

SteamScrubber® and FlaskScrubber™

Models 4400000, 4400300, 4400400, 4420000, 4420300, & 4420400
4400001, 4400301, 4400401, 4420001, 4420301, 4420401

Serial # 9409062425 to 3-98
~~CURRENT~~

Parts Manual

Introduction

This Parts Manual for the Labconco SteamScrubber™ and FlaskScrubber™ Laboratory Glassware Washers is carefully designed to be as accurate as possible. However, the product design is subject to change without notice. Please feel free to call the Labconco Technical Services Department at (800) 821-5525 to verify all part numbers for accuracy. This manual pertains only to models and serial numbers listed on the front cover of this manual.

To locate the model and serial number of the glassware washer, please look on the exterior of the machine, in the lower right hand corner of the bottom of the washer, underneath the lower panel. This information is critical in identifying the proper parts for the machine.

All parts referenced in this manual can be purchased directly from Labconco Corporation's Customer Service Department at (800) 821-5525. Orders may also be faxed to us at (816) 363-0130. All orders must meet or exceed the minimum order purchase amount (\$25.00).



*Protecting your
laboratory environment*

LABCONCO®

Labconco Corporation

8811 Prospect Avenue

Kansas City, Missouri 64132-2696

816-333-8811

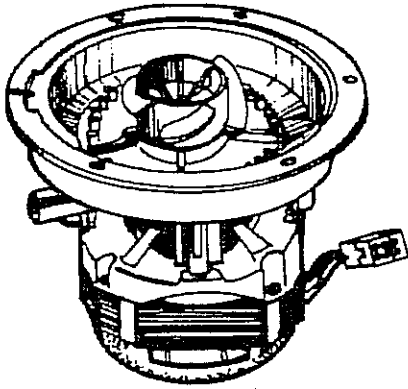
800-821-5525

FAX 816-363-0130

E-MAIL labconco@labconco.com

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44871-00P Complete Pump Kit

Motor/Pump Assembly

All Models

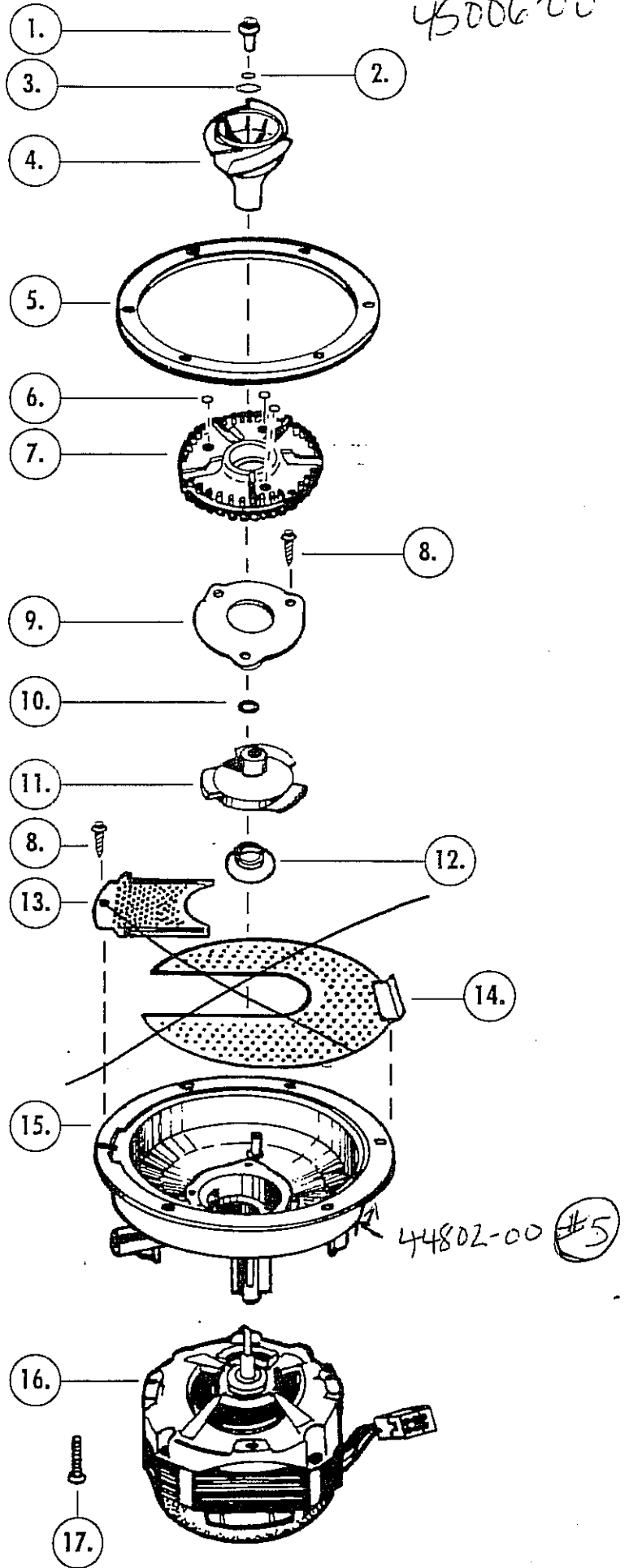
1. 44652-00 Screw
2. 19244-00 Sealing Washer
3. 44899-00 Wash Impeller Spacer
4. 44874-00 Wash Impeller
5. ~~44690-00~~ Gasket-Pump *44802-00*
6. 44681-00 Spacer (3)
7. 44649-00 Separator & Grid
8. 44892-00 Screw (1)
9. 44828-00 Drain Cover
10. 44647-00 "O" Ring
11. 44824-00 Drain Impeller Assy.
12. 44858-00 Seal-Head Assy.
13. 44825-00 Screen Holder
14. 44947-00 Screen
15. 44740-00 Pump Housing
16. 44642-00 Motor Assembly, 115V
17. 44653-00 Screw (4)

44802-00 gasket under housing

230V, 50Hz parts:

44871-01P Complete Pump Kit

16. 44690-00 Motor Assembly



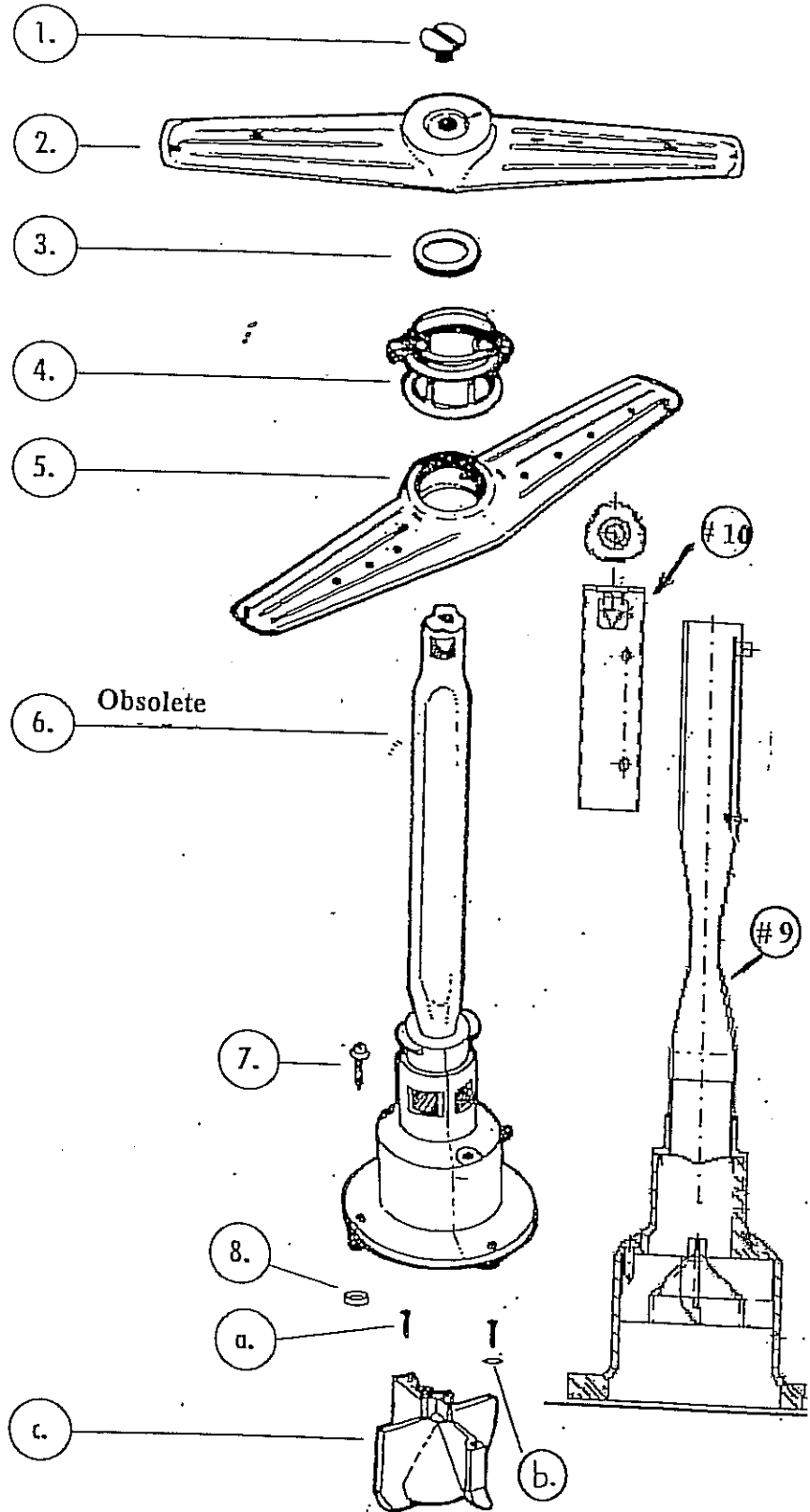
Water Distribution System

Steam Scrubber Models Only

1. 44521-00 Screw
2. 44394-00 Upper Distributor Arm
3. 44499-00 Bearing Seal
4. 44392-00 Wash Arm Bearing And Seal
5. 44389-00 Lower Distributor Arm
6. 44398-00 Case Diffusion Assembly
includes:
 - a. 44567-00 Screw
 - b. 44500-00 Washer, Vane Retention
 - c. 44655-00 Straightening Vane
7. 18820-16 Screw (3)
8. 44681-00 Spacer (3)

After 3/98—Replacement for part # 6!

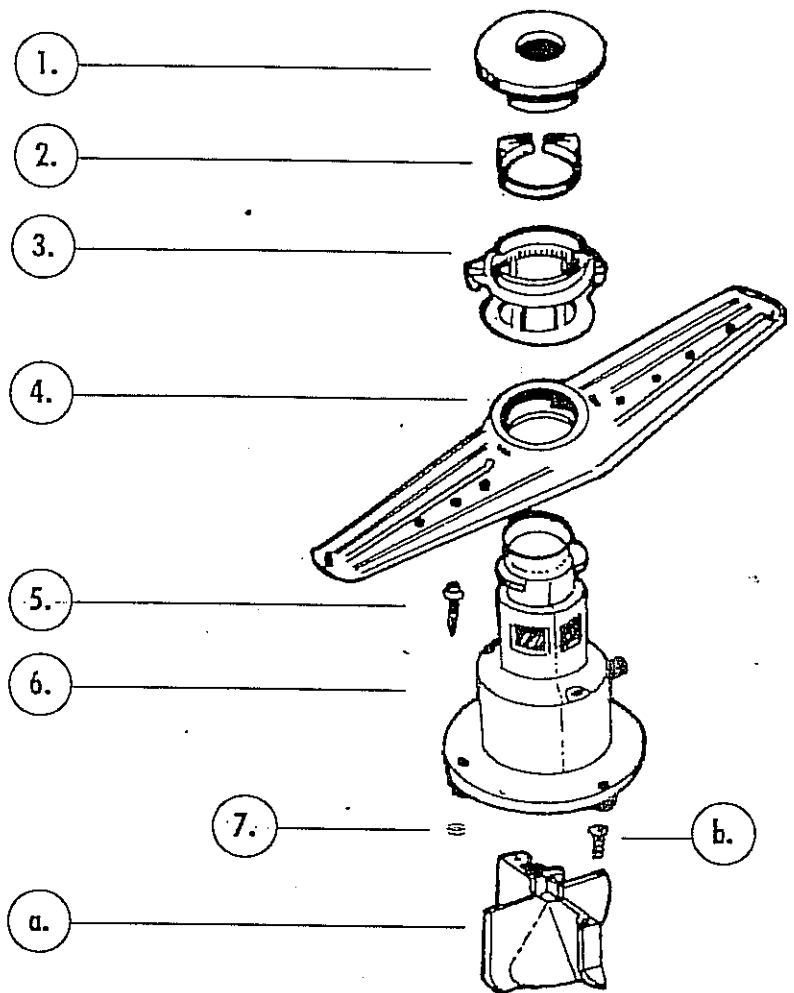
9. 45099-00 Case Diffusion Assy.
10. 45146-00 Tower & Plug Assy.



Water Distribution System

FlaskScrubber Models Only

1. 44488-00 Flexible Coupling
2. 44628-00 Diaphragm Clamp
3. 44392-00 Wash Arm Bearing And Seal
4. 44389-00 Lower Distributor Arm
5. 18820-16 Screw (3)
6. 44402-00 Case Diffusion Assembly
 - includes:
 - a. 44655-00 Straightening Vane
 - b. 44567-00 Screw
7. 44681-00 Spacer



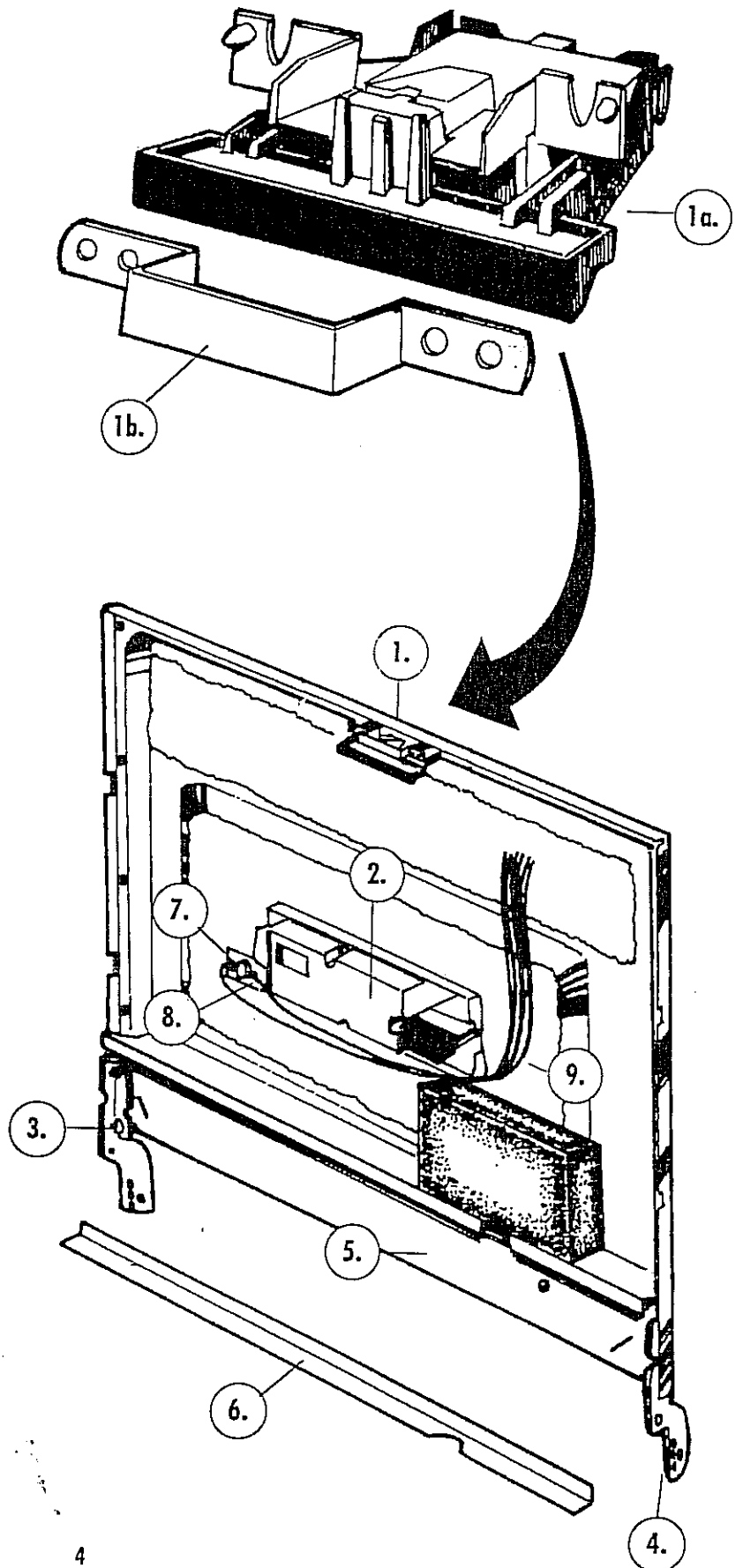
Inner Door Assembly, Latch & Hinge

All Models

- ^P
1. 44845-00 Latch Assembly, 115V
includes:
 - 1a.) 44849-00 Door Switch
 - 1b.) 44948-00 Latch Support
 2. 44981-00 Detergent Cup, 115V
 3. 44528-00 Left Hinge
 4. 44526-00 Right Hinge
 - 44724-00 R & L Hinge Screws (4)
 - 44500-00 R & L Hinge Washers (2)
 5. 44610-00 Door Baffle Assy.
 6. 44326-01 Baffle, Inner Door
 7. 44112-00 Thermostat
 8. 44982-00 Thermostat Bracket
 9. 44888-00 Wiring Harness, 115V

230V, 50Hz parts:

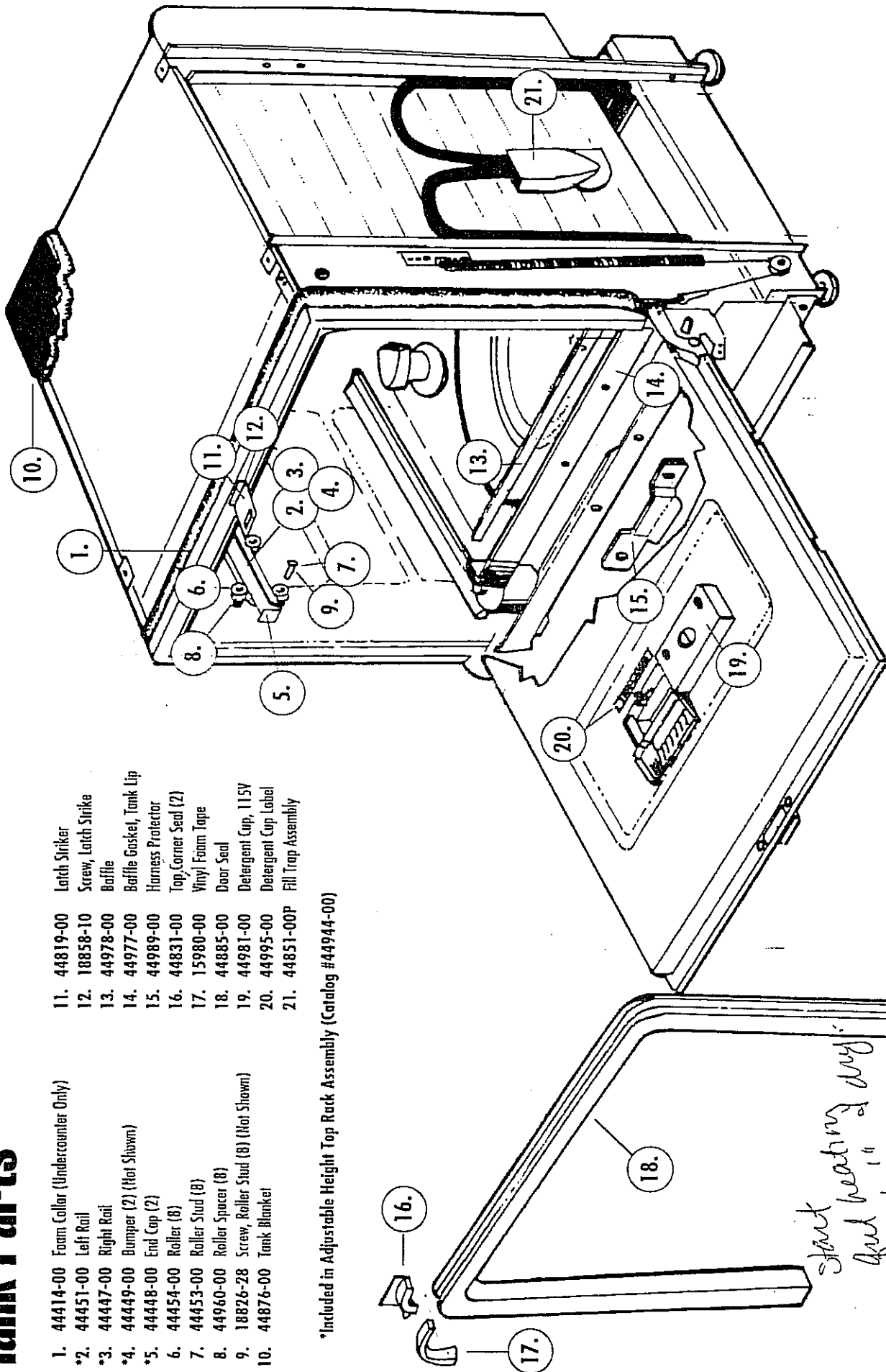
1. 44845-01 Latch Assembly
- 1a. 44849-00 Door Switch (2 for 230V)
2. 44981-01 Detergent Cup
9. 44889-00 Wiring Harness



Tank Parts

- | | | | |
|--------------|------------------------------------|---------------|-------------------------|
| 1. 44414-00 | Form Collar (Undercounter Only) | 11. 44819-00 | Latch Striker |
| *2. 44451-00 | Left Rail | 12. 18858-10 | Screw, Latch Strike |
| *3. 44447-00 | Right Rail | 13. 44978-00 | Baffle |
| *4. 44449-00 | Bumper (2) (Hot Showm) | 14. 44977-00 | Baffle Gasket, Tank Lip |
| *5. 44448-00 | End Cap (2) | 15. 44989-00 | Harness Protector |
| 6. 44454-00 | Roller (8) | 16. 44831-00 | Top, Corner Seal (2) |
| 7. 44453-00 | Roller Stud (8) | 17. 15980-00 | Vinyl Foam Tape |
| 8. 44960-00 | Roller Spacer (8) | 18. 44885-00 | Door Seal |
| 9. 18826-28 | Screw, Roller Stud (8) (Hot Showm) | 19. 44981-00 | Detergent Cup, 11.5V |
| 10. 44876-00 | Tank Blanket | 20. 44995-00 | Detergent Cup Label |
| | | 21. 44851-00P | Fill Trap Assembly |

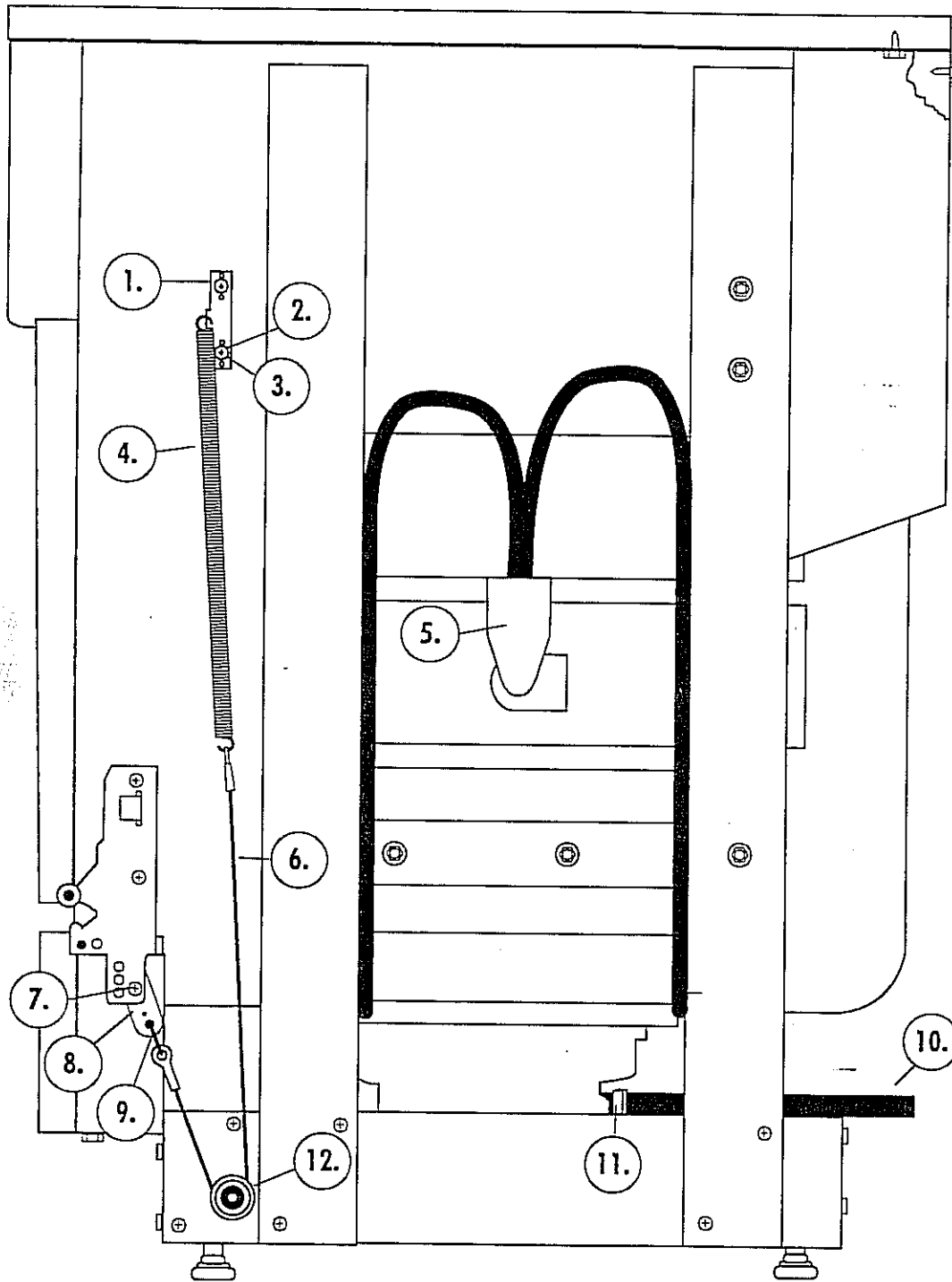
*Included in Adjustable Height Top Rack Assembly (Catalog #44944-00)



230V Parts
44981-01 Detergent Cup

bottom
5 door seal 98-new washer 45015

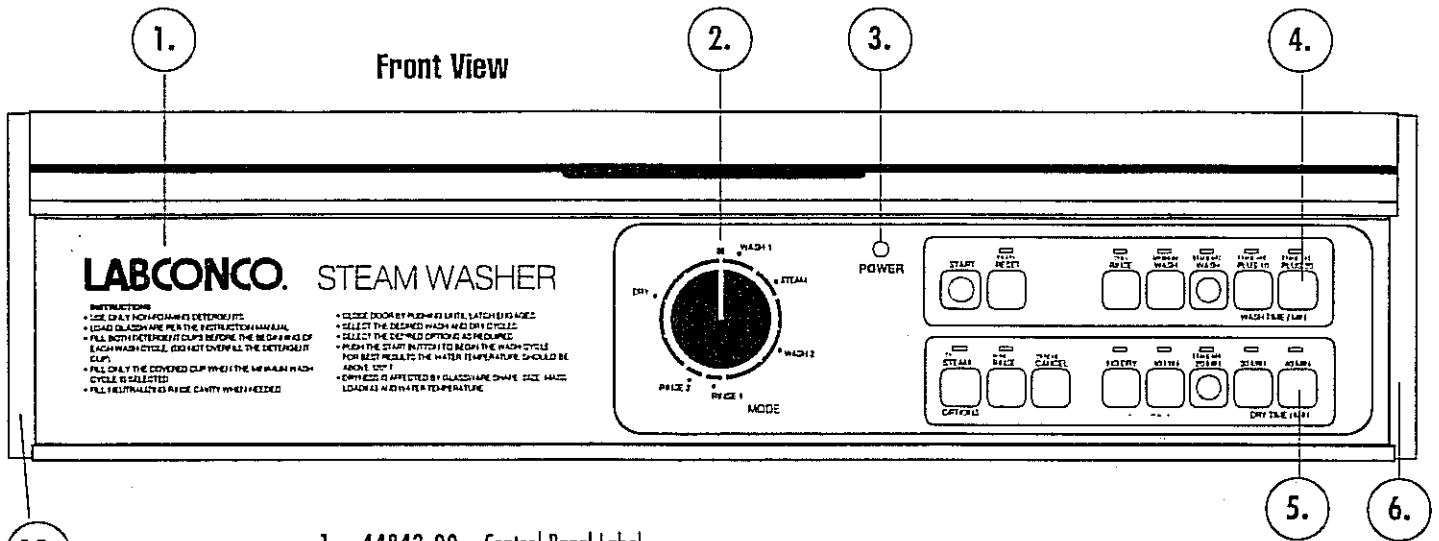
Side View Of Tank



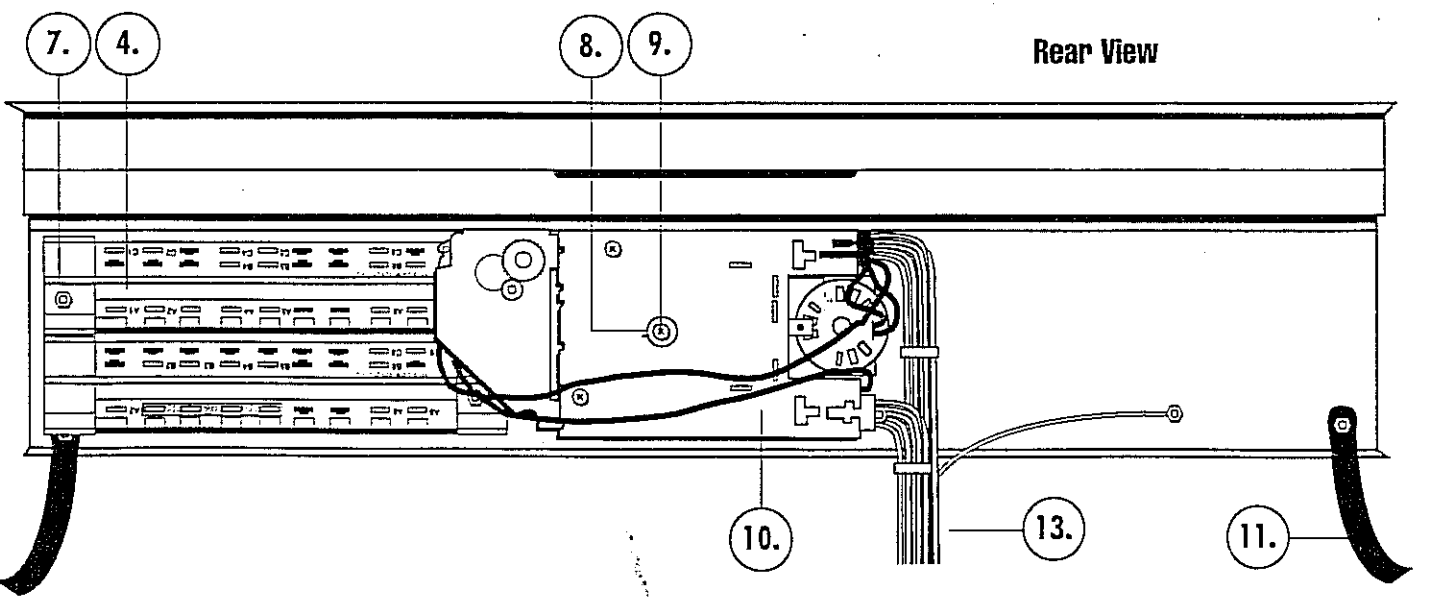
- | | | | |
|--------------|--------------------|--------------|------------------|
| 1. 44990-00 | Spring Retainer | 7. 44291-00 | Spring Pin |
| 2. 19109-08 | Lockwasher | 8. 44911-00 | Door Spring Hook |
| 3. 19107-15 | Screw | 9. 19719-00 | "S" Hook |
| 4. 44983-00 | Spring | 10. 44861-00 | Drain Hose |
| 5. 44851-00P | Fill Trap Assembly | 11. 14888-00 | Hose Clamp |
| 6. 44984-00 | Cable | 12. 18614-00 | Pulley |

Control Panel Assembly

All Models

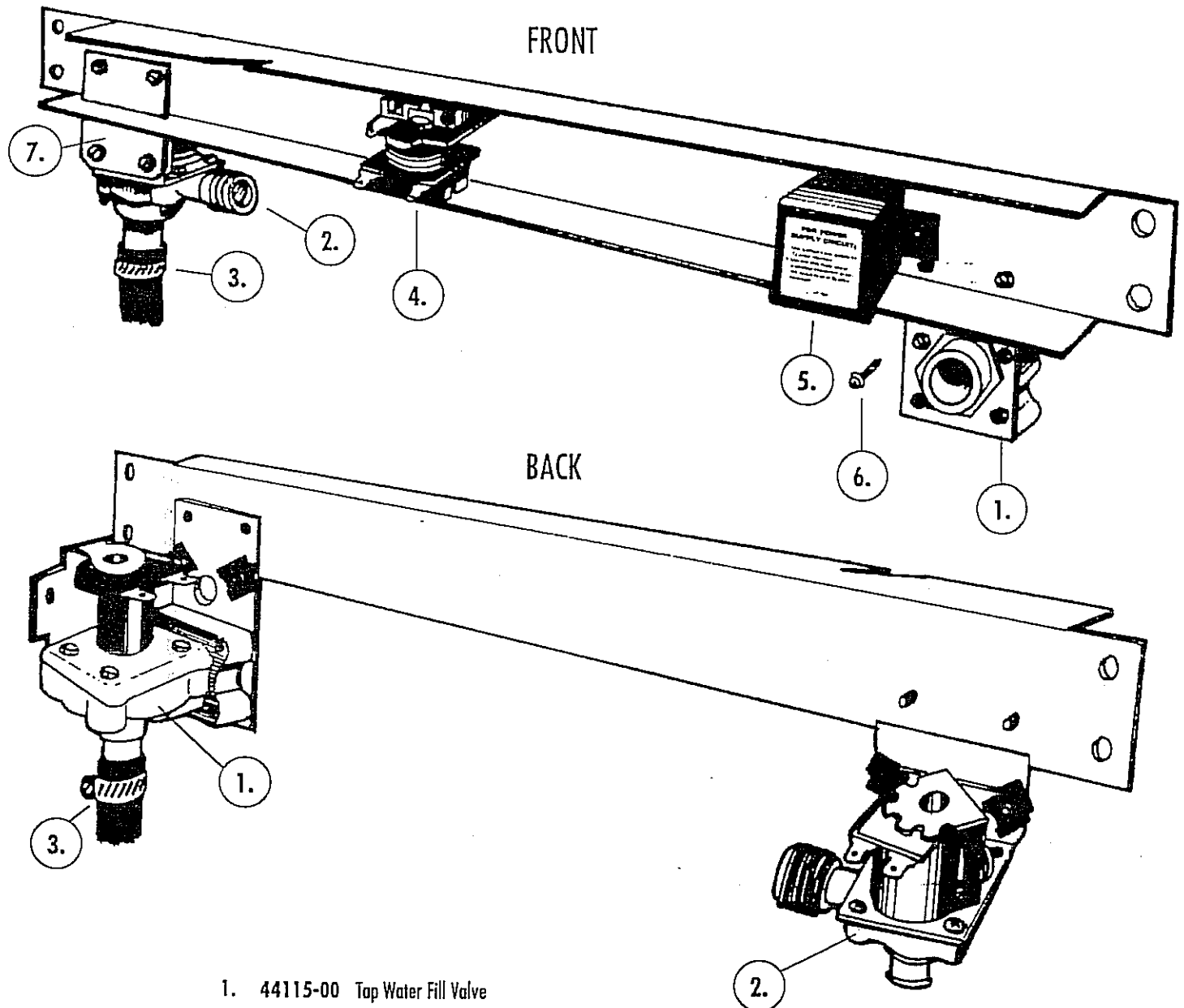


- | | | |
|------------|--|--|
| <p>12.</p> | <ol style="list-style-type: none"> 1. 44843-00 Control Panel Label 2. 44830-00 Timer Indicator Dial 3. 78273-00 Lamp Indicator Assembly 4. 44821-00 7-Position Switch 5. 44820-00 8-Position Switch 6. 44811-00 RH End Cap 7. 44951-00 Switch Support 8. 19114-08 Flat Washer 9. 1887036 Screw 10. 44854-00P Timer 11. 44952-00 Restraint Strap 12. 44811-01 LH End Cap 13. 44888-00 Wiring Harness, 115V | <p>230V, 50Hz Parts</p> <ol style="list-style-type: none"> 10. 44853-01 Timer 13. 44889-00 Wiring Harness |
|------------|--|--|



Support Channel Assembly

All Models



- 1. 44115-00 Tap Water Fill Valve
- 2. 44113-00 Purified Water Fill Valve
- 3. 14913-00 Hose Clamp
- 4. 44105-00 Start Relay
- 5. 44368-00 "J" Box Cover
- 6. 44501-00 "J" Box Screw
- 7. 44883-00 Purified Valve Bracket

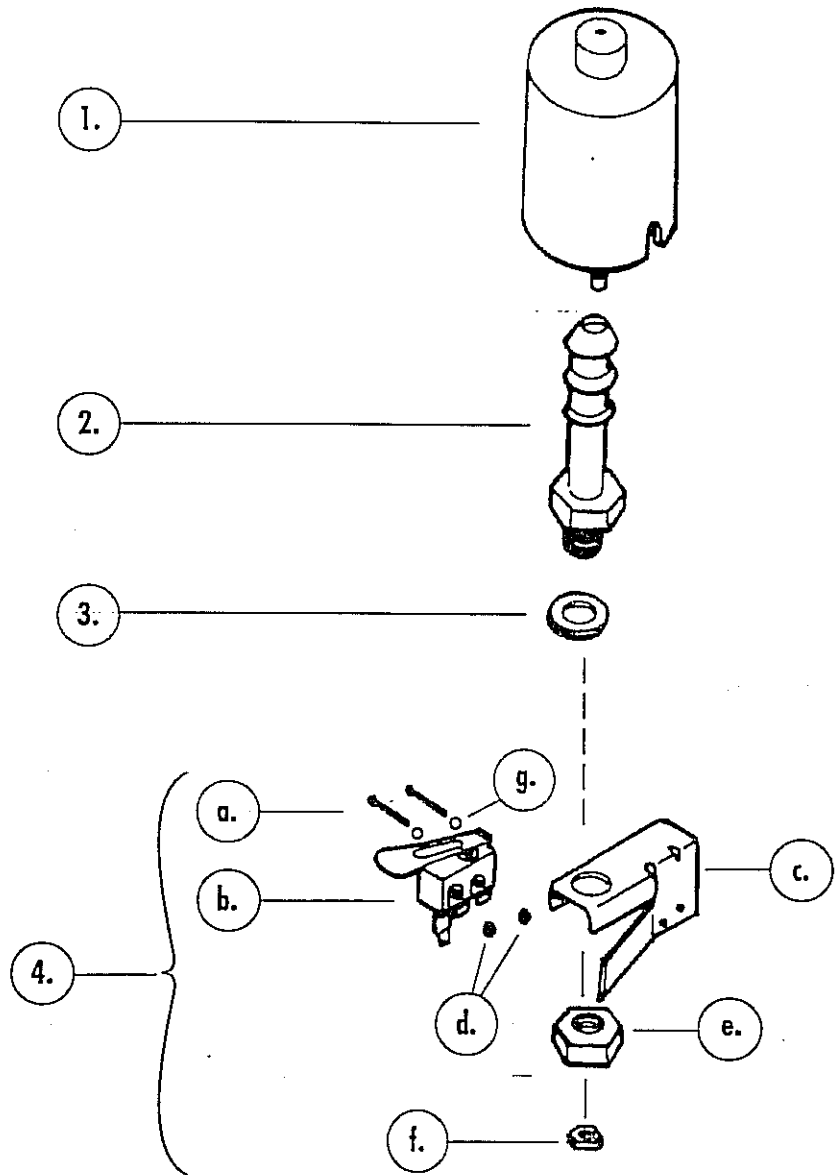
230V, 50Hz Parts

- 1. 90816-00 Tap Water Fill Valve
- 2. 44694-00 Purified Water Valve
- 4. 44688-00 Start Relay

Float Switch Assembly

All Models

1. 44352-00 Float
2. 44353-00 Float Guide
3. 16461-00 Washer
4. 44355-01P Switch Assembly
includes:
 - a.) 18861-10 Screw #4 x 5/8 (2)
 - b.) 13030-00 Micro Switch
 - c.) 44356-00 Float Bracket
 - d.) 44546-00 Nut # 4-40
 - e.) 44534-00 Hex Jamb Nut 5/8-18
 - f.) 19065-17 Hexnut #10-24
 - g.) 44715-00 Washer, Flat Fiber (2)



Heater Parts

All Models

Steam Heater

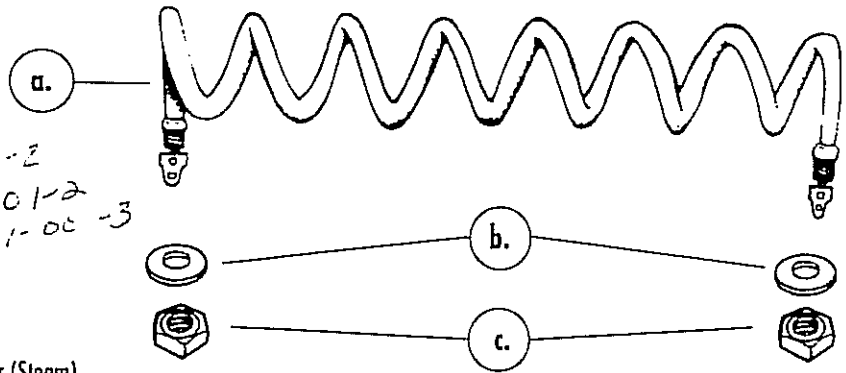
44719-00 Steam Heater includes:

- a. 44260-00 Helical Heater
- b. 44556-00 Rubber Washer
- c. 44536-00 Nut
- d. 44681-00 Spacer
(not shown)

230V, 50Hz Parts

- a. 44700-00 Heater (Steam)

44536-2
1924401-2
44681-00-3



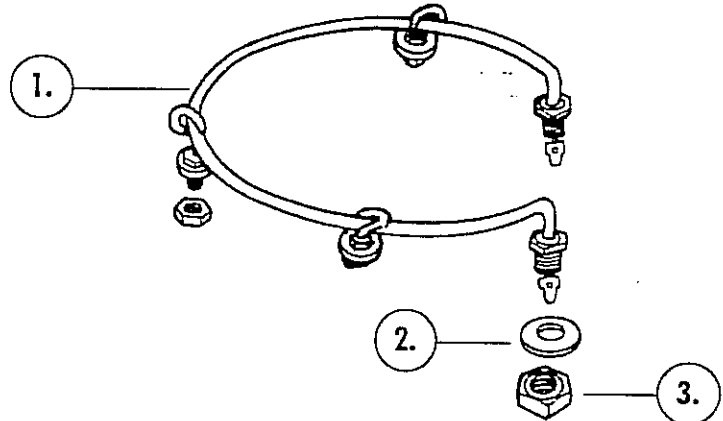
Sump Heater

44762-00 Sump Heater Kit includes:

- 1. 44261-00 Sump Heater
- 2. 44556-00 Rubber Washer
- 3. 44536-00 Nut

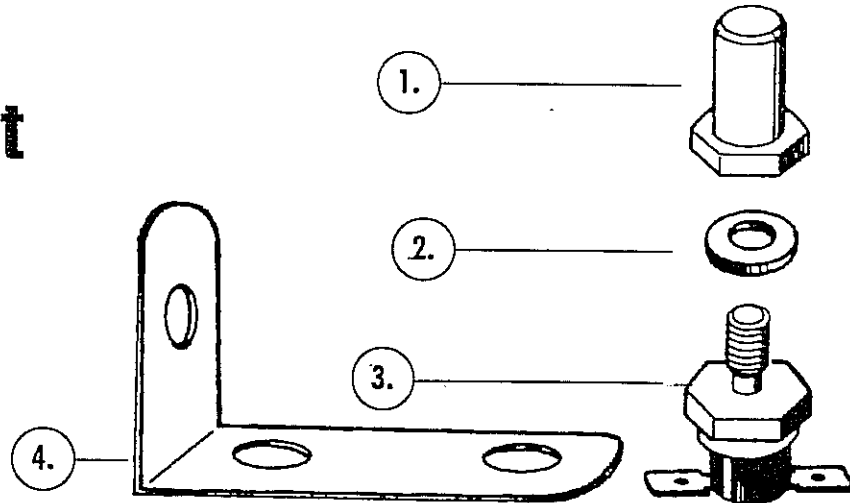
230V, 50Hz Parts

- 1. 44699-00 Sump Heater



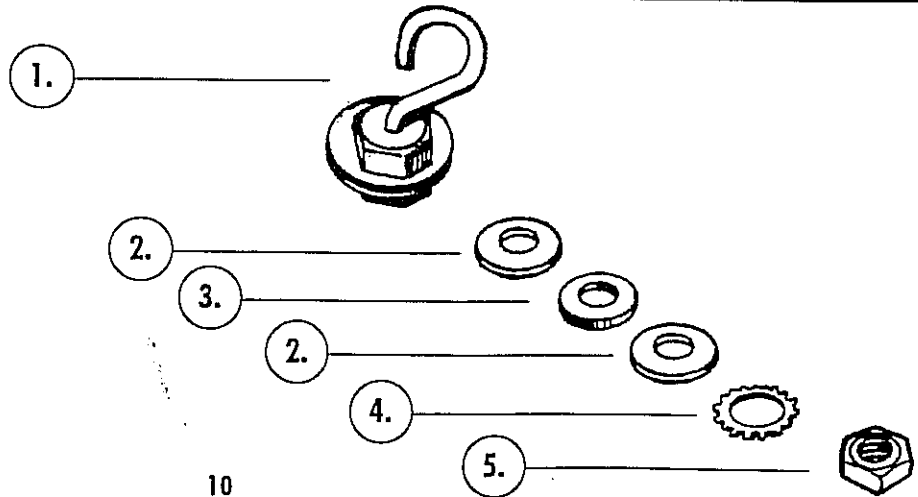
Tank Thermostat

- 1. 44535-00 Nut Head
- 2. 16460-00 Rubber Washer
- 3. 44267-00 Limit Thermostat
- 4. 44965-00 Heater Holder



Heater Holder

- 1. 44961-00 Heater Holder
- 2. 44573-00 Washer
- 3. 16460-00 Rubber Washer
- 4. 44574-00 Star Washer
- 5. 44575-00 Hex Nut



Blower & Shroud Assembly

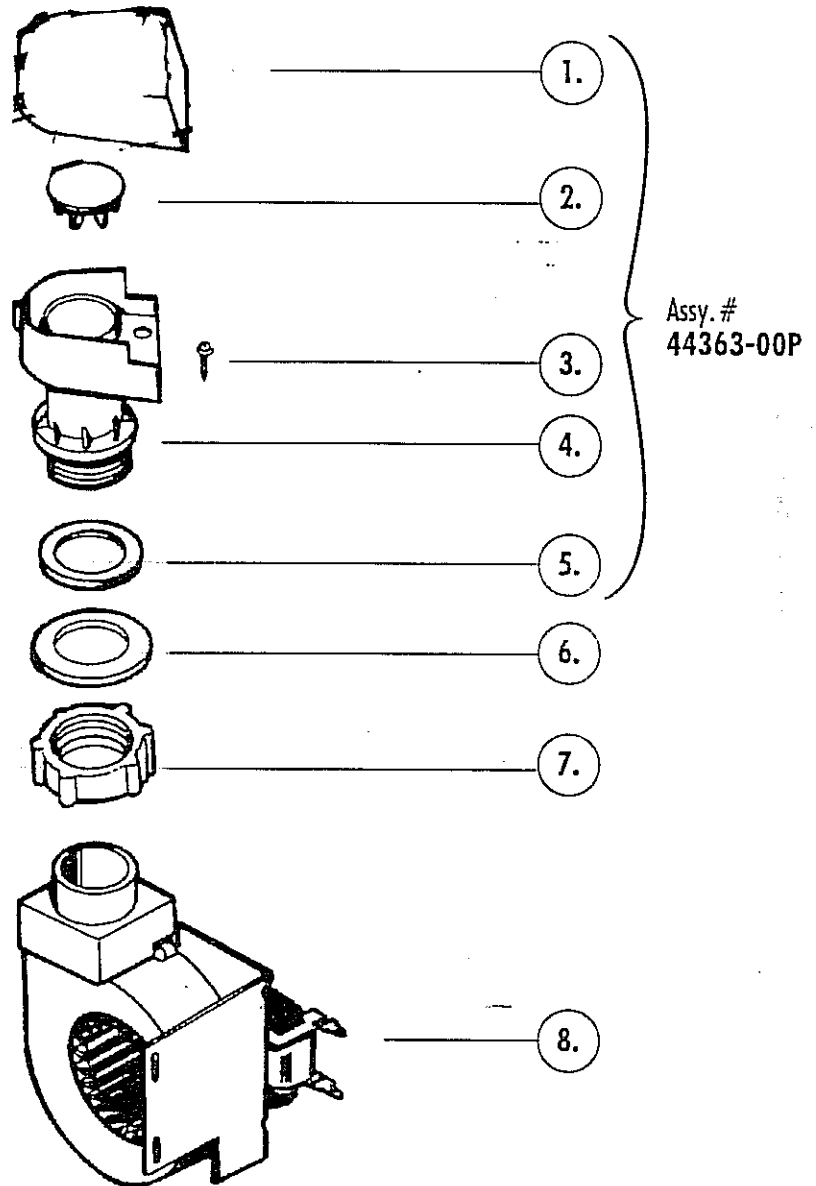
SteamScrubber Models

1. 44365-00 Cover
2. 44366-00 Cap
3. 18948-08 Screw #8 x 1/2 S.S.
4. 44364-00 Housing
5. 44367-00 Gasket
6. 44054-00 Washer, Blower Seal
7. 44362-00 Nut, Blower Housing
8. 44908-00 Blower, Motor Assy.

includes:

- 44371-00 Housing
- 44907-00 Bracket
- 44373-00 Adaptor
- 19065-15 Nut, Hex (2)
- 44516-00 Screws (3)
- 44372-00 Impeller

- *44463-00 Motor
- 19105-08 Lock Washer (2)
- 19113-10 Washer (2)



230V, 50Hz Parts

- 8. 44908-01 Blower Motor Assembly
- *44702-00 Motor

Vacuum & Blower System

FlaskScrubber Models Only

'90- 4418500-P Blower

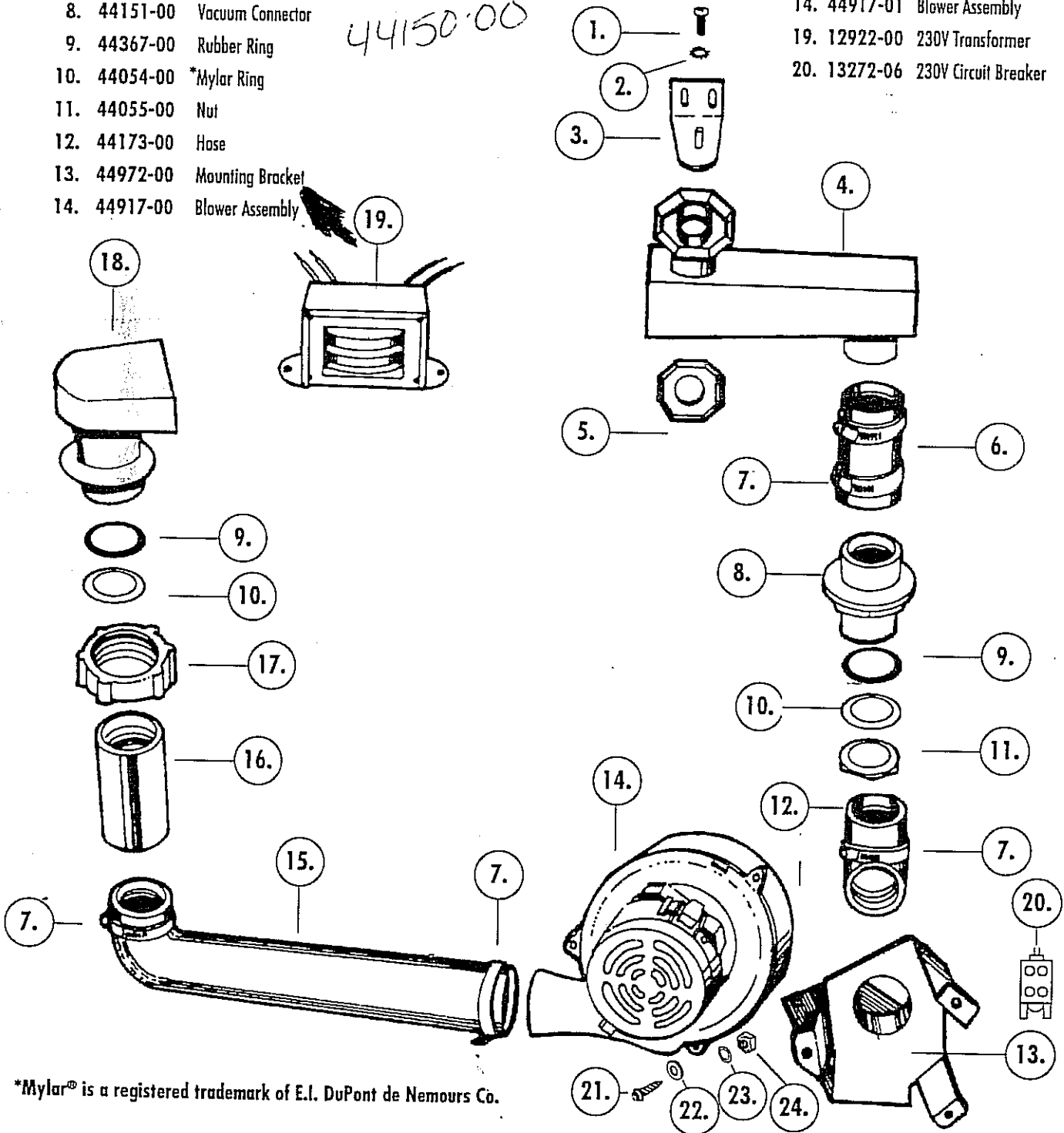
1624500 Rubber Hose
from VAC.

- | | |
|-------------------------------|------------------------------------|
| 1. 18869-08 Screw | 15. 44921-00 Hose |
| 2. 19105-10 Lock Washer | 16. 44472-00 Pipe |
| 3. 44161-00 Bracket | 17. 44362-00 Nut |
| 4. 44282-00 Vacuum Duct Assy. | 18. 44363-00P Tube & Hood Assy. |
| 5. 44287-00 Gasket | 19. 12921-00 115V, Transformer |
| 6. 44174-00 Hose | 20. 13272-05 115V, Circuit Breaker |
| 7. 44196-00 Clamp (2) | |
| 8. 44151-00 Vacuum Connector | |
| 9. 44367-00 Rubber Ring | |
| 10. 44054-00 *Mylar Ring | |
| 11. 44055-00 Nut | |
| 12. 44173-00 Hose | |
| 13. 44972-00 Mounting Bracket | |
| 14. 44917-00 Blower Assembly | |

230V, 50Hz Parts

- | |
|-----------------------------------|
| 14. 44917-01 Blower Assembly |
| 19. 12922-00 230V Transformer |
| 20. 13272-06 230V Circuit Breaker |

44150-00



*Mylar® is a registered trademark of E.I. DuPont de Nemours Co.

Basket Assemblies

44924-00 Top Rack Insert (Adjustable Height)

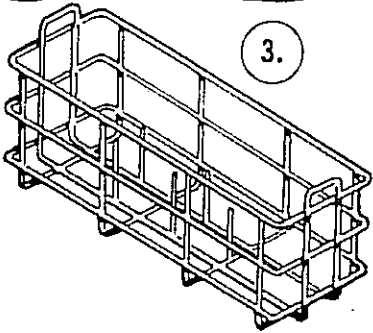
SteamScrubber Models

44011-00 Upper Rack

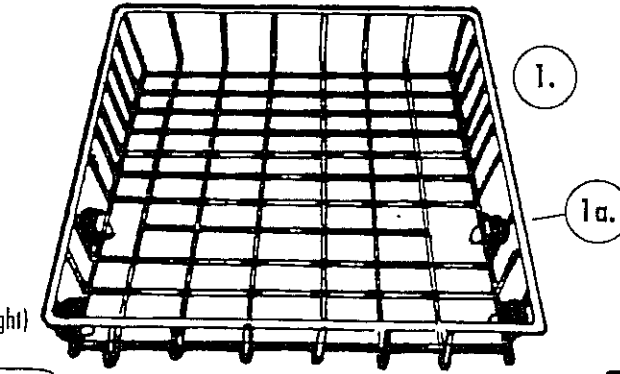
1. 44011-00 Upper Rack, Roller Assy.
- 1a. 44214-00 Rollers, Upper Rack
2. 44012-00 Lower Rack, Roller Assy.
- 2a. 44215-00 Rollers, Lower Rack
3. 44015-00 10 Pin Insert

FlaskScrubber Models

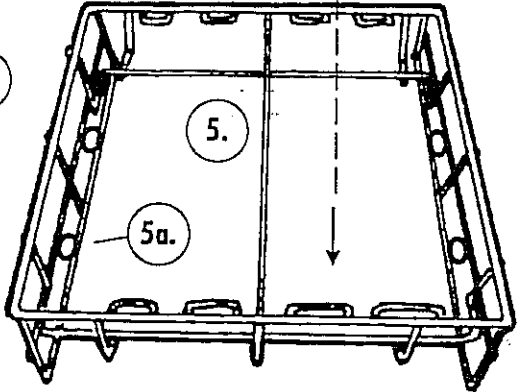
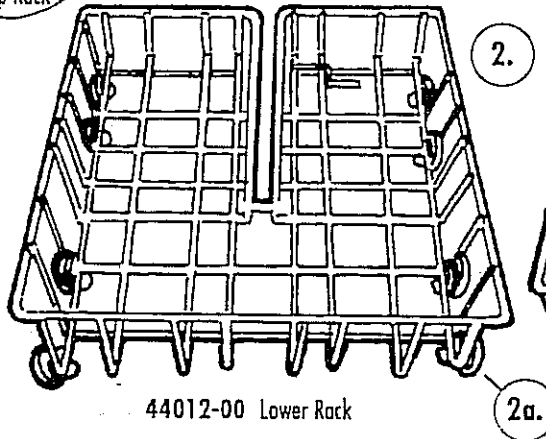
4. 44924-00 Top Rack Insert (Adj. Height)
5. 44944-00 Top Rack (Adj. Height)
- 5a. 44214-00 Rollers for Adj. Height Top Rack



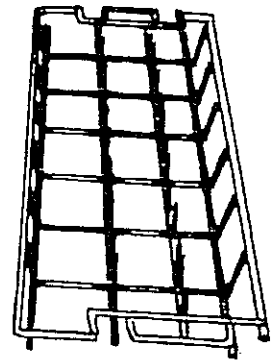
44015-00 10 Pin Insert



44012-00 Lower Rack



44944-00 Top Rack (Adjustable Height)



Purified Water Pump Assembly

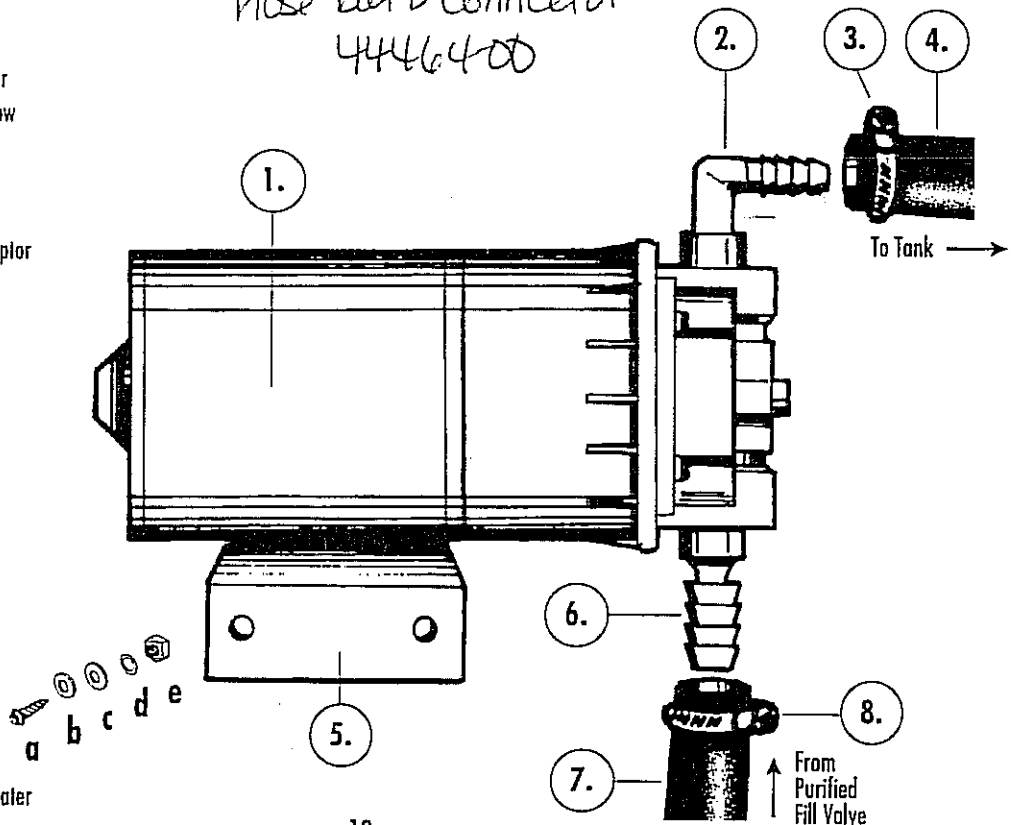
All Models

*use barb connector
4446400*

1. 44669-00 Pump, Purified Water
2. 15503-00 Connector, Male Elbow
3. 14913-00 Clamp
4. 44490-02 Hose
5. 44979-00 Plate
6. 15504-00 Connector, Male Adaptor
7. 44490-00 Hose
8. 14913-00 Clamp

HARDWARE & GASKET FOR MOUNTING PUMP:

- a. 18826-18 Screw
- b. 19112-10 Plain Washer
- c. 44980-00 Washer
- d. 19105-08 Lock Washer
- e. 19065-15 Nut



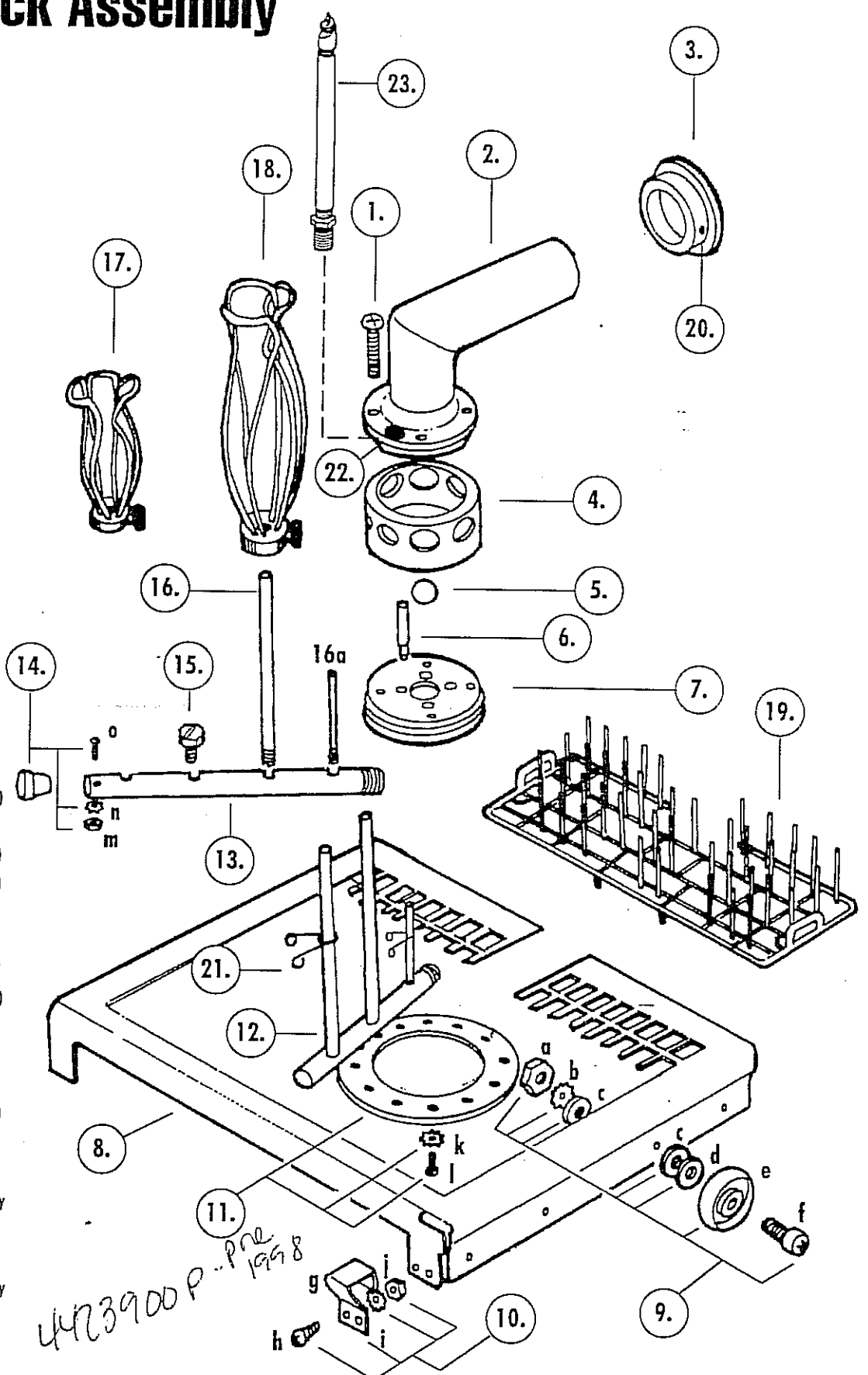
230V, 50Hz Parts

1. 44669-01 Pump, Purified Water

Spindle Rack Assembly

FlaskScrubber

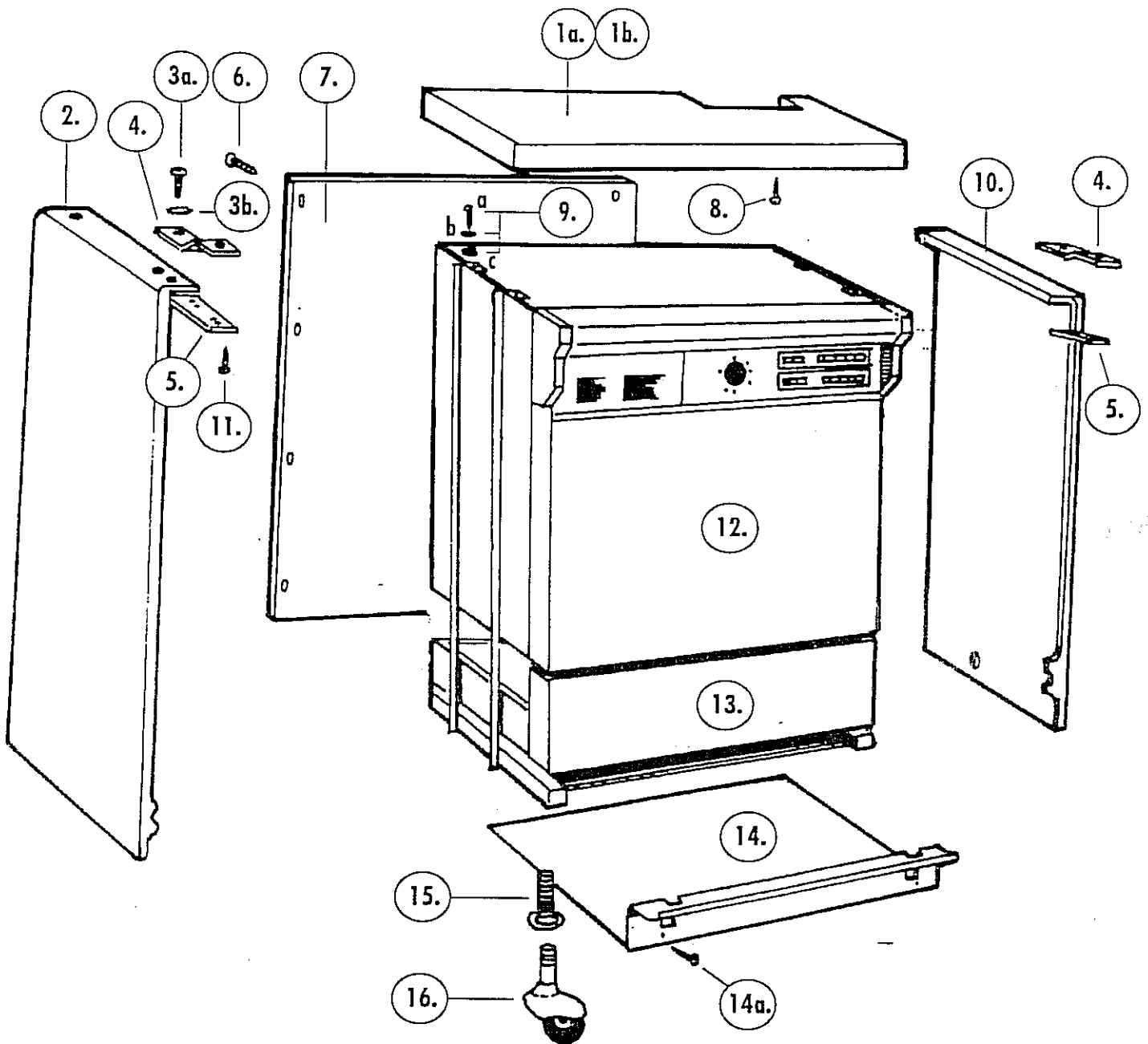
1. 18825-36 Screw (4)
2. 44139-00 Vacuum Tube Assy.
3. 44120-00 Seat Assy.
4. 44241-00 Hub
5. 44180-00 Plastic Ball
6. 44135-00 Ball Pin (4)
7. 44121-00 Lower Hub Cap
8. 44240-00 Spindle Rack
9. Roller Assembly (8)
 - includes:
 - a.) 19070-17 Nut (8)
 - b.) 19109-10 Lock Washer (8)
 - c.) 19113-10 Flat Washer (16)
 - d.) ~~44253-00~~ 44253-00 Spacer (8)
 - e.) 44254-00 Roller (8)
 - f.) 18855-12 Screw (8)
10. 01-36-639 Spring Assy. (2)
 - order:
 - g.) 44210-00 Rack Spring (2)
 - h.) 18826-08 Screw
 - i.) 19105-08 Lock Washer
 - j.) 19070-15 Nut
11. 44244-00 Retaining Ring
 - also requires:
 - k.) 19105-08 Lock Washer (10)
 - l.) 18826-08 Screw (10)
12. 44242-00 Spindle Arm/3 holes (6)
13. 44242-01 Spindle Arm/4 holes (4)
14. 44245-00 Plug End (10)
 - also requires:
 - m.) 19070-15 Nut (10)
 - n.) 19105-08 Lock Washer (10)
 - o.) 18826-16 Screw (10)
15. 44251-00 Manifold Plug (24)
16. 44774-00 1/4" Spindle (24)
- 16a.) 44773-00 1/8" Spindle (10)
17. 44246-00 4" Glassware Holder (2)
 - includes:
 - 44256-00P Thumbscrew Assembly
18. 44248-00 6" Glassware Holder (2)
 - includes:
 - 44256-00P Thumbscrew Assembly
19. 44049-00 Half Rack
20. 18908-03 Set Screw
21. 44252-00 1/4" Clip Spring (24)
22. 44770-00 Plug
23. 44767-00 Hub Adaptor Assembly
24. 44988-00 1/8" Clip Spring (10)



4423900 P...Pne 1998
 4585 105 -3198-7011 rent

Exterior Parts

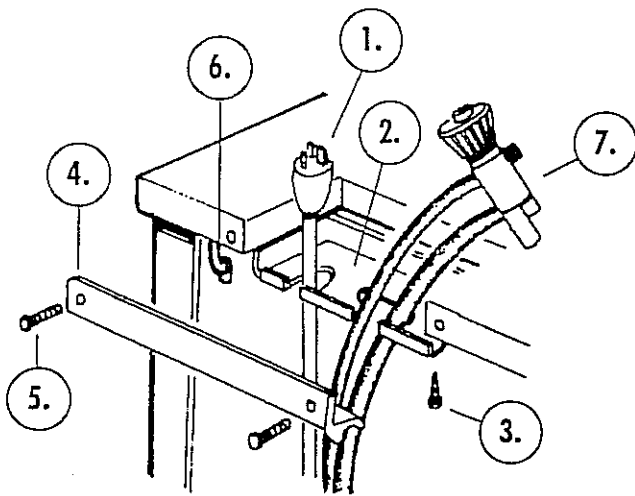
All Models (Including Side Panels and Top for Freestanding and Mobile Models)



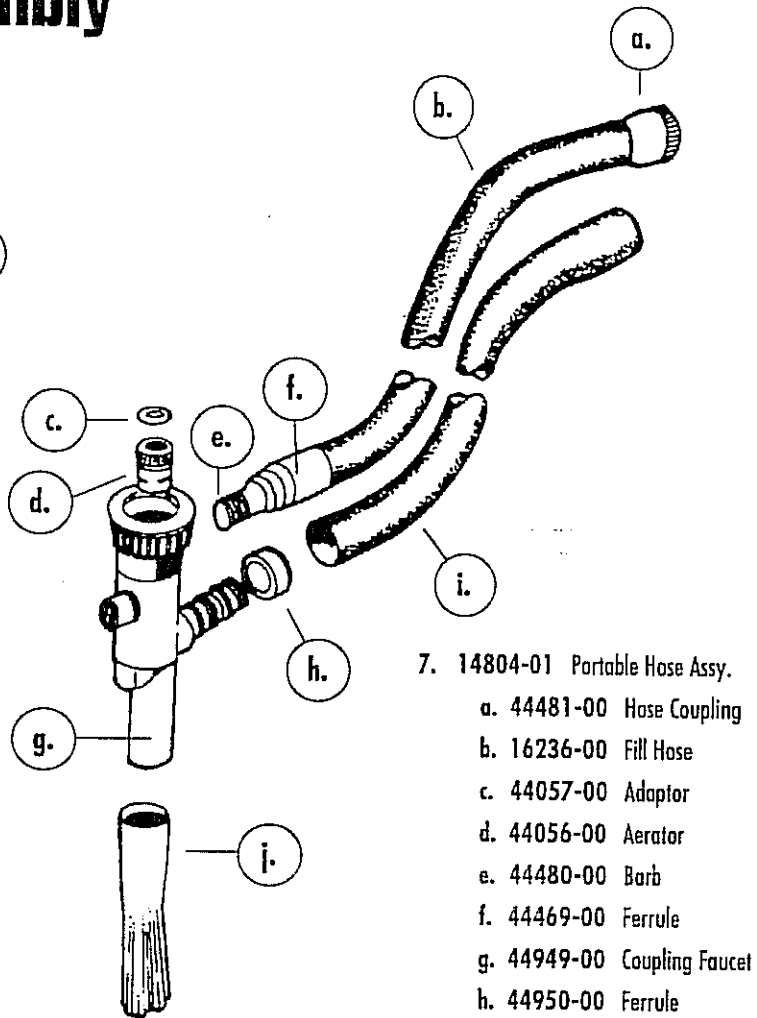
- | | | | | | |
|-----|----------|----------------------------------|------|----------|--|
| 1a. | 44564-00 | Top, Freestanding | 9a. | 44512-00 | Screw - Side Panel to Tabs (4) |
| 1b. | 44078-00 | Top, Mobile | 9b. | 44630-00 | Flat Washer (24) |
| 2. | 44836-01 | Left Side Panel | 9c. | 44566-00 | Tinnerman Nut (4) |
| 3a. | 18869-08 | Screw - Bracket to Nut Plate (4) | 10. | 44833-00 | Right Side Panel |
| 3b. | 19105-10 | Lockwasher (24) | 11. | 44504-00 | Screw - Top to Front Bracket (2) |
| 4. | 44441-00 | Mounting Bracket | 12. | 44878-00 | Front Panel |
| 5. | 44349-00 | Nut Plate | 13. | 44877-00 | Bottom Panel |
| 6. | 44543-00 | Screw - Rear Panel (8) | 14. | 44814-00 | Toe Plate |
| 7. | 44838-01 | Rear Panel | 14a. | 00000-00 | Screw (4) |
| 8. | 44506-00 | Screw - Top to Back (2) | 15. | 18798-00 | Bolt Leveler - Feet (4) Undercounter & Freestanding only |
| | | | 16. | 44882-00 | Mobile Caster (4) |

Mobile Adaptor Assembly

All Mobile Models



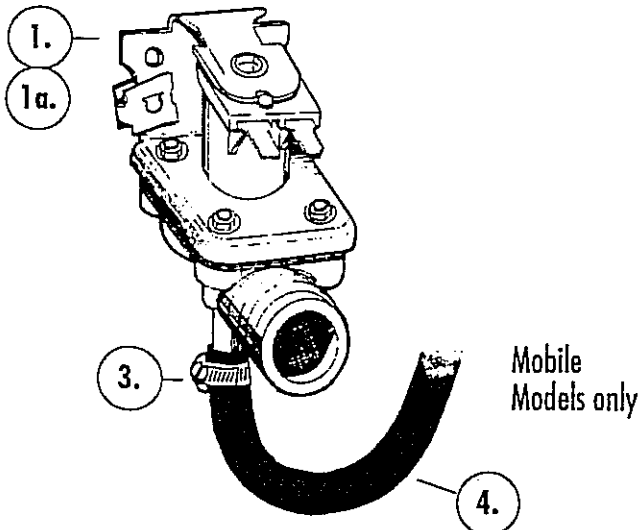
- 1. 13340-00 Power Cord (13369-00, 230V)
- 2. 44444-00 Hose Retainer
- 3. 44506-00 Screw (2)
- 4. 44725-00 Trim Strip
- 5. 44629-00 Screw (2)
- 6. 13497-00 Power Cord Clamp



- 7. 14804-01 Portable Hose Assy.
 - a. 44481-00 Hose Coupling
 - b. 16236-00 Fill Hose
 - c. 44057-00 Adaptor
 - d. 44056-00 Aerator
 - e. 44480-00 Barb
 - f. 44469-00 Ferrule
 - g. 44949-00 Coupling Faucet
 - h. 44950-00 Ferrule
 - i. 44862-00 Drain Hose
 - j. 44443-00 Hula Skirt

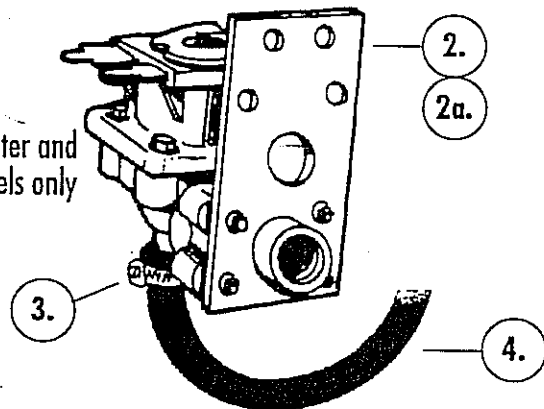
Fill Valve Assembly

Tap Water, All Models



Mobile Models only

Undercounter and Freestanding Models only



- 1. 44114-00 Fill Valve, Mobile
- 2. 44115-00 Fill Valve, Undercounter & Freestanding only
- 3. 14913-00 Clamp
- 4. Fill Tube is part of Fill Trap (44851-00)

230V, 50Hz Parts

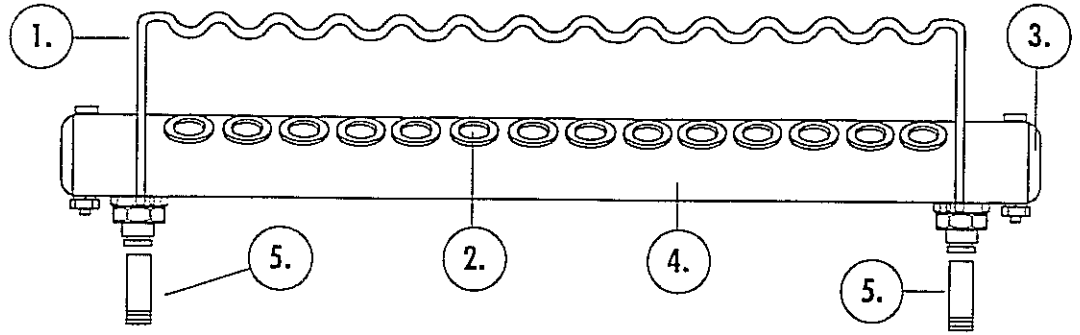
- 1a. 44692-00 Fill Valve, Mobile, 230V
- 2a. 90816-00 Fill Valve,

Undercounter & Freestanding only, 230V

14 Place Pipet Washer Assembly With Spindles

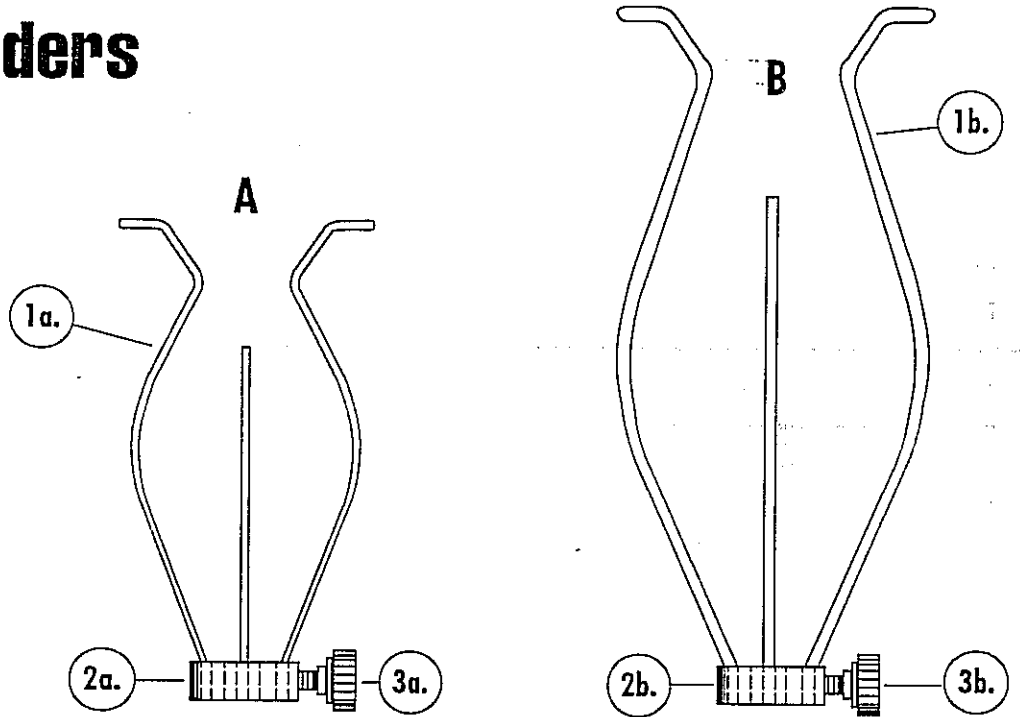
44943-00

- 1. 44789-00 Pipet Support
- 2. 44783-00 Check Valve (14)
- 3. 44778-00 Plug
- 4. 44788-00 Manifold
- 5. 44775-00 Spindle (2)



Glassware Holders

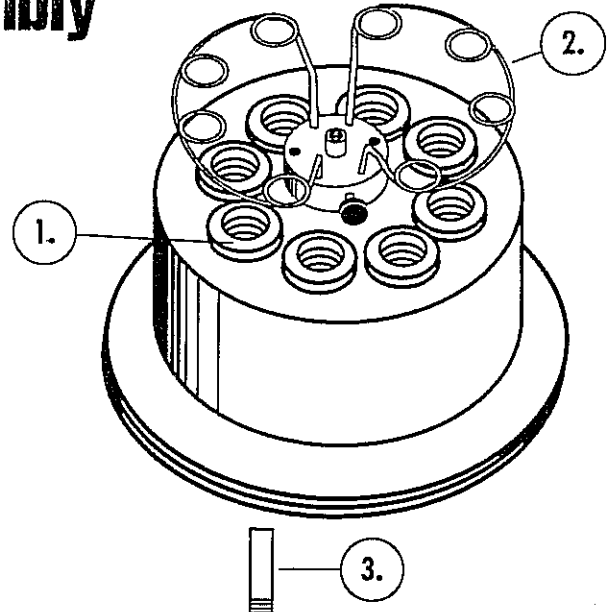
- A. 44246-00 4" Glassware Holder
 - 1. 44247-00 Leg (3)
 - 2. 44250-00 Hub
 - 3. 44256-00 Thumb Screw
- B. 44248-00 6" Glassware Holder
 - 1. 44249-00 Leg (3)
 - 2. 44250-00 Hub
 - 3. 44256-00 Thumb Screw



8 Place Pipet Washer Assembly

44942-00

- 1. 44783-00 Check Valve
- 2. 44791-00 Pipet Support
- 3. 44775-00 Spindle



Washer Part Numbers For Different Manufacturing Dates

FROM 820600001 TO CURRENT MODEL

PART NAME	PART NUMBER	SERIAL NUMBER RANGE
Impeller Kit	44106-00	8206 thru 9102
Impeller Kit	44646-00	910200001 thru 9408012424
Impeller Kit	1 of 44824-00 1 of 44874-00 1 of 44647-00 1 of 19244-00 1 of 44652-00 1 of 44858-00	9409062425 to Current 95 Model
Pump Assembly	44497-00	<i>44405 - start relay</i> thru 9409062425
Pump Assembly	44871-00P	9409062425 thru Current 95 Model
Case Diffusion Assembly for SteamScrubbers	44398-00	All Models
Upper Wash Arm	44394-00	All Models
Lower Wash Arm	44389-00	All Models
Arm Bearing & Seal	44392-00	All Models
Case Diffusion Assembly for SteamScrubbers	44402-00	All Models
Soap Cup	1 of 44268-00 1 of 16459-00 1 of 44269-00 1 of 16463-00 1 of 44317-00 1 of 16462-00	For Units With Serial #'s prior to 9409062425
Soap Cup	44981-00	9409062425 to Current 95 Model
Bi-Metal Assembly	44612-00P	Prior to 9408012424

FROM 820600001 TO CURRENT MODEL (Continued)

PART NAME	PART NUMBER	SERIAL NUMBER RANGE
Clutch Wheel Assembly	44611-00P	Prior to 9408012424
Door Seal	44059-00	820600001 thru 870800787
Door Seal	44263-00	870800788 thru 9408012424
Door Seal	44885-00	9409062425 to Current 95 Model
7-Button Switch	44117-00	820600001 thru 8907
8-Button Switch	44466-00	8907 thru 9408012424
7-Button Switch and 8-Button Switch	44821-00 44820-00	9409062425 to Current 95 Model
Steam & Final Rinse Switch	44109-00	8206 thru 8907
Steam & Final Rinse Switch	44258-00	8907 thru 9408012424
Power Dry Switch	44108-00	8206 thru 8907
Wiring Harness	44478-00	8907 thru 9408012424
Wiring Harness	44888-00	9409062525 to Current 95 Model
Timer	44094-00	8206 thru 8907
Timer	44633-00	8907 thru 9408012424
Timer	44854-00P	9409062525 to Current 95 Model
Steam Heater	44761-00	8206 thru 8907
Steam Heater	44719-00	8907 thru 9408012424
Steam Heater	44719-00	9409062525 to Current 95 Model
Sump Heater	44762-00	8907 thru 9408012424
Sump Heater	44762-00	9409062525 to Current 95 Model

hose Barb inlet valve 4446400

FROM 820600001 TO CURRENT MODEL (Continued)

PART NAME	PART NUMBER ^{UN}	SERIAL NUMBER RANGE
Purified Water Pump	44669-00	8206 thru 9408012424
Purified Water Pump	44895-00	9409062525 to Current 95 Model
Fill Valve <i>tap</i>	44115-00	All Models (Except Mobile) <i>} until '98</i>
Fill Valve <i>OI</i>	44114-00	All Mobile Units <i><</i>
Motor Start Relay	44105-00	All Models
Float	44352-00	All Models
Fill Trap	44361-00	8907 thru 9408012424
Fill Trap	44851-00	9409062425 to Current 95 Models

WASHER SPECIFICATIONS:

Minimum fill water temperature	120°F (49°C)
Water Consumption per fill	2.5 Gallons
Minimum feed water pressure	20 psi
Maximum feed water pressure	120 psi
Element power	1450 watts/4949 btu's
Maximum amps for 115 volt unit	16 amps
Maximum amps for 230 volt unit	8 amps

after '98

	<u>115V</u>	<u>230V</u>	
Fill Valve	1361300	1361301	<i>tap Free Stand Undercove</i>
Fill Valve	4411400	4469200	<i>OI - all tap - mobile</i>

WASHER SEQUENTIAL OPERATION

Glassware washers manufactured with serial numbers beginning 9409062425 are electromechanically timed and controlled. What follows is an explanation of normal wash cycle operation. Refer to the timer flow chart, schematics and selector switch logic as we proceed.

1. As the start button is depressed, timer contact 7B (Momentary Start) is closed and the rapid advance motor is energized. Almost immediately, timer contact 2T (Timer Motor) is closed which causes the "power on" indicator and the timer motor to operate. Timer contact 7B opens and contact 4T (Tap Fill Valve) closes. 4T will remain closed for approximately three minutes allowing water to enter the machine. This is an extended fill. At the same time that 4T closes, contact 8B (Pump Motor) also closes. Timer contact 0B (Drain Phase Winding) is closed as well. As long as 8B and 0B are closed the unit will drain. Contact 8B remains closed for approximately 45 seconds. The net effect of this is that for the first 45 seconds of the initial fill, the unit drains simultaneously to purge the heated tap water supply. The sump heater will operate via timer contact 2T, one of the tank limit thermostats and the control panel switch logic. The sump heater will remain energized for the duration of the cycle and as long as the 140°F limit of the tank thermostat is not surpassed.
2. As timer contact 4T (Tap Fill Valve) opens, contact 8B (Pump Motor) closes. Since contact 0T (Wash Phase Winding) is also closed, the unit begins a wash phase. Contacts 8B and 0T will remain closed for approximately five minutes. After this time contacts 8B; and 0T open and the unit will pause for approximately 28 seconds. During this pause, timer contact 9B (Short Wash TM) closes. This contact will remain closed for the duration of the entire cycle. 9B provides current flow through the sump heater via the black block of the timer if minimum wash cycle is selected at the control panel.
3. At the end of the pause, contact 8B (Pump Motor) closes again. Since contact 0B (Drain Phase Winding) is also closed, the unit drains. 8B will remain closed for approximately 30 seconds. As 8B opens, the pump motor deactivates to end this drain.
4. As 8B opens, contact 4T (Tap Fill Valve) closes to begin the second fill. 4T will remain closed for approximately two minutes. As 4T opens, the second fill is complete.
5. At the completion of the second fill, the unit will steam if selected. This is accomplished through contacts 4B (Steam Heater/Door T stat) and 6T (Steam Heater/Tank T stat). Both of these contacts close at the end of the second fill. This allows operation of the steam heater through two pathways. This ensures a high temperature gain since the door limit thermostat is satisfied at a higher temperature, 185°F, than the tank limit, 140°F. The unit will steam for approximately ten minutes, at which time contacts 4B and 6T open to end the steam portion of the cycle. If steam is not selected the unit will rapid advance through this portion of the cycle via contact 5B (Steam Bypass/Rapid Advance Motor) and the selector switch.
6. As the steam portion of the cycle ends, timer contact 8B (Pump Motor) closes. Since contact 0T (Wash Phase Winding) is also closed, the unit begins a wash phase. Approximately five seconds later, contact 6B (D-Cup) closes to activate the detergent dispenser. This wash phase will last approximately eight minutes. This is because of the selector switch logic, specifically the normally closed position of the Wash +10 selector switch, and the closing of timer contact 1T (Normal Wash/Rapid Advance Motor). As contact 1T closes, the rapid advance motor is energized through the Wash +10 selector switch and the final nineteen minutes of the wash cycle are bypassed.

7. Approximately six seconds after contact 1T (Normal Wash/RA) opens), contact 8B closes again. Since contact 0B (Wash Phase Winding) is also closed the unit drains. 8B will remain closed for approximately two minutes. The draining of the wash water is accomplished in less than fifty seconds. At the end of those fifty seconds contact 4T (Tap Fill Valve) closes to energize the tap water fill valve solenoid. 4T will remain closed for approximately three minutes. This is another extended fill. The result is the same as for the initial wash fill. The pump drain winding is energized for the first minute of this fill and serves to purge the heated tap water supply. As 8B opens, contact 6B (D-Cup) closes to activate the detergent dispenser for the optional acid rinse agent. Contact 4T will remain closed for another two minutes to complete the first rinse fill.
8. As 4T opens, 8B (Pump Motor) closes. Since 0T (Wash Phase Winding) is also closed, the motor enters a wash phase to perform the first rinse. 8B will remain closed for approximately two minutes. 8B opens and there is a 10 second pause after which 8B closes again. Since 0B (Drain Phase Winding) is also closed, the unit drains. 8B will open after fifty seconds. Approximately three seconds later, timer contact 10T (Purified Fill Valve) closes. If purified rinse is selected at the control panel, the Purified fill valve solenoid will be energized. If purified rinse is not selected, the tap water fill valve solenoid will be energized. Contact 10T will remain closed for approximately two minutes.
9. As 10T opens, contact 8B (Pump Motor) closes. Since 0T (Wash Phase Winding,) is also closed, the unit begins a wash phase for the second rinse. Contact 8B will remain closed for four minutes, the time allowed for the second rinse. 8B will now open and the unit will pause approximately two minutes.
10. Timer contact 8B (Pump Motor) closes again. Since 0B (Drain Phase Winding) is also closed, the unit drains. 8B will remain closed for approximately 110 seconds. The drain is now complete and the unit will perform the selected dry cycle.
11. For all dry cycle options Timer contact 8T (Blower) is closed. The blower will operate throughout the selected dry option. Because timer contact 6T (Steam Heater) is closed throughout the dry cycle, it will operate the steam coil through the selected dry. The sump heater is operated through contact 9B (Short Wash/TM) which is closed throughout the dry cycle. Both heaters are limited by the tank thermostats.
12. If the "no dry" option is selected, the unit will rapid advance to the end of the cycle via the "no dry" selector switch and timer contact 3B (No Drying/RA). If the normal dry mode is selected, the unit will perform the initial eight minute dry and then rapid advance to the end of the cycle via the "normal dry" selector switch and timer contact 1B (Normal Dry/RA). If "Normal Dry + 10" is selected, the unit will perform the initial eight minute dry, then rapid advance to the last ten minute portion of the dry cycle. This is accomplished via the "normal dry + 10" selector switch and timer contact 5T (Normal Dry + 10/RA). If "Normal Dry + 20" is selected, the unit performs the initial eight minute dry, then rapid advances to the last two ten minute portions of the dry cycle. This is accomplished via the "normal dry + 20" selector switch and timer contact 7T (Normal Dry + 20/RA). If "Normal Dry + 30" is selected, there is no path to the rapid advance motor on the timer. The unit will perform the entire dry cycle.

Minimum Wash Cycle Operation

With this wash cycle selection the unit rapid advances past the first fill via the "minimum wash" selector switch and timer contact 9T (Short Wash/RA). This is the only difference from normal cycle operation. The unit will advance as outlined from step #3 in the normal cycle explanation.

Normal Wash +10

With this wash cycle selection, the unit will not rapid advance through timer contact 1T (Normal Wash/RA) as outlined in step #6 of the normal cycle explanation. Only the last nine minutes of the total wash cycle are bypassed. This is accomplished via the "normal wash +10" selector switch and timer contact 3T (Normal Wash + 10/RA).

Normal Wash +20

The unit performs the entire wash cycle. This is accomplished via the “normal wash + 20” selector switch which is not connected to the rapid advance motor on the timer.

Rinse Only

The unit will rapid advance to the final fill via the “rinse only” selector switch and timer contact 11T (Rinse Only/RA). As 11T opens, 11B (Rinse Only/TM) closes. The unit will proceed as outlined from step #8 in the normal cycle explanation.

Reset Drain

The unit will rapid advance to the final drain via the selector switch logic and timer contact 13T (Reset Pause/RA). As 13T opens, contact 14T (Reset Pause Drain) closes. 14T allows the drain to occur since contact 9B (Short Wash/TM) is not in the loop for the reset selection. The unit drains via contacts 14T, 8B (Pump Motor), and 0B (Drain Phase Winding). 14T will remain closed for approximately two minutes. As 14T opens, 13T closes to rapid advance the timer to the end of the cycle.

ELECTRICAL COMPONENT TESTING AND TROUBLESHOOTING

Use an ohmmeter to test the following components. Refer to the drawings on pages 25 and 26 for reference. The following tests are to be performed with an ohmmeter. If the meter you are using is not autoranging, be sure to set the range according to the expected result.

To check the motor relay:

Check for resistance across the relay coil. With the meter leads across the terminals marked “L” and “M”, the meter should read continuity. If you suspect that the relay contacts have welded shut, check across the terminals “L” and “S” for continuity. If the meter reads continuity, the contacts are welded shut. The relay is defective and should be replaced. Remember, the relay is gravity sensitive. This type of relay has an arrow pointing “up” and the word “top” printed on it.

To check the door latch microswitch:

Place the meter leads across the door latch switch terminals. The meter should show continuity with the door latched, and infinity with the door unlatched.

To check the eight button selector switch:

Refer to the push-button switch logic diagram. Check for continuity across switch terminals as indicated by this diagram.

To check pump motor:

Remove the lower front panel to gain access to the motor. Separate the mox plug that connects the motor to the main harness. Place the meter leads on the pump motor prongs as follows:

1. Place the meter leads across the brown and white wires to check the “wash” winding. The meter should read 5-6 ohms.
2. Place the meter leads across the blue and white wires to check the “drain” winding. The meter should read 5-6 ohms.
3. Place the meter leads across the yellow and white wires to check the “main” winding. The meter should read 2-3 ohms.
4. Place the meter leads across the white and orange wires to check the overload protector. The meter should read continuity. If infinity is read, the overload protector is open and should close when the windings cool down. If the motor windings cool down and the overload protector does not close, the motor should be replaced.

To check the tap water fill valve coil:

Place the meter leads across the terminals of the solenoid coil. The meter should read approximately 900 ohms.

To check the purified water fill valve coil:

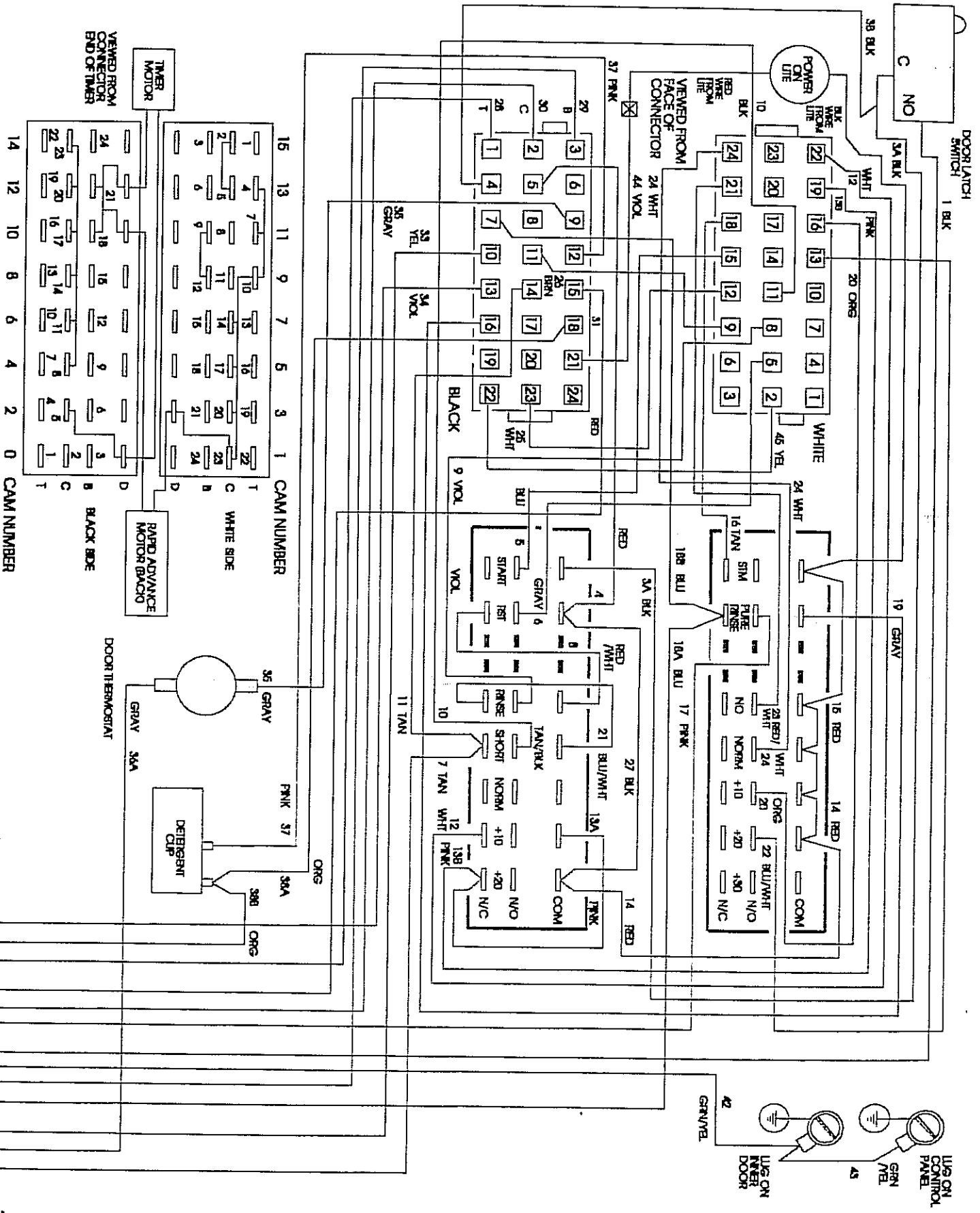
Place the meter leads across the terminals of the solenoid coil. The meter should read approximately 320 ohms.

To check the sump heater:

Place the meter leads across the terminal ends of the heater. The meter should read approximately 19.5 ohms.

To check the steam heater:

Place the meter leads across the terminal ends of the heater. The meter should read approximately 20 ohms.

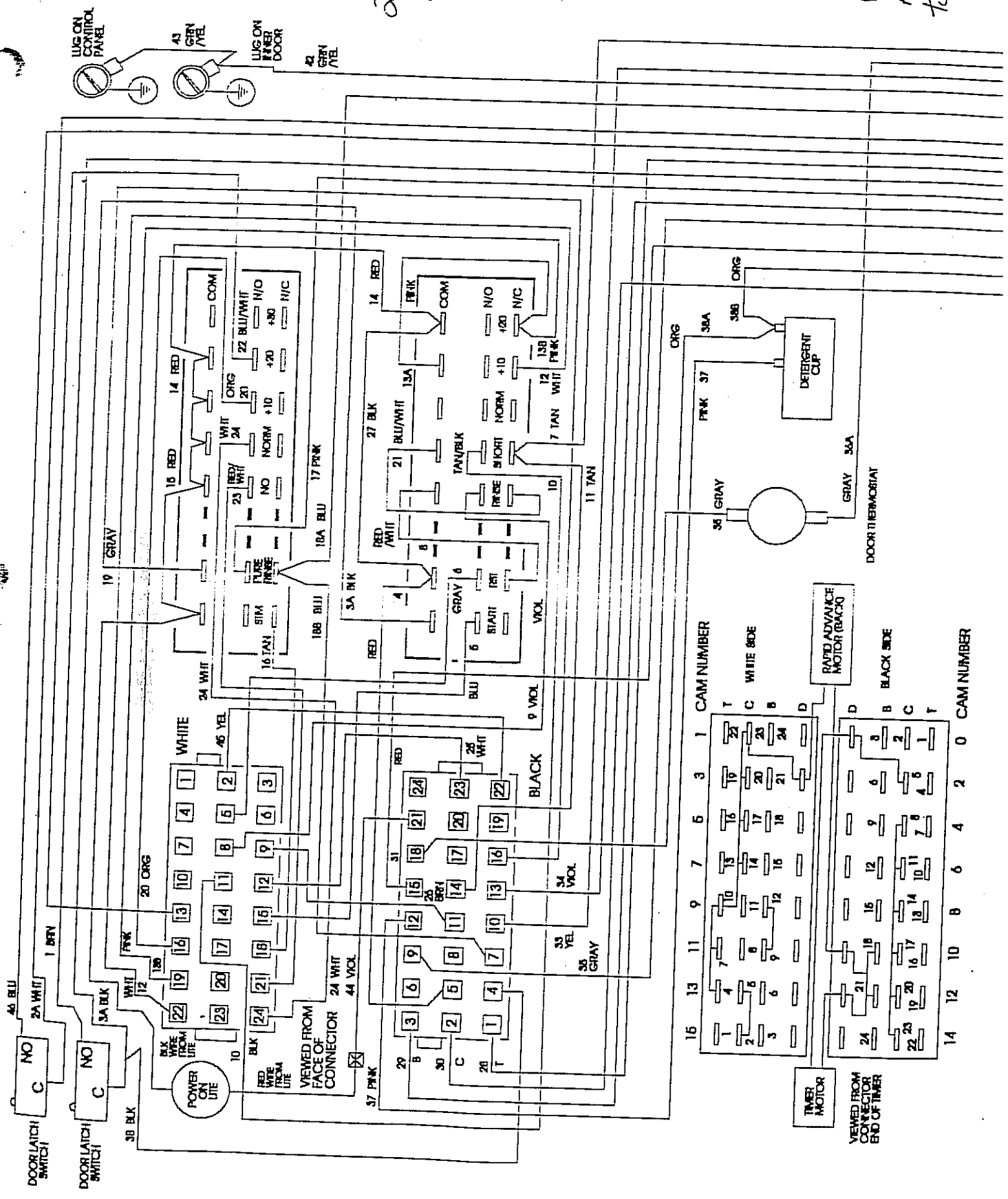


Put
 APDs
 together

115V
 Top

230 Top

Put Arrows Together



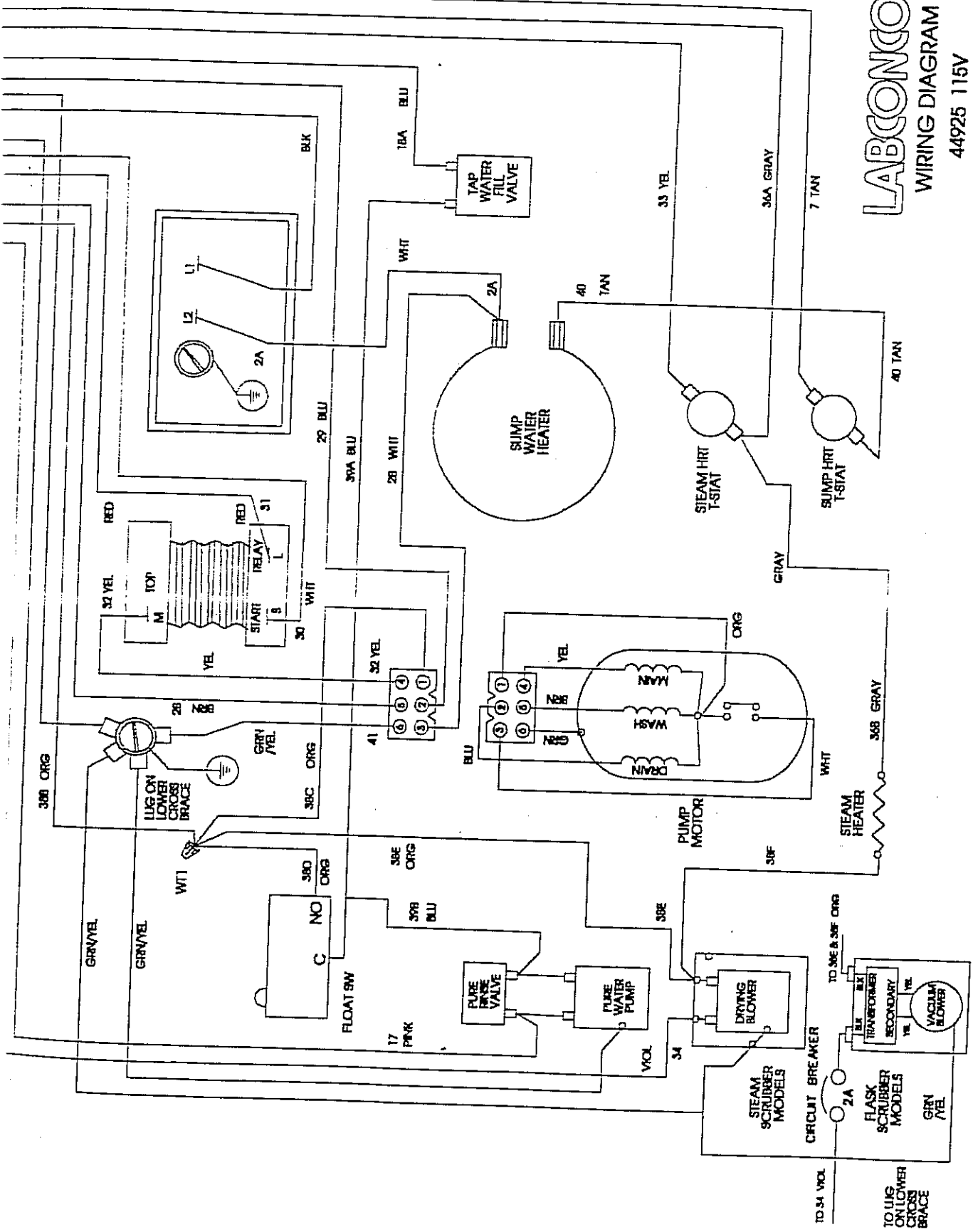
115V Boston

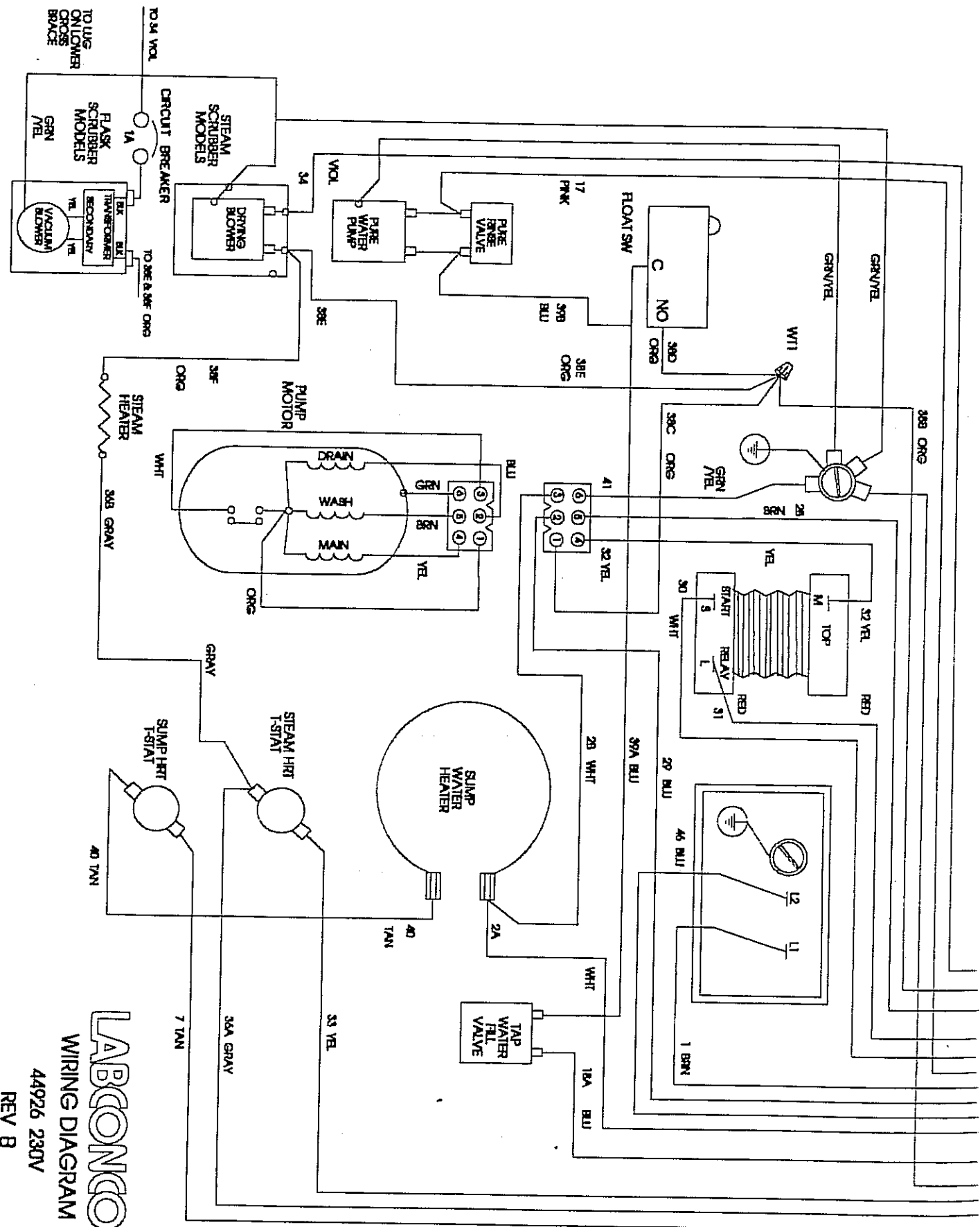
LABCONCO

WIRING DIAGRAM

44925 115V

REV B





LABCONCO
 WIRING DIAGRAM

44926 230V
 REV B

2301
 Bottom

