



models
122 - 147

Service Information
Parts List

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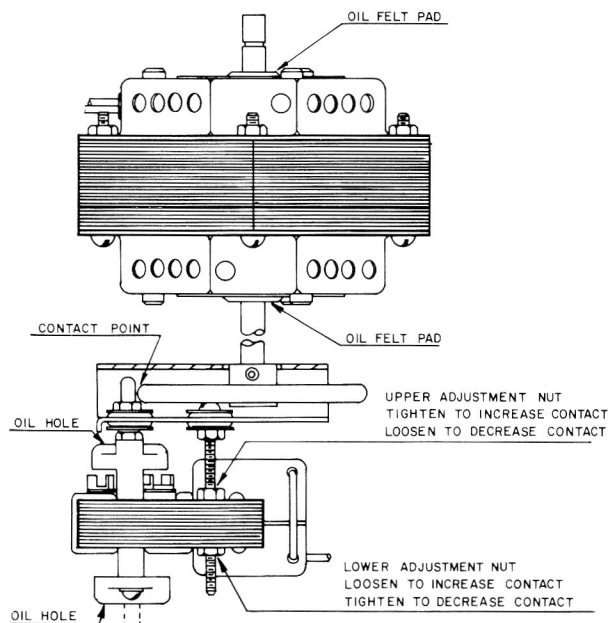
Electro Music/CBS Musical Instruments, A Division of CBS Inc., 56 W. Del Mar Blvd., Pasadena Calif. 91105

Oct. 1979
136370

MAJOR COMPONENTS

		Model 122	Model 147
Power Amplifier	117V 50/60Hz	036616	050039
	220V 50Hz	036624	052969
	240V 50Hz	053256	052977
	100V 50/60Hz	137009	137011
These part numbers apply to both Models 122 & 147			
Upper (treble)	117V 60Hz	140019	
Motor Assembly	117V 50Hz	140020	
	220V 50Hz	140020	
	240V 50Hz	140020	
	100V 60Hz	140021	
	100V 50Hz	140022	
Lower (bass)	117V 60Hz	037564	
Motor Assembly	117V 50Hz	045898	
	220V 50Hz	045898	
	240V 50Hz	045898	
	100V 60Hz	137023	
	100V 50Hz	137022	
Crossover		113860	
Speaker (treble) and Spindle Assembly		138681	
Horn Assembly		050807	
Speaker (bass), 15-in, 16 ohm		052308	
Rotor (bass), foam, 17 x 9		137588	

MOTOR OILING AND ADJUSTMENT



VOLUME ADJUSTMENT

The volume level should be set on the basis of maximum demand, avoiding distortion or overload, as follows:

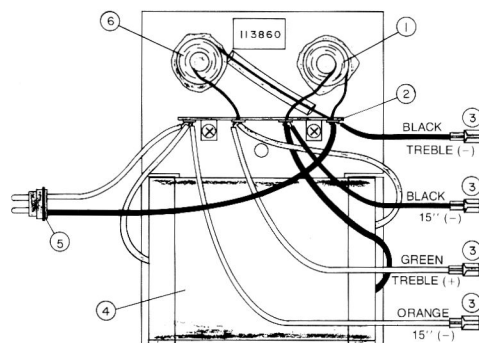
1. Use "full organ" registration, that is, with all stops in use and with the swell pedal at maximum. Play a full chord and a single note.
2. Advance the volume control on the amplifier from a minimum position up to a point where some distortion can be heard.
3. Back off the volume control setting just far enough to eliminate all distortion. This is the correct setting for maximum undistorted loudness, and usually no further adjustment will be necessary. (Distortion, when continuous, can seriously damage speaker components.)

LOAD RESISTOR (Model 147 only)

The load resistor switch is located on the amplifier chassis. This switch provides a load of the correct impedance for the organ's power amplifier when the organ speakers are not operating. The correct load resistance is given in the installation instructions for the console connector kit.

If you do not know the correct impedance, set the switch by the following procedure:

1. Set the echo control at ECHO and the load resistor switch at 8 ohms.
2. Set all the stops on; set the swell pedal at maximum; play a full chord and a single pedal note.
3. Holding the chord and note, increase the volume until some distortion is heard.
4. Switch the echo control back and forth between ECHO and MAIN and compare the volume of the LESLIE speaker with the volume of the organ speaker. If the LESLIE speaker volume is greater the load resistance is satisfactory. Go on to step 6. If the organ speaker volume is greater go to step 5.
5. Set the load resistor switch at 16 ohms. Repeat step 4. If the result is still not satisfactory, set the switch at OPEN. (It should be noted that if the OPEN setting is used there is a possibility that the organ amplifier may be damaged due to being over-driven.)
6. Set the volume control between 6 and 10.

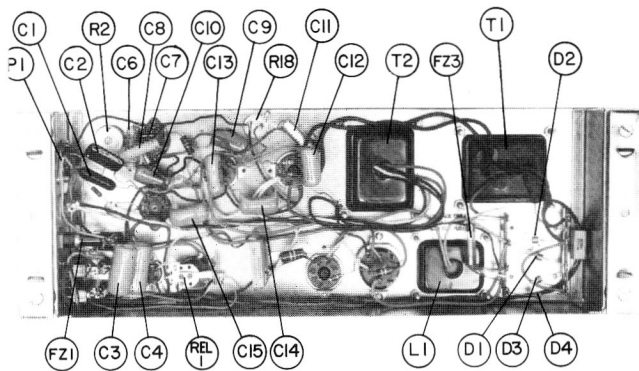
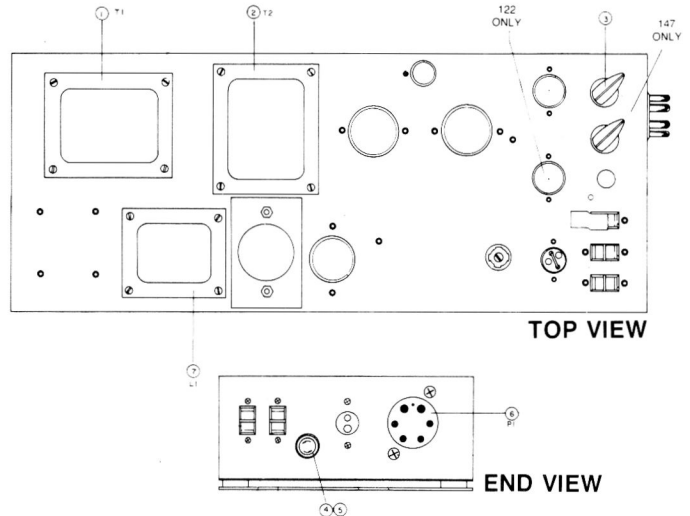


CROSSOVER ASSEMBLY 113860

Item	Description	Part No.
1	Inductor, 5.2mH (L3)	052845
2	Terminal Strip, 4-lug	063529
3	Connector, tab, female	029389
4	Capacitor, paper, (A) 7.8mfd (B) 12.5mfd, 50V 5% (C16)	052852
5	Cable and Plug Assembly, 2-pin (P7)	052878
6	Inductor, 3.2mH (L2)	052837

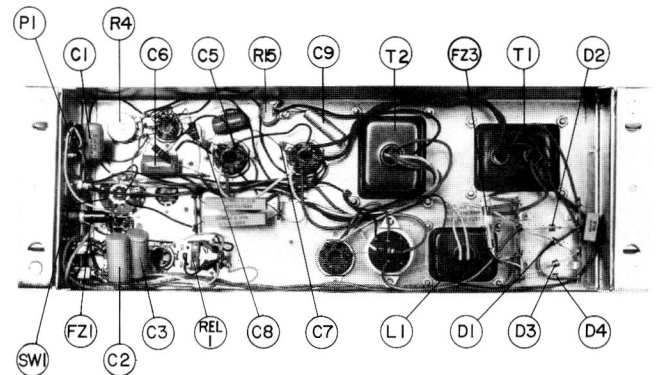
AMPLIFIER ASSEMBLY

Item	Description	Part No.
1	Transformer, power, 117V 50/60Hz (T1)	011007
	Transformer, power, 220/240Hz 50/60Hz (T1)	011015
	Transformer, power, 100V 50/60Hz (T1)	133630
2	Transformer, output (T2)	055103
3	Knob, bar, black	020289
4	Fuse Holder	055178
5	Fuses for 100/117V	
	Normal-Blo, 2-amp (FZ1)	020263
	Slo-Blo, 1.5-amp, pigtail (FZ3)	121250
	Fuse for 220/240V	
	Slo-Blo, 1-amp, 250V (FZ1)	038158
6	Plug, 6-pin (P1)	060442
7	Choke, filter (L1)	055111
Sockets		
	2 Contact	029298
	2 Contact, AC	055137
	5 Contact	029652
	8 Contact, octal	020321
	9 Contact	033746



MODEL 122 POWER AMPLIFIER
(Bottom View)

Item	Description	Part No.
Capacitors		
C1, C2	mylar, .047mfd, 15VAC	026468
C3, C4	0.1 mfd, 1000V	137192
C9, C10	0.1mfd, 600V	041145
C5	electrolytic, 30/30/30/10mfd, 475V	029892
C6, C8	mylar, .015mfd, 600V	032458
C7	mica, .001mfd, 500V	032409
C11	electrolytic, 200mfd, 50V	020081
C12, C13, C14, C15	.0047mfd, 1600V	033399
D1, D2, D3, D4	Rectifier, silicon 800PIV	055228
R2	Potentiometer, 100K	055186
Resistors		
R1, R3	10K, ½W, 5%	118110
R4, R5, R7	1-megohm, ½W, 5%	137764
R6	1.2K, ½W, 5%	018036
R8, R9	56K, 1W, 10%	021550
R10, R11	220K, ½W, 5%	020222
R12	wire-wound, 150-ohm, 10W, 10%	020115
R13	10K, 1W, 10%	020214
R14, R15	390K, ½W, 5%	018010
R16	12K, 2W, 10%	021568
R17	470-ohm, ½W, 5%	028068
R18	wire-wound, 10K, 7W	021501
R45	wire-wound, 8-ohm, 5W, 10%	021493
REL 1	Relay, SPDT, 5K	055129
V1, V2	Tube, 12AU7	029033
V3, V4	Tube, 6550	022301
V5	Tube, OC3	022319



MODEL 147 POWER AMPLIFIER
(Bottom View)

Item	Description	Part No.
Capacitors		
C1, C5, C6	0.1mfd, 600V	041145
C2, C3	0.1mfd, 1000V	137192
C4	electrolytic, 30/30/30/10mfd, 475V	029892
C7, C8	disc, 100PF, 100V, 20%	028027
C9	electrolytic, 200mfd, 50V	020081
D1, D2, D3, D4	Rectifier, silicon, 800PIV	055228
R4	Potentiometer, 10K	028803
Resistors		
R1	wire-wound, 8-ohm, 5W, 10%	021493
R2, R3	wire-wound, 8-ohm, 10W, 10%	010934
R5	820-ohm, ½W, 5%	028373
R6, R7	56K, 1W, 5%	020206
R8, R10	220K, ½W, 5%	020222
R9	18K, ½W, 5%	137761
R11, R13	56K, ½W, 5%	137766
R14	470-ohm, ½W, 5%	028068
R15	wire-wound, 150-ohm, 10W, 10%	020115
R12	10K, 1W, 10%	020214
REL 1	Relay, SPDT, Tube, 12AU7A	027649
V1	Tube, 12AU7A	029033
V2, V3	Tube, 6550	022301
V4	Tube, OC3	022319
SW1	Switch, rotary	137840

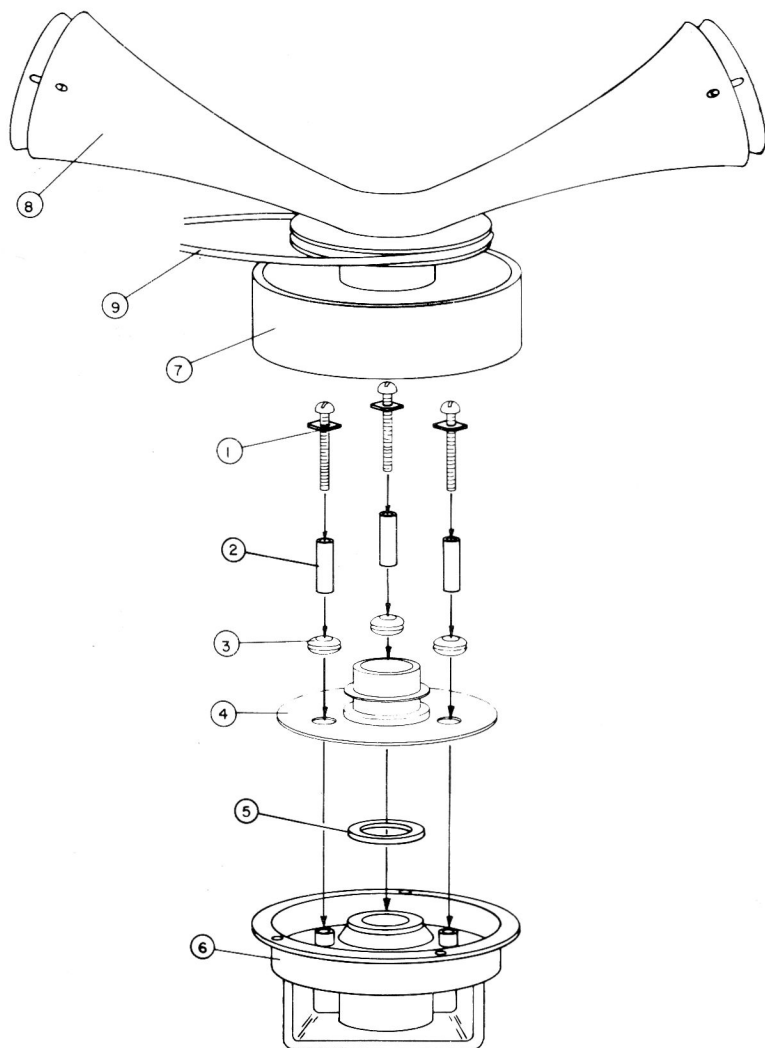
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When the organ is first turned "on," Relay REL 1 is in the fast position causing the motors to turn at the fast speed, even though the control switch may be in the "Choirale" position. As the 12A7V tube (V1) warms up it conducts momentarily, switching Relay 1 to the "Tremolo" position. The 12A7V tube (V1) then warms up and conducts during the warm-up period, the 6550 V3/6Z tube (V2) power output tubes produce bias voltage to the 12A7V cutting "off" the tube and, depending on whether the control switch is in the "Choirale" or "Tremolo" position, will turn the motors at either the fast or slow speed. This warm-up cycling is normal to the operation of the Model 122, and does not indicate any malfunction.

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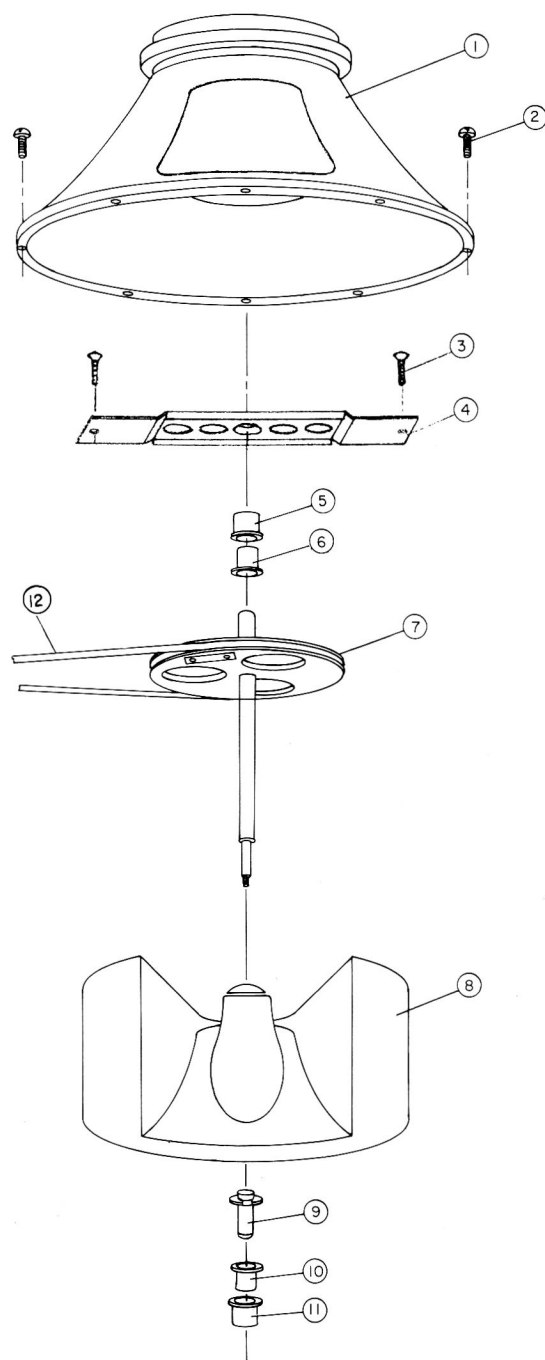
REL. 1 DE-ENERGIZED (FAST)			REL. 2 ENERGIZED (SLOW)		
PIN NO. 1	PIN NO. 2	PIN NO. 3	PIN NO. 1	PIN NO. 2	PIN NO. 3
285 VDC	OVDC	25 VDC	105 VDC	23 VDC	25 VDC

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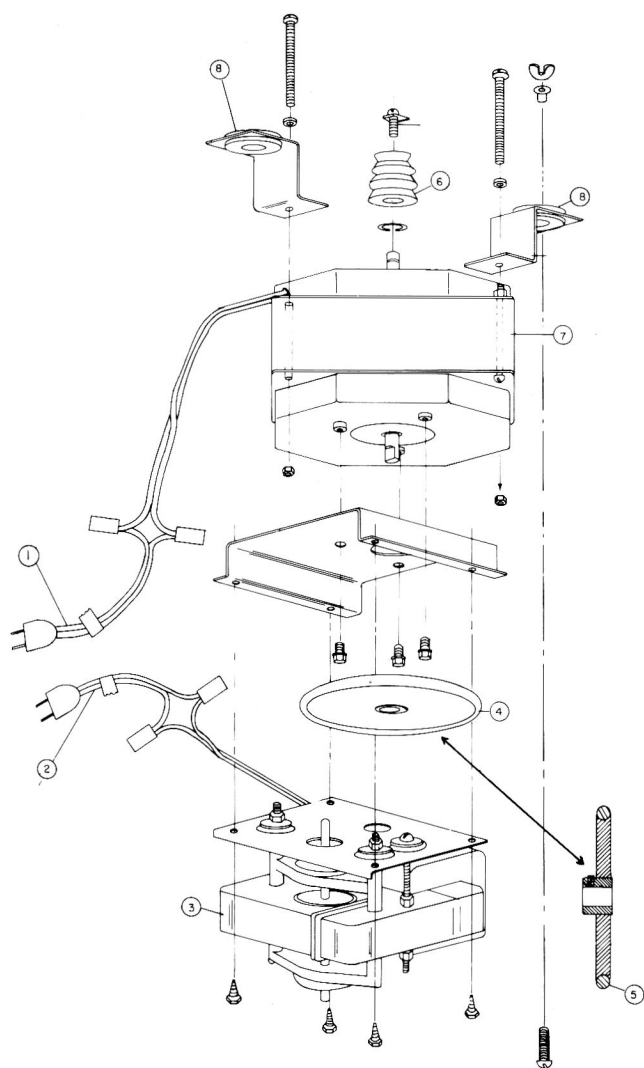
HORN ASSEMBLY 138681

Item	Description	Part No.
1	Screw With Lock Washer, machine, 8-32 x 1 1/8	016832
2	Bushing, aluminum, .144 x .281 x .813	050294
3	Grommet, neoprene	050211
4	Spindle and Plate Assembly	137804
5	Washer, flat, 5/8 x 1 1/2 x 1/8	050286
6	Speaker, treble driver, 16-ohm	031260
7	Ring, spacer, waxed	020313
8	Horn Assembly, treble	050807
9	Belt, drive	045468



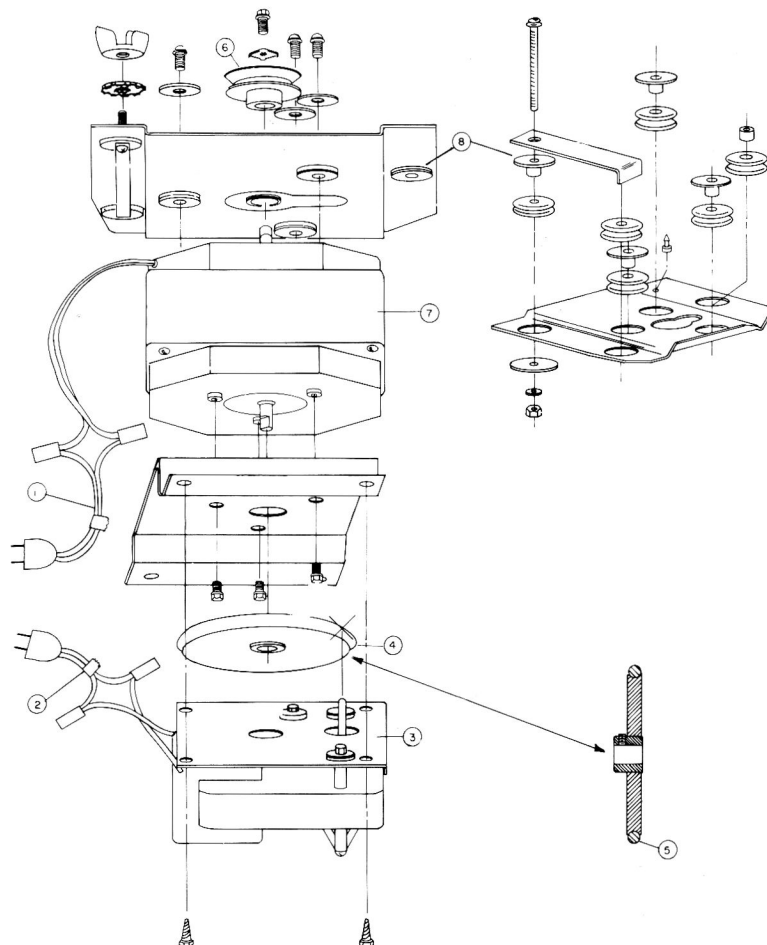
BASS ROTOR ASSEMBLY

Item	Description	Part No.
1	Speaker, 15-inch, 16-ohm — attaching parts —	052308
2	Screw, machine, 10-24 x 1 1/4 * * *	012849
3	Screw, machine, 8-32 x 3/4, Phillips head	137380
4	Support, rotor	137256
5	Bearing, plastic	137264
6	Grommet, shoulder, neoprene	137255
7	Shaft and Pulley Assembly	137874
8	Rotor with Grommets, foam	137588
9	Shaft Extension Assembly	137836
10	Bearing, plastic	137264
11	Grommet, shoulder, neoprene	137255
12	Belt, drive, 60Hz	011700
	Belt, drive, 50Hz	030601



UPPER MOTOR ASSEMBLY 140019

Item	Description	Part No.
	Motor Assembly, 2-speed, V-up 117V 60Hz	140019
	Motor Assembly, 2-speed, V-up 117V 50Hz (also 220V, 240V)	140020
	Motor Assembly, 2-speed, V-up 100V 50Hz	140022
	Motor Assembly, 2-speed, V-up 100V 60Hz	140021
1	Cable and Plug Assembly, AC, 29-inch, brown	029785
2	Cable Assembly with Plug, 117V, 29-inch, white	029918
3	Motor Assembly, slow speed, 117V 50/60Hz (also 220V, 240V)	012534
4	Wheel Assembly, rim drive	014027
5	Ring, 0, 2.475 ID	014159
6	Pulley, 3-step, 60Hz	050500
	Pulley, 3-step, 50Hz	050559
7	Motor, D6, 117V 50/60Hz (also 220V, 240V)	060269
	Motor, D6, 100V 50/60Hz	012990
8	Grommet	050641



LOWER MOTOR ASSEMBLY 037564

Item	Description	Part No.
	Motor Assembly, 2-speed, V-down, 117V 60Hz	037564
	Motor Assembly, 2-speed, V-down, 117V 50Hz (also 220V, 240V)	045898
	Motor Assembly, 2-speed, V-down, 100V 50Hz	137023
	Motor Assembly, 2-speed, V-down, 100V 60Hz	137022
	Cable Assembly with Plug, 117V, 9-inch, brown	029983
1/2	Cable Assembly with Plug, 117V, 9-inch, white	029991
3	Motor Assembly, slow, 117V 50/60Hz	054031
	Motor Assembly, slow, 220/240V 50Hz	062752
	Motor Assembly, slow, 100V 50/60Hz	137024
4	Wheel Assembly, rim drive	014027
5	Ring, 0, 2.475 ID	014159
6	Pulley, 60Hz	018309
	Pulley, 50Hz	014928
7	Motor, D10, 117V 50/60Hz (also 220V, 240V)	014019
	Motor, D10, 100V 50/60Hz	133660
8	Grommet	050641

