BASIC OPERATION OF COMMERCIAL DRYER

- For additional information, see **www.whirlpoolcommerciallaundry.com**

⚠WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

IMPORTANT

Electrostatic Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance.

  -OR-

  Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in anti-static bag, observe above instructions.

GENERAL USER INFORMATION

Blank display

This condition indicates the appliance is inoperative. Enter set-up mode to view diagnostic code.

'0 Minutes' showing in display

This condition indicates the dryer cannot be operated. Coins dropped or debit inputs during this condition will be stored in escrow but cannot be used until normal operation is restored by opening and closing the door. If the door switch fails, it must be replaced before normal operation can be restored.

Cold start (initial first use)

Dryer is programmed at the factory as follows:

- 5 minutes dry time/quarter (coin 1).
- $1.50 dry price (fixed cycle with top off – Coin Models).
- $0.00 dry price (fixed cycle – Non-Coin / Card-Ready Models).

Warm Start (after power failure)

A few seconds after power is restored, if a cycle was in progress at the time of the power failure, 'RESELECT CYCLE' will flash in the display. This is to indicate the need for a fabric setting keypad to be pressed to restart dryer.

Pricing

After the door is opened following the completion of a cycle, the display indicates the cycle price (unless set for free operation). As coins or debit inputs arrive, the display will change to lead the user through the initiation of a cycle.

There are four (4) types of pricing:

Fixed 'Vend' Pricing
A dryer set up for 'Fixed Cycle' operation can only accept additional time accumulated by increments equal to the length of a complete dry cycle. A maximum time in minutes may be purchased; no additional credit is given when that time is in the display.

Accumulator Pricing
If the price is set to one coin 1, then accumulator mode is in effect (stacked coin models also require Fixed Cycle with Top Off option to be selected). Cycle time can be purchased one coin at a time (Coin models) up to the maximum time. Stacked Coin dryers will credit all money to a cycle with a single button press while in accumulator pricing.

Fixed Cycle With Top Off Pricing
A dryer set to offer 'Top Off' capability will allow time to be added to an existing dry cycle in increments equal to the number of minutes of dry time per quarter (coin 1), up to the maximum time, regardless of the cost required to start the dryer. No credit is given for coins or debit inputs entered when the control is displaying the maximum time.

Non-Coin / Card-Ready Models: In Enhanced Debit Mode, the top off price can be set independently. (See VALUE OF COIN 2), and the top off time is calculated according to the following equation:

$$\frac{\text{top off price}}{\text{full cycle price}} = \frac{\text{top off time}}{\text{full cycle length}}$$

Penny increment offset is not applied to top off purchases.

Free Cycles
This is established by setting the cycle price to zero. When this happens, 'SELECT CYCLE' will appear rather than a cycle price. Any cycle started as a free cycle will automatically terminate when the door is opened.

Debit Card Ready

This dryer is debit card 'cable' ready. It will accept a variety of debit card systems, but does NOT come with a debit card reader. Refer to the debit card reader manufacturer for proper dryer set-up. In models converted to a Generation 1 debit card system, debit pulses represent the equivalent of one coin (coin 1).

CONTROL SET-UP PROCEDURES

IMPORTANT: Read all instructions before operating.

The fabric setting keypads along with the digital display are used to set-up the dryer controls.
The display can contain 4 numbers and/or letters and a decimal point. These are used to indicate the set-up codes and related code values available for use in programming the dryer

How to use the keypads to program the controls

1. The WHITES AND COLORS keypad is used to adjust the values associated with set-up codes. On a stacked dryer/dryer unit, you must use the lower dryer keypads. Pressing the keypad will increment the value by one (1). Rapid adjustment is possible by holding the keypad down.
2. The PERMANENT PRESS keypad will advance through the set-up codes. Pressing the keypad will advance to the next available set-up code. Holding the keypad down will automatically advance through the set-up codes at a rate of one (1) per second.
3. The DELICATES keypad is used to select or deselect options.

Start Operating Set-Up

- Single Load Coin Models: Insert access door key, turn, and lift to remove access door.
- Single Load Non-Coin / Card-Ready Models: Once the debit card reader is installed (according to the reader manufacturer's instructions), the set-up mode can be entered by inserting a manual set-up card (supplied by the reader manufacturer) into the card slot. If manual set-up card is not available, manual set-up mode can be entered by removing connector AA1 on the circuit board.

DISPLAY

After the dryer has been installed and plugged in, the display will show '0 minutes.'

Single Load Models

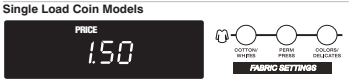


Stacked Models



Once the dryer has been plugged in and the door opened and closed, the display will show the price. In Non-Coin / Card-Ready models set for free cycles, the display will flash 'SELECT CYCLE' (not shown).

Single Load Coin Models



Stacked Coin Models



IMPORTANT: The console must not be opened unless power is first removed from the dryer. To access connector AA1:

- → Unplug dryer or disconnect power.
- → Open console, disconnect plug on AA1, close console.
- → Plug in dryer or reconnect power.
- ■ Stacked Coin Models: Insert access panel key and turn counter-clockwise.
- ■ Stacked Non-Coin / Card-Ready Models: Once the debit card reader is installed (according to the reader manufacturer's instructions), the set-up mode can be entered by inserting a manual set-up card (supplied by the reader manufacturer) into the card slot.

  If manual set-up card is not available, manual set-up mode can be entered by turning the access panel key.

The dryer is now in the set-up mode.

Before proceeding it is worth noting that, despite all the options available, an owner can simply choose to uncrate a new commercial dryer, hook it up, plug it in and have a dryer that operates.

- ■ Coin models are pre-set at the factory for fixed cycle price with top off.
- ■ Non-Coin / Card-Ready models are pre-set for free cycle operation so they can be run without readers or coins.

SET-UP CODES

- ■ The PERMAMENT PRESS keypad will advance from code to code.
- ■ The WHITE AND COLORS keypad will change the code value.
- ■ The DELICATES keypad will select or deselect options.

FOR NON-COIN / CARD-READY MODELS: The set-up codes are the same as for the Coin models except where noted.

NOTE: On all stacked dryer models, programming selections apply to both dryers. Stacked dryer selections are accessed by pressing the LOWER DRYER keypads.

The set-up code is indicated by the one or two left-hand characters. The set-up code value is indicated by the two or three right-hand characters.

CODE	EXPLANATION
6.06	**REGULAR CYCLE PRICE**
6.06	Represents the number of quarters (coin 1); may adjust from 0–39. (See VALUE OF COIN 1 b. 05) Advance from 0–39 by pressing WHITES AND COLORS. Factory preset for 6 quarters - $1.50. NON-COIN / CARD-READY MODELS ONLY: Factory preset for 0 quarters.
→ Press PERMANENT PRESS keypad once to advance to next code.	
7.05	**REGULAR DRY TIME**
7.05	Represents the number of minutes per quarter (coin 1). Factory preset for 5 minutes per coin. Example: 6 quarters x 5 minutes = 30 minutes. By pressing the WHITES AND COLORS keypad you can adjust the value from 1 to the max. time in minutes.
→ Press PERMANENT PRESS keypad once to advance to next code.	
	TYPE OF DRYER PRICING
8.00	Fixed Cycle with Top Off. For detailed description see General User Information.
8.00	Fixed Cycle. For detailed description see General User Information. Use DELICATES keypad to make this selection.
8.FC	NON-COIN / CARD-READY ONLY: Factory preset for FC.
→ Press PERMANENT PRESS keypad once to advance to next code.	

CODE	EXPLANATION
9.00	**CYCLE COUNTER OPTION** This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
9.00	Not Selected 'OFF'.
9.0C	Selected 'ON' and not able to be deselected. Press DELICATES keypad 3 consecutive times to select 'ON'. Once selected 'ON' it cannot be deselected. See page 6 for additional details.
→ Press PERMANENT PRESS keypad once to advance to next code.	
1.00	**MONEY COUNTER OPTION** This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
1.00	Not Selected 'OFF'.
1.0C	Selected 'ON'. Press DELICATES keypad 3 consecutive times to select 'ON' and 3 consecutive times to remove (Not Selected 'OFF'.) Counter resets by going from 'OFF' to 'ON'. See Page 6 for additional details.
1.LO	Selected 'ON' and not able to be deselected. To select 'ON' and not able to be deselected, first select 'ON', then within two seconds press DELICATES twice, WHITES AND COLORS once, and exit the set-up mode. See Page 4 for additional details.
→ Press PERMANENT PRESS keypad once to advance to next code.	
2.00	**SPECIAL PRICING OPTIONS** This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
2.00	Not Selected 'OFF'.
2.SP	Selected 'ON'. Press DELICATES keypad once for this selection.
If SPECIAL PRICING OPTION ZL is selected, you have access to codes '3.' thru '9.'. → Press PERMANENT PRESS keypad once to advance to next code.	

CODE	EXPLANATION
	OPTIONS TO USE IF SPECIAL PRICING IS SELECTED:
3.06	**SPECIAL CYCLE PRICE**
3.06	Represents the number of quarters (coin 1); may adjust from 0–39. (See VALUE OF COIN 1 b.05). Advance from 0–39 by pressing WHITES AND COLORS. Factory preset for 6 quarters = $1.50. NON-COIN / CARD-READY MODELS: Factory preset for 0 quarters.
→	Press PERMANENT PRESS keypad once to advance to next code.
4.05	**SPECIAL DRY TIME**
4.05	Represents the number of minutes per quarter (coin 1). Factory preset for 5 minutes per coin. Example: 6 quarters x 5 minutes = 30 minutes. By pressing the WHITES AND COLORS keypad you can adjust the value from 1 to the max. time in minutes.
→	Press PERMANENT PRESS keypad once to advance to next code.
5.00	**TIME-OF-DAY CLOCK, MINUTES**
5.00	This is the TIME-OF-DAY CLOCK, minute setting; select 0–59 minutes by pressing WHITES AND COLORS keypad.
→	Press PERMANENT PRESS keypad once to advance to next code.
6.00	**TIME-OF-DAY CLOCK, HOURS** **NOTE:** Uses military time – 24 hr. clock.
6.00	This is the TIME-OF-DAY CLOCK, hour setting; select 0–23 hours by pressing WHITES AND COLORS keypad.
→	Press PERMANENT PRESS keypad once to advance to next code.
7.00	**SPECIAL PRICE START HOUR** **NOTE:** Uses military time – 24 hr. clock.
7.00	This is the start hour; 0–23 hours. Select START HOUR by pressing WHITES AND COLORS keypad.
→	Press PERMANENT PRESS keypad once to advance to next code.
8.00	**SPECIAL PRICE STOP HOUR** **NOTE:** Uses military time – 24 hr. clock.
8.00	This is the stop hour; 0–23 hours. Select STOP HOUR by pressing WHITES AND COLORS keypad.
→	Press PERMANENT PRESS keypad once to advance to next code.
9.10	**SPECIAL PRICE DAY**
9.10	This represents the day of the week and whether special pricing is selected for that day. A number followed by '0' indicates no selection that particular day (9.10). A number followed by an 'S' indicates selected for that day (9.1S). Day of week (1-7) can be chosen by pressing the WHITES AND COLORS keypad. Press DELICATES keypad once to select special pricing for each day chosen. When exiting setup code '9.', the display must show current day of week: When exiting setup code '9.', the display must show current day of week:

DISPLAY	DAY OF WEEK	CODE (selected)
10	Day 1 = Sunday	1S
20	Day 2 = Monday	2S
30	Day 3 = Tuesday	3S
40	Day 4 = Wednesday	4S
50	Day 5 = Thursday	5S
60	Day 6 = Friday	6S
70	Day 7 = Saturday	7S

→ Press PERMANENT PRESS keypad once to advance to next code.

CODE	EXPLANATION
	OPTIONS TO USE IF SPECIAL PRICING IS SELECTED (continued):
A.00	**VAULT VIEWING OPTION** This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
A.00	Not Selected 'OFF'.
A.SC	Selected 'ON'. Press DELICATES keypad once for this selection. When selected, the money and/or cycle counts will be viewable (if money and/or cycle counting is selected) when the coin box is removed.
→	Press PERMANENT PRESS keypad once to advance to next code.
b.05	**VALUE OF COIN 1**
b.05	This represents the value of coin 1 in number of nickels. 05 = $0.25. By pressing WHITES AND COLORS keypad you have the option of 1–199 nickels.
→	Press PERMANENT PRESS keypad once to advance to next code.
C.20	**VALUE OF COIN 2**
C.20	This represents the value of coin 2 in number of nickels. 20 = $1.00. By pressing WHITES AND COLORS keypad you have the option of 1–199 nickels. NON-COIN / CARD-READY MODELS ONLY: For Non-Coin / Card-Ready models using Enhanced Debit, this field represents the value of top off in nickels. NON-COIN / CARD-READY MODELS: Factory preset for $.25.
→	Press PERMANENT PRESS keypad once to advance to next code.
d.00	**COIN SLIDE OPTION** This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
d.00	Not Selected 'OFF'.
d.CS	Selected 'ON'. Press DELICATES keypad 3 consecutive times for this selection. When coin slide mode is selected, set 'b.' equal to value of slide in nickels. Set '606' (REGULAR CYCLE PRICE) and '3.06' (SPECIAL CYCLE PRICE) to number of slide operations. **NOTE:** If the installer sets up 'CS' on a coin drop model, it will not register coins.
→	Press PERMANENT PRESS keypad once to advance to next code.
E.00	**ADD COINS OPTION** This option is either SELECTED 'ON' or NOT SELECTED 'OFF'. This option causes the customer display to show the number of coins (coin 1) to enter, rather than the dollars-and-cents amount.
E.00	Not Selected 'OFF'.
E.AC	Selected 'ON'. Press DELICATES keypad 3 consecutive times for this selection. NON-COIN / CARD-READY MODELS ONLY: In enhanced debit mode, this option is not selectable.
→	Press PERMANENT PRESS keypad once to advance to next code.
d.Cd	**COIN/DEBIT OPTION**
d.Cd	Both coin & debit selected.
d._d	Debit Card selected, coin disabled. Press DELICATES keypad 3 consecutive times for this selection.
d.C_	Coins selected, debit disabled. Press DELICATES keypad 3 consecutive times for this selection.
d.Ed	Enhanced debit is self-selected when a Generation 2 card reader is installed in the dryer. The 'Ed' option cannot be manually selected or deselected.
→	Press PERMANENT PRESS keypad once to advance to next code.

CODE	EXPLANATION
L.00	**PRICE SUPPRESSION OPTION** This option is either SELECTED 'ON' OR NOT SELECTED 'OFF'. This option causes the customer display to show 'AVAILABLE' or 'ADD' rather than the amount of money to add. (Used mainly in debit installations.)
L.00	Not Selected 'OFF'.
L.PS	Selected 'ON'. Press DELICATES keypad once for this selection.
→ Press PERMANENT PRESS keypad once to advance to next code.	
n.CE	**CLEAR ESCROW OPTION** This option is either SELECTED 'ON' OR NOT SELECTED 'OFF'. When selected, money held in escrow for 30 minutes without further escrow or cycle activity will be cleared.
n.CE	Selected 'ON'.
n.00	Not Selected 'OFF'. Press DELICATES keypad once to deselect this option.
→ Press PERMANENT PRESS keypad once to advance to next code.	
U.00	**PENNY INCREMENT OFFSET**
U.00	This represents the penny increment price offset used in Generation 2 (Enhanced Debit) Non-Coin / Card-Ready models. Choose from 0–4 pennies by pressing the WHITES AND COLORS keypad.
→ Press PERMANENT PRESS keypad once to advance to next code.	

If cycle counter (9 0C) is selected (see Page 2), the following is true:

100 Represents the number of cycles in HUNDREDS. 1 02 = 200

200 Represents the number of cycles in ONES. 2 25 = 25

TOTAL=225 cycles

This is 'VIEW ONLY' and cannot be cleared.

Press the PERMANENT PRESS keypad once to advance to next code.

If money counter (1. 0C or 1. C0) is selected (see Page 2), the following is true:

300 Number of dollars in HUNDREDS. 3 01 = $100.00

400 Number of dollars in ONES. 4 68 = $ 68.00

500 Number of CENTS. 5 75 = $ 00.75

TOTAL = $168.75

END OF SET-UP PROCEDURES

EXIT FROM SET-UP MODE

- SINGLE LOAD COIN MODELS: Reinstall access door.
- SINGLE LOAD NON-COIN / CARD-READY MODELS:
- → Unplug dryer or disconnect power.
- → Open console, reinsert plug into AA1, close console.
- → Plug in dryer or reconnect power.
- STACKED MODELS: Turn access panel key back to original position.

DIAGNOSTIC CODES

If the set-up mode is entered and one of the following has occurred, the appropriate diagnostic code will be in the display.

STACKED DRYERS

CODE	EXPLANATION
d1	Invalid upper dryer door circuit state – The CSP Venus control does not differentiate between invalid state and open door state.
d4	The CSP Venus control will send this error when the upper motor feedback circuit is sensing voltage with the door open or when the motor should not be on. The control does not know if the relay is bad (stuck on), the relay drive circuit is bad (shorted causing the motor relay to stay on), or the relay feedback circuit is bad.
d5	Coin 1 failure. Screen goes blank. Switch over to service mode verify d5 error. Check connector AA4 connection and check coin 1 drop for blockage.
d9	Low voltage.
d12	Lower dryer motor sense circuit error on control board or due to power line interference (lower dryer cycles and lower dryer display disabled until diagnostic code is manually cleared).
d13	Coin 2 failure. Screen goes blank. Switch over to service mode and verify d13 error. Check Coin 2 connector AA5 connection and check coin drop 2 for blockage.
d14	Upper dryer motor sense. Upper dryer screen disabled. Ensure connector AA7 connection.
d16	Gen 2 debit card communication error. Unplug card reader and plug it back in to allow it to reboot.
d17	Lower dryer door sense error on control board or due to power line interference (lower dryer cycles and lower dryer display disabled until diagnostic code is manually cleared).
d20	Lower dryer motor control circuit error (lower dryer cycles and lower dryer display disabled until diagnostic code is manually cleared).
d23	Upper button stuck switch (upper dryer cycle and upper dryer display disabled for 30s or diagnostic code cleared) Function will return normal if stuck switch no longer detected.
d24	Lower button stuck switch (lower dryer cycle and lower dryer display disabled for 30s or diagnostic code cleared) Function will return normal if stuck switch no longer detected.

DRYER DIAGNOSTIC MODE

This mode is entered by depressing DELICATES for one second while in any of the set-up codes 1 through 6 (or while dAS displays if operating with Whirlpool Data Acquisition setup) or with a diagnostic code present. Diagnostic codes are cleared on entry and all display segments should flash. If a diagnostic code persists, it must be corrected before the diagnostic cycle may be executed.

All Single Load Models:

With all segments flashing, the diagnostic cycle is started by depressing the PERMANENT PRESS keypad. The cycle consists of 7 minutes of heat and 1 minute of cooldown.

The WHITES AND COLORS keypad will increment the diagnostic cycle minutes up to the maximum allowed, then roll over to 2 minutes. The DELICATES keypad will cancel this cycle and exit the diagnostic mode.

Stacked Models Only:

There are 2 procedures to initiate cycle activity from diagnostic mode for these models:

1. Upper Dryer Field Diagnostic Cycle – With the entire display flashing, the cycle is started by pressing the UPPER DRYER PERMANENT PRESS keypad. The cycle consists of 7 minutes of heat and 1 minute of cool down. The UPPER DRYER WHITES AND COLORS keypad will increment the diagnostic cycle minutes up to the maximum allowed, then roll over to 2 minutes. Pressing the LOWER DRYER DELICATES keypad will cancel this cycle and exit the diagnostic mode.

2. Lower Dryer Field Diagnostic Cycle – With the entire display flashing, the cycle is started by pressing the LOWER DRYER PERMANENT PRESS keypad. The cycle consists of 7 minutes of heat and 1 minute of cool down. The LOWER DRYER WHITES AND COLORS keypad will increment the diagnostic cycle minutes up to the maximum allowed, then roll over to 2 minutes. Pressing the LOWER DRYER DELICATES keypad will cancel this cycle and exit the diagnostic mode.

DRYER HELP MODE

Dryer help mode is entered by pressing the WHITES AND COLORS keypad while in special pricing option step 2.XX (or while dAS displays if operating with Whirlpool Data Acquisition setup). In help mode, the software revision is displayed in the digits. Press the WHITES AND COLORS keypad at any time to exit help mode.
In help mode, other display symbols and elements are mapped to reflect the state of various inputs and outputs as follows:

SINGLE LOAD DRYERS ONLY:

*. . . . . low voltage present (below about 90 VAC)
circle above digit . . . . . .door closed
&. . . . . .60°C (140°F) thermostat closed
OR . . . . . motor sensed running
AIR. . . . . heater/gas valve relay on
FLUFF . . . . . motor relay on

STACKED MODELS ONLY:

Upper Dryer Only – Upper Half of Display

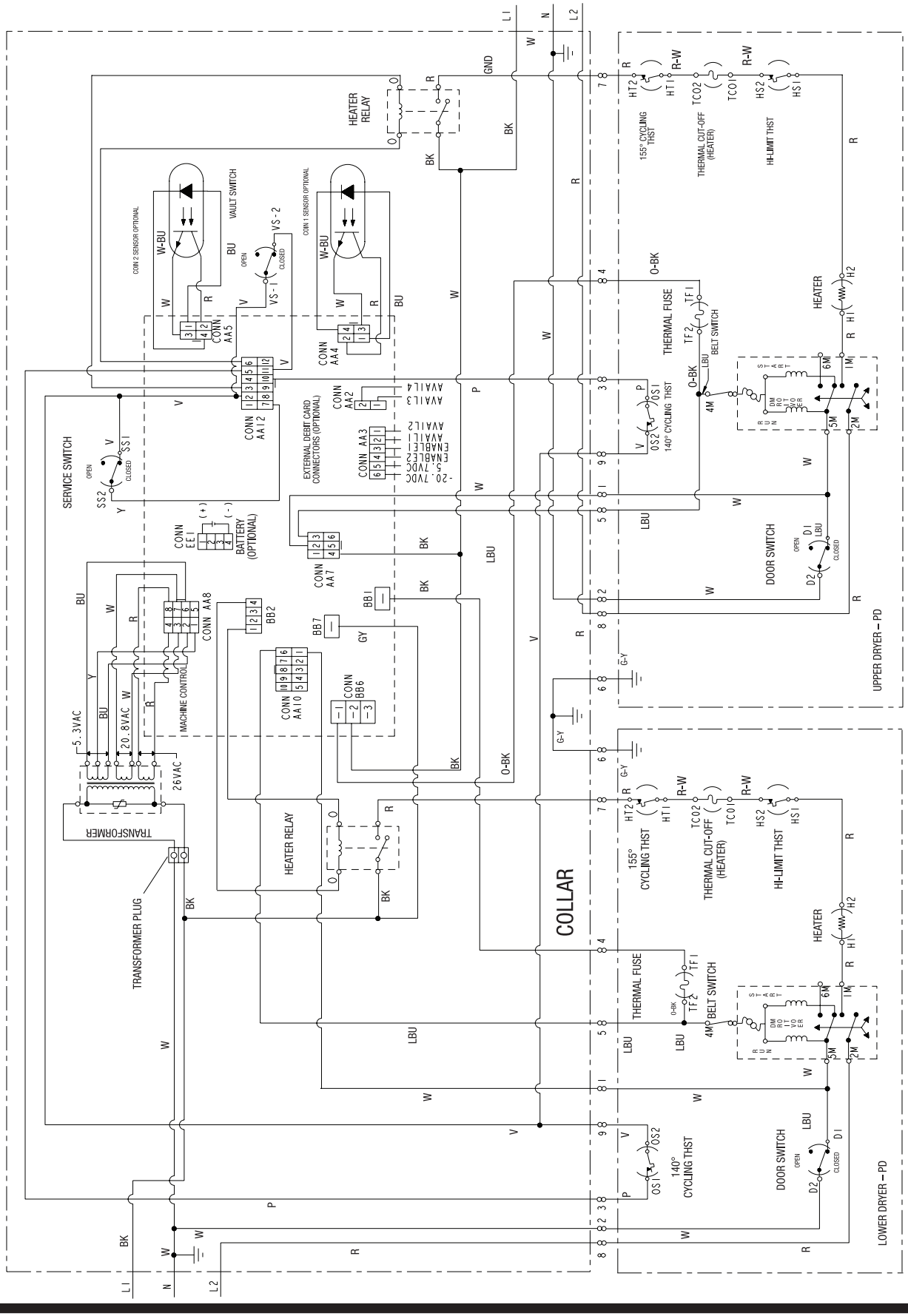
* . . . . . low voltage present (below about 90 VAC)

. . . . . .upper dryer motor sensed running
circle beside digit . . . . . upper dryer door closed
COOL . . . . . upper dryer 60°C (140°F) thermostat closed
OR . . . . . .upper dryer heater relay on
&. . . . . .upper dryer motor relay on

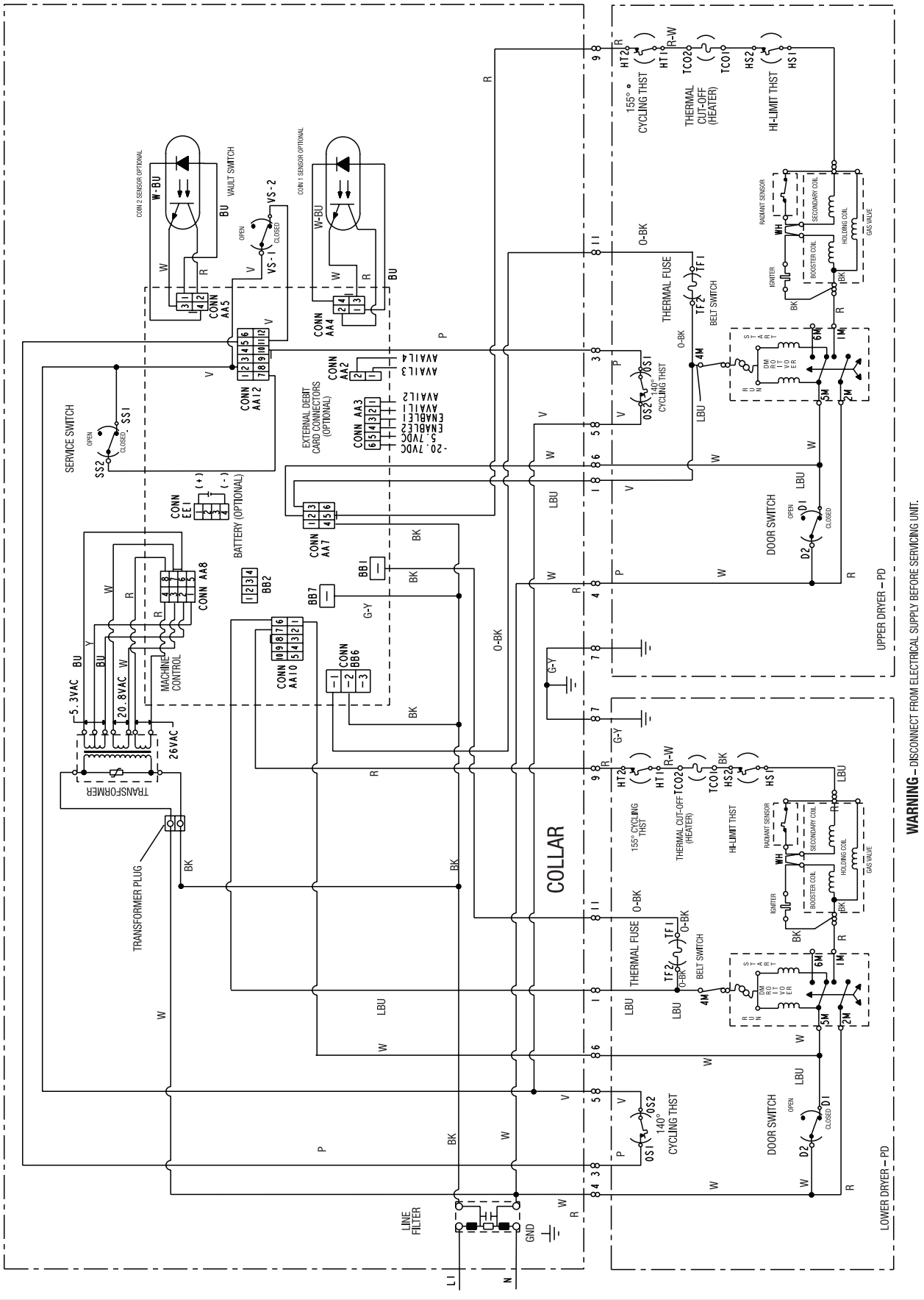
Lower Dryer Only – Lower Half of Display

. . . . . lower dryer motor sensed running
circle beside digit . . . . . .lower dryer door closed
COOL . . . . . .lower dryer 60°C (140°F) thermostat closed
OR . . . . . lower dryer heater relay on
&. . . . . lower dryer motor relay on

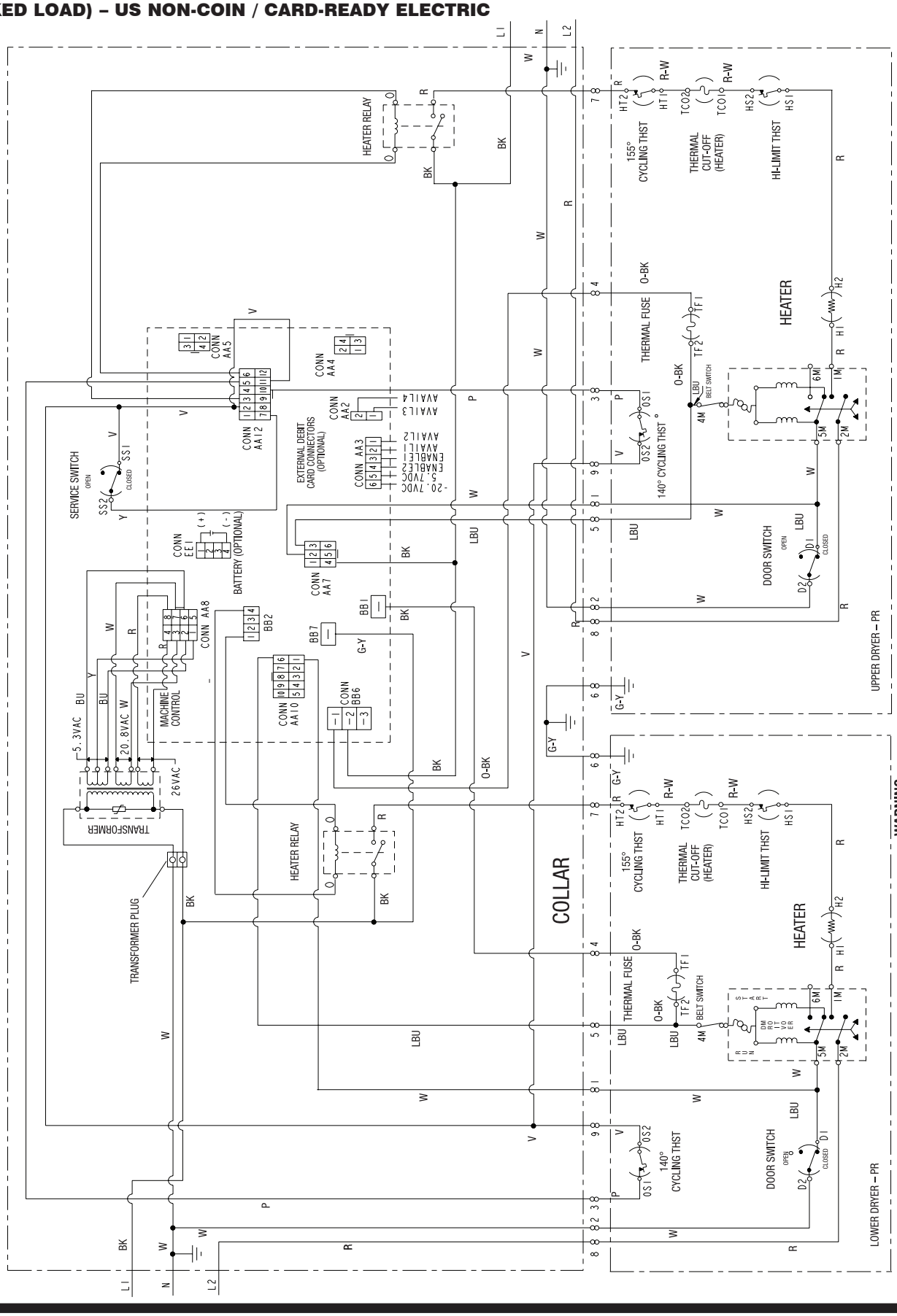
WIRING DIAGRAM – COIN ELECTRIC MODELS (STACKED LOAD) – US COIN ELECTRIC



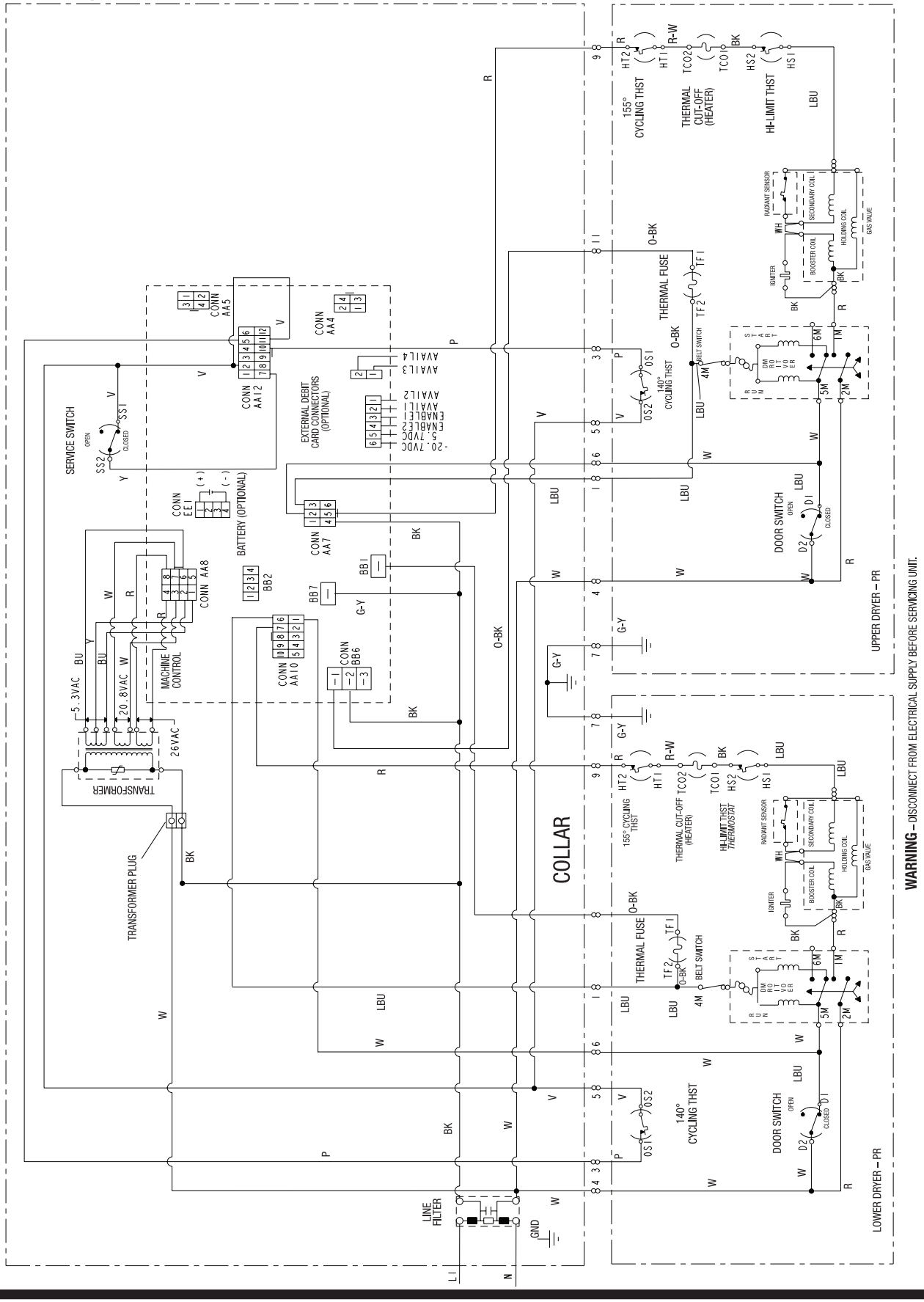
WIRING DIAGRAM – COIN GAS MODELS (STACKED LOAD) – COIN GAS



WIRING DIAGRAM – NON-COIN / CARD-READY ELECTRIC MODELS (STACKED LOAD) – US NON-COIN / CARD-READY ELECTRIC



WIRING DIAGRAM – NON-COIN / CARD-READY ELECTRIC MODELS (STACKED LOAD) – US NON-COIN / CARD-READY ELECTRIC



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