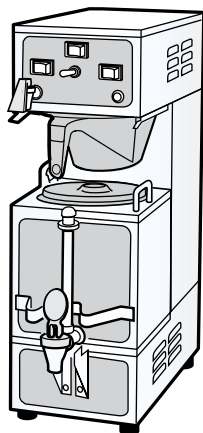




WILBUR CURTIS CO., INC.

Service Manual – GEM-120A Satellite Brewer



Model:

- **GEM-120A**



CAUTION:

Equipment must be installed to comply with applicable federal, state, and local plumbing/electrical codes.



CAUTION: Follow this setup procedure before attempting to use this unit. Failure to follow these instructions can result in injury and/or void of warranty.



CAUTION: DO NOT connect the unit to hot water supply. The inlet valve is not rated for hot water.

Important Safeguards/Symbols

This equipment is designed for commercial use. Any servicing other than cleaning and routine maintenance should be performed by an authorized Wilbur Curtis Company Service Technician.

- DO NOT immerse the unit in water or any other liquid
- To reduce the risk of fire or electric shock, DO NOT open service panels. There are no user serviceable parts inside.
- Keep hands and other items away from hot areas of the unit during operation.
- Never clean with scouring powders or harsh chemicals.

SYMBOLS:



WARNINGS – To help avoid personal injury



Important Notes/Cautions – from the factory



Sanitation Requirements

INSTALLATION

This Curtis unit is pre-set and ready to go from the factory.

Factory settings for this unit are:

- Brew Temperature = 200°F
- Brew Volume = Set to vessel requirements (1 Gallon).

System Requirements:

- Water Supply 20 – 90 psi (minimum flow rate of 1 gpm)
- Electrical: See electrical schematic.

SETUP STEPS

1. The unit should be level (left to right - front to back), on a secure surface.
2. Connect the water line to the water inlet fitting on the rear of the unit. Water volume flow to the machine should be consistent. Use tubing sized sufficiently to provide a minimum flow rate of one gallon per minute.



NOTE: A water filtration system must be used to help maintain trouble-free operation. **Air must be purged from the cartridge prior to connection to equipment.** In areas with extremely hard water, we highly recommend the use of a Curtis approved water filter. For our full line of filters, please log on to www.wilburcurtis.com.



NSF International requires the following water connection:

1. A quick disconnect or additional coiled tubing (at least 2x the depth of the unit) is required so that the unit can be moved for cleaning.
2. This unit must be installed with adequate back-flow protection to comply with applicable federal, state and local codes.
3. Water pipe connections and fixtures directly connected to a portable water supply shall be sized, installed and maintained in accordance with federal, state, and local codes.

3. Connect the unit to electrical outlet with appropriate amperage rating (see serial tag on machine).
4. Once power has been supplied to the unit, flip the toggle switch to the 'ON' position (located on the rear of the unit), the water tank will begin to fill. When the water level in the tank reaches the probe, the heating element(s) will turn on.
5. Water in the heating tank will require approximately a half hour before reaching operating temperature (factory setting of 200°F). When the water temperature in the heating tank is ready, the green "BREW WHEN LIT" light will come on.

For the latest specifications and information go to www.wilburcurtis.com

ISO 9001:2008 REGISTERED

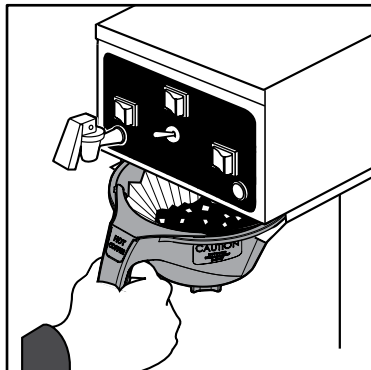
WILBUR CURTIS CO., INC.
6913 West Acco Street
Montebello, CA 90640-5403
For the latest information go to
www.wilburcurtis.com
Tel: 800-421-6150
Fax: 323-837-2410

BREWING

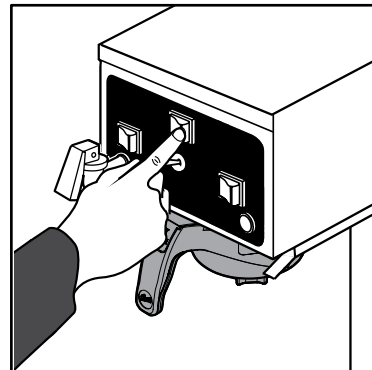
1. Brewer should be ON (Confirm at rear toggle switch, then press the ON/OFF button). The Brew When Lit light should be on.
2. Place an empty satellite under the brew basket and press the warmer switch to pre-heat the satellite.
3. Place a clean filter into the brew basket.



4. Fill the brew basket with the correct amount of ground coffee.



5. Transfer the brew basket to brewer, inserting it into the brew basket rails.



6. Determine the brew volume and flip the toggle switch to desired size, 1/2 gallon (1) or 1 gallon (2). Press the brew button. Brewing will begin immediately.



WARNING: AVOID SCALDING - Do not remove the brew basket while the brew light is flashing.

CLEANING

Regular cleaning and preventive maintenance is essential in keeping your coffee brewer looking and working like new. To clean the coffee brewer and components, prepare a mild solution of detergent and warm water.



CAUTION – Do not use cleaning liquids, compounds or powders containing chlorine (bleach) or corrosives. These products promote corrosion and will pit the stainless steel. **USE OF THESE PRODUCTS WILL VOID THE WARRANTY.**

DAILY CLEANING

1. Wipe exterior surfaces with a damp cloth, removing spills and debris.
2. Slide the brew basket out and clean it. Wipe the spray head area with a cloth soaked in a mild detergent solution.
3. Rinse and dry the brew basket and spray head area.
4. Drain coffee from the drip trays.
5. Use a clean soft cloth to wipe dry the coffee brewer and drip tray.

WEEKLY CLEANING

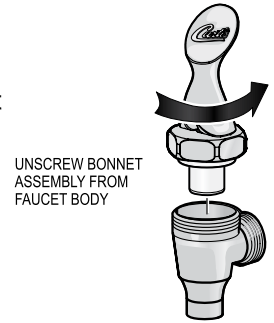
1. Turn off unit at the power switch, behind the unit. Allow the brewer to cool.
2. Clean the spray head and dome plate area.
 - a. Remove the spray head, unscrewing counterclockwise from the dome plate.
 - b. Thoroughly clean the dome plate area with detergent solution.
 - c. Clean the brew basket rails with a brush soaked with the detergent solution. When clean, rinse the area with a cloth soaked with clean water to remove all traces of detergent.
 - d. Use a clean soft cloth to dry the area.
 - c. Attach the spray head.

CLEANING THE SATELLITE SERVER

1. Empty any remaining coffee from the satellite server.
2. Fill the liner with a mild detergent solution and let it stand for 10 to 15 minutes.
3. After about 15 minutes take a sponge brush and scrub out the stainless steel liner.
4. Drain out the detergent solution from the server. Rinse in a sink with running water.
5. Repeat this rinsing until the water runs clear.

CLEANING THE FAUCET

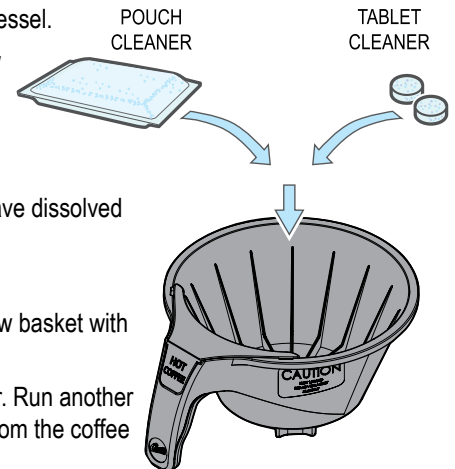
1. Remove the faucet handle assembly. Take hold of the bonnet and turn counterclockwise to unscrew it from the faucet.
2. Clean the handle assembly with a mild detergent solution. When clean, rinse the handle with water. Inspect for cracks or tears in the seat cup. Replace if the seat cup is damaged.
3. Clean the coffee level gauge glass.
 - a. Remove the gauge glass cap unscrewing it from the top of the shield.
 - b. Carefully, pull out the gauge glass. Brush out the inside of the glass with a detergent solution. Rinse the gauge glass tube with clear water, removing all traces of the detergent solution.
 - c. Inspect the gasket seals at the top and bottom of the gauge glass. Clean these gaskets.
 - d. Assemble the gauge glass. Make sure gaskets are properly seated.
 - e. Hand-tighten the gauge glass cap.



POUCH CLEANER

You may use a pouch or tablet cleaner to easily clean both the brew basket and the coffee vessel.

1. Place a pouch or tablet cleaner into the brew basket. Place an empty server on the brew deck.
2. Press the brew button to run a full brew cycle into the server. You will see that the cleaner pouring from the brew basket is blue.
3. At the end of the brew cycle, discard the used filter cleaner pouch. The tablets should have dissolved in the brew cycle.
4. Allow the cleaner to soak in the coffee server for a few minutes.
5. Dump out the cleaner from the coffee server into a sink. Rinse the coffee server and brew basket with clear running water.
6. Return the empty coffee server to the brew deck. Install the brew basket onto the brewer. Run another brew cycle of hot water to rinse the brew basket and the server. Empty the rinse water from the coffee server.
7. Dry the surfaces with a clean soft cloth and the brewer is ready to return to service.



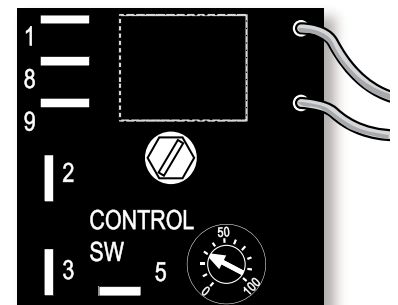
SETTING WC-603-101 BREW TIMER

Adjusting the brew timer is made on the calibrated dial. The dial range is from 0 to 100. This represents 2 to 20 minutes. Also in the timer circuit, there is a brew selector switch on the front control panel of the brewer. This is marked 1 (half brew) and 2 (full brew).

To change the brew time setting:

Disconnect the power cord.

1. Flip the brew selector switch to 2.
2. Open the top cover and locate the brew timer.
3. On the brew timer, rotate timer arrow to change the setting. Rotating to the right will increase the brew time, rotate to the left will decrease it. The timer arrow is usually set at 25. This setting is intended to deliver one gallon of water (brew 24 cups) per brew cycle.
4. After making an adjustment, run a brew cycle with coffee to test the liquid level and the coffee taste. If this is not satisfactory, repeat steps above.
5. Once you achieve an acceptable result, return the top cover onto the brewer.



TROUBLE SHOOTING

PROBLEM: WATER DOES NOT FLOW INTO HEATING TANK

POSSIBLE CAUSE	SOLUTION
1. Water line turned off or filter clogged up.	Open the water line and make sure water flows to the brewer.
2. Water inlet valve coil burned out.	Turn off brewer. Disconnect wires from water inlet coil terminals and connect a power cord to the terminals. Plug cord into a 110v outlet and verify that water flow when plugged in and stops when cord is disconnected. If valve does not respond to this test, replace the valve.
3. Grounded probe.	When water in the heating tank is below the probe tip, yet water is not refilling, pull the wire off the probe terminal. If water starts flowing into the tank, find ground, clean or replace the probe.
4. Defective or burned out water level control board.	Pull the wire from the probe terminal. With a volt meter, check the voltage at the water inlet coil terminals. This should read 110 to 115 volts. If no voltage is present, check the water level control board. Make sure that the back of the board is grounded securely to the mounting bracket. Check for loose wire connections. Replace board.

PROBLEM: WATER IN HEATING TANK OVERFLOWING

POSSIBLE CAUSE	SOLUTION
5. Defective water inlet valve.	Turn power off and observe the water level in the heating tank. If water continues to flow in, clean or replace the valve.
6. Probe limed up.	Pull wire off from probe terminal. Touch the water tank shell with the terminal at the end of this wire. If water stops flowing, clean or replace the probe.
7. Loose or ungrounded water level control board.	If probe is okay, check the water level control board. The water level control board must be securely grounded. Check for loose connections. Check for voltage at the inlet valve terminals. Replace board.

PROBLEM: WATER IN TANK DOES NOT GET HOT OR WATER TEMPERATURE TOO LOW

POSSIBLE CAUSE	SOLUTION
8. Thermostat is off.	Check the thermostat to make sure it is in the ON position. Turn the thermostat stem clockwise until it stops.
9. Burned out heating element.	Check element for continuity and/or check with clamp ammeter. This should show a reading of approximately 15 amps. If no power is going through element, replace it.

TROUBLE SHOOTING

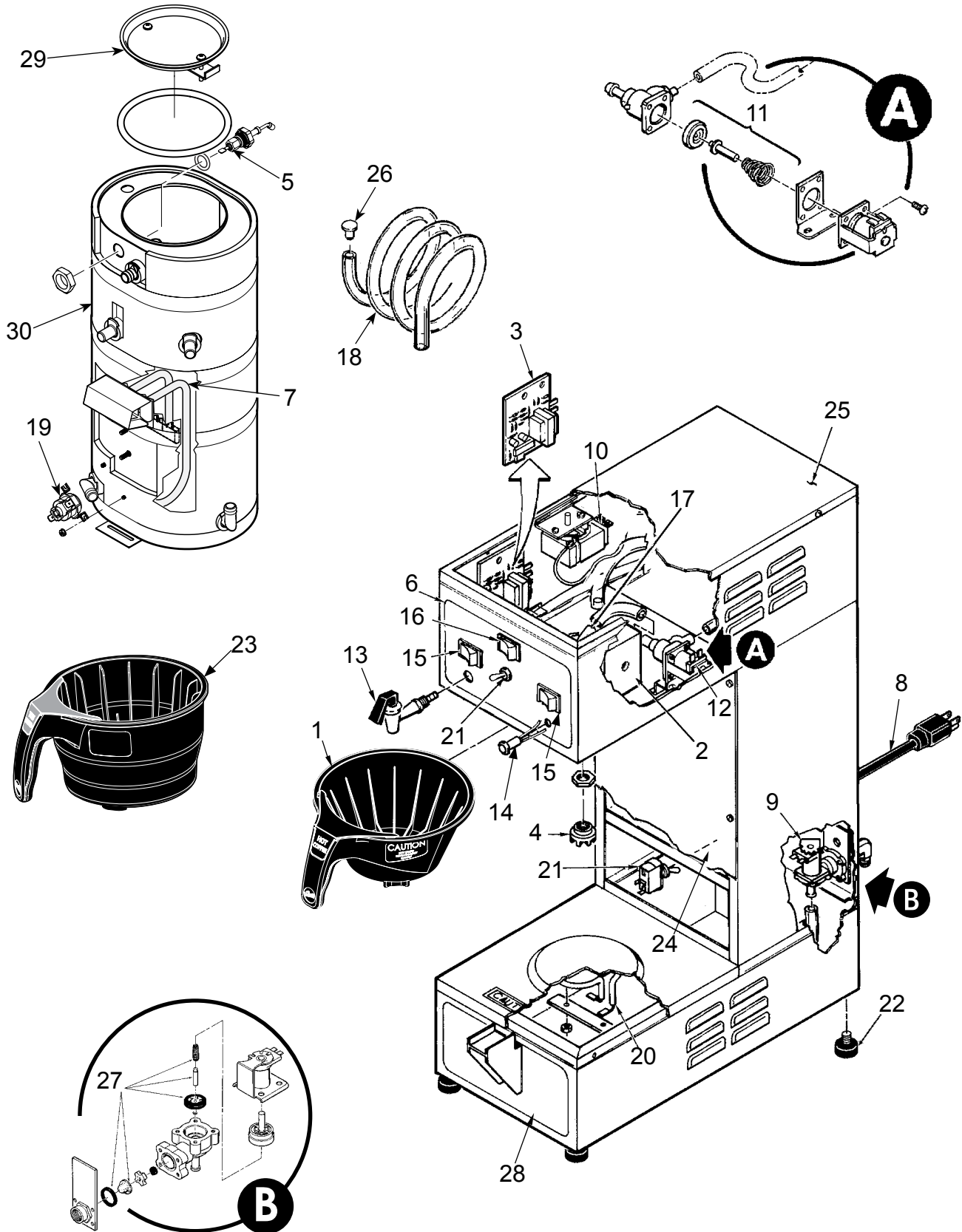
PROBLEM: WATER IN TANK DOES NOT GET HOT OR WATER TEMPERATURE TOO LOW

POSSIBLE CAUSE	SOLUTION
10. Defective thermostat.	Thermostat may be cutting off before the water temperature reaches operating temperature. Do not try to reset the thermostat. Replace it.

PROBLEM: WATER NOT FLOWING FROM Spray head.

POSSIBLE CAUSE	SOLUTION
11. Water level is too low in heating tank.	Check water level in tank. If water is not flowing into the tank, re-view steps 1 thru 4, previous page.
12. Defective brew switch.	Check the continuity between terminals 5B and 4B when the BREW switch is pressed. If there is no continuity, replace the switch.
13. Defective timer.	Make sure the timer is receiving 110 to 120 volts. You can verify this by taking a reading with your meter at the end of the YELLOW wire on terminal 5B of the ON/OFF switch and at terminal 9 of the timer. When the timer is activated by the brew switch, you should read 110 to 120 volts across terminals 8 and 9 of the timer. The RED wire on terminal 8 supplies power to open the dump valve. If no voltage is present, replace the timer.
14. Burned out dump valve coil.	If the timer works when the brew switch is pressed, then check the dump valve using a voltmeter on the terminals. If it shows 110 to 120 volts but no water flows through the valve, clean out the valve or replace the coil.

GEMINI 120A Parts List



GEMINI 120A Parts List

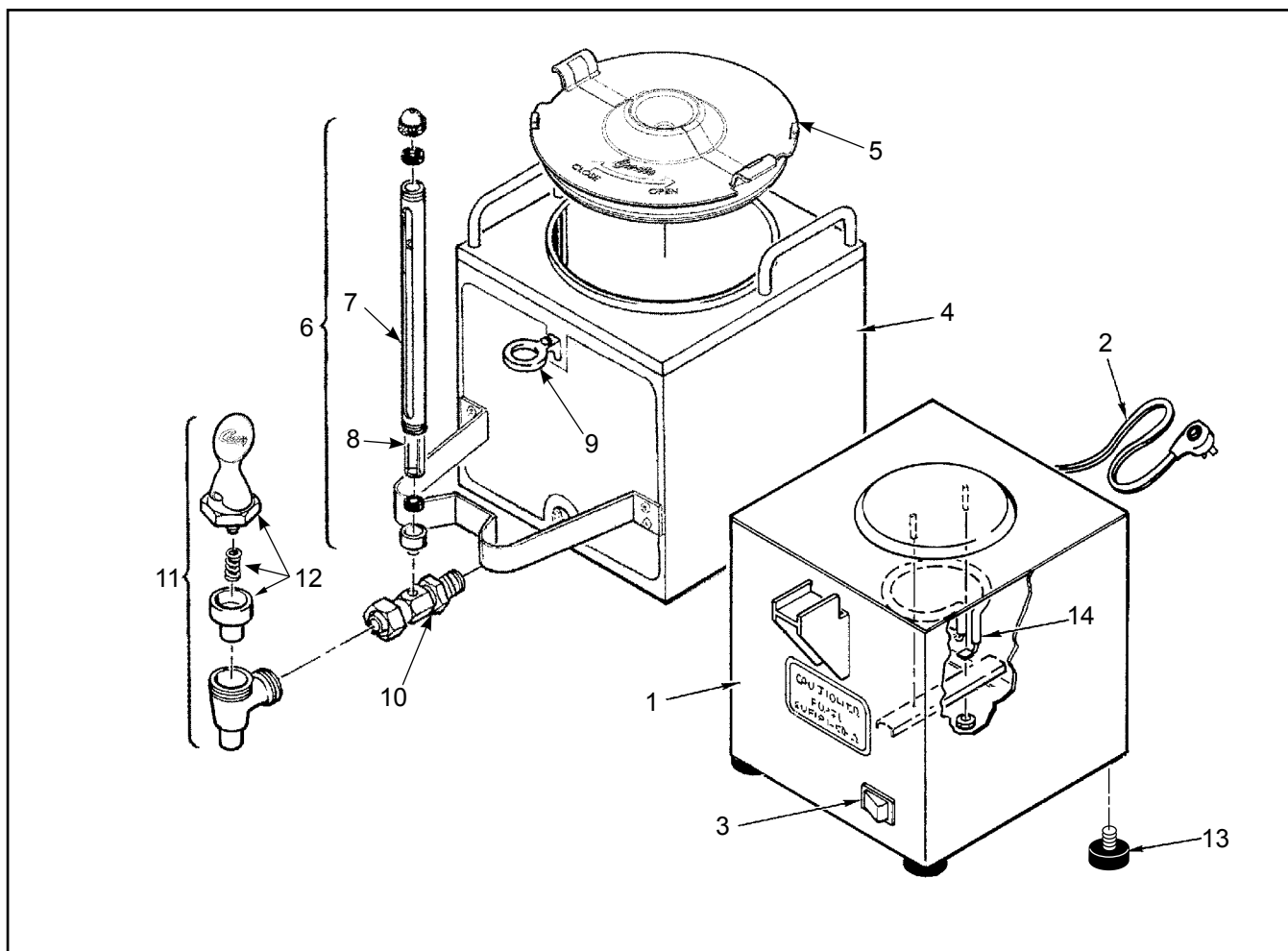
ITEM №	PART №	DESCRIPTION
1	WC-3621-101*	BREW CONE, NON-METAL UNIVERSAL (WITH SPLASH POCKET)
2	WC-603-101K-GEM*	KIT, RETROFIT TIMER BREW SELECTOR 120V GEM-120A/12
3	WC-608-101K*	KIT, LIQUID LEVEL CONTROL BOARD RETROFIT
4	WC-2936*	SPRAYHEAD, RED (Ø.131)
5	WC-5527K*	KIT, PROBE WATER LEVEL O-RING & NUT CURTIS
6	WC-3920-01	LABEL, SWITCH PANEL GEM-120A CURTIS
6A	WC-3920T	LABEL, SW PANEL GEM-120A CURTIS (OLDER UNITS)
7	WC-904-04*	KIT, ELEMENT, HEATING 1.6KW 120V W/JAM NUT & SILICONE O-RING
7A	WC-906-04	KIT, ELEMENT, HEATING 2KW 220V W/JAM NUT & SILICONE O-RING
8	WC-1200	CORD, 14/3 SJTO 6' BLK W/PLUG
9	WC-826L*	VALVE, INLET 1 GPM 120V 10W ALP/AP/TLP GREY BODY
10	WC-504*	THERMOSTAT, CAPILLARY SPST 250V 25A GEM
11	WC-3763*	KIT, DUMP VALVE FOR WC-889, WC-817
12	WC-817*	VALVE, DUMP RIGHT 120V 12W W/RECTIFIER AP/GEM
13	WC-1809	FAUCET, PS/HPS SERIES HOT WTR 1/2-20 UNF AP/ALP
14	WC-207	LIGHT, BREW 115V GREEN
14A	WC-208	LIGHT, BREW 250V GREEN
15	WC-114R*	SWITCH, ROCKER (RED) 120V NEON SPST 15A 250V
16	WC-122*	SWITCH, BREW (GREEN) 120V NEON SPST 15A 250V
17	WC-2977-101K*	KIT, SPRAYHEAD FITTING PLASTIC
18	WC-5310*	TUBE, 5/16 ID x 1/8W SILICONE GEN USE
19	WC-523*	THERMOSTAT, MANUAL RESET 120/240 VAC 25A 220 DEG F MAX
19A	WC-522	THERMOSTAT, HI LIMIT HEATER CONTROL DPST 277V 40A
20	WC-970*	ELEMENT, WARMER ASSY 100W 120V WITH SILICONE BOOTS
21	WC-102	SWITCH, TOGGLE NON-LIT SPST 15A 125/6A 250VAC RESISTIVE
22	WC-3503*	LEG, 3/8"-16 STUD SCREW BUMPER
23	WC-3338-101	B. CONE, ASSY W/SPLASH POCK. NON-MTL. DLX. D500/D1000GT (OPT)
24	WC-5452	KIT, COVER FRONT GEM-120A/120P/230A/200R/300IL/600ILD
25	WC-58117	COVER, TOP ALPGT/D500GT/D60GT/TLP/TCTS/CBS/GEMSS
26	WC-43058	PLUG, TANK DRAIN ULTEM 1000F
27	WC-3765L*	KIT, INLET VALVE REPAIR USE ON WC-826/WC-826L/WC-847
28	WC-3920B	LABEL, BOTTOM PANEL GEM-120A CURTIS
29	WC-37008*	KIT, TANK LID ROUND
30	WC-5466	TANK, COMPLETE GEM-120A/C500AP
30A	WC-54133	TANK, COMPLETE GEM-120A 120/ 220V DV

* Recommended Parts to Stock

PAPER FILTERS

Part Number	Description
CR-12	FILTER, 500 PKG 12 5/16 X4 3/8 FITS DELUXE BREWCONE WC-3338
CR-10	FILTER, COFFEE #506 1000/PK 9-3/4" X 4-1/2"

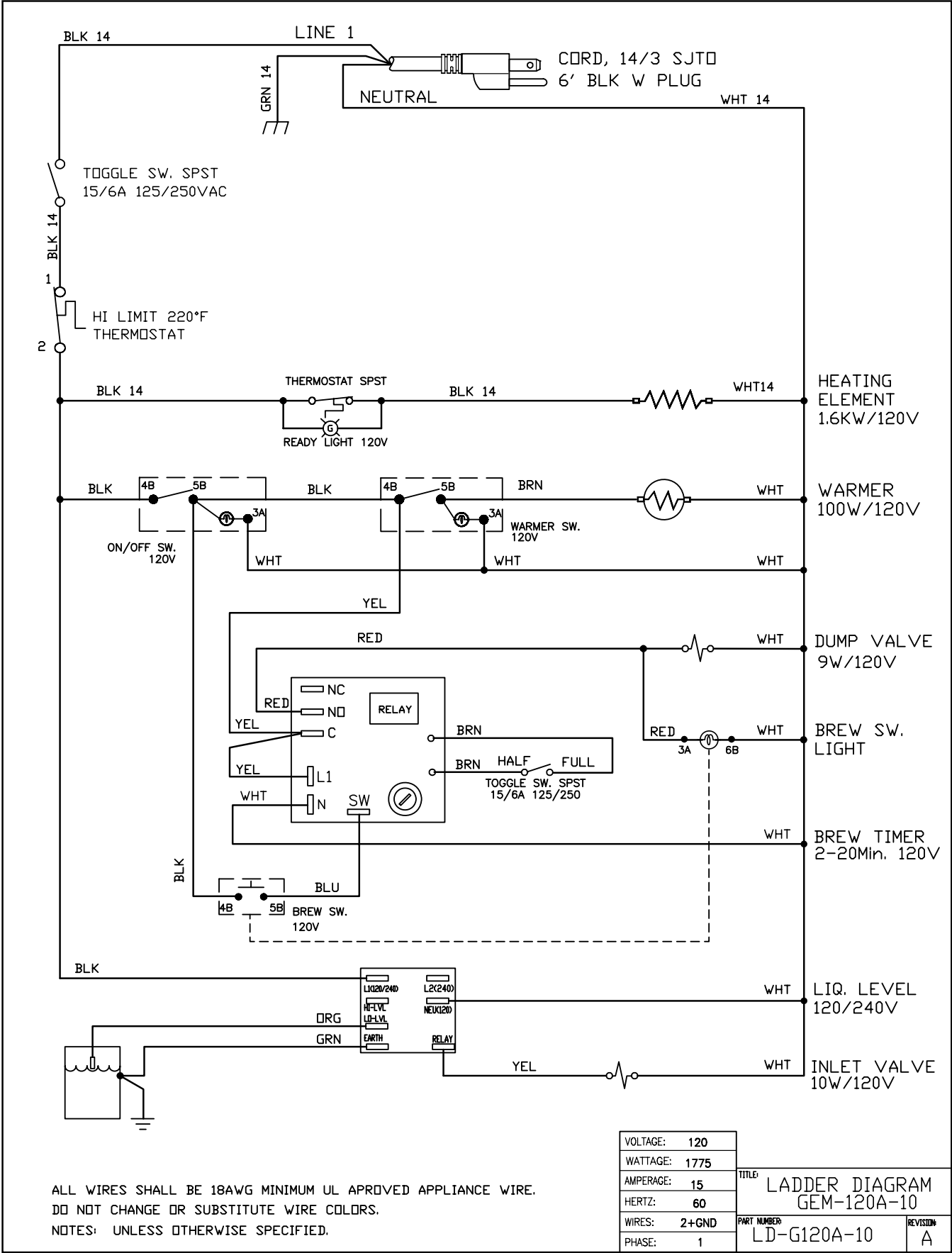
ILLUSTRATED PARTS LIST GEM-3, 5, 8



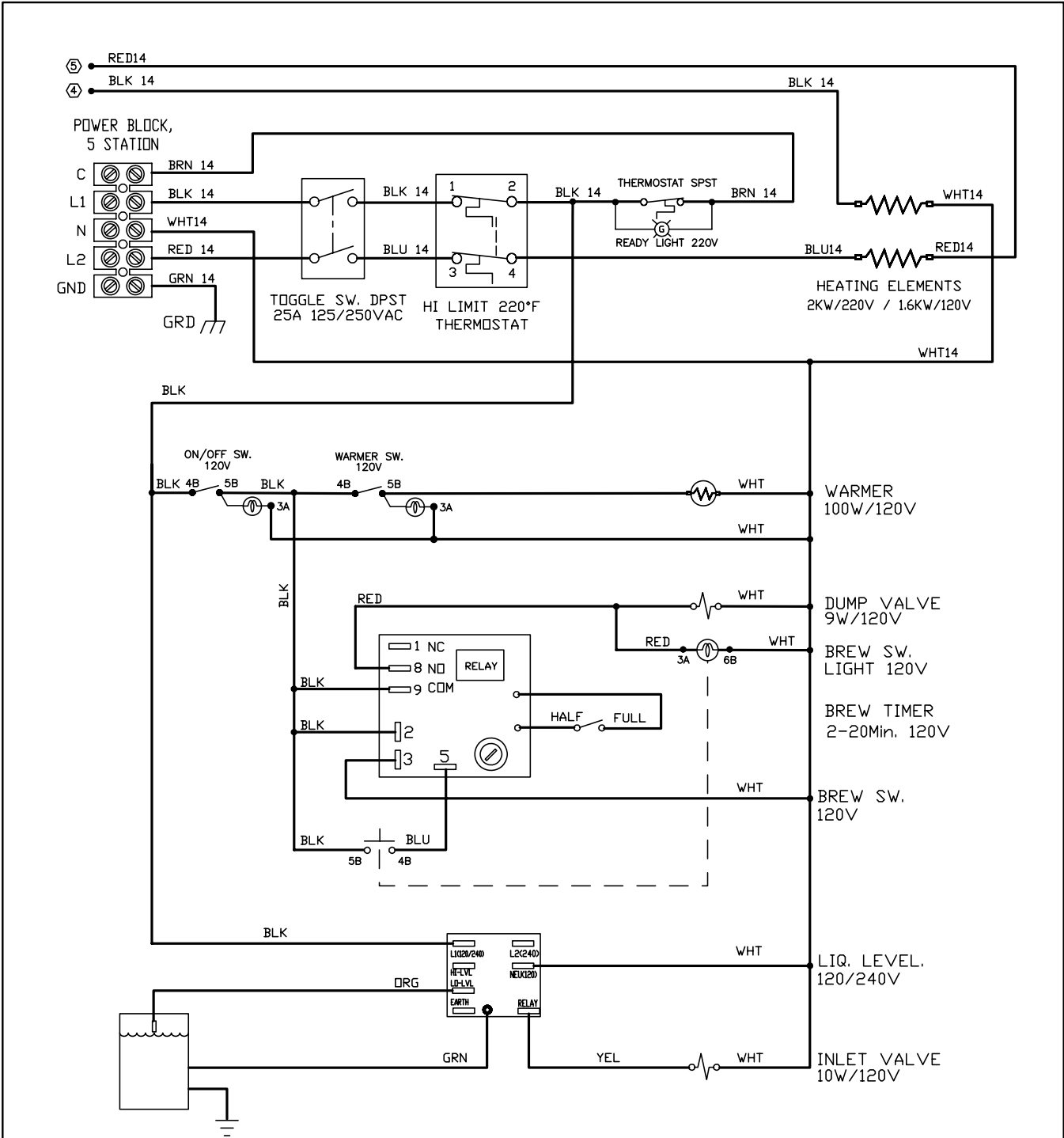
INDEX №	PART №	DESCRIPTION
1	GEM-5	SATELLITE WARMER STAND 120V 100W 120V 1A 1PH 50/60HZ 2W+G
2	WC-1201	CORD, 18/3 SJTO 6' BLK W/RED STRIPE W/PLUG
3	WC-114R*	SWITCH, ROCKER (RED) 120V NEON SPST 15A 250V
4	GEM-3	SATELLITE SERVER, 1-1/2 GAL.
5	WC-5622	LID, SATELLITE PLASTIC GEM-3
6	WC-2102	GAUGE GLASS, ASSY 8"C
7	WC-2010C	SHIELD, GAUGE GLASS 3/4"D.X 8"
8	WC-2025*	GLASS, GAUGE 8"
9	WC-2007	BRACKET, GAUGE GLASS GEM-3
10	WC-1901A-103K	KIT, SHANK ASSY, FAUCET W/SHIELD BASE & O-RING
10A	WC-1901A	SHANK, FAUCET W/SHIELD BASE
11	WC-1800	FAUCET,"S" SERIES BLK LOCKING 1-1/32-14 UNS CURTIS
12	WC-3705*	KIT, FAUCET S SERIES NONLOCK USE ON WC-1800
13	WC-3503*	LEG, 3/8"-16 STUD SCREW BUMPER
14	WC-37102*	KIT, WARMER ELEMENT 100W 120V GEN USE

* Recommended Parts to Stock

ELECTRICAL DIAGRAM – GEM120A-10



ELECTRICAL DIAGRAM – GEM120A-63



6 USE THIS DIAGRAM FOR ALL OTHER MODELS WITH ADDED
PREFIX LETTERS AND/OR DIFFERENT DASH NUMBER
ON THEIR PART NUMBERS HAVING THE SAME ELECTRICAL
RATINGS. Ex.: SCGEM-120A-63 and/or GEM-120A-63-01.

5 FOR 220VAC OPERATION: CONNECT RED14 WIRE TO POINT 'C' ON POWER BLOCK WC-314, CAP & STOW BLK14.

4 FOR 120VAC OPERATION: CONNECT BLK14 WIRE TO POINT 'C' ON POWER BLOCK WC-314, CAP & STOW RED14.

3 NOTE DELETED.

2 TEFLON WIRES 14 AWG MAY BE USED AS A SUBSTITUTE FOR THE 14 AWG APPLIANCE WIRE.

1 ALL WIRES SHALL BE 18 AWG UL APPROVED APPLIANCE WIRE.

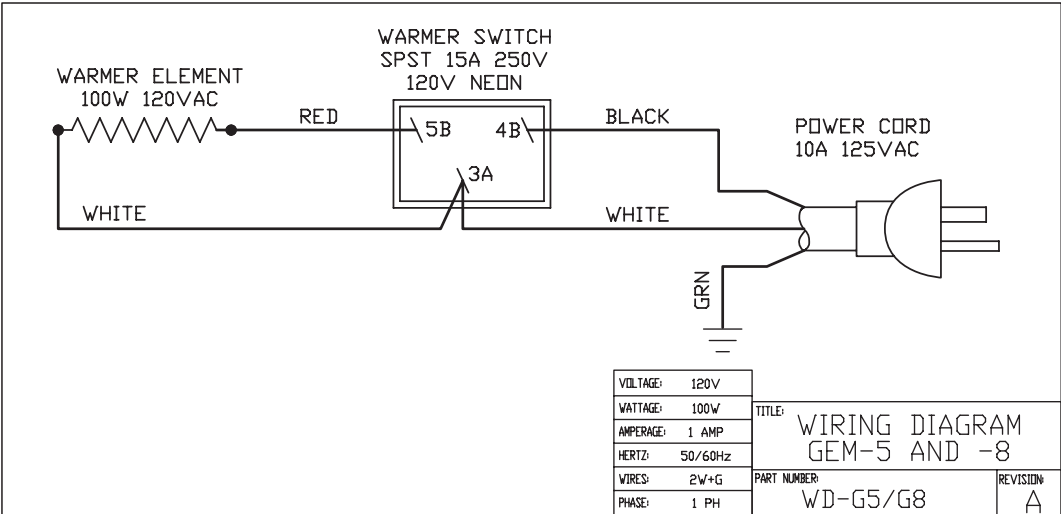
NOTES: unless otherwise specified

VOLTAGE:	120/220
WATTAGE:	1775/2100
AMPERAGE:	15/10
HERTZ:	60
WIRES:	2W/3W+GRD
PHASE:	1

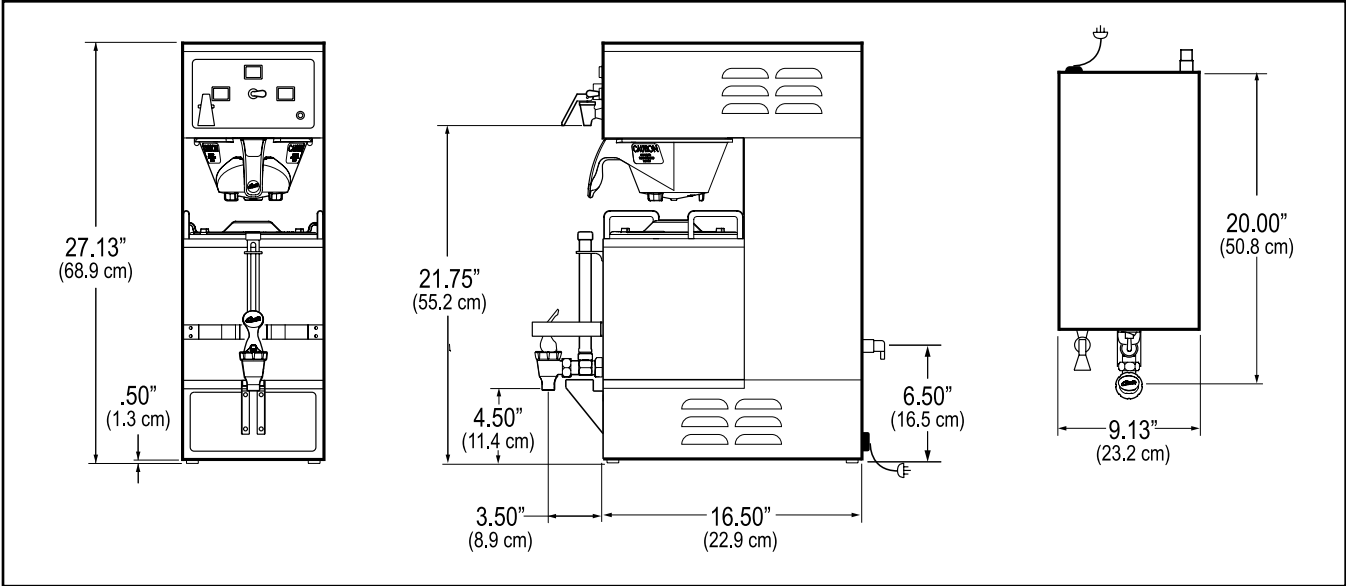
TITLE:
LADDER DIAGRAM
GEM-120A-63

PART NUMBER:
LD-G120A-63 REV:NC

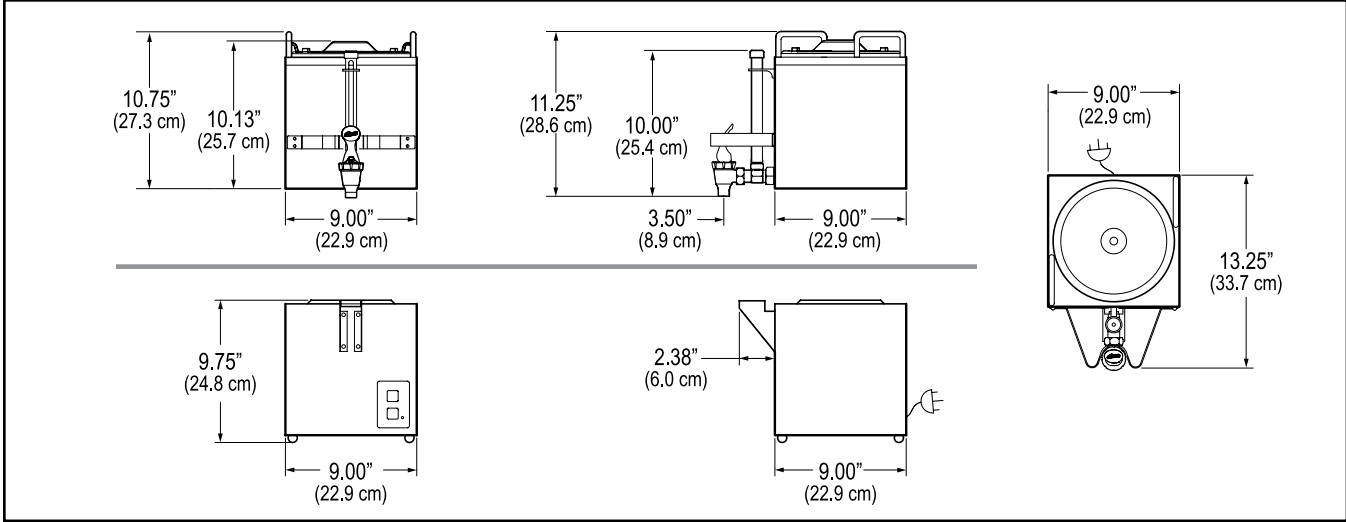
**ELECTRICAL
DIAGRAM
GEM 5 & 8**



ROUGH-IN DRAWING GEM-120A



ROUGH-IN DRAWING GEM-3 & GEM-5



Product Warranty Information

Wilbur Curtis Co., Inc. certifies that its products are free from defects in material and workmanship under normal use. The following limited warranties and conditions apply:

- 3 years, parts and labor, from original date of purchase on digital control boards.
- 2 years, parts, from original date of purchase on all other electrical components, fittings and tubing.
- 1 Year, Labor, from original date of purchase on all electrical components, fittings and tubing.

Additionally, Wilbur Curtis Co., Inc. warrants its grinding burrs for forty (40) months from date of purchase or 40,000 pounds of coffee, whichever comes first. Stainless steel components are warranted for two (2) years from date of purchase against leaking or pitting and replacement parts are warranted for ninety (90) days from date of purchase or for the remainder of the limited warranty period of the equipment in which the component is installed. All in-warranty service calls must have prior authorization. For authorization, call the Technical Support Department at 1-800-995-0417. Effective date of this policy is April 1, 2003. Additional conditions may apply. Go to www.wilburcurtis.com to view the full product warranty information.

CONDITIONS & EXCEPTIONS

The warranty covers original equipment at time of purchase only. Wilbur Curtis Co., Inc., assumes no responsibility for substitute replacement parts installed on Curtis equipment that have not been purchased from Wilbur Curtis Co., Inc. Wilbur Curtis Co., Inc. will not accept any responsibility if the following conditions are not met. The warranty does not cover and is void under the following circumstances:

- 1) **Improper operation of equipment:** *The equipment must be used for its designed and intended purpose and function.*
- 2) **Improper installation of equipment:** *This equipment must be installed by a professional technician and must comply with all local electrical, mechanical and plumbing codes.*
- 3) **Improper voltage:** *Equipment must be installed at the voltage stated on the serial plate supplied with this equipment.*
- 4) **Improper water supply:** *This includes, but is not limited to, excessive or low water pressure and inadequate or fluctuating water flow rate.*
- 5) **Adjustments and cleaning:** *The resetting of safety thermostats and circuit breakers, programming and temperature adjustments are the responsibility of the equipment owner. The owner is responsible for proper cleaning and regular maintenance of this equipment.*
- 6) **Damaged in transit:** *Equipment damaged in transit is the responsibility of the freight company and a claim should be made with the carrier.*
- 7) **Abuse or neglect (including failure to periodically clean or remove lime accumulations):** *Manufacturer is not responsible for variation in equipment operation due to excessive lime or local water conditions. The equipment must be maintained according to the manufacturer's recommendations.*
- 8) **Replacement of items subject to normal use and wear:** *This shall include, but is not limited to, light bulbs, shear disks, "O" rings, gaskets, silicone tube, canister assemblies, whipper chambers and plates, mixing bowls, agitation assemblies and whipper propellers.*
- 9) **Repairs and/or Replacements** *are subject to our decision that the workmanship or parts were faulty and the defects showed up under normal use. All labor shall be performed during regular working hours. Overtime charges are the responsibility of the owner. Charges incurred by delays, waiting time, or operating restrictions that hinder the service technician's ability to perform service is the responsibility of the owner of the equipment. This includes institutional and correctional facilities. Wilbur Curtis Co., Inc. will allow up to 100 miles, round trip, per in-warranty service call.*

RETURN MERCHANDISE AUTHORIZATION: *All claims under this warranty must be submitted to the Wilbur Curtis Company Technical Support Department prior to performing any repair work or return of this equipment to the factory. All returned equipment must be repackaged properly in the original carton. No units will be accepted if they are damaged in transit due to improper packaging. **NO UNITS OR PARTS WILL BE ACCEPTED WITHOUT A RETURN MERCHANDISE AUTHORIZATION (RMA). RMA NUMBER MUST BE MARKED ON THE CARTON OR SHIPPING LABEL.** All in-warranty service calls must be performed by an authorized service agent. Call the Wilbur Curtis Technical Support Department to find an agent near you.*

ECN 16604 . 10/30/15 @ 16.2 rev K



WILBUR CURTIS CO., INC.

6913 Acco St., Montebello, CA 90640-5403 USA | Phone: 800-421-6150 | Fax: 323-837-2410

Technical Support Phone: 800-995-0417 (M-F 5:30 A.M. - 4:00 P.M. PST)

Email: techsupport@wilburcurtis.com | Web: www.wilburcurtis.com

10/2015 F-1903 rev K