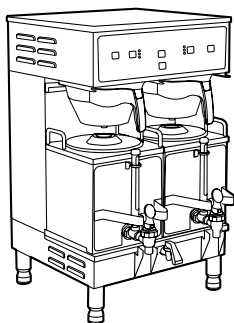




# WILBUR CURTIS Co., Inc.

## Service Manual – GEM-12D



Model GEM-12D



**CAUTION:** Please use this setup procedure before attempting to use this brewer. Failure to follow the instructions can result in injury or the voiding of the warranty.



**IMPORTANT:** Equipment to be installed to comply with applicable federal, state, or local plumbing/electrical codes having jurisdiction.



**CAUTION:** DO NOT connect this brewer to hot water. The inlet valve is not rated for hot water.



**WARNING:** TO AVOID SCALDING, do not remove brew cone while brew light is flashing.

### Important Safeguards

This appliance is designed for commercial use. Any servicing other than cleaning and preventive maintenance should be performed by an authorized Wilbur Curtis 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. No user serviceable parts inside.
- Keep hands and other items away from hot surfaces of unit during operation.
- Never clean with scouring powders, bleach or harsh chemicals.

### Symbols



WARNINGS – To help avoid personal injury



Important Notes/Cautions – from the factory



Sanitation Requirements

Your Curtis ADS System is factory pre-set and ready to go... right from the carton.

Following are the factory settings for your interlock coffee brewing systems:

- Brew Temperature = 200°F
- Water By-pass = ON - recommended, 36 cup brew
- Brew Volume = Set to 36 cup vessel requirements.
- Sleep Mode = Off

System Requirements:

- Water Source: 20 – 100 psi (minimum flow rate of 1 gpm)
- Electrical: See attached schematic for standard model or visit [www.wilburcurtis.com](http://www.wilburcurtis.com) for your model.

### Setup Steps

The unit should be located on a solid counter top and leveled (left to right and front to back). Connect a water line from the water filter to the brewer.



**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](http://www.wilburcurtis.com).



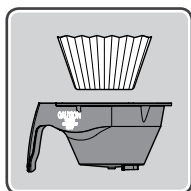
NSF International requires the following water connection:

1. A quick disconnect or additional coiled tubing (at least 2x the depth of the unit) so that the machine can be moved for cleaning underneath the unit.
2. This equipment is to 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 potable water supply shall be sized, installed and maintained in accordance with federal, state and local codes.

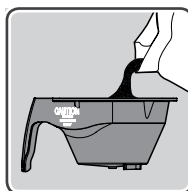
1. A 3/8" NPT x 1/4" flare elbow has been supplied for water line connection. Use tubing sized sufficiently to provide a minimum of 1.0 gpm.
2. Connect the unit to an appropriate electrical power circuit.
3. Turn on the toggle (STANDBY/ON) switch behind the unit. The heating tank will start to fill. When the water level in the tank rises to the correct volume, the heating elements will energize automatically. With ADS Systems there is no danger of element burnout caused by an empty tank.
4. The heating tank will require 20 to 30 minutes to reach operating temperature (200°F) as indicated by the READY-TO-BREW indicator.
5. Prior to brewing, dispense 12 ounces of hot water through the hot water faucet.
6. Brew a cycle of at least 12 ounces, to purge the water lines of any air that may be trapped after filling.

### Brewing Instructions

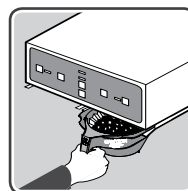
1. Brewer should be ON (Confirm this at the rear power switch, then press the ON/OFF button). The Ready-to-Brew light should be ON.
2. Place a clean, empty satellite on the warmer deck and press the warmer switch.



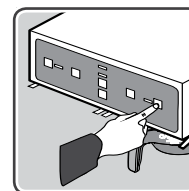
3. Place a clean filter into the brew cone.



4. Pour in the correct measure of ground coffee.



5. Transfer the brew cone to the brew rails.



6. Press the Brew button. Brewing will start immediately.

ISO 9001:2008

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FOR THE LATEST SPECIFICATIONS AND INFORMATION GO TO [WWW.WILBURCURTIS.COM](http://WWW.WILBURCURTIS.COM)

## STEPS TO PROGRAMMING



**WARNING:** These steps involve working with hot water. Scalding may occur if care is not taken against spilling.

## PROGRAMMING ONLY REQUIRED IF FACTORY SETTINGS MUST BE CHANGED



**IMPORTANT** – Before entering the program mode, allow the unit to reach brewing temperature, then press the BREW button to dispense at least 12 ounces of water to clear any air that may be trapped within the water lines.

**NOTE:** For ALL functions you must first enter the programming mode.

### Brew Temperature – Factory Pre-Set to 200°F

Function to set brew temperature, 170° to 204°F. Brew temperature will be indicated by READY-TO-BREW light blinking.

#### ENTERING THE PROGRAM MODE #1

- Turn OFF the power from the control panel by pressing .
- Press and HOLD and press and RELEASE .
- Continue HOLDING until starts blinking; RELEASE.

#### CONFIRM/RESET BREW TEMPERATURE - Factory Preset to 200°

ENTER THE PROGRAMMING MODE #1:

- Press for two seconds, then RELEASE.
- will start blinking. Each blink equals 2° F, starting at 170°.
- To change temperature, press and HOLD .
- will start QUICK flashing. Each QUICK flash equals 2° F. After 204°, temperature starts over at 170°.
- RELEASE when the desired temperature is reached.
- To set and exit, press .

### BREW VOLUME - Factory Preset to Brewer Requirements



**CAUTION** – Hot Water. Take precautions to place a container on the brew deck before adjusting the brew volume. An empty satellite can be used to measure the proper brew level.

#### CHANGE BREW VOLUME

ENTER THE PROGRAMMING MODE #1

- Press and HOLD until hot water starts running from spray head; then RELEASE.
- When desired volume is reached, press again to stop flow.
- To set and exit, press .

### BREW CYCLE COUNTER

#### ENTER THE PROGRAM MODE #2

- Turn OFF the power from the Control Panel by pressing .
- Press and HOLD and press and RELEASE .
- Continue HOLDING until STOPS blinking; RELEASE.

#### TO ACCESS BREW CYCLE COUNTER

ENTER THE PROGRAMMING MODE #2:

- will now start a pattern of LONG and SHORT blinks. This pattern identifies the number of brew cycles. SHORT blinks indicate the brew number from one [1] to nine [9]. LONG blinks separate the 1's, 10's, 1,000's and 10,000's.

### SLEEP MODE (220V Models Only) – Factory Preset to Disabled

This function conserves energy by automatically reducing tank temperature to 140° F when the unit sits idle for more than two hours. To recover, simply press any BREW or ON/OFF button. Once the water in the tank reaches brewing temperature, the brew cycle will automatically start. Recovery is indicated by a yellow RECOVERY light on the membrane control panel. Recovering from a SLEEP mode is faster and more efficient than heating after switching off the power.

#### SLEEP MODE – Factory Preset to DISABLED

To ENABLE Sleep Mode:

- UNIT MUST BE ON. Press and HOLD until turns ON; press again. Sleep Mode is now ENABLED.

To DISABLE Sleep Mode:

- UNIT MUST BE ON. Press and HOLD until turns OFF; press again. Sleep Mode is now DISABLED.

### WARMERS

#### Setting the Temperature

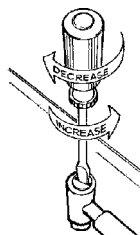
Gemini warmers feature three temperature settings. Warmers are rated at 90W with High (100%); Med (60%); Low (30%). Pressing the WARMER button once will place it on High; A second time Med; Third time Low as indicated by the warmer lights. A fourth press of the warmer button turns off the warmer.

When the system is turned off at the ON/OFF button, it will remember the last warmer setting. Additionally, if the warmer is off, the unit is designed to automatically turn the warmer on (Med setting) when the BREW button is pressed.

To Determine Timer Setting and the Change Time:

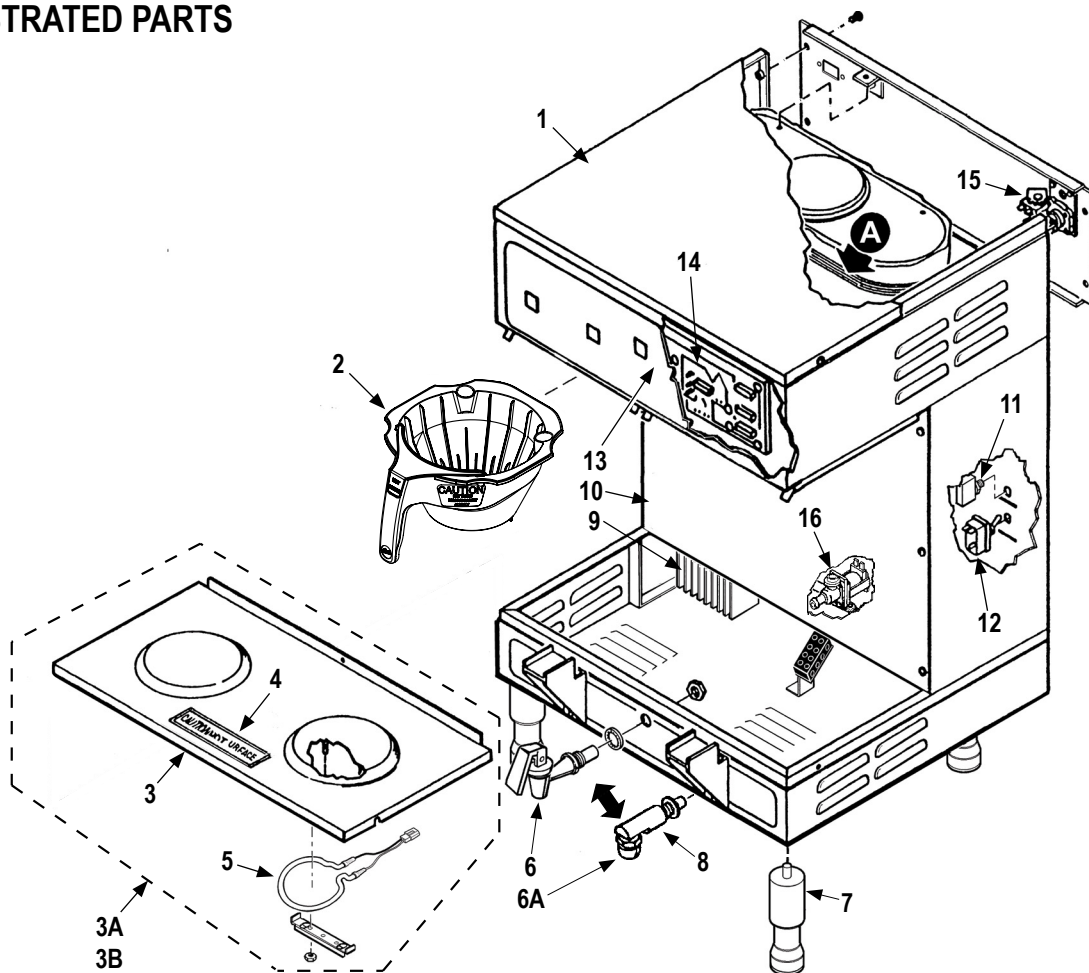
- WARMER MUST BE OFF. Press and HOLD until the light comes ON and goes OFF; RELEASE.
- The light will start blinking. Count the blinks. Each blink = 20 minutes (maximum 200 min.).
- At the end of the flashing cycle, press and HOLD until the light begins QUICK flashing. The cycle will start over after 11 flashes (Note - A setting of 11 flashes is the OFF position).
- When you come to the desired time, RELEASE .
- To set and exit, press .

### By-Pass Flow Adjustment



1. Slide brew cone out to expose by-pass outlet. Place one measuring cup under the by-pass fitting and another measuring cup under the brew cone outlet. Press the LARGE brew button for 15 seconds, then press the ON/OFF button to stop the brew cycle.
2. Divide the number of ounces collected from the by-pass outlet into the total ounces collected from the spray head and by-pass. This will determine the percentage of by-pass.
3. To increase or decrease the volume of by-pass water, turn the adjustment screw on the by-pass fitting as show in the illustration (left). Turn clockwise for less water – counterclockwise for more water.
4. After making the adjustment, you must reprogram the brew volume to maintain the proper total amount of finished coffee brewing into the insulated server. This reprogramming is required every time you make a by-pass adjustment or when a different spray head is installed.

## ILLUSTRATED PARTS



ITEM#	PART#	DESCRIPTION
1	WC-5421	COVER, TOP SS GEM-12D GEM-612ILD, TL9002, 312IL
2	WC-3417	BREW CN, ASSY W/SPL POC BRWN STYLIZED GEMIN HOT COFF
3	WC-5423	DECK, WARMER W/ASSY GEM12 312IL/612IL/12ILD/612ILD
3A	WC-5430 <sup>c</sup>	WARMER DECK, COMPLETE W/WARMER ELEMENTS GEM-12, 312IL
3B	WC-37163 <sup>d, e</sup>	KIT, WARMER ELEMENT 100W 220V GEN USE
4	WC-38310	LABEL, CAUTION HOT SURFACE GEN USE
5	WC-970 <sup>a, c</sup>	ELEMENT, WARMER ASSY 100W 120V WITH SILICONE BOOTS
5A	WC-973 <sup>d, e</sup>	ELEMENT, WARMER ASSY 100W 220V
6	WC-1809	FAUCET, PS/HPS SERIES HOT WTR 1/2-20 UNF AP/ALP
6A	WC-2912BK <sup>b</sup>	SPOUT, HOT WATER "NO SPLASH"
7	WC-3528	LEG, 4" ADJUSTABLE 3/8-16 THRD ITALIAN STYLE
8	WC-39198	LABEL, BOTTOM PANEL GEM12D/612 ILD CURTIS
9	WC-8560 <sup>a</sup>	HEATSINK, ASSY 1PH GEM612ILD GEM-12D/TL9002-10/D1000AP/T
10	WC-5829	COVER, FRONT W/A GEM-12 GEM-12D/312IL/612ILD
11	WC-1501 <sup>a</sup>	FUSE, HOLDER ASSY W/5A FUSE
12	WC-102 <sup>a, c</sup>	SWITCH, TOGGLE NON-LIT SPST 15A 125/6A 250VAC RESISTIVE
12A	WC-103 <sup>d, e</sup>	SWITCH, TOGGLE NON-LIT DPST 25A 125/250VAC RESISTIVE
13	WC-39197 <sup>a</sup>	MEMBRANE CONTRL PANEL CURTIS GEM-12D
14	WC-670 <sup>a, c</sup>	CONTROL BOARD 120V 50/60HZ GEM-12D
14A	WC-758 <sup>d, e</sup>	CONTROL BOARD 220V 50/60HZ GEM12D-30
15	WC-847 <sup>a, c</sup>	VALVE, INLET
15A	WC-883 <sup>d, e</sup>	VALVE, INLET 2 GPM 240V 10W
16	WC-892 <sup>b</sup>	VALVE, HOT WATER 220V 17W GEM-12D
16A	WC-888 <sup>b</sup>	VALVE, HW 120V 14W*NSI* TL9001/2/GEM-12D/600ILD/612ILD

<sup>a</sup> Recommended parts to stock

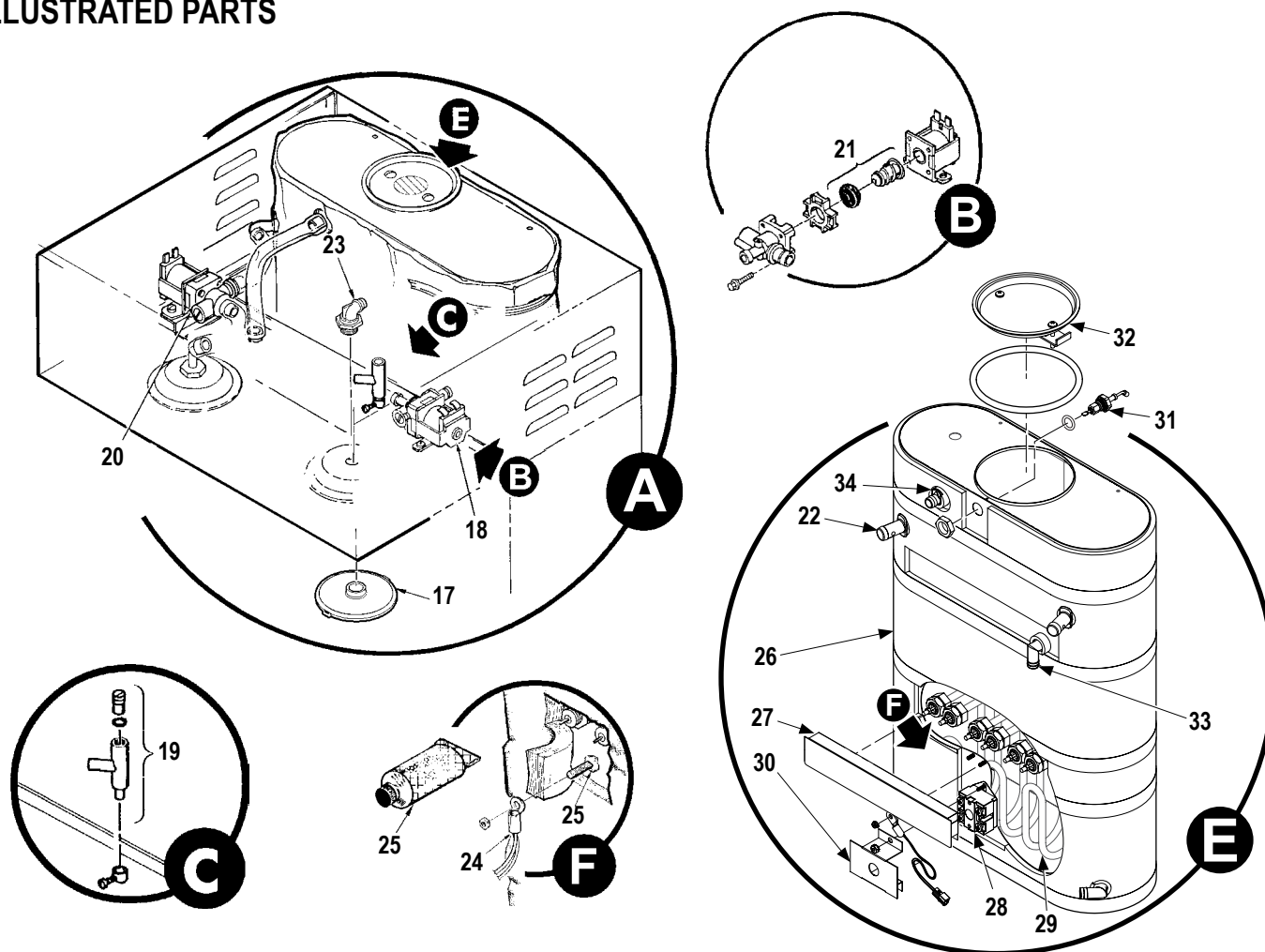
<sup>b</sup> Component used on earlier models of GEM12D built before 4/12, equipped with electric faucet.

<sup>c</sup> Used on model GEM-12D-10.

<sup>d</sup> Used on model GEM-12D-16.

<sup>e</sup> Used on model GEM-12D-30.

## ILLUSTRATED PARTS



ITEM#	PART#	DESCRIPTION
17	WC-29025 <sup>a</sup>	SPRAYHEAD, PURPLE ADVANCE FLOW
18	WC-37122 <sup>a,c</sup>	KIT, DUMP VALVE RIGHT
18A	WC-854 <sup>d,e</sup>	VALVE, BREW DUMP RIGHT 240V 12W GEM12D/TP/TPC
19	WC-2987	BYPASS ASSEMBLY, ADJUSTABLE (WC-2984,WC-2985 & WC-43011)
20	WC-37121 <sup>a,c</sup>	KIT, DUMP VALVE LEFT
20A	WC-853 <sup>d,e</sup>	VALVE, BREW DUMP LEFT 240V 12W GEM12D/TP/TPCELEMENT, KIT,
21	WC-37132 <sup>a,c</sup>	KIT, VALVE REPAIR USE ON WC-820WDR,WC-821WDR, WC-844WDR
22	WC-37357 <sup>a</sup>	KIT, STRAIGHT PLASTIC FITTING AND BUSHING 12MM
23	WC-2962-101K <sup>a</sup>	KIT, FITTING SPRAYHEAD KYNAR
24	WC-1438-101 <sup>a</sup>	SPOUT, HOT WATER "NO SPLASH"
25	WC-5231 <sup>a</sup>	COMPOUND, SILICONE 5 OZ
26	WC-54005	TANK, COMPLETE GEM-612ILD/G12D/TL9002
26A	WC-5432 <sup>f</sup>	TANK, ASSY. COMPLETE GEM-12/ GEM-312IL
27	WC-4382 <sup>a</sup>	GUARD, SHOCK HTNG ELMNT DOUBLE
28	WC-522 <sup>a</sup>	THERMOSTAT, HI LIMIT HEATER CONTROL DPST 277V 40A
29	WC-906 <sup>a</sup>	ELEMENT, HEATING 2KW 220V W/JAM NUTS
30	WC-43055 <sup>a</sup>	GUARD, SHOCK RESET THERMOSTAT (WC-522)
31	WC-5527K <sup>a</sup>	KIT, PROBE WATER LEVEL O-RING & NUT
32	WC-37008 <sup>a</sup>	KIT, TANK LID ROUND
33	WC-37365 <sup>a</sup>	KIT, FITTING TANK INLET
34	WC-37266 <sup>a</sup>	KIT, FITTING TANK OVERFLOW

<sup>a</sup> Recommended parts to stock

<sup>b</sup> Component used on earlier models of GEM12D, equipped with electric faucet, built before 4/12.

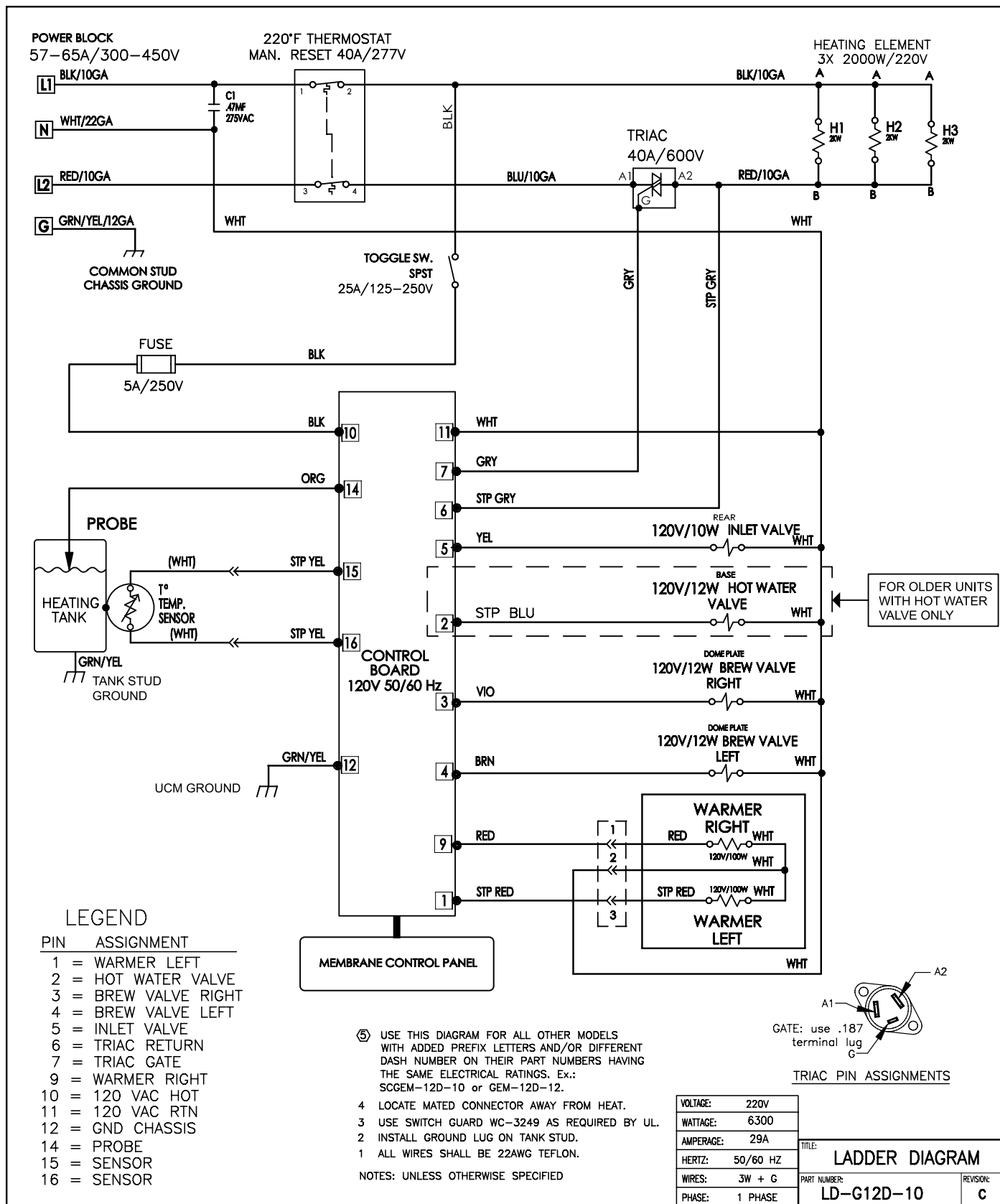
<sup>c</sup> Used on model GEM-12D-10.

<sup>d</sup> Used on model GEM-12D-16.

<sup>e</sup> Used on model GEM-12D-30.

<sup>f</sup> For units with a capillary thermostat.

# ELECTRICAL SCHEMATIC



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## 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, part, 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](http://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 16832 10/01/15 @ 13.4 rev C



### 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](mailto:techsupport@wilburcurtis.com) | Site: [www.wilburcurtis.com](http://www.wilburcurtis.com)

**FOR THE LATEST SPECIFICATION INFORMATION GO TO [WWW.WILBURCURTIS.COM](http://WWW.WILBURCURTIS.COM)**