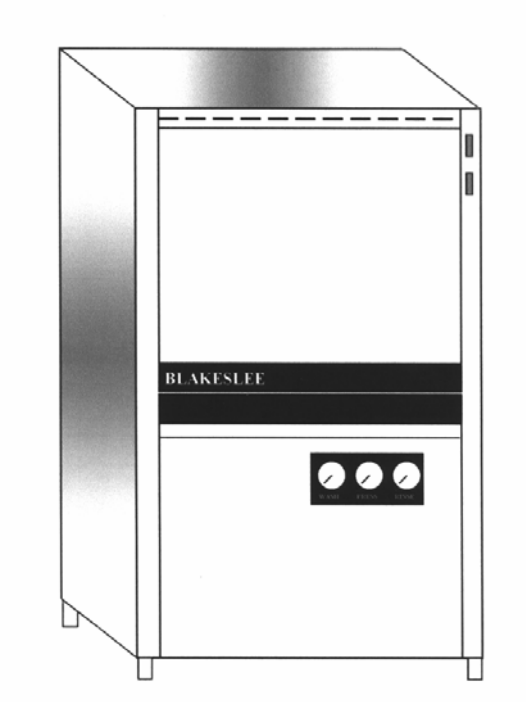
BLAKESLEE Division of Blako Inc.

OWNER'S MANUAL

UNDERCOUNTER DISHWASHER

UC-21



I.R.S. INTEGRATED RECIRCULATING SYSTEM DESIGN

1844 South Laramie Avenue Chicago, IL 60804 Phone (708) 656-0660 Fax (708) 656-0017	www.blakesleeinc.com service@blakesleeinc.com	1149 Bellamy Road North Unit 19 Scarborough, Ontario Canada M1H1H7 Phone (416) 751-2625 Fax (416) 751-8539

BLAKESLEE

USA

Date of Installation _____

Serial No. Model No.

Limited Warranty

Your new Blakeslee dishwashing machine is warranted for one year from date of installation shown above against defective materials and workmanship. If any defects are found within the warranty period; parts, and labor involved with their replacement will be covered free of charge. Service must be performed by a Blakeslee authorized service agency. All labor to be performed during regular working hours. Overtime premium will be charged to the customer. All warranty parts are shipped by surface transportation. If other means of transportation is requested the customer is required to pay the premium. This warranty does not apply to damages resulting from errors in installation on the part of other contractors, nor does it apply to machines which have been subject to accident, misuse, or abuse. It is understood that Blakeslee's warranty obligation with respect to machines located outside of the United States or located in the state of Alaska is limited to the furnishing of replacement parts only. In the state of Hawaii, repair labor is provided free of charge; travel time and expenses paid by the customer. On the island of Oahu, repair labor, travel time and expenses are provided free of charge. This is the entire and only warranty of Blakeslee. We neither assume nor authorize anyone else to assume for us any other obligation or liability in connection with Blakeslee Machines.

- In no case can this warranty exceed eighteen (18) months from the date of shipment from our plant at Chicago, Illinois

Items NOT Covered Under Warranty

1. Replacing Fuses or resetting Overloads.

Replacing a blown fuse or resetting an open overload breaker is a very simple procedure and is the owner's responsibility. If the machine continues to blow fuses or open the overload breaker, contact your nearest authorized Blakeslee Service Center.

2. Adjusting Tank Heats.

Heat adjustments are covered in The Owners Manual and must be adjusted depending upon desired results.

3. Proper Loading of Dishes.

It is important that the machine owner's personnel observe the instructions outlined in The Owners Manual.

4. Cleaning Drain Valves.

Foreign articles lodged in the drain valve seat should be removed as a part of the normal daily cleaning.

5. Cleaning Rinse or Wash Nozzles and Line Strainers.

Keeping a dishwasher clean and removing obstructions from the nozzles and line strainers will be a periodic function of the machine owner's personnel. The cleaning periods will vary depending upon impurities in the water supply and cleanliness of the washing operation.

6. Final Rinse Water.

Most frequent of all complaints in any dishwashing machine is that of poor final rinse. It is the responsibility of the owner to provide 180 to 195 degree (plus) water at 15-25 lb. flow pressure through clean unobstructed water lines. If the machine has a factory equipped final rinse water booster, the owner must supply the booster with a minimum of 140 degree temperature water.

INDEX

SPECIFICATIONS

Construction:
Body of stainless steel construction throughout.

Wash System:
Top and bottom counter rotating spray arms.

Rinse system:
Top and bottom counter rotating spray arms.

Recirculating System:

Gallons per minute	180
Horsepower	1

Wash Tank Capacity:
6.0 gallons

Water Heating:
An electric immersion heater rated at 9.0 KW heats both the wash and rinse water.

Control:
Automatic wash/rinse cycle control.
Thermostatically controlled rinse temperature

MACHINE INSTALLATON DATA:

Electrical:

Volts	Phase	Load Amps
220	1 (4 wire)	48.6
220	3 (5 wire)	27.0

Water Supply:

Inlet Temperature	140° F
Inlet Pressure *	20 psi
Inlet Size	½" Hose
Inlet Flow	6gpm
Drain Size	1 ½" OD Hose
Water Consumption	30.5 gpm

Wash and Rinse Cycle

Wash Time	105 seconds
Dwell Time	5 seconds
Rinse Time	12 seconds
Total Cycle	120 seconds

* Inlet pressure should be measured at the connection point of the dish machine.

SECTION I INSTALLATION

The Model UC21 is suitable for both under the counter and free standing installations. Access is required to both the sides and rear of the machine for service and maintenance. Therefore, all connections should be made with flexible hoses and conduit to ensure that access can be achieved.

SHIPMENT CHECKOUT & UNCRATING

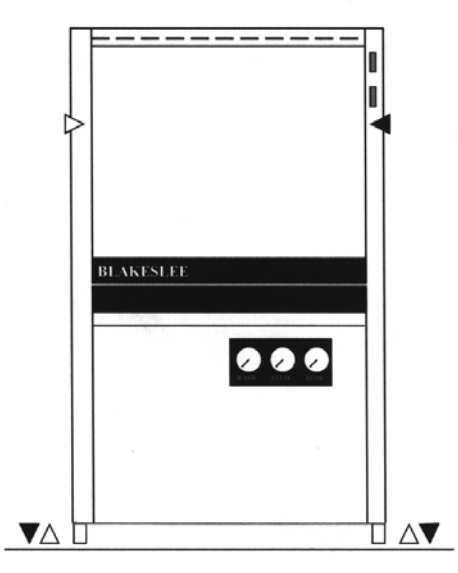
Unit is shipped with standard commercial packing, should any damage be observed on visual inspection of the crate; notify the freight carrier immediately, as hidden damage may exist.

No special equipment is required to uncrate the unit. However care should be taken to ensure that no damage is caused by the implements used in uncrating the machinery.

Level the machine by adjusting legs as necessary, while maintaining counter clearance dimensions.

NOTE: If machine is not leveled properly door will not close correctly

If door rubs on left side adjust left leg down or right leg up



If door rubs on right side adjust right leg down or left leg up

FIGURE 1

INSTALLER WARNING

To protect Booster Heating Element

Do not turn on electrical power supply to dishwasher until water supply has first been connected and you are ready to proceed with actual test operation of the machine.

WATER SUPPLY: Connect incoming water supply hose to ½" I.D. hose fitting. Water supply source must be able to provide 140°F water minimum at 20 PSI flow pressure.

DRAIN: Connect 1 ½" drain tube to waste connection. Machines equipped with optional drain pump will have a ¾" hose to be inserted into an elevated drain or sink (see section 5).

ELECTRICAL: Check machine data plate before making any electrical connections. All supply connections must correspond with data plate information. Check pumps rotation, pump turns clockwise when viewed from rear of motor; if not reverse leads.

MODEL	A	B	C	D
UC-21	33 ¼"	37 ¼"	12"	15 ½"
UC-21T	39 ¼"	43 ¼"	18"	21 ½"
UC-21XT	45 ¼"	49 ¼"	24"	27 ½"

Dimensions A & B are ± 1"

DIM. FROM FLOOR	2" LEG	6" LEG
1	4"	8"
2	4 ½"	8 ½"

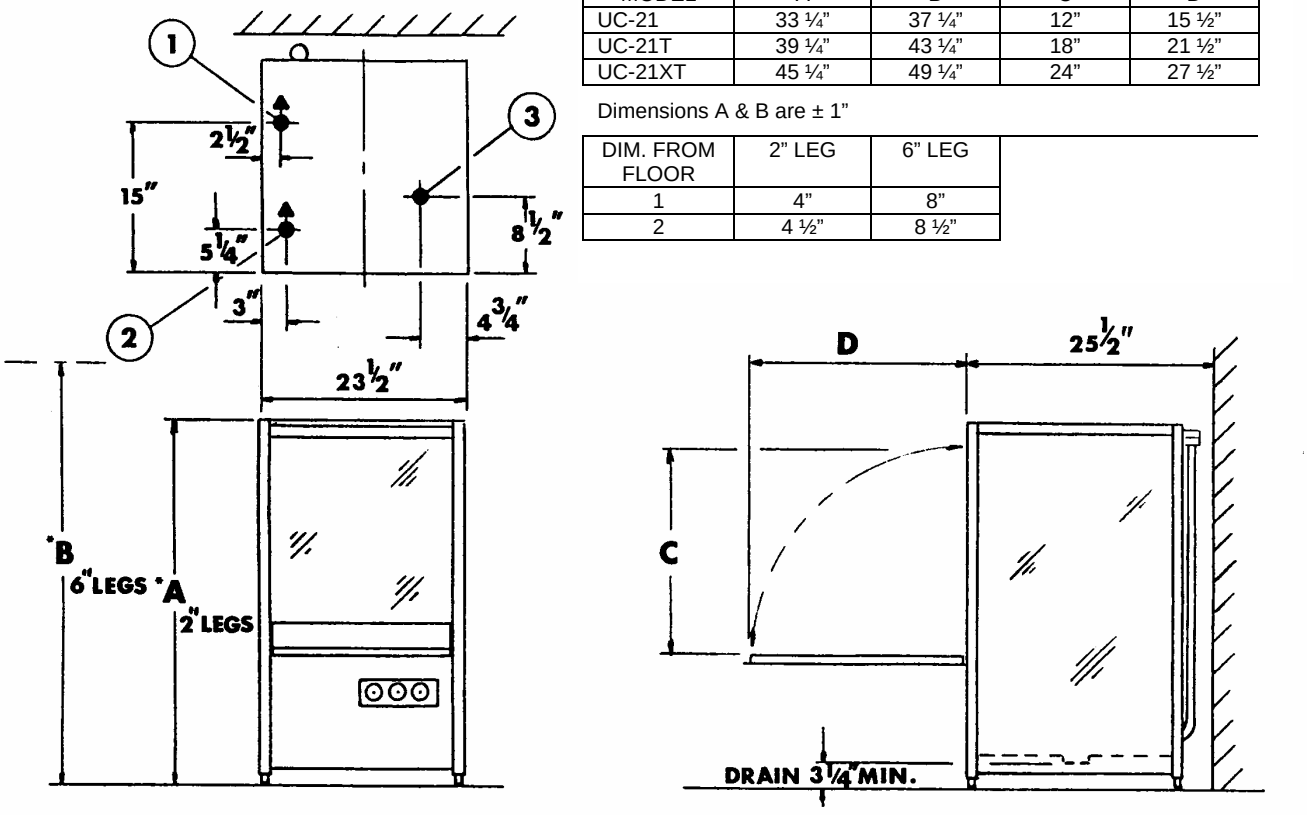


FIGURE 2

		Size of Connection
1	140° Hot Water Connection	1/2"
2	Electrical Connection (Check Data Plate Requirements to Correspond with Correct Power Supply)	1"
3	Drain	1 ½"

SECTION II OPERATION

DO NOT ATTEMPT TO OPERATE WITHOUT WASH
TANK BEING PROPERLY FILLED, DRY ROTATION
WILL DAMAGE PUMP SEALS AND VOID WARRANTY

1. Ensure that all spray arms spin freely and that scrap tray and standpipe are properly installed. NOTE: There is no stand pipe on machines equipped with an optional drain pump.

2. Depress ON/OFF main switch to “ON” position. Switch light will indicate power is on. Close door.

3. Depress and hold START/FILL switch in the “FILL” position for 50 seconds or until water can be heard flowing down the drain.

4. If detergent is fed manually, prep full tank of fresh water with 3 oz. of a low suds commercial detergent, then 1 oz. per each cycle there after. Increase or decrease detergent rate based on results.

5. Insert rack with properly pre-scrapped and pre-flushed ware.

6. Close door, depress and hold START/FILL switch for 1 second in the “START” position. Lighted switch will indicate machine is operating.

7. Cycle is completed when START/FILL switch indicator light turns off.

8. Open door and remove rack of cleaned ware. IMPORTANT do not leave rack sitting on open door.

9. Washing operation is completed

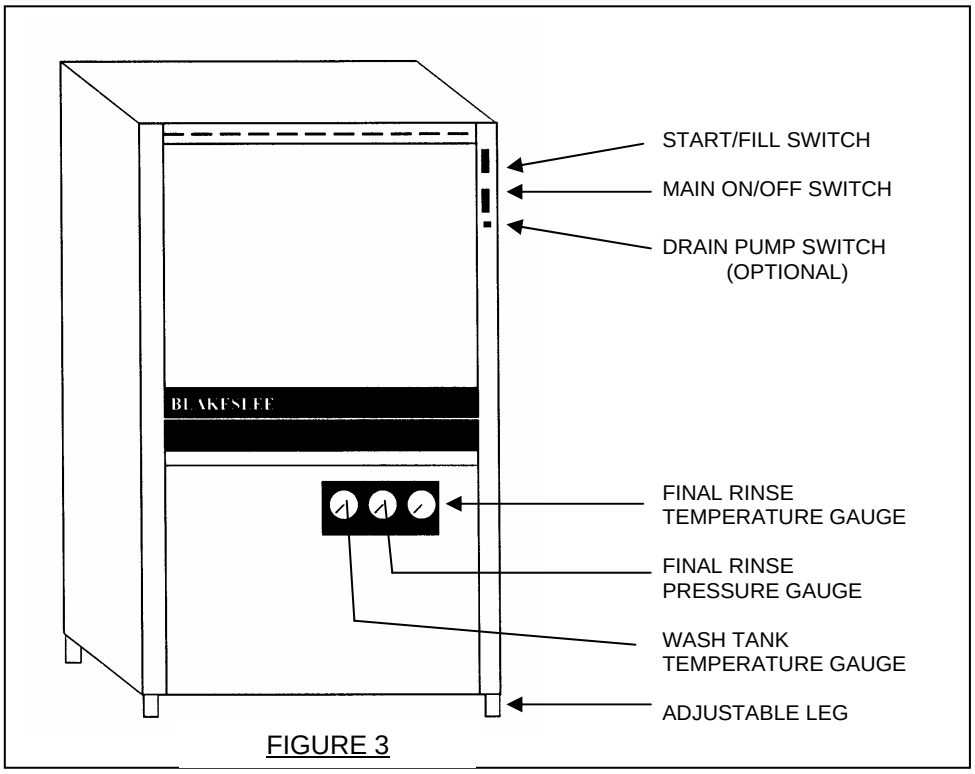


FIGURE 3

Observe the following instructions to obtain maximum performance from the dishwashing machine.

1. Whenever possible, instruct bus boys or wait staff to stack the soiled dishes according to sizes as they are brought to the soiled dish table.

2. Remove by hand, rubber scraper, or pre-washing as much food particles left on the dishes as possible. This will reduce pollution of water, insure the cleanest possible wash water and lower detergent costs.

3. Rack dishes in appropriate rack as indicated in figure 4. When placing silverware in combination rack; you should be able to see many holes in the bottom of the rack after it is loaded. Dishes and all "flat" china should be stacked in the multi-purpose racks so that they lean back with the face of soiled surface of the dish exposed to the upper spray. Glasses, cups, bowls and other "deep" dishes should be placed face down in the combination racks. Remember, whenever possible it is a good practice to have your bus boys or waitresses place cups, glasses and bowls directly in the combination rack. Do not overcrowd or overload the racks as the wash and rinse waters must reach all surfaces to obtain clean ware.

4. Scrape and rack more dishes and insert the racks of soiled ware into the machine.

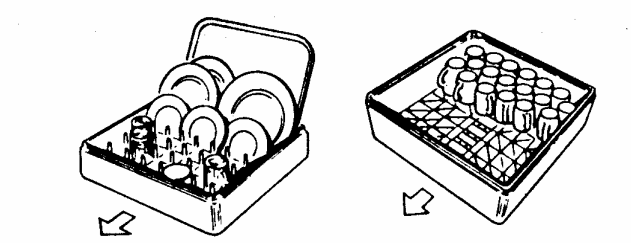
5. Clean ware must be taken out of the racks and the empty racks removed from the clean dish table and returned to the soiled dish table for reloading. Do not let dish racks pile up on the clean dish table until they hit the end of the dish table as this subjects the conveyor to unnecessary strain. Let the washed and rinsed dishes remain in the racks for a minute or so until they have had a chance to drain and self dry. If the dishes are removed from the racks to soon, they will not be dry.

6. Continually check wash and rinse temperatures.

7. Be sure enough detergent is being added to the wash water to keep it at an effective strength if an automatic dispenser is not being used.

8. Detergents should be used according to the detergent manufacturer's recommendations. Their representative knows the capabilities of their detergents and can determine the proper treatment of your water for proper use with their product. The wash water must be kept at an effective strength to obtain good washing results. Use a good detergent. Never use a foaming soap or soap flakes. Ask your local detergent man for his help and heed his advice.

FIGURE 4



MULTI-PURPOSE RACK
PART NO. W-0-16428

COMBINATION RACK
PART NO. W-0-16429

SECTION III MAINTENANCE & CLEANING

Maintenance:

Motor: No lubrication required

Pump: No lubrication required

Wash Arms:

a. Wash arms, upper and lower, should turn freely and continue turning for a few seconds after being whirled by hand.
b. If the scrap screen is not properly in place, obstructions may clog the wash arm nozzles. The wash arms are easily removed for cleaning.
c. To remove the upper & lower wash arms, turn the individual arms clockwise and remove.
d. Push the obstruction into the arm and flush out.
e. To reassemble push arm in hole and turn counter clockwise.

Rinse Arms:

a. The rinse arm nozzles will need frequent cleaning if your water contains lime or other solids.
b. To remove the rinse arms you should first remove the wash arm assemblies.
c. On upper wash arm assembly remove knob and lower assembly. On lower remove knob and lift assembly. NOTE: Take care not to lose bushings.
d. Remove rinse arms by taking set screw out of top and pulling out arm.
e. Push the obstruction into the arm and flush out.
f. To reassemble push arm in hole and align screw hole with hole in top, insert and tighten set screw.
g. Put assemblies back in and install knob. Check to make sure assemblies turn freely.

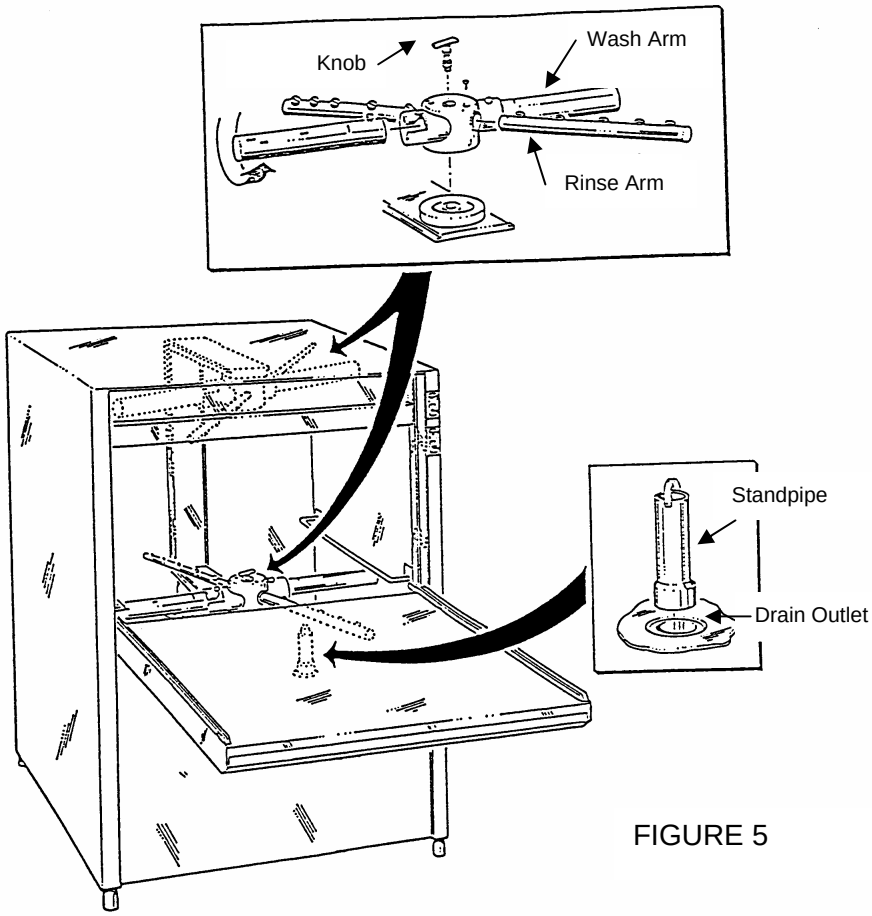


FIGURE 5

After each meal period and at the end of the day, pull out the stand pipe to drain the machine and clean out the scrap tray.

Daily cleaning instructions:

1. Turn off main switch to dish machine*.

2. Open door and pull out stand pipe*.

3. Remove scrap tray and empty. Clean with a scrub brush, do not hit scrap tray on trash container.

4. Inspect both wash arms for obstructions in any openings and for ease of rotation. Remove and clean if required.

5. Replace spray arms after cleaning.

6. Rinse down the inside of wash tank with fresh water, and wipe down with damp cloth.

7. Replace scrap tray and stand pipe.

8. Leave door open overnight to dry out.

* If your Dish machine is equipped with the optional drain pump; press the pump switch to drain the tank before turning off power. Skip step 2, there is no standpipe on machines with drain pumps.

UNSATISFACTORY WASHING RESULTS

1. If grey hard deposits appear on the inside of the tank, you are using an unsatisfactory detergent or the wrong dilution.

2. If a film of grease appears inside the wash, it could be caused by:

   A. Lack of detergent

   B. Insufficient water flow on the rinse cycle

   C. Tank water may require changing

3. If the dishes are spotted with water, it may be because of:

   A. Insufficient water flow on the rinse cycle

   B. Clogged nozzles on the rinse spray arms

   C. The angle of the nozzles on the rinse spray arms may need adjustment to ensure that the rinse water is sprayed uniformly throughout the wash tank

4. If spray arms do not rotate, look for clogging in the spray arms.

5. If the wash tank foams excessively, it may be because the wrong detergent has been used. Excessive rinse aid also causes this problem.

6. If the machine stops during a wash cycle and fails to restart, check that the door is properly closed.

PROTECT YOUR EQUIPMENT

USE GENUINE **BLAKESLEE** PARTS

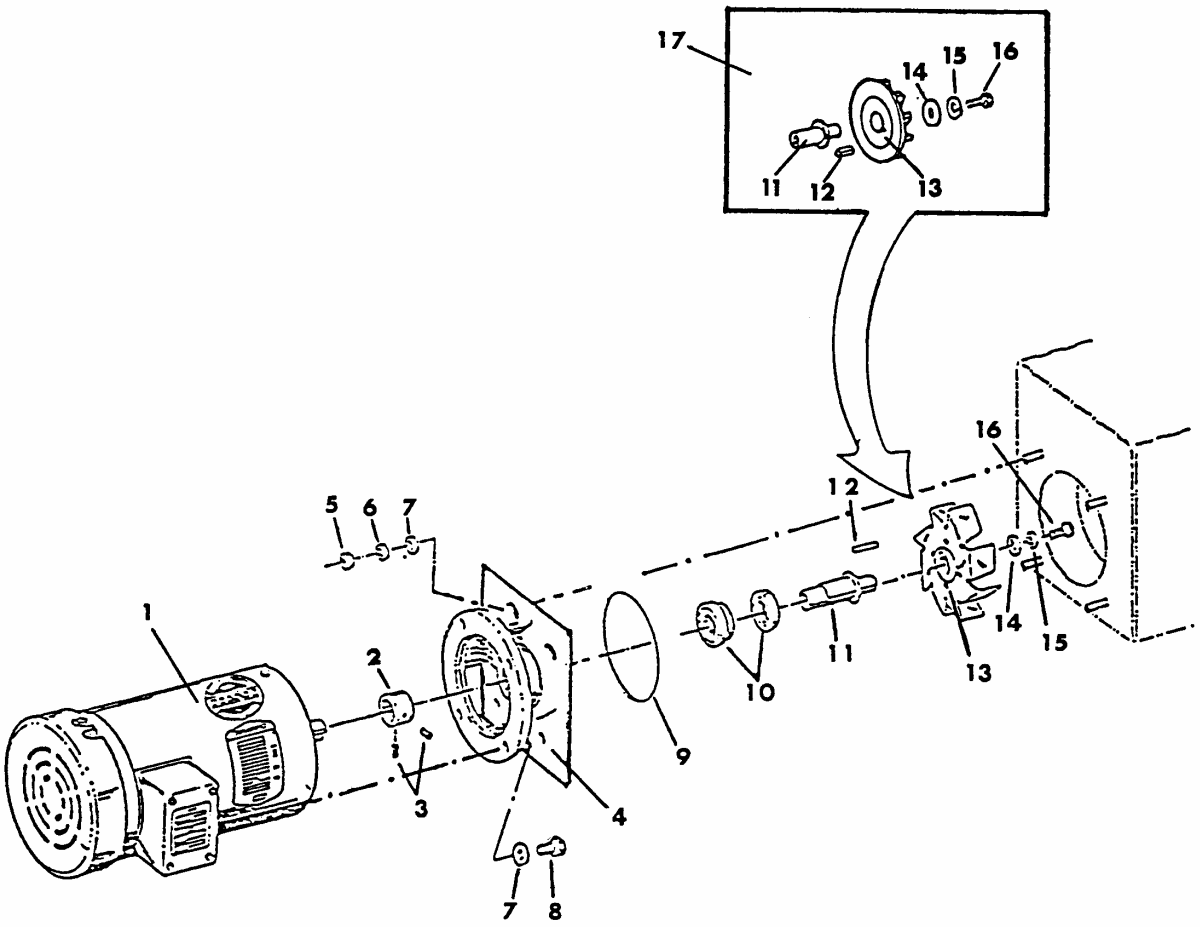


FIGURE 1. RECIRCULATING SYSTEM

FIGURE 1. RECIRCULATING SYSTEM

ITEM NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	17798	MOTOR 1 H.P., 115/230V, 1 PH	1
1A	8247	MOTOR 1 H.P., 208/240V, 480V, 3 PH	1
2	17794	COLLAR	1
3	7117	SETSCREW, 5/16 X 3/8	2
4	74505	MOTOR MTG. BRACKET	1
5	14785	3/8-16 HEX NUT	4
6	17245	3/8" LOCK WASHER	8
7	7522	3/8" FLAT WASHER	8
8	7656	3/8-16 X 1" HEX HD. CAPSCREW	4
9	75004	O-RING	1
10	2255	PUMP SEAL ASS'Y.	1
11	95252	IMPELLER SPINDLE	1
12	1658	3/16 SQ. X 3/4" LG. KEY	1
13	95673	IMPELLER	1
14	5587	FLAT WASHER	1
15	7598	5/16" LOCK WASHER	1
16	7621	5/16-18 X 3/4" S.S. H.H.M.S.	1
17	17762	IMPELLER ASSEMBLY INCLUDES ITEMS 11, 12, 13, 14, 15 & 16	

Serial No. Suffix BAA

13 – 77174 Impeller
17 – 77186 Impeller Assembly

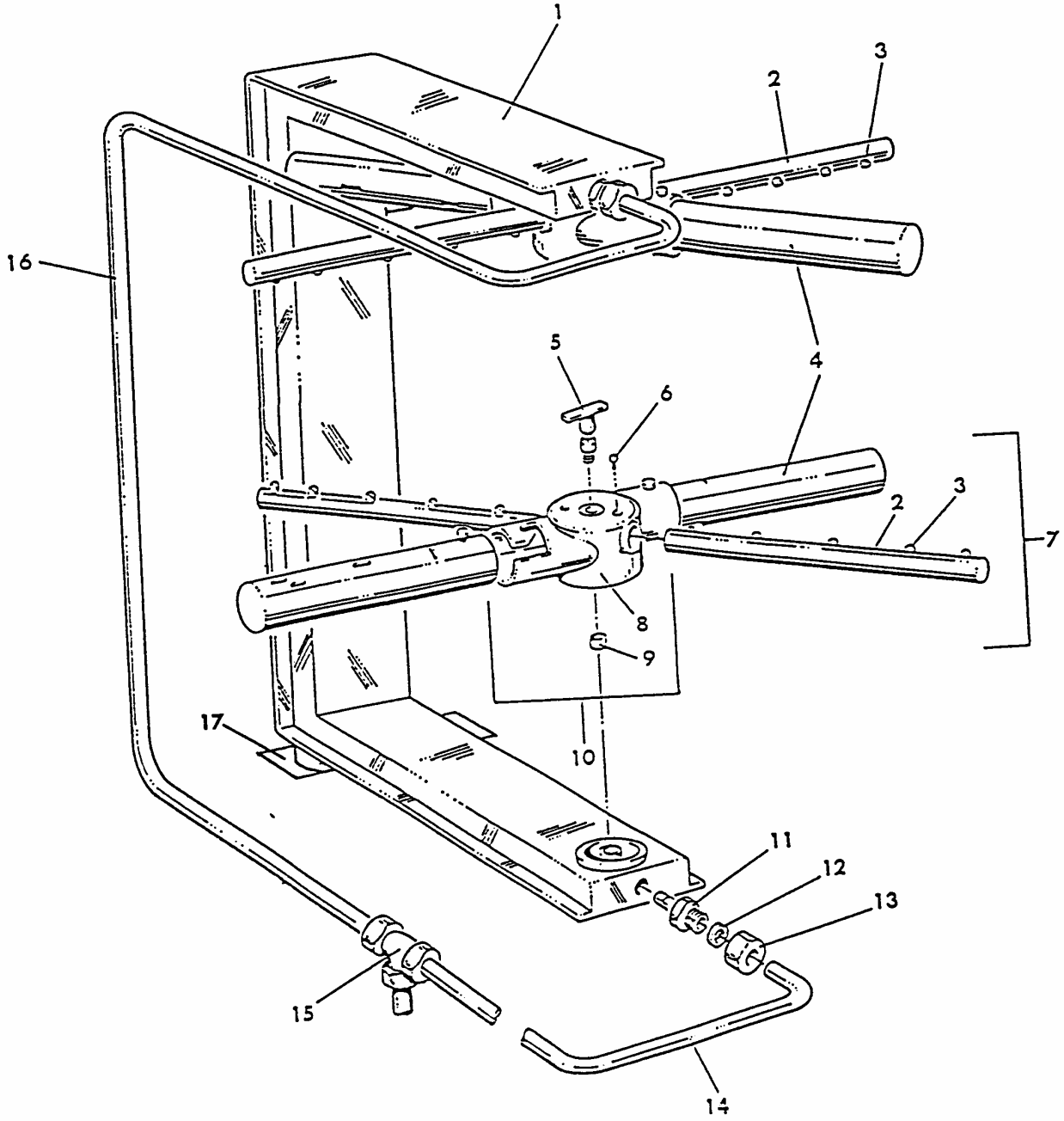


FIGURE 2. SPRAY ARMS & MANIFOLDS

ITEM NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	75000	WASH MANIFOLD	1
2	70086	RINSE ARM	4
3	70087	RINSE ARM NOZZLE	20
4	70083	WASH ARM	4
5	70060	SPRAY ARM KNOB	2
6	09917	RINSE ARM ADJUSTMENT SCREW	4
7	70081	SPRAY ARM ASSEMBLY INCLUDES ITEMS 2, 3, 4, 6 & 10	2
8	70088	HUB	2
9	70089	BUSHING	4
10	70082	HUB ASSEMBLY INCLUDES ITEMS 8 & 9	2
11	74691	RINSE BLOCK CONNECTOR	2
12	74693	COMPRESSION RING	2
13	74692	COMPRESSION NUT	2
14	74649	LOWER RINSE MANIFOLD	1
15	13986	COMPRESSION TEE	1
16	70044	UPPER RINSE MANIFOLD	1
17	75001	RISER WELDMENT	1

Serial No. Suffix BAA

76077 Drain Pump

FIGURE 2. SPRAY ARMS & MANIFOLDS

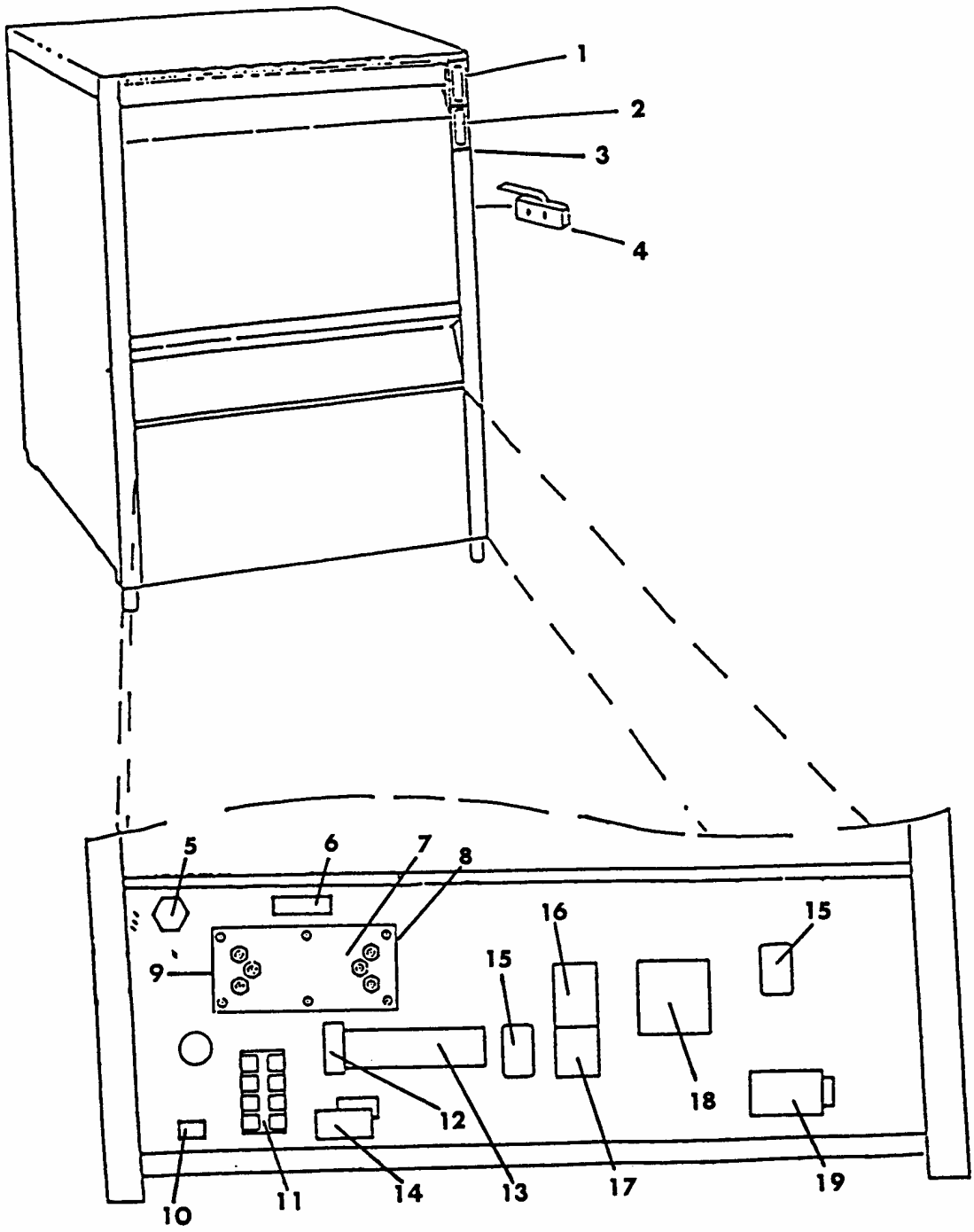


FIGURE 3. ELECTRICAL ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	70154	SWITCH FILL/START	1
2	70153	SWITCH ON/OFF HEAT	1
3	70431	SWITCH LABEL WASH/START	1
4	71335	DOOR SAFETY SWITCH	1
5	74217	FLOAT SWITCH	1
6	74602	LIMIT THERMOSTAT	1
7	74599	IMMERSION HEATER 9 KW, 230V	1
7A	71904	IMMERSION HEATER 1.5 KW, 240V	1
7B	71720	IMMERSION HEATER 1.5 KW, 115V	1
8	75024	GASKET-IMMERSION HEATER	1
9*	74964	HEATER COVER	1
10	74114	GROUND LUG	1
11	70191	POWER TERMINAL STRIP	1
12	16779	FUSE	1
13	70190	CONTROL TERMINAL STRIP	1
14	7768	THERMOSTAT	1
15	14246	RELAY	2
16	70192	MOTOR CONTACTOR	1
17	71603	OVERLOAD RELAY 7-10 AMP	1
17A	71601	OVERLOAD RELAY 4-6 AMP	1
17B	71605	OVERLOAD RELAY 13-18 AMP	1
18	7210	HEAT CONTACTOR 60 AMP	1
18A	7209	HEAT CONTACTOR 30 AMP	1
19	74980	CYCLE TIMER	1
	75142	THERMAL CYCLE EXTENSION TIMER	

*NOT ILLUSTRATED.

77170 Switch Cover
77251 575 Volt Transformer

FIGURE 3. ELECTRICAL ASSEMBLY

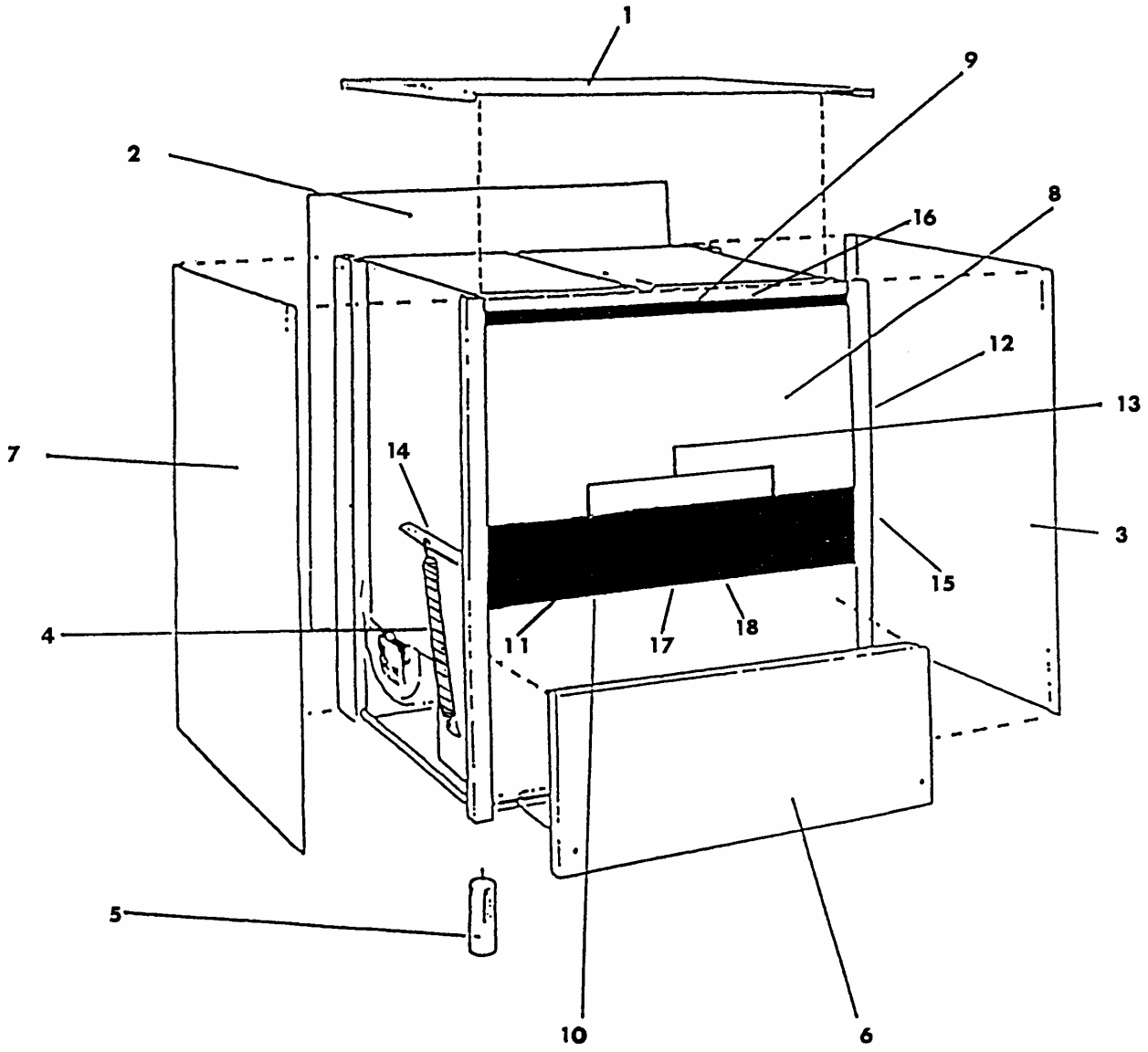


FIGURE 4. BODY ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	71594	TOP COVER	1
2	70440	REAR PANEL	1
3	71593	PANEL R.H.	1
4	70437	DOOR SPRING	2
5	70064	ADJUSTABLE FOOT	4
6	74877	FRONT PANEL	1
7	71592	PANEL L.H.	1
8	74655	DOOR	1
9	74227	DOOR HANDLE	1
10	71591	HINGE COVER PANEL	1
11	97844*	BLAKESLEE LOGO	1
12	70140*	DOOR SWITCH MOUNTING BRACKET	1
13	72724	COILED SPRING PIN	2
14	71553	DOOR HINGE L.H.	1
15	71688*	DOOR HINGE R.H.	1
16	72625*	UPPER DOOR SEAL	1
17	74653*	DOOR SEAL RETAINER - LOWER	1
18	74654*	DOOR SEAL - LOWER	1

FIGURE 4. BODY ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	70201	3/8" VACUUM BREAKER	1
2	72632	3/8" TO 1/2" TUBE ELBOW	2
3	72569	INLET TUBE	1
4	72570	VACUUM BREAKER TUBE	1
5	74960	STANDPIPE	1
6	70765	OUTLET DRAIN ASSY.	1
		* DRAIN CUP	1
		* O-RING	1
		* LOCKNUT	1
7	72630	MALE CONN. 3/8" TO 1/2" TUBE	2
8	72560	FLARED FITTING NUT 1/2"	4
9	70395	3/8" CLOSE NIPPLE	2
10	13884	3/4" X 1/2" X 1/2" BRASS TEE	1
11	18528	1/2" BRASS PIPE PLUG	1
12	12495	1/2" X 90° BRASS STREET ELBOW	1
13	70348	1/2" X 3/8" REDUCING BUSHING	2
14	72641	3/8" X 8" BRASS NIPPLE	2
15	70200	3/8" SOLENOID VALVE	1
16	70441	INSTRUMENT DATA PLATE	1
17	70155	THERMOMETER	2
18	70156	PRESSURE GAUGE	1
19	70392	1/2" LINE STRAINER	1
20	70204	3/8" X 3/8" X 3/8" BRASS TEE	1
21	72631	3/8" TO 1/4" TUBE CONNECTOR	1
22	72564	MALE CONN. 1/4" NPT TO 1/4" TUBE	1
23	72561	FLARED FITTING NUT 1/4"	2
24	72568	GAUGE TUBE	1
25	70206	3/8" X 90° STREET ELBOW	2
26	70393	1/2" HOSE NIPPLE	1
27	70099	1/4" X 90° BRASS ELBOW	1

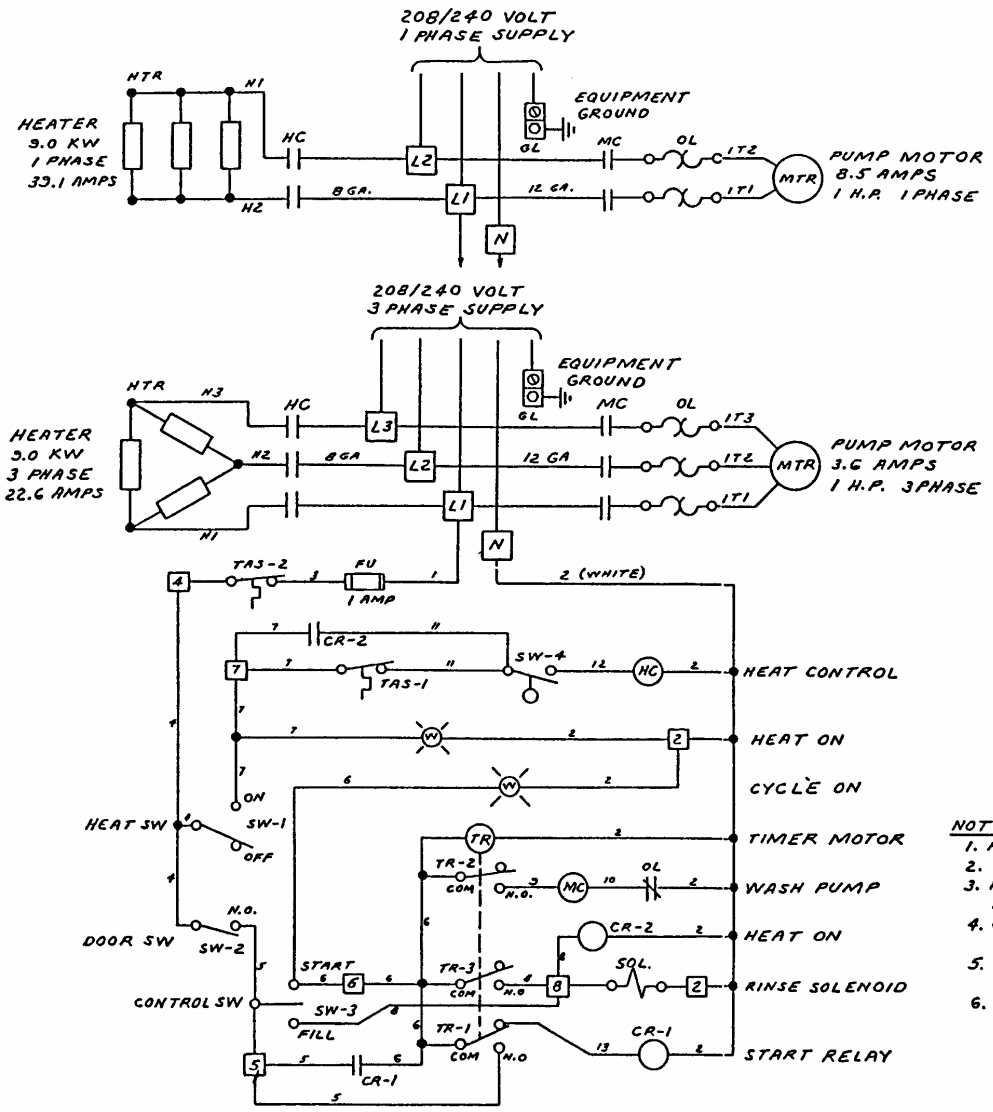
Serial No. Suffix BAA

74959 Stand Pipe

FIGURE 4. BODY ASSEMBLY

IF IN DOUBT ASK

DWG. NO.



ITEM	SYM	QTY	DESCRIPTION
1	L1	1	POWER TERMINAL ASS'Y
2	2	1	CONTROL TERMINAL ASS'Y
3	GL	1	GROUND LUG
4	FU	1	FUSE (1 AMP)
5	HTR	1	HEATER (IMMERSION)
6	HC	1	HEATER CONTACTOR
7	SW-1	1	ROCKER SWITCH (ON-OFF) ILLUM.
8	SW-2	1	DOOR SWITCH WELDMENT
9	SW-3	1	ROCKER SWITCH (ON-OFF-ON) ILLUM.
10	SW-4	1	FLOAT SWITCH
11	TAS-1	1	THERMOSTAT (SET 195° F. OFF)
12	TAS-2	1	THERMOSTAT (HIGH LIMIT)
13	TR	1	CAM TIMER
14	MC	1	MOTOR CONTACTOR
15	OL	1	MOTOR OVERLOAD (3 PHASE)
	OL		MOTOR OVERLOAD (1 PHASE)
16	MTR	1	PUMP MOTOR (3 PHASE)
	MTR		PUMP MOTOR (1 PHASE)
17	IT	1	PUMP MOTOR CABLE (3 PHASE 16-4)
	IT		PUMP MOTOR CABLE (1 PHASE 14-3)
18	SOL	1	SOLENOID VALVE
19	CR	2	RELAY

NOTES:

1. ALL WIRES ARE IDENTIFIED WITH A WIRE MARKER.
2. CAM SWITCH TR-1 IS CLOSEST TO THE TIMER MOTOR.
3. NUMBERS IN SQUARE BOXES ARE NUMBERS AT THE TERMINAL BLOCKS.
4. CONTROL WIRES ARE RED OR WHITE #16 GA. A.W.G. MTW, 600 V, 105°C.
5. HEATER WIRES ARE BLACK #8 GA. A.W.G. MTW 600 V 105°C.
6. MOTOR CIRCUIT WIRES ARE #12 GA. A.W.G. MTW 600 V. 105°C AND TYPE SJOW-A CORD 14/3 FOR 1 PHASE OR 16/4 FOR 3 PHASE, 300V, 90°C.

TOLERANCES UNLESS OTHERWISE NOTED:
FRACTIONAL ±
DECIMAL ±

ISSUE	DESCRIPTION	BY	DATE
RECORD OF CHANGES			

BLAKESLEE
CHICAGO, ILLINOIS
Commercial Dishwashing & Kitchen Equipment — Since 1880 —

WIRING DIAGRAM
UNDER COUNTER DISHWASHER 208/240 VOLT

DWN. BY	H.G.	SCALE	N.T.S.	DATE
FIRST MADE FOR		MODEL	UC-21	DWG. NO.


BLAKESLEE