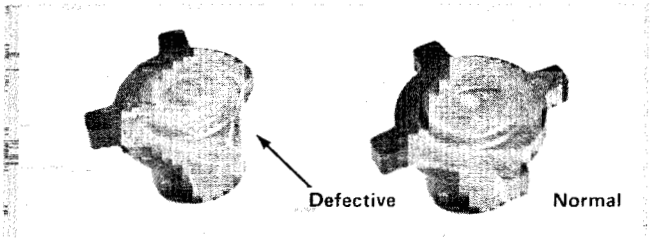


Figure 1.4

AUTOMATIC LINE FEED ASSEMBLY SERVICE INSTRUCTIONS

1.41 REPLACE DRIVER ALL UNITS EXCEPT 1978 CORDLESS (fig. 1.41 a)

Remove the spool. Unscrew the core, with driver, from the motor shaft. Gently release the pressure the spring is applying against the spool core. To install the new driver, reverse procedures.

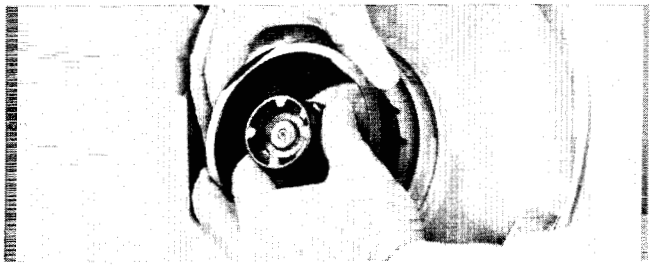


Figure 1.41a

CORDLESS 8000001 & UP (fig. 1.41 b)

On the Cordless Trimmer (Serial No. 8000001-9115104) a **white** driver was pressed on at the factory. Pry off the driver to remove it. **Note:** If the driver is **beige** colored Cordless Trimmer (Serial No. 9115105 & up), it is threaded onto the motor shaft. Replace the **white** driver by firmly pushing it on the motor shaft, while ragidly supporting the opposite end of the motor shaft. Note that the motor shaft and **white** driver both have a flat side.

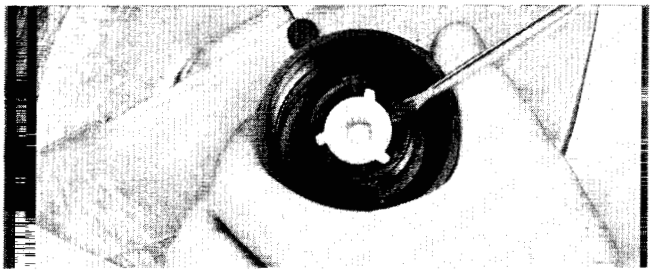


Figure 1.41b

1.5 CHECK FOR DIRTY OR DAMAGED CORE (fig. 1.5)

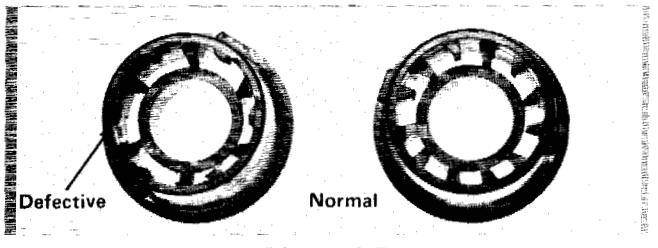


Figure 1.5

Inspect the spool core after removing the spool cap. Look for broken or worn teeth that would allow the driver to skip. A build-up of dirt inside the core would stop the driver from indexing.

1.51 CLEAN OR REPLACE CORE

Remove and replace core as driver replacement in section 1.41.

1.6 1978 CORDLESS TRIMMER – CHECK FOR DRUM RUBBING MOTOR (fig. 1.6)

The head assembly was "press-fit" on the motor shaft up to the heat sink. It could possibly be hitting against the base of the motor.

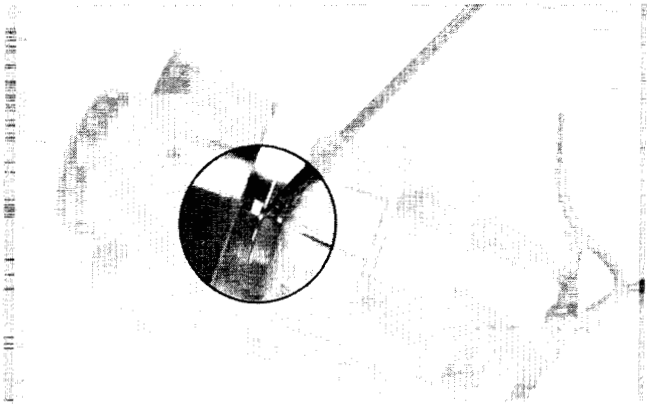


Figure 1.6

1.61 REPLACE DRUM AND MOTOR WITH NEW STYLE (fig. 1.61)

Replace the #88140 Motor Assembly with a #88150 Motor Assembly and #88151 Automatic Line Feed Assembly. To replace these components, please refer to section 2.6 and 2.7.

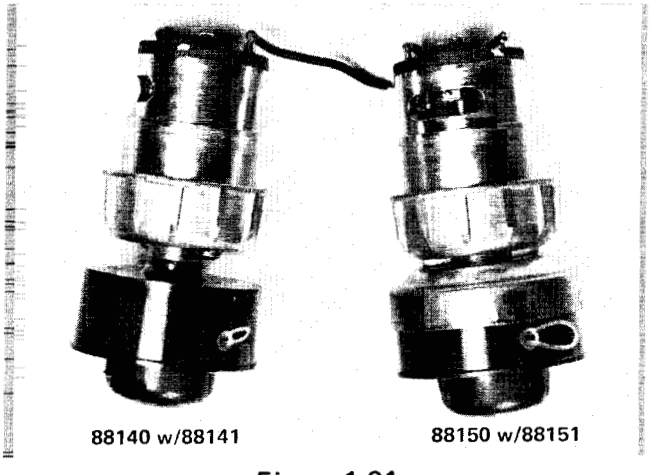


Figure 1.61

TORO®

900 Home Duty Trimmer/ Weeder

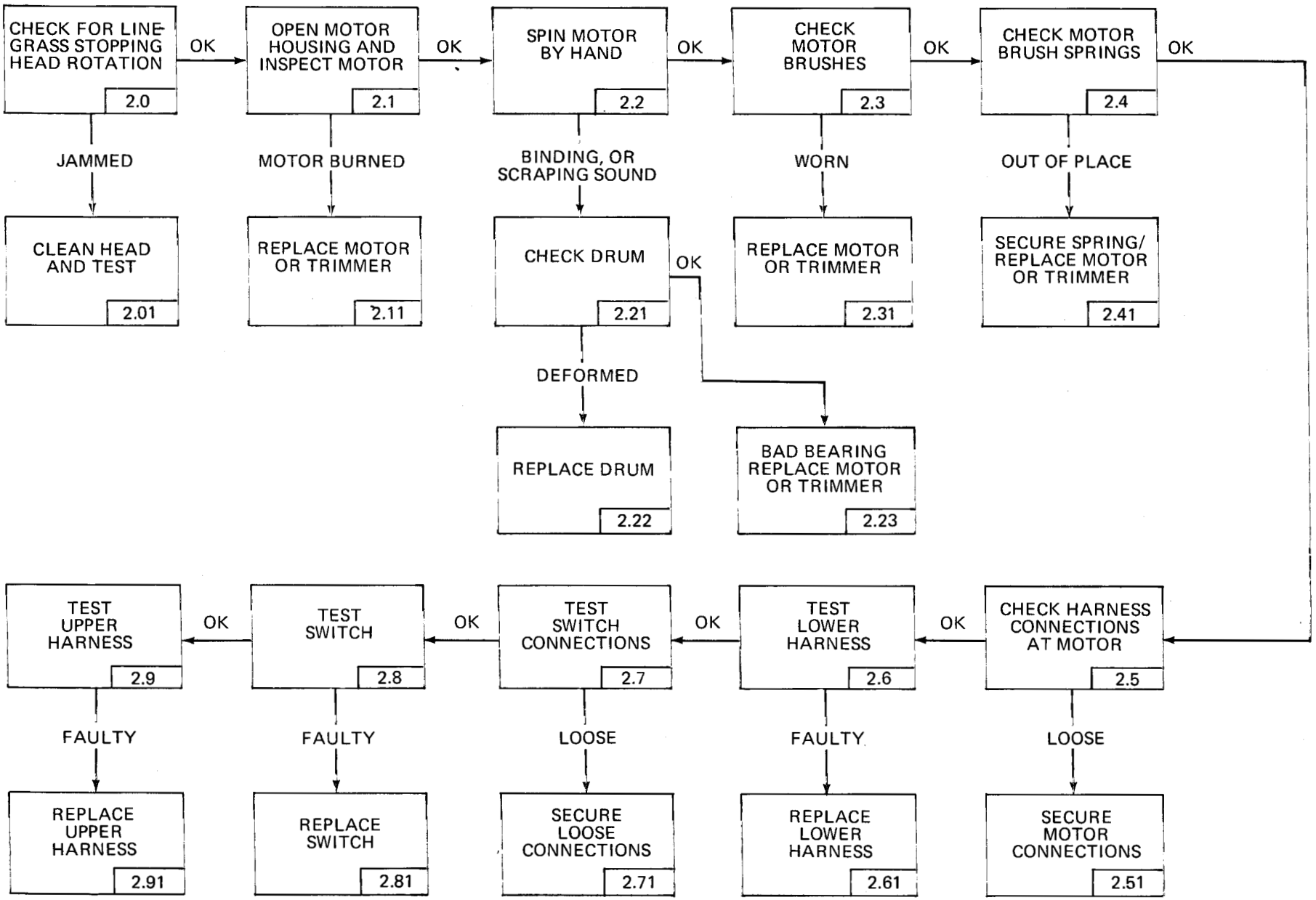
Model Numbers 51200 and 51225

and

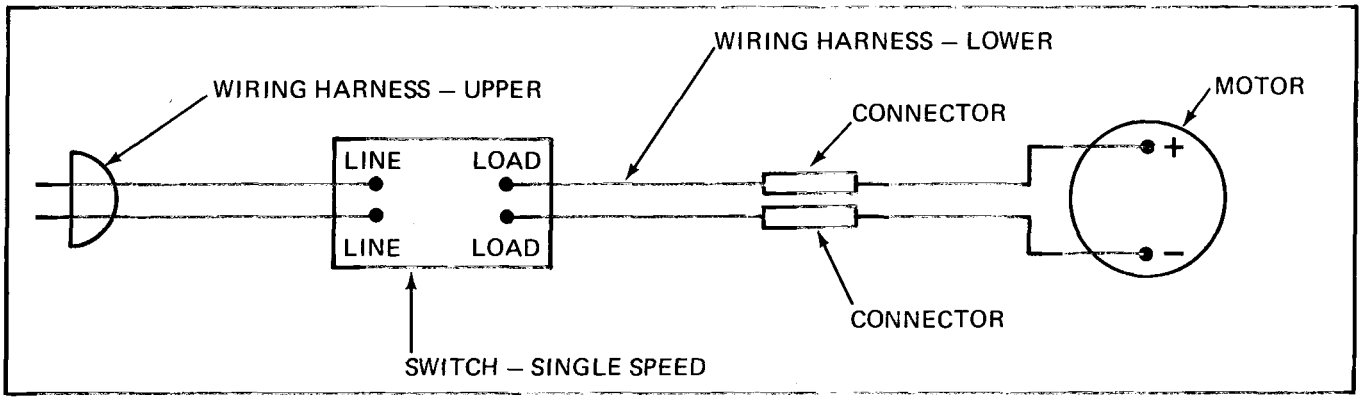
1100 Heavy Duty Trimmer/ Weeder

Model Numbers 51300 and 51325

900 or 1100 TRIMMER DOES NOT OPERATE OR IS LOW ON POWER



WIRING DIAGRAM



SERVICE INSTRUCTIONS

CAUTION: THIS TOOL IS DOUBLE INSULATED. TO MAINTAIN ITS ENGINEERED SAFETY STANDARDS USE **ONLY** GENUINE TORO REPLACEMENT PARTS.

CAUTION: ALWAYS DISCONNECT THESE APPLIANCES FROM ALL POWER SOURCES BEFORE ATTEMPTING ANY REPAIRS.

2.0 CHECK FOR LINE/GRASS STOPPING HEAD ROTATION (fig. 2.0)

Depending on the environmental conditions and the customer's operating procedures during trimmer use, the head assembly could jam with debris, thus stopping the head from turning or slowing it down.

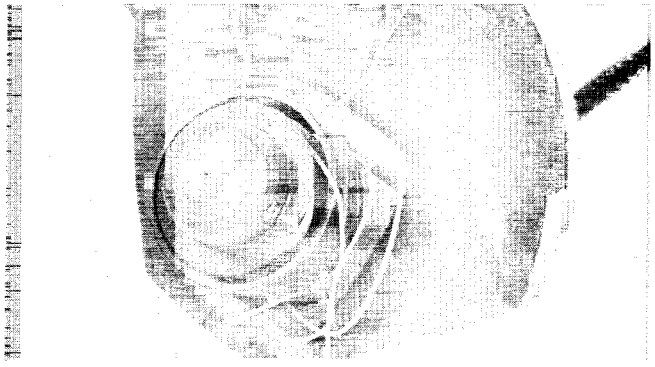


Figure 2.0

2.01 CLEAN HEAD AND TEST (fig. 2.01)

Remove any debris from about the head assembly. While cleaning the head assembly, be sure to check the area between the drum and the motor for build-up. Refer to section 1 for further details on the automatic line feed assembly.

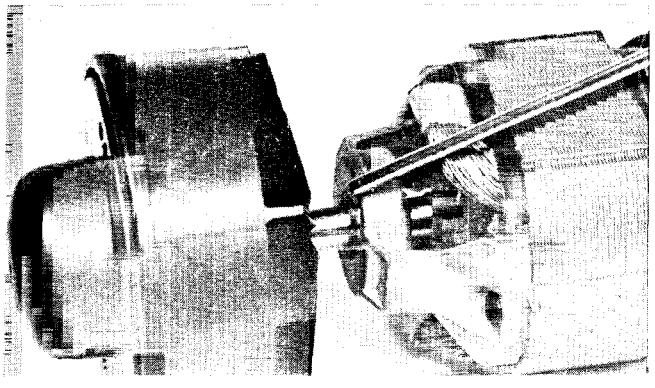


Figure 2.01

2.1 OPEN MOTOR HOUSING AND INSPECT MOTOR (fig. 2.1)

Remove the decal on the motor housing. Remove all the screws that hold the housings together. Gently separate the two halves and inspect the motor for charred or broken wires, etc.

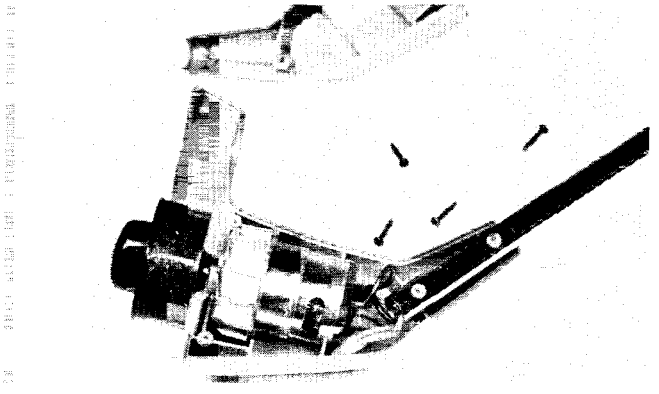


Figure 2.1

SERVICE INSTRUCTIONS

2.11 REPLACE MOTOR (figs. 2.11a, 2.11b)

When replacing the motor it is necessary to remove the automatic line feed assembly. Refer to section 1 for head disassembly. To remove the wire connectors, use wire cutters and nip the connector in the center of the factory crimp; pull the wires out. Remove the roll pin by rigidly supporting the armature shaft (to prevent bending) and driving the roll pin out.

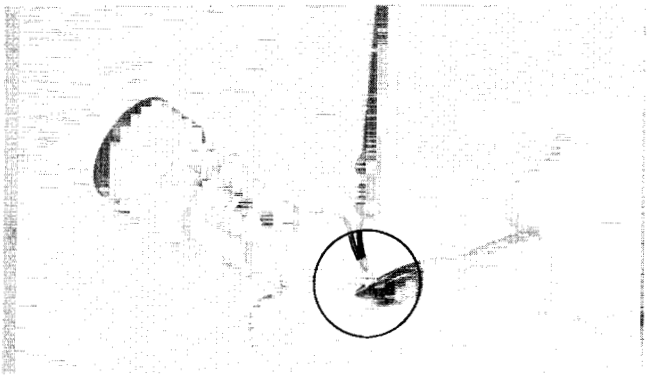


Figure 2.11a

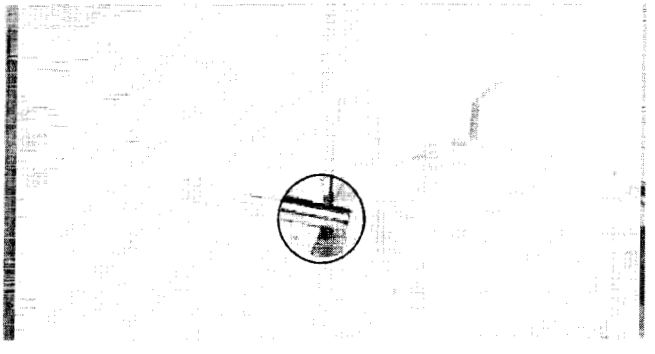


Figure 2.11b

2.2 SPIN MOTOR BY HAND

Spin the motor with your hand and notice the feel of the armature; it should turn freely. Visually check for excessive commutator wear, armature end-play and bearing to shaft fit. A binding or scraping sound when the motor is turned could be evidence of a bad bearing or a deformed drum.

2.21 CHECK DRUM (fig. 2.21)

A deformed drum means that plastic deformation has occurred to the drum at the motor shaft. The drum may have slipped up the motor shaft. A tell-tale sign would be the spool not located inside the drum correctly. A deformed drum **must** be replaced.

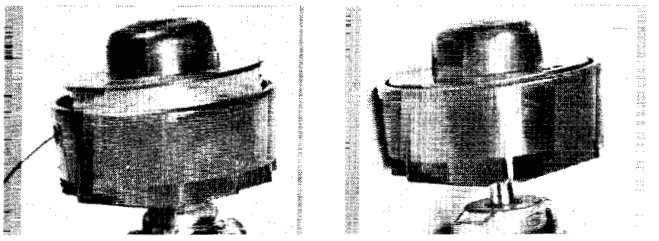


Figure 2.21

2.22 REPLACE DRUM (fig. 2.22) SERIAL NOS. 800001 - 899999.

A retaining ring is used to secure the drum. After removing the spool, driver, core and spring as described in section 1, pry out the ring and slide the spool off the shaft. Install with 1979 parts.

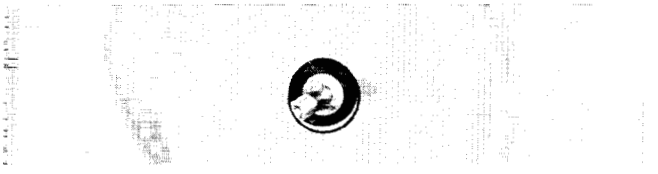


Figure 2.22

SERIAL NOS. 900101 and UP.

After removing the spool, driver, core and spring, the drum will slide off the motor shaft. Install the new drum and reassemble.

2.23 BAD BEARING – REPLACE MOTOR OR TRIMMER (fig. 2.23)

To pin-point a defective motor bearing, inspect for a burned or charred shaft at the bearing. Carefully watch the bearing. It should not spin in its casing. Lubricate the bearing while turning the motor; a drop or two of 30 wt. oil may be all that is needed to free-up the motor. If the bearing is at fault, replace the motor as per section 2.11 or, replace the trimmer if in warranty.

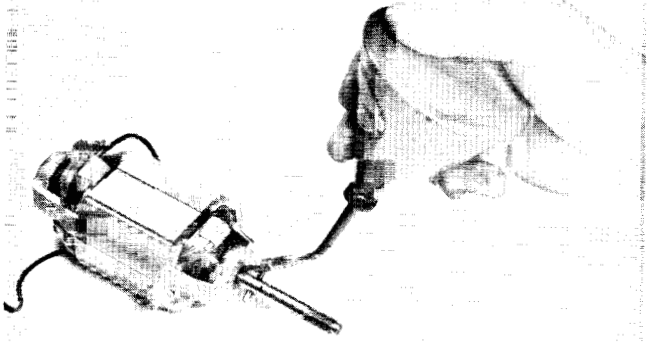


Figure 2.23

2.3 CHECK MOTOR BRUSHES (fig. 2.3)

Using a scribe or other sharp object, carefully push the brush into its holder away from the commutator. When released the brush should spring back into position against the commutator. Excessively worn motor brushes will not make proper contact with the commutator. Motor brushes are not replaceable.

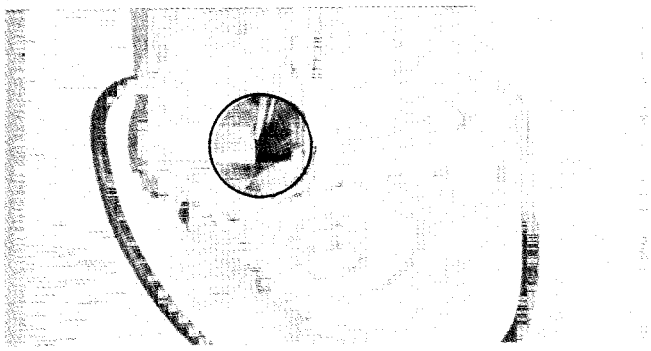


Figure 2.3

2.31 REPLACE MOTOR OR TRIMMER

Refer to section 2.11 for motor replacement, or replace the trimmer if in warranty.

2.4 CHECK MOTOR BRUSH SPRINGS (fig. 2.4)

During shipment the motor brush spring may have been jarred out of position, causing no brush to armature contact and disabling the motor.

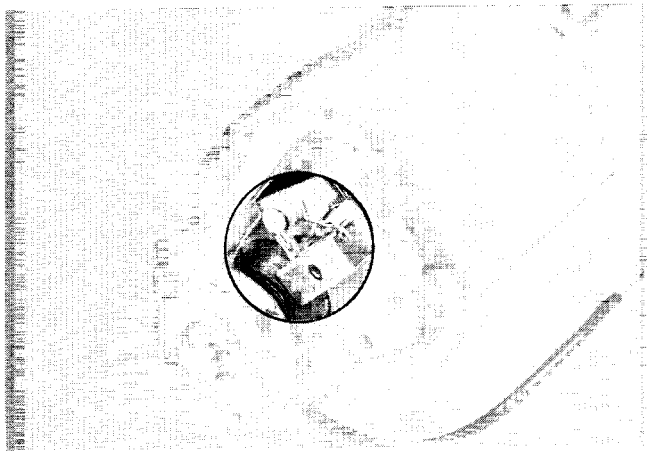


Figure 2.4

2.41 SECURE SPRING/REPLACE MOTOR OR TRIMMER (fig. 2.41)

Lifting the brush spring back into position, restore brush to armature contact. In some cases the spring may be missing; replace motor, or trimmer if in warranty.

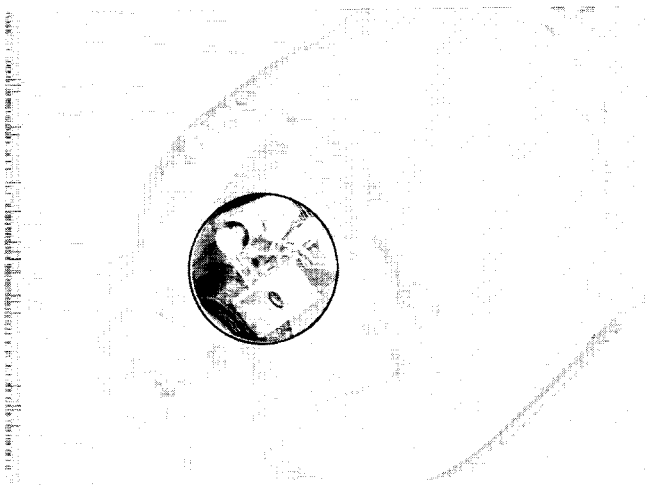


Figure 2.41

2.5 CHECK HARNESS CONNECTIONS AT MOTOR

Visual inspection alone will not suffice. Try moving the wires at the motor connections; the wires may slip out of the connectors.

2.51 SECURE CONNECTION AT MOTOR (fig. 2.51)

Secure the loose connections at the motor to harness junctions by recrimping the existing connectors or installing new connectors.

⚠ Note: Use electrical crimping pliers **only.** Do not use side cutters or wire cutters.

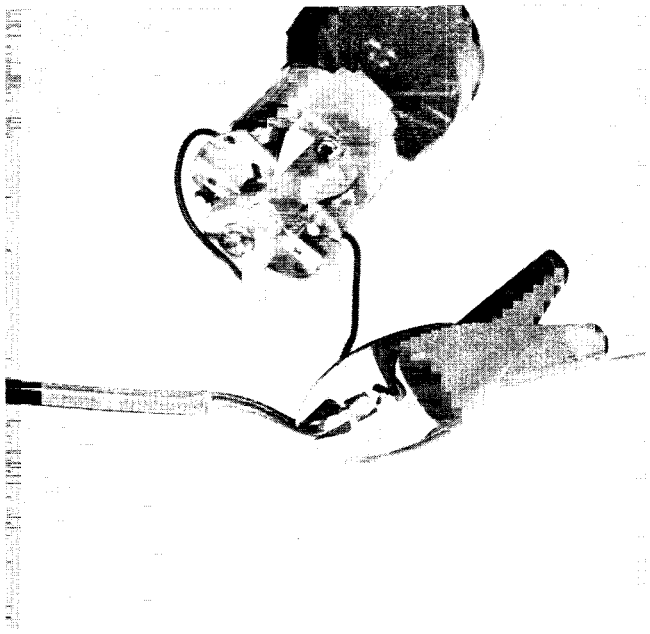


Figure 2.51

2.6 CHECK LOWER HARNESS (fig. 2.6)

Remove all the phillips head screws and separate the handle grip sections. Using a continuity tester, insert one of its probes into the switch alongside either of the lower harness leads. Insert the other tester probe into the proper connector at the motor (note lead wire color). Check both leads for complete circuits.

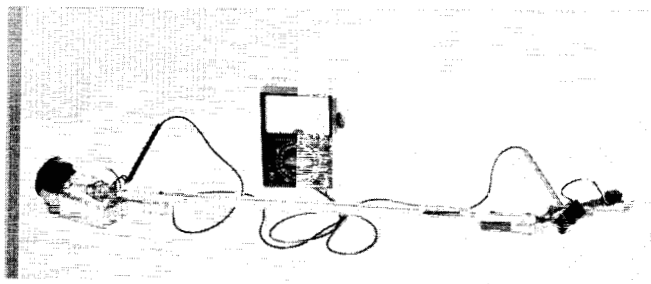


Figure 2.6

2.61 REPLACE LOWER HARNESS (figs. 2.61a, 2.61b)

Disconnect the ends of the harness from both the motor and the switch terminals.* Pull the harness out of the tube(s). Replace with new harness. Care should be taken so that wires are not pinched when replacing the motor housings and handle grips.

* To remove each wire from the switch, proceed as follows:

a. Insert a #54 drill bit (or similar object) into the switch alongside the wire.

b. Carefully pull wire out of switch.

c. Remove drill bit.

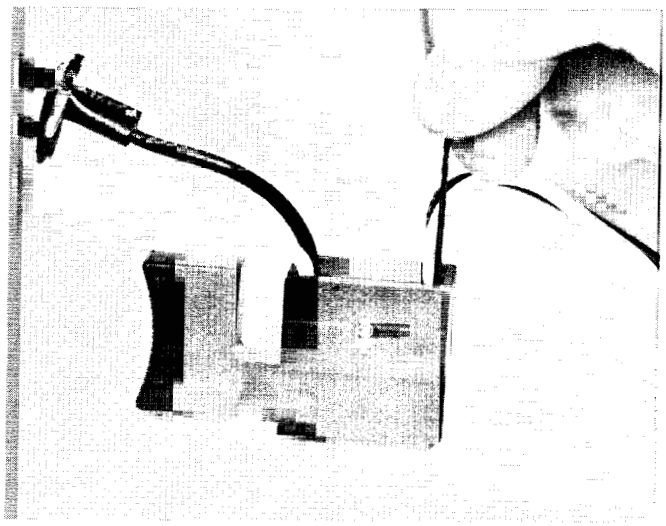


Figure 2.6a

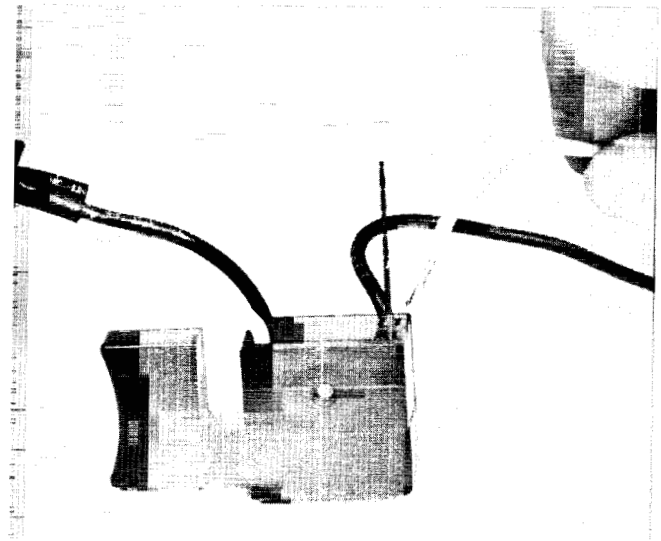


Figure 2.6b

2.7 TEST SWITCH CONNECTIONS (fig. 2.7)

Try pulling gently on the wires leading into the switch to be certain that both harnesses have **firm** connections.

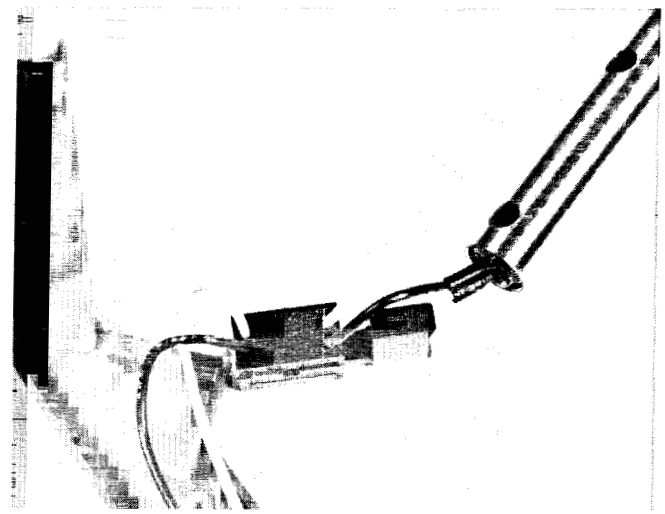


Figure 2.7

2.71 SECURE LOOSE CONNECTIONS

If any of the wires leading to the switch are loose, reinsert them firmly into the switch. If they do not stay inserted, replace the switch (refer to section 2.81).

2.8 TEST SWITCH (figs. 2.8a, 2.8b)

Connect the tester leads as shown. There should be continuity **only** when the switch is depressed. Replace any switch that shows no current flow on either or both sides.

WARNING: FORCING PROBES INTO THE SWITCH MAY CAUSE INTERNAL DAMAGE. DO NOT INSERT OBJECTS LARGER THAN 1/32 INCH DIAMETER INTO SWITCH.

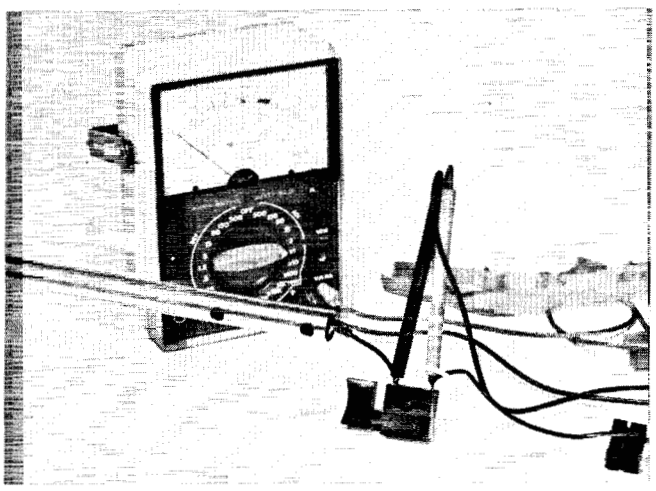


Figure 2.8a

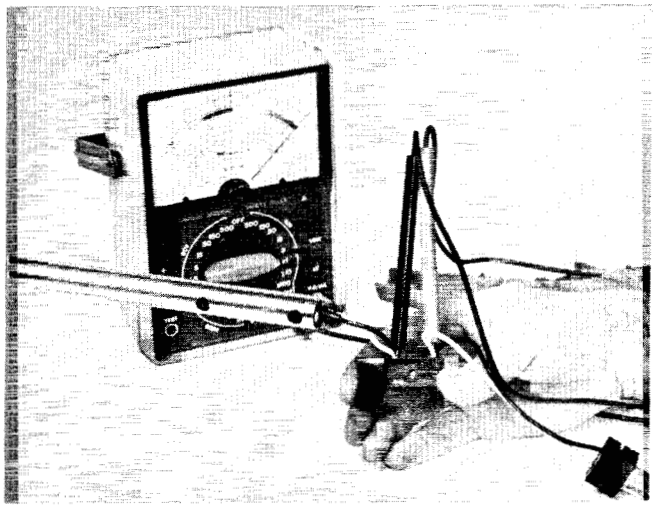


Figure 2.8b

2.81 REPLACE SWITCH (fig. 2.81)

Install the new switch after replacing the wires in their proper terminals (refer to the trimmer wiring schematic). Correctly position the switch in the handle grip. Care should be taken as not to pinch any wires when securing the handle grips.

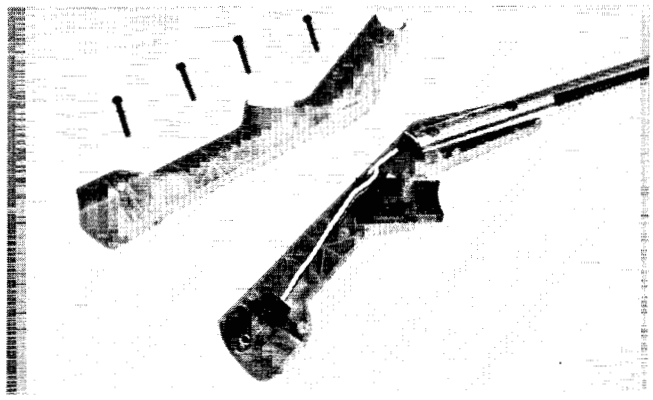


Figure 2.81

2.9 TEST UPPER HARNESS (fig. 2.9)

Insert one probe of a continuity tester into the switch alongside either harness lead. Connect the other terminal of the tester to the proper spade of the harness. Test both leads for complete circuits.

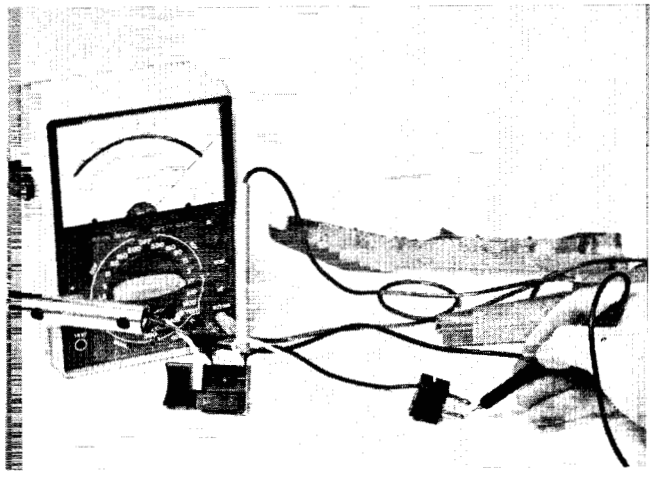


Figure 2.91

2.91 REPLACE UPPER HARNESS

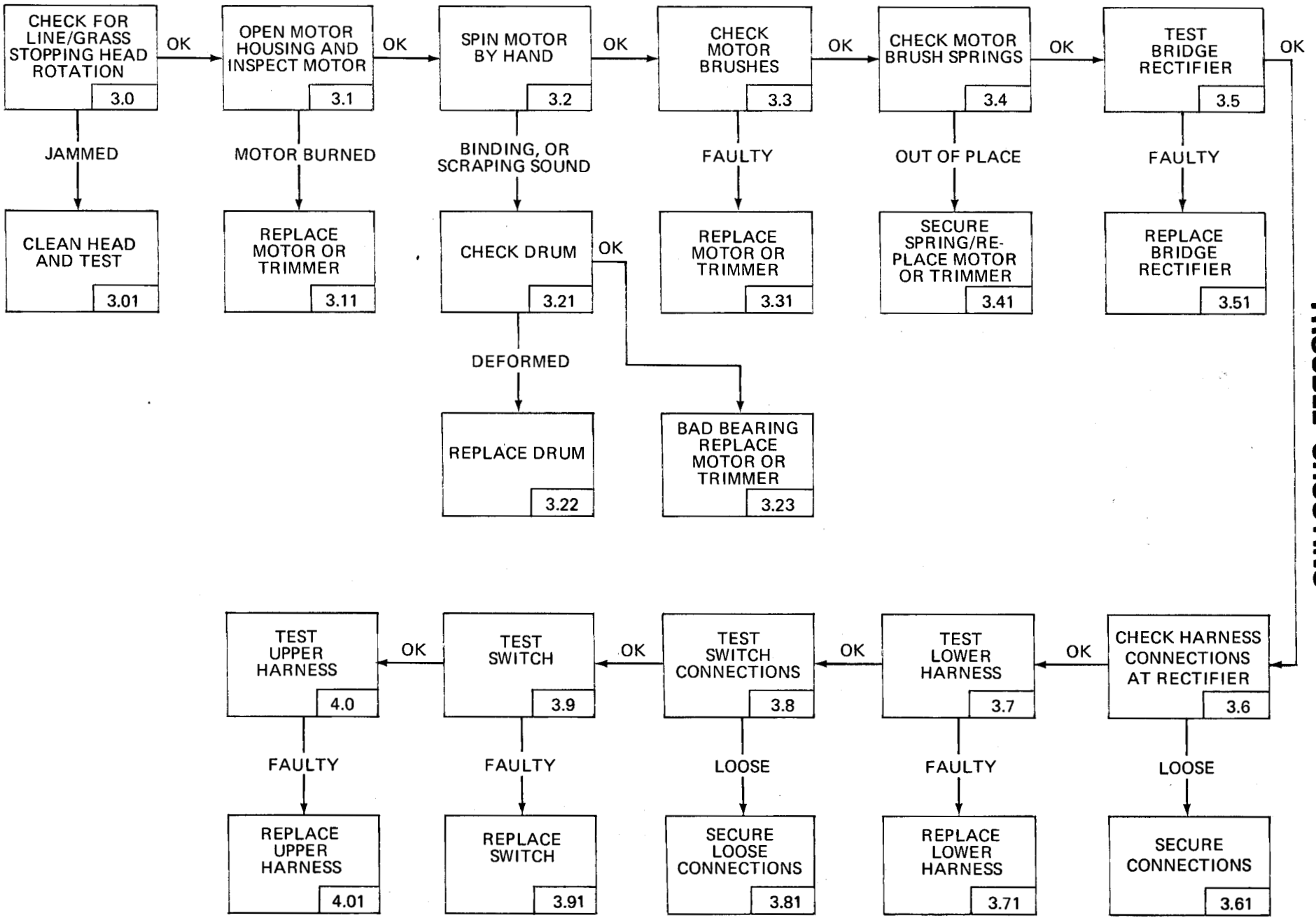
After removing the wires from the switch (see * in section 2.61), install the new upper wiring harness by replacing the wires in the proper terminals of the switch. Position the harness in the handle grips. Caution should be taken so that the wires are not pinched when securing the handle grips.

TORO

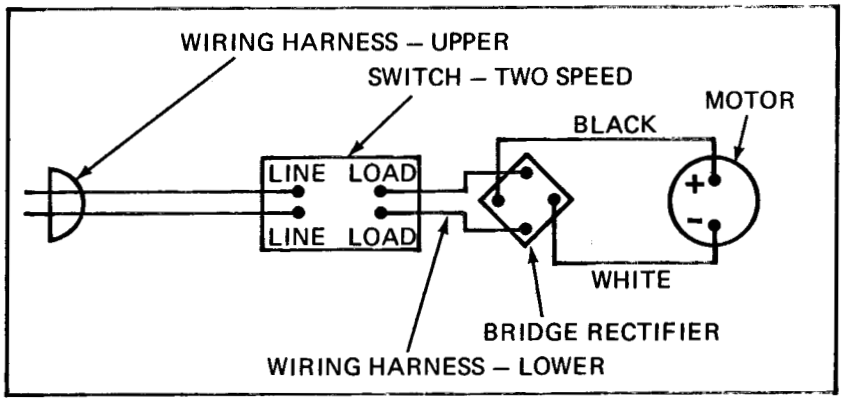
1200 Professional Trimmer/ Weeder

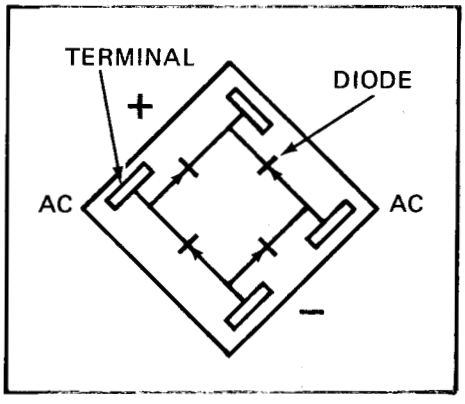
Model Numbers 51400 and 51425

1200 TRIMMER DOES NOT OPERATE OR IS LOW ON POWER



WIRING DIAGRAM





SERVICE INSTRUCTIONS

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CAUTION: ALWAYS DISCONNECT THESE APPLIANCES FROM ALL POWER SOURCES BEFORE ATTEMPTING ANY REPAIRS.

3.0 CHECK FOR LINE/GRASS STOPPING HEAD ROTATION (fig. 3.0)

Depending on the environmental conditions and the customer's operating procedures during trimmer use, the head assembly could jam with debris, thus stopping the head from turning or slowing it down.

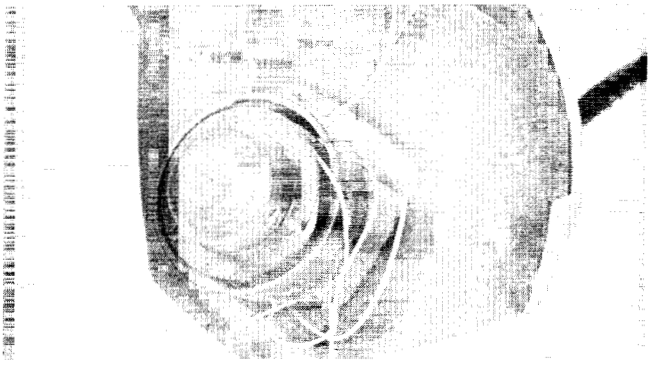


Figure 3.0

3.01 CLEAN HEAD AND TEST (fig. 3.01)

Remove any debris from about the head assembly. While cleaning the head assembly, be sure to check the area between the drum and the motor for build-up. Refer to section 1 for further details on the automatic line feed assembly.

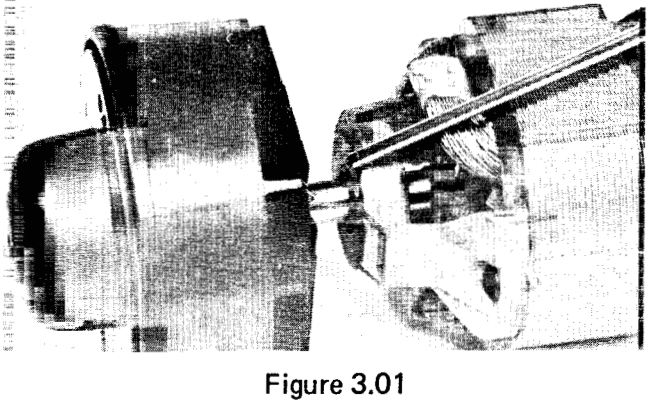


Figure 3.01

3.1 OPEN MOTOR HOUSING AND INSPECT MOTOR (fig. 3.1)

Remove the decal on the motor housing. Remove all the screws that hold the housings together. Gently separate the two halves and inspect the motor for charred or broken wires, etc.

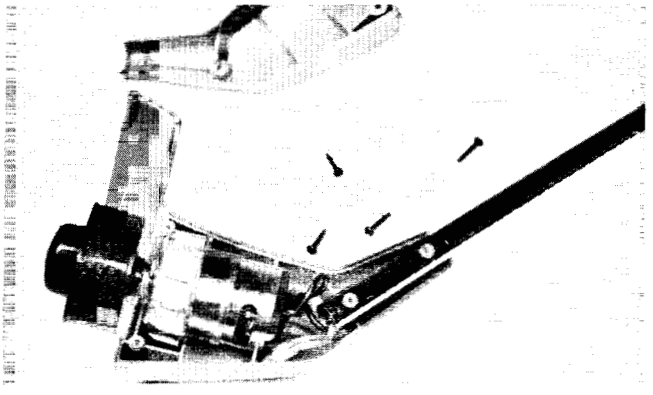


Figure 3.1

3.11 REPLACE MOTOR (fig. 3.11a, 3.11b)

When replacing the motor it is necessary to remove the automatic line feed assembly. Refer to section 1 for head disassembly. To remove the wire connectors, use wire cutters and nip the connector in the center of the factory crimp; pull the wires out. Remove the roll pin by rigidly supporting the armature shaft (to prevent bending) and driving the roll pin out.

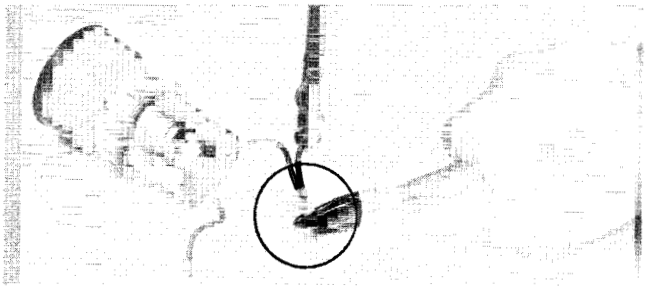


Figure 3.11a

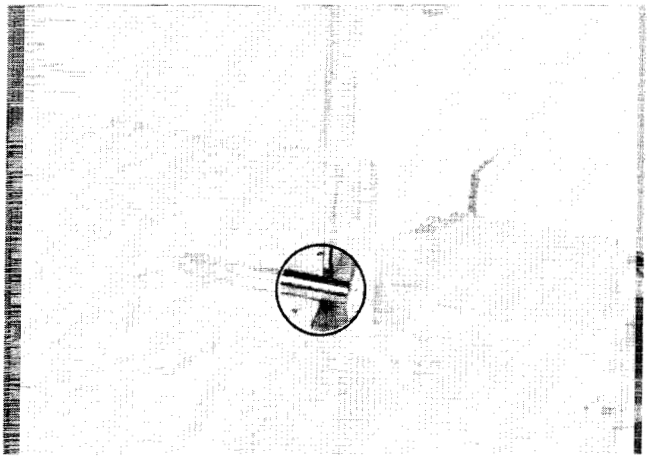


Figure 3.11b

3.2 SPIN MOTOR BY HAND

Spin the motor with your hand and notice the feel of the armature; it should turn freely. Visually check for excessive commutator wear, armature end-play and bearing to shaft fit. A binding or scraping sound when the motor is turned could be evidence of a bad bearing or a deformed drum.

3.21 CHECK DRUM (fig. 3.21)

A deformed drum means that plastic deformation has occurred to the drum at the motor shaft. The drum may have slipped up the motor shaft. A tell-tale sign would be the spool not located inside the drum correctly. A deformed drum **must** be replaced.

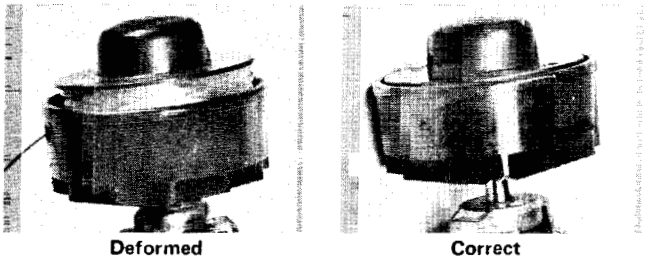


Figure 3.21

3.22 REPLACE DRUM (fig. 3.22)
SERIAL NOS. 800001-899999.

A retaining ring is used to secure the drum. After removing the spool, driver, core and spring as described in section 1, pry out the ring and slide the spool off the shaft. Install with 1979 parts.

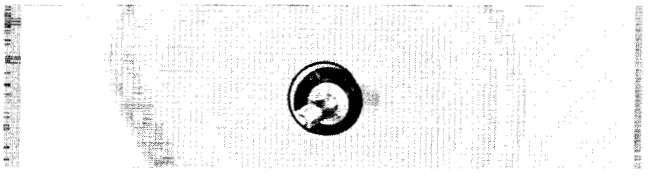


Figure 3.22

SERIAL NOS. 900101 and UP.

After removing the spool, driver, core and spring, the drum will slide off the motor shaft. Install the new drum and reassemble.

3.23 BAD BEARING – REPLACE MOTOR OR TRIMMER (fig. 3.23)

To pin-point a defective motor bearing, inspect for a burned or charred shaft at the bearing. Carefully watch the bearing; it should not spin in its casing. Lubricate the bearing while turning the motor; a drop or two of 30 wt. oil may be all that is needed to free-up the motor. If the bearing is at fault, replace the motor as per section 2.11 or, replace the trimmer if in warranty.

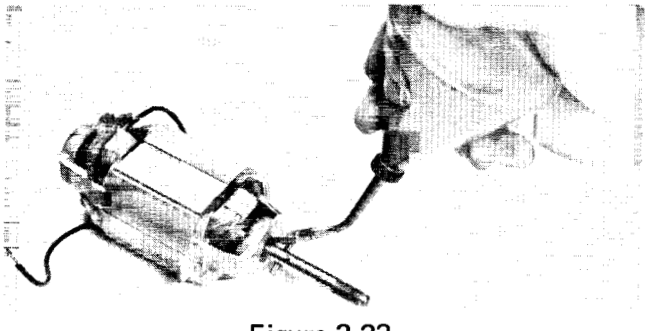


Figure 3.23

3.3 CHECK MOTOR BRUSHES (fig. 3.3)

Using a scribe or other sharp object, carefully push the brush into its holder away from the commutator. When released the brush should spring back into position against the commutator. Excessively worn motor brushes will not make proper contact with the commutator. Motor brushes are not replaceable.

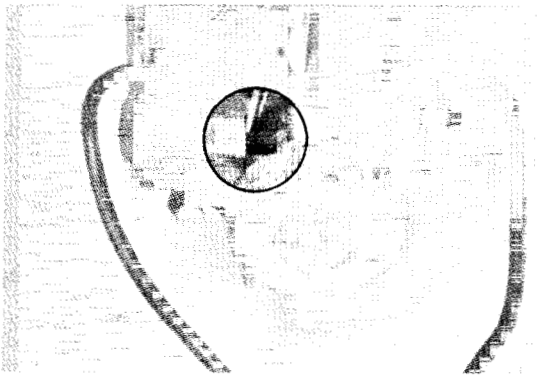


Figure 3.3

3.31 REPLACE MOTOR OR TRIMMER

Refer to section 2.11 for motor replacement, or replace the trimmer if in warranty.

3.4 CHECK MOTOR BRUSH SPRINGS (fig. 3.4)

During shipment the motor brush spring may have been jarred out of position, causing no brush to armature contact and disabling the motor.

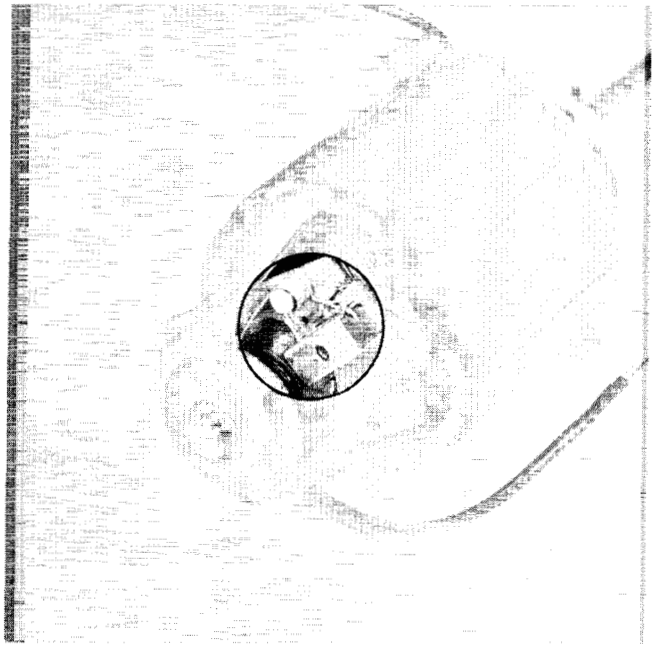


Figure 3.4

3.41 SECURE SPRING/REPLACE MOTOR OR TRIMMER (fig. 3.41)

Lifting the brush spring back into position, restore brush to armature contact. In some cases the spring may be missing; replace motor or, trimmer if in warranty.

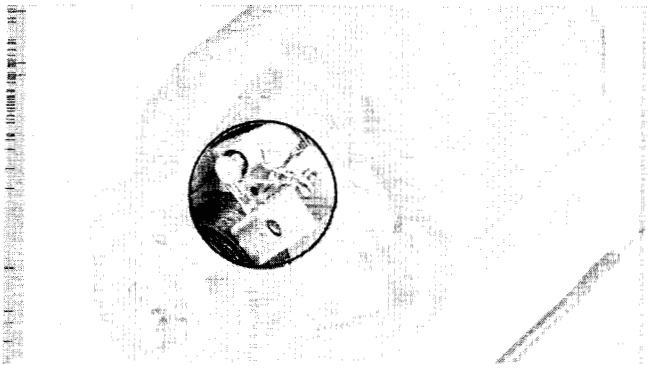


Figure 3.41

3.5 TEST BRIDGE RECTIFIER (fig. 3.5a, 3.5b)

The readings obtained during the following test will vary depending on the test equipment and settings used. Select any two adjacent terminals on the rectifier (all combinations will be tested), connect the tester to them and note the reading. Reverse the leads. Again, note the reading. Continue this test process until all the terminals have been checked (4 tests). If after any test the 1st reading equals the 2nd reading, the rectifier is faulty and must be replaced.

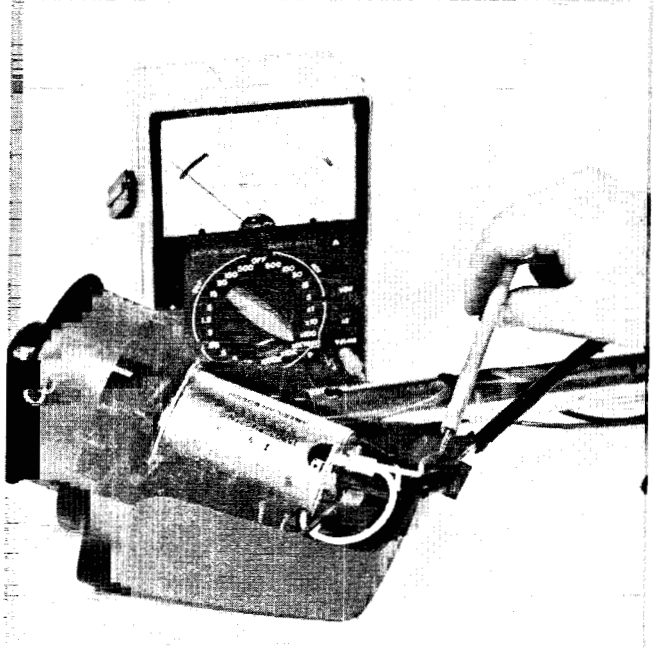


Figure 3.5a

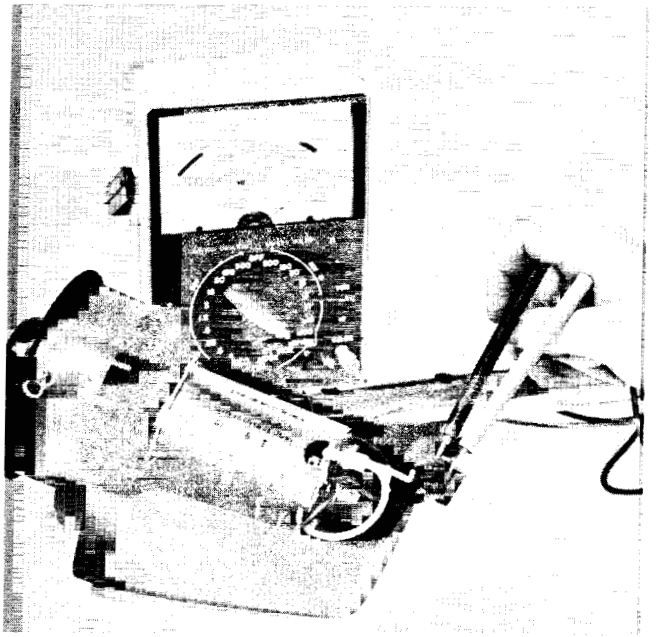


Figure 3.5b

3.51 REPLACE BRIDGE RECTIFIER

Careful attention must be paid to replacing the wires in the proper position. See wiring schematic. Trimmers with serial number 9000101 and up must have the lower wire harness replaced.

3.6 CHECK HARNESS CONNECTIONS AT RECTIFIER

Visual inspection alone will not suffice. Try moving the wires at the rectifier connections; the wires may slip out of the terminals.

3.61 SECURE CONNECTION AT RECTIFIER

Secure the loose connections at the rectifier or replace the lower harness.

⚠ **Note:** Use electrical crimping pliers **only.** Do not use side cutters or wire cutters.

3.7 CHECK LOWER HARNESS (fig. 3.7)

Remove all the phillips head screws and separate the handle grip sections. Using a continuity tester, insert one of its probes into the switch along either of the lower harness leads. Place the other tester probe onto the proper terminal at the rectifier (note lead wire color). Check both leads for complete circuits.

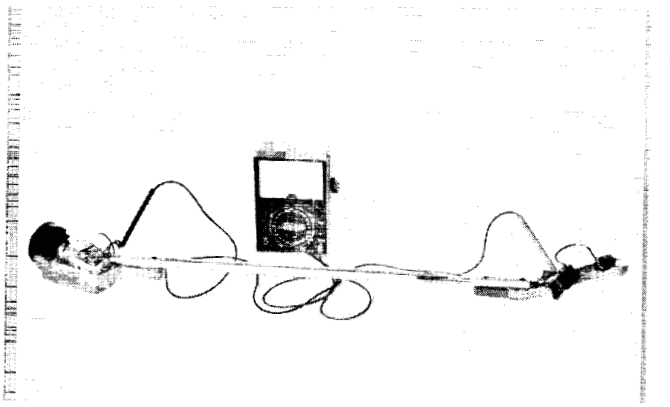


Figure 3.7

3.71 REPLACE LOWER HARNESS

Disconnect the ends of the harness from both the rectifier and the switch terminals (see sections 3.11 and 2.61). Pull the harness out of the tubes. Replace with new harness. Caution should be taken so that wires are not pinched when replacing the motor housings and handle grips.

3.8 TEST SWITCH CONNECTIONS (fig. 3.8)

Try pulling gently on the wires leading into the switch to be certain that both harnesses have firm connections.

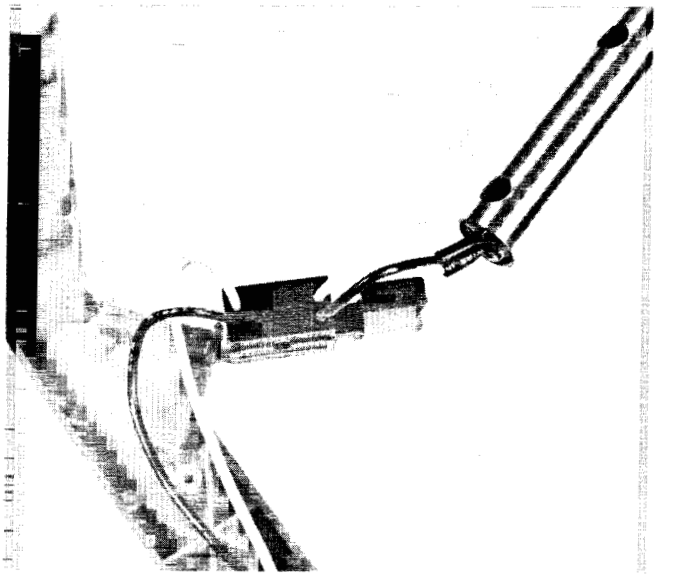


Figure 3.8

3.81 SECURE LOOSE CONNECTIONS

If any of the wires leading to the switch are loose, reinsert them firmly into the switch. If they do not stay inserted, replace the switch (refer to section 2.81).

WARNING: FORCING PROBES INTO THE SWITCH MAY CAUSE INTERNAL DAMAGE. DO NOT INSERT OBJECTS LARGER THAN 1/32 INCH DIAMETER INTO SWITCH.

3.9 TEST SWITCH (figs. 3.9a, 3.9b)

THE 1200 TRIMMER USES A TWO SPEED SWITCH. Disconnect all lines to the switch (see * in section 2.61). Connect the tester leads as shown. There should be continuity **only** when the switch is depressed. Replace any switch that shows no current flow on either or both sides.

NOTE: The test readings may vary depending on test equipment used. If all other tests are good and the trimmer does not have a high and low speed, replace the switch.

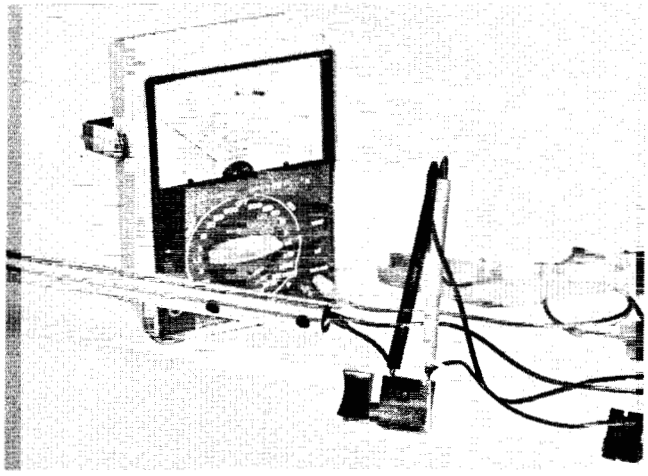


Figure 3.9a

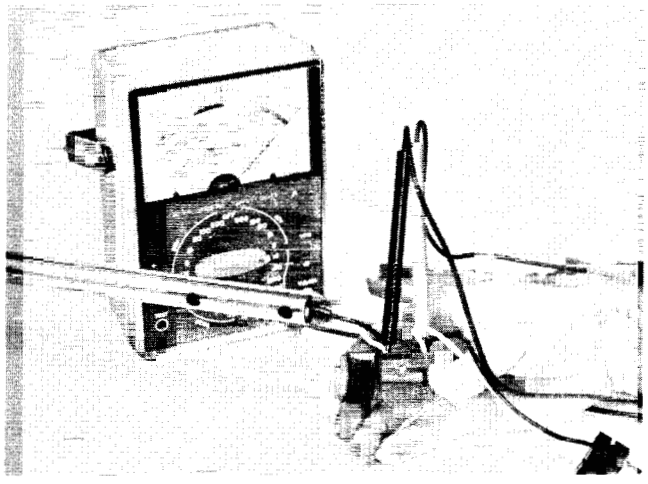


Figure 3.9b

3.91 REPLACE SWITCH (fig. 3.91)

Install the new switch by replacing the wires in their proper terminals (refer to the trimmer wiring schematic). Correctly position the switch in the handle grip. Care should be taken as not to pinch any wires when securing the handle grips.

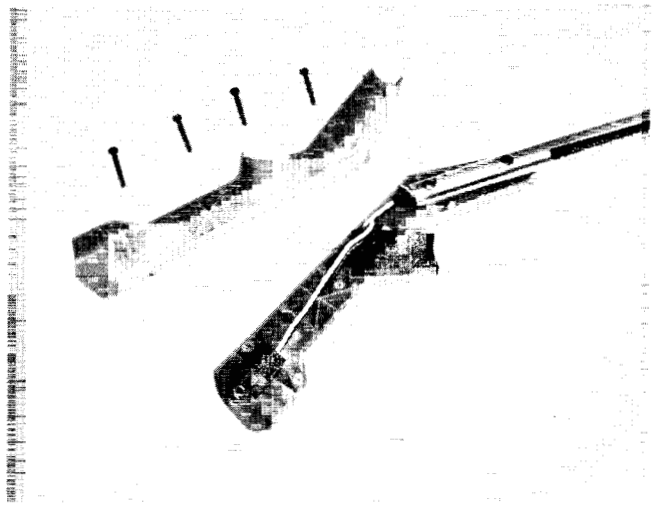


Figure 3.91

4.0 TEST UPPER HARNESS (fig. 4.0)

Insert one probe of a continuity tester into the switch alongside either harness lead. Connect the other terminal of the tester to the proper spade of the harness. Test both leads for complete circuits.

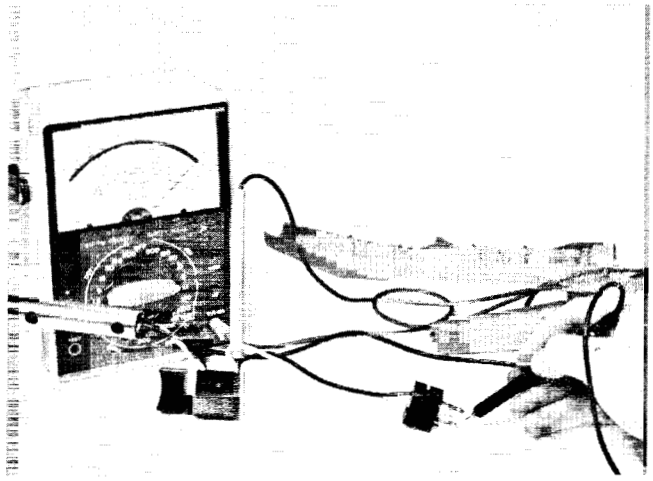


Figure 4.0

4.01 REPLACE UPPER HARNESS

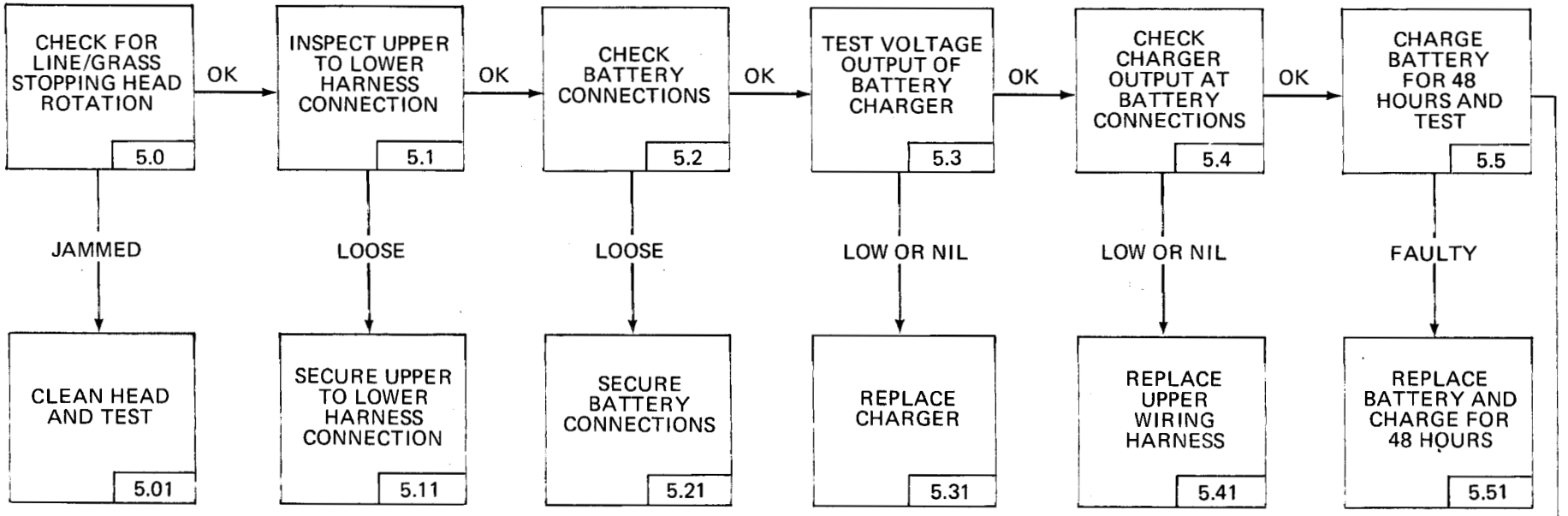
After removing the wires from the switch (see * in section 2.61), install the new upper wiring harness by placing the wires in the proper terminals of the switch. Position the harness in the handle grips. Caution should be taken so that the wires are not pinched when securing the handle grips.

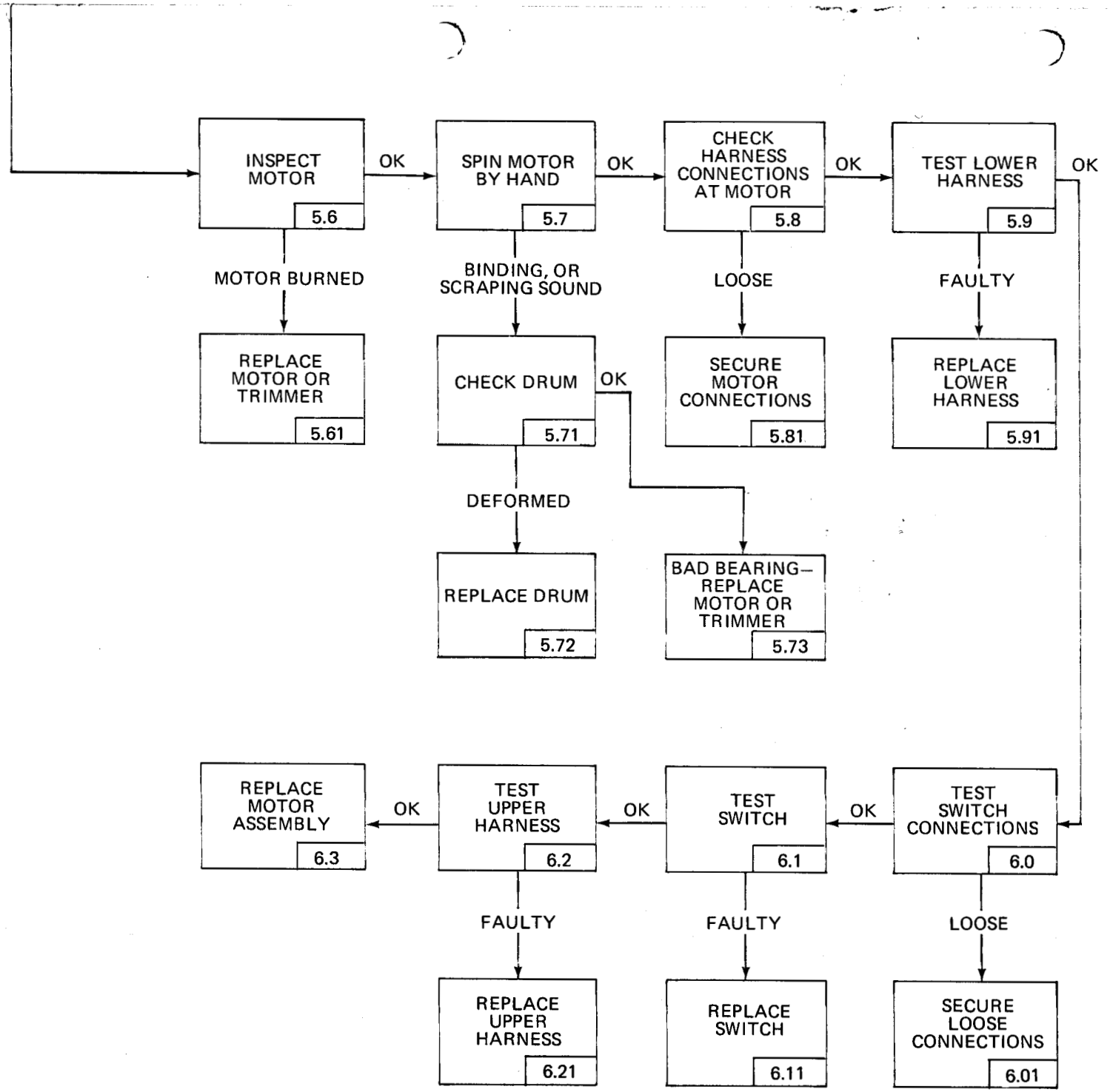
TORO

Cordless Trimmer/Weeder

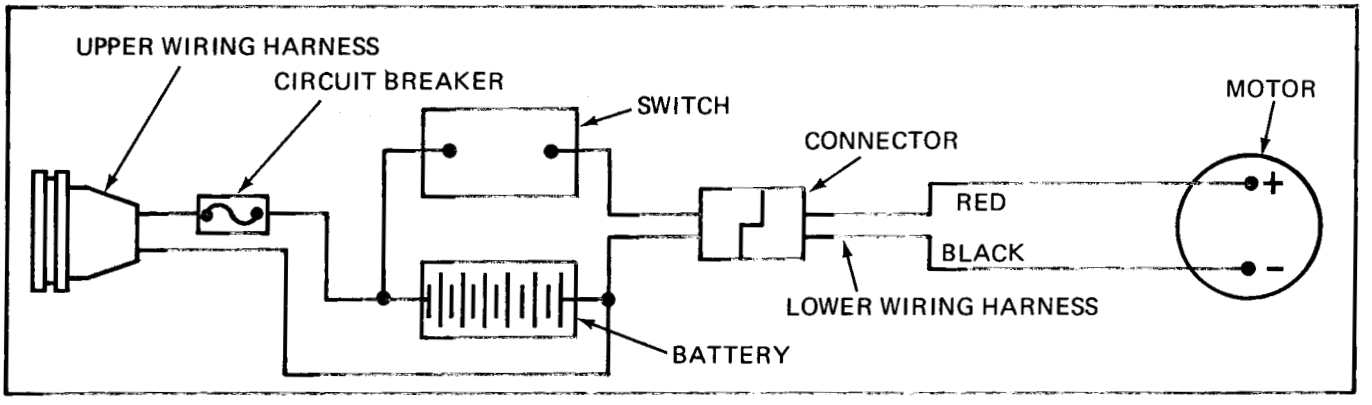
Model Number 51550

CORDLESS TRIMMER DOES NOT OPERATE OR IS LOW ON POWER




INSPECT MOTOR
5.6
OK
SPIN MOTOR BY HAND
5.7
OK
CHECK HARNESS CONNECTIONS AT MOTOR
5.8
OK
TEST LOWER HARNESS
5.9
OK
MOTOR BURNED
REPLACE MOTOR OR TRIMMER
5.61
BINDING, OR SCRAPING SOUND
CHECK DRUM
5.71
OK
LOOSE
SECURE MOTOR CONNECTIONS
5.81
FAULTY
REPLACE LOWER HARNESS
5.91
DEFORMED
REPLACE DRUM
5.72
BAD BEARING– REPLACE MOTOR OR TRIMMER
5.73
REPLACE MOTOR ASSEMBLY
6.3
OK
TEST UPPER HARNESS
6.2
OK
TEST SWITCH
6.1
OK
TEST SWITCH CONNECTIONS
6.0
FAULTY
REPLACE UPPER HARNESS
6.21
FAULTY
REPLACE SWITCH
6.11
LOOSE
SECURE LOOSE CONNECTIONS
6.01

WIRING DIAGRAM



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5.0 CHECK FOR LINE/GRASS STOPPING HEAD ROTATION (fig. 5.0)

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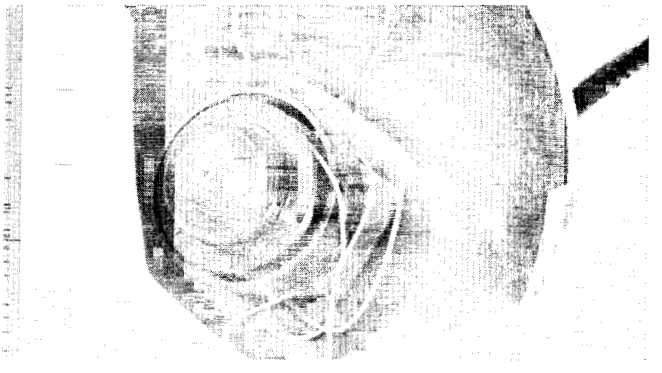


Figure 5.0

5.01 CLEAN HEAD AND TEST (fig. 5.01)

Remove any debris from about the head assembly. While cleaning the head assembly, be sure to check the area between the drum and the motor for build-up. Refer to section 1 for further details on the automatic line feed assembly.

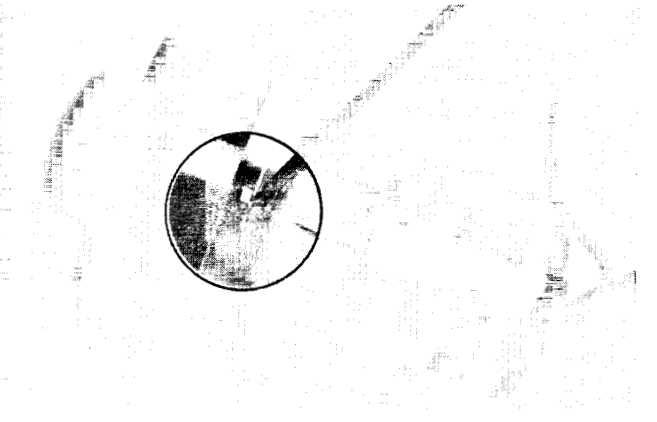


Figure 5.01

5.1 INSPECT UPPER TO LOWER HARNESS CONNECTION (fig. 5.1)

Remove red cover from power pack case by inserting a wide blade screw driver between the black handle and red cover on both sides as shown and twist gently. Lift cover forward, then up. The upper to lower harness connection should be secure.

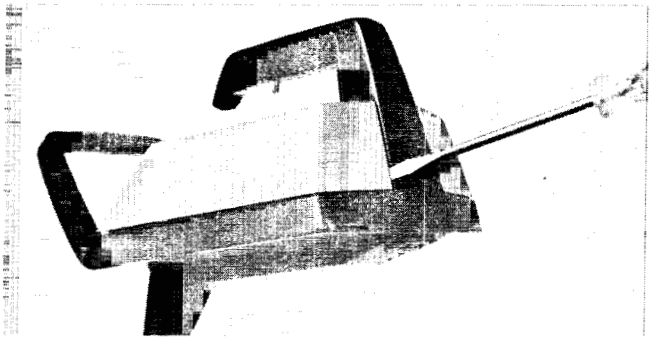


Figure 5.1

5.11 SECURE UPPER TO LOWER HARNESS CONNECTION (fig. 5.11)

Check that the connection is free of dirt or corrosion. If reconnecting had no effect, unplug the connector, clean the terminals and retest the trimmer. If any of the wires or connectors are damaged, refer to section 5.41 for upper wire harness replacement.

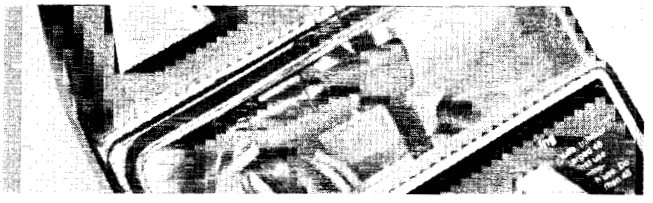


Figure 5.11

5.2 CHECK BATTERY CONNECTIONS (fig. 5.2)

The battery connections should be free of dirt and corrosion. Insure that each battery lead wire is firmly in place on the proper battery terminal.

NOTE: The largest terminal is positive (red wire).

Figure 5.2

5.21 SECURE BATTERY CONNECTIONS

Plug each battery lead wire **firmly** in place on the appropriate battery terminal.

NOTE: The largest terminal is positive (red wire). If securing them did not repair the trimmer, clean the battery terminals and retest the trimmer. In the event that any of the wires or connectors are damaged, refer to section 5.41 for upper wire harness replacement.

5.3 TEST OUTPUT VOLTAGE OF BATTERY CHARGER (fig. 5.3)

Test the charger with a voltmeter. Set the tester for a 10 V.D.C. test. Connect the voltmeter leads to the charger wires as shown. Plug the charger into a 110 volt outlet (make sure switched outlets are on) and read the charger output on the voltmeter scale. A good charger will show at least 5.0 volts D.C. output.

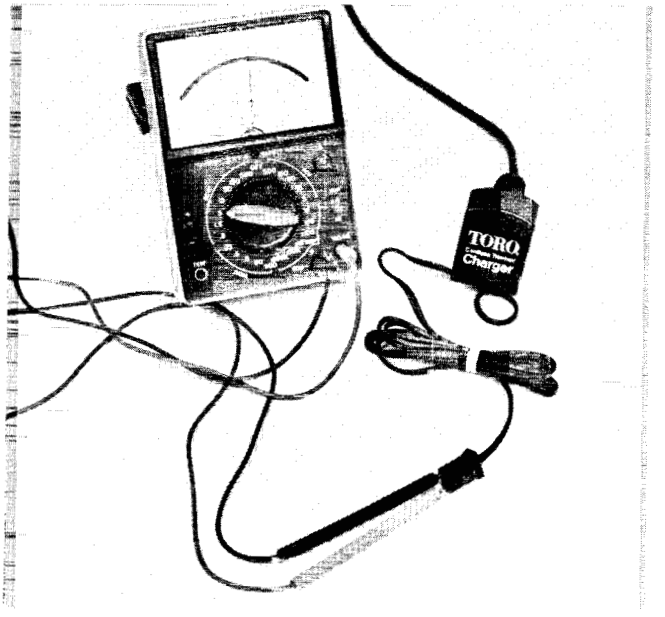


Figure 5.3

5.31 REPLACE BATTERY CHARGER

Replace a faulty charger with a genuine TORO charger, part #33-6730.

5.4 CHECK CHARGER OUTPUT AT BATTERY CONNECTIONS (fig. 5.4)

Disconnect battery leads from battery. Plug the battery charger into the receptacle on the bottom of the battery case and into a 110 volt outlet (make sure switched outlets are turned on). Using a voltmeter set for a 10 V.D.C. test, connect the negative voltmeter lead to the small battery terminal. The charger output indicated on the voltmeter scale must exceed 5.0 volts.

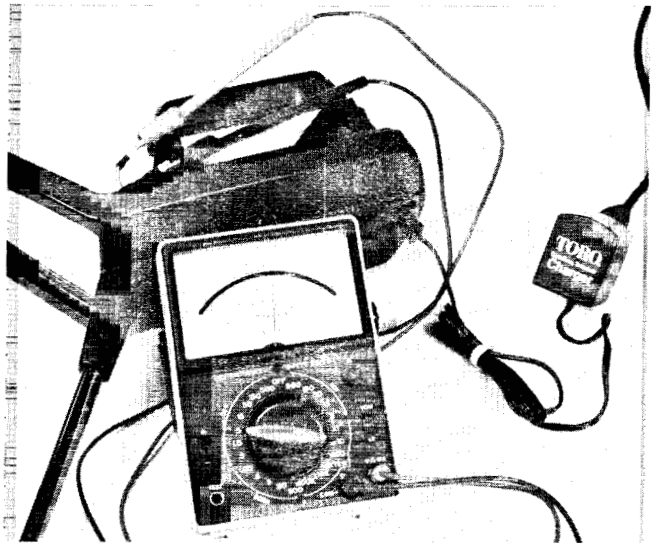


Figure 5.4

5.41 REPLACE UPPER WIRING HARNESS

It is necessary to remove the battery and separate the battery case for this repair.

Procedures:

A. Disconnect the upper to lower wiring harness terminal. Disconnect the battery lead wires.

B. Remove the 4 screws and pull the handle tube from power pack case (fig. 5.41a).

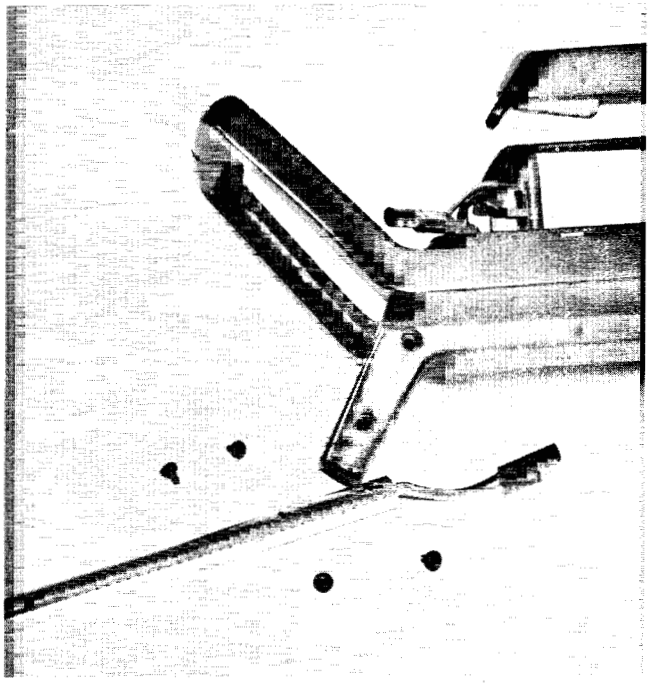


Figure 5.41a

C. Remove the 2 screws on the bottom of battery case (fig. 5.41b).

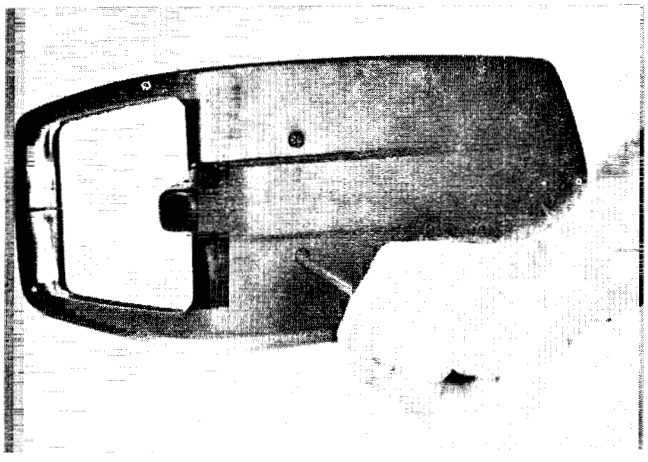


Figure 5.41b

D. Pull up gently on upper handle and remove the control panel (fig. 5.41c).

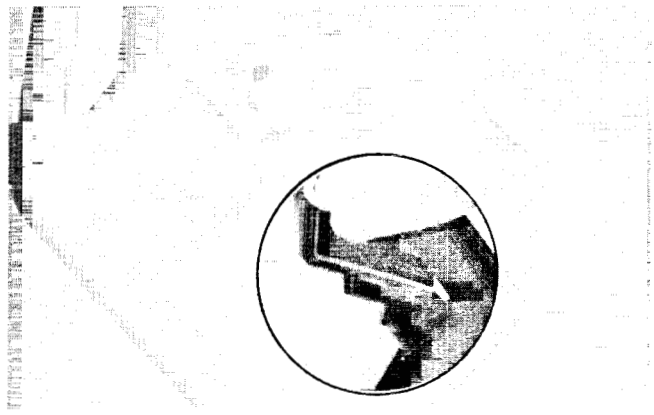


Figure 5.41c

E. Remove the battery pack (fig. 5.41d).

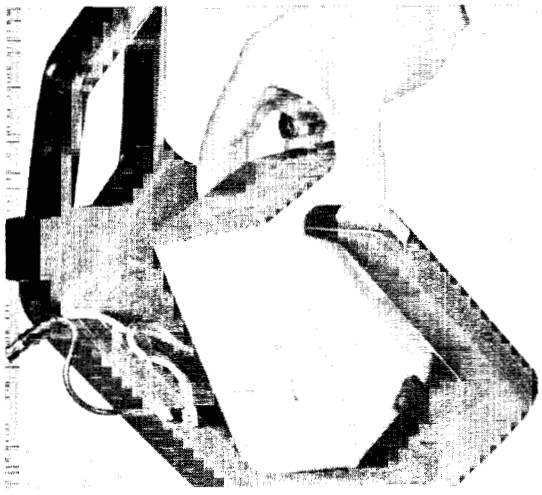


Figure 5.41d

F. Remove all remaining screws.

G. Carefully separate the battery case (fig. 5.41e).

NOTE: As the handles are taken apart, the trigger, spring and trigger release may fall out of the case. Do not lose these parts!

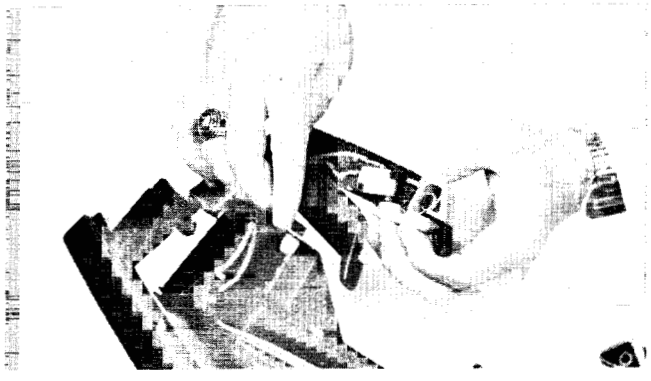


Figure 5.41e

H. Replace the wiring harness (fig. 5.41f).

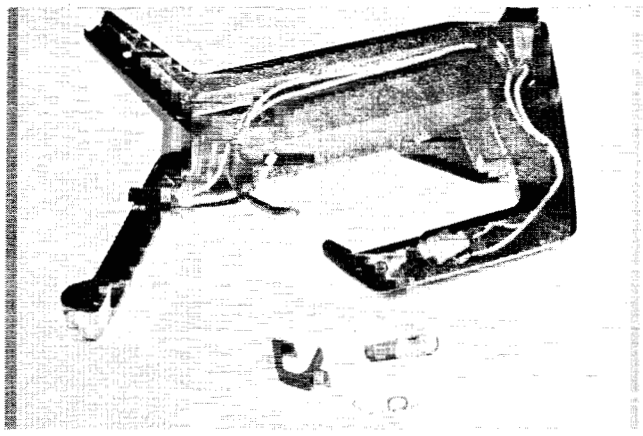


Figure 5.41f

I. To save time later, the switch should be tested at this point. Refer to section 2.8 for procedures.

J. To replace the trigger release, trigger and spring, proceed as follows:

a. Note that on the inside of the trigger release there is a small hole. This hole accepts the short end of the spring (fig. 5.41g).

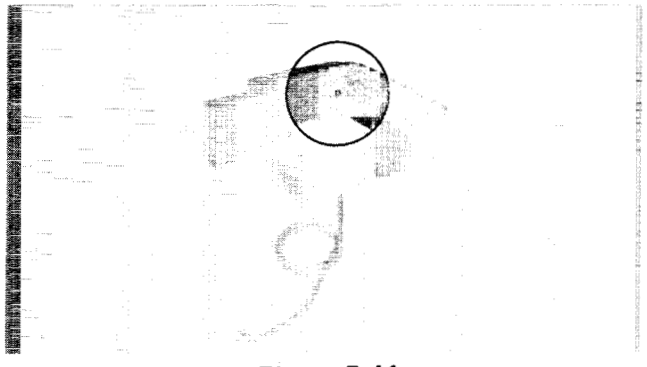


Figure 5.41g

b. Lay the left half of the battery case on a work bench in a steady position and install the trigger release in position (fig. 5.41h).

Figure 5.41h

c. Insert the short end of the spring into the hole in the trigger release. The coil of the spring must fit over the plastic boss in the case (fig. 5.41i).

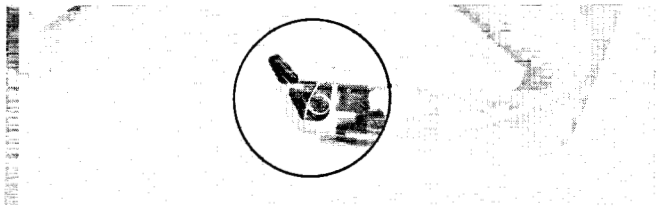


Figure 5.41i

d. Place the trigger over the long end of the spring. Put the trigger boss into the hole in the case. Carefully hold the trigger in this position and let go of the spring and trigger release (Fig. 5.41j).

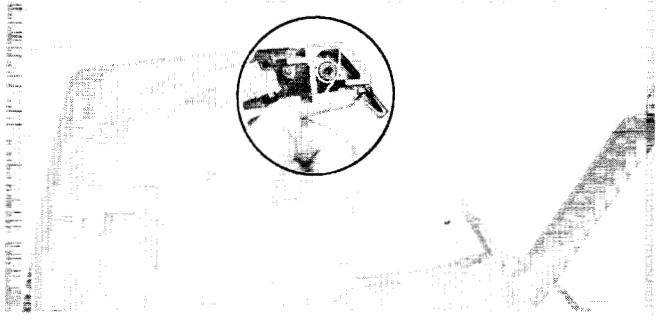


Figure 5.41j

e. Place the remaining half of the battery case over the trigger mechanism, assuring the charging receptacle is in place. Secure the case halves (fig. 5.41k).

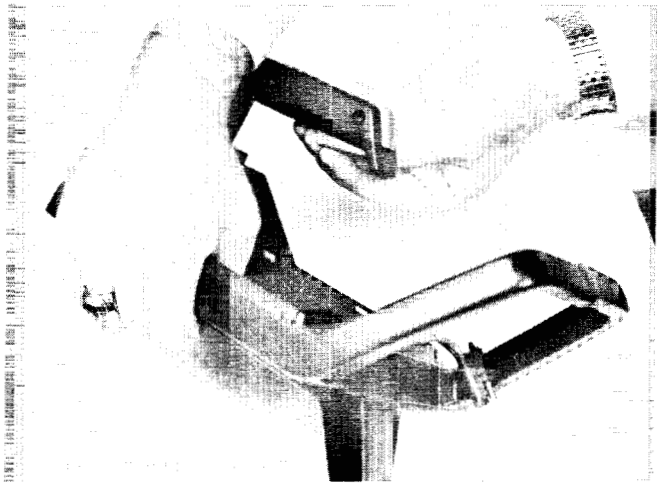


Figure 5.41k

5.5 CHARGE BATTERY FOR 48 HOURS AND TEST (fig. 5.5)

To test the Power Pack, the battery must be in place and connected inside the trimmer. Connect a voltmeter (set for a 10 V.D.C. test) to the battery wiring harness; large terminal is positive, small is negative. With the trimmer cutting head in a safe position, squeeze the trigger and read the voltmeter scale. A reading below 6 volts means that the battery is defective and should be replaced.

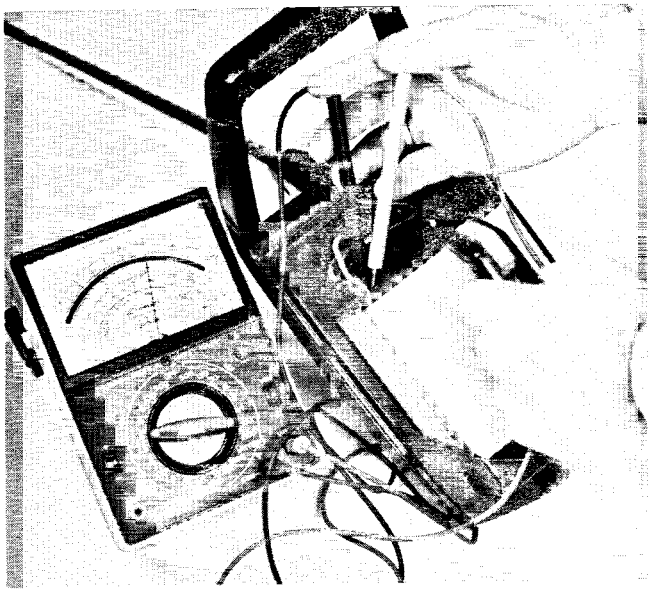


Figure 5.5

5.51 REPLACE BATTERY AND CHARGE FOR 48 HOURS

After removing the battery as outlined in section 5.41 (steps A, C, D, E), install the new battery in reverse order.

DON'T FORGET: Charge the new battery for 48 hours before putting it to use!

5.6 INSPECT MOTOR

Remove all the screws that hold the housings together. Gently separate the two halves and inspect the motor for charred or broken wires, etc.

5.61 REPLACE MOTOR (fig. 5.61)

When replacing the motor it is necessary to remove the automatic line feed assembly. Refer to section 1 for head disassembly. To remove the wire connectors, use wire cutters and nip the connector in the center of the factory crimp; now pull the wires out.

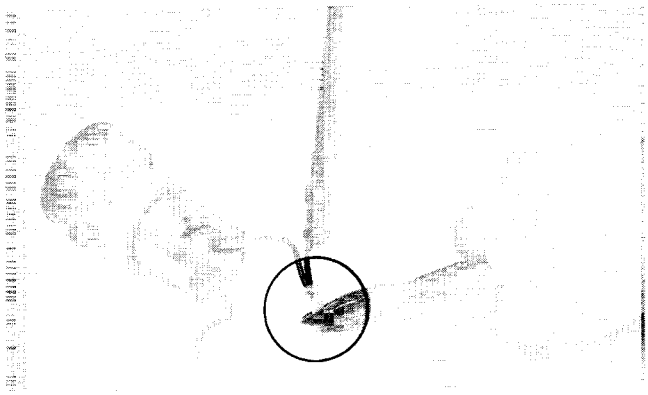


Figure 5.61

5.7 SPIN MOTOR BY HAND

Spin the motor with your hand and notice the feel of the armature; it should turn freely. Visually check for excessive commutator wear, armature end-play and bearing to shaft fit. A binding or scraping sound when the motor is turned could be evidence of a bad bearing or a deformed drum.

5.71 CHECK DRUM (fig. 5.71)

A deformed drum means that plastic deformation has occurred to the drum at the motor shaft. The drum may have slipped up the motor shaft. A tell-tale sign would be the spool not located inside the drum correctly. When the drum is deformed it must be replaced.

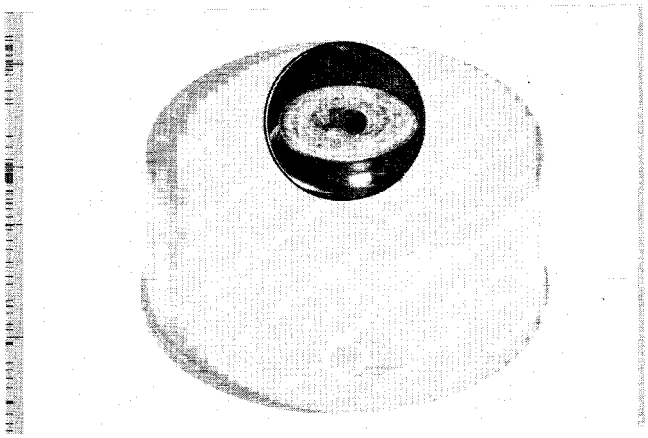


Figure 5.71

5.72 REPLACE DRUM SERIAL NOS. 800001-9115104

After removing the spool, driver, core and spring as described in section 1, pry the spool off the shaft. Note that the motor shaft has a flat side to line up inside the drum.

SERIAL NOS. 9115105 & UP

After removing the spool, driver, core and spring, the drum will slide off the motor shaft. Install the new drum and reassemble.

5.73 BAD BEARING – REPLACE MOTOR OR TRIMMER

To pin-point a defective bearing, inspect for a burned or charred shaft at the bearing. Carefully watch the bearing; it should not spin in its casing. Lubricate the bearing while turning the motor; a drop of 30 wt. oil may be all that is needed to free-up the motor. If the bearing is at fault, replace the motor as per section 2.11, or replace the trimmer if in warranty.

5.8 CHECK HARNESS CONNECTIONS AT MOTOR

Visual inspection alone will not suffice. Try moving the wires at the motor connections; the wires may slip out of the connectors.

5.81 SECURE MOTOR CONNECTIONS (fig. 5.81)

Secure the loose connections at the motor by recrimping the existing connectors or installing new ones.

⚠ **Note:** Use electrical crimping pliers **only.** Do not use side cutters or wire cutters.

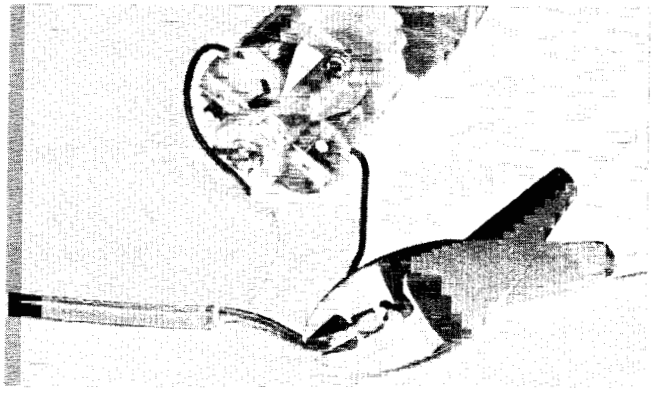


Figure 5.81

5.9 TEST LOWER HARNESS (fig. 5.9)

With the battery cover off, unplug the upper to lower harness. Insert one of the probes of a continuity tester into either of the lower harness leads. Insert the other tester probe into the proper connector at the motor (note lead wire to color). Check both leads for complete circuits.

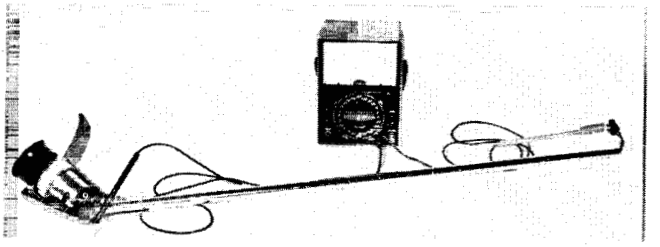


Figure 5.9

5.91 REPLACE LOWER HARNESS

To replace lower harness, disconnect the upper to lower harness. Cut the motor terminals at the factory crimp and pull the wires out. Pull the harness out of the tube. Install the new harness. Caution should be taken so that wires are not pinched when replacing the motor housings.

6.0 TEST SWITCH CONNECTIONS

Pull gently on the wires leading into the switch to be certain of **firm** connections.

6.01 SECURE LOOSE CONNECTIONS

If any of the wires leading to the switch are loose, re-install them firmly onto the switch. If they do not stay on, carefully squeeze the wire terminals with pliers to close the ears of the terminal.

6.1 TEST SWITCH (figs. 6.1a, 6.1b)

Open the battery case as described in section 5.41. Disconnect the wires on the switch. Connect the tester leads as shown and activate the switch. There should be continuity **only** when the switch is depressed.

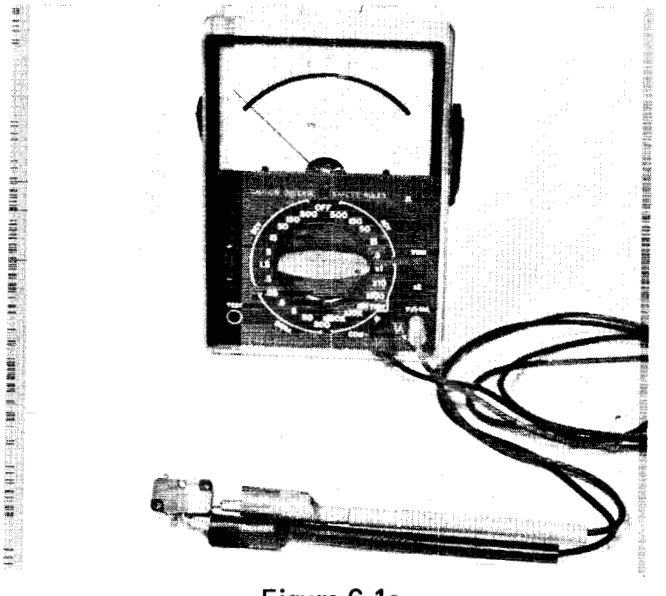


Figure 6.1a

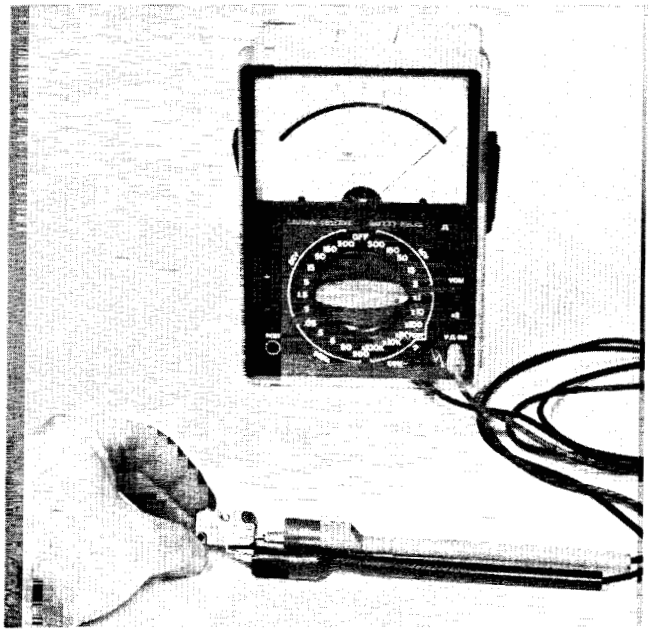


Figure 6.1b

6.11 REPLACE SWITCH

Install the new switch by replacing the wires on the terminals (refer to the trimmer wiring schematic). Correctly position the switch in the handle grip. Care should be taken as not to pinch any wires when securing the handle grips. See section 5.41 for case assembly.

6.2 TEST UPPER HARNESS (figs. 6.2a, 6.2b)

Remove the battery cover. Disconnect both battery terminals and the upper to lower harness connection.

(Test 1) Using a continuity tester, insert a probe into the upper harness connector (red wire). Connect the other lead of the tester to the red wire battery terminal. Activate the switch. The tester should show continuity.

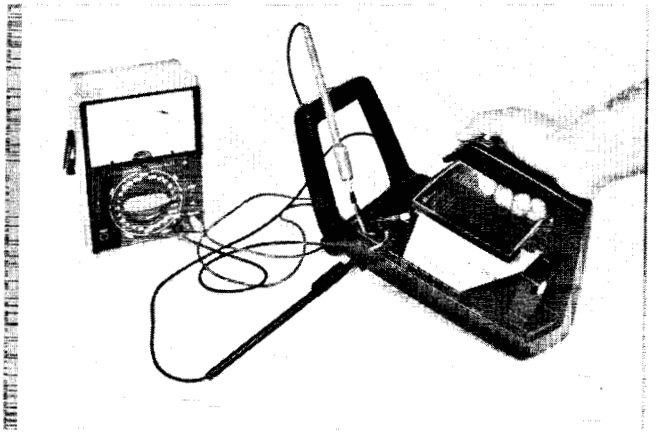


Figure 6.2a

(Test 2) Connect one tester lead to the black wire battery terminal and the other to the upper harness connector (black wire). The test should show continuity.

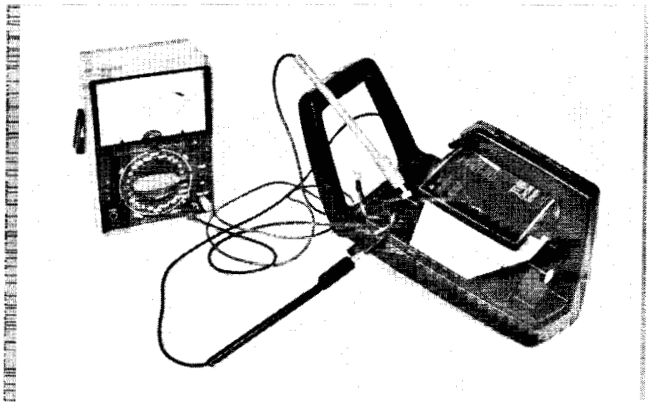


Figure 6.2b

6.21 REPLACE UPPER HARNESS

See section 5.41 for proper instructions.

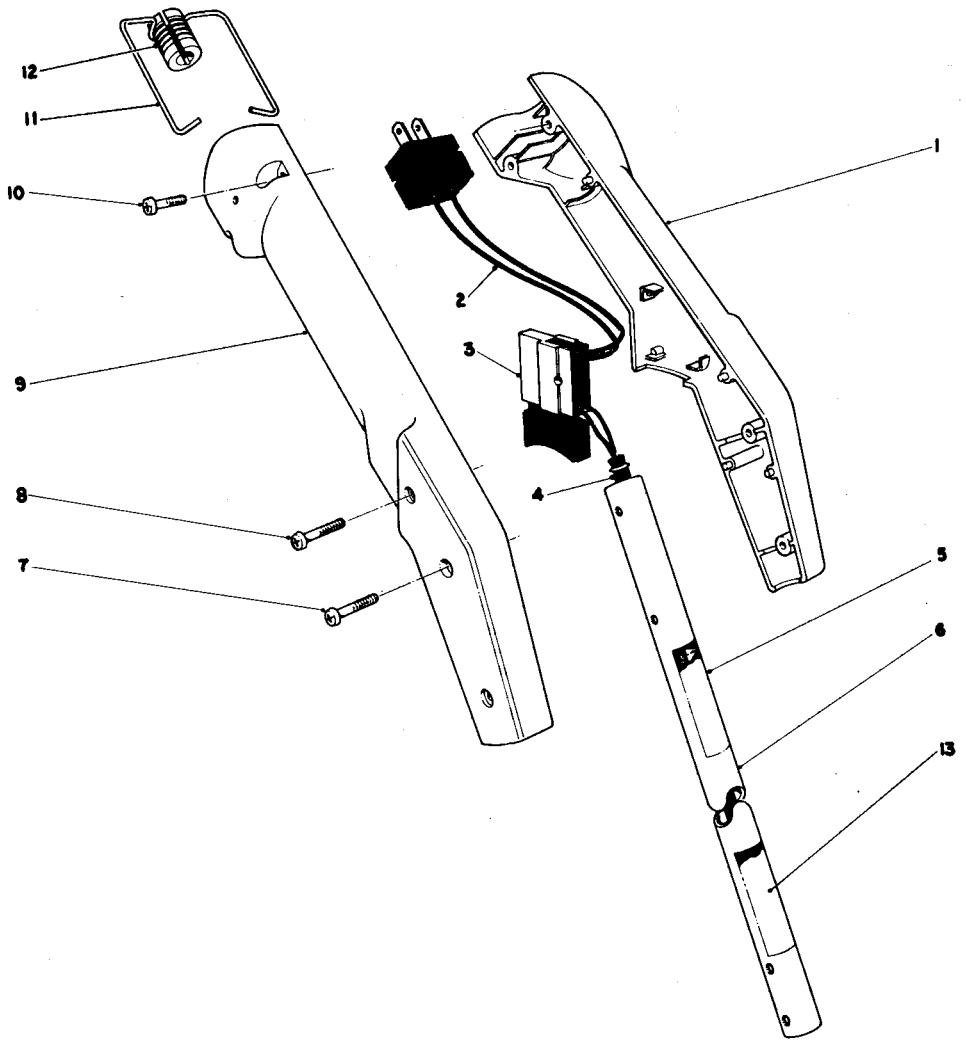
6.3 REPLACE MOTOR

Refer to section 2.11 for motor replacement.

PARTS CATALOG

TORO TRIMMER 900 HANDLE ASSEMBLY

MODEL NO. 51200 - 8000001 & UP



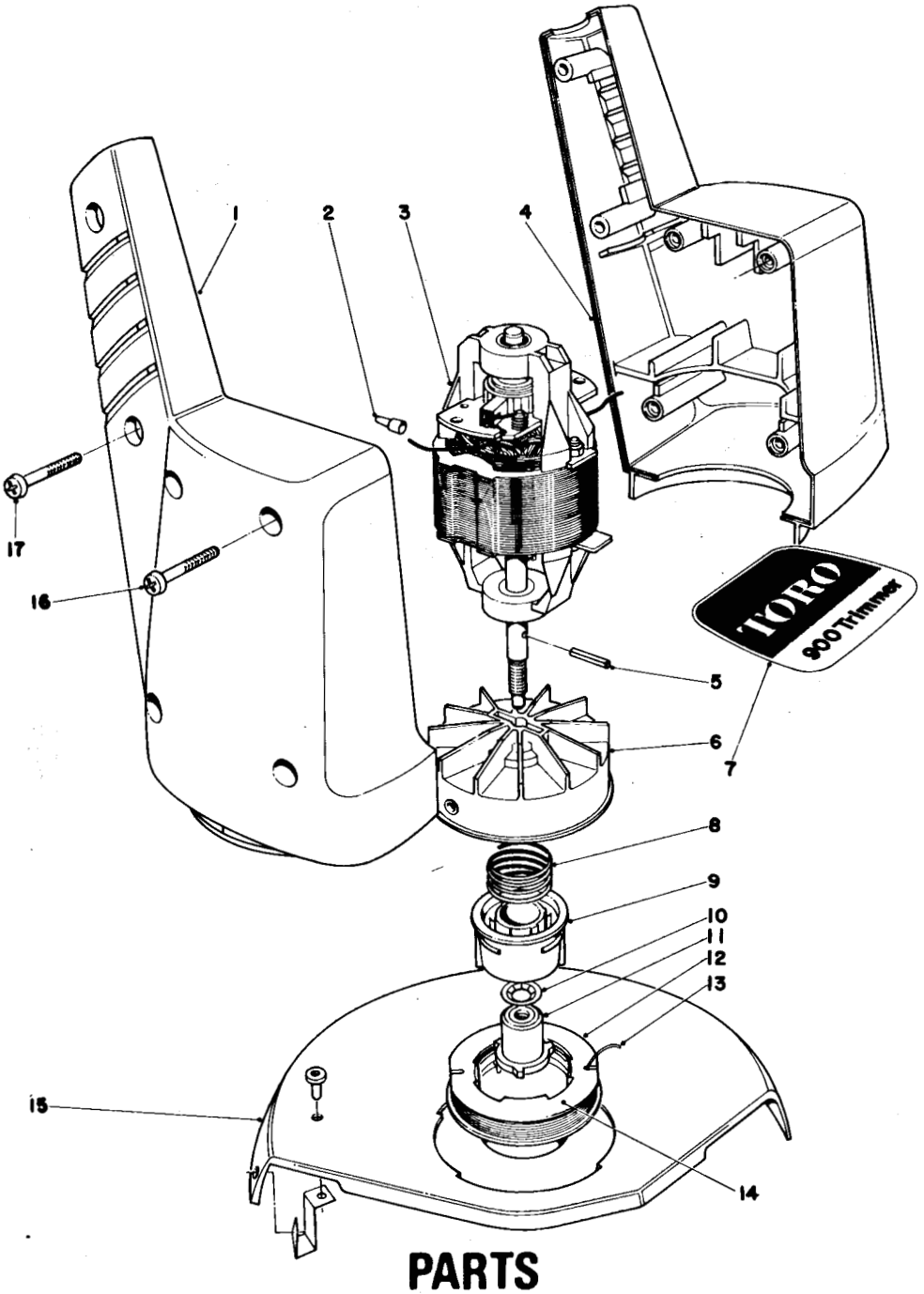
PARTS

Ref. No.	Part No.	Description	No. Used
1	29-8290	Left Hand Grip	1
2	29-7220	Upper Wiring Harness	1
3	29-7660	Single Speed Switch	1
4	29-8270	Main Wiring Harness	1
5	29-7400	Caution Decal	1
6	29-8300	Tube	1
7	32104-121	Screw	2

Ref. No.	Part No.	Description	No. Used
8	32104-119	Screw	1
9	29-8280	Right Hand Grip	1
10	32104-118	Screw	2
11	29-7270	Extension Cord Wire Clamp	1
12	29-7280	Extension Cord Retainer	1
13	29-8340	Serial Number Plate	1

TORO TRIMMER 900 MOTOR AND HOUSING ASSEMBLY

MODEL NO. 51200 - 8000001 & UP



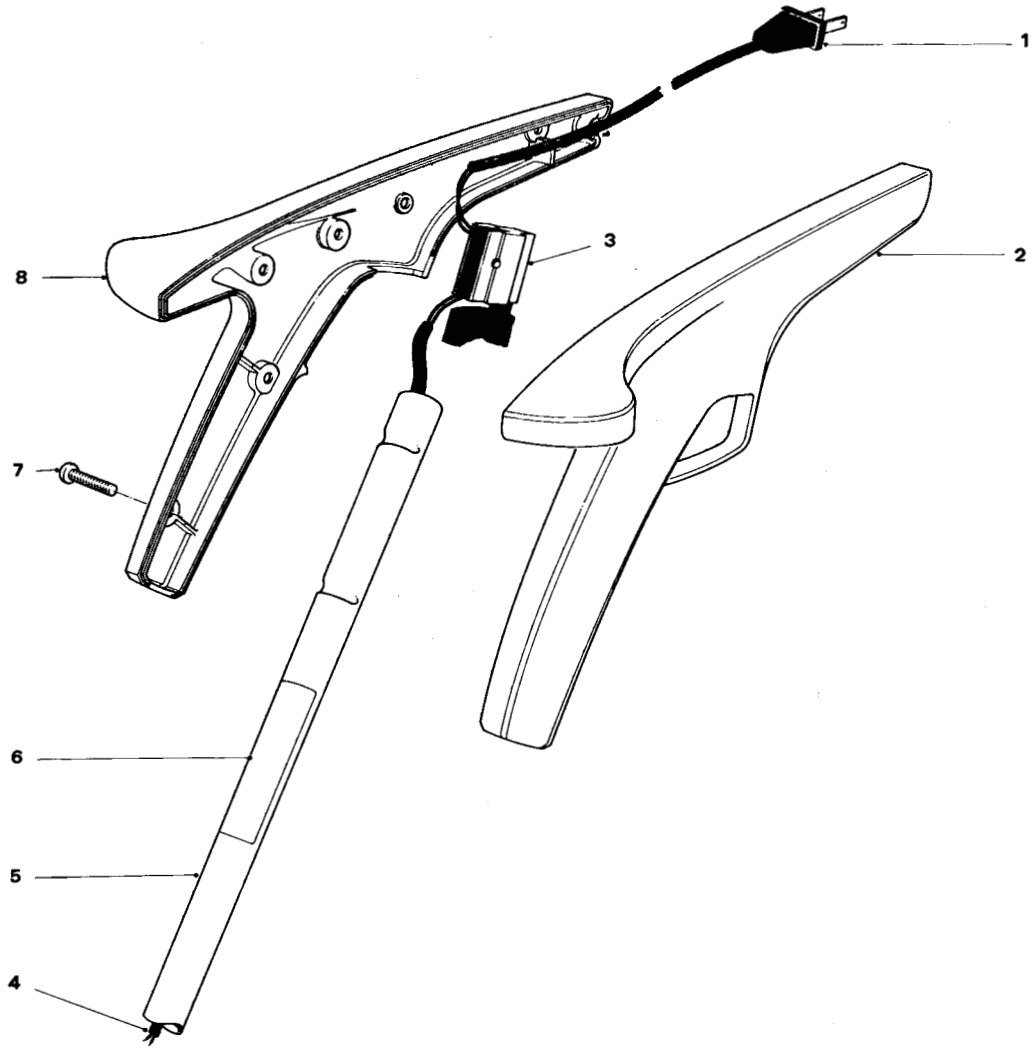
PARTS

Ref. No.	Part No.	Description	No. Used
1	29-8170	Right Motor Housing	1
2	218-496	Wire Connector	2
3	29-8150	Motor	1
4	29-8180	Left Motor Housing	1
5	32121-88	Roll Pin	1
6	29-8210	Fan Hub with Eyelet	1
7	33-5870	Toro 900 Decal	1
8	29-8230	Compression Spring	1
9	29-8120	Spool Core	1
10	3290-418	Retaining Ring	1

Ref. No.	Part No.	Description	No. Used
11	29-8130	Driver	1
12	29-8110	Empty Spool	1
13	88002	50', .040" Cutting Line in Coil	1
14	88004	50', .040" Cutting Line prewound on Spool	1
15	29-8310	Shield with Cut-off Blade	1
16	32104-120	Screws	4
17	32104-119	Screws	2

TORO TRIMMER 900 HANDLE ASSEMBLY

MODEL NO. 51225 - 9000101 & UP



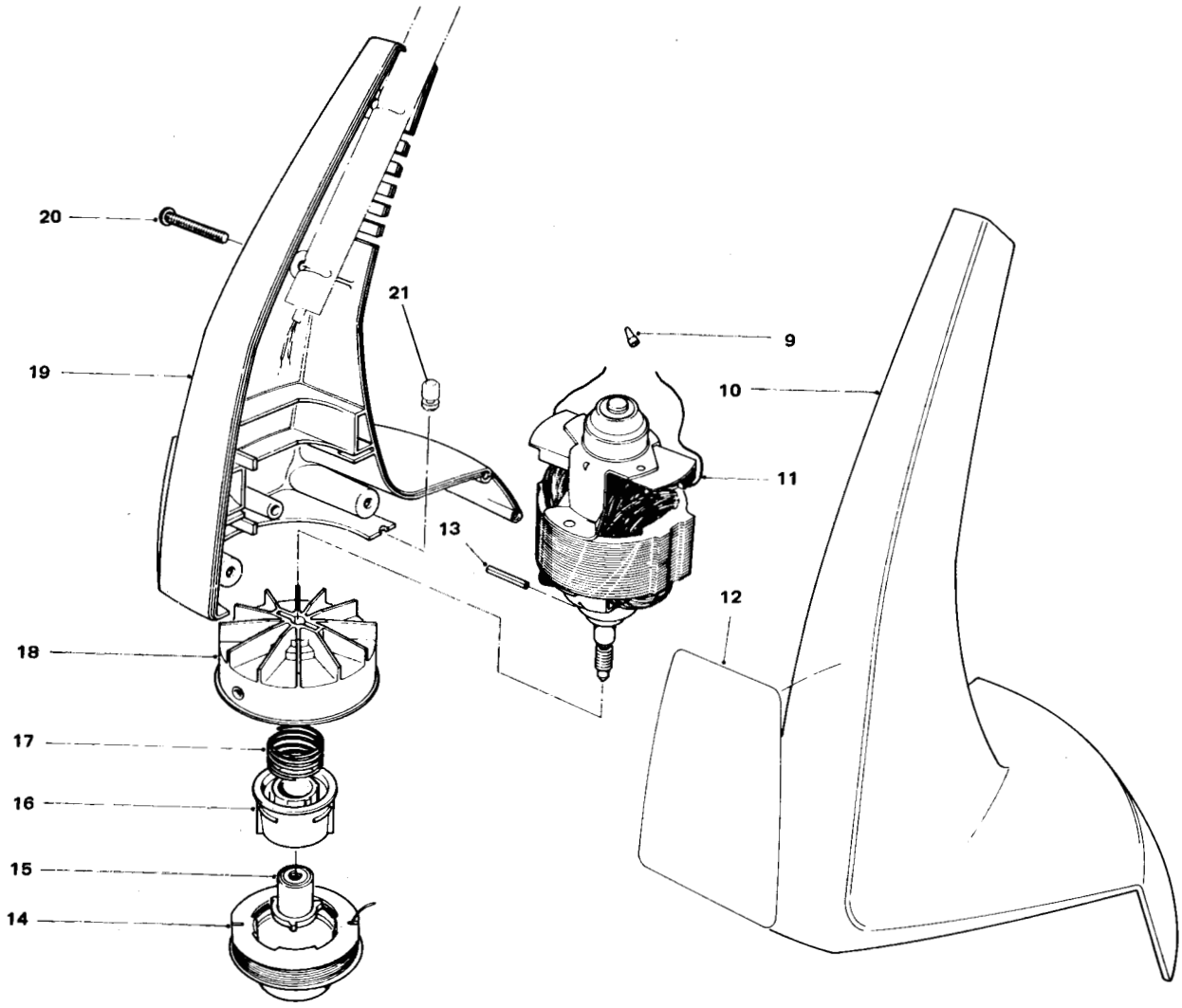
PARTS

Ref. No.	Part No.	Description	No. Used
1	33-8570	Pigtail Plug	1
2	33-8520	Left Hand Grip	1
3	29-7660	Switch	1
4	33-8560	Wiring Harness	1

Ref. No.	Part No.	Description	No. Used
5	33-8550	Tube	1
6	33-8600	Decal (UL)	1
7	32104-121	Screw	5
8	33-8510	Right Hand Grip	1

TORO TRIMMER 900 MOTOR AND HOUSING ASSEMBLY

MODEL NO. 51225 - 9000101 & UP



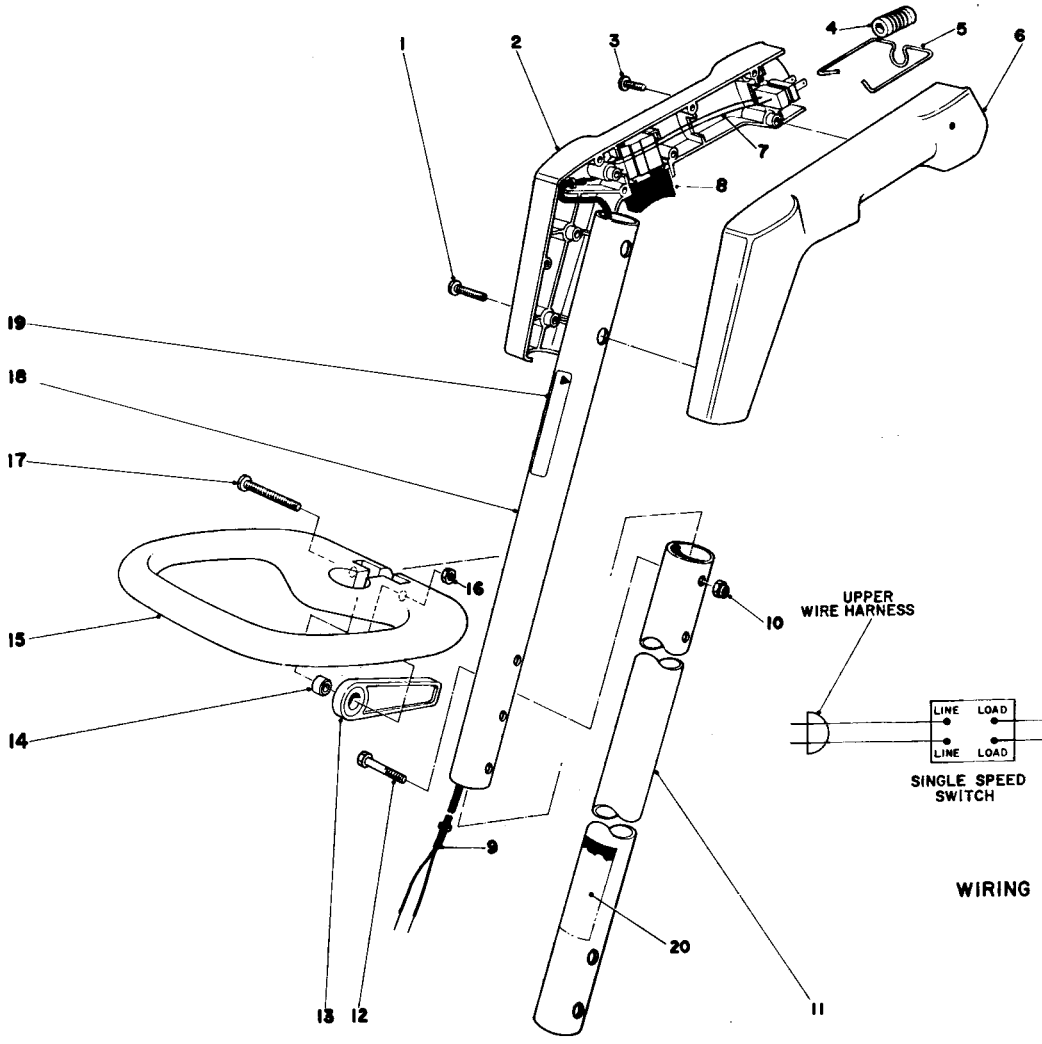
PARTS

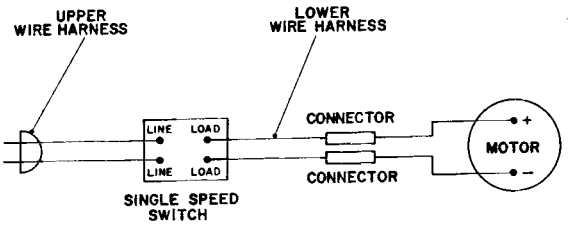
Ref. No.	Part No.	Description	No. Used
9	218-496	Wire Connector	2
10	33-8530	Left Hand Housing	1
11	33-8590	Motor	1
12	33-8620	Decal	1
13	33121-88	Roll Pin	1
14	88004	Prewound Spool	1
	29-8110	Empty Spool	1
	88002	50' Coil - .040" Cutting Line	1

Ref. No.	Part No.	Description	No. Used
15	29-8130	Driver	1
16	29-8120	Spool Core	1
17	29-8230	Spring	1
18	33-8680	Drum with Eyelet	1
19	33-8630	Right Hand Housing	1
20	32104-121	Screw	5
21	33-8710	Grommet	1

TORO TRIMMER 1100 HANDLE ASSEMBLY

MODEL NO. 51300 - 8000001 & UP





WIRING DIAGRAM

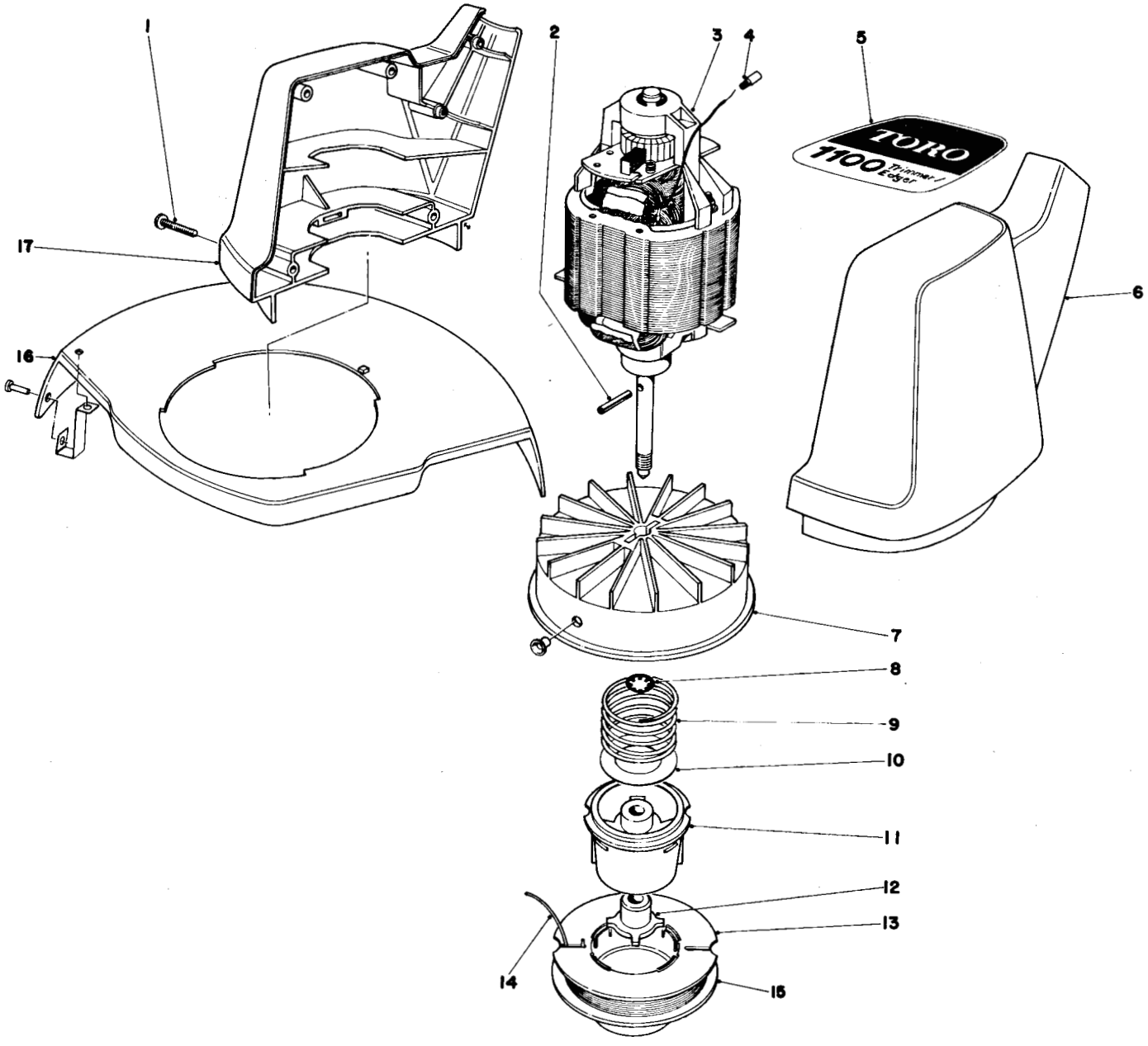
PARTS

Ref. No.	Part No.	Description	No. Used
1	32104-119	Screws	3
2	29-7250	Right Hand Grip	1
3	32104-118	Screws	2
4	29-7280	Extension Cord Retainer	2
5	29-7270	Extension Cord Wire Clamp	1
6	29-7260	Left Hand Grip	1
7	29-7220	Upper Wiring Harness	1
8	29-7660	Single Speed Switch	1
9	29-7650	Main Wiring Harness	1
10	3296-12	Locknut	2

Ref. No.	Part No.	Description	No. Used
11	33-6140	Lower Tubing	1
12	29-7440	Screws	2
13	29-7680	Cam Adjustment Lever	1
14	29-7690	Spacer	1
15	29-7670	Support Handle	1
16	3217-5	Nut	1
17	3250-11	Screw	1
18	33-6130	Upper Tubing	1
19	29-7400	Caution Decal	1
20	29-7730	Serial Number Plate	1

TORO TRIMMER 1100 MOTOR AND HOUSING ASSEMBLY

MODEL NO. 51300 - 8000001 & UP



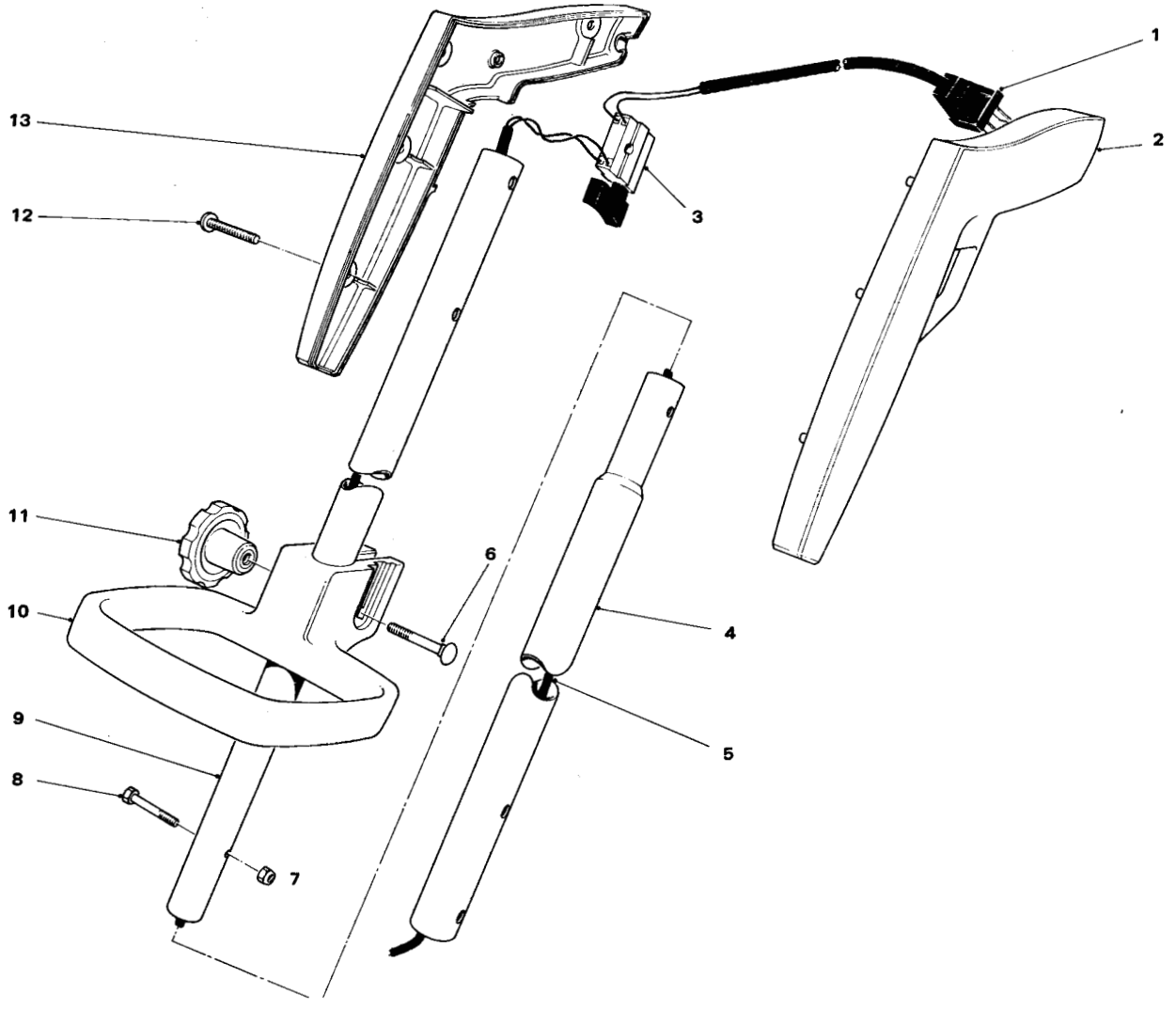
PARTS

Ref. No.	Part No.	Description	No. Used
1	32104-120	Screws	6
2	32121-88	Roll Pin	1
3	29-7610	Motor	1
4	218-496	Wire Connector	2
5	33-5860	Toro 1100 Decal	1
6	29-7590	Left Motor Housing	1
7	29-7620	Fan Hub with Eyelet	1
8	3290-418	Retaining Ring	1
9	29-7130	Compression Spring	1

Ref. No.	Part No.	Description	No. Used
10	3256-42	Washer	1
11	29-7150	Spool Core	1
12	29-7140	Driver	1
13	29-7380	Empty Spool	1
14	88003	50', .065" Cutting Line in Coil	1
15	88005	50', .065" Cutting Line prewound on Spool	1
16	29-7370	Shield with Cut Off Blade	1
17	29-7600	Right Motor Housing	1

TORO TRIMMER 1100 HANDLE ASSEMBLY

MODEL NO. 51325 - 9000101 & UP



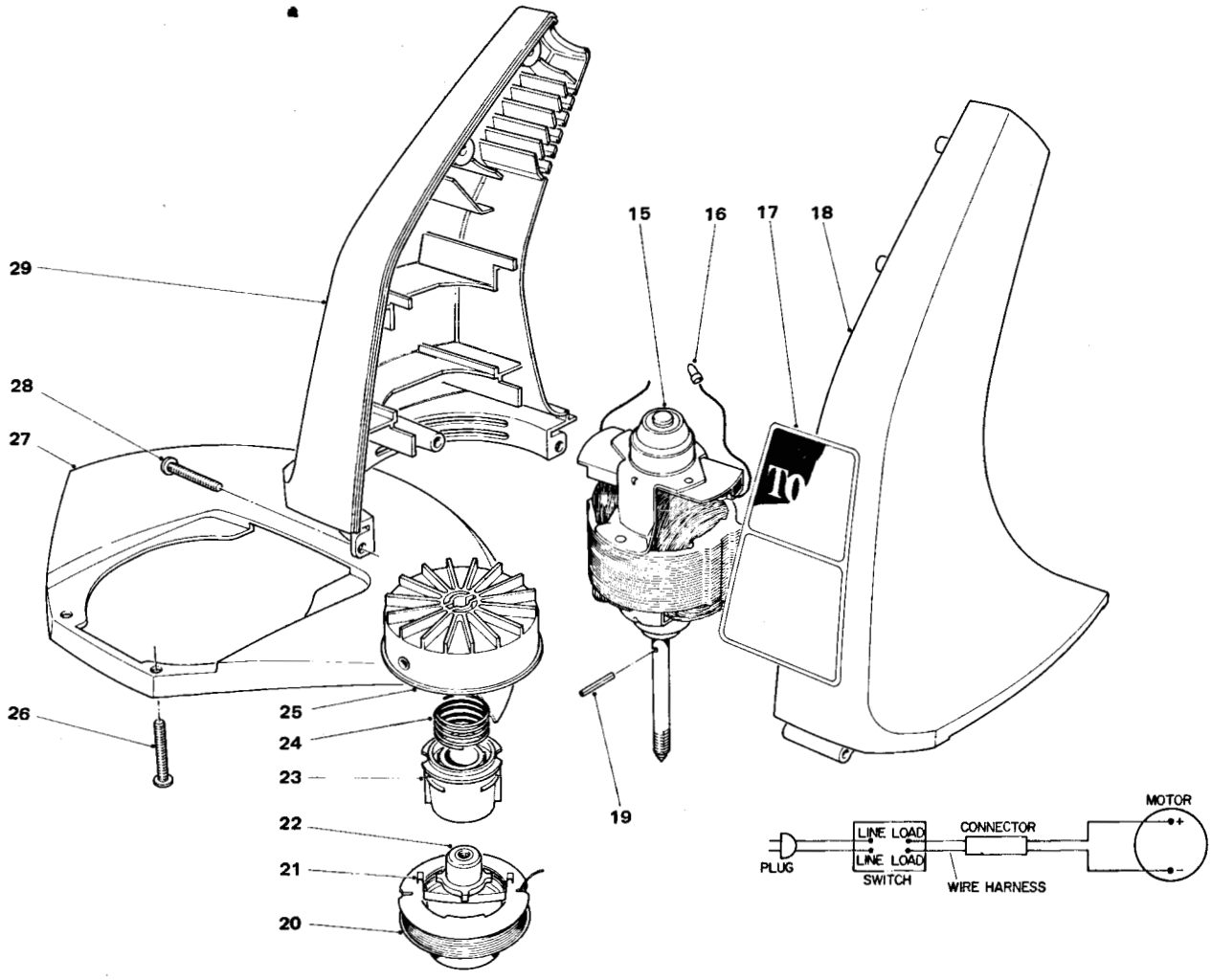
PARTS

Ref. No.	Part No.	Description	No. Used
1	33-8570	Power Cord	1
2	33-8810	Grip - Left Hand	1
3	29-7660	Switch	1
4	33-8870	Tube - Lower	1
5	33-8900	Wiring Harness	1
6	33-5790	Carriage Bolt	1
7	3296-12	Locknut	1

Ref. No.	Part No.	Description	No. Used
8	33-8950	Machine Screw	1
9	33-8880	Tube - Upper	1
10	33-8890	Adjustable Handle	1
11	19-4050	Knob	1
12	32104-121	Screw	4
13	33-8810	Grip - Right Hand	1

TORO TRIMMER 1100 MOTOR AND HOUSING ASSEMBLY

MODEL NO. 51325 - 9000101 & UP



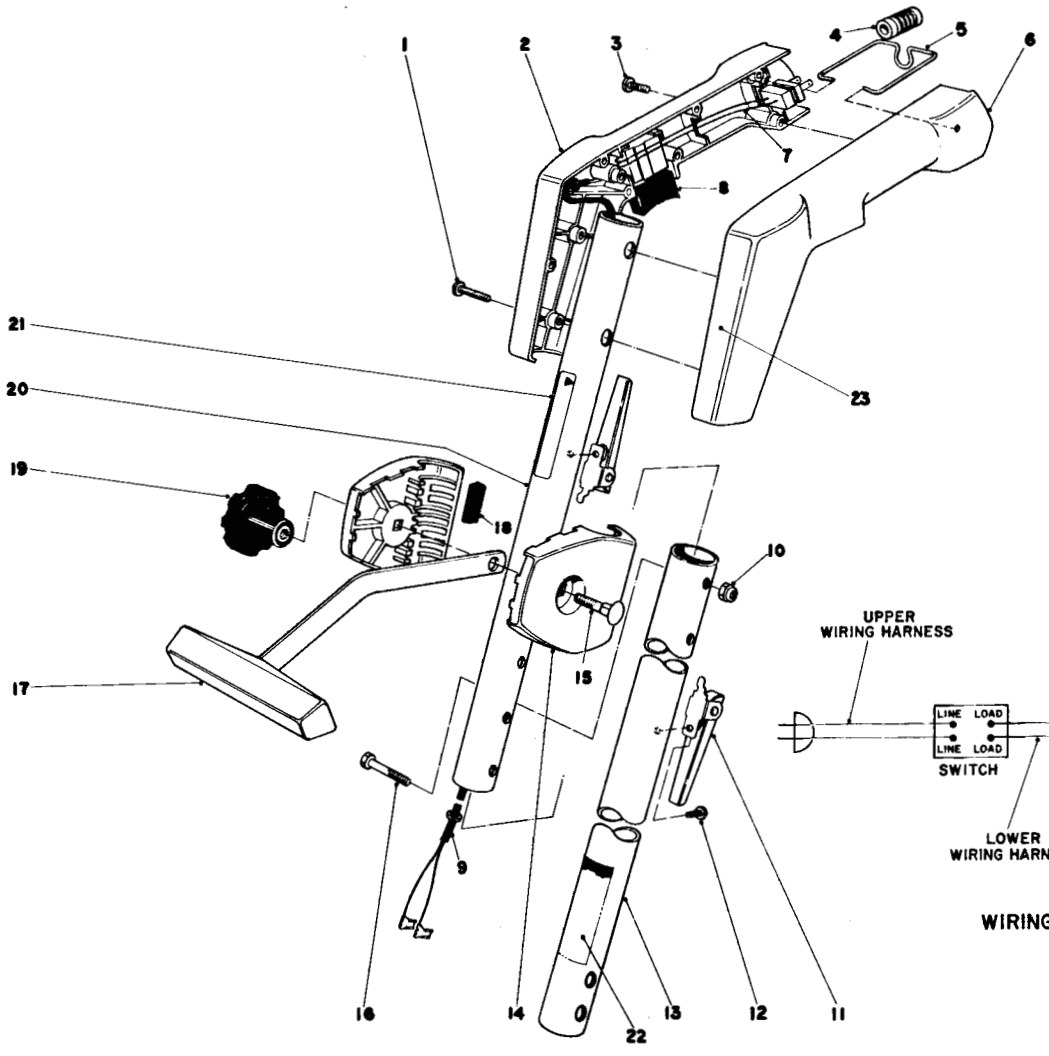
PARTS

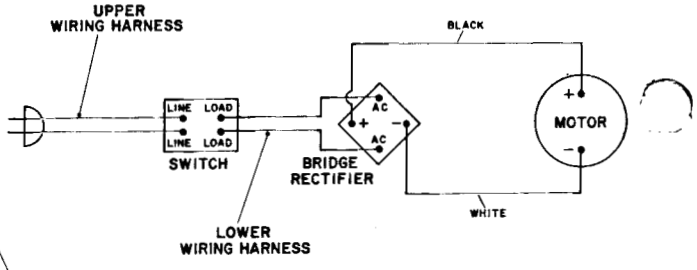
Ref. No.	Part No.	Description	No. Used
15	33-8910	Motor	1
16	218-496	Wire Connectors	2
17	33-8920	1100 Decal	1
18	33-8850	Housing - Left Hand	1
19	32121-88	Roll Pin	1
20	88005	Prewound Spool	1
	29-7380	Empty Spool	1
	88003	50' Coil - .065" Cutting Line	1
21	33-8940	Saddle Clip	1

Ref. No.	Part No.	Description	No. Used
22	29-7140	Driver	1
23	33-6230	Core	1
24	29-7130	Spring	1
25	33-8970	Drum with Eyelet	1
26	32104-121	Screw	2
27	33-8830	Shield	1
28	32104-121	Screw	4
29	33-8860	Housing - Right Hand	1

TORO TRIMMER 1200 HANDLE ASSEMBLY

MODEL NO. 51400 - 8000001 & UP





WIRING DIAGRAM

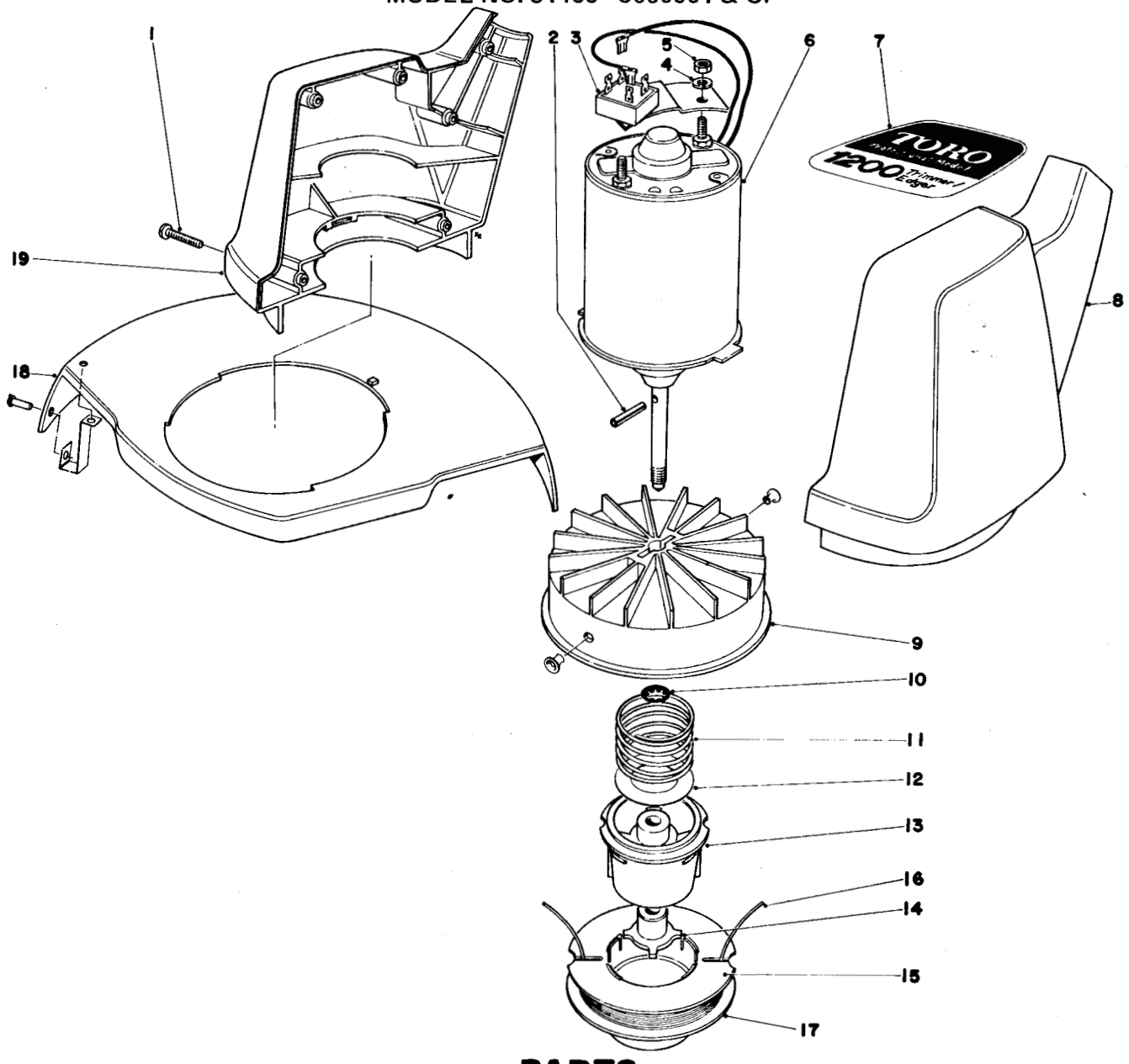
PARTS

Ref. No.	Part No.	Description	No. Used
1	32104-119	Screws	3
2	29-7250	Right Hand Grip	1
3	32104-118	Screws	2
4	29-7280	Extension Cord Retainer	2
5	29-7270	Extension Cord Wire Clamp	1
6	29-7260	Left Hand Grip	1
7	29-7220	Upper Wiring Harness	1
8	29-7360	Two Speed Switch	1
9	29-7210	Main Wiring Harness	1
10	3296-12	Locknut	2
11	29-7290	Cord Bracket Assembly	2

Ref. No.	Part No.	Description	No. Used
12	32144-28	Self Tapping Screw	2
13	29-7230	Lower Tubing	1
14	29-7340	Handle Bracket	2
15	33-5790	Carriage Bolt	1
16	29-7440	Screws	2
17	29-7320	Tee Handle	1
18	29-7470	Rubber Insert	4
19	19-4050	Handle Release Knob	1
20	29-7240	Upper Tubing	1
21	29-7400	Caution Decal	1
22	29-7480	Serial Number Plate	1

TORO TRIMMER 1200 MOTOR AND HOUSING ASSEMBLY

MODEL NO. 51400 - 8000001 & UP



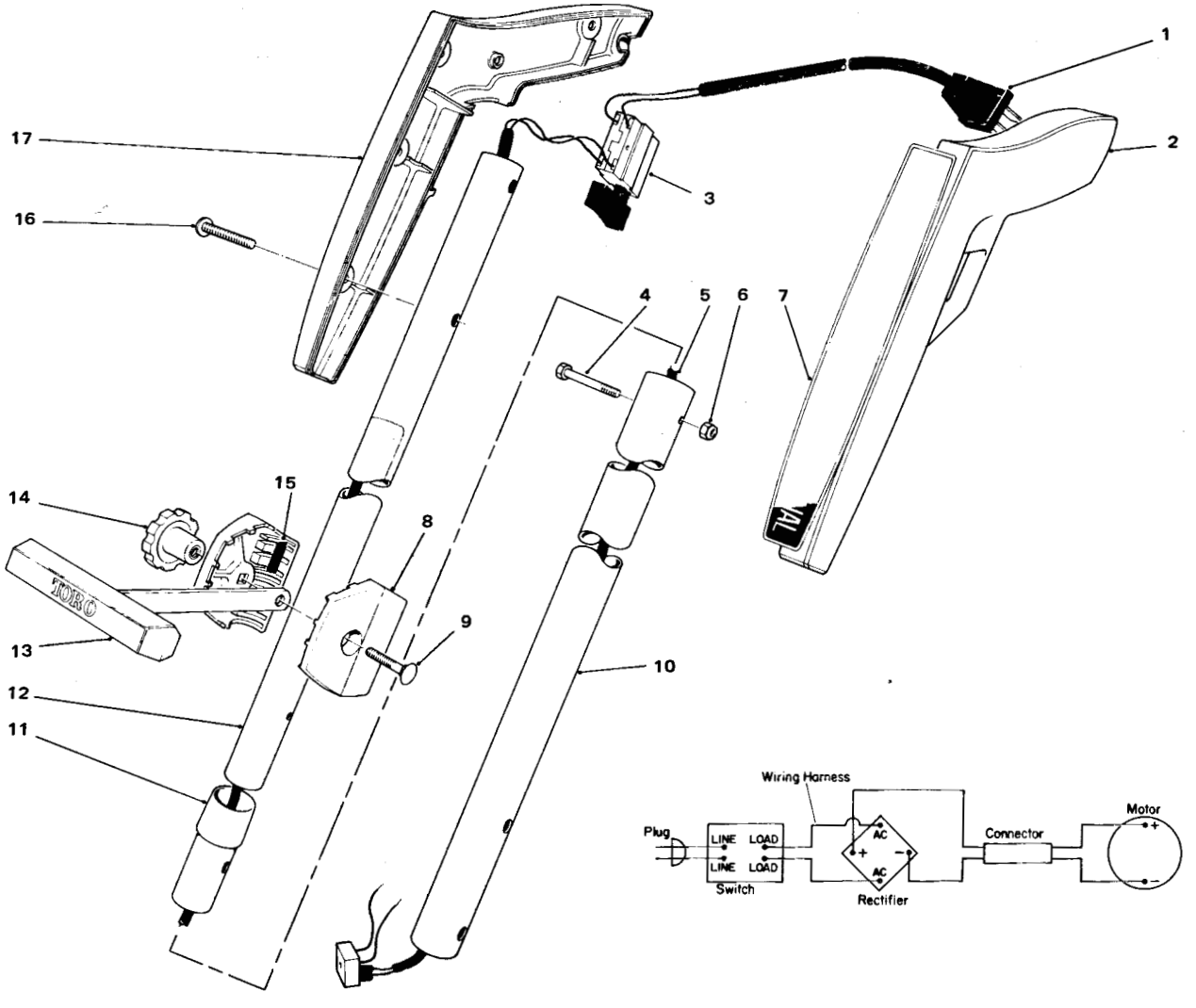
PARTS

Ref. No.	Part No.	Description	No. Used
1	32104-120	Screws	6
2	32121-88	Roll Pin	1
3	29-7110	Bridge Rectifier Assembly	1
4	3255-17	Lockwasher	1
5	3219-14	Jam Nut	1
6	29-7080	Motor	1
7	33-5850	Toro 1200 Decal	1
8	29-7050	Left Motor Housing	1
9	29-7090	Fan Hub with Eyelets	1
10	3290-418	Retaining Ring	1
11	29-7130	Compression Spring	1

Ref. No.	Part No.	Description	No. Used
12	3256-42	Washer	1
13	29-7150	Spool Core	1
14	29-7140	Driver	1
15	29-7380	Empty Spool	1
16	88003	50', .065" Cutting Line in Coil	1
17	88006	50', .65" Cutting Line Prewound on Spool	1
18	29-7370	Shield with Cut-Off Blade	1
19	29-7060	Right Motor Housing	1

TORO TRIMMER 1200 HANDLE ASSEMBLY

MODEL NO. 51425 - 9000101 & UP



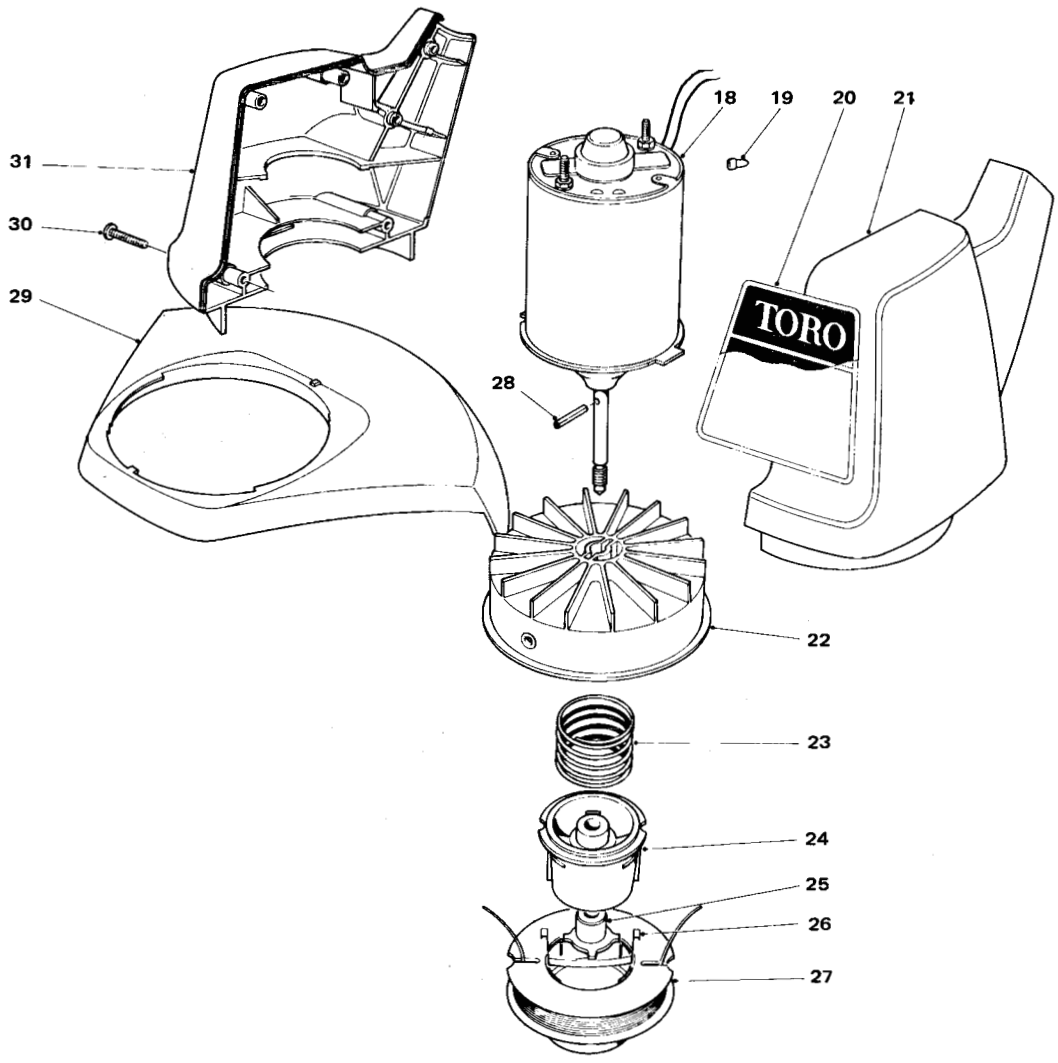
PARTS

Ref. No.	Part No.	Description	No. Used
1	33-8570	Power Cord	1
2	33-8811	Left Hand Grip	1
3	29-7360	Two Speed Switch	1
4	29-7440	Hex H.D. Screw	1
5	33-9130	Wiring Harness	1
6	3296-12	Locknut	1
7	33-9210	Decal	1
8	33-9150	Bracket	2
9	33-5790	Carriage Bolt	1

Ref. No.	Part No.	Description	No. Used
10	33-9140	Lower Tube	1
11	33-9180	Tubing Sleeve	1
12	33-8880	Upper Tube	1
13	33-9200	Tee Handle	1
14	19-4050	Knob	1
15	29-7470	Rubber Insert	4
16	32104-121	Screw	4
17	33-8821	Right Hand Grip	1

TORO TRIMMER 1200 MOTOR AND HOUSING ASSEMBLY

MODEL NO. 51425 - 9000101 & UP



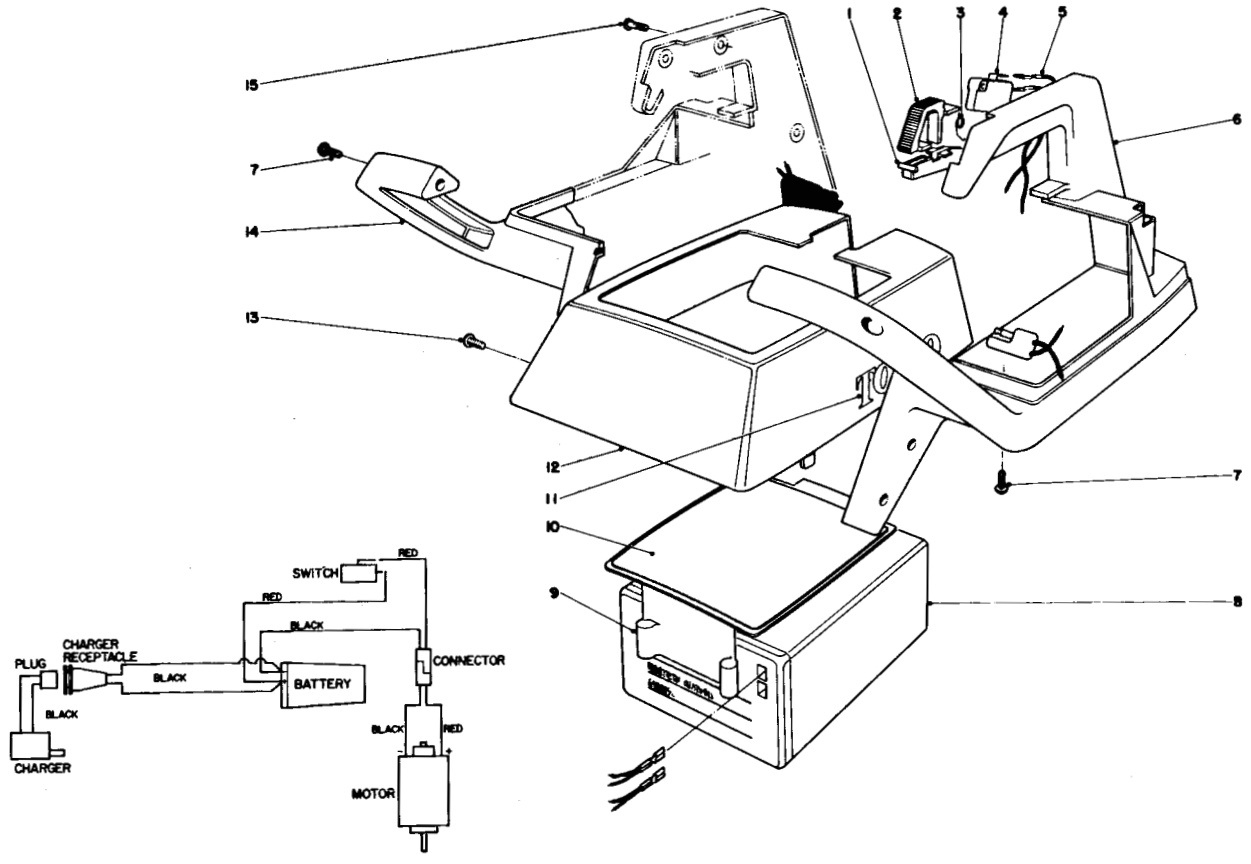
PARTS

Ref. No.	Part No.	Description	No. Used
18	29-7081	Motor	1
19	218-496	Wire Connectors	2
20	33-9170	Decal 1200	1
21	29-7052	Left Hand Housing	1
22	33-9240	Drum with Eyelets	1
23	29-7130	Spring	1
24	33-6230	Core	1
25	29-7140	Driver	1

Ref. No.	Part No.	Description	No. Used
26	33-8940	Saddle Clip	1
27	88006	Prewound Spool	1
	29-7380	Empty Spool	1
	88003	50' Coil - .065" Cutting Line	1
28	32121-88	Roll Pin	1
29	33-9110	Shield with Cut Off Blade	1
30	32104-120	Screw	6
31	29-7062	Right Hand Housing	1

TORO CORDLESS TRIMMER UPPER CASE ASSEMBLY

MODEL NO. 51550 - 8000001 & UP



PARTS

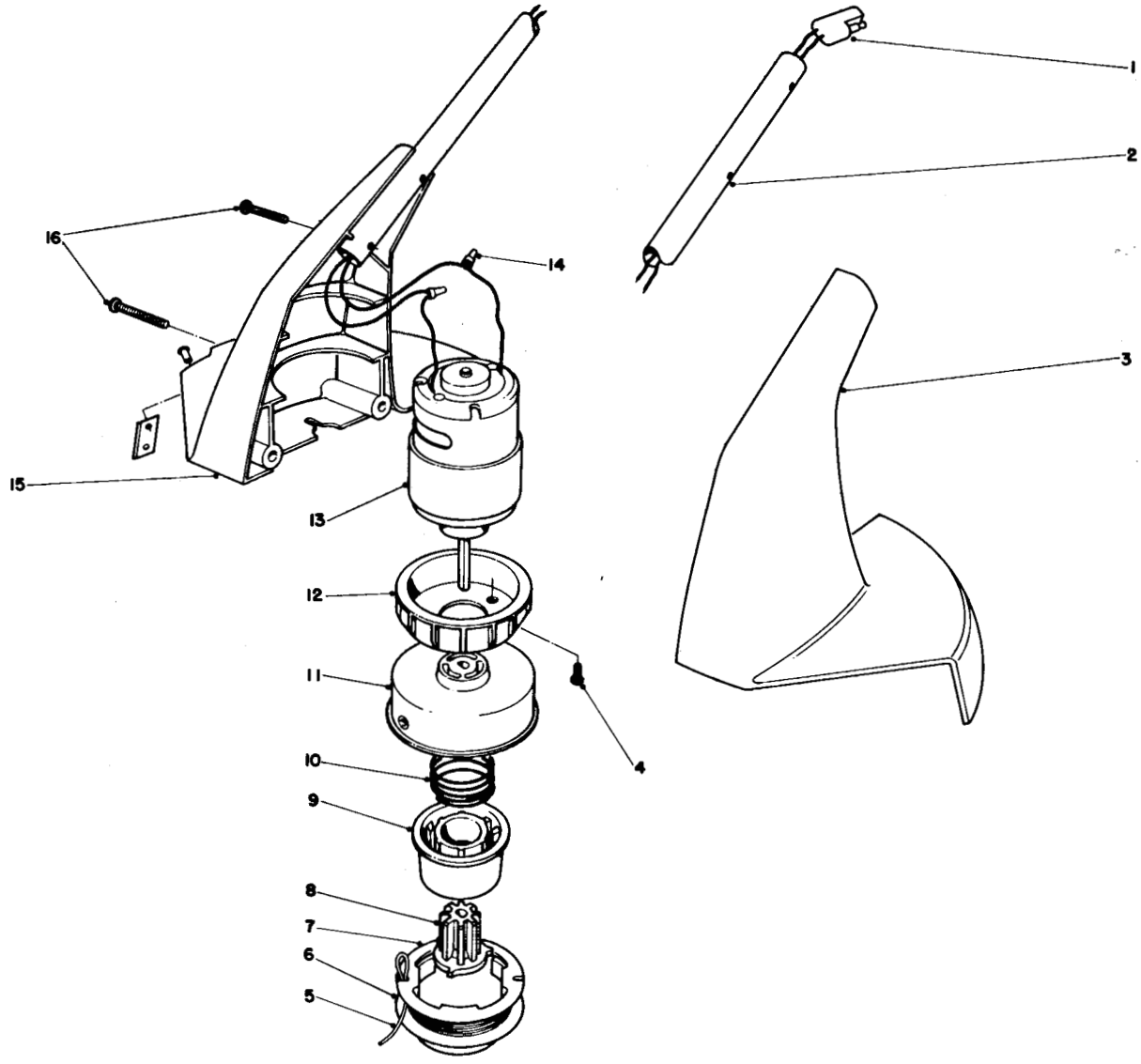
Ref. No.	Part No.	Description	
1	33-6630	Trigger	1
2	33-6620	Trigger Lock	1
3	33-6670	Spring	1
4	33-6610	Switch	1
5	33-6710	Upper Wiring Harness	1
6	33-6700	Handle and Battery Case — Left Hand	1
7	32104-121	Screw	6
8	33-6650	Battery	1
9	33-6540	Control Panel	1

Ref. No.	Part No.	Description	No. Used
10	33-6770	Decal, Control Panel	1
11	33-6780	Toro Decal	2
12	33-6550	Cover	1
13	32144-30	Screw	4
14	33-6600	Handle and Battery Case — Right Hand	1
15	32104-118	Screw	2
*	33-6730	Charger	1
*•	33-6830	Foam Pad	1

*Not Illustrated

TORO CORDLESS TRIMMER MOTOR HOUSING ASSEMBLY

MODEL NO. 51550 - 8000001 & UP



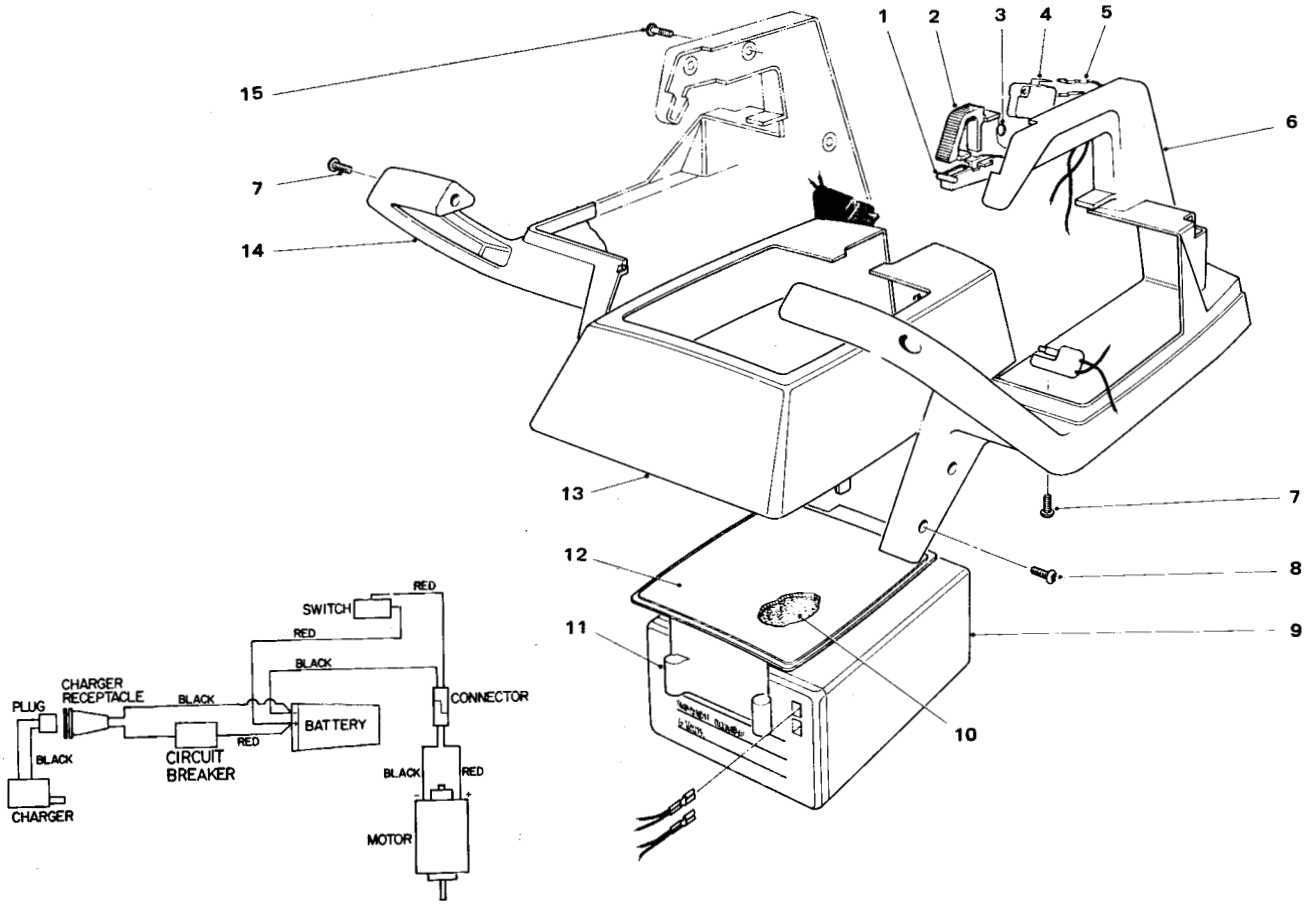
PARTS

Ref. No.	Part No.	Description	No. Used
1	33-6720	Lower Wiring Harness	1
2	33-6660	Tubing	1
3	33-6560	Left Motor Housing	1
4	32144-31	Screw	2
5	88002	.040" Cutting Line in Coil	1
6	33-6530	Empty Spool	1
7	88014	20", .040" Cutting Line prewound on spool	1
8	33-6510	Driver	1

Ref. No.	Part No.	Description	No. Used
9	29-8120	Spool Core	1
10	33-6840	Compression Spring	1
11	33-6750	Drum (including eyelet)	1
12	33-6580	Heat Sink Casting	1
13	33-6590	Motor	1
14	218-496	Wire Connectors	2
15	33-6760	Rt. Motor Housing including Cut off Blade	1
16	32104-123	Screw	4

TORO CORDLESS TRIMMER UPPER CASE ASSEMBLY

MODEL NO. 51550 - 9115105 & UP



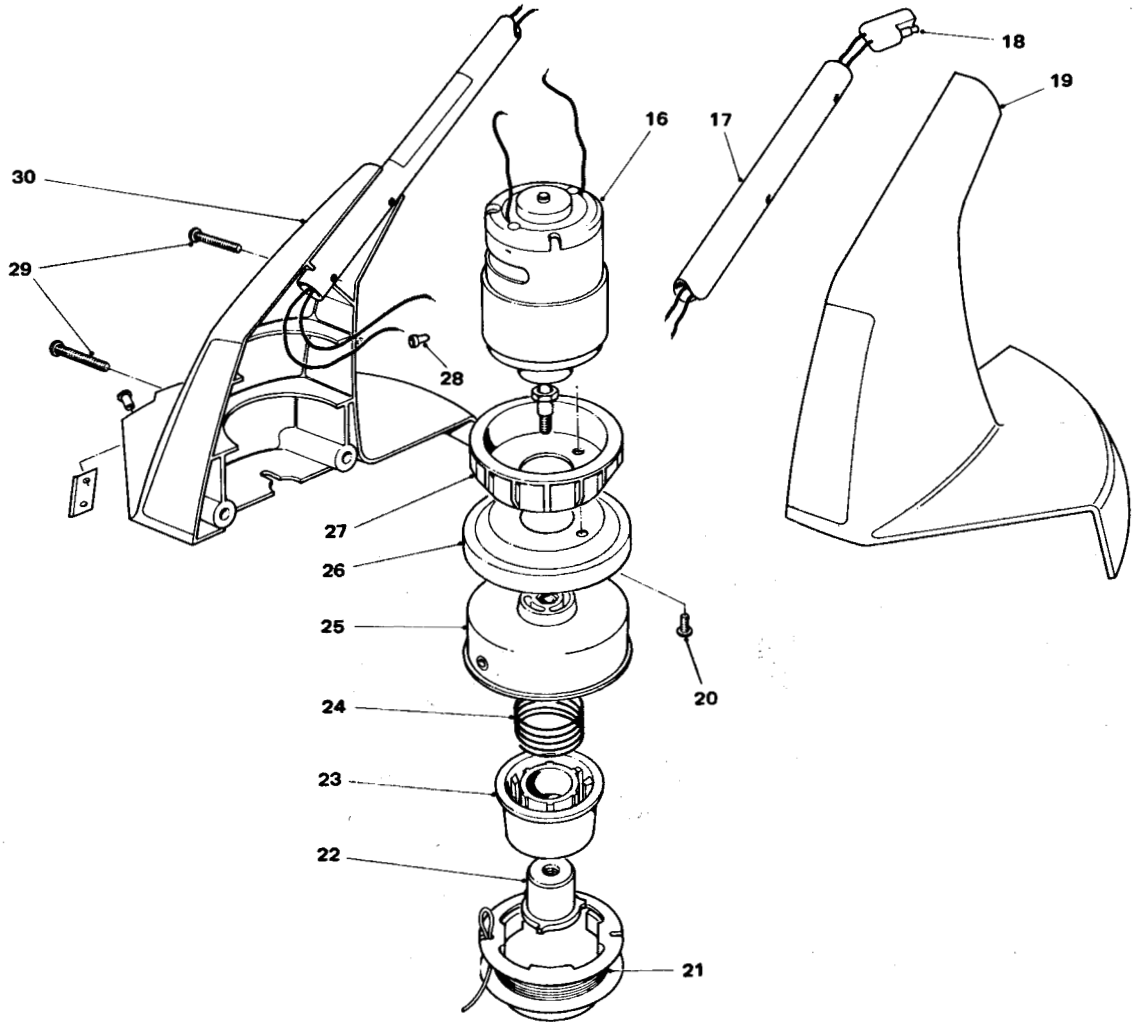
PARTS

Ref. No.	Part No.	Description	No. Used
1	33-6630	Trigger	1
2	33-6620	Trigger Release	1
3	33-6670	Spring	1
4	33-6610	Switch	1
5	33-9660	Wiring Harness	1
6	33-6700	Left Handle and Battery Case	1
7	32104-121	Screws	6
8	32144-30	Self Tapping Screws	4

Ref. No.	Part No.	Description	No. Used
9	33-6650	Battery	1
10	33-6830	Foam Pad	1
11	33-6540	Control Panel	1
12	33-9690	Control Panel Decal	1
13	33-9790	Cover	1
14	33-6600	Right Handle and Battery Case	1
15	32104-118	Screws	2

TORO CORDLESS TRIMMER MOTOR HOUSING ASSEMBLY

MODEL NO. 51550 - 9115105 & UP



PARTS

Ref. No.	Part No.	Description	No. Used
16	33-9750	Motor	1
17	33-6660	Tube	1
18	33-6720	Lower Wiring Harness	1
19	33-6560	Left Hand Housing	1
20	3250-18	Screws	2
21	88014	Prewound Spool	1
	33-6530	Empty Spool	1
	88002	50' Coil - .040" Cutting Line	1
22	33-9720	Driver	1

Ref. No.	Part No.	Description	No. Used
23	29-8120	Core	1
24	33-6840	Spring	1
25	33-9760	Drum with Eyelet	1
26	33-9730	Drum Cup	1
27	33-9740	Heat Sink Casting	1
28	218-496	Wire Connectors	2
29	32104-123	Screws	4
30	33-6760	Right Hand Motor Housing with Cut Off Blade	1

Form No. 3710-139

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