

Book no. 27

THIS UNIT IS CERTIFIED TO HAVE BEEN TESTED AT IEC TEST FACILITIES. ALL OPERATING FUNCTIONS WERE WITHIN SPECIFIED TEST PARAMETERS.

MODEL NO. UV

PRODUCT SERIAL NO. 11551

EQUIPMENT SOLD BY  
(Dealer name and address)  
Scientific Pro.

DATE DELIVERED: 6/19/74

THE INTERNATIONAL SEAL OF ASSURANCE means that Damon/IEC Division, as the manufacturer of this product, pledges a program of complete customer satisfaction. We are dedicated to the idea of supplying this satisfaction in all aspects and especially those which cover product quality, installation, service and education.

It is felt that expensive equipment requires special attention in achieving a proper installation. The price of the unit allows adequate compensation to the dealer for his service and instruction to you. This also means that instruction at the time of installation should be complete and understandable.

The purchase of any IEC instrument entitles the customer to dealer call-backs to educate him to the capabilities of the equipment and to keep him informed of the availability of new accessories.

If the service, as outlined above, on this instrument has been inadequate, write directly to Damon/IEC Division, 300 Second Ave., Needham Heights, Mass. 02194, Attn: Sales Manager. Your correspondence should include the model and serial number of your machine, the date of delivery, and the name of the dealer from whom it was purchased.

PLEASE FILL OUT AND RETURN YOUR WARRANTY CARD IMMEDIATELY. IT IS OUR RECORD OF YOUR PURCHASE.

IBM 93356

## OPERATION AND MAINTENANCE MANUAL

### MODEL UV

CATALOG NO. 3425, 115 V 60 Hz  
3426, 115 V 50 Hz  
3427, 230 V 60 Hz  
3428, 230 V 50 Hz

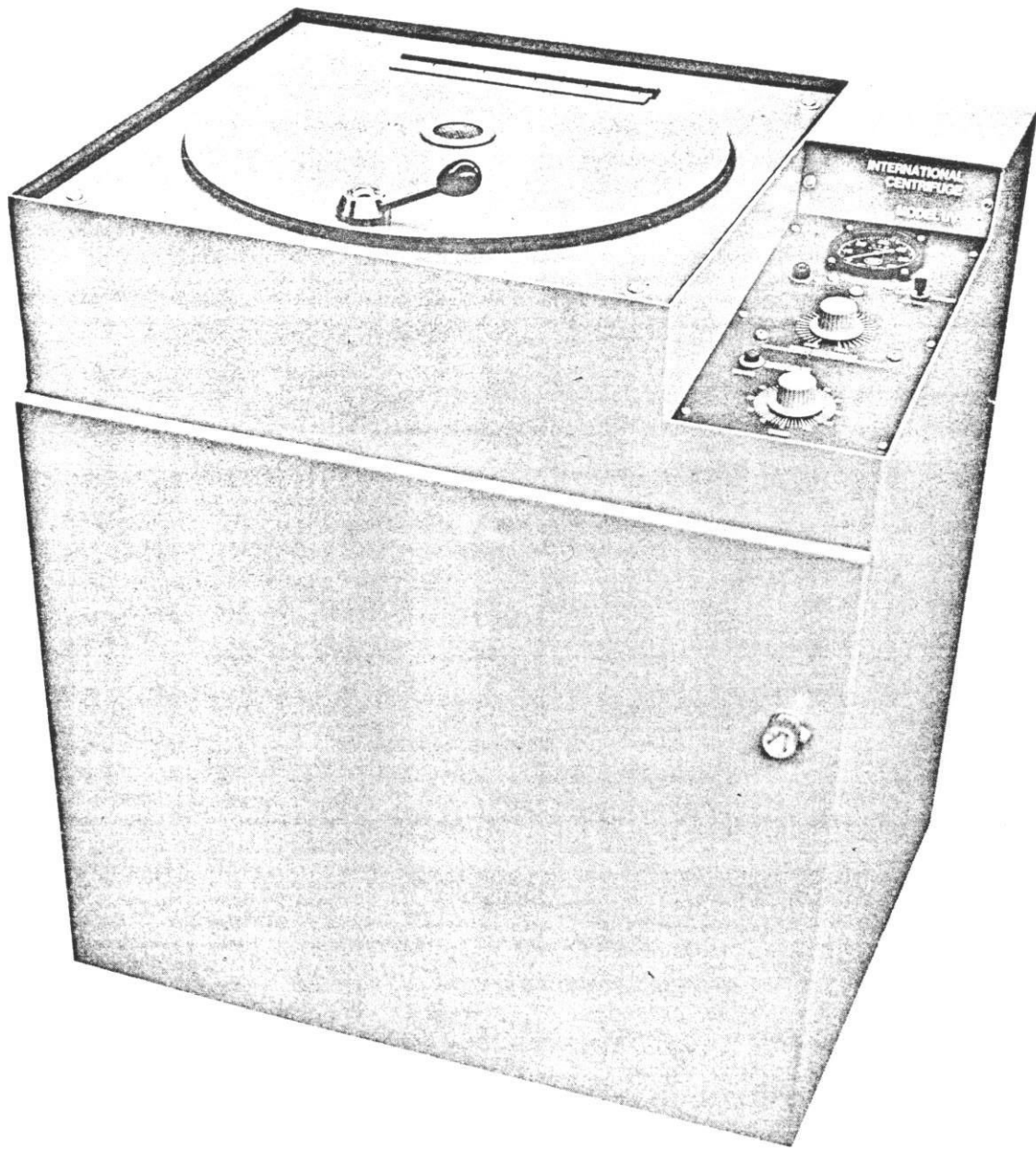
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March, 1972



# DAMON/IEC DIVISION

300 SECOND AVE., NEEDHAM HTS., MASS. 02194, TEL: (617) 449-0800



International Model UV Centrifuge

## 1. INTRODUCTION

The Model UV centrifuge is a universal cabinet-type machine. Medical and industrial laboratories are able to standardize on this one general purpose machine as a replacement for older machines now in service and as a standard for present and future expansion.

Depending on the head and accessories used, maximum allowable speeds between 1200 and 5600 rpm are obtainable which produce relative centrifugal forces between 300 and 5100 g's. Speeds up to 21,600 rpm and corresponding gravities of 33,000 g's are obtainable by use of the multispeed attachment.

## 2. INSTALLATION

### 2.1 Lubrication

THE UPPER BEARING ON THIS MACHINE IS DRY WHEN RECEIVED. Remove the cover plate on the top housing, see Figure 1, and fill the space above the felt washer with International Lubricant, IEC Part No. 1709, furnished with the machine. The lower ball bearing is permanently lubricated and sealed; it requires no attention.

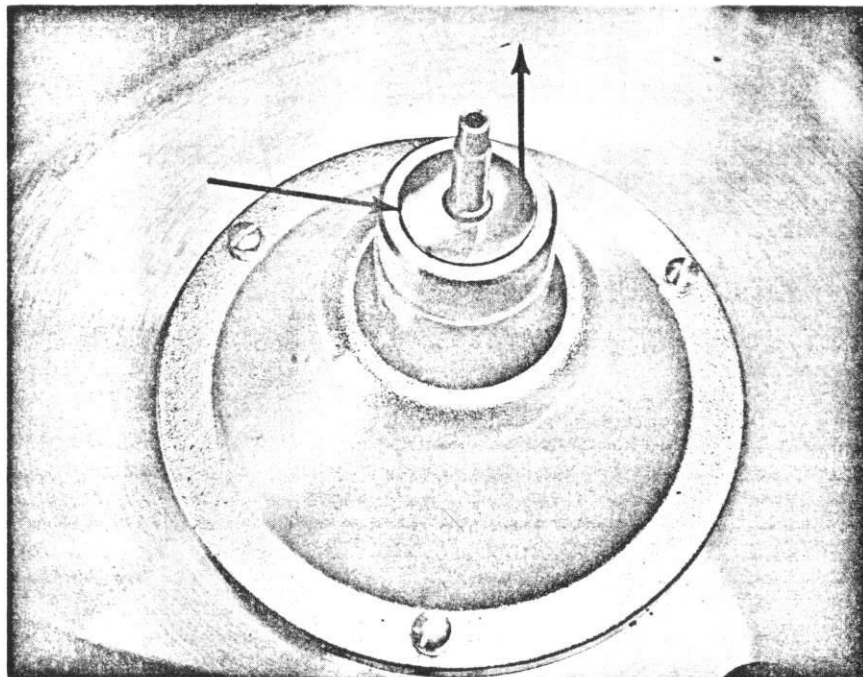


Figure 1. Cover Plate, Part No. 1720

### 2.2 Wiring

This centrifuge has been completely assembled and carefully tested at the factory. All wiring conforms with the National Electrical Code. This centrifuge is listed by Underwriters' Laboratories and CSA Testing Laboratories.

MAKE SURE THAT THE VOLTAGE AND FREQUENCY SHOWN ON THE CENTRIFUGE CONTROL PANEL CORRESPONDS WITH THE LINE VOLTAGE AND FREQUENCY AVAILABLE IN THE LABORATORY.

### 3. OPERATION

#### 3.1 Installation of the Head

All horizontal swinging heads are slotted to engage the key on the shaft. Care should be taken while lowering the head onto the shaft so that the key will not be burred or otherwise damaged. Tighten the set screw with a screw driver to hold the head in place.

When angle and basket-type heads are used, the adapter, IEC Part No. 1702, must be used. Place the adapter on the shaft so that the key is engaged by one of the slots in the adapter. Make sure the adapter is pushed all the way down to the shoulder on the shaft. Lower the head or basket onto the adapter and tighten the hexagonal nut with the socket wrench provided, IEC Part No. 1787.

#### 3.2 Removal of the Head

To remove a horizontal head, loosen the set screw and lift the head. To remove an angle head, loosen and remove the hexagonal nut. Pull up on one side of the head and strike down on the other side with the hand. Continue this action until head is loosened. Remove the head carefully in order not to damage the key and shaft.

CAUTION: DO NOT OPERATE THIS CENTRIFUGE WITHOUT A HEAD ON THE SHAFT ABOVE 2000 RPM.

#### 3.3 Control Panel Operation

If it is desired to have the centrifuge stop automatically, set the centrifuge switch to TIMED position and then set the timer to the desired time. If automatic stopping is not desired, set the centrifuge switch to NOT TIMED position.

See that the SPEED CONTROLLER knob is turned to zero. Next, advance the SPEED CONTROLLER knob slowly to avoid overloading until the desired speed is reached. DO NOT EXCEED THE SPEEDS INDICATED IN THE SPEED AND FORCE TABLE.

This centrifuge is equipped with an electric brake for rapid stopping. Set the centrifuge switch to the OFF position before depressing the BRAKE button.

NOTE: The motor speed controller is provided with a low voltage relay. If the current is cut off for any reason while the machine is running, the centrifuge will not start if the current is returned, unless the speed controller is brought back to the zero position. This is for the protection of the motor and equipment.

### 3.4 Balance

Accessory balance is an important factor in prolonging the bearing and armature life. The rotating parts of a centrifuge are in balance when sent out from the factory. IEC heads are dynamically balanced and trunnion rings, shields, cups and carriers are weighed and matched to one-half a gram. The gram weight is stamped on each piece.

To obtain a good dynamic balance the opposite loads must, in addition to being equal in mass, have the same center of gravity. Care should be taken to select tubes and bottles in pairs that are alike in shape, thickness and distribution of glass. The larger the container the more critical the selection should be.

Use a balance that has sufficient capacity to handle the size container needed to do the job. The balance should have a sensitivity of one-tenth of a gram at full load.

The following balancing technique renders the best possible weight distribution as well as providing maximum external support for the glassware.

1. Place opposite cups containing filled glassware on the balance.

2. To the lighter centrifuge cup, add water around the glassware to the level of the liquid in the glassware, but no closer to the top than one-quarter inch.
3. Add water to the other centrifuge cup until the two are in good balance.

MERCURY SHOULD NEVER BE PLACED IN CUPS OR SHIELDS FOR BALANCING.

### 3.5 Determination of RCF

The relative centrifugal force may be determined by means of the IEC nomograph which is shown in Figure 2.

### 3.6 Guarantee

This Model UV centrifuge has been thoroughly tested. The breaking-in period of operation has been performed at the factory. Therefore, the centrifuge may be operated at once (be sure initial lubrication has been accomplished) at the maximum speeds indicated in the Speed and Force Table, see Section 5.2.

This centrifuge and its accessories are guaranteed against defective materials and workmanship for a period of one year from the date of their receipt by the customer, provided that the equipment is used according to the International Equipment Company recommendations. The recommendations are as follows:

1. The centrifuge and accessory speeds and forces must not exceed those indicated in the Speed and Force Table, see Section 5.2.
2. The maintenance requirements as listed in this manual must be followed.
3. Do not use IEC accessories on centrifuges manufactured by others. International Equipment Company does not recommend the use of another manufacturer's accessories on their centrifuges. Such use of IEC products would naturally nullify the IEC guarantee and absolve IEC from normal manufacturer's product liability.

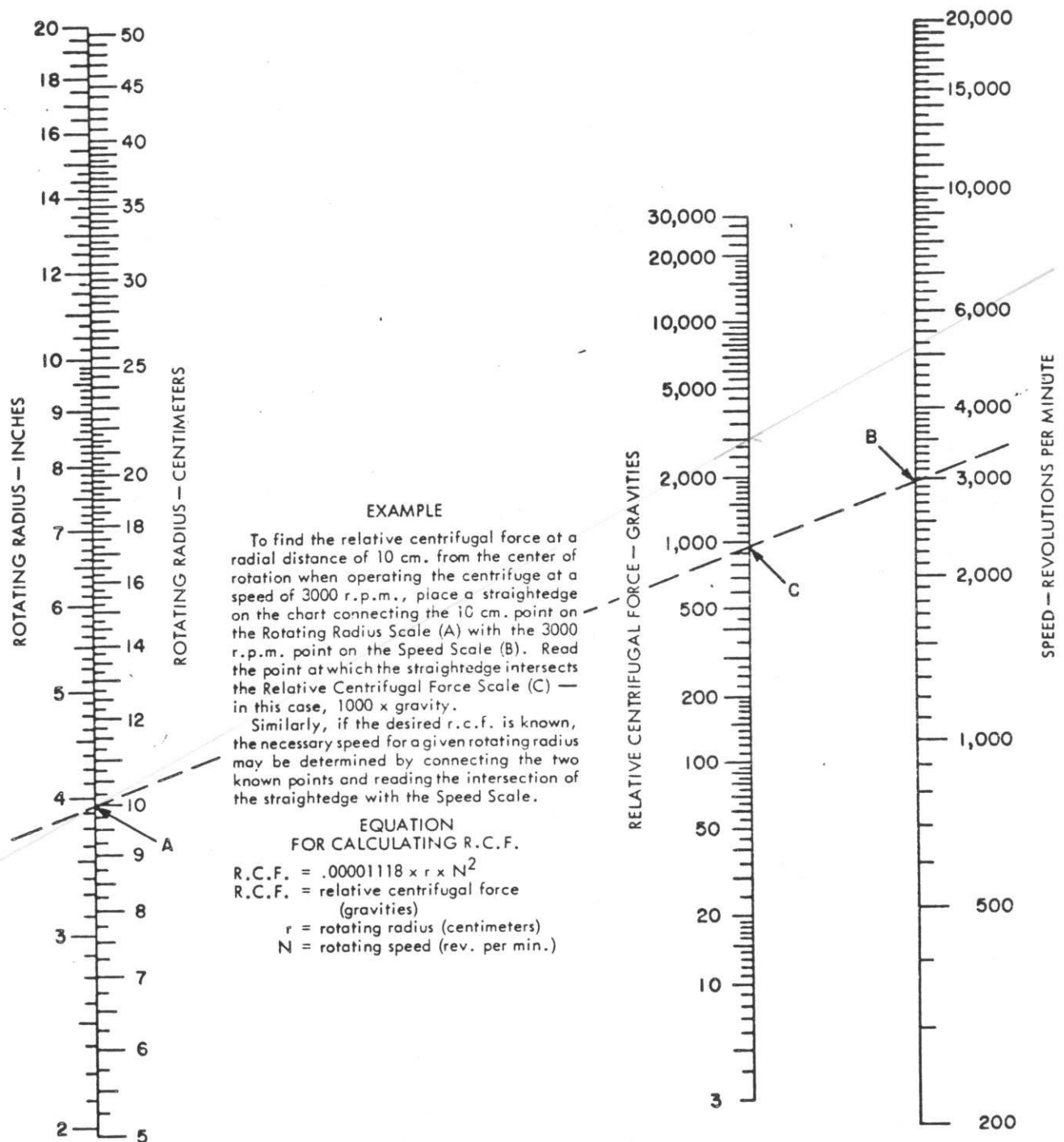


Figure 2. IEC Nomograph



## 4. MAINTENANCE

### 4.1 Lubrication

The upper bearing of the Model UV centrifuge is of the sleeve-type and is located just below the top of the shaft. Initially and every four months the head and the dust cover, IEC Part No. 1720, should be removed and lubricant, IEC Part No. 1709, added so that the grease cup is kept full. At least once a year the grease should be completely removed and replaced.

The lower bearing is a permanently lubricated, sealed ball bearing and requires no maintenance.

### 4.2 Commutator and Brushes

The commutator and brushes may be reached by opening the door and removing the electrical guard (held by two screws). The commutator should have a smooth cylindrical surface not scratched or cut with concentric grooves. In normal operation there is usually a fine brush of sparks to be seen where the carbon brushes contact the commutator. If, however, the sparking is unduly prominent, it indicates that the commutator may need cleaning or smoothing. If the commutator is not too badly roughened, fine sandpaper (0 to 00) may be used. While running the centrifuge at about 2000 rpm hold the sandpaper against the commutator. After completing this preventive maintenance, be sure to replace the electrical guard.

If the commutator is badly cut or grooved, the armature must be removed and the commutator turned smooth in a lathe. The commutator and brush holders should be kept free of oil, dust and dirt to prevent electrical arcing with resultant damage. Keep the segments between the copper strips clean. The use of a toothbrush and carbon tetrachloride is recommended for this maintenance.

Brushes should be checked regularly every three or four months and replaced if worn to 5/16-inch. Replace with brush, IEC Part No. 1946. These brushes have been carefully selected and are particularly adapted to the Model UV centrifuge motor. When installing the new brushes, make sure that the brushes slide freely in the holder so that spring tension will keep them in good contact with the commutator.

The Model UV is equipped with an autotransformer that has a carbon brush which should be checked every four months. To check or replace this brush, disconnect the centrifuge from the electrical supply. Remove the six screws holding the control panel in place and lift out the control panel. If less than 1/16-inch of this brush is protruding, it should be replaced. This may be done by removing the brush assembly (held in place by a set screw) and replacing it with a new unit, IEC Part No. 1927.

## 5. SPECIFICATIONS

### 5.1 Physical Specifications

Height of Centrifuge, with cover open	50 inches (180 cm)
Height of Centrifuge, with cover closed	35 inches ( 97 cm)
Width	29 inches ( 74 cm)
Depth	24 inches ( 64 cm)
Diameter of Guard Bowl	21 inches ( 53 cm)
Shipping Weight	500 pounds (227 kg)
Net Weight	365 pounds (166 kg)
Motor	440 watts
Timer Range	2 to 120 minutes
Footing	2 fixed, 2 movable casters

## 5.2 Speed and Force Table

HEAD		SHIELDS AND CUPS			Max. Allowable Speed	RCF at tip	Radius ( cm. ) at tip
Cat. No.	No. Places	No. Tubes	Cat. No.	Description			
240	8	8	302	15 ml. (310 Tr.)	2900	2110	22.4
240	8	24	302	15 ml. (355 Tr.)	2000	1000	22.4
240	8	32	302	15 ml. (354 Tr.)	2000	1000	22.4
240	8	24	356	10 ml. (355 Tr.)	2100	930	18.9
240	8	32	356	10 ml. (354 Tr.)	2100	930	18.9
240	8	8	320	50 ml. (325 Tr.)	3400	2550	19.8
240	8	16	320	50 ml. (326 Tr.)	2900	1880	20.0
240	8	8	341	100 ml. (350 Tr.)	2600	1840	24.3
240	8	8	362	Babcock	2000	840	18.9
240	8	8	365	Babcock (366 Tr.)	2000	940	21.1
240	8	48	380	Multiple Carrier	3000	1800	17.9
240	8	64	381	Multiple Carrier	3000	1800	17.9
240	8	64	2760	Multiple Carrier Coombs Test	3000	1800	17.9
266	6	6	384	250 ml.	2400	1530	23.8
266	6	168	1021	28 Pl. Multiple Carrier	2500	1360	19.5
266	6	102	1020	17 Pl. Multiple Carrier	2500	1430	20.5
277	4	4	384	250 ml.	3100	2150	20.0
279	12	12	303	15 ml. (310 Tr.)	2600	1750	23.2
279	12	36	304	Kahn (355 Tr.)	2200	1030	19.0
279	12	48	304	Kahn (354 Tr.)	2200	1030	19.0
279	12	12	320	50 ml. (325 Tr.)	2700	1830	22.5
279	12	24	320	50 ml. (326 Tr.)	2200	1230	22.7
279	12	36	356	10 ml. (355 Tr.)	2100	1060	21.6
279	12	48	356	10 ml. (354 Tr.)	2100	1060	21.6
279	12	12	362	Babcock	1800	780	21.6
279	12	12	365	Babcock (366 Tr.)	1800	860	23.8
279	12	72	379	Multiple Carrier	2700	1580	19.4
279	12	72	380	Multiple Carrier	2400	1320	20.6
279	12	96	381	Multiple Carrier	2400	1320	20.6
279	12	72	398	Multiple Carrier	2100	1140	23.2
279	12	96	2760	8 Pl. Multiple Carrier	2400	1320	20.6
295	6	6	300	Multispeed Attachment	23400	37950	6.2
296	4	4	298	Multispeed Attachment	21800	36130	6.8
811	20	20	302	15 ml., Angle	5400	4560	14.0
822	12	12	320	50 ml., Angle	5200	4410	14.6
831	36	36	302	15 ml., Angle	4000	3130	17.5
838	60	60	356	10 ml., Angle	4500	4170	18.4
845	8	8	...	100 ml., Angle	5000	4600	16.5
850	6	6	2733	250 ml., Angle	4300	3870	18.7
907	6	6	302	15 ml. (310 Tr.)	3600	2830	19.5
907	6	6	367	100 ml. oil (366 Tr.)	1900	990	24.6
907	6	6	367a	100 ml. Babcock Oil (366 Tr.)	2000	970	21.8
907	6	6	341	100 ml. (350 Tr.)	2600	1780	23.6
976	4	4	353a	600 ml.	2400	1460	22.7
1357	11" dia.		...	Basket	3500	1900	13.9

## 6. SERVICE

In this section of the manual some common troubles are listed with their possible causes and remedies. If more than routine maintenance is needed, an authorized IEC service man should be consulted.

### 6.1 Failure of Centrifuge Motor to Start

- 1) Check the electrical outlet to be sure that there has not been a line failure or a blown fuse. MAKE SURE THAT THE LINE VOLTAGE AND FREQUENCY COINCIDES WITH THE VOLTAGE AND FREQUENCY STAMPED ON THE NAMEPLATE.
- 2) Set the switch to ON WITHOUT TIMER to eliminate the timer from the circuit.
- 3) Check the brushes of the centrifuge motor to see that they are at least 5/16-inch long, making firm contact with the commutator and sliding freely in the brush holders. Remove the power cord when checking the brushes.
- 4) Examine the motor switch, beneath the panel, for burns or cracks around the terminals. If there is any visible damage, replace with a new switch.
- 5) Bring the controller pointer to zero. This will close the contact on a microswitch energizing the magnetic coil, causing the relay points to close. Relay points closing should be audible and proof that the current has reached the controller. If there was no audible sound, close the microswitch using the rubber end of a pencil. If the relay closes, it indicates that the contact arm of the controller is not correctly contacting the microswitch point. To correct this, disconnect the centrifuge from the power source, then loosen the screw that holds the cam in place and rotate the cam until it closes the microswitch. If the microswitch will not close manually, remove and replace it.

- 6) If the relay switch closing was audible, advance the pointer to approximately the 1/8-position. The centrifuge should start on or near this point.
- 7) Check the controller brush; replace if worn or broken and clean the brush track with carbon tetrachloride if dirty.

## 6.2 Failure of the Electric Brake to Operate

The electric brake push button operates two switches, and failure of either switch may prevent operation of the centrifuge and will prevent operation of the electric brake. If the two switches are operated separately, see the wiring diagrams Figures 3 and 4, they should both exhibit sharp positive action with an accompanying audible click. When the click cannot be heard, the switch may be assumed to be burned out.

If the electric brake does not function, it may also indicate the failure of one or both of the electrical diodes, IEC Part No. 36985, or a failure of the fuse, IEC Part No. 1909. To determine if the diode or fuse has failed, remove the power cord, unscrew the instrument panel and replace the fuse. If the brake does not operate after changing fuses, one of the diodes (or both) has failed. To be safe, IEC recommends replacing both.

## 6.3 Sparking at the Commutator

- 1) If a brush is too short the spring pressure is not effective and sparking will result. Replace the short brushes with IEC Part No. 1946.
- 2) If dirt and grease become lodged between the sides of the brush and brush holder, the brushes will not make proper contact with the commutator and sparking results. Keep the brush holders clean with carbon tetrachloride and a small brush.
- 3) Heat produced at the brushes can cause the brush springs to lose their tension. A defective spring when stretched will not return to its original position. It is necessary to replace the brush holder.
- 4) Loose connection of the leads to the brush holder will cause sparking.

- 5) A new brush that has not assumed the shape of the commutator may also spark. To correct this condition, wrap a piece of 0 or 00 sandpaper around the commutator with the rough surface facing the brush. Holding the ends of the paper, rotate the armature back and forth by hand until the end of the brush has the proper shape. Blow or brush out all sand and carbon dust that has accumulated before starting the centrifuge.
- 6) Rough, grooved or out-of-round commutators will cause sparking. A commutator should have a smooth surface with no scratches or concentric grooves. A commutator that is only slightly roughened may be smoothed with 0 to 00 sandpaper. Badly scratched, concentrically grooved, or out-of-round commutators must be turned down in a lathe.
- 7) A dirty commutator is the main cause of sparking. The commutator must be free of grease, oil and dirt. Wipe the commutator with a cloth dampened with carbon tetrachloride. With the centrifuge running at 2000 rpm, sand the commutator using 00 sandpaper. Scrape out the dirt between the copper segments and scrub with a toothbrush and carbon tetrachloride.
- 8) If the sparking cannot be corrected by these methods, the armature is probably shorted or grounded at the windings. In this case it is advisable to consult the factory.

#### 6.4 Loose Motor Mounting

The Model UV centrifuge has a flexible mounting that makes the machine self-balancing within reasonable limits. The upper end of the motor is supported by a rubber ring,<sup>\*</sup> IEC Part No. 1721. Over a long period of time, this ring may dry out and allow the motor too much freedom of movement. The motor support ring has to be removed in order to replace the rubber ring.

\* Boot

#### 6.5 Pilot Light

The pilot light on the control panel indicates that electric current is flowing to the speed controller. When the lamp burns out, unscrew the red plastic dome and remove the lamp. Replace it with GE 51-H neon lamp, IEC Part No. 6516.

#### 6.6 Removable Control Panel

All instruments and controls are assembled on the control panel. This unit may be detached for servicing. Remove the six phillips-head screws and lift up the panel.





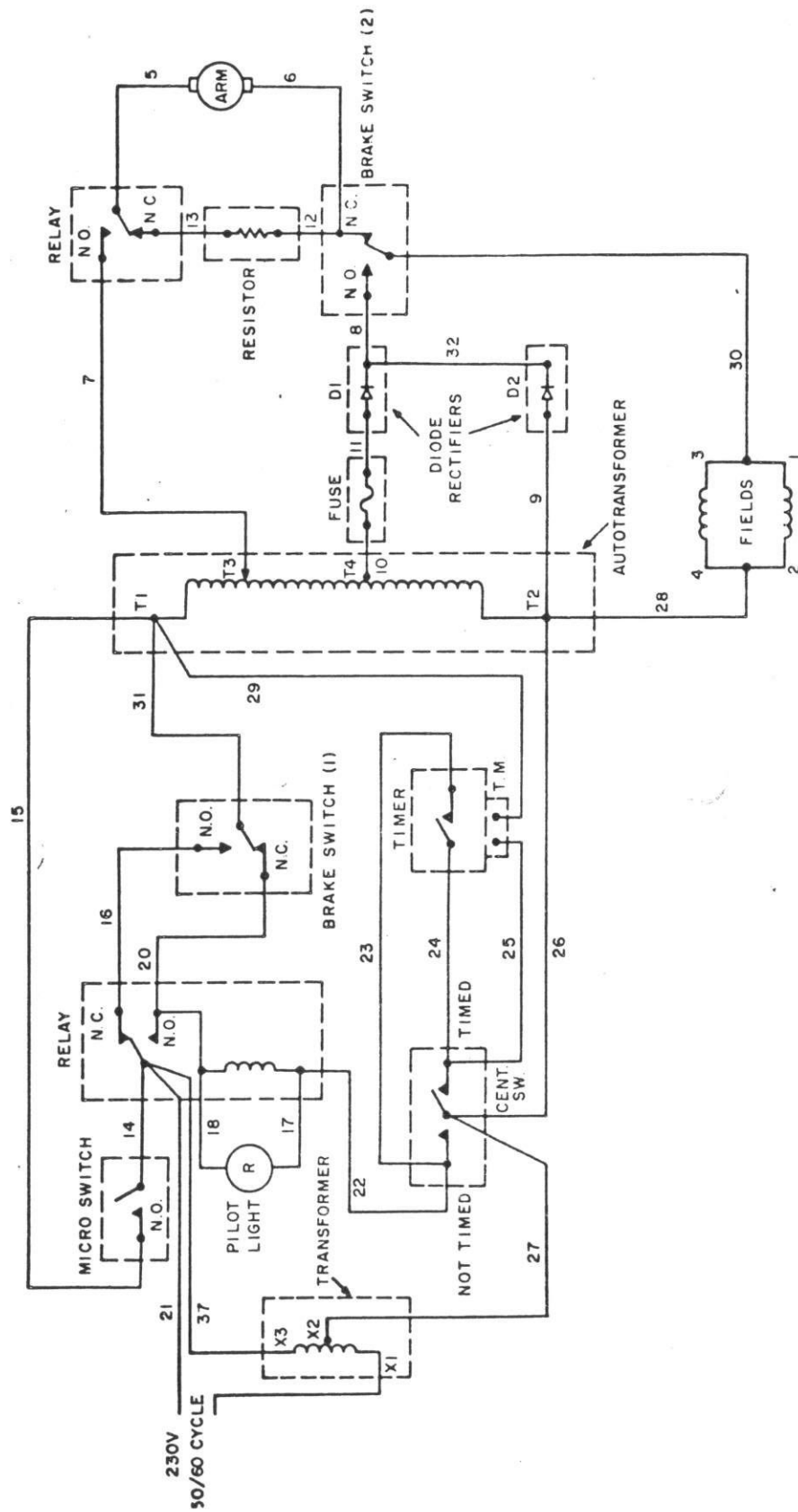


Figure 4. Schematic for Model UV, 230V 50/60 cycle.  
Catalog No. 3427 and 3428.

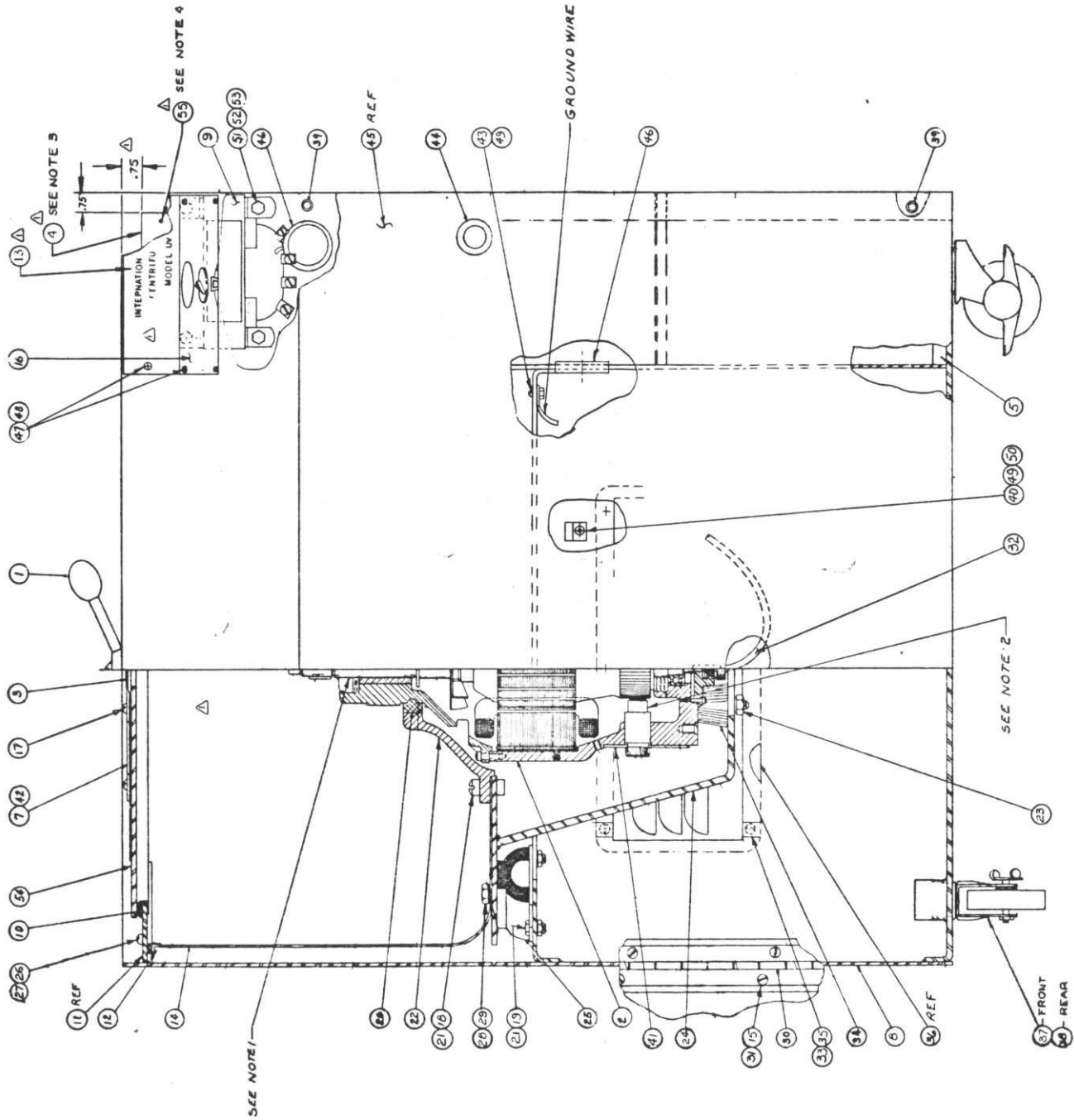


Figure 5. The Model UV Parts Diagram

Part No.	Part Name	Quantity	Unit	Material	Notes
3433	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3434	GROUND WIRE	1	PC	ALUMINUM	SEE ECN
3435	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3436	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3437	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3438	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3439	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3440	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3441	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3442	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3443	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3444	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3445	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3446	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3447	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3448	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3449	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3450	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3451	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3452	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3453	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3454	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3455	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3456	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3457	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3458	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3459	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3460	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3461	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3462	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3463	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3464	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3465	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3466	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3467	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3468	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3469	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3470	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3471	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3472	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3473	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3474	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3475	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3476	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3477	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3478	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3479	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3480	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3481	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
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3483	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
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3488	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3489	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3490	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3491	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3492	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3493	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3494	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3495	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3496	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3497	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3498	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3499	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN
3500	INTERMEDIATE ENTRY	1	PC	ALUMINUM	SEE ECN

7. PARTS LIST (Refer to Figure 5)

<u>UNIT</u>	<u>DESCRIPTION</u>	<u>IEC PART NO.</u>
(1)	Latch Assembly	5410
(2)	Motor Assembly	1939
(3)	Plug Button	30353
(4)	Nameplate	41240
(5)	Floor Mat	32141
(6)	Deleted	
(7)	Channel Strip	31132
(8)	Cabinet Parts	32140
(9)	Step-Down Transformer 230V-60/50 Hz (only)	5246
(10)	Cover Gasket	7486
(11)	Top Plate Assembly	31104
(12)	Guard Bowl Gasket	1535
(13)	Name Plate (Markings)	41823
(14)	Guard Bowl	7561
(15)	Speed Nut, Tinnerman C-917-1024-27 (10)	50
(16)	Control Panel Assembly, 115V-60 Hz	32136
	Control Panel Assembly, 115V-50 Hz	32137
	Control Panel Assembly, 230V-60 Hz	32138
	Control Panel Assembly, 230V-50 Hz	32139
(17)	Oval Head Phillips Screw, 1/4-20 x 5/8" long (4)	50
(18)	Fillister Head Screw, 3/8-16 x 1" long (3)	50
(19)	Hex Head Screw, 3/8-16 x 3/4" long (8)	50
(20)	Ring Cushion	1721
(21)	Lock Washer, 3/8" (11)	50
(22)	Motor Support Ring	7489
(23)	Hex Nut, 5/16-18-ESNA	50
(24)	Plate Mounting and Bracket Assembly	31114
(25)	Vibration Dampeners (4)	1764
(26)	Truss Phillips Head Screw 5/16-18 (4)	50
(27)	Bevel Edge Washer, 5/16 (4)	50
(28)	Hex Head Screw, 1/2-13 UNC-2A x 1" long (4)	50
(29)	Lock Washer, 1/2" extension (4)	50
(30)	Door Hinge	31110
(31)	Truss Head, Slotted Screw (10)	50
(32)	Outer Casing and Shaft ← (Tech Cable) →	5866
(33)	Round Head Slotted Screw (7)	50
(34)	Motor Dampener (3)	7488
(35)	Speed Nut (6)	50

<u>UNIT</u>	<u>DESCRIPTION</u>	<u>IEC PART NO.</u>
(36)	Rear Panel	31144
(37)	Locking Caster (2)	37495
(38)	Caster (2)	37494
(39)	Button (2)	1779
(40)	Cable Clip	9185
(41)	Guard Brush Weldment	32542
(42)	Hinge Stop	31109
(43)	Round Head Slotted Screw, #8-32 x 3/8" long	50
(44)	Adjustable Pawl Fastener	38247
(45)	Front Door	31123
(46)	Grommet	30351
(47)	Round Head Phillips Screw, #10 type 2 x 1/2" long (8)	50
(48)	Speed Nut, Type V, Tinnerman #C-6452-10Z-E (8)	50
(49)	Hex Nut, #8-32 (2)	50
(50)	Fillister Head Screw, #8-32 x 3/8" long	50
	Main Motor Brushes (Pair)	1946

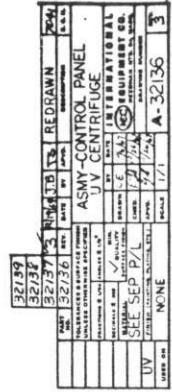


Figure 6. The Model UV Control Panel

8. CONTROL PANEL PARTS LIST (Refer to Figure 6)

<u>UNIT</u>	<u>DESCRIPTION</u>	<u>IEC PART NO.</u>
(1)	Control Panel Markings	41824
(2)	Mounting Plate Brace	31146
(3)	Mounting Plate	31124
(4)	Control Knob (2)	41244
(5)	Brake Switch	1908
(6)	Deleted	
(7)	Centrifuge Switch	42957
(8)	Neon Bulb	6516
(9)	Pilot Light	6515
(10)	Mechanical Tachometer	5886
(11)	Oiler	1732
(12)	Silicon Rectifier (2)	36985
(13)	Strain Relief, #6 Heyco	50
(14)	Fixed Resistor, 5 ohms 100 W	31134
(15)	Fuse Block	31448
(16)	Fuse, 5 amp	1909
(17)	Microswitch	5538
(18)	Actuator	5555
(19)	Wiring Harness	31145
(20)	Microswitch Bracket	31125
(21)	Microswitch Cam	31126
(22)	Snap-In Bushing	50
(23)	Relay, 115V-50/60 Hz	1940
	230V-50/60 Hz	1940
(24)	Deleted	
(25)	Transformer, 115V-50/60 Hz	1922
	230V-50/60 Hz	1922
(26)	Deleted	
(27)	Timer, 115V-60 Hz	769
	115V-50 Hz	770
	230V-60 Hz	769
	230V-50 Hz	770
(28)	Deleted	
(29)	Cord Set, 115V-50/60 Hz	4708
	230V-50/60 Hz	9068
(30)	Deleted	
(31)	Deleted	
(32)	Deleted	
(33)	Deleted	
(34)	Round Head Slotted Screw, #5-40 X 1/4" long (2)	50
(35)	Round Head Slotted Screw, #4-40 X 3/4" long (4)	50
(36)	Oval Head, Phillips Head Screw, #6-32 X 1/2" long (4)	50
(37)	Round Head Slotted Screw, #6-32 X 3/8" long (3)	50

45873A #110

<u>UNIT</u>	<u>DESCRIPTION</u>	<u>IEC PART NO.</u>
(38)	Round Head Slotted Screw, #8-32 X 1 1/4" long	50
(39)	Round Head Slotted Screw, #8-32 X 1/2" long (2)	50
(40)	Round Head Slotted Screw, #8-32 X 3/8" long	50
(41)	Round Head, Phillips Head Screw, # 10-32 X 1/2" long (2)	50
(42)	Round Head Slotted Screw, #10-32 X 3/8" long (3)	50
(43)	Slotted Cup Set Screw, #10-32 X 1/4" long (2)	50
(44)	Lock Washer, #4 Int. Serr. (2)	50
(45)	Lock Washer, #6 Int. Serr. (3)	50
(46)	Lock Washer, #8 Int. Serr. (4)	50
(47)	Lock Washer, #10 Int. Serr. (3)	50
(48)	Clinch Nut, #6, 32 (4)	50
(49)	Nut, #6-32 (3)	50
(50)	Nut, #4-40 (2)	50
(51)	Nut, #8-32 (3)	50
(52)	Nut, #10-32 (3)	50
(53)	Nut, #10-32 ESNA Locknut (2)	50
(54)	Round Head, Phillips Head Screw, 1/4-20 X 1" long (3)	50
(55)	Lock Washer, 1/4" (3)	50
(56)	Nut, 1/4-20 (3)	50
(57)	Deleted	
(58)	Plastic Clip, #7	3185
(59)	Plastic Clip, #9, 1/2"	7958
(60)	Fiber Spacer	30363

NOTE: When ordering parts the centrifuge serial number must be given.