TECHNICAL MANUAL
MAINTENANCE INSTRUCTIONS WITH PARTS BREAKDOWN

PIPETTE SHAKER ASSEMBLY

115 V AC 50/60 HZ, SINGLE PHASE
220 V AC 50/60 HZ.

6640 01 249 1212

BURTON PART NO. 1006974

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INTRODUCTION

This publication provides maintenance instructions with parts breakdown for the Pipette Shaker Assembly, Part No. 1006974, manufactured by Burton, Division of Cavitron Corporation, Van Nuys, California 91406. Each unit has an identification plate which reflects the model number, operating power voltage, and manufacturer.

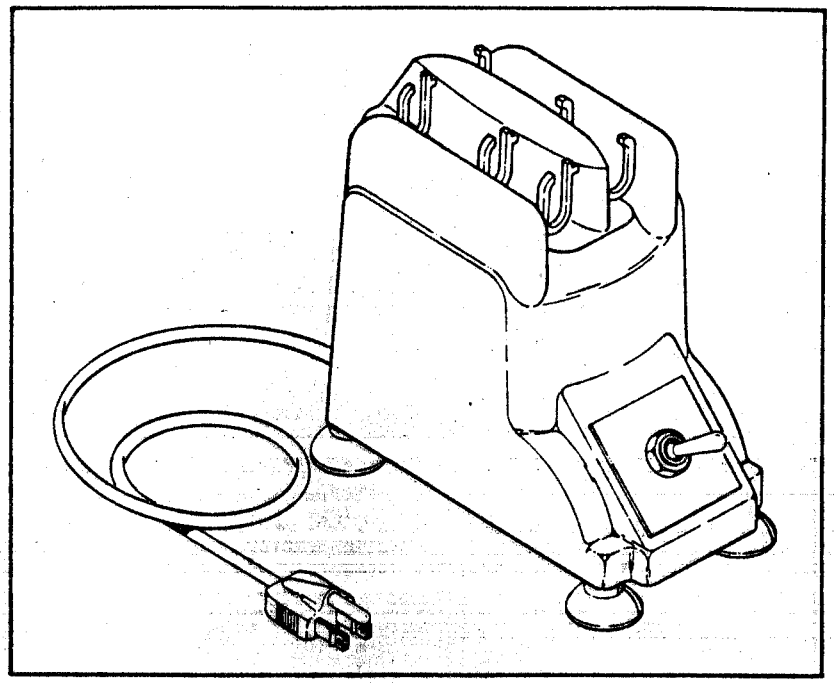

Figure 1. Pipette Shaker Assembly, Part No. 1006974

1. DESCRIPTION. (See figure 1.)

a. The pipette shaker assembly is a portable shaker mechanism capable of providing a rolling or slightly tossing motion that allows the contents of the pipette tube to be mixed without the use of outside stirring implements, that might cause contamination or the introduction of foreign materials not desired in the mixture.

b. The pipette shaker assembly is designed to provide the pipette with the best speed and motion desired to sufficiently mix ingredients for use in diagnostic procedures. Leading particulars are listed in Table I.

TABLE I. LEADING PARTICULARS

Input Power	115 vac, 60 Hz, single phase
Switching	manual
Finish	brown
Envelope Dimensions:	
Height	6 inches
Width	3 inches
Depth	6.75 inches
Weight	2 lb (maximum)

2. PREPARATION FOR USE. Prior to energizing the pipette shaker assembly, make certain that input power conforms with the one listed in Table I.

3. OPERATING INSTRUCTIONS. (See figure 2.)

a. Operating instructions for the pipette shaker assembly consist mainly of proper pipette installation in the pipette supports and correct application of input power.

b. After proper pipette installation has been accomplished proceed as follows:

(1) Turn on input power switch.

(2) Adjust plastic knob for desired amount of agitation. Mid range speed is preferable.

4. MAINTENANCE INSTRUCTIONS.

a. Disassembly. (See figure 3 and 4.)

NOTE

The pipette shaker assembly should not be disassembled unless the test procedure or visual inspection indicates malfunctions within the pipette shaker assembly. If a malfunction is indicated during the test procedures, the nature of the indicated malfunction and results of the related troubleshooting procedure will determine the extent of disassembly necessary to repair or replace defective parts.

(1) To gain access to the interior of the pipette shaker assembly, the following steps should be followed:

(a) Remove cover plate (12), from housing (17), by detaching vacuum cups (13).

(b) Disassemble remaining detail parts to the extent indicated by results obtained from troubleshooting in Table III.

b. Cleaning.

TABLE II. CLEANING MATERIALS

DESCRIPTION	MANUFACTURER
Micro-Pel;	Certified Labs Mountain View, California
D-C-W	Fuller Brush Company East Hartford, Conneticut

WARNING

Use cleaning agents in a well-ventilated area. Avoid excess skin contact or prolonged inhalation of vapors. Do not use near open flame.

(1) Cleaning Procedure for Internal Surfaces. Apply micro-Pel cleaning agent (no known Government specification) (see Table II) on a clean, lint-free cloth until slightly damp and thoroughly wipe external surfaces of Fiberglas housing. Vigorous rubbing is not recommended. The cleaning agent dries rapidly and produces a clean, dust-resistant surface.

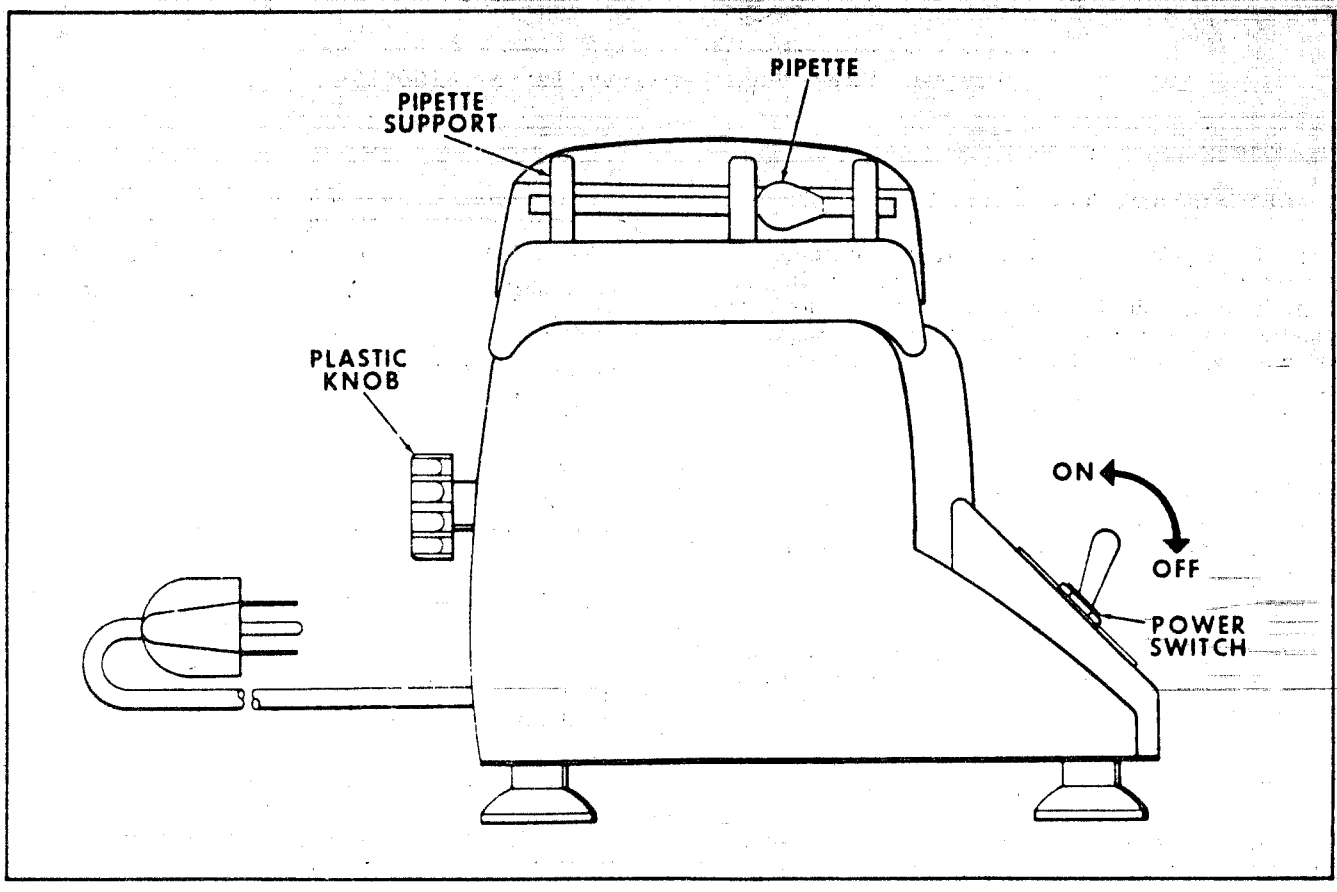

Figure 2. Operating Diagram

(2) Cleaning Procedure for External Surfaces. Moisten a clean lint-free cloth with D-C-W cleaning agent (no known Government specification) (see Table II) and thoroughly wipe all external surfaces clean. Repeat if required using a new clean dry cloth.

c. Inspection. (See figure 4.)

(1) Inspect all components to make certain there is no obvious damage, corrosion, or evidence of overheating.

(2) Inspect all wires or parts to make certain there are no loose connections or signs of aging.

(3) Inspect all threaded surfaces for evidence of cross threading or stripping.

(4) If wire is suspected of being faulty, check for continuity using an ohmmeter or other suitable low-voltage device.

d. Repair. (See figure 4.)

(1) Replace all parts that do not pass inspection or are damaged beyond minor repair.

WARNING

Use cleaning agents in a well-ventilated area. Avoid excessive skin contact or prolonged inhalation of vapors. Do not use near open flame.

(2) Thoroughly clean all parts that undergo repair as outlined in paragraph 4b(2).

e. Assembly. (See figure 4.)

(1) Assemble all removed parts observing the following specific procedure:

(2) Refer to figure 3 for correct wiring information.

f. Test and Calibration Procedure. Not applicable.

g. Troubleshooting. Refer to Table III for troubleshooting of the pipette shaker assembly, and refer to figure 4 for index numbers.

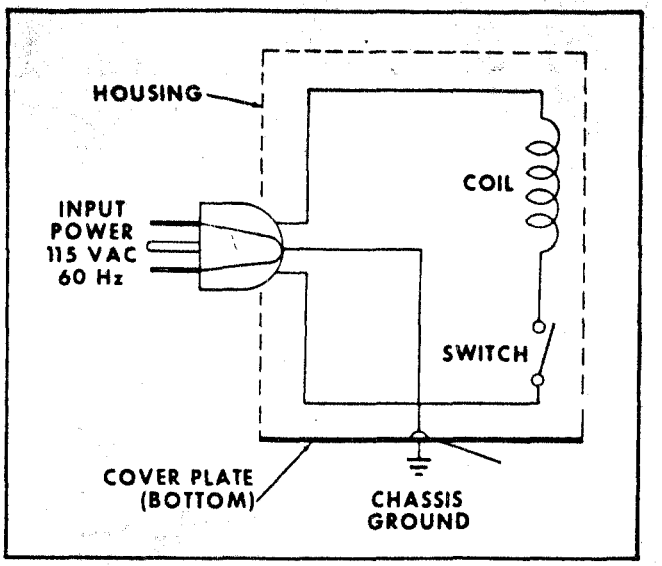

Figure 3. Wiring Diagram

5. ILLUSTRATED PARTS LIST. (See figure 4.)

a. Time Compliance Technical Orders. There are no known time compliance technical orders applicable to this equipment.

b. Source and Repair Codes. This parts list does not reflect the use of source and repair codes and any source and repair code definitions are, therefore, not included in this publication.

c. Symbols and Abbreviations. Symbols and abbreviations, where applicable, are used throughout this Illustrated Parts List in compliance with MIL-STD-12.

d. Cross Index System. No cross index system is employed in this Illustrated Parts List.

e. Part Numbering System. The manufacturers part numbers have been assigned from miscellaneous numbers. In the procurement of parts, always use the complete part number, exactly as listed in the Parts List.

f. Attaching Parts. Screws, nuts, bolts, etc., which serve as attaching parts for frequently detached items are listed immediately following and with the same indention as the item they attach. They are designated (AP) following thedescription of an item.

TABLE III. TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Pipette shaker assembly does not operate	Input power incorrect or not connected	Make certain that power source conforms to that listed in Table I.
	Coil assembly (3) defective	Replace coil assembly.
Loud noises or chatter occur	Plastic knob (2) adjusted too tightly	Loosen plastic knob.

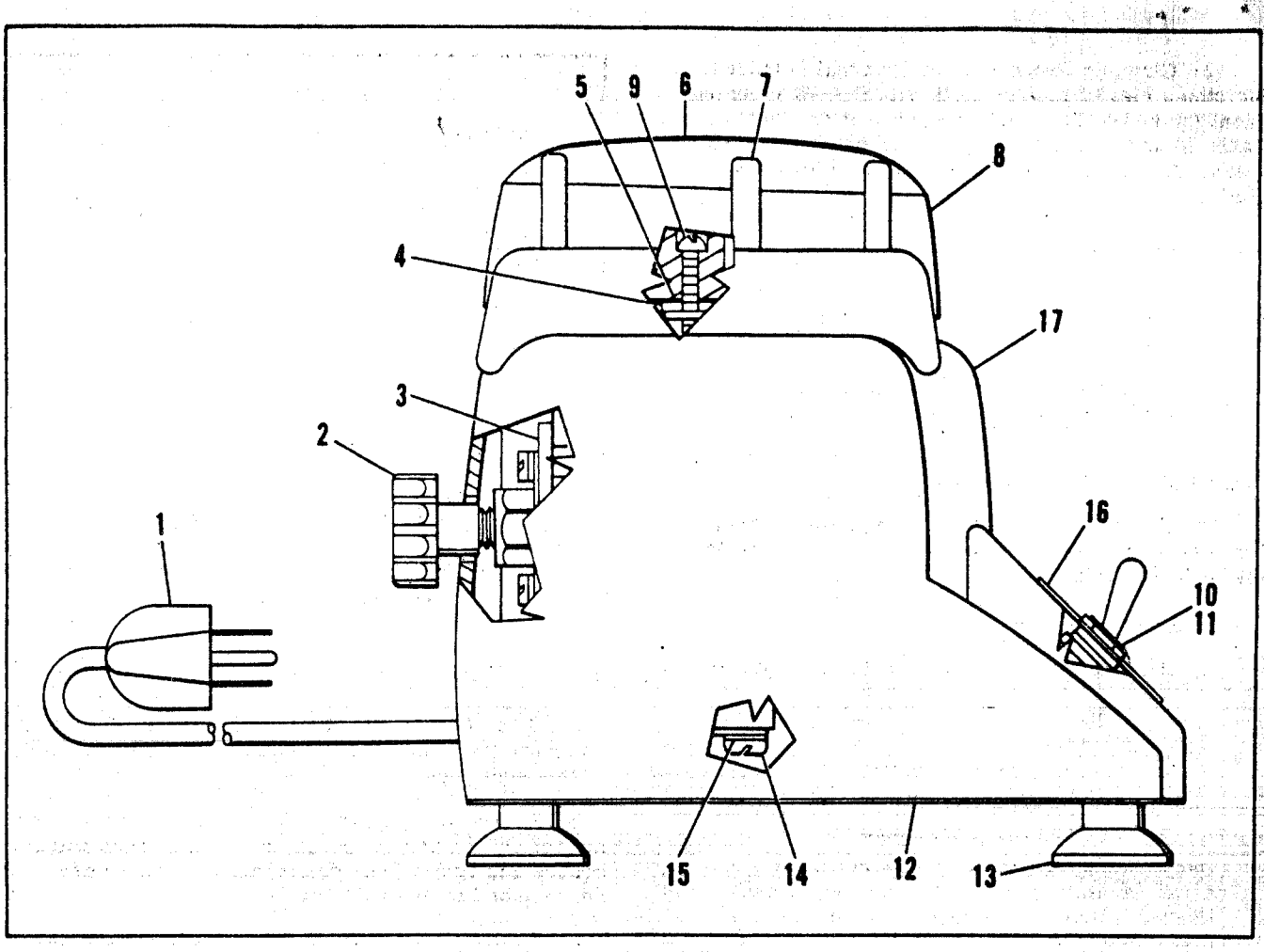

Figure 4. Pipette Shaker Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION	SOURCE CODE	REPAIR CODE	UNITS PER ASSY
RF	1006974	PIPETTE SHAKER ASSEMBLY.....			RF
1	0002162	. CORD AND PLUG ASSEMBLY.....			1
2	1002643	. KNOB, Plastic.....			1
3	1004347	. COIL ASSEMBLY.....			1
4	0002272	. GROMMET, Rubber.....			1
5	1002167	. WASHER, Rubber.....			1
6	1003732	. CAP, Cradle.....			1
7	1002306	. SUPPORT, Pippet.....			3
8	1003674	. BASE, Cradle.....			1
9	0003284	. SCREW, 6-32NC-2X7/8 in. lg (AP)...			1
10	0001076	. SWITCH.....			1
11	0005107	. WASHER, Lock, internal tooth,..... #8-3/8 in.dia			1
12	1006975	. PLATE, Cover.....			1
13	0001214	. CUP, Vacuum (AP).....			1
14	0003521	. SCREW, 8-32NC2X5/16 in. lg..... bind head			4
15	0005104	. WASHER, Lock, internal tooth,..... #8-3/8 in.dia			4
16	1003691	. PLATE, Identification.....			1
17	1006976	. HOUSING, Fiberglas.....			1

APPENDIX A

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APPENDIX B

ADDITIONAL PRODUCT INFORMATION
PIPETTE SHAKER ASSEMBLY

EQUIPMENT SUPPLIED

1. Pipette Shaker Assembly
2. Transformer(for 220 V AC Operation)

REQUIRED EQUIPMENT NOT SUPPLIED

Not Applicable

SUMMARY OF ELECTRICAL SPECIFICATIONS

1. 115 V AC 50/60 Hz. Single Phase
2. 220 V AC 50/60 HZ. With Step Down Transformer

UNPACKING OF UNIT

No Special Care Required

OPERATION OF UNIT

Operator Performance Check

1. Power cord to proper electrical source. Transformer installed if 220 V power being used.
2. Switch "on" to operate, adjust control as required.
3. Switch "off" after use.
4. Refer to Table 3 Troubleshooting if problem occurs.
   Push the toggle (item #10) upwards to turn the unit on, and downwards to turn off.
   To adjust cradle shaking, turn the control knob at the rear of the machine fully clockwise to fully counterclockwise for minimum to maximum vibration. Mid range speed is preferable.

THEORY OF OPERATION

Basic Circuit Operation: Input power will flow to the switch. When switch is closed, power will flow through the coil then return to source. The 50/60 cycle coil can be adjusted to control vibration of the top arm which shakes the pipette cradle.

FREQUENCY OF ADJUSTMENT

Not Applicable

ADJUSTMENT FOR ELECTRICAL/MECHANICAL COMPONENTS

Not Applicable

TEST EQUIPMENT REQUIRED

1. Volt/OHM Meter

STORAGE

Store the units indoors only, in normal warehouse facilities. Units should be adequately protected from inclement weather conditions. Storage temperature range is from 0° to 100° Centigrade. No special

APPENDIX C

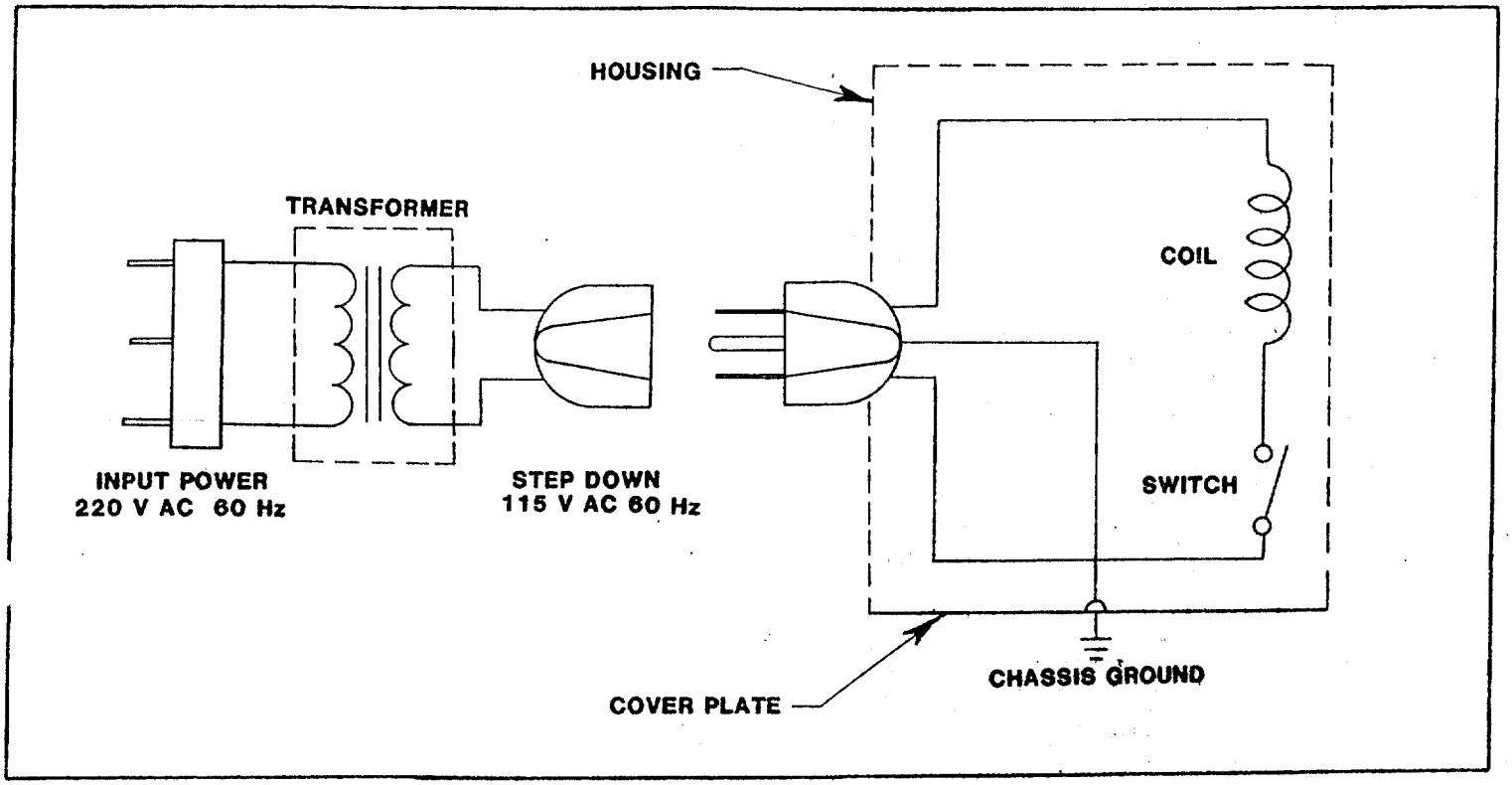

FIGURE 5. WIRING DIAGRAM (220 VOLT OPERATION)

APPENDIX B

STORAGE

inspections are required while in storage. Package the units with enough support to prevent physical damage to the housing.

COMMERCIAL WARRANTY TERMS

Limited Warranty - Three (3) years parts and labor.