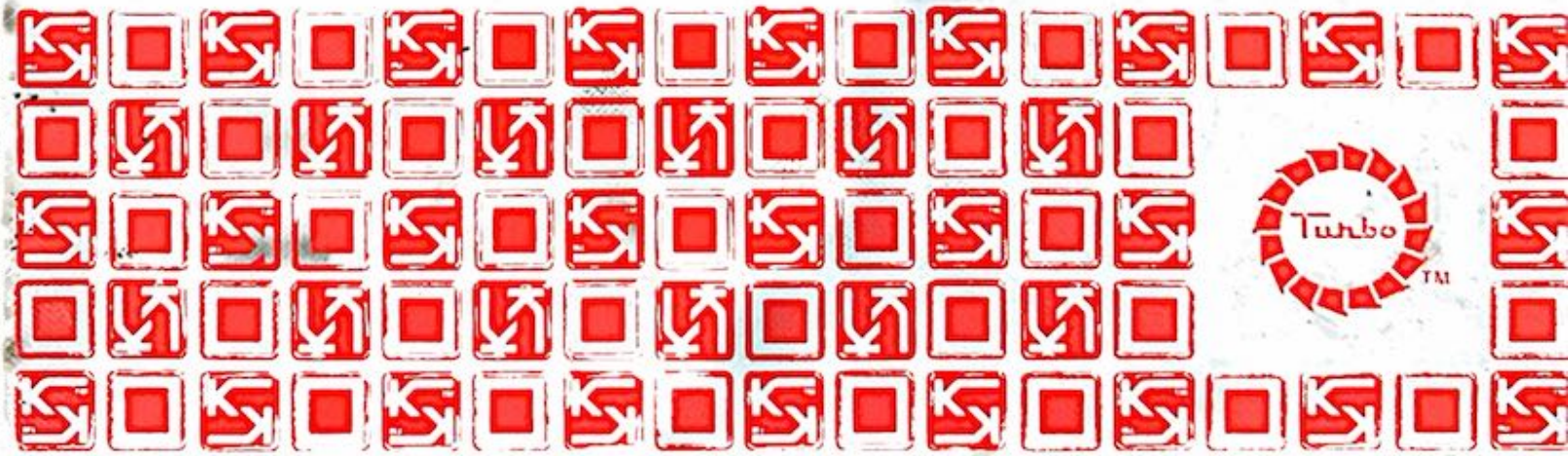
Kirby®

HERITAGE™

Time and money saving features you can depend on...



HERITAGE.

SERVICE MANUAL FOR HERITAGE MODELS 1HD AND 1HC
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The Kirby Company
1920 West 114th Street • Cleveland, Ohio 44102
A SCOTT & FETZER GROUP

Form No. 773681
Printed in USA
Price: $9.00

FOREWORD

THE PURPOSE OF THIS MANUAL IS:

1. To assist Kirby distributors and service personnel in establishing and operating a service department capable of making all necessary repairs to HERITAGE Model Kirbys.

2. To summarize for Kirby distributors and service personnel the various Kirby warranty policies; their rights, privileges, and responsibilities, and those of the consumer under these policies. By studying this summary, distributors and service personnel can gain the working knowledge necessary to properly apply the warranty policies as required by consumer protection agencies.

3. To serve as a text and guide for performance of "authorized service" with "authorized parts" as required to maintain testing laboratory approval and Kirby warranty coverage.

4. To provide a training text for the training or retraining of service personnel.

PROPER USE OF THE MANUAL

1. The manual is divided into two major parts: the Introduction and the Service groups. The introduction outlines the Kirby service policies and the functions and responsibilities of a Kirby service representative. Layout of a service department and methods of efficient operation are suggested. The minimum special tools and equipment required to perform effective service on HERITAGE Model Kirbys are recommended. The rest of the manual is devoted to detailed instructions for the disassembly, cleaning, repair, and reassembly of HERITAGE Model Kirbys. These instructions are presented for each group of equipment: the Kirby HERITAGE Convenience Group, the Kirby HERITAGE Super Renovator Group, the Kirby HERITAGE Home Turbo Group, the Kirby HERITAGE Handi-Butler Group, and the Kirby HERITAGE Service Group.

2. The detailed instructions provided in the manual have been reviewed and approved by the Kirby engineering and service departments and are the only authorized service procedures for HERITAGE Model Kirbys. These procedures shall be performed as written until changed with the approval of the Kirby Distributor Relations Manager or by a Service Bulletin issued by him.

3. The manual is presented in a three-ring notebook format to facilitate use and expansion. The serviceman is encouraged to annotate and insert pages to maintain a record of knowledge gained through service experience.

4. To assure that up-to-date service information is provided, the Kirby Company issues Customer Information Bulletins to all distributors and service representatives. These bulletins contain technical information and advice concerning engineering changes, parts adaptation, service methods, and other information valuable to operating an efficient service department. It is the responsibility of the serviceman to keep his manuals up-to-date by inserting, deleting, or marking portions of the manuals as instructed in a bulletin or by the cover letter accompanying a bulletin.

INTRODUCTION

The introduction is divided into two sections: I, Service Policies and Functions, and II, Service Department Operation and Layout. Section I summarizes the Kirby warrantys and the rebuilding policies, and the rights, privileges, and responsibilities of the distributor and serviceman in protecting the consumer under those provisions. Section II offers information and guidance valuable in establishing and operating a complete and efficient service department.

SECTION I
SERVICE POLICIES AND FUNCTIONS

KIRBY WARRANTY IN GENERAL

There are three agreements discussed in this section: THE LIMITED WARRANTY, THE FACTORY REBUILD AGREEMENT, AND THE FIRE REPLACEMENT AGREEMENT. Each operates under varying terms and conditions which are stated clearly in the owner's book or the card that accompanies the Kirby and equipment when delivered. There are some conditions common to all of the agreements. These are stated below.

1. Warranted Kirby equipment is warranted only by The Kirby Company; under no circumstances is a distributor or serviceman authorized to extend or alter the terms, conditions, limitations, or any other aspect of a warranty issued by The Kirby Company.

2. All Kirby warranties become null and void when the serial nameplate is altered, defaced, or removed from the machine.

3. Evidence of unauthorized repairs or tampering shall eliminate the Kirby product in question from the warranty and the rebuilding provisions.

4. If the consumer, distributor, or service personnel has a question regarding warranty coverage that is not explained in this text or in the warranty statements delivered with the equipment, the question will be resolved by The Kirby Company, Cleveland, Ohio

5. In any warranty matter, the Kirby product in question must be identified by:

   a. Serial number.

   b. Date of original owner's purchase.

   c. Name of original purchaser.

   d. The type of warranty protection in question.

   e. The terms and conditions of the warranty which qualify the product in question for warranty protection.

6. Whenever a product is returned to Kirby for warranty consideration, a detailed packing list must accompany the shipment.

7. Warranty consideration of any product involves the review and inspection of the product and the documentation presented with it. Service records which contain the dates of all engineering modifications and changes affecting the various components of the Kirby products will also be reviewed. Examination of the records, documentation, and the product in question determines warranty program qualification.

The Limited Warranty

The Kirby limited warranty for a particular model and production run is included in detail in the owner's book or on the warranty card included with the equipment. The main points and limitations of the warranty are summarized and paraphrased below.

1. The Kirby and accessories are warranted to the original purchaser for a period stated in the warranty — under normal use and service — against defective materials or workmanship.

2. This warranty is void if the Kirby has been damaged by accident or unreasonable use, neglect, improper service, or other causes not arising out of defects in material or workmanship; or if the serial nameplate has been altered, defaced, or removed.

3. Equipment requiring replacement under the Limited Warranty as a result of defective material or workmanship should be adjusted through the distributor.

4. This warranty does NOT INCLUDE A NO CHARGE SERVICE CALL at the consumer's home. The availability of such a call is entirely at the discretion of the distributor involved.

5. When the distributor sends a defective part to the factory for adjustment or warranty consideration, the transportation charges involved are the responsibility of the distributor or the consumer.

6. In all cases there must be unmistakable evidence that the defect or malfunction is in the material or workmanship; otherwise, replacement or adjustment will not be made.

7. Equipment shipped to a facility of The Kirby Company for repair, service, or adjustment without proof of purchase date will be returned unrepaired.

The Factory Rebuild Agreement

All claims for adjustment under the factory rebuild agreement must be presented directly to The Kirby Company, Cleveland, Ohio, in accordance with the instructions contained in the owner's book. The distributor is not to repair or replace equipment under the terms of this agreement. The company will not recognize or compensate such claim settlements. It is for this reason the terms common to all the rebuild agreements are presented below. The terms and conditions of the factory rebuild agreement are specifically stated in the owner's book supplied with each model Kirby. The cost of service and other terms of the factory rebuild agreement vary with the model Kirby involved. Refer to the agreement for specifics. Listed below are some important terms and conditions.

1. The original purchaser is entitled to whatever repairs or replacements may be required as a result of normal fair wear and tear. The rebuild agreement is not an insurance program against breakage or loss, but a program to provide service at a minimum cost to cover the effects of normal fair wear and tear. Replacement of lost, missing, or broken parts can only be made at a cost in excess of the basic rebuild charge.

2. The rebuild price does not include transportation to and from the factory. This is the responsibility of the consumer. Shipments will be accepted on a collect basis; however, such incoming transportation charges along with outgoing transportation charges will be included in the final invoicing for services rendered.

3. Return shipment of all Kirbys serviced under the factory rebuild agreement can only be made directly to the residence of the consumer. If a preferred delivering service is not specified, the company will make the return shipment through the most economic carrier in keeping with the size and destination of the shipment.

The Fire Replacement Agreement

All claims for service under the fire replacement agreement must be presented directly to The Kirby Company, Cleveland, Ohio; in accordance with the instructions contained in the owner's book

supplied with the equipment. The Kirby distributor is not to replace material lost or damaged by fire, as the company will not recognize such claim settlements. We review below the two methods of presenting a fire claim to enable you to answer questions regarding claim presentation.

1. Whenever possible the fire damaged remains should be returned to the factory. A letter of instructions covering such a shipment should include the following information:

   a. The date and residence at time of purchase.

   b. The name of the Kirby distributor from whom the unit was purchased.

   c. A listing of those items which may not be included in the shipment as a result of the customer's inability to salvage the same from the fire area.

   d. Serial number of fire damaged Kirby.

   e. Proof of purchase — cancelled check or contract.

   f. Warranty Instruction Book bearing Authorized Signature.

   It is not necessary to have this statement notarized as the fire-damaged remains are evidence in themselves of the loss experienced.

2. When, as a result of fire, the remains of the Kirby equipment are not available, then a statement should be prepared containing the following information:

   a. The Model and Serial number as well as the name of the distributor from whom the unit was purchased.

   b. The date of such purchase and residence at the time of purchase.

   c. The extent of Kirby equipment involved in the claim (the customer is entitled to include in his claim all Kirby equipment which had been included in the original purchase).

   d. A statement outlining the circumstances under which fire loss was experienced.

   e. A statement to the effect that this is an initial claim and has not been presented at any previous date to either a Kirby distributor or our company in Cleveland.

   f. Proof of purchase — cancelled check or contract.

   g. Warranty Instruction Book bearing Authorized Signature.

   This statement must then be notarized and submitted to the factory.

The price of repair or replacement under the fire replacement agreement varies with the equipment involved. The specific expenses chargeable to the consumer are detailed on the warranty card supplied with the original purchase.

A 90-day limitation has been included in the fire replacement agreement. A fire claim must be submitted to the Cleveland facility within 90 days to be honored.

The return shipment of serviced or replaced fire claim equipment must be made directly to the residence of the customer involved. If such return is not possible as a result of fire loss, we will be willing to delay the return shipment for a period not to exceed 90 days without incurring additional costs in the form of storage charges. It is our opinion that such a delay will permit the reestablishment of a customer in a permanent residence where the possession of his Kirby will prove advantageous.

SECTION II
SERVICE DEPARTMENT OPERATION AND LAYOUT

ESTABLISHMENT OF A SERVICE DEPARTMENT

Developing the consumer service arm of any marketing organization is critical to the continued, long term growth and profitability of that organization. Although this section is not long enough to present a detailed plan for the development and growth of a successful service department, guidelines and suggestions are presented to assist the department manager and distributor to avoid the more common pitfalls when establishing this department. The beginning of this section deals generally with management and operation of a service department. This section also provides a list of specific tools and equipment that will be required for efficient servicing of Kirby products; and, in charted form, poison control information on the Kirby household products.

SELECTION OF YOUR SERVICE DEPARTMENT PERSONNEL

1. The Distributor, in the interest of organizing an efficient and successful sales organization, should select a capable, dependable, and trustworthy person as a service manager.

2. Considering the vast number of Kirbys in the field today it is difficult to visualize any area of the country in which a profitable service operation could not function.

3. In the interest of a successful organization, the activities of the service manager should be limited to service and conversely those of the sales department to sales. In this manner you will eliminate any questions a consumer may have regarding the type of consideration given a call for service assistance.

MANAGEMENT SUGGESTIONS

1. SCHEDULING. A work schedule or planning board separated into the days of the week should be provided, so that the amount of work and the promised completion date of each job can be ascertained at a glance. Businesslike handling and scheduling of service work is invaluable in building good will and future sales.

2. DOCUMENTATION. Although paper work can constrict the most healthy of businesses, in this age of increasing government regulation and with the courts leaning heavily on business to provide consumer protection, documentation of service transactions and consumer relations is critical. The development of a few well designed, multi-purpose forms will go a long way to making documentation a routine business practice.

IMPORTANT

Government agencies may require all service departments authorized to repair Kirbys to keep detailed records. Issues involving consumer safety MUST be reported to the factory within 24 hours of time unit is presented to Distributor.

3. SERVICE CALL DOCUMENTATION. A printed memorandum form should be supplied for service calls, re-demonstration notices — anything pertaining to the work to be done by the service department. On this form there should be a space for the name of the person to whom the note is directed, the subject or type of work to be done, the date of the note, the name and address of the consumer, space for detailed instructions and, finally, a space for the signature of the person making the note.

4. ESTIMATE AND QUOTATION DOCUMENTATION. To prevent any misunderstandings with a consumer regarding a point of general service or repair, develop a form listing specific service needs and prices to be authorized by customer. Use this form when discussing service options

with your customer, and thus eliminate possible further questions after the service transaction has been completed. Space on the form should be reserved for recording the agreed-upon price quotation. Make your quotation for service accurately and in a businesslike manner. Do not attempt to avoid issues which may necessitate additional cost to the consumer and consequently create dissatisfaction and complaints. A proper explanation of all options and charges at the very first contact with the consumer will save many hours of unnecessary lost time which can come about as a result of improper or incomplete communication with the consumer on each service issue. Verify state or local ordinances which may apply to accuracy of service quotation costs.

DEPARTMENT LAYOUT AND SHOP ARRANGEMENT

1. GENERAL.

   a. The physical layout of your service department will depend largely on the size and shape of the space available. However, regardless of the layout, such things as cleanliness, orderliness (a place for everything — everything in its place), and proper handling of necessary paper work are very important.

   b. A good service department should be partitioned off from the rest of the office so as to exclude the casual trespasser. A dutch-type door with a shelf topping the bottom half is quite universally used.

   c. A packing and wrapping table, equipped with wrapping paper and a gummed tape dispenser, would be convenient. A storage space for reserve supplies of repacking papers should be adjacent to this table.

   d. A telephone should be convenient to this department.

2. SAFETY AND ENVIRONMENTAL CONDITIONS.

   a. Safe working conditions must prevail. Electrical outlets and equipment should comply with local building code regulations. Safety glasses should be worn at all times when working with power equipment in your shop. In addition, service departments may be subject to the requirements of the U.S. Occupational Safety and Health Act (OSHA).

   b. Bright but glareless light should be supplied. Poor lighting adds strain to the working conditions. Naturally, proper ventilation and heating conditions should prevail. Courtesy should characterize all contacts.

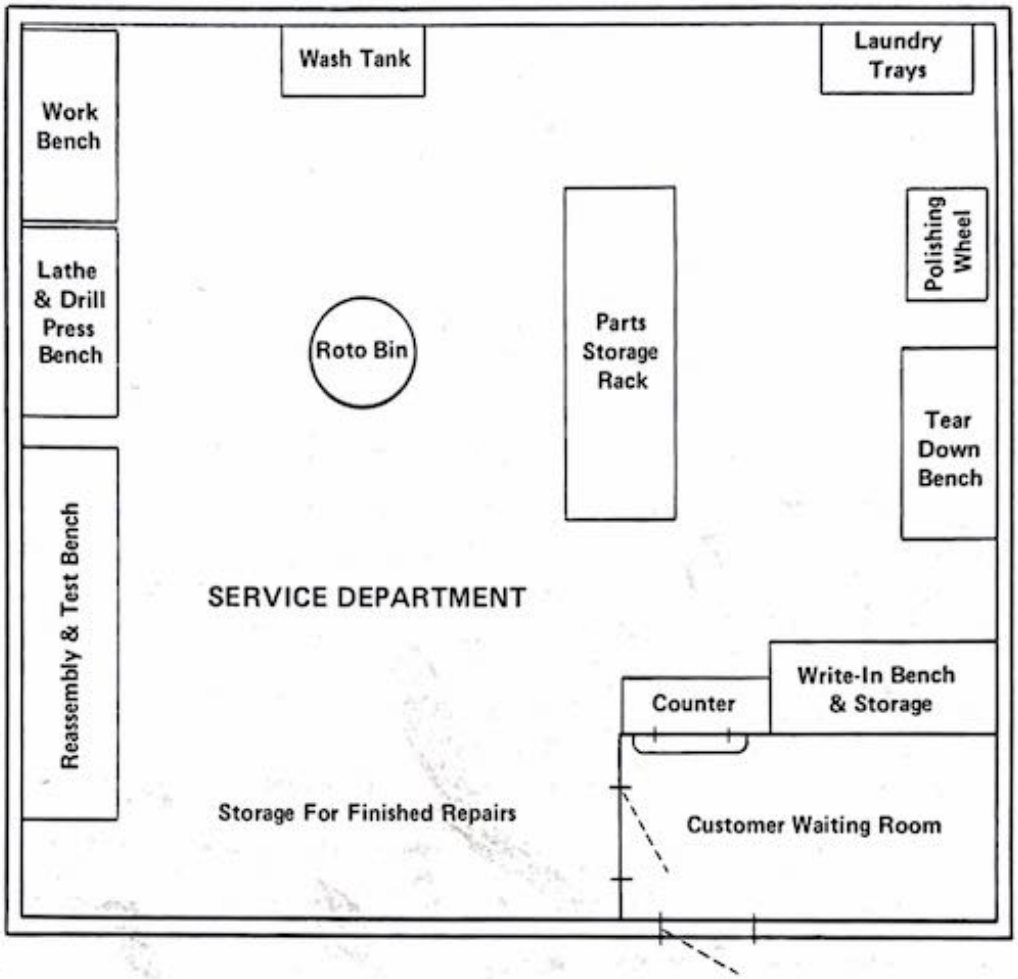
3. DEPARTMENT LAYOUT. The accompanying sketch shows what we believe to be the ideal floor plan for a service department. The diagrammed area is approximately 15 feet square; however, the principle of flow of work material, as expressed in this diagram, can be incorporated under modified area circumstances. This area has been planned on the assumption that you will be performing repairs equivalent to major overhauls.

4. SHOP ARRANGEMENT. The pictures below show a layout of a model service department in which all parts are readily accessible with a minimum of lost motion.

SPECIAL TOOLS AND EQUIPMENT

1. With the exception of the few special Kirby tools as outlined on the current parts list, all necessary tools may be purchased locally at a hardware dealer of your choice. A list of those items which would be considered as standard tools consists of the following:

Chisel, Steel - 3/8" blade
File, Round Rattail - 8" long
File, 1/4" Pillar - #4 grade - 6" long
Hammer, Ball Peen, size 8 oz.
Pliers - Truarc No. 0300
Pliers, Electricians' diagonal cutting pliers - 5" long
Pliers, Heavy duty combination - 6" long
Pliers, Needle nose - 8" long
Screwdriver - Phillips head
Screwdriver - 1/4" blade
Screwdriver - 5/16" blade
Screwdriver - 7/32" blade
Soldering Iron, Quick Heating
Vise, Bench to open 4" or more
Assorted Special Kirby Tools as listed on Price List



A roto bin provides for convenient, readily accessible storage of small parts. An acceptable storage rack for small parts is manufactured by Frick-Gallagher Mfg. Co., Wellston, Ohio.

Storage bins for parts too large for the roto bins can be constructed by a local carpenter or handy man to fit the requirements and the available space.

2. Test meters required:

Volt Wattmeter, Robinair Model 14865 or equivalent
Accuracy ±3%
Voltage ranges 0-130 V and 0-260 AC
Wattage ranges 0-500, 0-2500, and 0-5000

This instrument measures power consumption of an electrical device and, at the same time, monitors the input voltage to locate trouble spots caused by low voltage supply, overloaded circuits, or inadequate wiring.

High Voltage Insulation Tester, Slaughter Co. Model 101.2.5 or equivalent
Six voltage settings between 500 to 2500 VAC
Indication: buzzer
Detection: breakdown, ground, and short

Volt Ohm Meter, A.W. Sperry Instruments Inc. Model SP-15 or equivalent

Sensitivity	2KΩ/VAC and DC
AC V	5/25/250/1000
DC V	5/25/250
DC MA	0.5/5/250
Ohms Full Scale	5K/500KΩ
Ohms Midscale	50/5KΩ
Continuity Range (Buzzer)	Separate Switch Position
Accuracy	DC ±3%FS — AC ±4%FS — Ohms ±3% of ARC

3. For a new distributor, the Handi-Butler attachment will suffice as a satisfactory polisher for touching up minor scuffs and scratches. For deep scratches we suggest that a very fine grade of emery cloth be used before polishing is attempted on the Handi-Butler. As a matter of fact, a handy tool can be made by wrapping this fine emery cloth around a flat file or a 12" rule, fastening it at either end with a heavy rubber band.

4. Still another most important tool in every service shop should be a combination Watt Voltage Meter. Specification sheets are available from the factory on all motors issued, and by running the motor on the Watt Voltage Meter you can determine whether it is operating efficiently. In the event of faulty operation, you can precisely pinpoint the cause.

5. This testing equipment, while more refined than normal visual or sound observation as outlined in the troubleshooting chart on pages 1-6 and 1-7, is not designed to displace the accepted procedures but rather to be applied in conjunction with the instructions on the troubleshooting chart. A description of the proper interpretation to apply to information received from this testing equipment would consist of the following:

a. HIGH WATTAGE — If the wattage consumption is approximately two times the normal prescribed rating, it is reasonable to assume that the armature is defective.

b. EXTRA HIGH WATTAGE — If the wattage consumption is two to three times the normal wattage rating for the type of motor tested, then it is reasonable to assume that the field requires replacement.

If the motor had run for any length of time with a shorted field, then there is also a good possibility that the armature will have become affected. Even after the field replacement has been made, a very close recheck of the armature should be made.

6. Information concerning the availability of the above or other suitable test equipment is available from the factory. Also, specification listings of motor ratings are available as a separate insert for the reason that additions and improvements will result in changes of specifications.

POISON CONTROL CHART

KIRBY PRODUCTS

PRODUCT NAME	----- WHAT TO DO ----- IF SWALLOWED	IF EYE CONTACT	INGREDIENTS
ODORIFIC Deodorizer	Non-toxic. No ingestion hazard.	Flush with water.	Essential oils, slow evaporating solvent
SCUTTLE General Purpose Spray Cleaner	Non-toxic. Vomiting not necessary but may be induced. May cause nervous depression.	Flush with water.	8% - Butoxy ethanol 10% - Aqua ammonia Trace - Blue dye
INSTANT SUDS Rug and Upholstery Shampoo	Non-toxic. May cause diarrhea. Take emetic such as syrup of ipecac to cause vomiting; follow with milk or egg white.	Mild irritant. Flush with water. If irritation persists get medical attention.	4.9% - Sodium lauryl sulfate 4.0% - Acrylic polymer emulsion .10% - Tetrasodium edta .10% - Formaldehyde .05% - Fluorescent brighteners
CREAM WAX Floor Wax	Non-toxic.		8.0% - Carnauba wax 4.0% - Polyethylene wax .50% - Synthetic resin 4.0% - Petroleum distillant 1.3% - Soap emulsifier Trace - Thickener, perfume, formaldehyde
CARPET FRESH Rug Deodorizer	Non-toxic. Drink water. Induce vomiting. Call physician.	Flush with water.	32.96% - Sodium bicarbonate 65. % - Sodium sulfate .50% - Fumed silica .04% - N, n-cetyl ethyl morpholinium ethosulfate 1.5% - Fragrance blend
KGF-40 CONCENTRATE	Toxic. Induce vomiting. Inform physician.	Wash thoroughly with water. If irritation persists, get medical attention.	Ziram (zinc dimethyl-dithiocarbamate), zinc 2 mercapto benzo thiazole
HANDI-WAX Paste Wax	Non-toxic. Do not induce vomiting. Give 1/2 cup olive or cooking oil.		Vegetable and mineral waxes, amine stearate, soap, aliphatic petroleum distillates
ROLL-O-WAX Paste Wax	Non-toxic. Do not induce vomiting. Give 1/2 cup olive or cooking oil.		Vegetable, mineral, and synthetic waxes; morpholine stearate; soap; aliphatic petroleum distillates; 1-(3-choroally) 3, 5, 7 triaza; 1-azoniaadamantane chloride 0.4%; and water
SWEET AIRE	Toxic. Contact physician. Induce vomiting with warm salt water or mixture of mustard and milk.		60% - Isopropyl alcohol 1% - Formaldehyde 39% - Non-harmful substance

SECTION 1
MOTOR GROUP

INDEX

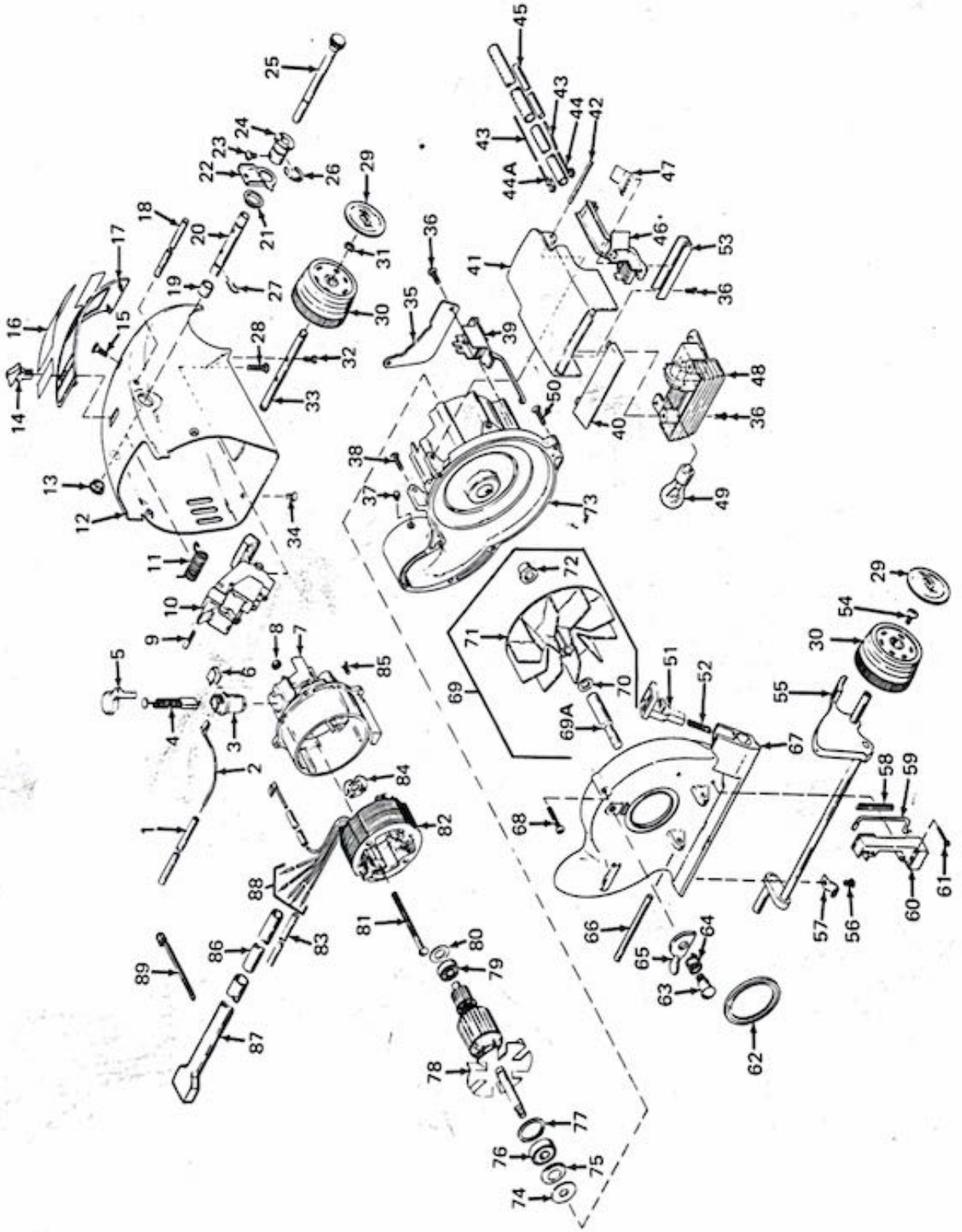


Figure 1-1. HERITAGE Models 1HD and 1HC motor group, exploded view

1-1. ILLUSTRATED PARTS LIST

The exploded view illustration (fig. 1-1) and its related parts list provide identification of the parts and show the proper relationship of associated parts as an aid to overhauling the motor assembly.

HERITAGE MODELS 1HD AND 1HC MOTOR UNIT PARTS

Index No.	Part No.	Part Name	Quantity
1-1-1	111573	Brush lead tubing	1
-2	110973	Brush lead wire w/clip	1
-3	107276	Commutator brush holder section	2
-4	118076	Commutator carbon brush	2
-5	107173	Brush cap	2
-6	106859	Commutator brush retainer clip	2
-7	100180	Motor bell housing, plastic	1
-8	104773	Field screw nut	2
-9	111180	Foot switch clip	1
-10	110581	Foot switch	1
-11	137073	Handle fork spring	1
-12	135678S	Housing shell	1
-13	135960	Housing shell bushing, RH, small	1
-14	136681	Handle lock button	1
-15	110673	Foot switch screw, top	1
-16	112081	Scuff plate label	1
-17	111281	Foot switch scuff plate	1
-18	136979	Handle lock shaft	1
-19	137973	Handle fork oilite bearing	1
-20	137173	Handle fork spring shaft	1
-21	135860	Housing shell bushing, LH, large	1
-22	137579	Handle fork spring yoke	1
-23	137373	Handle fork spring screw	1
-24	137273	Handle fork spring bushing	1
-25	137879	Handle fork pin	1
-26	136373	Handle fork bushing clip	1
-27	1005	Handle fork spring clip	1
-28	110773	Foot switch screw, bottom	1
-29	131881	Wheel hub cap	4
-30	131981	Wheel	4
-31	132180	Wheel clip	4
-32	102269	Rear wheel shaft screw	2
-33	102080	Rear wheel shaft	1
-34	138470	Housing shell assembly screw	3
-35	119276	Vent plate	1
-36	102168	Headlight/speed selector switch/vent screw	6
-37	100656	Sani-Em-Tor connecting pin	3
-38	134756	Fan housing to motor housing screw	3
-39	134381	Speed selector switch	1
-40	161981	Headlight cap bumper	1
-41	160279	Headlight cap	1
-42	163379	Headlight cap hinge pin	1
-43	110878S	Headlight lead, white	1

Index No.	Part No.	Part Name	Quantity
1-1-44	112679	Terminal clip, single	1
-44a	112779	Terminal clip, double (orange lead)	1
-45	111678	Insulation tube, white	1
-46	112579S	Terminal block	1
-47	***	. Terminal block insulator	1
-48	108979	Headlight lens and socket	1
-49	109273	Headlight bulb	1
-50	135169	Fan housing to motor housing screw	1
-51	133073P	Ratchet lock	1
-52	1331	Ratchet lock spring	1
-53	162379	Terminal block hold down	1
-54	1321	Wheel screw	1
-55	131673S	Front wheel bracket shaft	1
-56	134157	Front shaft clamp screw	2
-57	134073	Front shaft clamp	2
-58	120481	Switch lever retainer	1
-59	120381	Speed selector switch lever	1
-60	120581	Switch lever cover	1
-61	135473	Switch lever cover screw	2
-62	122068	Nozzle seal O-ring	1
-63	1211	Nozzle lock screw	1
-64	1212	Nozzle lock spring	1
-65	121056P	Nozzle lock	1
-66	121656	Nozzle attaching shaft	1
-67	119781S	Fan housing	1
-68	134673	Fan housing to motor housing screw	1
-69	119078S	Plastic fan complete	1
-69a	***	. Fan pulley	1
-70	***	. Fan washer	1
-71	***	. Plastic fan	1
-72	***	. Spacer	1
-73	101181S	Motor housing casting w/seals and bearing	1
-74	100773	Front bearing seal	1
-75	100873	Front bearing seal retainer	1
-76	116073	Front bearing	1
-77	101076	Front bearing retaining ring	1
-78	114973	Armature	1
-79	115573	Rear bearing	1
-80	115774	Thrust washer	1
-81	104673	Field screw	2
-82	103981	Field	1
-83	111773	Motor tubing, white, short	1
-84	115674	Rear bearing finger spring	1
-85	100276	Bell housing assembly screw	4
-86	111981	Four wire insulator (clear tube)	1
-87	111481	Lead and switch cover, black	1
-88	120681	Terminal connector	1
-89	120781	Cable tie	1

*** Do not order this part; if defective, order the assembly above.

1-2. MOTOR UNIT CHECKOUT

a. Prepare the unit for motor checkout as follows:

(1) Remove the handle by pulling out the handle fork pin (25).

(2) Remove the Sani-Em-Tor and bag by grasping the bottom of the Sani-Em-Tor and pulling away from the housing shell, rotating the Sani-Em-Tor 1/8 turn around the exhaust port.

(3) Remove the nozzle or any other accessory from the motor unit to be tested.

(4) Remove the housing shell according to paragraph 1-3.

b. Check the motor unit for obvious damage, including cracked castings, broken or jammed fan, broken leads, burned wires or insulation, broken switches, misaligned parts, and other damage that could be discovered in a preliminary inspection. Correct any faults before attempting to check the motor operation.

c. Rotate the extended shaft of the fan to ensure that the motor unit does not bind or rub. If binding, scraping, difficult rotation, or unusual noise is noted, do not attempt to run the unit as additional damage may result. Instead, proceed with motor disassembly as described in paragraph 1-10.

CAUTION

The speed selector switch is not designed as a quick action "snap switch" and therefore should not be used as a start-stop switch for the motor. The switch should only be engaged by means of a properly attached accessory before power is applied through the main foot switch.

d. If the shaft rotates freely, use an electrical cord known to be in good condition and connect the unit to a power source.

CAUTION

When conducting the motor tests, cover the exhaust port with a soft porous cloth to trap possible dirt in the fan housing when the motor starts.

NOTE

For low speed motor testing, attach the standard nozzle (4, fig. 2-1). For high speed testing, attach the hose suction blower connection (10, fig. 5-1).

e. Check motor operation as follows:

(1) With nozzle body attached to the motor unit, the motor should operate at the low speed rate. If the motor starts when the main foot switch is activated, then check in accordance with instructions in step (3). To check the high speed side of the speed selector switch, remove nozzle attachment and attach the suction blower connection coupler which will activate the high speed range of the motor.

(2) If faulty operation of the speed selector switch is suspected, the switch can be tested in place.

(a) Disconnect the power cord from the motor to be sure the circuits are completely de-energized.

(b) Lift the black lead cover (87, fig. 1-1) and disconnect the leads from the selector switch.

(c) With a suitable test meter, test the switch for continuity. In the high speed position, the switch should be open across poles R to W, and Y to G; in the low speed position, the switch should be open across poles R to Y only. A discontinuity under these conditions or continuity other than described above indicates a faulty speed selector switch which should be replaced according to paragraph 1-5.

(d) Reconnect power cord to the unit and proceed with operational testing.

(3) While the motor is running, check the commutator and brushes for arcing. Only pinpoint arcing should be visible. If more severe arcing is noted, the brushes are defective, the commutator is rough or damaged, or the armature windings are shorted. Motor disassembly is required to repair or replace parts.

f. If faulty operation is evident, use the following troubleshooting chart to determine the cause of the unsatisfactory operation.

TROUBLESHOOTING CHART

MOTOR RUNS IMPROPERLY		
Trouble	Possible Cause	Remedy
Motor smokes after short period of operation	Defective armature	Replace armature (par. 1-10)
Motor runs slowly with little suction or power	Defective armature	Replace armature (par. 1-10)
	Dirty or defective brushes	Check brushes (par. 1-8)
	Poor electrical connection	Tighten electrical connection
	Dust and dirt buildup in nozzle and fan housing	Disassemble (par. 1-10) and clean out nozzle and fan housing
	Strands of carpeting, hair, etc., wrapped around pulley and brush	Disassemble (par. 2-3) and remove wound material from brush and pulley
	Too much dirt in the Sani-Em-Tor and bag	Empty the bag and Sani-Em-Tor
Motor vibrates	Broken fan	Replace fan (par. 1-10)
	Bent shaft	Replace armature (par. 1-10)
	Worn bearing	Replace bearing (par. 1-10)
Motor overheats	Defective field	Replace field (par. 1-10)
	Blocked motor vent inlet slots	Clean vent inlet slots (par. 1-3)
	Damaged or misaligned vent seal blocking motor vent outlet	Align or replace vent seal (par. 1-3)
Motor makes clicking or grating sound	Dirt or debris in motor housing	Inspect motor housing after removing housing shell (par. 1-3)
	Loose field screw	Inspect motor housing after removing housing shell (par. 1-3)
	Defective bearing	Replace bearing (par. 1-10)
	Vent fan hitting field	Realign or replace fan (par. 1-10)
	Defective fan	Replace fan (par. 1-10)

TROUBLESHOOTING CHART (Continued)

MOTOR DOES NOT RUN		
Trouble	Possible Cause	Remedy
Motor sparks and blows fuses when touching metal ground	Grounded wires in motor and/or headlight socket	Remove housing shell and inspect for worn, burned, or broken insulation (par. 1-3)
	Grounded armature or field	Replace armature or field (par. 1-10)
Motor and headlight dead	Defective foot switch	Replace foot switch (par. 1-4)
	Defective cord	Replace cord (par. 3-2)
	Nozzle not making proper contact with speed selector switch	Check nozzle fit and condition (par. 2-2)
	Defective speed selector switch	Replace speed selector switch (par. 1-5)
Motor dead but headlight lights	Defective speed selector switch	Replace speed selector switch (par. 1-5)
	Defective brushes	Replace brushes (par. 1-8)
	Loose or broken wire at foot or speed selector switch	Remove housing shell (par. 1-3a) and inspect wires (par. 1-4 and 1-5)
	Broken field lead	Inspect leads; disassemble and test for open field
Motor starts and stops erratically	Defective cord	Check cord (par. 3-2)
	Loose connections at foot or speed selector switch	Remove housing shell (par. 1-3a) and inspect (par. 1-4 and 1-5)
	Loose nozzle not making secure contact with speed selector switch	Check nozzle for fit and tightness (par. 2-2)
	Defective speed selector switch	Replace speed selector switch (par. 1-5)
	Defective foot switch	Replace foot switch (par. 1-4)
	Defective brushes	Replace brushes (par. 1-8)
	Defective field or armature	Replace as necessary (par. 1-10)

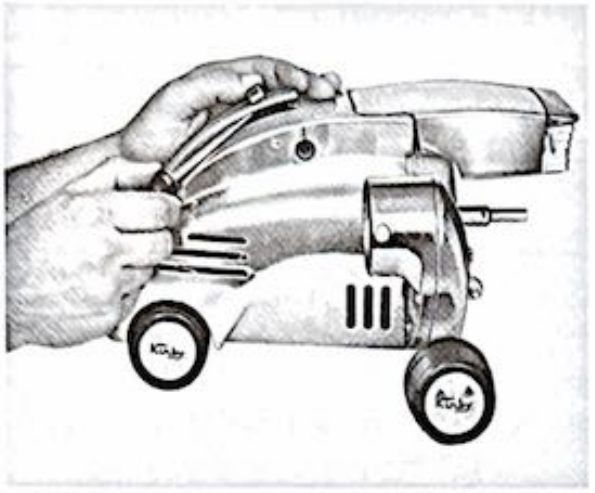


Figure 1-2. Removing plastic scuff plate and lock button

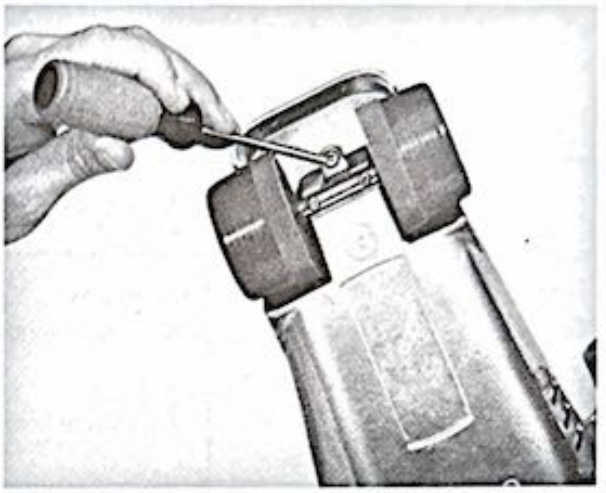


Figure 1-3. Loosening bottom foot switch screw

1-3. HOUSING SHELL

a. Removal. Removal of the housing shell (12, fig. 1-1) is necessary before proceeding with foot switch removal, headlight cap replacement, handle fork spring and handle lock replacement, and major overhaul. Remove and install the housing shell as follows:

(1) Wrap a clean cloth around a screwdriver blade to avoid scratching the housing shell. Pry up and remove plastic scuff plate (17). The handle lock button (14) will pry loose as well (fig. 1-2). Remove it and handle lock shaft (18, fig. 1-1), which will now be loose in the housing shell. Turn the housing shell on its side, and back out bottom foot switch housing screw (28) about 1/2 inch, as shown in figure 1-3. It is not necessary to remove the screw from the housing.

(2) Remove top foot switch screw (15, fig. 1-1).

(3) Remove three housing shell assembly screws (34) and remove housing shell (12) by pulling it back and up so that handle fork spring assembly inside housing shell clears upper brush holder (3) and brush cap (5).

(4) Remove two screws (32) and the assembled rear wheel shaft (33) and wheels (30). To remove stick-on wheel hub caps (29), place the assembled wheels and shaft in a vertical position. Gently force the upper wheel toward the lower wheel. The shaft will push the hub from the upper wheel, exposing "E" clip (31). Remove the clip and the wheel. Repeat for the second wheel.

b. Cleaning and inspection.

WARNING

Many cleaning solvents are toxic. Use in a well-ventilated area. Avoid breathing vapors. Avoid contact with skin.

(1) Clean the housing shell with a safety solvent or kerosene, taking care to remove all carbon dust and other dirt from the interior.

(2) Inspect the housing shell for cracks, severe dents, distortion, or other damage.

(3) Inspect the rear wheels for cracks, out-of-round mounting holes, looseness on shaft, and other damage; replace damaged wheels.

(4) Inspect the rear wheel shaft for misalignment and wear. Replace a damaged shaft.

(5) Polish the exterior of the shell with a buffing attachment or other metal polisher.

c. Installation.

(1) Position rear wheels (30) on rear wheel shaft (33). Attach "E" clips (31) to the shaft and hubs (29) to the wheels. Secure the shaft to the housing shell with mounting screws (32).

(2) Position the foot switch by pushing it about 3/8 inch into the large notch on the back of motor bell housing (7) to approximate its position. This must be done now because it is difficult to realign the switch after the housing shell is in place. See figure 1-4.

(3) Make sure that vent plate (35, fig. 1-1), speed selector switch (39), and black lead cover (87) are securely in place. Check that brush caps (5) are installed and that there is no debris or dirt fouling the motor.

(4) Slide shell over motor housing, lifting up slightly on the shell so that handle fork spring assembly clears motor brush and brush cap.

(5) Start the bottom foot switch mounting screw (fig. 1-3) into the foot switch, but do not tighten. Turn the housing shell on its side and fully install and tighten the top foot switch mounting screw (15, fig. 1-1). With the foot switch secured in position, tighten the bottom mounting screw fully.

(6) Install three housing shell assembly screws (34) and tighten. Finish tightening top foot switch mounting screw (15).

(7) If old scuff plate (17) is cracked or chipped, or if any tabs are worn or missing, install a new scuff plate. Align tabs on scuff plate with holes in housing shell and push plate in, starting with the bottom pair of tabs and working up, until all three tabs are firmly seated.

1-4. FOOT SWITCH

a. Remove housing shell and foot switch as described in paragraph 1-3a.

b. Inspection and testing.

(1) Inspect the switch and wires for loose, burned, or broken parts. Tug gently on the wires to check contact with the switch.

(2) Check continuity within the switch.

(a) Disconnect the power cord from the unit being tested to be sure the circuits are completely deenergized, and to gain access to the power supply prongs in the switch body.

(b) Attach a test probe to the power supply prong on the terminal connector side of the switch.

(c) Touch the other test probe to one of the "B" (black wire) terminal connectors. The meter should indicate continuity across the prong and "B" terminal.

(d) Attach a test probe to the other power supply prong.

(e) Touch the other test probe to a "W" (white wire) terminal connector. The meter should alternately indicate an open, then closed circuit as the foot switch is operated.

Figure 1-4. Positioning the foot switch in motor bell housing

(f) If the foot switch does not perform as described in either step (c) or (e), the switch is defective and should be replaced.

c. Replacement.

(1) Refer to figure 1-5 and note position of the wires. To remove the wires, fashion a tool by straightening one leg of a paper clip. Insert the paper clip into the release window next to each wire and pull out wire, as illustrated in figure 1-6.

(2) Tag each wire to facilitate reassembly.

(3) Install wires by pushing the bare ends of the wires into the proper switch recesses. If the wire end is damaged, clip off the end and strip insulation back about 1/4 inch. Tug gently on the wires to check for tightness.

(4) Replace housing shell and foot switch as described in paragraph 1-3c.

1-5. SPEED SELECTOR SWITCH

a. Remove the housing shell as described in paragraph 1-3a.

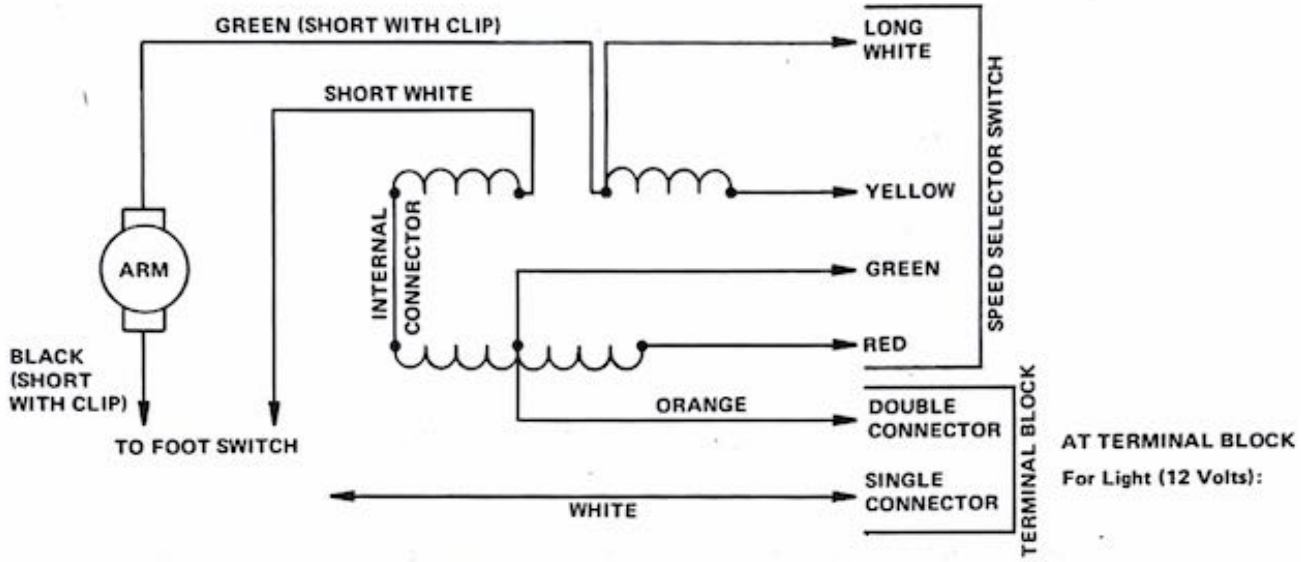
b. Speed selector switch (39, fig. 1-1) can be tested in place as described in paragraph 1-2e(2).

c. If the selector switch is faulty, remove and replace it as described below.

(1) Remove screws (61), and lever cover (60) from the face of fan housing (67), in order to pull lever (59) from the selector switch linkage arm which projects through the fan housing. See figure 1-7.

(2) If testing was performed in paragraph b, above, the leads will already be removed from the selector terminals; otherwise, remove lead cover

SCHEMATIC



PICTORIAL

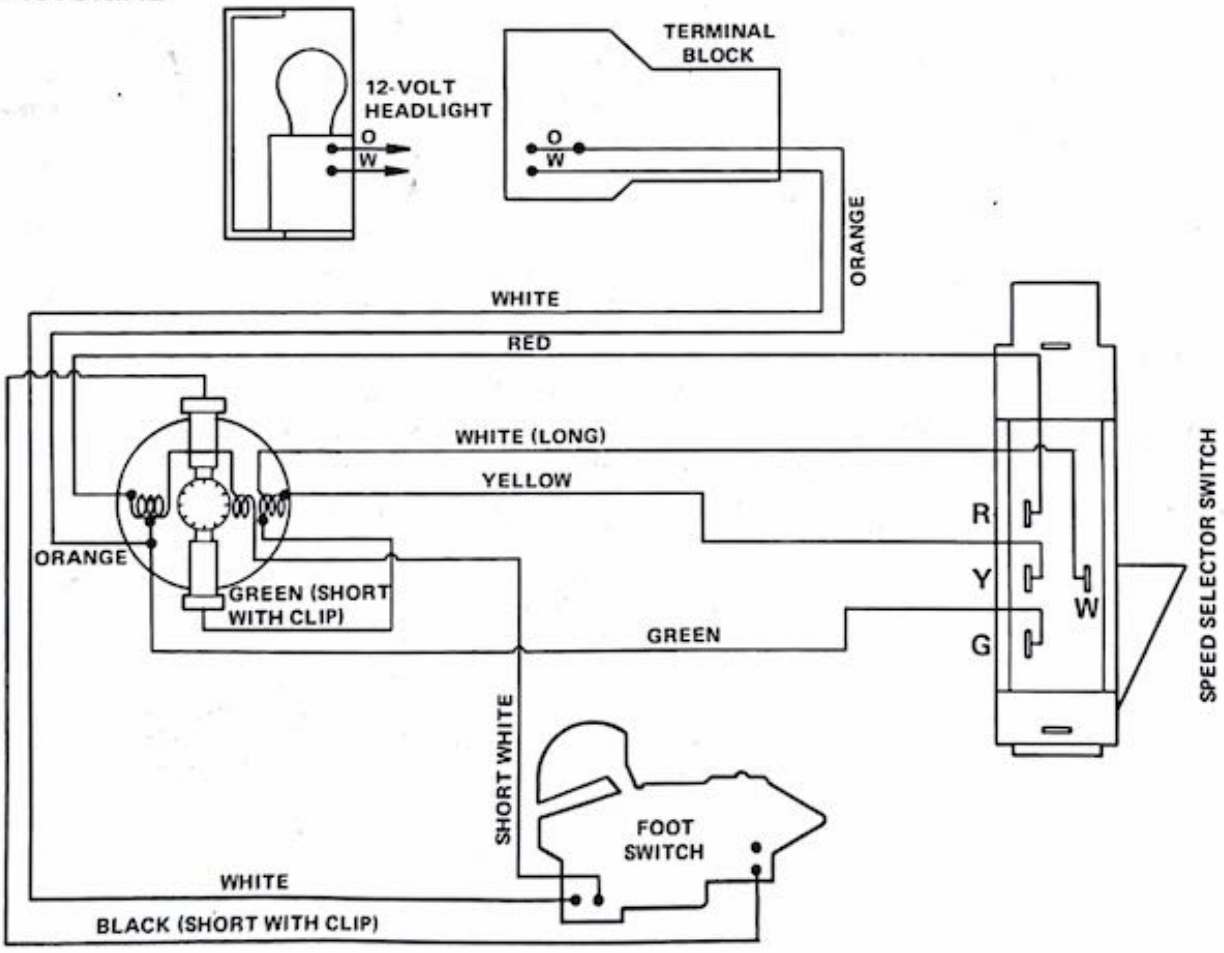


Figure 1-5. HERITAGE Models 1HD and 1HC wiring diagrams

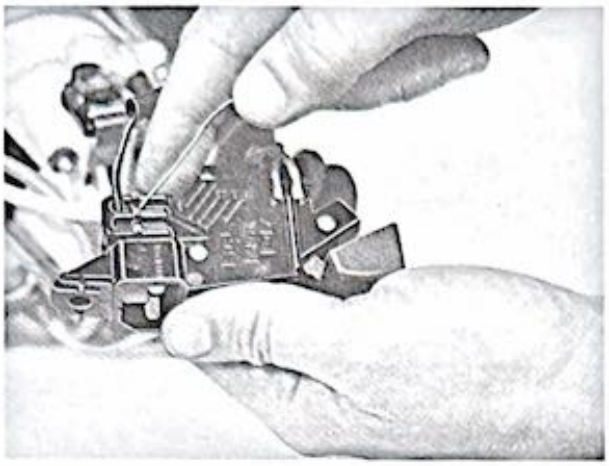


Figure 1-6. Removing wires from foot switch

(87, fig. 1-1) and the four colored leads from the speed selector switch.

(3) Remove the mounting screw (36) which secures the speed selector switch (39) to the vent plate (35) and motor housing (73). Lift the speed selector switch bracket off of the locating pin sticking through the vent plate and switch bracket. Being careful not to bend the linkage arm, slide it from the tear drop shaped hole at the bottom of the motor housing.

d. Switch replacement.

CAUTION

While installing the selector switch, be careful to avoid bending the linkage arm inserting it through the motor and fan housings, or while installing the switch lever (59).

(1) Insert the linkage arm through the motor housing eyelet and secure the switch in the retaining boss on motor housing (73, fig. 1-1).

(2) Emplace the selector switch by sliding the switch bracket over the locating pin of the motor housing sticking through the vent plate. Fasten the selector switch and vent plate to the motor housing with mounting screws (36).

(3) Insert lever (59) into the linkage arm and remount lever cover (60) to the fan housing with mounting screws (61).

(4) Inspect the four switch leads, the black switch/lead cover (87), the clear insulator tube (86), and the wire tie (89) before connecting the leads to the switch terminals. The four switch leads must be protected inside the insulator tube

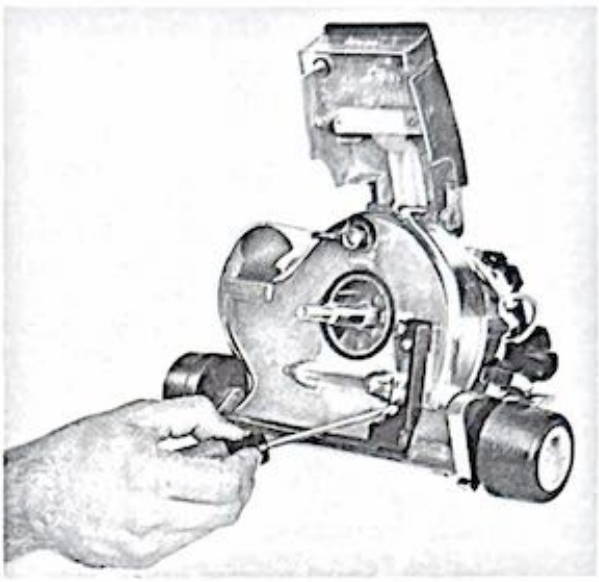


Figure 1-7. Removing lever cover from fan housing

and the tube must pass securely through the D-hole in the bell housing and into the housing. Be sure the switch/lead cover is secured to the insulator tube by the cable tie.

(5) Reconnect the four leads to the switch terminals according to the color coding. Cover the switch terminal board with the black switch cover (87), as shown in figure 1-9.

(6) Replace the housing shell as described in paragraph 1-3c.

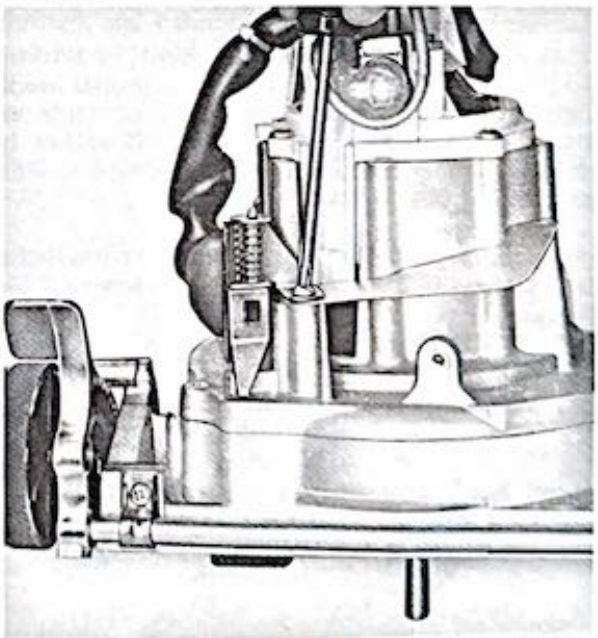


Figure 1-8. Removing speed selector switch

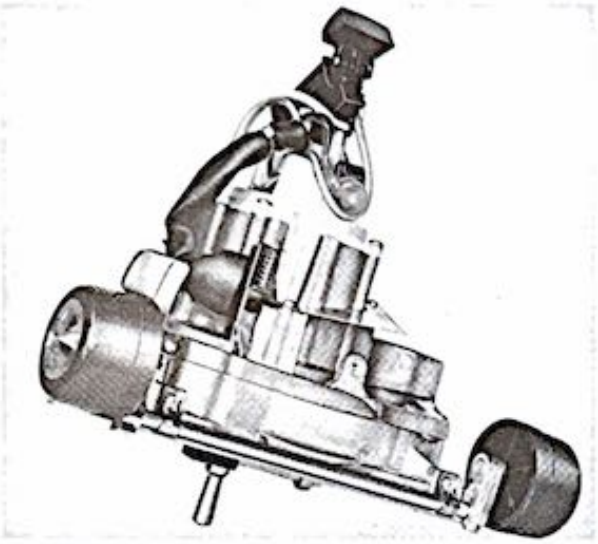


Figure 1-9. Speed selector switch and lead cover

1-6. HEADLIGHT

a. Bulb replacement.

(1) Lift headlight cap (41, fig. 1-1) and remove two headlight cap lens screws (36) as shown in figure 1-10. Remove lens from terminal block (46, fig. 1-1).

(2) To remove bulb, push it into the socket, rotate it about 1/4 turn counterclockwise, and pull it out. Test headlight operation with a good bulb before proceeding.

b. Socket testing. Corroded, bent, or broken contacts in the socket will prevent proper headlight operation. Clean and align contacts as necessary and recheck operation. If socket is damaged or contacts are defective, replace lens and socket assembly (48) as a unit.

c. Socket replacement. Fasten the headlight lens to headlight cap (41) with two screws (36).

1-7. HEADLIGHT CAP

NOTE

Headlight cap removal is not recommended as part of routine repair or overhaul. Remove and replace the headlight cap only if it has been damaged beyond functional repair.

a. Remove the housing shell as described in paragraph 1-3a, the headlight as described in paragraph 1-6, and the terminal hold down (53) by removing screws (36).

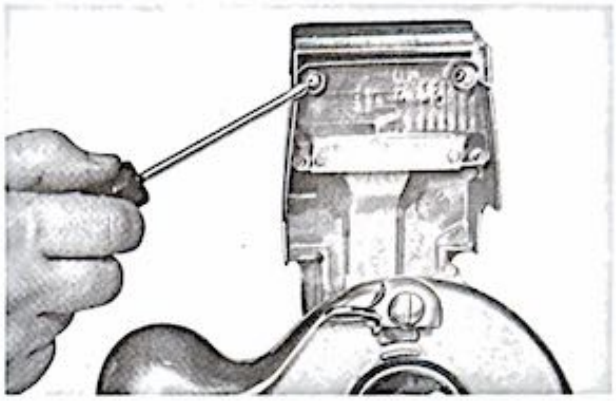


Figure 1-10. Removing headlight lens and socket

b. Remove the headlight cap by removing hinge pin (42) with a drift punch from left to right when the unit is facing you.

c. Attach terminal block (46), hold down (53), and mounting screws (36) to the new cap.

d. Align the holes of the new cap with those of the motor housing. Start the pin through the holes from right to left with the beveled end of the pin toward the left.

e. Be sure the headlight wires are over the hinge pin as shown in figure 1-18.

f. Replace the housing shell as described in paragraph 1-3c, and the headlight lens as described in paragraph 1-6c.

1-8. MOTOR BRUSHES

a. Removal.

(1) Remove housing shell as described in paragraph 1-3a.

(2) Pull off plastic brush caps (5, fig. 1-1). Note carefully the position of the brush wires. Squeeze together the spread end of the terminal clip and pull it out. The brushes (4) can then be removed.

(3) Inspect the brushes and armature commutator as described in paragraph b, below.

b. Inspection.

(1) Wipe the brushes with a rough, dry cloth. Examine the brushes for cracks, chips,

disconnected leads, damaged springs, roughness, or burned condition. If brushes are defective or worn to 3/8-inch length, replace with genuine Kirby brushes only.

(2) Inspect the armature commutator through the opening of the brush holder for roughness or excessive dirt. If the commutator is rough, scored, or dirty, remove the armature for cleaning or replacement, as directed in paragraph 1-10. If only a few commutator segments are burned, the armature windings may be open. Remove the armature and test as described in paragraph 1-10g.

(3) If only one brush is burned and the other remains shiny and smooth, the burned condition may be caused by an accumulation of dust or lint in the commutator area; or by a restriction of brush movement within the brush holder, caused by dirt or a pinched spring. In either case, the armature is probably good.

(4) If both brushes are burned, look for an open or shorted armature.

c. Brush installation.

(1) Insert brushes (4) into brush holders (3). Make sure the commutator contact surface is curved to fit the contour of the commutator. Use a pencil or small screwdriver to press down on the spring while inserting the terminal clip. Insert the clip from the notched side of the brush holder and push it in until the clip locks into the notch in the brush holder.

(2) Replace plastic brush caps (5), making sure the tubular part of each cap is securely inserted into the brush lead insulating tubes (1).

(3) Replace housing shell as described in paragraph 1-3c.

1-9. MOTOR UNIT MAJOR OVERHAUL

The following paragraphs give the instructions for complete disassembly, inspection, and rebuilding of the motor unit. It may not be necessary to completely disassemble the unit to replace the defective components and repair the motor unit. Follow the disassembly, inspection, and reassembly steps necessary to restore the unit to good working condition.

1-10. MOTOR UNIT DISASSEMBLY

a. Housing shell removal. Remove housing shell as described in paragraph 1-3a.

b. Speed selector switch removal. Remove the switch as described in paragraph 1-5c.

c. Front wheel removal.

(1) Remove the two front shaft clamp screws (56, fig. 1-1) from the bottom of fan housing (67).

(2) The ratchet lock (51) and ratchet lock spring (52) will be released as shaft (55) is removed.

d. Fan housing removal.

(1) Remove screw (68) from the front of fan housing (67). Remove three screws (38) from the motor housing casting around the exhaust outlet, and remove screw (50) from near the toe touch control.

CAUTION

The fan housing has been sealed with cement, and may not come apart easily. Do not attempt to pry the fan housing from the motor housing with a screwdriver as this may damage the mating surfaces or mar the front of the fan housing. Do not attempt to knock off the fan housing by rapping on it.

(2) To break loose the fan housing from the motor housing, insert a heavy screwdriver through the exhaust port of the motor housing and tap the end of the screwdriver. See figure 1-11.

(3) If the nozzle seal O-ring (62) is worn or damaged, remove it by prying it out with a small screwdriver, as shown in figure 1-12.

e. Fan removal.

CAUTION

Do not attempt to insert a screwdriver or other type of bar into the ventilating fan to lock the armature for fan (71, fig. 1-1) removal. Fan locking tool (T130) must be used. To fabricate a fan locking tool if you do not have one, refer to figure 1-13.

(1) Insert the fan locking tool through lower opening in motor bell housing (7, fig. 1-1) as illustrated in figure 1-14. Lower part of tool

Figure 1-11. Tapping fan housing loose from motor housing

area (A) shown in figure 1-13 slides into one of the slots in the armature laminations. See figure 1-15. The protruding part of the tool bears against the internal shoulder of the field laminations.

CAUTION

The armature (78) and the pulley (69) which fastens fan (71) to the armature have left-hand threads. Unscrew the pulley CLOCKWISE.

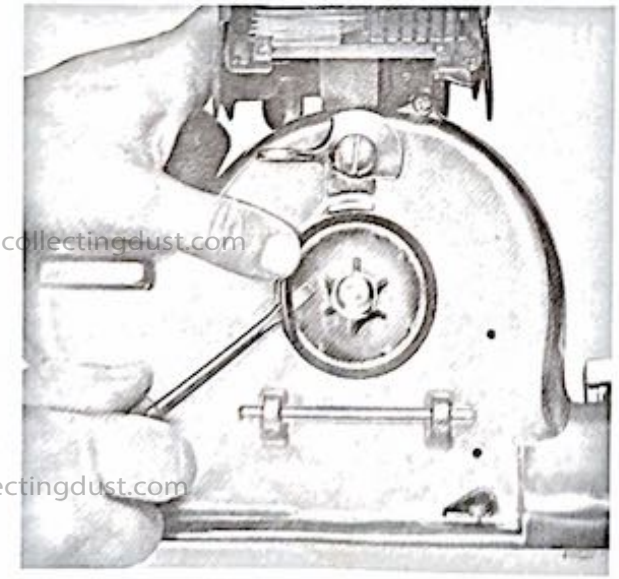
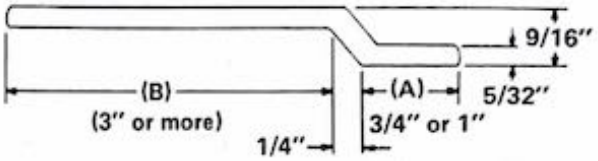


Figure 1-12. Removing nozzle seal O-ring



MAKE TOOL FROM ANY FLAT STEEL STOCK OF 1/16" THICKNESS. AREA (A) MUST BE GROUND OR FILED TO A THICKNESS OF 0.048 TO 0.050" SO THAT IT WILL ENGAGE SLOTS OF THE LAMINATIONS OF ARMATURE SIDE.

Figure 1-13. Fan locking tool dimensions

(2) Insert a small screwdriver or bar through the hole in pulley (69). Unscrew the pulley clockwise from the armature and remove the pulley, washer (70), fan (71), and spacer (72) from the shaft.

f. Motor brush removal. Refer to paragraph 1-8.

g. Armature assembly removal.

(1) Remove the headlight wires (43, fig. 1-1) and insulation tube (45) from the slot on the upper left side of motor bell housing (7). Do not disconnect the wires unless the field (82) must be replaced.

(2) Remove four screws (85) at the rear of the motor bell housing.

CAUTION

Before removing the bell housing from the motor housing, disconnect the four leads from the speed selector switch to prevent damaging the switch terminal connectors during bell housing removal.

(3) Pry bell housing out of motor housing casting (73) by inserting screwdriver blade between end of motor housing and shoulder on bell housing. It is possible to remove the bell housing and field assembly from the rear of the motor housing casting without disconnecting the field leads at the foot switch.

Figure 1-14. Fan locking tool inserted through motor bell housing

(4) Remove shaft of armature (78) from the front bearing (76) as shown in figure 1-16. If the front bearing is defective, use special retaining ring pliers (Waldes Truarc No. 0300) to remove the retaining ring from the bore in the motor housing casting as shown in figure 1-17. Press the front bearing from its seat in the motor housing casting. Do not remove the front bearing seal (74, fig. 1-1) or the seal retainer (75) unless they are badly worn.

(5) To remove armature rear bearing (79), attach bearing puller (SP125).

(6) Remove thrust washer (80) and rear bearing finger spring (84) from bearing seat at rear of motor bell housing.

h. Field removal.

(1) Remove the wires from the foot switch as described in paragraph 1-4c.

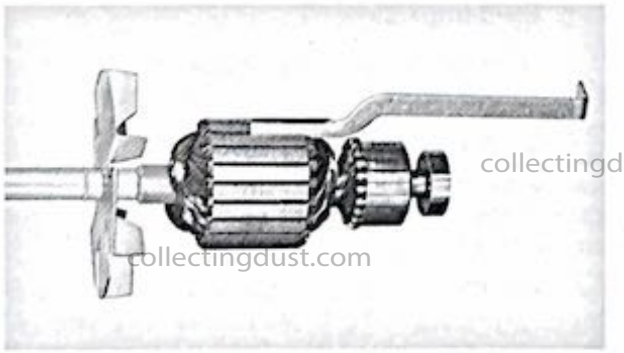


Figure 1-15. Locking tool positioned in armature slot

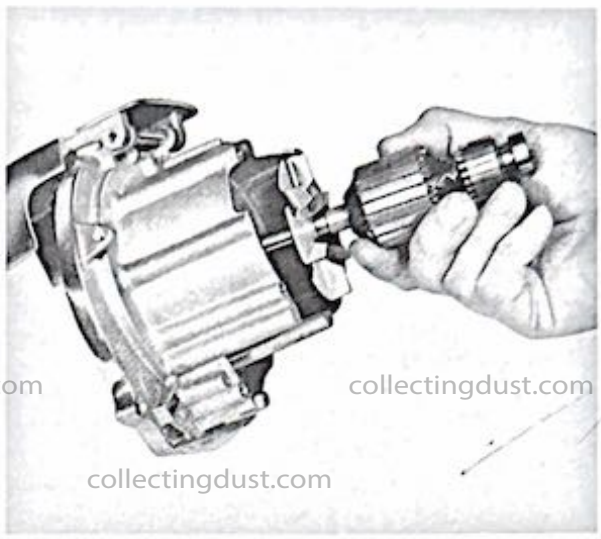


Figure 1-16. Removing armature

(2) Slide the headlight wires (43) from the slot on the back of the motor bell housing (7).

(3) Remove the headlight lens (48) and terminal block hold down (53) by removing screws (36) as shown in figure 1-10. The terminal block (46, fig. 1-1) will fall free, and may be removed easily from the hinge pin (42) by gently prying up with a small screwdriver.

(4) Disconnect the headlight wires from the terminal block by squeezing the clip prongs together with a tweezer or small screwdriver, as shown in figure 1-18. Pull the wires back through the slot above the hinge pin.

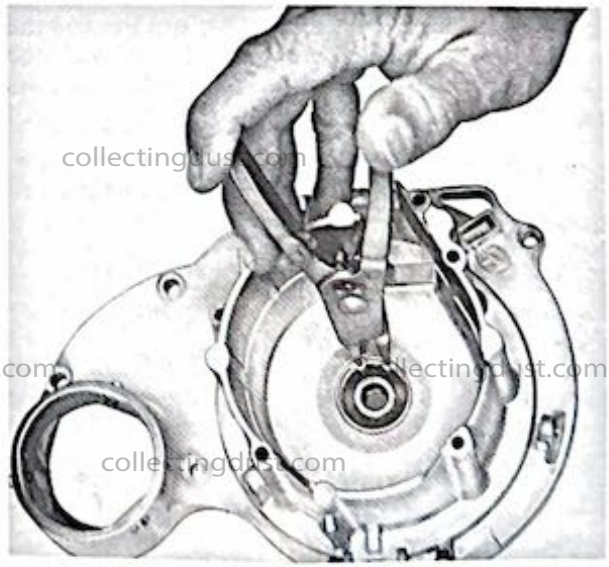


Figure 1-17. Removing bearing retaining ring from motor housing

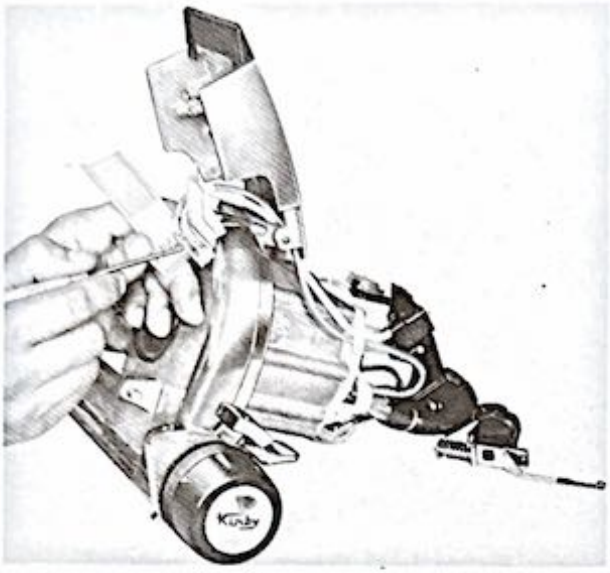


Figure 1-18. Headlight wire terminal clips in terminal block

CAUTION

There are no force fits, shrink fits, or compounds employed in the bell/motor housing assemblies that require the use of heat in the removal of any motor part. Using a torch to heat parts will burn insulation and damage plastic components.

(5) Remove two field nuts (8, fig. 1-1) from field screws (81), and remove the screws from the front of the bell housing. Disconnect the speed selector switch wires from the switch terminals. Cut the wire tie (89), and remove the black switch/lead cover (87), and insulator tube (86) from the switch leads. Pull the field out the front of the bell housing.

(6) Pry off retainer clips (6) with a screwdriver and push brush holders (3) out of the bell housing.

1-11. MOTOR UNIT INSPECTION AND REPAIR

a. Fan inspection. Inspect the fan for cracked, bent, or broken blades, for looseness on the shaft, and for damaged threads. Replace defective fan.

b. Bearing inspection.

(1) Inspect front and rear bearings (76 and 79, fig. 1-1) for rough or binding operation, excessive looseness or wear, or discoloration of balls or race. Replace the bearings if worn, damaged, or discolored.

WARNING

Many cleaning solvents are toxic. Use in a well-ventilated area. Avoid breathing vapors. Avoid contact with skin.

(2) If the bearings are to be reused, wipe them thoroughly with clean kerosene or a safety solvent to remove all old grease. Allow bearings to dry completely before reinstallation.

c. Armature inspection.

(1) Inspect the armature ventilating fan blades, and straighten any bent blades.

(2) Check for grounded armature windings with a test meter set for continuity. Because the armature is double insulated, the windings must be tested between the commutator segments and the laminations. If the meter indicates continuity at any segment, the armature is grounded and must be replaced.

(3) If the armature windings appear burned, if the commutator segments are burned from arcing, or if the armature is bent or worn where it seats the bearings, the armature must be replaced.

d. Commutator repair.

(1) Use No. 400 sandpaper to clean the commutator and to remove any burrs or surface roughness.

(2) Carefully clean all copper or carbon dust from the slots between the commutator segments.

(3) If the armature commutator is worn, rough beyond sandpaper smoothing, or grooved; it must be replaced.

e. Field inspection.

(1) With a volt ohm meter (VOM) (A.W. Sperry Instruments Model SP-15) set to test for continuity, test the circuit first across the red and green leads and then across the white and yellow leads. In both tests the meter should indicate continuity. If it does not, the field is open and must be replaced.

(2) Check the field for grounds by touching one probe of the VOM to the field core and the other to each of the field leads in turn. If continuity is indicated in any of the four tests, the field coil is grounded and must be replaced.

CAUTION

Before testing the high voltage resistance of the field, clean the motor windings. Dirt may conduct high voltage and endanger an otherwise good motor.

(3) With the high voltage insulation tester (Slaughter Co. Model 101.2.5) set for 1500 volts, and the speed switch engaged either by the nozzle or the hose attachment, test the insulation resistance by attaching one meter probe to the metal motor casting and the other to one foot switch prong for one second; then, using the alternate foot switch prong, repeat the test. If the insulation fails either test, replace the field.

f. Inspection and repair of housings.

(1) Stripped threads in any of the housings can be remedied by cleaning up the bore and using the next larger self-tapping screw upon reassembly; or the bore could be reamed and tapped for an appropriate sized machine screw.

(2) If fan housing (67, fig. 1-1) is cracked, bent, or otherwise damaged, replace it.

(3) If motor housing (73) is bent, cracked, or worn in a critical area such as the bearing seat, replace it.

(4) If motor bell housing (7) is cracked or worn, especially around the bearing seat; if the area around the brush holders is melted, burned, or discolored; or if the bearing seat is worn so that the bearing no longer fits snugly, replace the housing.

WARNING

Many cleaning solvents are toxic. Use in a well-ventilated area. Avoid breathing vapors. Avoid contact with skin.

(5) If a housing is serviceable, wipe it clean with a rag soaked in kerosene or safety solvent, and blow out dust with compressed air. Allow housing to dry completely before reassembly.

1-12. MOTOR UNIT REASSEMBLY

a. Motor housing casting.

(1) Install front bearing seal (74, fig. 1-1) into the motor housing. Pack with Kirby bearing grease (T105) and install front bearing seal retainer (75) into the motor housing.

(2) Press a new front bearing (76) into the housing bore. Take care to press against only the outer bearing race to prevent bearing damage. Using special retaining ring pliers (Waldes Truarc No. 0300), install retaining ring (77) to secure the bearing in the housing bore. Refer to figure 1-17.

(3) Install brush holders (3, fig. 1-1) by pushing them into place at the rear of the bell housing. Note that the brush holder has a tab on the underside of its seating lip. Align this tab with the corresponding notch in the motor housing casting. Lip on brush holder contacts the boss on bell housing when holder is properly seated. Fasten with retainer clip (6).

b. Field installation.

(1) Field wires are tied into a harness at one end of the field (82). This end faces rear of motor bell housing (7). Feed the six longest leads through the D-hole at the end of the bell housing. The short green lead with the brush holder terminal clip passes through the opening next to this boss, not through the hole with the rest of the wires.

(2) Select the four speed switch leads from the wires fed through the D-hole. Slide the insulator tube (86) over the switch leads and slide it securely into the D-hole in the bell housing.

(3) Field core has two grooves along its length. The groove on the side opposite the wiring harness must be aligned with the guide on the inside wall of the bell housing.

CAUTION

Tighten screws only until field is seated in bell housing and nuts are snug. Bell housing will crack if screws are overtightened. Because of the low torque permitted on the screws, the nuts must be secured with Loctite. Be sure to wipe any excess Loctite from the motor, bell housings, or electrical leads or connections, as this excess will gather carbon dust, causing electrical tracking and grounding of the field.

(4) Place a small drop of Loctite thread sealing compound on the threads of screws (81). Fasten the field to the bell housing with these two screws and nuts (8). Wipe off any excess Loctite.

c. Armature reassembly and installation.

(1) Align rear bearing (79) on the armature shaft. Use an arbor press or vise to press bearing onto the shaft, applying pressure against the inner bearing race only.

(2) Set rear bearing finger spring (84) in the rear bearing bore with fingers toward the bearing. Set thrust washer (80) in place over rear bearing finger spring.

(3) Dip the end of a straightened paper clip in Loctite thread sealing compound, and apply the retained Loctite on the threads of each of four tapped holes at the back of the motor housing casting. Wipe off any excess Loctite.

(4) Slide long end of armature shaft through front bearing (76) in motor housing.

CAUTION

Tighten screws only until bell housing is tight against motor housing and screws are snug. Bell housing will crack if screws are overtightened. Loctite must be used because of the low torque permitted. Be sure to wipe any excess Loctite from the motor, bell housings, or electrical leads or connections, as this excess will gather carbon dust, causing electrical tracking and grounding of the field.

(5) Install the bell housing into the motor housing by sliding it over the end of the armature. Fasten with four screws (85).

d. Fan installation.

(1) Insert the fan locking tool (T130) (see figure 1-13) through the lower window in the motor bell housing as shown in figures 1-14 and 1-15, so that the tool slides into one of the armature laminations and the protruding part of the tool bears against the internal shoulder of the field lamination.

CAUTION

Armature (78, fig. 1-1) and the pulley (69) which fastens the fan (71) to the armature both have left-hand threads. Turn the pulley counterclockwise to thread it onto the armature.

(2) Slide spacer (72), fan (71), and washer (70) onto the armature shaft and thread pulley (69) into place.

(3) Insert a small screwdriver or bar through the hole in the pulley and tighten it on the shaft.

(4) Remove the screwdriver and fan locking tool, and spin the fan by hand to check for free rotation.

e. Fan housing installation.

(1) Reinstall nozzle seal O-ring (62) if it has been removed. Be sure to coat the flat side of the O-ring with Kirby plastic cement (T106). Install the O-ring in its groove in the fan housing with the cupped side out.

(2) Use a file or knife blade to remove old sealing cement from mating surfaces of fan housing (67) and motor housing casting.

(3) Coat the mating surfaces with fresh sealing cement (Scotch Clear Seal No. 1103, or equivalent). Align the fan housing with the motor housing casting and press parts together. Attach fan housing with one screw (68) through front of fan housing, one screw (50) through motor housing casting near toe touch control, and three screws (38) through motor housing casting around exhaust outlet.

f. Front wheel installation.

(1) Position ratchet lock spring (52) and ratchet lock (51) in motor housing casting.

(2) Slide the toe control lever of front wheel bracket shaft (55) over the arrow-shaped boss on the ratchet lock and hold in place on the fan housing while attaching front shaft clamps (57) with attaching screws (56). See figure 1-19.

g. Headlight installation. Refer to paragraph 1-6. Slide headlight wires under arm on back of motor bell housing.

h. Brush installation. Refer to paragraph 1-8.

i. Speed selector switch installation. Refer to paragraph 1-15d.

j. Foot switch installation. Attach white wires from field and headlight by inserting into proper holes in foot switch. Check wiring diagram (figure 1-5) to determine wire locations, and refer to figures 1-4 and 1-9 for wiring arrangement. Replace housing shell as described in paragraph 1-3c.

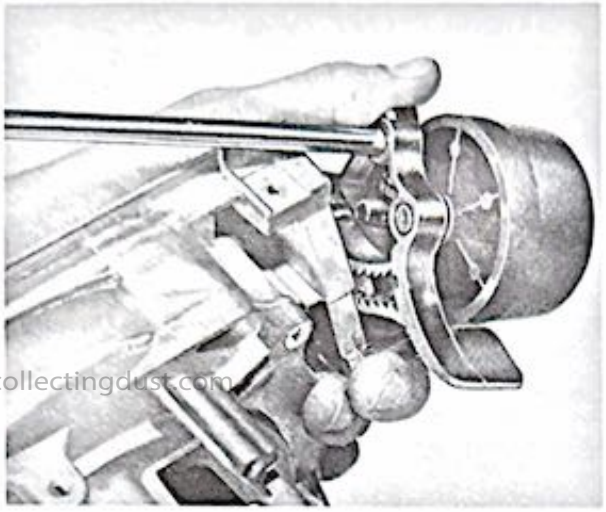


Figure 1-19. Installing front wheel shaft

1-13. HANDLE SPRING

a. Handle spring removal.

(1) Remove housing shell as described in paragraph 1-3a.

(2) Use a screwdriver to remove bushing clip (26, fig. 1-1).

(3) If spring (11) is not broken, release the spring tension before proceeding. Note in which notch of bushing (24) the tab of yoke (22) is located. The orientation of the yoke tab and the right bushing notch is critical to setting the correct spring tension during reassembly.

(4) Engage the pin of the spring tool (SP123) into one of the unused notches of the bushing. Twist it against the force of the spring. Inserting a screwdriver blade between the yoke and the bushing lip, disengage the yoke tab from the bushing notch. If the tab catches in the next notch, repeat the procedure until the spring is loose on the shaft.

(5) Remove spring screw (23) from bushing (24), and pull the bushing and yoke from the shell. See figure 1-20.

(6) Remove spring clip (27, fig. 1-1) from shaft (20). Catching the spring and bronze bearing with one hand, pull the shaft from the shell. Do not remove the two shell bushings (13 and 21) unless they must be replaced.

b. Handle spring replacement.

(1) If shell bushings (13 and 21) are worn, replace them.

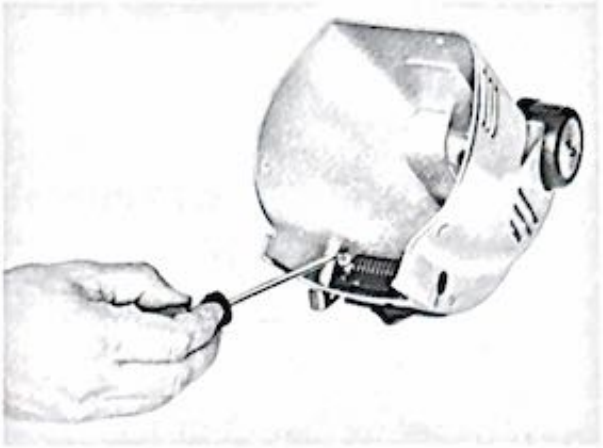


Figure 1-20. Removing screw from spring bushing

(2) At one end of spring shaft (20), there is a raised tab. Insert this end of the shaft through the larger shell bushing (21). Inside shell (12), slide bronze bearing (19) and spring (11) onto the shaft and slide the shaft into shell bushing (13).

(3) Slide handle fork pin (25) through the metal bushing (24) and into spring shaft (20). This pin will help separate the ends of the spring clip when it is installed. Install spring clip (27) so that flat side of the clip engages the groove in the shaft. Remove handle fork pin (25) and bushing (24) from the spring shaft.

(4) Slide yoke (22) onto bushing (24), and the bushing onto spring shaft (20) and into bushing (21). Install screw (23) into bushing (24).

(5) Insert the pin of the spring tool (SP123) into a notch of bushing (24) and rotate the bushing clockwise until the hook of spring (11) catches the shoulder of the screw. Use a screwdriver blade to prevent the tab on yoke (22) from catching in the wrong bushing notch. Continue to rotate the bushing until the tab on the yoke drops into a middle notch that will provide sufficient spring tension.

(6) Tap the bushing to seat it completely and install bushing clip (26) to retain the bushing.

NOTE

To prevent misplacing fork pin (25), temporarily reinsert it until handle is reinstalled.

(7) Replace the housing shell as described in paragraph 1-3c.

SERVICE MANUAL FOR KIRBY HERITAGE II

a Scott Fetzer company

Cleveland, Ohio 44102 U.S.A.

Form No. 773684
Printed in USA
Price: $9.00

FOREWORD

THE PURPOSE OF THIS MANUAL IS:

1. To review the Kirby warranty as it pertains to the Customer, Distributor, and the Kirby Company.
2. To outline the physical requirements and general operating format of a typical Kirby Service Center.
3. To provide detailed disassembly and service instructions for the Heritage II Kirby.

SECTION I

THE KIRBY WARRANTY

The Warranty as provided by the Kirby Company is set forth in the Owner's Manual and on documents associated with the original purchase.

1. The Warranty becomes effective on NEW Kirby equipment at the time (date) of purchase. Such purchases must be made from and properly recorded by an authorized Kirby Distributor, Area Distributor, or Dealer.
2. Parts tendered to the Kirby Company for Warranty consideration must each bear a tag or label showing:
   a. The serial number of the Kirby from which the part was removed.
   b. The date of purchase of the Kirby by the customer requesting service.
   c. The nature of the defect, if not readily apparent.

SECTION II

THE SERVICE CENTER

This should be in an easily accessible walk-in location with adequate parking. Keep this area separated from the hiring or sales training areas. If you offer immediate service, provide a reception room atmosphere with chairs for your customers.

DEPARTMENT OPERATION

Established prices for parts should be posted or readily available for reference in a business-like manner. Standard charges for bench work or house service calls should be posted as a matter of record so that the customer understands these charges in advance. Records are most important—a properly prepared receipt should show the serial and model numbers as well as a detailed description of work performed.

A work schedule board should be maintained so that advance service calls can be arranged and fulfilled as promised. Since the activities of the Service Center can make a strong impression on the public, the person running it should be polite and professional as well as mechanically competent.

TOOLS AND METERS

Tools required include:

- Screwdrivers - Flat - Assorted Sizes
- Screwdrivers - Phillips - Assorted Sizes
- Pliers - Assorted
- Impact Screwdriver
- Soldering Gun
- Bench Vise
- File - Round Rattail - 8" long
- File - 1/4" Pillar - 6" long
- Pliers - Snap Ring - Truarc No. 0300
- Tap Wrench
- Threading Tap 6 x 32
- Threading Tap 8 x 32
- Threading Tap 10 x 24
- Threading Tap 10 x 32

In addition, certain special tools and supplies available from the factory are:

- Spring Winding Tool T123
- Rear Bearing Puller T125
- Fan Locking Tool T130
- Plastic Cement T106
- Clear Sealer 134856

Meters required for analysis and electrical safety testing are:

- Wattmeter - with range to 5000 watts
- Ohm Meter - or battery-powered test light
- High Voltage Insulation Tester - range 500/2500 VAC

These meters should be available through electrical equipment or motor service and supply companies in your area. Follow the manufacturer's operating instructions when using these meters. Practice safe working habits at all times. For detailed use information see page 17.

POISON CONTROL INFORMATION

Poison control information may be requested at any time. The following chart of Kirby products shows the ingredients used to formulate each. When asked for information on this subject, limit your answer to facts shown on the chart. Do not recommend clinical remedies.

POISON CONTROL CHART

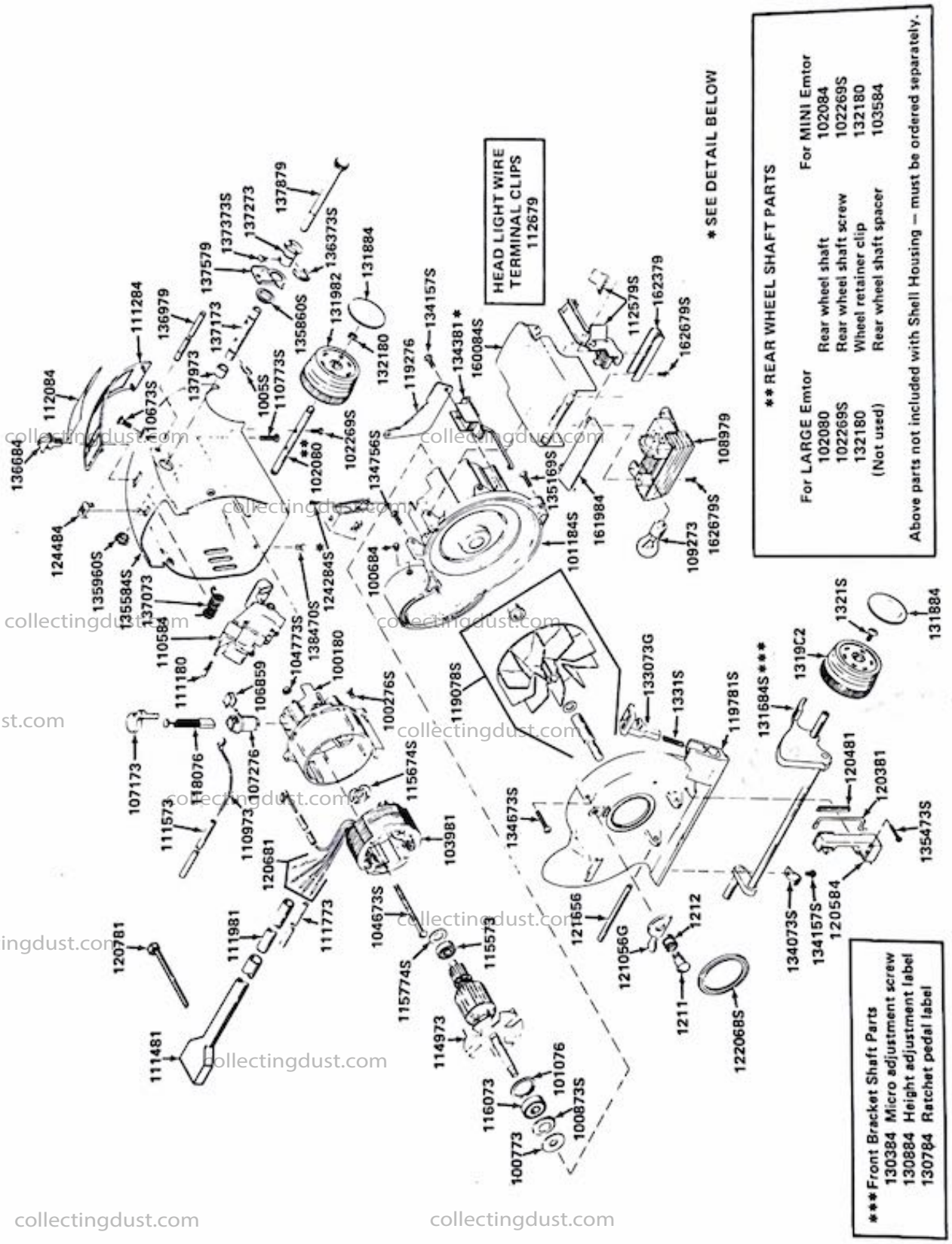
REFER ALL CALLERS TO THEIR PERSONAL PHYSICIANS AFTER GIVING THEM THE INFORMATION BELOW. IF THEY DESIRE MORE INFORMATION CONCERNING WHAT THE CHEMICALS WILL DO TO A PERSON, REFER THEM TO THE NEAREST POISON CONTROL CENTER.

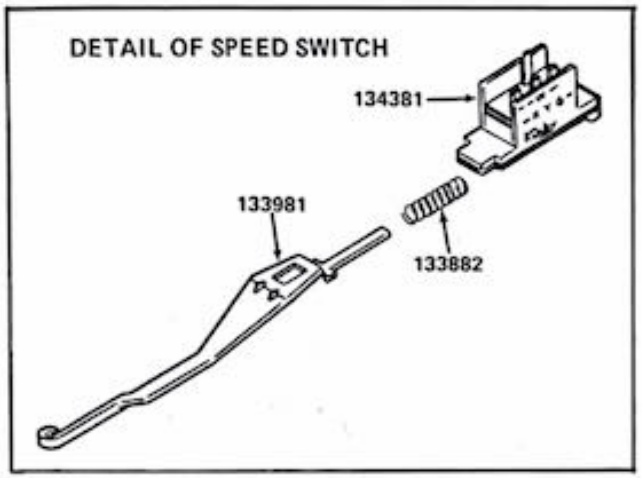
PRODUCT	IF SWALLOWED	EYE/SKIN CONTACT	INGREDIENTS
FORMULA A	Non-toxic.	Skin and eye irritant. Flush with water. Call physician.	Less than 5% — Citric acid Balance — Water
FORMULA B	Toxic. Call physician immediately.	Skin and eye irritant. Flush 15 minutes with water. Call physician.	Less than 5% — Ammonia Balance — Water

PRODUCT	IF SWALLOWED	EYE/SKIN CONTACT	INGREDIENTS
Room and Carpet HOME FRESHENER	Non-toxic.	Mild eye irritant. Flush 15 minutes with water.	Less than 70% — Borax (Sodium biborate decahydrate) Less than 30% — Silica Less than 5% — Perfume
INK AND STAIN REMOVER	Toxic. Call physician immediately. Do not induce vomiting.	Eye irritant. Flush 15 minutes with water. Call physician.	Less than 5% — Amyl acetate Less than 20% — M-Methylpyrolidone 25% — Petroleum distillates Less than 20% — Glycol ether 35% — 1,1,1, Trichloroethane Less than 2% — Anionic surfactant 5% — Mixed fatty acid alkanolamide
Hair Clipper LUBRICATING OIL (Shell Tellus Oil #10)	Toxic. Pulmonary irritation possible. Call physician.	Skin and eye irritant. Flush 15 minutes with water. Call physician.	99.0% — Petroleum hydrocarbons 0.5% — Hindered phenol antioxidant 0.1% — Aromatic amine Less than 0.1% — Succinic acid derivative Less than 0.1% — Sulfurized fatty acid
ODORIFIC	Non-toxic. Will irritate stomach. Call physician for gastric lavage.	Heavy tearing of the eyes. Flush with water.	100% — Essential oils, perfume
EXTENDED INHALATION OF CONCENTRATE MAY CAUSE HEADACHE AND DIZZINESS.			
OIL AND GREASE REMOVER	Non-toxic. Call physician. Do not induce vomiting.	Eye irritant. Flush 15 minutes with water. Call physician.	Less than 50% — Petroleum distillates Less than 60% — 1,1,1, Trichloroethane
SCUTTLE	Non-toxic. May cause nervous depression.	Non-irritant. Flush with water.	Less than 10% — Glycol ether Balance — Water
SUDS w/ Kirby Guard and Freshener	Non-toxic.	Non-irritant. Flush with water.	Less than 0.08% — Citric acid Less than 5.0% — Carboxylated acrylic copolymer Less than 5.0% — Anionic surfactant Less than 5.0% — Glycol ether Maximum 0.18% — Formaldehyde Less than 0.5% — Perfume Balance — Water
STAIN REMOVER	Non-toxic.	Non-irritating.	Less than 3.0% — Glycol ether Less than 5.0% — Amphoteric surfactant Balance — Water

SECTION III

1. MOTOR GROUP





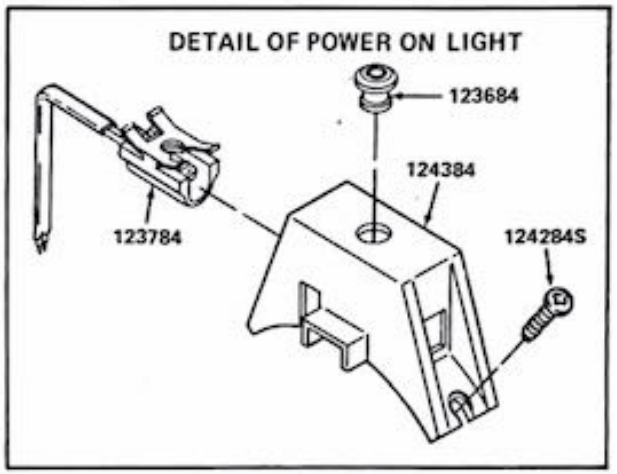


Figure 1. HERITAGE II motor group, 110 volt 60 hertz model only, exploded view

Part No.	Part Name
100180	Motor bell housing
100276S	Bell housing screw, 25 pk.
1005S	Handle fork pin spring clip, 25 pk.
100684	Emtor connector pin
100773	Front bearing seal
100873S	Front bearing seal retainer, 25 pk.
101076	Front bearing retainer ring
101184S	Motor casting
102080	Rear wheel shaft (see **)
102084	Rear wheel shaft (see **)
102269S	RR axle screw, 25 pk.
103584	Rear wheel shaft spacer
103981	Field
104673S	Field screw, 25 pk.
104773S	Field screw nut, 25 pk.
106859	Commutator brush return clip
107173	Commutator brush cap
107276	Commutator brush holder
108979	Headlight lens assembly
109273	Headlight bulb
110584	Foot switch, black
110673S	Foot switch top screw, 25 pk.
110773S	Foot switch bottom screw, 25 pk.
110973	Black wire w/terminal
111180	Foot switch clip
111284	Scuff plate, black
111481	Speed switch and cable boot
111573	Brush lead tube, black
111773	Foot switch lead tubing, white
111981	Speed switch lead tube
112084	Scuff plate label
112579S	Terminal w/insulation, black

Part No.	Part Name
112679	HL wire terminal clip
114973	Armature
115573	Rear bearing
115674S	Rear bearing spring, 25 pk.
115774S	Rear bearing washer, 25 pk.
116073	Front bearing
118076	Commutator carbon brush
119078S	Fan complete, lexan
119276	Motor vent seal
119781S	Fan case
120381	Speed switch lever
120481	Speed switch lever retainer
120584	Speed switch lever cover
120681	Spade connector-field
120781	Cable tie
1211	Nozzle lock screw
121056G	Nozzle lock
1212	Nozzle lock spring
121656	Nozzle attaching shaft
122068S	Nozzle seal ring, 25 pk.
123084	Cable tie power on light harness (NI)
123684	Power on light lens-clear
123784	Power on light harness
124284S	Power on light screw
124384	Power on light bracket
124484	Power on light lens-amber
130384	Micro adjusting screw (NI)
130784	Ratchet pedal label (NI)
130884	Height adjustment label (NI)
131684S	Front bracket shaft
131884	Wheel hub cap
131982	Wheel, black

Part No.	Part Name
1321S	Wheel mounting screw, 25 pk.
132180	Wheel retainer clip
133073G	Ratchet lock
1331S	Ratchet lock spring, 25 pk.
133882	Speed switch spring
133981	Speed switch arm
134073S	Front shaft clamp, 25 pk.
134157S	Front clamp screw, 25 pk.
134381	Speed switch
134673S	Fan housing/motor housing screw, 25 pk.
134756S	Fan housing/motor housing screw, 25 pk.
135169S	Fan housing/motor housing screw, 25 pk.
135473S	Speed switch mounting screw, 25 pk.
135584S	Motor shell housing
135860S	Shell bushing LH, 25 pk.
135960S	Shell bushing RH, 25 pk.
136373S	Bushing spring clip, 25 pk.
136684	Lock button, black
136979	Handle lock shaft
137073	Handle fork spring
137173	Handle fork spring shaft
137273	Handle fork spring bushing
137373S	Handle fork spring bushing screw, 25 pk.
137579	Handle fork yoke
137879	Handle fork pin
137973	Handle fork oilite bearing
138470S	Motor shell mounting screw, 25 pk.
160084S	Headlight cap complete, black
161984	Headlight cap bumper, black
162379	Hold down bar
162979S	Head light assembly screw, 25 pk.
163379	Headlight cap hinge pin

NI - Not illustrated

1. MOTOR GROUP

1-1. ILLUSTRATED PARTS LIST

The exploded view illustration (figure 1) and its related parts list provide identification of the parts and show the proper relationship of associated parts as an aid to overhauling the motor assembly.

1-2. MOTOR UNIT CHECKOUT

a. Prepare motor for checkout by removing the handle with cord, emtor with bag, and rug nozzle.

b. Check motor for obvious damage such as: broken casting; frozen or jammed fan (must turn freely by hand); damaged or broken switches or wiring. Correct any such faults before attempting to check motor in the running mode.

CAUTION

Before attempting to operate motor, cover exhaust horn with a heavy cloth to muffle air blast and trap any foreign objects that may be discharged when fan turns.

c. With front of motor unit open (nothing attached to fan case) and cord connected, power on light should go ON and OFF with foot switch action. Motor should NOT run.

d. If power on light does not function:

(1) Check cord. See paragraph 3-1.b.

(2) Check power ON light. See paragraph 1-7.

e. Test for LOW speed with rug nozzle attached. See paragraph 1-16.

f. Test for HIGH speed with attachment hose in place. See paragraph 1-16.

1-3. TROUBLESHOOTING CHART

NOTE

If fault you find is listed on the following troubleshooting chart, follow suggestions shown for service. If problem is not on the chart, proceed with disassembly and service, starting with paragraph 1-4.

TROUBLESHOOTING CHART — MOTORS

Trouble	Possible Cause	Remedy
Power on light does not operate	Defective power cord.	Check power cord (par. 3-1.b).
	Faulty connection to foot switch	Check entry of wires into terminal sockets of switch (par. 1-5.a).
	Faulty foot switch.	Check foot switch (par. 1-5.b); replace.
	Burned out power on light.	Replace power on light (par. 1-7).
Power on light operates but motor does not run	Defective speed selector switch.	Replace speed selector switch.
	Defective brushes.	Replace brushes.
	Loose or broken wire at foot or speed selector switch.	Remove housing shell and inspect wires.
	Broken field lead.	Inspect leads; disassemble and test for open field.

TROUBLESHOOTING CHART – MOTORS (Continued)

Trouble	Possible Cause	Remedy
Motor runs slowly	Defective armature.	Check armature (par. 1-13); replace if necessary.
	Misaligned field and bell housing.	Check alignment (par. 1-13); adjust or replace parts as required.
Motor makes clicking sound	Dirt or debris in fan case.	Inspect and remove.
	Bent vent fan striking field screw.	Straighten fan; tighten or replace field screw if loose.
Motor vibrates	Broken or out-of-balance fan.	Replace fan (par. 1-11).
	Worn bearing.	Replace bearing front (par. 1-13). Replace bearing rear (par. 1-13).
Motor runs hot (to touch); gives off odor or smoke after short period of operation	Defective armature.	Check armature (para. 1-13); replace.
	Defective field.	Check field (par. 1-13); replace.
	Blocked vent parts in shell housing.	Remove dirt or foreign matter.
Motor starts and stops erratically	Defective cord.	Check cord (par. 3-1.b); replace.
	Faulty connection:	
	Foot switch.	Check foot switch (par. 1-5).
	Speed switch.	Check speed switch (par. 1-6).
	Poor contact of carbon brushes to commutator.	Check contact (par. 1-10); service or replace parts.
	Loose fitting nozzle to speed selector switch.	Check fan case locking cam.
	Speed switch not properly mounted.	Check mounting (par. 1-6).
Motor sparks and blows fuses when in contact with metal ground	Pinched wire in assembly of castings.	Test with Ohm meter as in (par. 1-16) remedy cause of pinching, repair as required.
	Grounded armature or field.	Check armature and field (par. 1-13); replace.
Motor runs without nozzle or coupler attachment to front of fan case.	Bent speed switch arm (133981) causing drag in channel.	Service or replace speed switch arm.
	Improper hookup of terminal spades to speed switch.	Check hookup (par. 1-6).

1-4. MOTOR SHELL HOUSING (135581S)

a. Partially remove (approximately 1/2 inch) lower foot switch mounting screw (110773S). This screw is located on the underside of the motor directly in back of the rear wheel shaft.

b. Peel back scuff plate label (112084) to expose and remove top foot switch mounting screw (110673S).

c. Remove three motor shell mounting screws (138470S) located on the perimeter of shell casting at point of connection to motor housing.

d. Motor shell housing can now be lifted away from motor.

e. If handle fork spring requires service, see paragraph 3-1.

1-5. FOOT SWITCH (110584)

a. Terminal leads can be released by inserting a small pick or straightened paper clip into release hole along side each wire entry hole. Refer to figure 17, and tag leads for ease of reassembly When attaching a new switch, be certain that no more than 1/4 inch of clean solder coated wire is available for insertion into terminal contact holes. Follow color coding on switch body and insert wire only so far as they are clear of insulation. Over-insertion can cause insulation to interfere with a good contact within switch. Tug firmly on each wire to be sure of good contact.

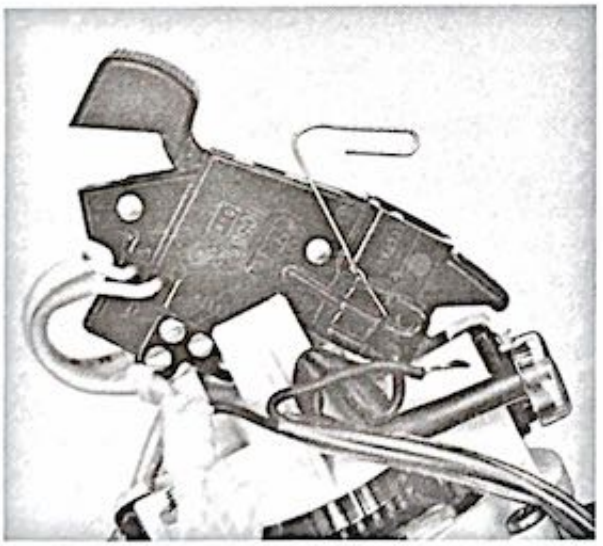


Figure 2. Removing wires from foot switch

b. Foot switch can be tested in place with a battery powered test meter. Detach cord from switch and proceed as follows:

(1) Continuity from right switch prong to B (black wire) terminal should be constant.

(2) Continuity from left switch prong to W (white wire) terminal should alternate as switch lever is operated.

c. If replacement is required, refer to paragraph 1-4.a.

1-6. SPEED SWITCH (134381)

a. Can also be tested in place with a battery powered test meter.

b. Lift speed switch and cable boot (111481) and disconnect leads from switch.

(1) With hose attached to motor, this switch should be in the HIGH speed mode and terminal taps should be open across poles R to W and Y to G.

(2) With rug nozzle attached for LOW speed mode, open poles should be from R to Y only.

Figure 3. Removing speed switch and cable boot

c. If replacement is required, proceed as follows:

(1) Remove speed switch mounting screws (135473S) and lever cover (120584).

Figure 4. Removing lever cover from fan housing

(2) Disengage speed switch lever (120381) from speed switch arm (133981).

(3) With leads removed, the switch can now be detached by removing screw (134157S) which holds switch and one end of vent seal (119276) to motor casting.

(4) Switch with speed switch arm (133981) and spring (133882) can now be withdrawn. The arm and spring can be reused as shown in figure 6.

(5) For reassembly, reverse above procedure. Be certain to insert forward end of switch in pocket on motor casting and position switch bracket and vent seal so they engage on the locating pin alongside mounting screw hole. When switch is in place speed switch arm must float free within tear drop hole. This arm may become bent in use or service and should be adjusted to assure free movement.

(6) Note that color code letters on side of switch also indicate use of front or back terminals (R-Y-G in front row and W in back row).

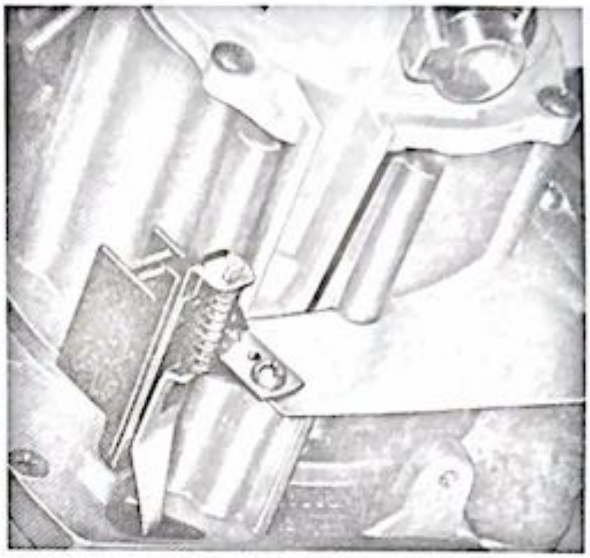


Figure 5. Removing speed switch

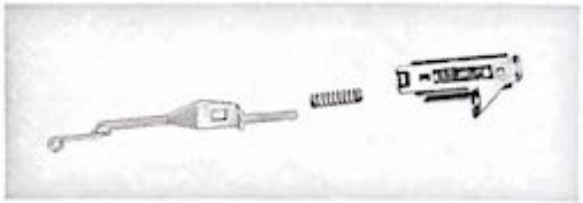


Figure 6. Speed switch arm and spring

Figure 7. Speed switch and lead cover

1-7. POWER ON LIGHT

a. This assembly consists of the following four parts:

124484 Amber lens in shell housing
123684 Clear lens in bracket
124384 Bracket
123784 Light and harness wires

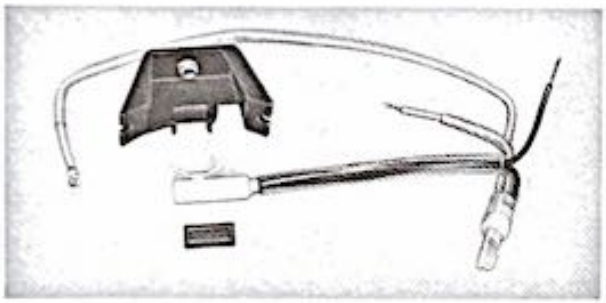


Figure 8. Power on light assembly parts

b. The amber lens is snapped into place in the shell housing and will come away with the shell. To remove, carefully depress the tabs where they extend through inside of shell housing.

c. The power on light socket is secured into the bracket by means of the pair of fingers which engage with the locking groove on lower end of the clear lens. To remove, slide socket sideways through open end of bracket.

d. This light must be isolated for proper testing. To do this, disconnect power on wire at black terminal of foot switch only. (See Fig. 10.)

Figure 9. Disconnect power on wire

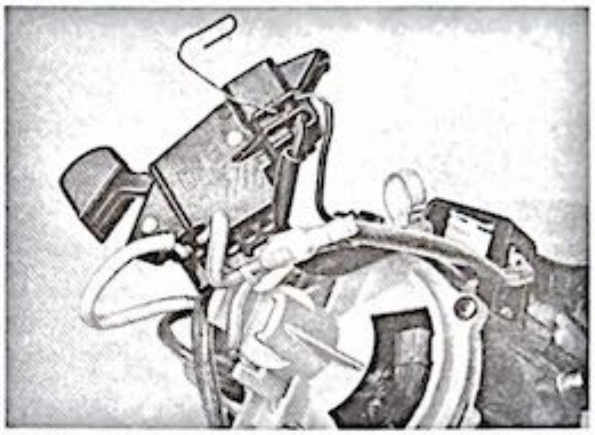


Figure 10. Disconnect foot switch leads

e. Battery test meter should now show continuity between stripped tinned tip of detached wire and either white terminal of foot switch.

f. If replacement is required, disconnect lead from power-on light to B on foot switch and white headlight leads from terminal block and W on foot switch. This harness should be replaced as a unit.

1-8. HEADLIGHT

a. The lens and socket assembly can be released by removing two screws (162679S) which fasten it in the forward area of the headlight cap.

b. With screws removed, light socket and lens assembly can be pulled free from the terminal block contacts. (See MS 2D).

c. Check socket for bent, corroded, or broken contacts. Contacts can be re-shaped using needle nose pliers to improve contact with bulb. If this does not correct fault, then replace socket.

1-9. TERMINAL BLOCK

a. Detach from headlight casting by removing two screws (162679S) which secure terminal block hold down bar (162379).

b. Terminal block service will consist primarily of replacement of terminal clips or wire harnesses. These clips are secured in the block by spring tension. Use extreme care when removing or inserting clips into terminal block slots. Use a thin bladed screwdriver and tweezers. Never pull terminals free by tugging on wires.

1-10. MOTOR CARBON BRUSHES

a. Pull off plastic brush caps (107173). Depress spring tab of brass terminal and slide terminal away from brush holder.

b. Motor brushes should be smooth and shiny at point of contact with commutator surface. If one is clean and the other burned rough and dull check for:

(1) Evidence of pinched spring or shunt wire which would limit movement of brush within sleeve of brush holder.

(2) Dust or lint caught between brush and commutator.

(3) Restriction within sleeve of brush holder such as heavy dirt or bend or nick in metal.

(4) Correct either condition by use of a 1/4 inch Piller file, or replace brush holder.

c. If both brushes are burned rough and not shiny or smooth, check for an open or dead segment on the commutator. This will be evident by heavily pitted or burned segments on opposing sides of the commutator. This armature will need to be replaced.

1-11. FAN AND FAN CASE

a. Remove speed switch linkage from front of fan case as in paragraph 1-6 c(1).

b. Remove screw (134673S) from top front of fan case. Remove three screws (134756S) located around exhaust outlet and one screw (135169S) near ratchet mechanism.

c. With screws removed, the fan case can be forced away from the motor by inserting a large screwdriver or other blunt instrument through the exhaust horn and tapping it with the heel of your hand.

d. Inspect condition of sealing material on joining edges of the motor and fan case castings. Use only clear sealer (134856) if replacement is required.

e. To remove fan, first insert fan locking tool (T130) through a back opening of the bell housing. Position the tool in one of the slots on the barrel of the armature so that it will bear against one of the dividing shoulders in the field plates. Insert a steel pin into the side hole of the pulley and turn the pulley in a clockwise direction until it is free of motor stem.

Figure 11. Separating fan case from motor housing

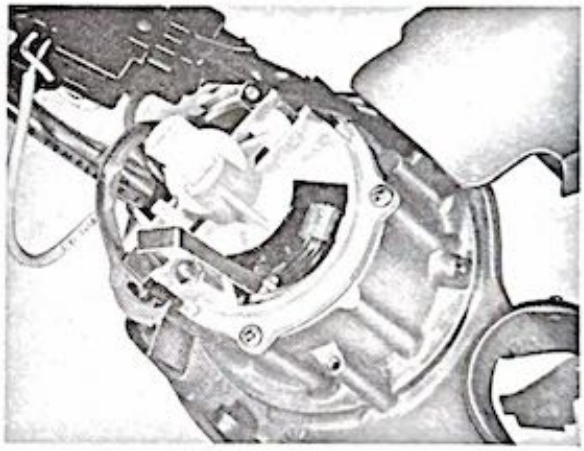
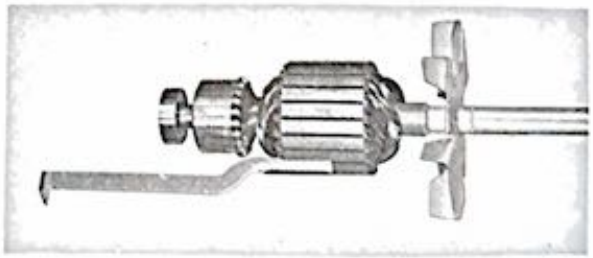


Figure 12. Fan locking tool inserted through ball housing



Housing removed to show tool location.

Figure 13. Locking tool positioned in armature slot

1-12. BELL HOUSING

a. Disengage headlight wires from retaining slot and disconnect the speed selector terminals. Be certain that carbon brushes have been removed.

b. Remove four bell housing screws (100276S) at rear of bell housing. With a thin bladed screwdriver pry bell housing free from motor casting. Armature will stay in motor casting.

1-13. ARMATURE, FIELD, AND BEARINGS

a. Armature can now be pulled free from front bearing and motor casting.

(1) Rear bearing can now be examined and removed if necessary, using rear bearing puller (T125). When installing a new rear bearing be careful to apply force to the inner race only, using a drift pin no longer than the diameter of the side face of the inner race. Do not pound on the outer race of the bearing to install it.

(2) If front bearing must be removed, use retaining ring pliers (Truarc No. 0300) to remove the retaining snap ring. (See Fig. 14.) This bearing is not a press fit in the casting and should fall out with a small amount of tapping of the inverted motor housing on a padded bench surface.

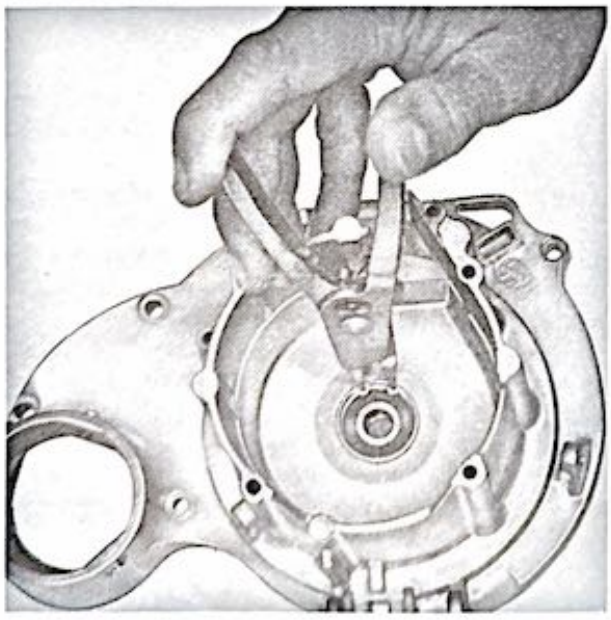


Figure 14. Removing bearing retaining ring from motor housing

b. Field removal requires release of all leads from speed selector switch and removal of two field screws (104673S) and nuts (104773S). Now cut the cable tie (120781) and remove speed switch and cable boot (111481) and lead tube (111981). Field can now be pulled away from motor bell housing.

(1) Continuity of field coil windings can be determined with ohm meter probes across red and green leads and across white and yellow leads. If either pair is open or dead field must be replaced.

(2) Testing for grounding or insulation breakdown can be made using the high voltage tester set at 900 volts. Do not lay probes across wires, test from each wire to steel body plates alternately.

(3) Armatures can also be tested for grounded condition by laying the probes from commutator to center steel shaft of armature.

c. Reassembly begins with insertion of field into bell housing as in figure 15. Lead tube (111981) and speed switch and cable boot should be slipped over field leads. Do not fasten cable tie until after bell housing is assembled to motor housing and selector switch is mounted, leads can then be attached and outer tubing and boot can be adjusted as required before securing with cable tie.

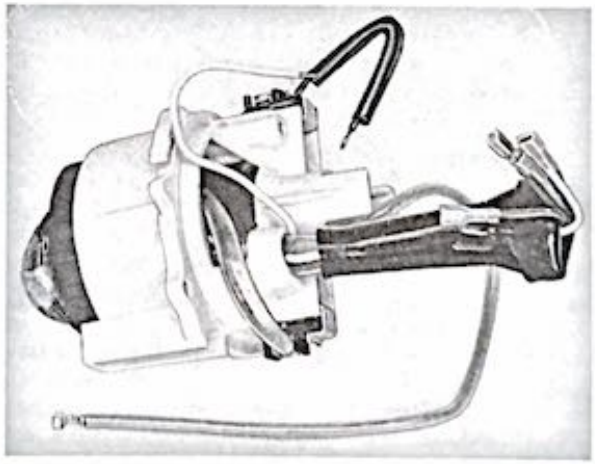


Figure 15. Inserting field into bell housing

1-14. FRONT WHEEL SHAFT

a. If front bracket shaft (131684S) needs service, remove two clamp screws (134157S) from bottom of fan case and allow free end of shaft to fall away from fan case. Ratchet end of shaft can now be lifted away from ratchet lock (133073G) and spring (1331S).

b. If ratchet lock mechanism is too stiff or tight, you should disassemble and grease both the ratchet plunger and ratchet gear teeth. Also, repeated operation will break-in assembly for easier use. If you do not have extra ratchet locks in stock, you may try switching from other units to achieve a better match for smooth operation.

c. To assemble front shaft to motor, hold ratchet plunger lock with spring in place as in figure 16. Position ratchet as shown and then lower it into place.

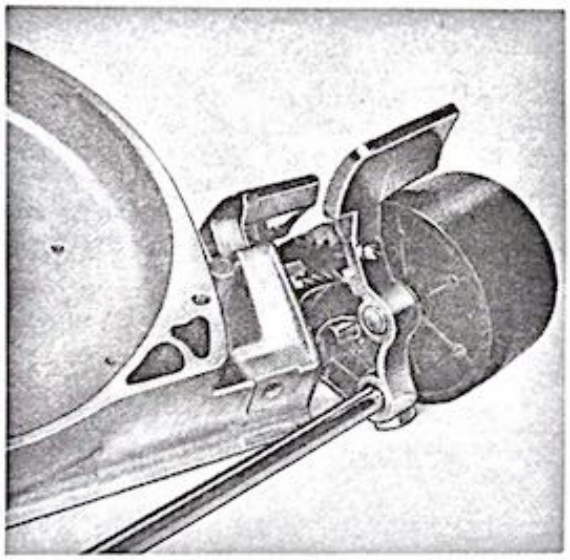


Figure 16. Installing front wheel shaft

1-15. HANDLE SPRING

a. With shell housing removed as in paragraph 1-4, check handle spring.

b. If replacement of handle spring is required, proceed as follows:

(1) To familiarize yourself with position and relationship of parts when installed in shell housing, set up handle spring parts without tension as in figure 17.

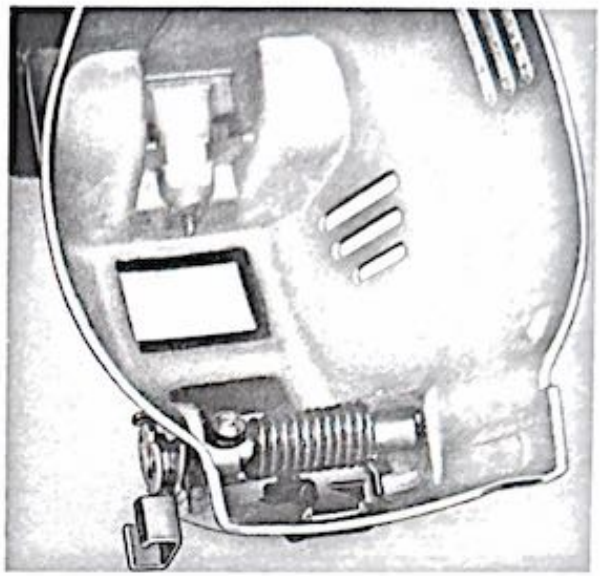


Figure 17. Checking handle spring

(2) With parts installed, position spring winding tool (T123) in bushing (137273), with engaging pin in either of the outside notches on bushing collar. Then turn tool clockwise until tension is attained and center slot of bushing can be engaged with the tab extension on the face of the fork yoke (137579). To facilitate insertion of pin spring clip (1005S), first insert handle fork pin (137879) into place in spring tube.

(3) Reassembly of the balance of the motor should follow motor disassembly instructions in reverse order.

1-16. TEST METERS IN USE

a. Ohm meter.

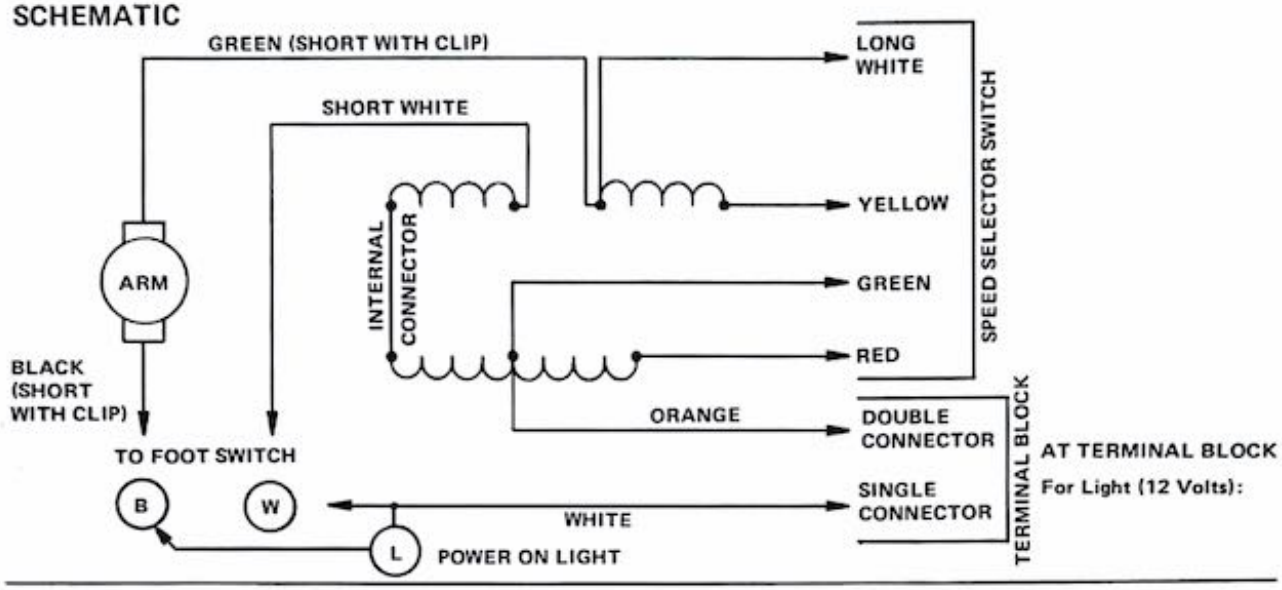
(1) This battery powered testing device provides a safe way to check continuity of wiring harnesses and electrical components.

(2) The ohm meter also can be used to safely identify a dead ground in those instances where the high voltage test is not practical.

b. Wattmeter.

(1) This instrument measures power consumption as the Kirby is running.

SCHEMATIC



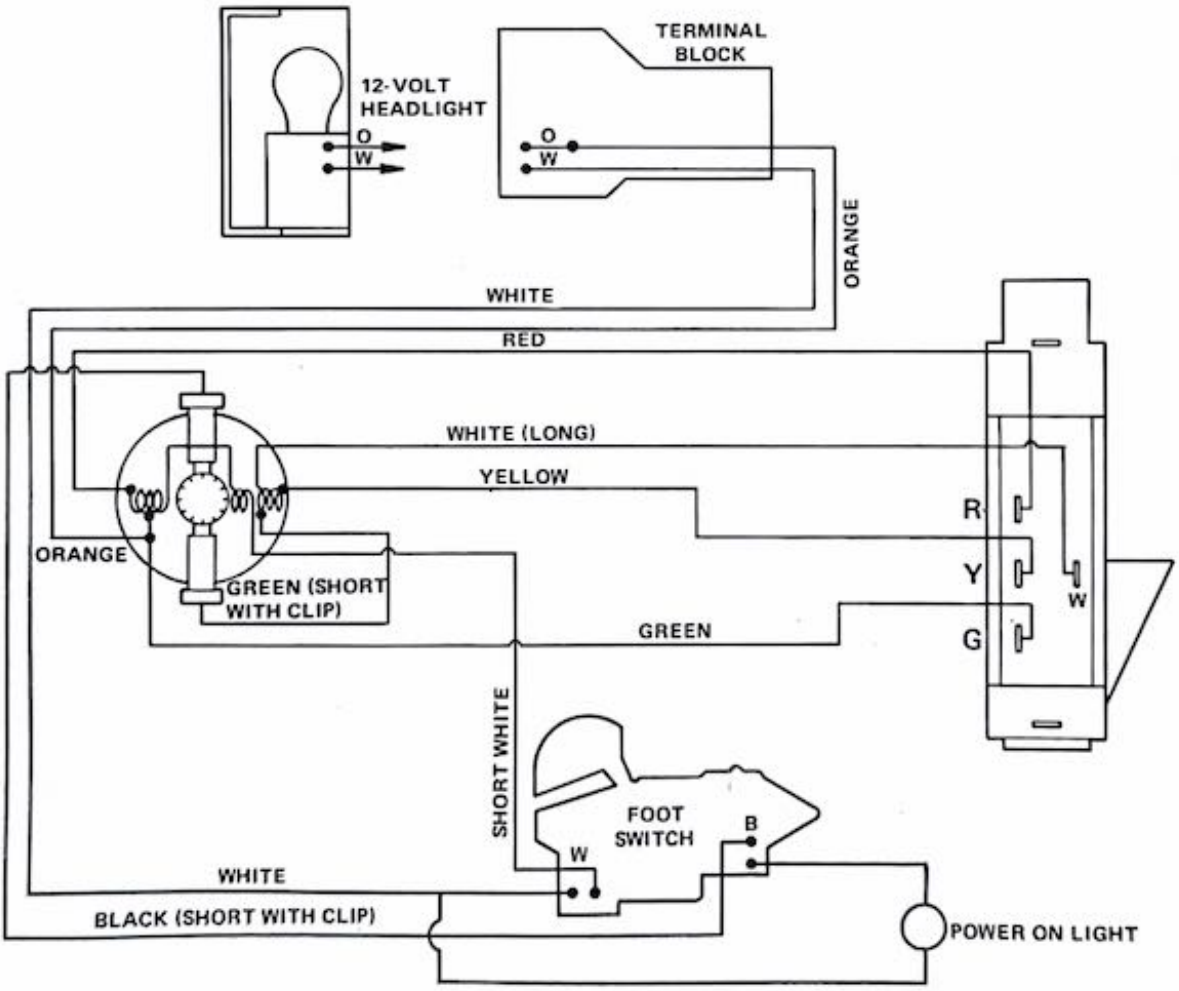


Figure 18. HERITAGE II motor group, 110 volt/60 hertz model only wiring diagram

SECTION 2
NOZZLE GROUP

INDEX

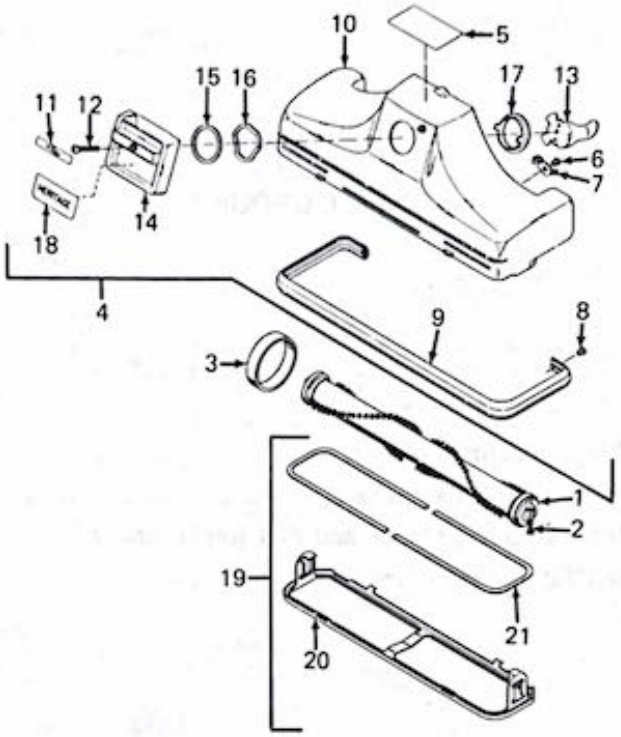


Figure 2-1. HERITAGE nozzle group, exploded view

Index No.	Part No.	Part Name	Quantity
2-1-1	152581	Brush roll assembly	1
-2	154169	Adjusting screw	2
-3	301279	Belt	1
-4	141681S	Nozzle less rug plate	1
-5	146681	. Instruction plate	1
-6	141381	. Rug plate latch rivet	1
-7	141481	. Rug plate latch	2
-8	140869	. Bumper end rivet	2
-9	140481	. Bumper	1
-10	***	. Nozzle body	1
-11	146381	. Belt lifter label	1
-12	144781	. Belt lifter screw	1
-13	144281	. Belt lifter hook	1
-14	144081	. Belt lifter	1
-15	144681	. Belt lifter flat washer	1
-16	144181	. Belt lifter spring washer	1
-17	145481	. Belt lifter bearing	1
-18	146781	. Belt lifter bottom label	1
-19	154481S	Rug plate assembly	1
-20	***	. Rug plate	1
-21	154881S	. Rug plate gasket (set)	1

*** Do not order this part; if defective, order the assembly above.

Kirby
a Scott Fetzer company

KIRBY SERVICE NEWS

Genuine Kirby Parts
OUR QUALITY IS AS GOOD AS OUR NAME

Volume 1, No. 7 May/June 1986

OUR MOST IMPORTANT FEATURE

With the introduction of the Brush Roll Performance Indicator as the newest feature on the Heritage II, we are reminded of our most important feature, YOU!

While we continually work on improving the features that will benefit the consumer we realize that your hard work, persistence, enthusiasm, and dedication to Kirby is the key to our success.

As the Service Manager you are in a position to promote good will by handling customer problems and machine repairs in a quick and professional manner. The job that you do pays off in keeping Kirby customers satisfied and provides valuable word of mouth advertising for future machine sales.

This important function does not go unnoticed at the Customer Service Center and we'd like to take this time to say thank you and recognize our most important resource.

We will continue to strive to service you in the same professional manner that you show your customers and as always, we welcome your suggestions and ideas along these lines.

Meet Our Staff

To date you've had a chance to meet those people at the Customer Service Center with whom you have a great deal of telephone contact. However, just like your organizations we have many valuable employees "behind the scenes" who contribute a great deal to your customer needs. We would like to introduce three such members, as pictured from left to right.

Karen Sinkovic is that friendly voice you hear when you reach the receptionist at the Customer Service Center. Karen complements the Parts Order Department with customer correspondence and all order entry for quick shipment of your parts orders.

Our Rebuild Department team is Dawn Allar and Dana Fergus. Dawn has been with the department since 1983. Her ability to put your customers needs first concerning the rebuild process keep them as satisfied Kirby customers. Dana has worked in the Rebuild Department for five years. Her pleasant and unique ability in dealing with people make her an invaluable ambassador of good will to Kirby owners.

If your customers have any questions concerning the rebuild procedure, please have them call the Rebuild Department at (216) 228-2400 and Dawn or Dana will be happy to assist them.

Merchandising Ideas

With summer just around the corner, now is the time to put up your "Summer Super Special" window poster and advertise one or two good items at below regular price. These traffic generators will give you the opportunity to promote good customer relations and to sell additional merchandise to customers who may otherwise not have come in to your facility.

Service Tips

Split Second

If you receive a Split Second or Zipp Brush in for warranty repair, please send the complete unit to our Warranty Parts Department at the Customer Service Center for repair or replacement.

Armature

When changing an armature on a 505 through D80 Kirby which has never been rebuilt, you may also have to change the field. Due to a change in design after the production of these machines the current armatures and fields may not be interchangeable with the original. When replacing an armature on one of these machines check the armatures identification code number. If you find a number listed below you must change the field also.

10175	4494	5BA45FN1
3424	4579	5BA45DN35
4121	13042	5BA45FN27

If you receive a machine of this type it may be in your customer's best interest to have the machine sent to the factory for rebuilding provided they are the original owner.

Brush Roll Complete

We have received brush rolls complete (152585S) for warranty from machines with the brush roll performance indicator where the only problem is with the thread guard and magnet assembly (155985S). If this situation should arise, please send only the thread guard assembly and we will replace in kind.

Kirby Introduces Brush Roll Performance Indicator

Kirby introduced the Brush Roll Performance Indicator as a new feature on the Heritage II rug nozzle during March production.

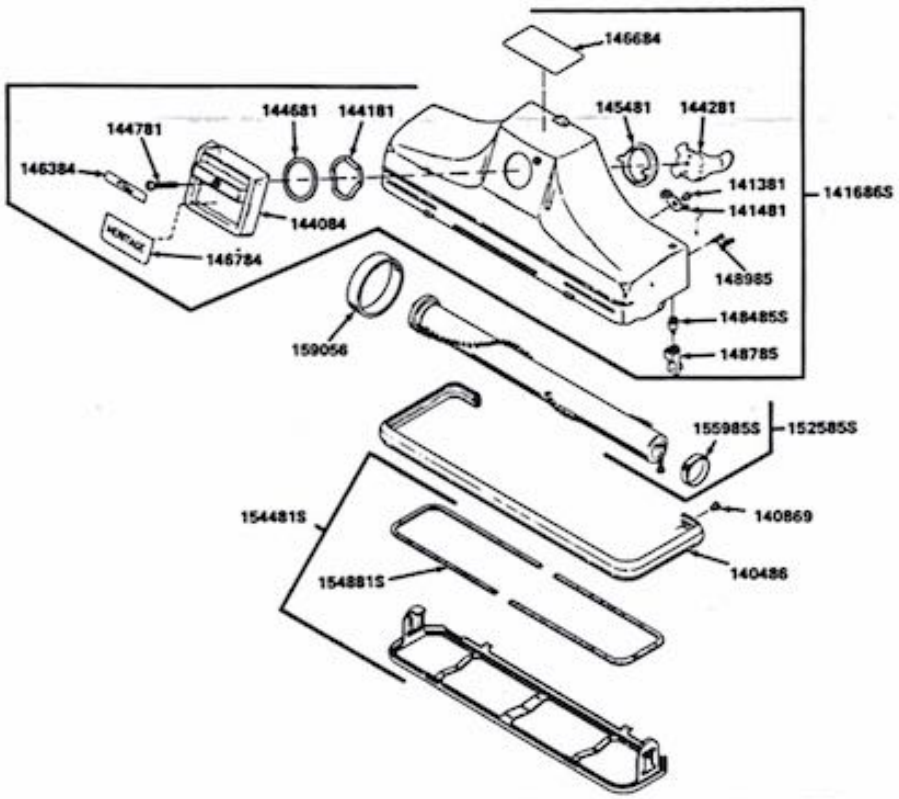
This new feature lets your customer know that the brush roll is revolving by illuminating a light on the rug nozzle and removes any doubt as to whether the brush belt is driving the brush roll. This feature became a part of production in conjunction with the new 5 year/2 year limited warranty.

The Brush Roll Indicator works by passing the magnet located in the thread guard past a coil in the sensor inducing an electrical current through the LED and lighting the green light on the nozzle indicating that the brush roll is revolving and belt is properly installed. The light goes off when the brush belt is broken or machine is turned off and flickers when the brush roll is turning too slowly indicating belt wear.

With the introduction of the Brush Roll Performance Indicator, we have added six new part numbers to our Service Parts Department and price list. (1) the nozzle complete with LED (light emitting diode) less brush roll will be stocked as part number 141686S, (2) the sensor as part number 148785, (3) shroud and brush roll indicator light as part number 148485S, (4) sensor mounting screw 148985, (5) thread guard with magnet 155985S, and (6) brush roll and magnet assembly 152585S. Also be advised that while the rug plate part number (154481S) was not changed, a slight modification was made. The metal tab on the rug plate which covers the small brush roll end cap has been shortened so as not to interfere with the Brush Roll Performance Indicator.

If the need arises to replace the rug plate on one of these new machines, please make sure that you have the correct rug plate. This modification does not affect its use on Heritage I or Heritage II Kirby's prior to the Brush Roll Performance Indicator introduction.

The rug nozzle with Brush Roll Performance Indicator has undergone extensive testing at the factory and has been field tested in all geographic locations of the country. Because there are no moving parts to wear out or be replaced other than the thread guard with magnet the Brush Roll Performance Indicator has a life expectancy of 10,000 hours.



HERITAGE II nozzle group (with brush roll indicator)

Part No.	Part Name
140486	Nozzle bumper, black
140869	Bumper end rivet
141381	Rug plate latch rivet
141481	Rug plate latch
141686S	Nozzle less brush
144084	Belt lifter body
144181	Belt lifter spring washer
144281	Belt lifter hook
144681	Belt lifter flat washer
144781	Belt lifter screw
145481	Belt lifter bearing

Part No.	Part Name
146384	Belt lifter label
146684	Instruction label
146784	Belt lifter bottom label
148485S	Shroud and BRI light
148785	Sensor
148985	Sensor mounting screw
152585S	Brush roll assembly
154481S	Rug plate assembly
154881S	Rug plate gasket (set)
155985S	Thread guard with magnet
159056	Belt

(2) The normal rating for the Heritage II in LOW speed range with bag and nozzle in place and with the brush roll turning should be 450 to 500 watts.

(3) With the hose attached as in the HIGH speed, the normal reading should be 550 to 600 watts.

(4) Replace the armature if the reading is approximately two times normal (in either mode).

(5) Replace the field if the reading is from two to three times normal (in either mode).

(6) If either armature or field is replaced because of poor performance, the motor should be "run in" for no less than 15 minutes. During and after this run in, readings should be taken to confirm satisfactory services have been performed.

(7) Marginal increases in wattage consumption can indicate possible future problems and should be watched closely.

c. High voltage insulation tests.

(1) This meter should also be adjustable with a range from 500 to 2500 VAC.

(2) Testing with too high a range on older used motors can give false readings caused by dirt or grease which can act as conductors. We recommend therefore, that the most effective range is from 500 to 900 VAC.

CAUTION

DO NOT make tests by tapping either probe to its contact point. Touch probes to unit only once, to repeat will cause a buildup of current in the motor which can cause damage.

(3) When using the tester, probes should be applied to one switch prong and to an outer casting. Move to other prong and repeat. Operate the foot switch and repeat both tests.

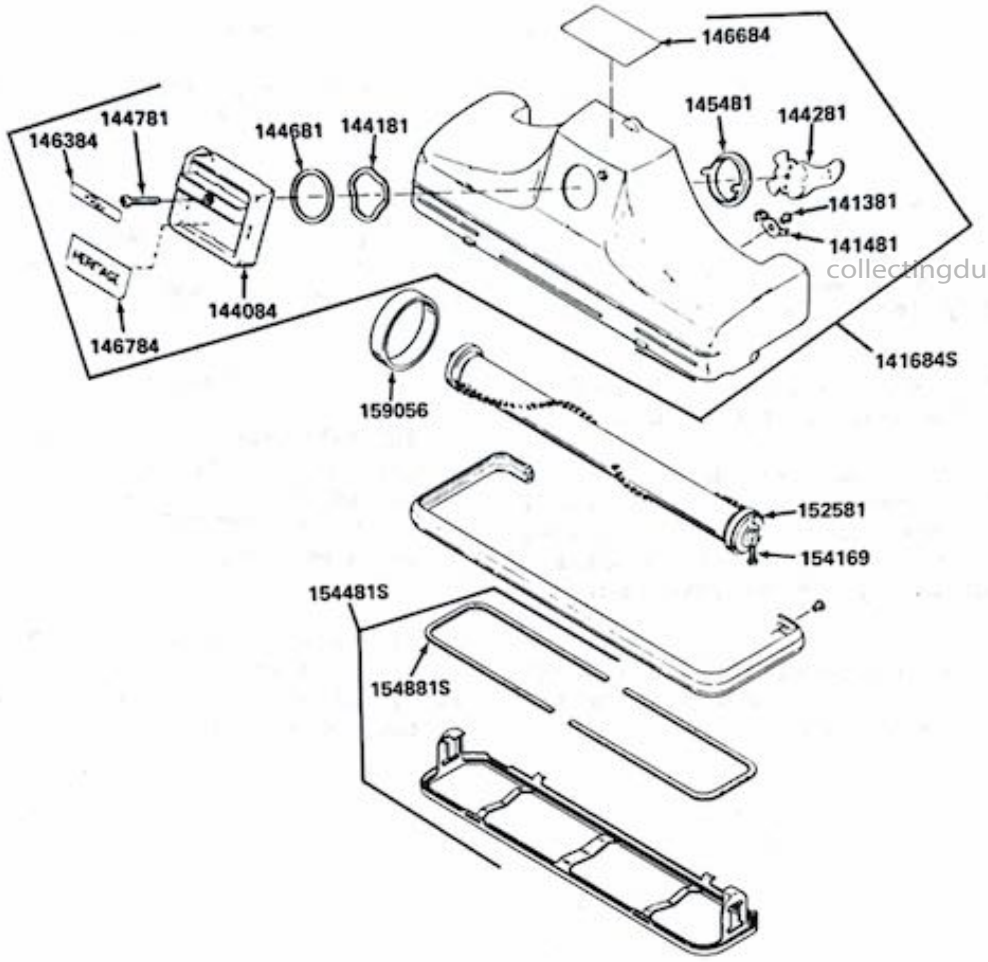


Figure 19. HERITAGE II nozzle group, exploded view

Part No.	Part Name
140484	Bumper
140869	Bumper end rivet
141381	Rug plate latch rivet
141481	Rug plate latch
141684S	Nozzle less brush
144084	Belt lifter body
144181	Belt lifter spring washer
144281	Belt lifter hook
144681	Belt lifter flat washer
144781	Belt lifter screw

Part No.	Part Name
145481	Belt lifter bearing
146384	Belt lifter label
146684	Instruction label
146784	Belt lifter bottom label
152581	Brush roll assembly
154169	Adjusting screw
154481S	Rug plate assembly
154881S	Rug plate gasket (set)
159056	Belt

***Do not order this part; if defective, order the assembly above.

2. NOZZLE GROUP

2-1. The exploded view illustration in figure 19 depicts the parts used in the assembly of the nozzle group of the HERITAGE II.

2-2. Disassembly of the nozzle and belt lifter is basic and follows the flow of the exploded drawings. For this reason, we go directly to specific service situations as follows:

a. Nozzle fits loosely against motor.

(1) Check engaging lugs on back; if broken or worn, casting must be replaced.

(2) Check cam of nozzle lock (121056G) on face of fan case. If nozzle lock screw (1211) is loose, it may be tightened and peened from the inside. This requires that the fan case be removed from motor.

b. Brush does not pick up surface lint.

(1) Check for broken or slipping belt.

(2) Check brush adjustment. Bristle extension through face of nozzle rug plate should be at least 1/16 inch when measured as in figure 19. Adjust as required at adjusting screws.

(3) Check brush roll end bearings for accumulation of thread, hair, or dirt that could restrict free rotation.

NOTE

Do not remove both screws; remaining screw will act as a guide for reassembly.

(a) If brush must be disassembled, remove only one screw and end ferrule.

(b) With screw removed, axle shaft can be drawn free of brush. Use a 1/4 inch drift pin, very gently if necessary. Check brush shaft at screw hole for burrs; remove burrs with flat file.

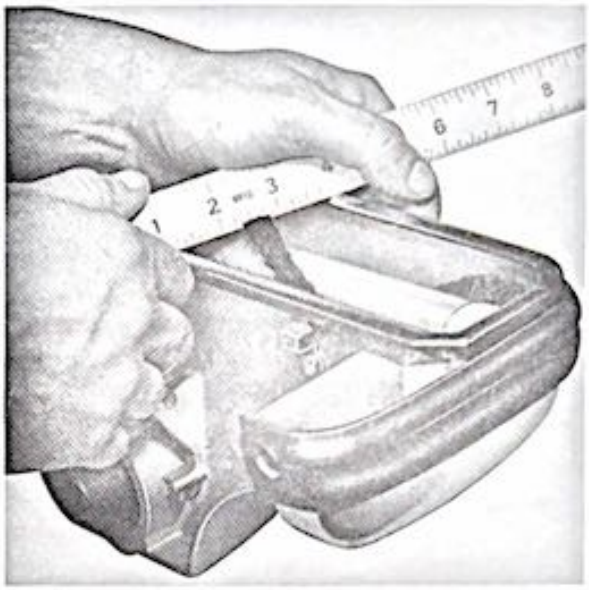


Figure 20. Checking nozzle brush protrusion

(c) Clean and lightly lubricate axle before reassembly. Insert screw in same direction as remaining screw.

c. Brush is noisy when running.

(1) Are bearings out of alignment and causing rotation to hesitate or drag? If so, remove brush from nozzle and turn axle by hand until drag is evidenced. Using a rubber mallet, strike a sharp blow to the side of the brush; this will alter the bearings in their sockets and permit free rotation in most instances.

(2) Is rug plate gasket (154881S) in place?

d. Belt lifter turns completely around.

(1) Belt lifter body may have broken internal wall at point of contact with stop rivet on front face of nozzle. Replace belt lifter body casting.

TROUBLESHOOTING CHART — NOZZLE

Trouble	Possible Cause	Remedy
Brush does not turn	Broken or stretched belt.	Replace belt.
Belt breaks in use	Frozen brush bearings.	Replace or service brush bearings.
	Improper use of belt lifter.	Refer to Owners Manual.
Does not pick up dirt	Brush out of adjustment.	Check adjustment (par. 2-2.b(2)).
	Stretched or broken belt.	Replace belt.
	Fouled brush bearings.	Clean and lubricate brush bearings (par. 2-2.b(3)).
	Fan blades worn away.	Replace fan.
	Dust bag too full.	Empty or replace dust bag.
	Fill tube blocked.	Clean/replace fill tube.
Odor of rubber (as hot)	Fouled brush bearings.	Check brush bearings; clean and lubricate as necessary.
	Belt drag on rug plate or belt lifter back.	Check brush adjustment.
	Over-adjusted brush.	Check brush adjustment.
Noisy operation	Bearings out of alignment.	Check bearings for alignment (par. 2-2.b), and adjust.
	Worn or missing rug plate gasket.	Replace rug plate gasket.

2-1. NOZZLE GROUP PARTS LIST

The exploded view illustration in figure 2-1 shows all available parts for the Nozzle Group of the HERITAGE. The parts are drawn in proper relationship to each other to serve as an aid to disassembly and reassembly. Note the following:

a. The parts list contains part numbers only for those parts for which service replacements are available. If you cannot find a part on the exploded view, or if the symbol (***) appears in the Part No. column, the part cannot be replaced separately.

b. The part names in this list are indented to indicate subassembly relationship. When a part name is indented under another name, it indicates that the indented part belongs to the subassembly under which it is indented. If you order an assembly, you will receive all the parts indented under it in this parts list.

c. The index numbers have been assigned in the approximate order of disassembly, except when the sequence is broken to show correct subassembly relationship.

2-2. NOZZLE AND BRUSH ADJUSTMENTS

a. Check that the two lugs that fit over the nozzle attaching shaft are not broken or badly distorted. These lugs cannot be repaired; if defective, the nozzle assembly must be replaced.

b. Brush adjustment.

(1) Place a straight edge across the nozzle opening to determine the protrusion of the brush bristles as shown in figure 2-2. Bristles should protrude 1/16 inch beyond the mouth of the nozzle.

(2) The brush roll height adjusting screws (2, fig. 2-1) are located at each end of the brush. Turn the adjusting screw clockwise to extend the brush so it protrudes more. Turn the adjusting screw counterclockwise to retract the brush so it protrudes less.

(3) Check and adjust the brush at each end of the nozzle to obtain the proper adjustment. Replace the brush roll assembly (1) when the bristles of the old brush are worn too short to make adjustment practical.

Figure 2-2. Checking nozzle brush protrusion

2-3. BRUSH ROLL, RUG PLATE, AND BELT REPLACEMENT

a. Adjust belt lifter (14) to release the tension on belt (3).

b. Turn the two rug plate latches (7) to release the rug plate, and swing the plate down and off the two bosses on the front of the nozzle body, as shown in figure 2-3.

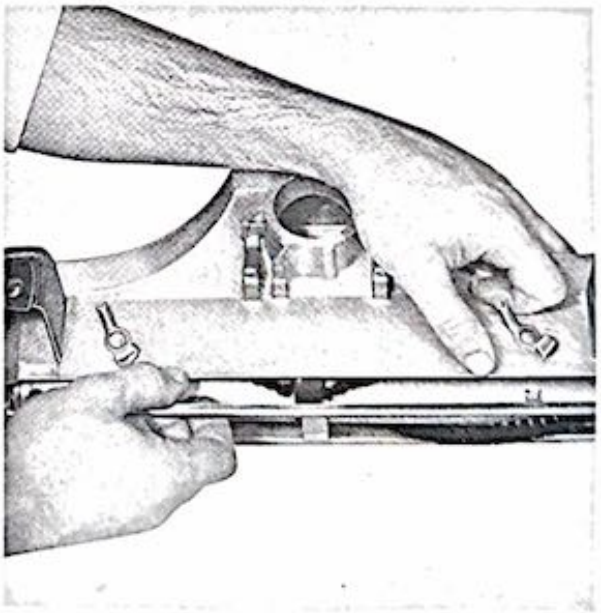


Figure 2-3. Releasing rug plate spring lock

c. Remove adjusting screws (2, fig. 2-1) from the ends of the brush roll. Carefully spreading the rug plate arms, work the brush roll out of the plate.

d. Install a new brush roll (1), rug plate assembly (19), or belt (3) as required. Replace the adjusting screws and close the rug plate on the nozzle body, securing it with the two latches (9).

e. Adjust the brush roll height as described in paragraph 2-2b.

2-4. BELT LIFTER REPLACEMENT

a. Remove the rug plate and brush roll as described in paragraph 2-3.

b. With a screwdriver or fingernail, lift the label (11) at its center to expose belt lifter screw (12). Holding belt lifter hook (13) inside the nozzle, remove the belt lifter screw. As the belt lifter hook and bearing (17) are pulled from belt lifter (14), spring washer (16) and flat washer (15) will fall free.

c. Inspect for and replace worn, broken, or damaged parts.

d. To replace the belt lifter:

(1) Place belt lifter hook (13) and bearing (17) into nozzle body (10) from the inside, and hold them in place with your left hand. Position them so the tabs of the bearing are horizontal and the ears of the lifter hook are to your right as you face the front of the nozzle. See figure 2-4.

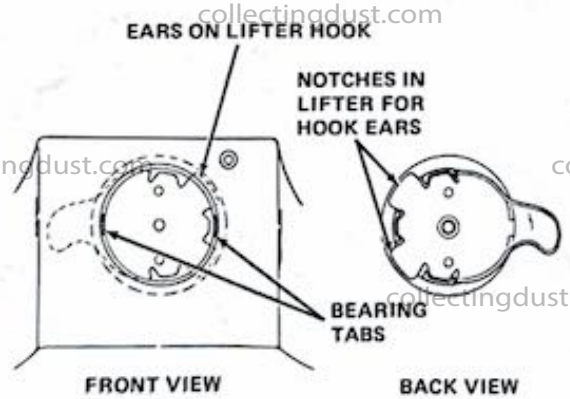


Figure 2-4. Positioning of the belt lifter, hook, and bearing

(2) Place spring washer (16, fig. 2-1) then flat washer (15) over the tabs of the bearing from the outside of the nozzle body.

(3) With lifter screw (12) placed in belt lifter (14), position the lifter with the lifter bar horizontal so the tabs of the bearing (17) fit into the depression in back of the lifter bar. Press the lifter into place, moving it slightly until you feel it slip into place with the ears of the hook fitting into the notches on the right side of the lifter, as shown in figure 2-4.

(4) When positioned properly, screw (12, fig. 2-1) lines up with the threaded hole in hook (13). Thread the screw into the hook and securely fasten the assembly in place. Replace the lifter label by inserting each end into the notches on the lifter bar and pressing the center of the label until it slips into place.

(5) The lifter hook and lifter must be oriented correctly for proper lifting of the belt. Check the orientation by starting with the lifter bar horizontal and the "Kirby" reading right to left. The recessed arrow should be in the upper left hand corner pointing to the BELT ON mark on the label, as shown in figure 2-6.

(6) Turn the lifter 270° counterclockwise until it is stopped by the housing stop rivet. The "Kirby" on the label should read from top to bottom. The arrow should be pointing to the

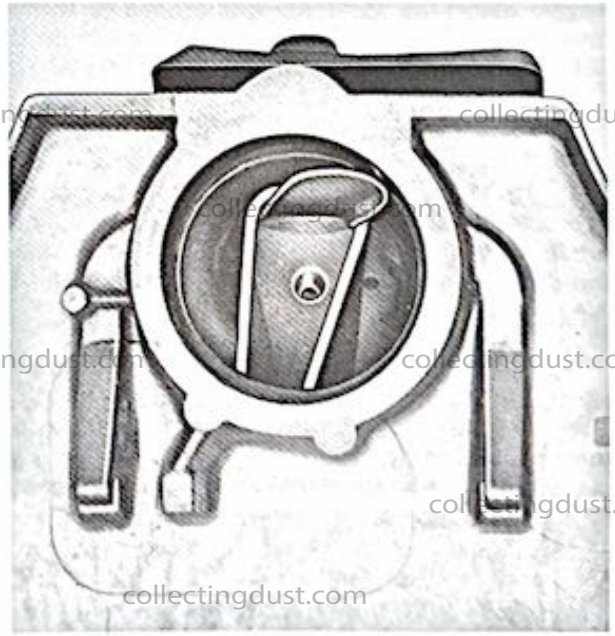


Figure 2-5. Belt lifter and lifter hook in position

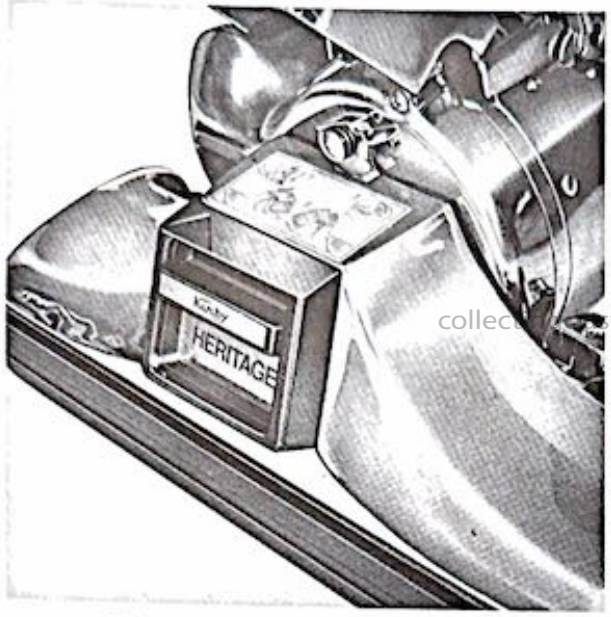


Figure 2-6. Belt lifter in BELT ON position

Figure 2-7. Belt lifter in BELT OFF position

BELT OFF mark on the right side of the label, as shown in figure 2-7. The belt lifter hook lifting flange should be in the top dead center position as shown in figure 2-5. If it is not, disassemble and reassemble properly.

(7) Replace the brush roll, rug plate, and belt as described in paragraph 2-3.

(8) With the belt in place, check that the belt is lifted properly as shown in figure 2-5.

SECTION 3
HANDLE GROUP WITH CORD

INDEX

3-1. HANDLE GROUP PARTS LIST

The exploded view illustration in figure 3-1 shows all available parts for the Handle Group of the HERITAGE. The parts are drawn in proper relationship to each other to serve as an aid to disassembly and reassembly. Note the following:

a. The parts list contains part numbers only for those parts for which service replacements are available. If you cannot find a part on the exploded view, or if the symbol (***) appears in the Part No. column, the part cannot be replaced separately.

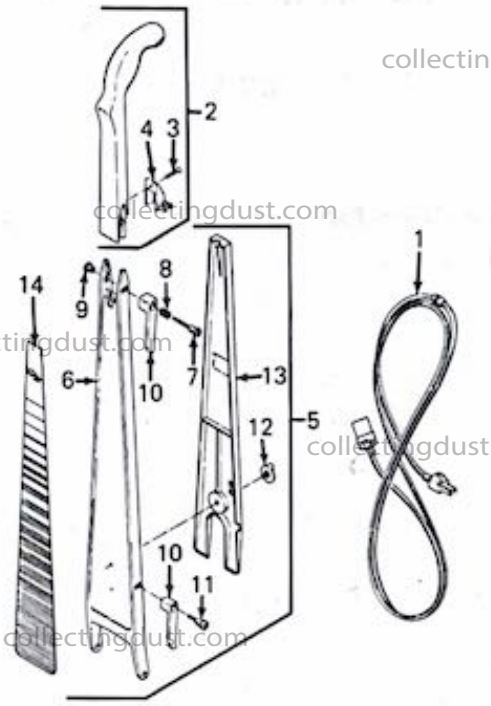


Figure 3-1. HERITAGE handle group, exploded view

Index No.	Part No.	Part Name	Quantity
3-1-1	192081	Cord set	1
-2	173381	Handle grip assembly	1
-3	175381	. Bracket retainer screw	1
-4	175481	. Bracket	1
-5	175081G	Handle fork assembly	1
-6	***	. Handle fork	1
-7	174067	. Swivel screw	1
-8	174167	. Spring	1
-9	175168	. Swivel post nut	1
-10	173881	. Cord hook swivel	2
-11	174467	. Shoulder screw	1
-12	174981	. Cover retainer screw	1
-13	174581	. Rear cover	1
-14	174381	Insert label	1

*** Do not order this part; if defective, order the assembly above.

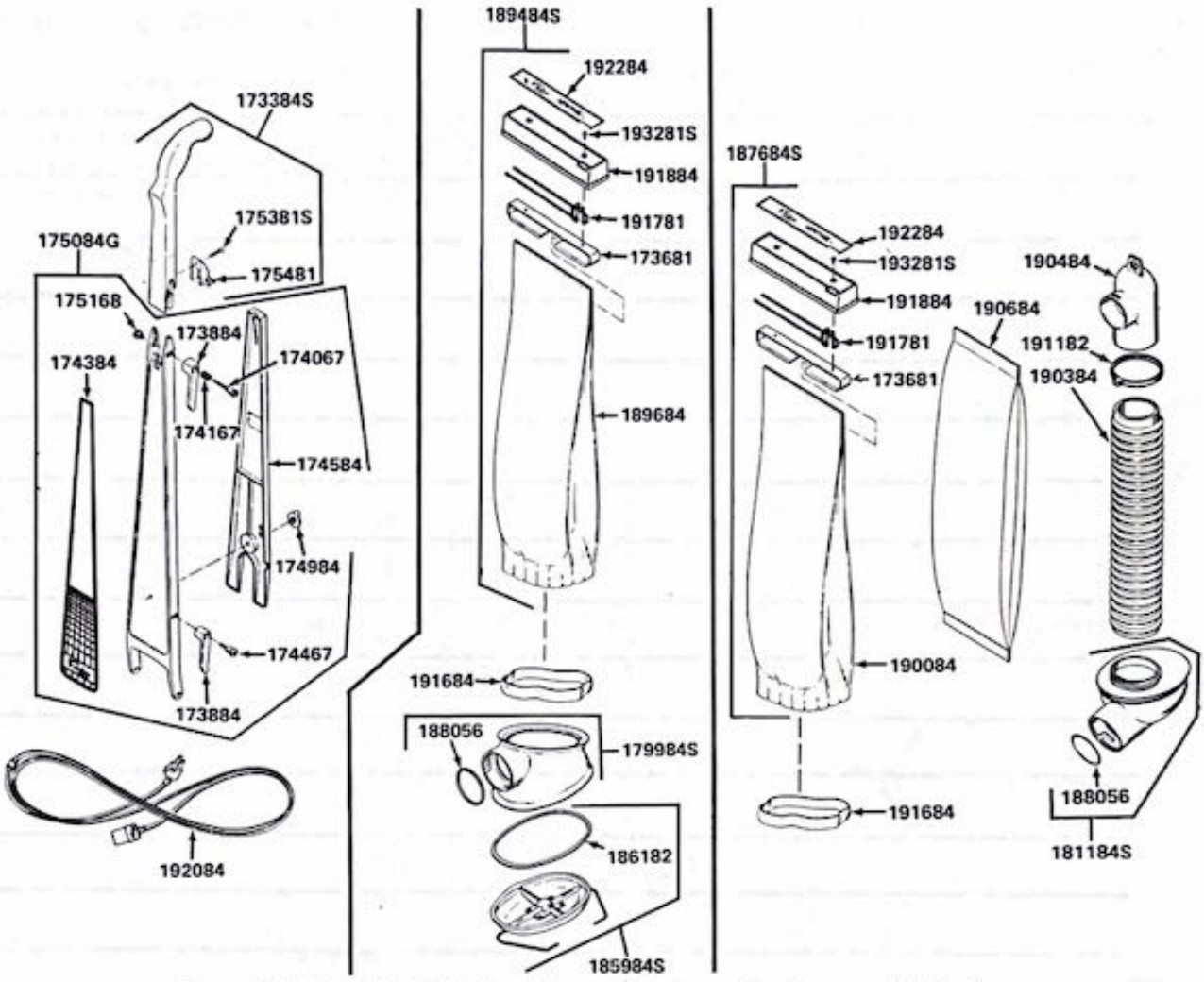


Figure 21. HERITAGE II handle, cord, bag, and emtor, exploded view

HANDLE AND CORD	
Part No.	Part Name
173384S	Handle grip
173884	Cord hook
174067	Cord hook swivel screw
174167	Cord hook swivel spring
174384	Hand fork label
174467	Cord hook shoulder screw
174584	Hand fork rr cover
174984	Bank retainer screw
175084G	Hand fork assembly
175168	Cord hook swivel nut
175381S	Handle grip bracket screw
175481	Cord/bag bracket
192084	Cord

POCKET BAG WITH LARGE EMTOR	
Part No.	Part Name
173681	Bag support hanger
179984S	Emtor casting
185984S	Emtor tray, black
186182	Emtor tray gasket
188056	Emtor round rubber gasket
189484S	Bag complete w/pocket
189684	Bag only w/pocket
191684	Bag guard
191781	Bag top wire
191884	Bag top cover
192284	Bag top cover label
193281S	Bag clamp screw, 25 pk.

DISPOSABLE BAG SYSTEM WITH MINI-EMTOR	
Part No.	Part Name
173681	Bag support hanger
181184S	Mini-Emtor assembly
187684S	Bag complete, zipper type
188056	Emtor round rubber gasket
190084	Bag only, zipper type
190384	Fill tube
190484	Top adapter
190684	Disposable paper bag
191182	Tube tie
191684	Bag guard
191781	Bag top wire
191884	Bag top cover
192284	Bag top cover label
193281S	Bag top cover screw

3. HANDLE, CORD, BAG, AND EMTOR GROUP

3-1. The exploded view illustration in figure 21 shall serve as guide for disassembly and assembly with specific details in service information as required.

a. Handle.

(1) To prevent breakage, keep clamp screw secure and tight.

(2) If handle fork pin (137879) works loose, check spring clip (1005S) on spring shaft (137173) inside of shell housing.

b. Cord.

(1) Check continuity by attaching cord to a Heritage motor known to be good. With power on light on, flex cord along full length, observing light for any interruption or outage.

(2) Check cord for cuts or breaks in outer insulation.

c. Bag.

(1) Hardware at top hanger assembly is the same for both the permanent bag (189484S) and the disposable bag (187684S) systems.

(2) Permanent bag units have sani-emtor and shake-down bag with zipper pocket and scraper. All dirt is removed through bottom opening of sani-emtor.

NOTE

Use T106 cement when replacing either gasket.

(a) Replace bottom tray gasket (186184) as required, or brush exposed face of gasket to remove accumulated lint or dust. Cement gasket in place.

(b) Check connecting gasket (188056) and replace as required. Cement gasket in place.

(3) Disposable paper bag system has the mini-emtor.

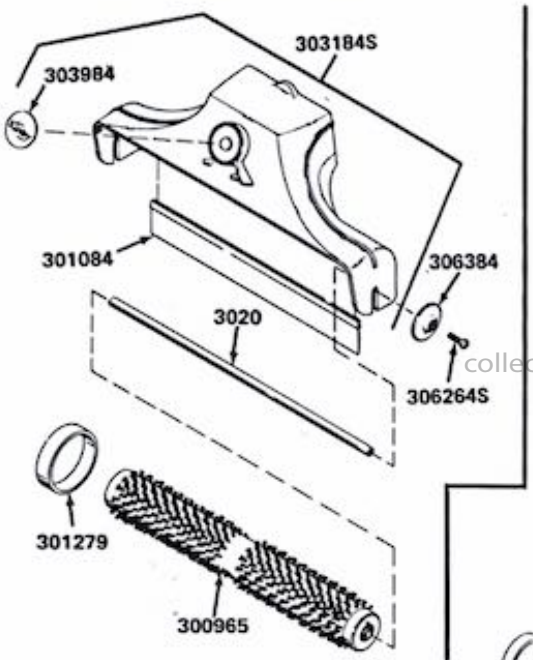
(a) Since this is a one-piece casting, the only maintenance required should be replacement of connecting gasket (188056).

(b) Fill tube assembly (187484S) is attached to the emtor body by means of a right-hand thread of the hose coils.

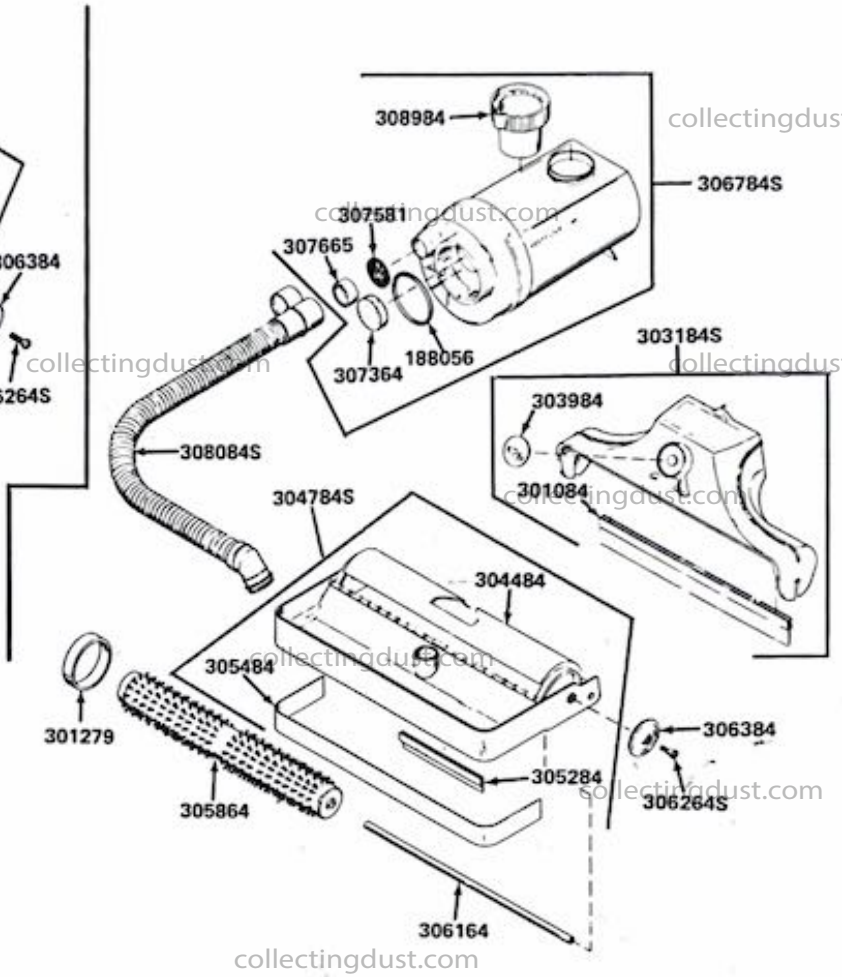
TROUBLESHOOTING CHART — HANDLE, BAG, EMTOR, CORD

Trouble	Possible Cause	Remedy
Handle fork breakage:		
At motor end	Loose handle fork pin.	Check handle fork pin (par. 3-1.a(2)); service or replace as necessary.
At grip end	Loose clamp screw.	Instruct user to tighten clamp screw securely.
Dust leakage:		
Emtor to motor	Missing or worn gasket (188056).	Replace gasket.
Emtor bottom tray	Dust or lint buildup on tray gasket.	Clean or replace gasket.
Power loss	Faulty cord.	Check cord (par. 3-1.b).

MIRACLE HEAD



RUG RENOVATOR



SUPPLIES: SUDS/SCUTTLE		
Instant Suds		
12 oz.	24/case	252684S
32 oz.	12/case	252781S
1 gal	4/case	252881S
5 gal.		25267305
Scuttle		
12 oz.	24/case	275181S
32 oz	12/case	275981S
Carpet Fresh		
12 oz.	24/case	275481S
Odorific		
1/4 oz.	48/case	2750814S
Stain Remover		254684S
8 oz.	24/case	

Figure 22. HERITAGE II super renovator group and cleaning supplies

Part No.	Part Name
188056	Round rubber gasket
25267305	Instant Suds, 5 gallon
252684S	Instant Suds, 12 oz, 24/case
252781S	Instant Suds, 32 oz, 12/case
252881S	Instant Suds, 1 gallon, 4/case
27508148	Odorific, 48/case
275181S	Scuttle, 12 oz, 24/case
275481S	Carpet Fresh, 12 oz, 24/case
275981S	Scuttle, 32 oz. 12/case

Part No.	Part Name
300965	Polisher brush
301084	RR baffle strip
301279	Polisher-reno belt
3020	Polisher shaft
303184S	Renovator casting
303984	Polisher-reno label
304484	RR brush shield
304784S	RR tray less brush, black
305284	RR belt baffle strip
305484	RR suds leveler

Part No.	Part Name
305864	Rug renovator brush
306164	RR brush axle
306264S	Reno bumper screw, 25 pk.
306384	RR bumper, black
306784S	RR tank complete, black
307364	RR filter sponge
307581	RR suds screen, gray
307665	RR screen retainer
308084S	RR hose complete, black
308984	RR tank cup, black

4. RENOVATOR GROUP

4-1. The exploded view illustration in figure 21 shows sufficient detail for required replacement parts service. Specific instructions are included in the following comments:

a. Insufficient foam.

(1) Check suds screen (307581) or filter sponge (307364). Each must be cleaned during use to remove accumulated dust and lint.

(2) Confirm solution strength.

(3) Make sure only Kirby Instant Suds are used—do not mix with other brands.

(4) Clear brass supply tube in tank with a thin wire probe or pipe cleaner.

b. Excessive foam.

(1) Confirm solution strength.

(2) Be certain brush is in full contact with rug surface.

(3) Use shut-off cap on suds hose.

c. Belt slippage.

(1) Too much foam.

(2) Belt stretched.

(3) Belt baffle strip (305284) in tray worn or missing.

5. ATTACHMENT GROUP

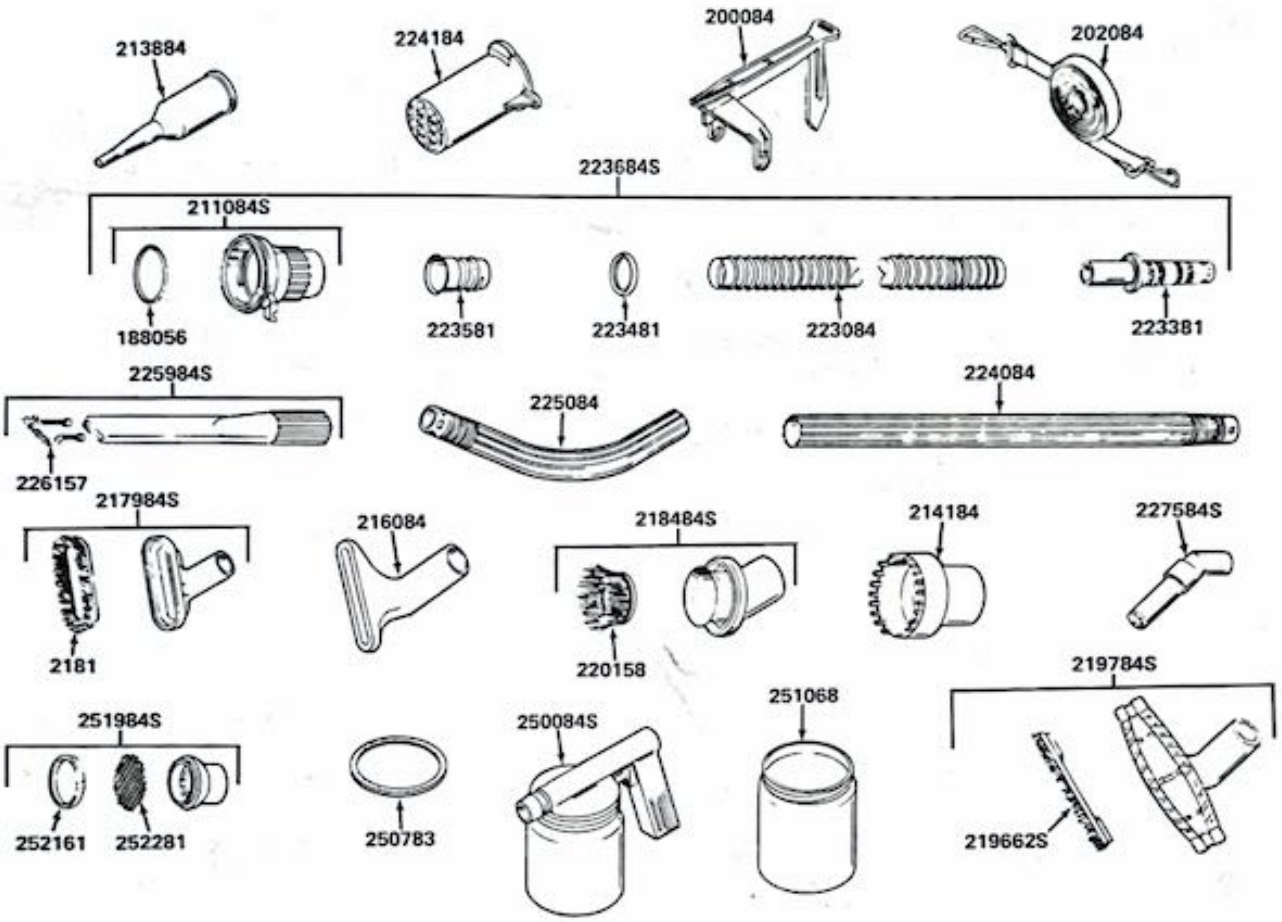


Figure 22. HERITAGE II attachment set parts

Part No.	Part Name
188056	Round rubber gasket
200084	Lifter grip, gray
202084	Shoulder strap, gray
211084S	Hose motor connection, gray
213884	Inflator, gray
214184	Massage cup, gray
216084	Utility air nozzle, gray
217984S	Utility brush nozzle, gray
2181	Utility brush strip
218484S	Duster brush, gray
219662S	Surface nozzle brush

Part No.	Part Name
219784S	Surface nozzle head, gray
220158	Duster brush ring
223084	Hose only, gray
223381	Hose tube swivel
223481	Hose ferrule ring
223581	Hose insert sleeve
223684S	Hose complete, gray
223881	Hose seal gasket
224084	Straight tube, gray
224184	Air intake nozzle

Part No.	Part Name
225084	Curved tube, gray
225984S	Radiator tool, gray
226157	Radiator tool brush
227584S	Surface nozzle elbow, gray
250084S	Spray gun complete, gray
251981S	Suds cap, gray
252161	Suds screen ring
252281	Suds cap screen, gray
250783	Spray jar gasket
251068	Spray jar

6. TURBO GROUP AND TOOLS

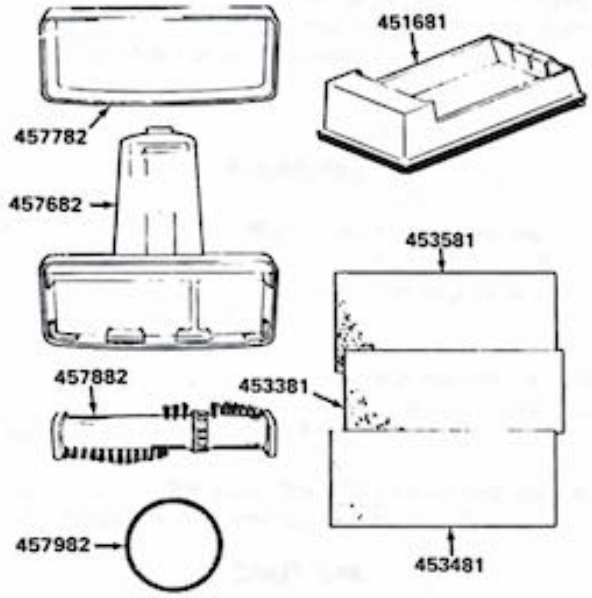


Figure 23. Turbo group

TURBO GROUP	
Part No.	Part Name
451681	Turbo sander shroud
453381	Turbo sander-scrubber pad
453481	Turbo sander-massage pad
453581	Turbo sander-fleece pad
457682	Turbo brush base plate
457782	Turbo brush base plate bumper
457882	Turbo brush roll
457982	Turbo brush belt

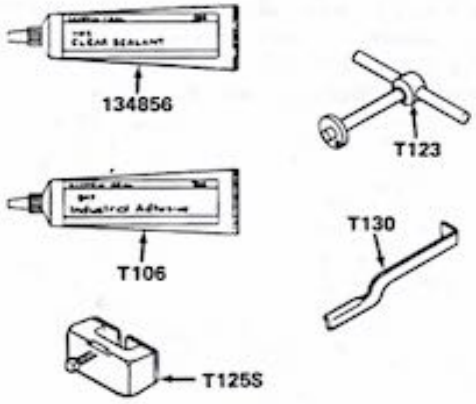


Figure 24. Special tools

SPECIAL TOOLS	
Part No.	Part Name
T106	Plastic cement
T123	Spring winding tool
T125S	Rear bearing puller
T130	Fan locking tool
134856	Clear sealer

OTHER TOOLS	
Size/Qty.	Part Name
Assorted	Screwdriver, flat
Assorted	Screwdriver, phillips
Assorted	Pliers
Assorted	Screwdriver, impact
Assorted	Soldering gun
Assorted	Bench vise
8 in.	File, round rattail
1/4 in. x 6 in.	File, pillar
No. 0300	Pliers, snap ring, Truarc
1	Tap wrench
6 x 32	Threading tap
8 x 32	Threading tap
10 x 24	Threading tap
10 x 32	Threading tap

b. The part names in this list are indented to indicate subassembly relationship. When a part name is indented under another name, it indicates that the indented part belongs to the subassembly under which it is indented. If you order an assembly, you will receive all the parts indented under it in this parts list.

3-2. CORD

WARNING

Do not use the Kirby cord set as an extension cord. This may damage the cord set and make it unsafe to use as a power cord with the Kirby.

Failure of the unit to operate can be caused by interruption of the circuit in the cord between the wall outlet and the motor unit.

a. Inspect the cord for cuts, defective insulation, damaged or loose plug or connector.

CAUTION

A plastic key (see figure 3-2) has been included in the female end of the cord set. This is to prevent the cord being used as an extension. Because of this it is no longer possible to test the continuity by connecting the cord between a power source and a desk lamp to observe operation of the lamp.

Figure 3-2. Kirby cord set with alignment pin safety key

b. If the plug or connector is damaged or burned, remove the old part from the cord, clean the leads, and install a new plug or connector.

c. If the cord insulation is damaged or if there is a break in the cord wires, the entire cord should be replaced.

SECTION 4
SANI-EM-TOR AND BAG GROUP

INDEX

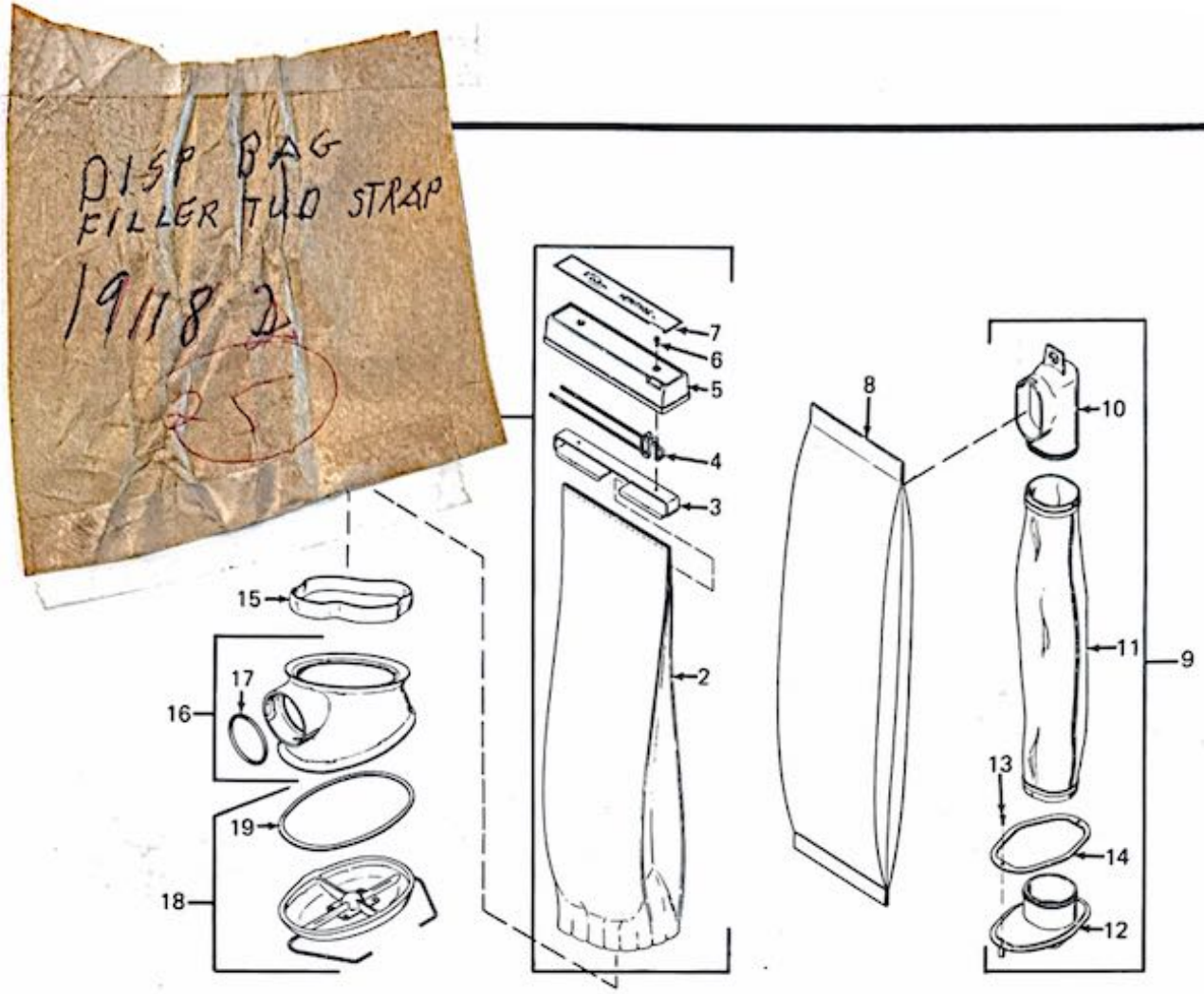


Figure 4-1. HERITAGE Sani-Em-Tor and bag group, with disposable bag, exploded view

Index No.	Part No.	Part Name	Quantity
4-1-1	189981S	Cloth bag assembly (zipper)	1
-1a	189481S	Cloth bag assembly (pocket)	1
-2	190081	. Cloth bag only (zipper)	1
-2a	189681	. Cloth bag only (pocket)*	1
-3	173681	. Support hanger	1
-4	191781	. Wire hanger	1
-5	191881	. Top cover	1
-6	193281	. Clamp screw	2
-7	192281	. Top cover label	1
-8	190681	Disposable bag, paper	3
-9	189881S	Disposable filler tube assembly	1
-10	***	. Disposable bag top clamp assembly	1
-11	***	. Disposable bag filler tube	1
-12	***	. Disposable bag adapter collar	1
-13	191481	. Adapter mounting screw	2
-14	192981	. Adapter gasket	1
-15	191681	Bag guard, plastic collar	1
-16	179981S	Sani-Em-Tor body with gasket and cam	1
	***	. Sani-Em-Tor body	1
-17	188056	. Sani-Em-Tor body gasket	1
-18	185981S	Sani-Em-Tor bottom tray with gasket	1
	***	. Sani-Em-Tor bottom tray	1
-19	186169	. Sani-Em-Tor bottom tray gasket	1

* Not illustrated.

*** Do not order this part; if defective, order the assembly above.

4-1. SANI-EM-TOR AND BAG GROUP PARTS LIST

The exploded view illustration in figure 4-1 shows all available parts for the Sani-Em-Tor and Bag Group with disposable bag and adapter of the HERITAGE. The parts are drawn in proper relationship to each other to serve as an aid to disassembly and reassembly. Note the following:

a. The parts list contains part numbers only for those parts for which service replacements are available. If you cannot find a part on the exploded view, or if the symbol (***) appears in the Part No. column, the part cannot be replaced separately.

b. The part names in this list are indented to indicate subassembly relationship. When a part name is indented under another name, it indicates that the indented part belongs to the subassembly under which it is indented. If you order an assembly, you will receive all the parts indented under it in this parts list.

4-2. BAG REPLACEMENT

a. Removal.

(1) Unscrew the Sani-Em-Tor to remove it from the motor unit.

(2) Lift label (7, fig. 4-1) to access cover mounting screws (6) as shown in figure 4-2.

(3) Remove both screws to remove top cover (5, fig. 4-1), wire hanger (4), and support hanger (3) from bag (2).

(4) Pull up bag guard (15), and slide it along and off the bag. Stretch the spring in the bottom of the bag and remove the bag from the Sani-Em-Tor.

b. Installation.

(1) Rest Sani-Em-Tor body (16) against the edge of a workbench and use both hands to stretch the bag over the body flange as shown in figure 4-3.

(2) Slide bag guard (15, fig. 4-1) over the bag and pull it down around the bag bottom to seal the bag to the Sani-Em-Tor.

(3) Slide the legs of support hanger (3) between the folds on each side of the bag. Install

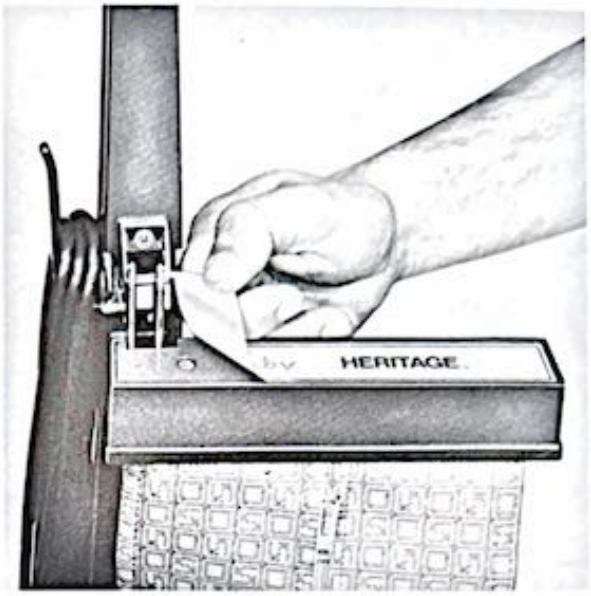


Figure 4-2. Label on top cover and mounting screw

wire hanger (4) in the cover (5), and fasten the cover to the support hanger with mounting screws (6). Replace the label on the cover.

(4) Reattach the Sani-Em-Tor to the motor unit. The Sani-Em-Tor should fit snugly to the exhaust horn of the motor. To facilitate reattaching the Sani-Em-Tor with a new gasket which may be dry on the surface, spray the gasket in place with WD-40 or other suitable rubber-safe lubricants, observing the precautions recommended by the manufacturer.

Figure 4-3. Installing bag on Sani-Em-Tor body

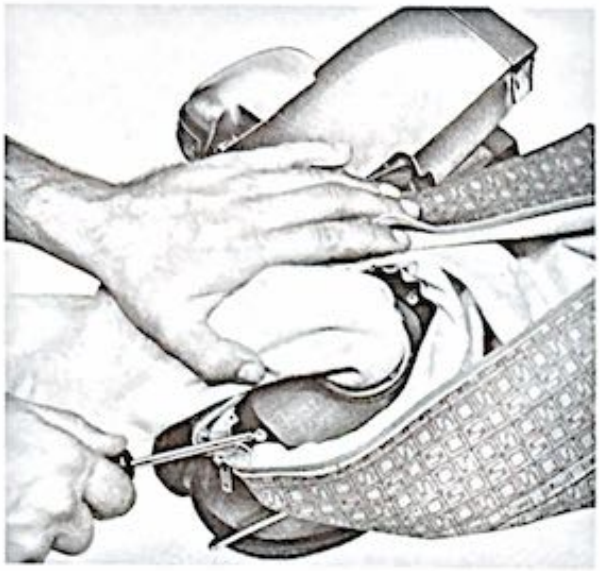


Figure 4-4. Filler tube, adapter collar, and mounting screws

4-3. FILLER TUBE REPLACEMENT

a. Removal. If a pocket bag is used on the unit, the bag must be removed as described in paragraph 4-2. If a zipper bag is used, detach wire hanger (4) from hanger bracket (4, fig. 3-1), unzip the bag and fold the sides out of the way to pull filler tube (11, fig. 4-1) out of the bag, as shown in figure 4-4. Remove the two screws (13, fig. 4-1) and drop the adapter collar (12) through the Sani-Em-Tor body and out the opened bottom tray as shown in figure 4-5.

Figure 4-5. Filler tube and adapter cover through bottom of Sani-Em-Tor body

b. Installation.

(1) With the bottom tray (18, fig. 4-1) of the Sani-Em-Tor open, slip the filler tube up into the bag, and secure the collar in place with mounting screws (13).

(2) Attach the filler tube to the elastic hanger in the top of the bag. If a pocket bag is used, reinstall the bag onto the Sani-Em-Tor as described in paragraph 4-2. If a zipper bag is used, zip the bag closed and attach it to the hanger bracket.

4-4. SANI-EM-TOR REPAIR

a. Bottom tray replacement.

(1) Release the bail on Sani-Em-Tor bottom tray (18, fig. 4-1) and open the bottom tray. Disengage the ends of the bail from the Sani-Em-Tor body and remove the bottom tray.

WARNING

Adhesive is flammable and toxic. Do not use near heat, sparks, or open flames. Use in well-ventilated area. Avoid prolonged contact with skin. Avoid breathing vapors.

(2) If only Sani-Em-Tor bottom tray gasket (19) is worn, pull it from the groove in the bottom tray. Clean the groove and cement a new gasket in place with Kirby T106 adhesive.

(3) Position the Sani-Em-Tor bottom tray so that the side with the small rivet is toward the clamp on the Sani-Em-Tor body. Engage the two ends of the bail in the holes in the Sani-Em-Tor body as shown in figure 4-6.

b. Gasket replacement.

(1) If body gasket (17, fig. 4-1) is worn, cracked, or gouged, use a knife or screwdriver to remove the gasket from Sani-Em-Tor body (16).

WARNING

Adhesive is flammable and toxic. Do not use near heat, sparks, or open flames. Use in well-ventilated area. Avoid prolonged contact with skin. Avoid breathing vapors.

(2) Use Kirby T106 adhesive to secure a new gasket in the Sani-Em-Tor body.

4-5. GENERAL DUST LEAKAGE

Complaints of dust odor or leakage can result from the following:

a. Bag problems.

(1) Worn or damaged bag. Replace if necessary.

(2) Bag agitation, possibly from bumping the bag into furniture while the motor is running.

(3) Poor seal at the Sani-Em-Tor body. Check the condition of bag guard (15, fig. 4-1) and its position on the bag. Check the condition of the elastic at the bottom of the bag. Replace the bag if the elastic is stretched or damaged.

b. Bottom tray troubles.

(1) Check that Sani-Em-Tor bottom tray (18, fig. 4-1) is correctly aligned and tightly installed on Sani-Em-Tor body (16).

(2) Use a brush to clean bottom tray gasket (19) on the tray. If the gasket is damaged or no longer seals tightly, replace it as described in paragraph 4-4.

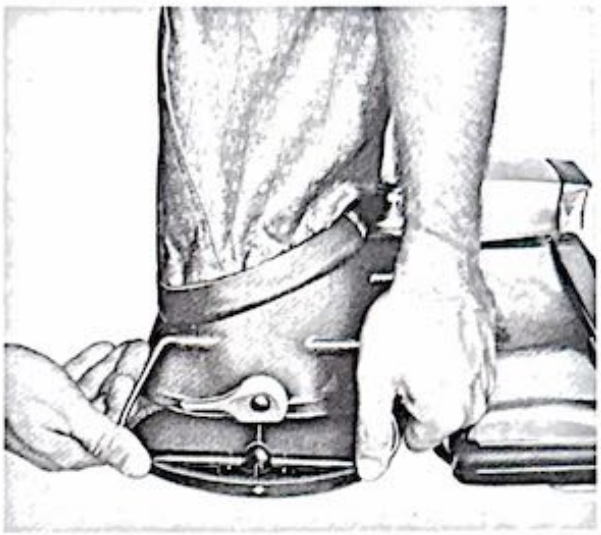


Figure 4-6. Sani-Em-Tor bottom tray

c. Body gasket defects. Replace the body gasket (17) if necessary as described in paragraph 4-4. The Sani-Em-Tor should fit snugly to the exhaust horn of the motor. To facilitate reattaching the Sani-Em-Tor with a new gasket which may be dry on the surface, spray the gasket in place with WD-40 or other suitable rubber-safe lubricant, observing the precautions recommended by the manufacturer.

SECTION 5
ACCESSORY PACKAGES

INDEX

5-1. ACCESSORY PACKAGES

The exploded view illustrations and related parts lists in this section show all available parts for the Convenience Accessories, Super Renovator, Home Turbo, Handi-Butler, and Service Groups used with the HERITAGE. No service instructions are provided, but the parts are drawn in proper relationship to each other to serve as an aid to disassembly and reassembly. Note the following:

a. The parts lists contain part numbers only for those parts for which service replacements are available. If you cannot find a part on the exploded views, or if the symbol (***) appears in the Part No. column, the part cannot be replaced separately.

b. The part names in these lists are indented to indicate subassembly relationship. When a part name is indented under another name, it indicates that the indented part belongs to the subassembly under which it is indented. If you order an assembly, you will receive all the parts indented under it in the parts list.

5-2. KIRBY HERITAGE CONVENIENCE GROUP

The convenience group includes the basic Kirby upright with a disposable bag system plus the Convenience Group Accessories illustrated in Figure 5-1. The components of the basic Kirby upright are presented in detail in Sections 1 through 4.

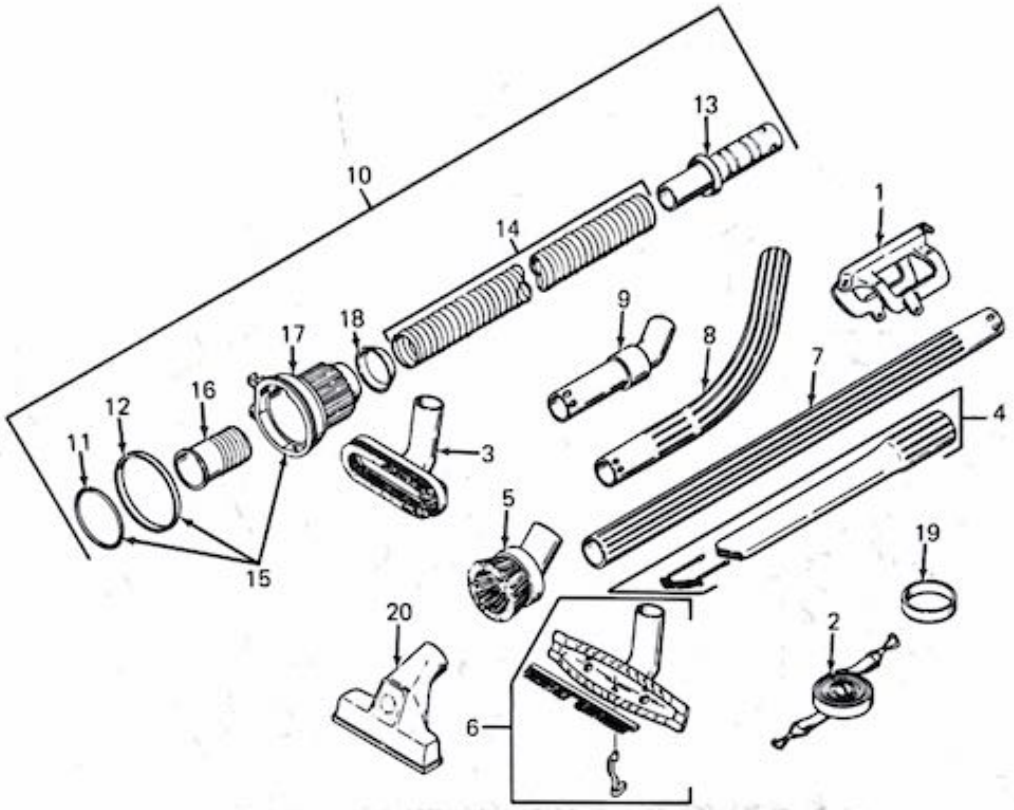


Figure 5-1. Kirby HERITAGE convenience group accessories, exploded view

Index No.	Part No.	Part Name	Quantity
5-1-1	200081	Lifter grip	1
-2	202081	Shoulder strap	1
-3	217981S	Upholstery tool	1
-4	225981S	Crevice tool assembly	1
-5	218481S	Duster brush assembly	1
-6	219781S	Surface nozzle assembly	1
-7	224081	Long extension tube	1
-8	225081	Curved extension tube	1
-9	227581S	Swivel elbow assembly	1
-10	223681S	Attachment hose assembly	1
-11	188056	. Gasket	1
-12	223881	. Seal ring	1
-13	223381	. Swivel tube	1
-14	223081	. Hose	1
-15	211081S	. Suction blower including items 11 and 12	1
-16	223581	. Connector	1
-17	***	. Blower body	1
-18	223481	. Sleeve ferrule	1
-19	301279	Belt	1
-20		Turbo brush	1
-21		Cardboard kit box*	1
-22		Odorific*	1
-23		Room and Carpet Fresh*	1
-24		Disposable bags, package of 3*	1
-25		New Owner's Book*	1

* Not illustrated.
*** Do not order this part; if defective, order the assembly above.

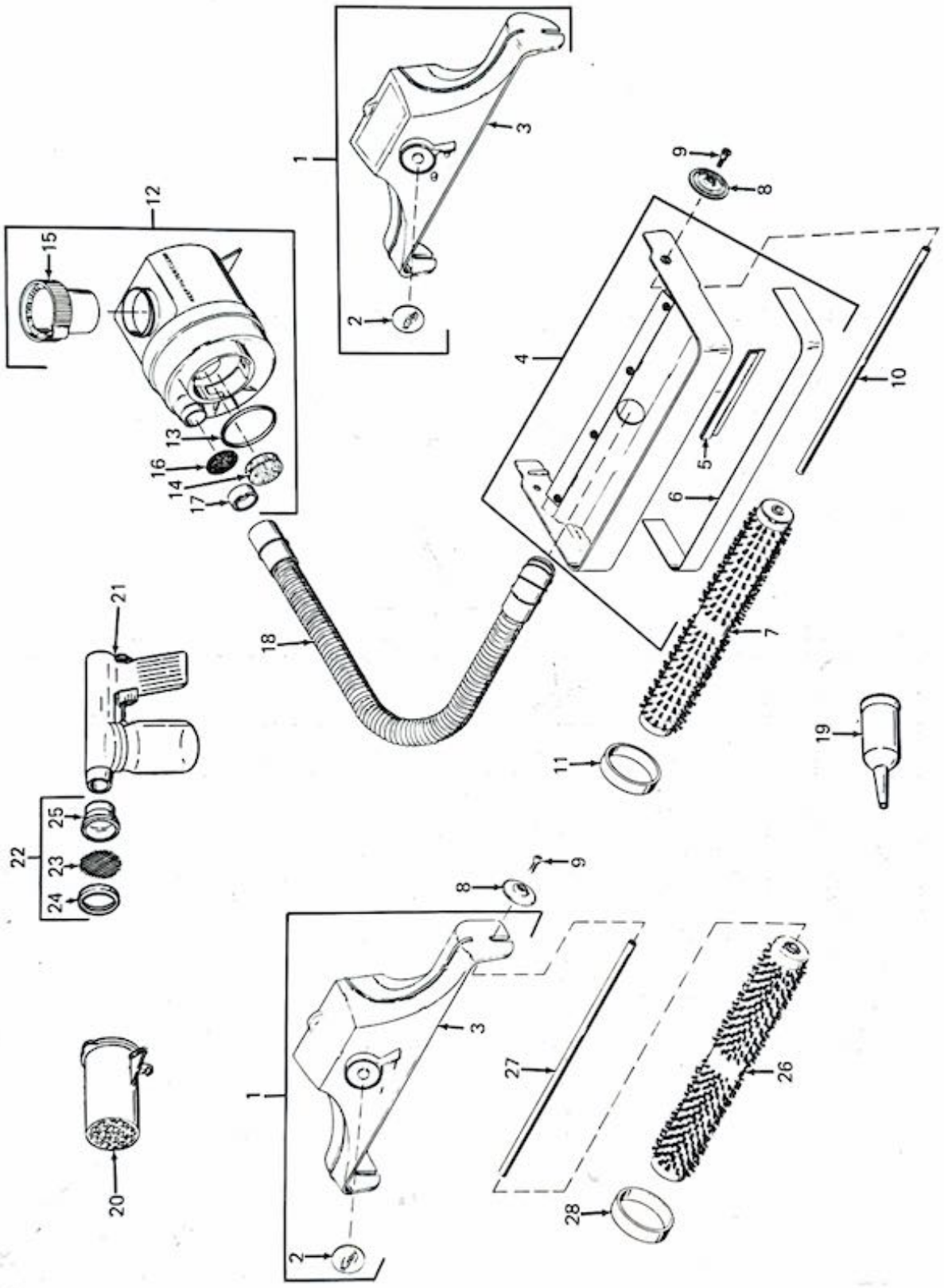


Figure 5-2. Kirby HERITAGE super renovator group, exploded view

Index No.	Part No.	Part Name	Quantity
5-2-1	303181S	Super Renovator nozzle assembly, less brush and axle	1
-2	303981	. Belt lifter label	1
	***	. Belt lifter	1
-3	***	. Nameplate	1
-4	304781S	Tray assembly	1
-5	305281	. Belt baffle strip	1
-6	305481	. Suds leveler	1
-7	305864	Rug renovator brush	1
-8	306381	Bumper	4
-9	306264	Bumper screw	4
-10	306164	Shaft	1
-11	301279	Belt	1
-12	306781S	Renovator tank assembly	1
-13	188056	. Gasket	1
-14	307364	. Tank filter	1
-15	308981	. Tank cap and measuring cup	1
-16	307581	. Suds screen	1
-17	307665	. Suds screen retainer	1
-18	308081S	Rug renovator hose assembly	1
-19	213881	Inflator	1
-20	224181	Air intake nozzle assembly	1
-21	250081S	Spray gun assembly	1
-22	251981S	Suds-O-Gun assembly	1
-23	252281	. Suds-O-Gun screen	1
-24	***	. Suds-O-Gun retaining ring	1
-25	***	. Suds-O-Gun body	1
-26	300965	Miracle Head brush assembly	1
-27	3020	Shaft	1
-28	301279	Belt	1
-29	***	Nameplate, caution label*	1
-30	252681	Instant Suds, 12 oz.*	1

* Not illustrated.
*** Do not order this part; if defective, order the assembly above.

At some time in the future, the Home Turbo Group component list and illustration will be supplied as a Customer Information Bulletin update, to be inserted in place of this page.

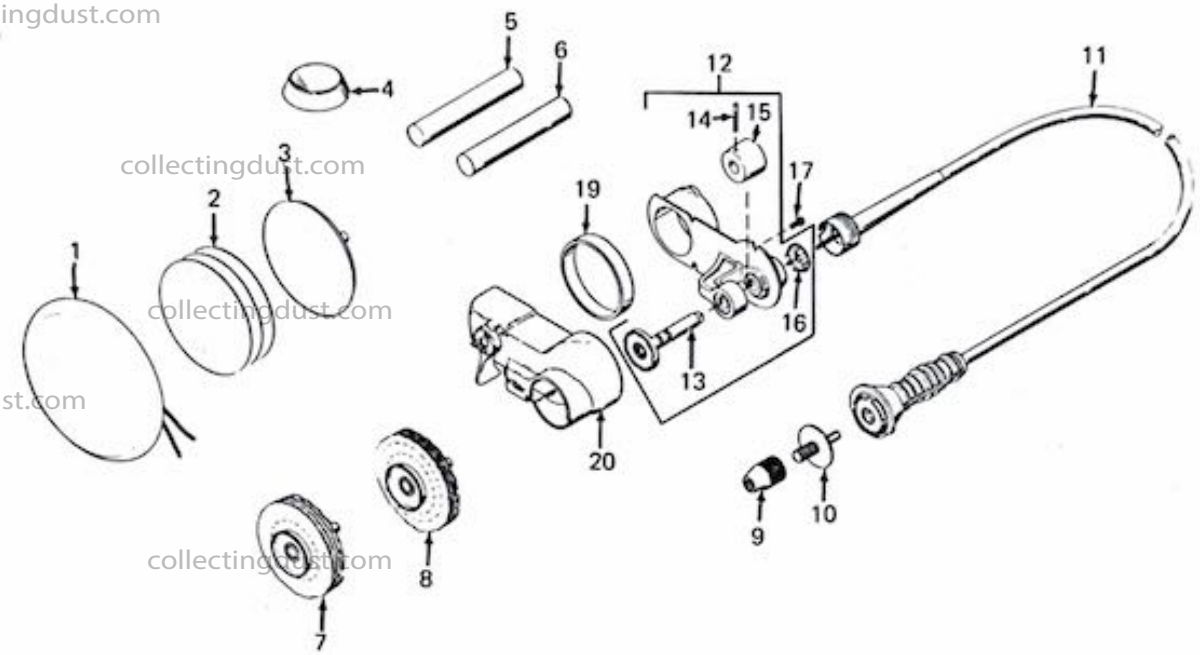


Figure 5-4. Kirby HERITAGE Handi-Butler group, exploded view

Index No.	Part No.	Part Name	Quantity
5-4-1	414073	Bonnet for rubber disc	1
-2	412662	Sanding disc	3
-3	412079	Rubber disc	1
-4	428079	Cup for cleaner wheel	3
-5	4240	Polishing stick — coarse	1
-6	4260	Polishing stick — fine	1
-7	419962S	Flannel buff assembly	1
-8	421962S	Sewed sheeting and buff assembly	1
-9	427062	Chuck	1
-10	427176	Chuck adapter	1
-11	417181	Flexible shaft assembly	1
-12	399981S	Handi-Butler frame assembly	1
-13	402362-9	. Jack shaft assembly	1
-14	4027	. Pulley pin, 1/8" x 1-1/8"	1
-15	402458	. Handi-Butler pulley	1
-16	402558	. Jack shaft cover	1
-17	100479	Assembly screw, No. 8 x 1/2" pan head	3
-18	***	Caution label*	1
-19	405058	Handi-Butler belt	1
-20	403981S	Handi-Butler body	1
	***	. Belt lifter	1

* Not illustrated.
*** Do not order this part; if defective, order the assembly above.

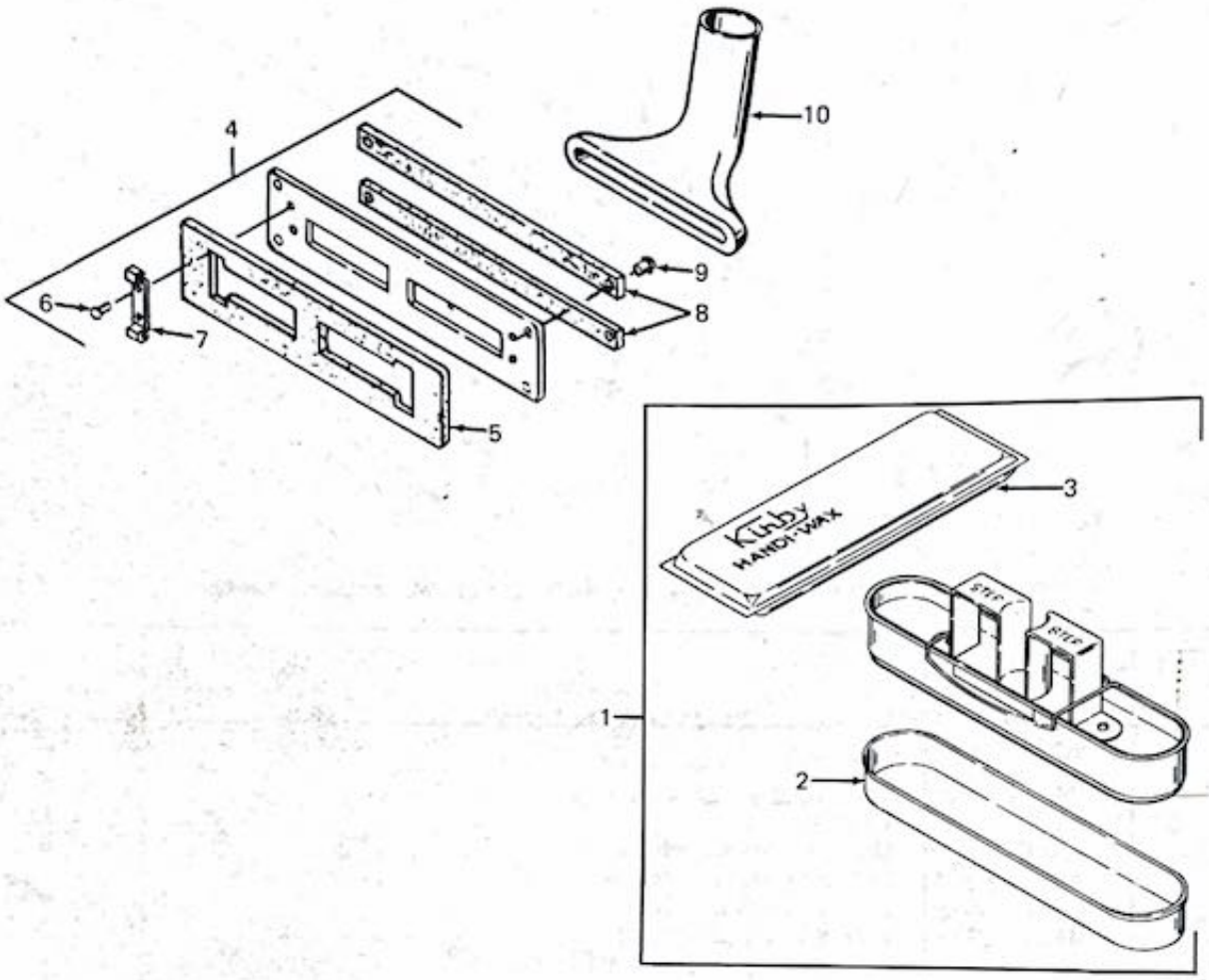


Figure 5-5. Kirby HERITAGE service group, exploded view

Index No.	Part No.	Part Name	Quantity
5-5-1	316081A	Handi-Waxer complete (case lot only)	1
-2	310681	Handi-Waxer cover	1
-3	315281	Handi-Waxer wax unit (case lot only)	1
-4	205981S	Floor duster pad plate assembly	1
-5		. Foam pad seal	1
-6		. Spring rivet	4
-7		. Spring	2
-8		. Felt pad	2
-9		. Pad rivet	4
-10	216081	Utility air nozzle	1

DISCONTINUED PRODUCTS THAT MAY STILL BE IN HOMES

The following Kirby products are on file with the Consumer Product Safety Commission (CPSC). The toxicity and irritant levels were established by an independent test laboratory using the CPSC test procedures.

PRODUCT	IF SWALLOWED	EYE/SKIN CONTACT	INGREDIENTS
HANDI-WAX	Non-toxic. Do not induce vomiting.	Non-irritant. Flush with water.	Vegetable and mineral waxes, amine stearate, soap, aliphatic petroleum distillates
ROLL-O-WAX	Non-toxic. Do not induce vomiting.	Non-irritant. Flush with water.	Vegetable, mineral, and synthetic waxes; soap, aliphatic petroleum distillates; 1 - (3-choroally) 3, 5, 7, triaza; 1 - axoniaadamantane cholide 0.4%; and water.

CUSTOMER INFORMATION BULLETIN

September 7, 1984

TO: ALL U.S. DISTRIBUTORS AND AREA DEALERS

SUBJECT: CUSTOMER SERVICE CENTER MOVE

Over the weekend of August 24th through 26th, the Customer Service Department moved to a new Customer Service Center four times larger than our former Brook Park facility.

This move was made to enhance our service to you and to consolidate all Kirby warehousing under one roof.

Service Parts, Rebuild Service and Consumer Relations Departments have not experienced delays because of the move.

All phone numbers remain the same. Our new address is:

KIRBY CUSTOMER SERVICE CENTER
4750 W. 160th Street
Cleveland, Ohio 44135

Ohio: 1-800-362-6635 Outside Ohio: 1-800-321-6772

Also, enclosed is the Order Form, Warranty Labels, and Service Manual for the Heritage II. Additional supplies are available from the Customer Service Center.

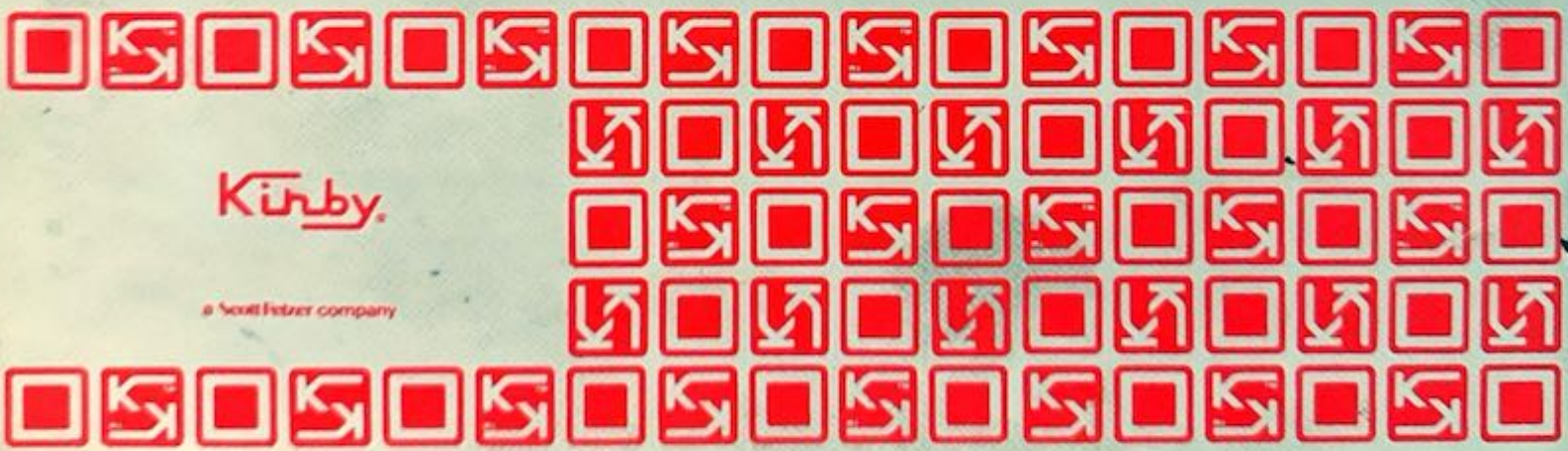
Robert Merckle

Robert Merckle
Director of Customer Services

Enclosures: (2) Order Forms
(4) Warranty Labels
(1) Service Manual

CIB #84-35U
Printed in the U.S.A.

The Kirby Company
1920 WEST 114th STREET • CLEVELAND, OHIO 44102
PHONE 216-228-2400 • TWX 810-421-8567
A SCOTT & FETZER GROUP


Kirby
a Scott Fetzer company