Service Manual



Universal Holding Cabinet UHC6PT-22MCD

Product Identification



LIMITED WARRANTY

This product is warranted to be free from defects in material and/or workmanship for a period of three (3) years from date of original installation, not to exceed 42 months from date of shipment from our factory. Any part or component which proves to be faulty in material and/ or workmanship within the warranty period will be replaced or repaired (at the option of Prince Castle) without cost to the customer for parts or labor, except as provided below.

- This Limited Warranty is subject to the following exceptions/conditions: Use of any non-genuine Prince Castle parts voids this warranty. All work must be performed by an authorized Prince Castle Service Agent, except as provided herein.
- All covered labor shall be performed during regular work hours.
- Overtime premium will not be covered. Travel charges are limited to 100 miles (200 kilometers) round trip; 2
- hours travel time, one trip per repair. Damage caused by carelessness, neglect, and/or abuse (e.g., using
- wrong current, dropping, tampering with or altering electrical components, or improper cleaning) is not covered.
- Equipment damaged in shipment or by fire, flood or an act of God is not covered.
- Damage to coated surfaces is not covered by this Limited Warranty.
- Labor for repair or replacement of the following parts is not covered by this Limited Warranty:
 - Display Bar (IUC) part number 547-058S
 - Heater Board part number 547-221S

Prince Castle will provide replacement parts to customer so customer are set out in the product's Operations Manual.

PRINCE CASTLE SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, OR EXPENSES. THIS IS PRINCE CASTLE'S ONLY WARRANTY. PRINCE CASTLE MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR ANY PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED.



A Marmon Group/Berkshire Hathaway Company

355 East Kehoe Blvd. • Carol Stream, IL 60188 USA Telephone: 630-462-8800 • Toll Free: 1-800-PCASTLE Fax: 630-462-1460 • www.princecastle.com

TABLE OF CONTENTS

Product Identification	1
Limited Warranty	1
Electrical Specifications	2
Safe Service Practices	2
Serial Number Matrix	2
Resetting Factory Defaults	3
Management Programming	4
Accessing Components	6
System Diagnostics	7
Service Tests	8
Removing/Replacing Bezels	9
Removing/Replacing Heater Boards	10
Removing/Replacing Distribution Board	11
Removing/Replacing Rows	12
Replacing Heater Platen/Probe Assembly	12
Troubleshooting	13
Exploded View and Parts List	16
Wiring Diagram	17



PRINCE CASTLE LLC MUNICUL A Marmon Group/Berkshire Hathaway Compar

Failure to disconnect power

from the unit before servicing could result in severe bodily injury or death. The ON/OFF Switch does not disconnect incoming power to the unit.

Electrical Specifications

208-240V 50/60 Hz 2250-3450W

Safe Service Practices

NOTE: This service manual is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects considered acceptable in the service trade. Prince Castle cannot be responsible, or assume any liability, for injury or damage arising from the use of this manual.

To avoid personal injury and /or property damage, it is important that Safe Service Practices be observed, including the following limited examples:

- Do not service the unit without first reading this manual.
- Do not attempt a repair if you have any doubt as to your ability to complete it in a safe manner.
- Do not attempt to repair or replace any component unless all power has been disconnected.
- · Prior to returning the unit to service, ensure that: - All electrical connections are correct and secure.
 - All safety grounds are correctly and securely connected.
 - All components are properly re-assembled.

Serial Number Matrix

The manufacture date is encoded in the unit's serial number. The service bench installation date (used to determine warranty coverage) is considered to be the end of the following month. For example:

Serial Number: FE0000458 Manufacture Date: June 2010 Service Bench Installation Date: July 31, 2010

			SERIAL NUMBER MATRIX						
		2009	2010	2011	2012	2013	2014	2015	2016
		D	Ε	F	G	Н	J	K	L
January	Α	AD	AE	AF	AG	AH	AJ	AK	AL
February	В	BD	BE	BF	BG	BH	BJ	BK	BL
March	C	CD	CE	CF	CG	СН	CJ	CK	CL
April	D	DD	DE	DF	DG	DH	DJ	DK	DL
May	Ε	ED	EE	EF	EG	EH	EJ	EK	EL
June	F	FD	FE	FF	FG	FH	FJ	FK	FL
July	G	GD	GE	GF	GG	GH	GJ	GK	GL
August	Н	HD	HE	HF	HG	HH	HJ	ΗK	HL
September	J	JD	JE	JF	JG	JH	JJ	JK	JL
October	K	KD	KE	KF	KG	KH	KJ	KK	KL
November	L	LD	LE	LF	LG	LH	LJ	LK	LL
December	Μ	MD	ME	MF	MG	MH	MJ	MK	ML



PRINCE CASTLE LLC



Management Programming Press the Master Program button. The Master The second 5 Display will request your password. NOTE: The default password is "1955". programmable ſΠΕ category is MENUS. 6 Sets which food product is assigned to @ BRKFST each tray in each of Enter your password. Type your password in on the keypad and press the OK Select button. the daypart modes. Press the button next 2 Programmable categories will appear in the rows of to the daypart mode () CHG OVER Item Displays, reading from the left. 6 whose menu is to change. The name of the food product currently assigned to Choose a 3 () REG MENU each tray position is displayed. Pressing the button next to the ¢ programmable PR category. Press the 0 lit Item Timer button desired tray position to the left of the MODES category you wish to program. Follow the (6 cycles through the @ CUSTON 1 6 available food instructions on the Master Display to products that can be assigned to the trav MENUS
 Menus
 position. When the navigate and © CUSTON 2 6 program the UHC. desired food product is displayed, press the OK Select button Confirm selections by pressing the OK on the Master Control Select button. Panel. You can change more than BR one item before | | SA D confirming by pressing OK Select. BAGEL
 6 Press the Back CHG COMPLETE button to retreat one NOTE: Be sure to level of programming start with the left-most (press several times Item Display in each () FOLD EGG 6 to exit programming). row. because changing an item may also make changes to items to the right in Incgriddel (6 that row due to The first temperature 4 programmable ΠO restrictions. category is MODES. 5*E* ®(: ۱ ٥ Sets the entire UHC Incgriddel 6 to one of the different Interpretation Interpretatio Interpretatio Interpretation Interpretation Inter (daypart modes, Breakfast, Change Over, Regular, Custom 1, Custom 2, () RND EGG 6 O CHG OVER or Cleaning. Each of 6 the dayparts modes is displayed. Press the button next to the 🕘 REG MENU 6 desired daypart mode and then press the OK Select button on the Master Control Panel, Press the Back © [USTON 1] 6 button on the Master Control Panel twice to exit programming. © <u>CUSTON 2</u> 6







System Diagnostics

ENTER SYSTEM DIAGNOSTICS

MARKEN MARKEN I I I A Marmon Group/Berkshire Hathaway Compa

- a. Turn the ON/OFF switch on and wait for the Master Display to show BRKFST MENU, then press the Master Program button.
- b. On the keypad enter **3550_9**, then press the OK Select button.



MASTER CONTROL BOARD DISPLAY TEST

- a. Press the Right button 5 times until the Master Display shows MCP DISPLAYS.
- Press the OK Select button and all segments of digit #1 on each row of the Master Display will turn on.
- c. Confirm all 14 segments of digit #1 are illuminated.
- d. Press the Right button to check digit #2.
- e. Continue until all 12 digits have been checked.
- f. Press the Back button to exit this test.

MASTER CONTROL BOARD BUTTON LIGHT TEST

- a. Press the Right button 1 time and the Master Display shows MCP BTN LGTS.
- b. Press the OK Select button and the Right button, the OK Select button, the Left button, and the Back button should light up.
- c. Confirm these four buttons are illuminated.
- d. Press the Back button to exit this test.

MASTER CONTROL BOARD BUTTON ACTUATION TEST

- a. Press the Right button 1 time and the Master Display shows MCP BUTTONS.
- b. Press the OK Select button.
- c. Press every button (18 on front and 2 on back of attic assembly), except the Back button, and watch the Master Display to confirm that the pressed button is recognized.
- d. Press the Back button to exit this test.



IUC BUTTON LIGHT TEST

- a. Press the Right button 1 time and the Master Display shows IUC BTN LGTS.
- b. Press the OK Select button and the Master Display shows ALL OFF.
- c. Press the Right button and the ring around all the Item Timer buttons becomes dimly lit.
- d. Press the Right button again and the ring around all the Item Timer buttons gets brighter.
- e. Press the Right button again and the lighted ring around all the Item Timer buttons flashes on and off.
- f. Press the Right button again and the flashing lighted ring gets brighter.
- g. Press the Back button to exit this test.

IUC BUTTON ACTUATION TEST

6

- a. Press the Right button 1 time and the Master Display shows IUC BTN PRSS.
- b. Press the OK Select button.
- c. Press the buttons on each of the 12 IUCs (total of 48 buttons) and confirm that the message on the Master Display matches the switch name which is in the IUC display next to the pressed switch.
- d. Press the Back button to exit this test.



8

IUC DISPLAY TEST

- a. Press the Right button 1 time and the Master Display shows IUC DISPLAY1.
- b. Press the OK Select button and all segments of digit #1 light up on all the Item Displays of each IUC (both front and back).
- c. Confirm all 16 segments of digit #1 are illuminated.
- d. Press the Right button to check digit #2.
- e. Continue until all 8 digits have been checked.
- f. Press the Back button to exit this test.

AUDIO TEST

- a. Press the Right button 2 times and then the OK Select button, and the Master Display shows LEVEL 0.
- b. Press the Right button 1 time and the Master Display shows LEVEL 1.
- c. Listen for an audible tone from the speaker.
- d. Repeat for levels 2, 3, and 4 and the volume should increase for each step.
- e. Press the Back button to exit this test.
- f. Press the Back button again to exit the system diagnostic mode. Shortly, the Master Display will show BRKFST MENU.

PRINCE CASTLE LLC WORLDWIDE

Service Tests

4

2

POWER SUPPLY TEST

- a. Disconnect power and inspect all terminals and connections for loose wires.
- Beconnect power and check for 5V DC on output pins of the power supply (orange wires = +V, black wires = GND).
- c. If 5V DC is not on the output pins of the power supply, turn power off, disconnect the output connector, turn power back on and check the voltage between the same two pins as in the previous step.

HEATER BOARD TEST

- a. Disconnect power and ensure heater board connectors are fully engaged with the receptacles on the bus board.
- b. Apply power and check for line voltage between pins 1 and 2 on connector P3.
- c. Check for 5V DC between pins 1 and 10 on connector P2.
- d. Check the operation of each triac on the heater board by checking the voltage between the following pins:
 - Triac Q1 = Pins 2 and 3
 - Triac Q3 = Pins 2 and 4 Triac Q6 = Pins 2 and 5 Triac Q9 = Pins 2 and 6
 - Triac Q11 = Pins 2 and 7
 - Triac Q13 = Pins 2 and 8

If the voltage reading switches between line voltage and no voltage, the triac is working correctly. If the voltage reading is steady at line voltage, the triac is not turning on. If the voltage reading is very small, the triac is turned on constantly.

3 DISPLAY TEST

- a. Move a ribbon cable from a display that is working to a failed display to determine if the failed display is defective.
- b. Reconnect all connections to original positions.

HEATER PLATEN TEST

- a. Disconnect power and disconnect the heater connector from the bus board.
- Measure resistance between the two pins in the heat connector. Resistance should be 190-220 ohms.
- c. Incorrect resistance indicates a defective heater platen.





10



PRINCE CASTLE LLC





5

Reassemble the unit. Replace the row and reassemble the unit according to *Removing/Replacing Rows* section.

wrap. Remove the four

setscrews

attaching the faulty heater

platen to the

platen rail.





Troubleshooting

MASTER DISPLAY MESSAGES							
PROBLEM	PROBABLE CAUSE	SOLUTION					
Left-most Item Display in affected row reads: HI TEMP	Row is changing to a temperature that is lower than its current value.	Wait for temperature to change before using slot.					
Left-most Item Display in affected row reads: LOW TEMP	Row is changing to a temperature that is higher than its current value.	Wait for temperature to change before using slot.					
Left-most Item Display in affected row reads: CALL SERVICE ROW TEMP TOO HIGH and alarm sounds		 Using a stand-alone temperature meter, check the actual heater platen temperature and compare it to the displayed temperature. To make sure the heater is responding to the unit's circuits, 					
Left-most Item Display in affected row reads: CALL SERVICE ROW TEMP TOO COOL and alarm sounds	Slot temperature is more than 10°F (6°C) below setpoint for more than 15 minutes.	 press that row's Row Mode button until OFF appears in the Item Displays and press the OK Select button. Then press the Row Mode button until an active mode appears and press OK Select. Heater platen may be defective — refer to <i>Heater Platen Test</i>. 					
Left-most Item Display in affected row reads: CALL SERVICE TEMP SENSOR ERROR and alarm sounds	There is a problem with the temperature probe.	 Inspect the probe's ribbon cable connection. Replace probe — refer to <i>Replacing Heater Platen/Probe</i> <i>Assembly.</i> 					
Left-most Item Display in affected row reads: CALL SERVICE RATE OF RISE and alarm sounds	A row is taking longer than 30 minutes to reach minimum temperature — there is a problem with the temperature probe or heater in row.	 Turn the ON/OFF switch off and on to clear any software problem. To make sure the heater is responding to the unit's circuits, press that row's Row Mode button until OFF appears in the Item Displays and press the OK Select button. Then press the Row Mode button until an active mode appears and press OK Select. Heater platen may be defective — refer to <i>Heater Platen Test</i>. Move a probe lead from a row that is working to this failed row to determine if a probe is defective. Replace probe — refer to <i>Replacing Heater Platen/Probe Assembly</i>. 					
Master Display reads: CALL SERVICE DISTRIBUTION BOARD ERROR and alarm sounds	Heaters for 3 rows will not operate — distribution board is down.	 Turn the ON/OFF switch off and on to clear any software problem. Inspect the board's ribbon cable connections. 					
Master Display reads:CALL SERVICE ROW DISPLAY BOARD ERROR and alarm sounds	One of the Item Displays is not operating.						
	OTHER FAILURE	CONDITIONS					
PROBLEM	PROBABLE CAUSE	SOLUTION					
Unit will not turn on and fans don't run	There is an exterior power supply problem.	Check for line voltage at the ON/OFF switch and the transformer.Reset the circuit breaker.					
While turned on, one display won't light	There is a problem with the ribbon cable or display.	 Inspect the display's ribbon cable connection. Move a ribbon cable from a display that is working to this failed display to determine if this display is defective. 					
While turned on, all displays won't light	There is an internal power supply problem.	Check for 5V DC on output pins of the power supply — refer to Power Supply Test.					
While turned on, one row will not heat or heats improperly	There is a problem with that row's heater board, heater platen or probe.	 Make sure that leads and inputs are securely seated on the heater boards. Perform <i>Heater Board Test</i>. Move power leads from a row that is working to this failed row to determine if this heater is defective. Move a probe lead from a row that is working to this failed row. 					
		to determine if a probe is defective.					

WORLDWIDE Lame _____

UHC IN STORE TROUBLESHOOTING

SYMPTOM RECOGNITION	
Item Displays on a timer bar are blank and there is no error message on the Master Display.	A
Parts of the displayed characters on a timer bar are missing.	A
Parts of the displayed characters on a timer bar remain lit all the time.	A
Pressing Item Timer button does not start product timer.	А
Item Timer button does not light up when pressed.	А
"ERROR" appears on a timer bar display when the unit is turned on.	В
The displayed items are not correct but instead are a duplicate of another timer bar.	С
Error message on Master Display says "CALL SERVICE ROW DISPLAY BOARD ERROR xxx".	D
Error message on affected timer bar display says "CALL SERVICE ROW TEMP TOO COOL Rx" where x = row (1- 6).	E
Error message on affected timer bar display says "CALL SERVICE ROW TEMP TOO HIGH Rx " where $x = row$ (1-6).	F
Error message on affected timer bar display says "CALL SERVICE RATE OF RISE Rx " where $x = row$ (1-6).	G
Error message on affected timer bar display says "CALL SERVICE TEMP SENSOR ERROR Rx zzz" where $x = row$ (1-6) and zzz = TOP or BOT.	Н

UHC TROUBLESHOOTING TEST STEPS								
A	1	Replace the display bar (see section on display bar removal).						
В	1	Turn off power to the UHC and remove the corner cover of the affected side and check the connection of the cable to the display bar. Turn power on and check for proper operation. If error is not fixed, continue with step 2.						
	2	Turn the power off and swap the connector of the affected display bar and the working display bar above or below and turn the power on. If the error stays on the affected display bar REPLACE THE DISPLAY BAR.						
	3	If the error shifts to the other display bar, call your service agent.						
С	1	Turn power off and remove the metal corner cover (right side when looking at the front of the unit, left side when looking from the back of the unit).						
	2	Turn the power switch off, wait 10 seconds, turn the power switch on and in the right most display of each display bar a position code should be briefly displayed.						
		FR1 = top front rowBR1 = top back rowFR2 = front row #2BR2 = back row #2FR3 = front row #3BR3 = back row #3FR4 = front row #4BR4 = back row #4FR5 = front row #5BR5 = back row #5FR6 = front row #6BR6 = back row #6						
	3	Note which display bar displays the wrong position code and slide it towards the end where the cable is connected (right on front-side, left on back-side).						

	4	Slide the display bar with the same position code towards the end where the cable is connected.				
	5	Swap the connectors between the two display bars.				
	6	Turn the power switch off, wait 10 seconds, turn the power switch on.				
	7	If the display bar that showed the wrong position code still shows the same code - Replace the display bar.				
	8	If the same two display bars still show the same position code - Call a service technician.				
D	1	Turn power off and remove the metal corner cover (right side when looking at the front of the unit, left side when looking from the back of the unit).				
	2	Refer to the following position code list to determine which display bar appears to have a problem.				
		FR1 = top front rowBR1 = top back rowFR2 = front row #2BR2 = back row #2FR3 = front row #3BR3 = back row #3FR4 = front row #4BR4 = back row #4FR5 = front row #5BR5 = back row #5FR6 = front row #6BR6 = back row #6				
	3	Slide the display bar identified in the error message towards the end where the cable is connected.				
	4	Make sure the cable connector is fully connected with the connector on the display bar.				
	5	If the connector was loose, turn the unit's power switch on, and continue this check if after 60 seconds the same message re-appears on the master display.				
	6	Slide a display bar either directly above or below the bar exhibiting the problem towards the end where the cable is connected.				
	7	Swap the connectors between the two display bars.				
	8	Turn the power switch off, wait 10 seconds, turn the power switch on and wait 60 seconds.				
	9	If the position code in the error message changes - Replace the display bar identified in the original error message.				
	10	If the position code in the error message remains the same - <i>Call a service technician.</i>				
E	1	Loosen the retaining screw at the bottom of the front right corner cover of the unit, swing it up and remove it.				
	2	Check that the red LEDs on both heater control boards are blinking at about the same rate (<i>NOTE:</i> <i>during normal operation they will not always both be</i> <i>on at the same time</i>).				
	3	NOTE: Rows 1-3 are controlled by the upper heater control board while rows 4-6 are controlled by the lower heater control board.				
		If the LED on the heater control board associated with the row displaying the error message is blinking at a different rate from the other board, or not at all, turn off the power switch and proceed to step 5.				
	4	If both LEDs are blinking correctly proceed to step				

Prince Castle LLC
WORLDWIDE
A Marmon Group/Berkshire Hathaway Company

	5	Remove and reconnect the heater control board whose LED is not blinking correctly (see section on heater control board replacement). Turn on the power switch, wait 15-20 seconds, and check if the LED on the repositioned heater control board starts to blink.
	6	If the LED on this board is still not blinking turn off the power switch and switch the two heater control boards.
	7	Turn on the power switch, wait 15-20 seconds, and check the LEDs on the heater control boards.
	8	If the LED is still not blinking correctly on the board in question - <i>Replace that heater control board</i> .
	9	If the LED starts blinking on the board in question but has now stopped blinking on the other heater control board - <i>Call a service technician.</i>
	10	Remove and reconnect both heater control boards (see section on heater control board replacement). Turn on the power switch and wait approximately 20 minutes to see if the error appears again.
	11	If the error message reappears check for a change in airflow around the unit that may be cooling the heaters.
	12	If nothing around the unit has changed - <i>Call a</i> service technician.
F	1	Press the Master Temperature button at the top of the unit.
		If the displayed temperature on the row that showed the error message is above 210°F (99°C) check if a batch of an item was put into the unit at a temperature much higher than normal.
	2	If all the product temperatures are normal - <i>Call a service technician.</i>
G	1	Press the Master Temperature button at the top of the unit.
	2	If the displayed temperature on the row that showed the error message is below 160°F (71°C) check for a change in airflow around the unit that may be cooling the heaters.
	3	If nothing around the unit has changed - <i>Call a</i> service technician.
Н	1	Turn off the power and remove the right front corner cover.
	2	Switch the heater control boards and turn the power on.
	3	If the error message reappears on a different row - Replace the heater control board associated with the error.
	4	If the error message reappears on the same row - <i>Call a service technician.</i>

Exploded View and Parts List



Heater Assembly Exploded View

ITEM	PART NO.	DESCRIPTION	QTY ITEM		PART NO.	DESCRIPTION	QTY	
1	547-004	Right Wall Assembly	1	26	76-900	Knurled Cup Setscrew (McM#:	48	
2	547-035	Base Assembly	1			93445A315 or Equivalent)		
3	547-007	Left Wall Assembly	1	27	76-619	SCR, HXCP, SS 1/4-20 x 7/16*	1	
4	547-123	Attic Electrical CE Assembly	1	28	76-908	XXX*	24	
5	547-033	MCU Assembly	1	29	547-058	IUC Assembly	12	
6	547-014	Upper Rear Assembly	1	30	547-067	Hanger Bolt	8	
7	547-074	Left Cover Weldment	1	31	073-008	Nut, Self-Lock, 10-32, Thin, SS*	8	
8	547-073	Right Cover Weldment	1	32	547-223	Bus Board	1	
9	547-030	Card Guide Assembly	1	33	547-221	Heater Board	2	
10	547-079	Card Guide (DIGIKEY #: SDC-400)	4	34	88-790	Lug, Ground Bond #2-#14 GA*	1	
11	547-119		2	35	076-864	Screw, PNPH, SS, 8-32 x 3/8*	44	
12	547-099	Front Left Corner	1	36	76-902	#8-32 x 0.375 PHPS*	2	
13	547-100	Back Left Corner	1	37	79-178	#8 Captive Washer*	2	
14	547-020	Lid	1	38	547-080	Grommet (McMaster-Carr Part No.	1	
15	547-023	Front Right Corner	1	20	076 000		10	
16	547-024	Rear Right Corner	1	39	076-230	SCR, PHRD, SS, 8-32 X 3/8"	16	
17	547-103	Base Pad	1	40	069-011	Rivet, Pop, Dome-Head, Open-End, SS, 1/8 x 0.265*	3	
18	547-090	Right Wall Insulation	2	41	547-111	IUC Mount*	12	
19	547-089	Top and Bottom Insulation	1	42	076-037	*	8	
20	547-091	Left Wall Insulation 1	1	43	547-130	Bridge Bracket Connector Assembly*	1	
21	547-095	Left Wall Insulation 2	2	44	069-011	Bivet Pop Dome-Head Open-End SS	4	
22	547-096	Left Wall Insulation 3	1	••	000 011	1/8 x 0.265*	•	
23	547-017	Platen Rail	12	45	76-910	XXX*	8	
24	547-061	Heater Platen	12	* Not S	hown			
25	547-048	Heater Insulation Wrap	6					

Wiring Diagram

