



3243 North California Avenue, Chicago, IL 60618

DIPLOMAT POPCORN MACHINE with LOGIC II OPTION SERVICE MANUAL

**120/208 - 240 Volt,
Single and Three Phase, 60 Hz**

**230 Volt
Single Phase, 50 & 60 Hz**

**400 Volt, 3N~
Three Phase, 50 Hz**

**100/200 Volt,
Single Phase, 50 & 60 Hz**



READ and **UNDERSTAND** these service, and safety instructions before servicing this popcorn machine

SAFETY FIRST

The information in this manual is essential for the safe installation of your Cretors popcorn machine. The manual must be read and understood before installing, servicing this equipment, or equivalent training must be provided.



"The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury".
Ref.: 29 CFR 1926.20 (b)(4)(a)(2)



It is understood that safety rules within individual companies vary. If a conflict exists between the safety procedures contained in this manual and the rules of a using company, the more stringent rule should take precedence.

I INTRODUCTION

This manual is filled with time-saving and money-saving information regarding your Cretors popcorn machine. There is nothing, however, more important than the safety aids and warnings that are found throughout this document. The Safety Alert Symbol is used to identify topics of primary safety concern wherever they appear. Furthermore, a separate section has been included which deals exclusively with operation and accident prevention.

If, after reviewing this manual, anything is unclear or technical problems are encountered, contact the dealer from whom you purchased your machine for assistance and if there are any additional questions, feel free to contact our Customer Service Department at the address and/or phone number listed on the front and back covers of this manual. Always have the model and serial number of your machine available to assist in obtaining the correct information.

II SAFETY ALERT SYMBOL

The symbol shown below is used to call your attention to instructions concerning your personal safety and the safety of others. Watch this symbol. It points out important safety precautions. It means "ATTENTION! Become Alert! Your personal safety is involved!" Read the message that follows and be alert to the risk of personal injury or death.



III PURPOSE OF MANUAL



This instruction manual is intended to familiarize owners with the service, and safety procedures associated with your Cretors popcorn machine.



This manual should be kept available to service personnel.



A person who has not read and understood all service and safety instructions is not qualified to service the machine.

IV PRODUCT IDENTIFICATION

CRETORS POPCORN MACHINE WITH LOGIC OPTION
 DIPLOMAT Models: DIL20CP, DIL32CP, DIL20FP, DIL32FP
 DIL205, DIL325, TDIL326,

ELECTRICAL SPECIFICATIONS: Diplomat Models are available in the following Electrical configurations:

120/208 - 240Volt, Single and Three Phase, 60 Cycle

230 Volt, Single Phase, 50 & 60 Cycle

400 Volt, Three Phase, 50 Cycle

SPECIFICATIONS:

MODEL DIL20CP	DIPLOMAT 20 OZ. ELECTRIC COUNTER MODEL
Capacity:	20 oz. All-Steel Kettle, 400 one-ounce servings per hour
Electrical:	4200 watts
Dimensions:	28"D x 36"W x 45-1/2"H - - - - 71 cm D x 91 cm W x 116 cm H
Net Weight:	189 lbs. (86 kg.)
MODEL DIL32CP	DIPLOMAT 32 OZ. ELECTRIC COUNTER MODEL
Capacity:	32 oz. All-Steel Kettle, 640 one-ounce servings per hour
Electrical:	5100 watts
Dimensions:	28"D x 36"W x 45-1/2" H - - - - 71 cm D x 91 cm W x 116 cm H
Net Weight:	189 lbs. (86 kg.)
MODEL DIL20FP	DIPLOMAT 20 OZ. ELECTRIC FLOOR MODEL
Capacity:	20 oz. All-Steel Kettle, 400 one-ounce servings per hour
Electrical:	4200 watts
Dimensions:	28"D x 36"W x 74"H - - - - 71 cm D x 91 cm W x 188 cm H
Net Weight:	390 lbs. (177 kg.)
MODEL DIL32FP	DIPLOMAT 32 OZ. ELECTRIC FLOOR MODEL
Capacity:	32 oz. All-Steel Kettle, 640 one-ounce servings per hour
Electrical:	5100 watts
Dimensions:	28"D x 36"W x 74"H - - - - 71 cm D x 91 cm W x 188 cm H
Net Weight:	390 lbs. (177 kg.)

MODEL DIL205	DIPLOMAT 20 OZ. ELECTRIC FLOOR MODEL 5'
Capacity:	20 oz. All-Steel Kettle, 400 one-ounce servings per hour
Electrical:	5960 watts
Dimensions:	24"D x 60"W x 73-1/4" H - - - 61 cm D x 154 cmW x 186 cm H
Net Weight:	425 lbs. (193 kg.)
MODEL DIL325	DIPLOMAT 32 OZ. ELECTRIC FLOOR MODEL 5'
Capacity:	32 oz. All-Steel Kettle, 640 one-ounce servings per hour
Electrical:	6800 watts
Dimensions:	24"D x 60"W x 73-1/4" H - - - 61 cm D x 154 cmW x 186 cm H
Net Weight:	425 lbs. (193 kg.)
MODEL TDIL326	TWIN DIPLOMAT 32 OZ. ELECTRIC FLOOR MODEL 6'
Capacity:	2 - 32 oz. All-Steel Kettles, 640 one-ounce servings per hour, per popper
Electrical:	First Popper 6800 watts - Second Popper 5100 watts
Dimensions:	28"D x 72"W x 73"H - - - - 71 cm D x 183 cm W x 186 cm H
Net Weight:	610 lbs. (277 kg.)

V PRINCIPLES OF POPCORN MACHINE OPERATION

Theory And Observations Of Popcorn Machine Operation

1. The efficient production of popcorn requires the presence of popcorn kernels, heat, and oil. The purpose of the oil is to distribute the heat throughout kernels evenly and quickly. If the heat is not distributed evenly and quickly, the kernels may burn instead of pop.



2. In order to pop corn in oil, the kettle, oil and parts near the heating elements are necessarily and unavoidably heated to temperatures high enough to pop popcorn. The temperature control uses a sensing element located inside the kettle to maintain the kettle at an operating temperature of approximately 410° F(210°C). Contact with these surfaces will burn and scald you. Do not touch the kettle, oil or parts in the direct vicinity of the heating elements.
3. The kettle is provided with an agitator to assist in the quick and even distribution of heat throughout the kernels.



4. The oil is heated to high temperatures in a kettle provided with electric heating elements to reach proper popping temperature. An operator is required in the vicinity of the kettle only when handling corn or dumping popped corn from the kettle. Neither of these operations requires direct contact with the kettle. Direct contact with the hot oil, kettle, or heating elements could result in serious burns or scalds. Keep away from the kettle whenever possible. Use the handle when dumping the kettle, and use the provided cups when necessary to measure corn, oil and salt.
5. As the popcorn pops, it will push the lid open and discharge into the cabinet. When the corn finishes popping, the corn remaining in the kettle can be removed by holding the kettle handle in your right hand and rotating down in a clockwise direction to dump the kettle.
6. Your Diplomat model Cretors popcorn popper is equipped for a pump, which, when properly adjusted, automatically delivers the proper amount of oil to the popping kettle.
7. A cornditioner is provided consisting of a blower and heating element. The cornditioner circulates hot air through the corn stored in the popcorn case to keep the product hot and crisp.
8. A two stage filter system traps odor and smoke produced by popping corn.

VI THE LOGIC OPTION

The Logic Option uses integrated microprocessor control to simplify and increase the safety of operating a popcorn machine. The Logic Option simplifies the operation by providing a single button to push to begin a popping cycle. The LCD display, allows the operator to view instructions and comments in four languages: Spanish, German, French or English. The LCD display gives specific feedback to the operators, managers, and service personnel. Creators recommends depressing the "Kettle Preheat" button prior to the first popping cycle. Operation is as simple as loading your corn and salt in the kettle and pressing the "START" button.

When the "START" button is pressed, the pre-set oil amount will dispense into the kettle and the popping cycle will begin. The "START" button is then locked out for two minutes to prevent accidental double charging of oil. The popping cycle will continue until the kettle reaches the temperature set point or a programmed time limit is reached. At that time, a beeper sounds for two minutes. This audible warning signals the operator that the kettle is ready to be dumped. Depressing the "KETTLE PREHEAT" button will turn off the beeper. The beeper will also be deactivated by depressing the "START" button, after the popped corn is dumped and raw corn and salt are added again. If the operator is not available to dump the kettle, the kettle heat will automatically shut off. The agitator and the exhaust will remain on for twenty minutes or until the "START" or "STOP" buttons are pressed. This reduces any chance of burning corn and eliminates possible odors.

In addition to ease of start-up and normal operation, the Logic Option serves as a backup to perform functions that the operator may forget.

For those operators who pop both salted and sugar popcorn, there is menu to set your kettle temperature set point for each mode. To switch back and forth between corn type, simply press a few menu keys. "Program" button for 5 seconds and use the arrow key to change mode.

Safety Features:

If the 'Start' button (indicating another popping cycle has been started) is not pressed for nine minutes, the kettle heat is automatically shut off. Additionally, if Logic II detects the kettle temperature rises to an unsafe level, all outputs, except exhaust, are disabled until normal temperature conditions are restored. If high temperature alarm is detected more than once in an eight hour period, the controller reverts to a "CALL FOR SERVICE" mode (non-operating). A technician must be called to evaluate and reset the system. The kettle agitator and exhaust fan are left 'On' in case the last batch of corn has not been dumped from the kettle. The turning agitator and operating exhaust will reduce the smoke and odor of scorched corn in a hot kettle.

If a mechanical problem, outside the control of the Logic Option, causes the kettle to exceed (570°F (298°C) a dangerous situation exists, the Logic Option will: Sound an alarm, disable the oil pump, and shut off all auxiliary components, except exhaust. If exhaust was 'OFF', it is turned "ON.". This continues until power is removed or kettle temperature goes below set point.

Logic Option Switches and Controls

There are nine keys on the touch panel. The left side buttons are used for accessing and maneuvering through various menus and options. The right side buttons turn on the kettle pre-heat program, starts the cleaning cycle, turns on the cabinet light, corditioner, and sign and one to turn the oil heater on and off.

PROGRAM	-Select SALT versus SUGAR modes, Enter programming mode,turn exhaust ON/OFF
STOP	-Emergency stop (stops everthing except for Oil heat. Oil heat is turned ON/OFF by pressing The oil heat button only) Stops current cook or clean sequence Restores controller to standby condition
UP/DOWN	-Used to increment or decrement parameters and to scroll through memu selections
START (with LED)	-Used to initiate cooking sequence
KETTLE PREHEAT (with LED)	-Pressed before initial cooking sequence of a cold machine. Maintains kettle temperature at 190°F for 45 minute -Turns off beep
OIL HEAT (with LED)	-Turns oil pump heat ON/OFF
CABINET (with LED)	-Turns ON/OFF cornditioner blower, heater and all lights including sign.
CLEAN (with LED)	-Initiates "CLEAN CYCLE" (See Clean cycle)
LED INDICATORS	-(Light Emitting Diodes) Indicate switch condition. (ON/OFF or SPECIAL CYCLE)

Logic Option Microprocessor Control Functions

All machine functions are controlled with the touch pad. If equipped, the LED on the switch is lit when the switch is activated. When a switch is pressed it will "BEEP" to let the operator know that the microprocessor will perform the desired function. A two tone "BEEP" indicates that the desired function will not or cannot be performed. The switches activate the following functions:

1. START

Begins the AUTO CYCLE process. Press START key, auto pop cycle process begins. Kettle heater relay will energize and Start LED will light. Agitator relay will energize for twenty minutes. Exhaust relay will energize for twenty minutes. Pump relay is energized until programmed time setting is reached. Start key is locked out from further activation for two minutes.

LCD displays "POPPING CYCLE" on top line and shows running time (count-up) of cycle (cycle consists of KETTLE HEATER on time) on bottom line "xMIN xx SECONDS."

When temperature setpoint is reached or programmed time limit is reached:

Kettle relay is deactivated. (Heat shuts off)

Start key LED blinks on/off and beeper sounds for two minutes,

Beeper can be silenced by pushing the PREHEAT key

Cycle is recored in memory.

Start key LED is de-activated.

NOTE: If the START key is pressed at any time after the two minutes safety delay, the buzzer will be de-energized and a new popping cycle will begin. Also, if the temperature is already above the setpoint at the time of the START key being pressed, the controller will recognize this and compensate for it by giving the kettle heater some time to equalize before energizing.

2. CABINET

Press CABINET key to turn to Cornditioner and lights. These items will remain on until turned off or Stop is pressed. CABINET key LED will light as long as Cornditioner is activated.

3. Press OIL HEAT key and oil pump heater relay will energize and Oil Heat LED and OIL HEAT key LED will light depending on setting:

7700 Model Relay energizes full power "on" for 20 minuets, reverts to a 10% duty cycle on (3 min. on/30 min. off). Oil Heat switch can be pressed to terminate cycle. LED flickers for 20 minutes, then blinks 50% on/off until Oil Heat switch is pressed to turn off.

7900 Model Relay energizes full power on until Oil Heat switch is press to turn off LED 100% on until Oil Heat switch is pressed to turn off.

4. KETTLE PRE-HEAT:

Press KETTLE PREHEAT key, KETTLE PREHEAT key LED will light.

The LCD displays "KETTLE PRE HEAT"

Kettle heater relay is energized and is controlled at 190°F.

Once kettle reaches set point, the LCD display "READY - ADD CORN, press START."

If Start key is not pressed within 45 minutes, kettle pre-heat cycle is terminated.

KETTLE PREHEAT key LED is de-activated.

If Start key is pressed within 45 minutes, kettle pre-heat cycle is terminated and KETTLE PREHEAT key must be pressed again to initiate pre-heat operation.

Kettle preheat cycle can also be terminated by pressing KETTLE PREHEAT or STOP key.

5. SAFETY SITUATION:

If kettle temperature sensor exceeds 570°F, all outputs excep that exhaust relay are disabled until normal conditions are restored. If high temperature alarm is detected more than once

per 8 hours, controller reverts to a "CALL FOR SERVICE" mode (non-operating) and must be reset by a technician.

6. SETTING CORRECT OIL VOLUME (MANAGEMENT LEVEL ACCESS):

Cretors allows the user to set the amount of oil to be dispensed by two different methods:

- A. Press and hold KETTLE PREHEAT switch for three seconds to enter "learning" mode.. LCD reads "OIL AMOUNT PROGRAM," place a measuring cup under the oil tube and press and hold Start key until desired amount of oil has dispensed. Controller will "learn" associated time needed to dispense and store as the program time until changed by either method
- B. Press and hold the PROGRAM key and the up and down key for five seconds to display "PUMP TIME-SALT" xx,x seconds or:"PUMP TIME-SUGAR xx,x seconds" depending on which mode is currently selected. Use up or down keys to adjust to desired time. Oil pump time values are adjustable from 5.0 seconds to 30.0 seconds in 0.5 second increments, with a factory setting of 8 seconds in both modes.

7. CLEAN CYCLE:

Press CLEAN key, CLEAN key LED will light.

When clean cycle is selected, normal operation (including pump and conditioner), pre-heat operations are disabled, cabinet lights remain on.

Kettle heater relay is energized and controlled at 190°F for a total of 15 minutes from the start of the clean cycle, then is de-energized (end of Clean cycle). Agitator relay is energized at the start of the clean cycle and is de-energized when temperature falls below 150°F. End of clean cycle is signaled by five beeps.

Clean LED is 100% on until end of clean cycle, then 50% on/off until CLEAN key is pressed to take machine out off Clean cycle and return to normal operation. LCD display shows time left in clean cycle (count-down). Cleaning cycle is recorded in memory (incomplete cycles are not counted).

CLEAN key LED will de-activate. Cleaning works best when used in conjunction with the Cretor's cleaning kit and supplies. See "Sanitation Instructions."

VII INSTALLATION INSTRUCTIONS

1. Location

Choose a location for your Cretors popcorn machine to maximize the ease of operation and maintenance procedures. Check your local building and fire codes for location restrictions.

2. Power Supply

A. Check the nameplate to determine the required power supply.



Connect your popcorn popper only to the correct power source. Failure to do so may result in personal injury or death and may damage your popper.

B. C. Cretors and Company recommends dedicated circuits for the Diplomat model popcorn machine. The Diplomat model poppers require a dedicated circuit to avoid voltage drop in the supply wiring. Check your local electrical codes regarding fuse or circuit breaker requirements.



Make certain your popcorn machine is properly grounded. Failure to do so may result in damage to your equipment or present a shock hazard.

3. Connecting Machine to Power Supply



A. Perform work only on de-energized circuits. Failure to do so may lead to electrical shock resulting in personal injury or death.

B. Make certain that power supply circuit breakers are in the 'OFF' position.

C. Push the plug completely into the receptacle. If the cord has a twist lock plug be sure to turn to lock in position.

4. Pump Installation

7700-L PUMP

Cretors 7700-L series Oil Pumps and Hot Rod are intended for use in standard steel pails only. The following instructions assume the presence of a Deluxe or Economy base.

A. Make certain the OIL HEAT switch on the control panel is in the 'OFF' position.

B. Insert the pump into the pail.

- C. If the oil is solid, place the pump on top of the oil and centered in the pail. The pump can be rotated clockwise/counterclockwise 90°, and the metal "blade" on the bottom of the pump will cut into the hard oil.
- D. Before connecting the pump to the popcorn machine be sure the pump OIL HEAT switch is 'OFF'. If the indicator light is 'ON', indicating power to the circuit is 'ON', turn it 'OFF' by pressing the oil heat switch.
- E. Connect the Power Supply cord to the pump. The special connector will only plug in one way, and it may be necessary to rotate it to find the correct orientation in order to insert it completely.
- F. Turn 'ON' the OIL HEAT switch and allow the pump to melt into the oil. The Logic Option will operate the pump heat element at full power for 20 minutes. After 20 minutes the Logic Option will reduce the power level to the pump heat element to 3 minutes ON, 30 minutes OFF. This will keep the oil liquid in cold locations or if left over night.
- G. If time permits, the Cretors Hot Rod is available to assist in melting the oil before the pump is put into the pail. The Hot Rod is to be plugged in and pushed into the hard oil along the inside edge of the pail until the hook goes over the lip of the pail. When the oil is melted, remove and unplug the Hot Rod.



Do not leave a Hot Rod unattended. Unplug the Hot Rod when not in use. Do not overheat the oil in the pail. Once the oil has liquefied, it is not necessary to continue heating the oil.

- H. When the oil in the pail has melted, insert the pump into the pail, being careful not to splash any oil where it can become a hazard. Connect the power supply cord to the pump. The special connector will only plug in one way and it may be necessary to rotate it in order to insert it completely. Turn 'ON' the pump OIL HEAT switch.



CAUTION If the OIL HEAT switch is turned 'OFF' and then back 'ON', the heat cycle is started. Do not overheat the oil in the pail. Once the oil is liquefied, it is not necessary to continue heating the oil at a high level. If the heat timer is continually restarted, the oil will become very hot and damage the oil tubing, becoming a source of leaks, and the hot pail a source of burns.

CAUTION: Any time the OIL HEAT switch is turned 'ON' a high output heat cycle is begun. Repeatedly turning the OIL HEAT switch 'ON' and 'OFF' may cause the oil and the surface of the oil pail to reach dangerously high temperatures.



- I. If any oil should spill or leak, be sure to promptly and thoroughly clean the exposed area. Failure to do so may result in a slipping hazard resulting in serious injury or death.

- J. Connect the pump to the oil delivery tube by pushing the quick connect socket at the end of the delivery hose, onto the quick disconnect plug mounted on the pump support cover. When the plug is fully inserted, the spring will snap into place and hold the connector securely.
- K. Make certain the oil delivery hose contains no low spots. Oil may solidify in such low spots and clog the hose.

7900-L PUMP

Cretors 7900-L series Oil Pumps are intended to be used with 35 pound (16.9 kg) boxes of popping oil only. The following instructions assume the presence of a Deluxe or Economy base.

- A. Make certain the OIL HEAT switch on the control panel is in the 'OFF' position.
- B. The 7900-L model weighs approximately 30 lbs (14 kg), so use proper lifting techniques and slide pump into cabinet. Allow at least 3" from front edge of pump to back side of door. This will ensure the bag connector will not interfere with the door when the door is closed.
- C. Connect hose by pushing 'quick-connect' socket onto plug and make sure it has snapped into place. *Test engagement by pulling up on hose near connection, fittings will not disengage.*
- D. Connect pump cord and plug to pump receptacle located on top back of 7900 model.



- E. Using proper lifting techniques, load one box into bottom tray and one on top. Following instruction on the box itself, connect the bag connector to the fitting on the bag.
- F. Turn 'ON' the OIL HEAT key to turn 'ON' the heaters under the boxes. The heaters are controlled by a thermostat and should be left 'ON' at all times to keep the oil in the boxes liquid. If a box of cold, solid oil is placed on the pump it may take 5 to 10 hours before it is liquid enough to use. For best results store the next four boxes to be used in a Cretors Heated back room Warmer. This way you will always have a box of liquid oil ready to use. In an emergency, the box can be opened carefully and the bag may be removed and placed in a container of warm water to melt the oil more quickly. When the oil is liquid hold the bag by the corners, (It is reasonably strong but be careful. A puncture can cause a serious oil spill hazard.) and return it to the box and reseal the box.

BOX INSTALLATION

- A. The box of oil is prepared for use. Break the perforated opening on the box and bend back the corrugated tab. (DO NOT USE A SHARP OBJECT TO BREAK THE OPENING, IT MAY PUNCTURE THE OIL BAG.) Reach inside and grasp the bag spout. Place the last ring of the spout into the box slot and lock into place with the corrugated tab.
- B. Place one Bag-in-Box on each shelf. Next remove the travel cap from the spout. The travel cap maintains a sanitary condition by preventing dirt from coming into contact with the internal slider valve before hook-up.
- C. Snap the locking plate of the connector over the bag spout. The tapered probe on the connector is then pushed into the bag spout and locks into place. This reseal locking action does two things. One, it eliminates any possibility of an accidental disconnect, giving the user a "foolproof" positive connection and two, it opens the channel allowing oil to flow to the pump.
- D. When the Bag-in-Box container is empty, disengage the connector by snapping the connector probe into the out position and remove it from the bag spout. This disconnects and reseals the bag. All product contact surfaces are protected ensuring a sanitary situation.
- E. No disassembly of connector is required when switching from one Bag-in-Box container to another. Repeat steps A - C to properly re-connect Bag-in-Box to pump.

***NOTE:** Prior to each attachment of Bag-in-Box connector, ensure that the probe has not been contaminated. If this has occurred, clean connector as described in Sanitation Instructions Section.

<u>MACHINE</u>	<u>AMOUNT OF OIL</u>	<u>TIMER SETTINGS</u>
DIL20	6.5 oz. (192 ml)	5 SECONDS
DIL32	11 oz. (326 ml.)	9 SECONDS
DIL48	16oz. (474 ml)	12 SECONDS
*Recommended pump timer settings. Machines may differ slightly.		

VIII SERVICE INSTRUCTIONS



In the case of improper machine operation, only qualified personnel should perform the following diagnostic checks, and, if necessary, corresponding adjustments and repairs. Many of the following procedures present an electrical shock hazard and can cause serious injury or death.

1. Parts

When ordering parts, refer to the attached parts diagram. Always supply the serial number, model number, and voltage of your popcorn machine.

2. Kettle Temperature Control

TEMPERATURE CONTROL OPERATION

The temperature control is a safety device that prevents overheating of the kettle if the machine should be left unattended momentarily while in operation. The Start LED light will begin to blink and the control will 'beep' when the kettle heat has been shut off by the temperature control. This should be 15 to 30 seconds before the corn stops popping and the kettle is dumped. If the Start LED begins to blink more than 30 seconds before the corn finishes popping, the temperature may be set too low and in need of adjustment.

TEMPERATURE CONTROL ADJUSTMENT

- A. Unplug pump cord.
- B. Position a pyrometer or surface thermometer over the thermocouple. (About 1 inch (2.5 cm) from the edge of the kettle.
- C. Turn 'ON' the kettle heat. Press "Start".
- D. Set temperature so that the power to heat elements is cut off at the correct temperature. Refer to Part E.

<u>KETTLE</u>	<u>SALTED CORN</u>	<u>SUGAR CORN</u>
20 OZ.	420° F. (210° C)	380° F. (193° C)
32 OZ.	420° F. (210° C)	380° F. (193° C)
48 OZ.	420° F. (210° C)	380° F. (193° C)



CAUTION! When adjusting kettle temperature, always start out at a low temperature and increase settings. If the kettle temperature is set too high, the high limit may be triggered and the kettle will not be usable until the high limit is replaced by a qualified service technician. If the kettle is a 48 oz, the high limits can be reset.

- E. Press and hold PROGRAM key **and** STOP key together for 5 seconds to enter guarded programming menu. Cook setpoints are adjustable from 350° to 475°F. Display will show 'SUGAR SP 385' (Sugar mode with temperature setpoint at 385°F) or "SALT SP 400" (Salt mode with temperature setpoint at 400°F) depending on which

mode is currently selected. Use up or down keys to adjust to desired setpoint. Setpoint ranges are 350°F to 475°F with a factory setting of 385°F for sugar mode and factory setting of 400°F for salt mode.

- F. If no pyrometer is available, the temperature may be adjusted by observing the Start LED while popping corn. The correct setting will turn 'OFF' the heat elements 15 to 30 seconds before the kettle needs to be dumped. The kettle is considered ready to dump when the time between audible pops is 3 to 5 seconds.
- G. Your final setting should allow the pilot light to cycle off at least 15-30 seconds prior to dumping the kettle.
- H. Observe two or three cycles of correct operation to be certain everything is working correctly.

3. Kettle Removal

To remove the kettle assembly, perform the following operations:

- A) Unplug the popcorn machine from the power supply.
- B) Remove the Retainer Patch (#4873)
- C) Remove the hex cap screws on the bottom of the retainer and remove the retainer.
- D) Disconnect the four lead wires from the mica terminal plate.
- E) Remove the thermocouple by loosening the nut that holds it in place.
- F) Loosen the two square head set screws that hold the kettle support plate(s) to the support shaft.



- G) Slide the kettle off of the support shaft. Use proper lifting techniques when removing the kettle assembly to avoid injury to back.

- H) If wires must be replaced, be sure to use nickel wire supplied by Cretors. Conventional copper or "stove" wire will have limited life.

- I) When removing nuts and spacers from the threaded studs on the bottom of the pan, do not wipe off the silver lubricant. Without this lubricant (NEVER SEEZ) the nuts may freeze on the studs and cause the studs to break when the nuts are turned, in an attempt to remove them.

4. Kettle Installation

- A) When reassembling the kettle, be sure all nuts and bolts are tight. Check to make sure that all electrical connections are secure. A loose connection can heat up and burn off the wires.
- B) Check the kettle support bar to be sure it is level.
- C) Locate the kettle so that the drive shaft lines up with the blade center, and tighten the bolts on the kettle support plate (plates) that hold the kettle in place.
- D) Turn 'ON' the agitator motor and dump the kettle. If the drive shaft does not engage and disengage freely, readjust the kettle. Under normal circumstances, if the kettle was aligned before it was removed, the only adjustment needed is to slide it in or out along the support shaft until the drive shaft is aligned with the blade center. In severe cases it may be necessary to make further adjustments; see the section on alignment.
- E) When the drive shaft engages and disengages freely, securely tighten the other bolts holding the pan.
- F) Replace the retainer and the retainer patch.

5. Kettle Alignment

- A) Begin by checking to see if the 4808 kettle support bar is level. With the kettle removed, apply slight downward pressure on the dump handle to simulate the weight of the pan. Measure the distance from the top of the bar to the top of the cabinet at both the tip and at the base near the support column. The measurements should be equal to within 1/8 inch (3 mm). This dimension should be approximately 11 and 7/8 inches (30.16 cm).
- B) If the bar is not level, remove the cover from the support column. Locate the 4766 kettle level nut and loosen the set screw that holds it to the shaft. With the set screw loose, the nut can be turned to move the 4808 support bar up or down. When level, re tighten the set screw.
- C) When the 4808 bar is level and properly aligned, the 4833 agitator drive shaft should be directly above it. If the bar is not under the drive shaft, it can be moved to either side by rotating the entire support column. The support column is rotated by loosening the four bolts that attach it to the top of the cabinet. Re tighten and recheck alignment.

6. Kettle Return Spring Adjustment

The kettle counter balance return spring holds the kettle in a level position when popping corn and permits the kettle to be emptied when the handle is pulled down. The fixed end of the spring is held by a hooked plate with four adjustment points. The tension of this spring is adjusted by sliding a small tube over the fixed end of the spring and moving it to a different adjustment point.

IX TROUBLE SHOOTING

The board is protected from possible voltage spikes and shorts. Each of the seven board outputs has a fuse protection. This means a customer will be able to have a fuse replaced rather than a complete board. There is also a diagnostic feature on this board to inform which of the outputs is not functioning correctly, via the LCD readout. The fuse locations are marked on the PC board. Following is a description of the fuses, the fuse values and the error code that will display if there is a problem and corrective action to be taken.

F1 is an 8-amp fuse which protects the Agitator relay. If the fuse blows, the following error code will be displayed on the LCD readout.

“AG OUTPUT FAILURE; CALL FOR SERVICE”

With this failure, you will be able to operate the popcorn machine as a warmer only. For safety reasons, you will not be allowed to pop until the problem is fixed. You can replace the fuse and the agitator may work, however, a blown fuse usually points to a problem located somewhere in the “Agitator Circuit”. If the fuse blows again, the first step is to determine the reason the fuse blew.

F2 is a 16-amp fuse which protects the cabinet lights relay, along with the sign, if so equipped. If the fuse blows, the following error code will be displayed on the LCD readout.

“LT OUTPUT FAILURE; CALL FOR SERVICE”

With this failure, you will be able to operate the popcorn machine normally, with the exception of cabinet’s lights and sign illumination. You can replace the fuse and the lights may work, however, a blown fuse usually points to a problem located in the “Lighting Circuit”. If the fuse blows a second time, the first step is to determine the reason the fuse blew.

F3 is an 8-amp fuse, which protects the Kettle Heater relay. If the fuse blows, the following error code will display on the LCD readout.

“KH OUTPUT FAILURE; CALL FOR SERVICE”

With this failure, you will be able to operate the popcorn machines as a warmer only. You will be unable to pop until the problem is corrected. You can replace the fuse and the kettle heat may work, however, blown fuse usually points to a problem located in the “Heating Circuit”. If the fuse blows a second time, the first step is to determine the reason the fuse blew.

F4 is an 8-amp fuse, which protects the Exhaust relay. If the fuse blows, the following error code will be displayed on the LCD readout.

“EX OUTPUT FAILURE; CALL FOR SERVICE”

With this failure, you will be able to operate the popcorn machine normally, with the exception of the exhaust, until the problem is corrected. You can replace the fuse and the exhaust may work,

however, a blown fuse usually points to a problem located in the “Exhaust Circuit”. If the fuse blows a second time, the first step is to determine the reason the fuse blew.

F5 is a 10-amp fuse that protects the Oil Pump relay. If the fuse blows, the following error code will be displayed on the LCD readout.

“OP OUTPUT FAILURE; CALL FOR SERVICE”

With this failure, you will be able to operate the popcorn machine normally, with the exception that the pump will not dispense oil automatically, until the problem is corrected. The operator will be able to manually add oil to continue popping. You can replace the fuse and the pump may work, however, this usually points to a problem located in the the “Pump Circuit”. If the fuse blows a second time, the first step is to determine the reason the fuse blew.

F6 is a 8-amp fuse, which protects the Oil Pump Heater relay. If the fuse blows, the following error code will be displayed on the LCD readout.

“OPH OUTPUT FAILURE; CALL FOR SERVICE”

With this failure, you will be able to operate the popcorn machine normally. If the oil remains liquid, the pump will continue to operate as normal also. If not, operator will need to add oil manually to continue popping. You can replace the fuse and the pump heat may work, however, a blown fuse usually points to a problem located in the “Pump Heating Circuit”.

First step is to see if there was any water, oil, or other liquid spilled into the oil pump connector. Clean up both plug and receptacle. Replace the fuse and try again. If this does not solve the problem, you will need to investigate further.

F7 is a 16-amp fuse, which protects the Corditioner blower and heater relay. If the fuse blows, the following error code will be displayed on the LCD readout.

“COR OUTPUT FAILURE; CALL FOR SERVICE”

With this failure, you will be able to operate the popcorn machine normally. You can replace the fuse and the corditioner may work, however, a blown fuse usually points to a problem located in the “Cornditioner Circuit”. If the fuse blows a second time, the first step is to determine the reason the fuse blew.

1. Problem - Popping is slow

QUESTION: Were the correct amounts of corn and oil used?

Refer to the chart in the operating section for the correct quantities.

QUESTION: Does the kettle switch/LED start blinking more than 30 seconds before the corn finishes popping?

YES! Temperature may be set too low – See Programming section on how to adjust temperature.



CAUTION If the corn has dried out, it may not finish popping at normal temperatures, and the light may appear to go out early. **DO NOT ADJUST KETTLE TEMPERATURE BASED ON POOR QUALITY CORN.**



CAUTION Do not adjust the temperature so high that the pan smokes at the end of the popping cycle.

If set too high (over 500°F or 260°C), the kettle can become a serious fire hazard.

NO!

- A. Voltage may be low - check voltage at terminal strip with kettle heat 'ON'.
Extension cords or inadequate wiring will provide full voltage, if no load is applied.
Once the kettle heat and auxiliaries are turned on, the voltage may drop 5 to 10 volts.
- B. If indicator light stays 'ON', one element in a multi-element pan may have failed.
Use an ammeter to diagnose.
- C. Check the amperage draw of the heating elements by using a clamp-on ammeter.
Determine whether or not a heating element has failed by performing the following procedure:
 - a. Remove the top of the machine by removing the screws and lifting the top off.
 - b. Turn 'ON' the kettle heat.

Place the ammeter around the black or red lead to the popper kettle. The following current draws are normal:

<u>Kettle</u>	<u>Wire Color</u>	<u>Elements</u>	<u>120/208 -240v. Amps</u>
20 oz.	red	1447-A	15 amps
	black	1983-A	7.5 amps
32 oz.	red	1528-A & 1808-A	22.9 amps
	black	2615-A	8.3 amps
48 oz.	red	1447-D & 1808 -D 1010-D	28.1 amps

<u>Kettle</u>	<u>Wire Color</u>	<u>Elements</u>	<u>230V. Amps</u>
20 oz.	red	1447-C	11.2 amps
	black	1983-C	11.2 amps
32 oz.	red	1528-C 1808-C	15.6 amps
	black	2615-C	15.6 amps

48 oz.	red black	1447-C & 1808-C 1010-C	23.4 amps
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<u>Kettle</u>	<u>Wire Color</u>	<u>Elements</u>	<u>230/380V. Amps</u>
20 oz.	red	1447-C	7.5 amps
	black	1983-C	3.2 amps
32 oz.	red	1528-C 1808-C	11.5 amps
	black	2615-C	4.1 amps
48 oz.	red	1447-C & 1808-C	24.4
	black	1010-C	

A low reading indicates a problem in the kettle. One or more of the heat elements may not be functioning properly. If the element is not functioning, the possible causes are either the element has burned out or a lead wire has burned off one of the element terminals due to a loose connection. In either case the kettle must be removed and the problem identified. See Service Section for kettle removal instructions.

- Remove kettle (see Service Section for removal instructions)
- Check for short circuits inside the kettle.
- If wires must be replaced, be sure to use nickel wire supplied Cretors. Conventional copper or "stove" wire will have limited life.
- Make a visual check for broken, loose, burned or heat damaged wires. If there are no obvious broken or loose wires shorting out on the kettle, the elements must be checked.
- Perform a continuity test on the elements. It is possible that one of the elements has burned through its insulation and casing and is shorting out directly to the kettle bottom.

Continuity test

Remove the nickel buss bars that connect the electrical terminals on the heat elements. Check each element between the following points:

When checking Ohms, make sure that the meter probes are making good contact on the terminals. Remove the nickel buss bars that connect the electrical terminals on the heat elements.

Using a multimeter, check each element between the following points:

Terminal to terminal	1.	Continuity-functioning properly
	2.	No continuity-burned element; replace.
First terminal to element case	1.	Continuity to case from terminal indicates a grounded element; replace.
	2.	No continuity - functioning properly

Second terminal to element case	1.	Continuity to case from terminal indicates a grounded element; replace.
	2.	No continuity - functioning properly

32 oz. - 120V elements	2615-A	1000 Watt - 14.4 Ω
	1808-A	1250 Watt - 11.5 Ω
	1528-A	1500 Watt - <u>9.6 Ω</u> 3.8 Ω (total)
20 oz. - 120V elements	1983-A	900 Watt - 16.0 Ω
	1447-A	1800 Watt - <u>8.0 Ω</u> 5.3 Ω (total)

32 oz. - 240V elements	2615-C	1000 Watt - 57.6 Ω
	1808-C	1250 Watt - 46.1 Ω
	1528-C	1500 Watt - <u>38.4 Ω</u> 15.6 Ω (total)
20 oz. - 240V elements	1983-C	900 Watt - 64.0 Ω
	1447-C	1800 Watt - <u>32.0 Ω</u> 21.3 Ω (total)

Replace failed heat elements with identical units available from your local dealer or from Cretors. Reassemble and reinstall kettle assembly onto the machine.

2. Problem - Kettle Will Not Heat

QUESTION: Do any of the other components work - motor, light, etc.?

NO! Check power supply:

- A. Is it plugged in?
- B. Is the receptacle live?
- C. Is machine plugged into the proper voltage? Measure with voltmeter and compare to specification on nameplate of machine.



Do not attempt electrical repairs on the power supply circuit unless you are qualified to do so. The electrical shock associated with line voltages can cause serious injury or death.

YES!

- A. Problem is in machine.



The following procedures are performed with the power 'ON'. As with any electrical repairs, there is a shock hazard present.

Check the relay. The Diplomat LOGIC CONTROL uses a relay to control the power to the popper pan heat elements. To check the relay, perform the following operations:
Unplug pump cord before pressing Start. When start or kettle Preheat are pressed.

- A) To gain access to the relay, remove the top of the machine by removing the screws on the top.
- B) Using a voltmeter, check the power to the relay coil, which are the small terminals in the center.
- C) At room temperature, the temperature control should be calling for heat and providing power to the relay. If the coil reading is not 120 volts (230 volts on 230v. and 400V. 50Hz machines), the problem is in the LOGIC CONTROL.
- D) If the coil reading is 120 volts, (230 volts on 230v. and 400V. 50Hz. machines), check the voltage between the output terminal with wire #1 and the output terminal with wire #3 from the kettle support. If the voltmeter does not have a reading between 208 and 240 volt, the relay is not functioning and needs to be replaced.

3. Problem - Corn Burns

QUESTION: Is the agitator working?

YES!

- A. Check to be certain the stirrer blade is on the bottom of the pan and is stirring the corn.
- B. Were the correct amounts of corn and oil used? See Operating Section for correct amounts.
- C. Temperature set too high? - adjust temperature.

NO!

- A. Does the agitator drive shaft engage the blade center and turn it? See Service Section for kettle alignment instructions.
- B. Does the kettle sag when corn is added to the kettle causing the agitator to disengage? See Service Section on return spring adjustment.
- C. Check motor connections - loose wire.
- D. Motor bad - replace.

4. Problem in Cornditioner

The Diplomat series of machines has three cabinet sizes; 36", 60", and 72".

The cornditioner heat system in the 36" cabinet consists of a blower, heating element, and two thermostats mounted in the base of the cabinet. The upper thermostat is a manual reset high limit. The lower thermostat controls the temperature of the air supplied by the cornditioner. The cornditioner circulates hot air through the popper case to keep popped corn hot and crisp. An LED light next to the cabinet switch indicates when there is power to the circuit.

To access the cornditioner components remove the perforated popper case bottom. Remove the screw and cover from the side of the panel on the left side of the cabinet. this will expose the cornditioner components.

With the power connected, turn the cornditioner 'ON'.

QUESTION: Is the LED light 'ON' and no air being delivered?

- A. Check the high limit thermostat. If tripped (red button out) reset by pressing red button.
- B. Check connections to blower.
- C. Replace blower.

QUESTION: Is the LED light 'ON' and cool air is being supplied?

- A. Check heat element; replace.
- B. Check thermostat; replace.

QUESTION: High limit trips off repeatedly?

- A. Cornditioner screen blocked - clear passageway.
- B. Blower not operating properly - replace.
- C. Thermostat stuck in 'ON' position - replace.

The cornditioner heat system, in the 60" and 72" cabinets, is similar and consists of a blower, heating element, and a thermostat mounted in a removable box. The cornditioner circulates hot air through the popper case to keep popped corn hot and crisp. An LED light next to the cabinet switch indicates when there is power to the circuit.

With the power connected, turn the cabinet switch 'ON'.

QUESTION: Is the LED light 'ON' and no air being delivered?

- A. Check connections to blower.
- B. Replace blower.

QUESTION: Is the indicator light 'ON' and cool air is being supplied?

- A. Check heat element; replace.
 - B. Check thermostat; replace.
- The maximum air output temperature is approximately 140° F. (60°C) The thermostat is installed as a safety device and is not adjustable.

QUESTION: Is the indicator light 'ON' and air from blower too hot ?

- A. Cornditioner screen blocked - clear passageway.
- B. Blower not operating properly - replace.
- C. Thermostat stuck in 'ON' position - replace.

5. Problem - Exhaust Odors

- A. Wash grease filter.
- B. Replace charcoal media in the charcoal filter box.

6. Pump

QUESTION: Nothing works:

- A. Is the pump plugged in?
- B. Is the machine plugged in?

QUESTION: Pump not heating:

- A. No LED or heat - problem with Logic control panel.
- B. Indicator light, but no heat - check element.

QUESTION: Motor hums, but does not turn:

- A. 7700 Oil in pail not liquid: Turn 'ON' OIL HEAT switch to melt oil.
- B. 7700 pump; drive shaft does not turn freely - may have been dropped on element causing discharge tube to jam into pump gears - clear jam
- C. Motor bad - replace.
- D. 7900 Oil in box not liquid. Turn 'ON' OIL PREHEAT switch to melt oil.

QUESTION: Pump runs all the time:

Timer set to very long cycle - reset (See Pump Adjustment).

QUESTION: Motor runs, but does not dispense oil:

- A. Check for oil in the pail or box- refill.
- B. Solid oil in line - A hair dryer may be used to heat the tube to melt the oil. A rag soaked in hot water and wrapped around tube will also melt the oil.
- C. 7700 Oil Inlet tube (#2566) pulled out of pump body.
- D. 7900 Check for air in oil line from box.
Box is upside down and connector is at the top of the box, not at the bottom. Pump is now pumping air from the top of the bag.
NOTE---If connector is moved to second box, replace empty box as soon as possible so that a full box will be available when needed.

DO NOT DISTRIBUTE THE FOLLOWING INFORMATION TO USERS:

To enter any “programming level” the keys must be held for 5 seconds.

OPERATOR’S LEVEL ACCESS

- Press Program for five seconds = Salt or Sugar and Exhaust On or Off.

MANAGEMENT LEVEL ACCESS

- Press and hold down “Program” and “↑” buttons for 5 seconds to Set: (a) Pump time (also see page 10 in Service Manual) (b) Language (c) Temperature in °F or °C
- Press and hold down “Kettle Preheat” for 5 seconds, then hold down Start button to set amount of oil.
- Press and hold down “Program” + “Stop” buttons for 5 seconds to Set: (a) Kettle Temperature (also see page 15 in Service Manual) (b) Pump type 7700 or 7900 pump.
- Press and hold down “↑” and “↓” buttons for 5 seconds to enter Data Retrieval Mode.

TECHNICIAN LEVEL ACCESS

- Press “↑” + “↓” + “Program” = To get out of overtemp.
- Press “↑” + “↓” + “Cabinet” = Diagnostic Sequence – Controller will cycle through all keypad LEDs, relays, and associated on board LEDs with the press of the UP or Down keys. If no activity is seen for 15 minutes, or if power to the unit is cycled (restarted), controller reverts to normal operation.

X OPERATING INSTRUCTIONS



1. Do not attempt to operate your Cretors popcorn machine until you have read and understood this manual. Failure to do so may result in serious injury or death.



2. Do not attempt to operate your Cretors popcorn machine unless the installation instructions have been strictly adhered to. Failure to do so may result in serious injury or death.



3. Operate your popcorn machine only if it is in sanitary condition (SANITATION INSTRUCTIONS). Failure to do so may result in illness to your customers.

5. To operate your Cretors popcorn popping machine:

- A. Fill the corn drawer with corn (models DIL20FP, DIL32FP, DIL205, DIL325, TDIL326).
- B. Fill the salt box and hang it on the inside edge of the corn drawer.
- C. Connect and adjust the pump as explained in the installation instructions and preheat the popping oil until liquid, if necessary.
- D. Fill the corn measure with corn and the salt measure with salt, and empty these into the kettle. When making sugar corn, add the correct amount of sugar, rather than salt.



- E. Close the kettle lid by pulling the knob down. Avoid contact with the kettle. Contact with a hot popping kettle may result in serious burns or scalds.



CAUTION! Always add corn to the kettle before pressing the 'START' button or adding oil. Failure to do so may result in the oil being heated too rapidly resulting in a fire.

- F. Press the 'START' button. Pressing the 'START' button will: Turn 'ON' the agitator, turn 'ON' the exhaust fan, turn 'ON' the kettle heat, and pump the correct amount of oil into the kettle.



NOTE: After the first popping the kettle is hot. Avoid contact with the kettle when adding corn or salt. Failure to do so may result in serious burns or scalds.

Measuring instruments have been provided to accurately measure the proper amounts of popcorn, salt and oil. The correct amount for each popping is:

SALTED CORN

<u>Kettle Size</u>	<u>VOLUMETRIC MEASURE</u>		
	<u>Corn</u>	<u>Oil</u>	<u>Salt</u>
20 oz.	20 oz. 591 ml	6.5 oz. 192 ml	2 tsp.
32 oz.	36.5 oz. 1083 ml	12.25 oz. 360 ml	3 tsp.

SUGAR CORN

<u>Kettle Size</u>	<u>VOLUMETRIC MEASURE</u>		
	<u>Corn</u>	<u>Oil</u>	<u>Sugar</u>
20 oz.	12 oz. 351 ml	4.25 oz. 122 ml	8.25 oz. 245 ml
32 oz.	19.5 oz. 577 ml	7.5 oz. 225 ml	15.25 oz. 451 ml

- G. As the corn pops, it will push the lid open. When the lid has moved about one and one-half inches, it will open completely, allowing the corn to discharge from the kettle. When the corn finishes popping, dump the kettle by pulling the large black handle down as far as it will go. Then when the pan is empty, return the handle to its upright position.



Avoid contact with the kettle when dumping popped corn. Failure to do so may result in serious burns or scalds.

- H. When the oil container is empty, replace with new full container of oil.
- I. Repeat steps D - G as desired, adding corn to the corn drawer and salt to the salt box as necessary.

NOTE: The ideal time for maximum volume is between 2-3/4 to 3-1/2 minutes from the time the corn is placed into the kettle until the time it is dumped. Check the popping time after several popping cycles. Reduce the charge of raw corn if the time is more than 3-1/2 minutes and increase the charge if the time is less than 2-1/2 minutes per popping.

- J. Follow the recommended sanitation procedures.

XI SANITATION INSTRUCTIONS



Be certain the machine is turned off and power is unplugged before sanitizing this machine unless a specific cleaning procedure requires power to the machine. Failure to do so could result in injury or death.



Do not clean heated surfaces until they have been given sufficient time to cool. Failure to do so may result in serious burns or scalds.

1. Popping Kettle



A. Do not immerse an assembled pan in water. This will damage the electrical components and may cause short circuits resulting in electrical shock hazard if power is applied.

B. Do not use steel wool or other similar abrasives to clean the kettle as they will ruin the kettle by removing the nickel plating.



C. Do not attempt to clean the kettle with power connected unless you are boiling the "CKC" cleaning compound to clean the inside of the kettle in step G.



D. Do not attempt to clean a hot kettle. Failure to do so may result in serious burns or scalds.

E. The kettle has a polished nickel finish and is very easy to clean if oil is not allowed to burn on it. After the final popping, the best practice is to wait until the oil just begins to solidify, then take a cotton towel or absorbent rag and wipe the kettle. Once the oil is allowed to completely solidified, it can become more difficult to remove. We recommend coconut oil for your Cretors popper; it will not stick or burn as easily as other oils.

F. The outside of the kettle should be used cleaned with Cretors Outside Kettle Cleaner "COC" periodically to remove popping oil that may become baked on.

G. Clean the interior of the kettle every week with "CKC" cleaning compound. This will prevent the accumulation of carbon on the bottom and internal sides of the kettle. When using "CKC" cleaning compound in the kettle, do not fill the kettle with more than 3/4" high of water inside the kettle. Heat the water to boiling and turn off the kettle heat, don't boil the kettle dry. If the kettle has been overheated or oils that tend to carbonize are used, the normal cleaning procedures may not suffice. Increase frequency as needed.

H. Press CLEAN key, CLEAN key LED will light.

When clean cycle is selected, normal operation (including pump and conditioner), pre-heat operations are disabled, cabinet lights remain on.

Kettle heater relay is energized and controlled at 190°F for a total of 15 minutes from the start of the clean cycle, then is de-energized (end of Clean cycle). Agitator relay is energized at the start of the clean cycle and is de-energized when temperature falls below 150°F. End of clean cycle is signaled by five beeps.

Clean LED is 100% on until end of clean cycle, then 50% on/off until CLEAN key is pressed to take machine out of Clean cycle and return to normal operation. LCD display shows time left in clean cycle (count-down). Cleaning cycle is recorded in memory (incomplete cycles are not counted).

CLEAN key LED will de-activate. Cleaning works best when used in conjunction with the Cretor's cleaning kit and supplies. See "Sanitation Instructions."

I. The agitator assembly is disassembled by removing the spring pin going through the top of the stirrer blade. Lift off the stirrer blade.

J. Clean all parts thoroughly, making sure to use Cretor's Kettle Cleaner. Do not use any harsh abrasives or cleaning material.

K. Reassemble in reverse order, following the directions above.

2. Cabinet



A. Remove and empty the waste clean-out drawer daily or whenever it is full. Under heavy use this may need to be done more often. Failure to empty the drawer and clean cabinet may result in a fire hazard due to restricted air flow.

B. The cabinet glass and cabinet base can be cleaned with any good grade glass or household cleaner suitable for glass and plastic surfaces. The inside of the cabinet can be cleaned with the same cleaner as the outside, if it is the type that has a cleaning agent to cut the oil remaining from the popping operation, and it is acceptable for food contact surfaces.

C. The popper case bottom of the 36" (DIL---P) cabinet should be removed at least weekly or more often if needed, to thoroughly clean the air chamber beneath of salt and small bits of corn which come through the air holes. The corn and scraps may be swept into the clean-out drawer and then removed.

D. Remove and empty the clean-out drawer daily. Heavy or continual use of the machine will require more frequent cleaning.

E. The popper case bottom of the 60" (DIL--5) and 72" (TDIL--6) cabinets should be removed at least weekly or more often if needed to thoroughly clean the air chamber beneath of salt and small bits of corn which come through the air holes. The corn and scraps may be swept into the hot air well in the center of the bin.

- F. Remove the clean-out drawer from under the popper case bottom and slide it under the hot air well; then pull out and clean out slide. The scrap will fall into the scrap drawer. When through, replace the clean out slide and the clean-out drawer.

3. Pump



Be certain the machine is turned off and power is unplugged before sanitizing this machine unless a specific cleaning procedure requires power to the machine. Failure to do so could result in injury or death.

Do not clean heated surfaces until they have been given sufficient time to cool. Failure to do so may result in serious burns or scalds.

7700-L PUMP

The pump is most easily cleaned by using two empty popping oil pails or buckets that have been thoroughly cleaned of oil. The cleaning procedure is:

- A. Fill one pail 1/2 full of hot water and mix in 1/2 package of CKC (Cretors Kettle Cleaner).
- B. Put the pump on the pail and turn on the heat timer to 20 minutes and leave until the water is hot.
- C. Unplug the pump and hold the pump over the pail. Clean the outside of the pump and heating element. Do not immerse the pump motor or get the top plate and motor wet. Put the pump on the pail again, and reconnect the electrical power supply and oil line.
- D. Put the kettle in the dump position, and place a container under the oil discharge tube to catch the cleaning water.
- E. Cycle the pump several times catching the cleaning water in the empty container.
- F. Disconnect the pump. Take the pump to a sink and thoroughly rinse the pump and heat element.



Do not get the top of the pump wet. Electrical shorts and a shock hazard, which can cause injury may result if the wires inside the top of the pump get wet.

- G. Take a second pail and fill it with clean water. If only one pail is available, empty the soapy water from the pail, rinse it completely and fill it with clean water.
- H. Reconnect the pump, and cycle it several times to thoroughly rinse the inside of the pump and oil lines.
- I. Allow the pump and oil lines to drain.
- J. After system is cleaned, the pump must be filled with oil by cycling the pump until oil is discharged from the oil tube over the kettle. This will prevent any damage to the steel components of the pump. Never leave water in the pump or oil lines.

7900-L PUMP

The design of the 7900 pump is a closed system and should remain aseptic.

If you believe your pump system to be contaminated, then you will need to clean the system. The pump is most easily cleaned by the following steps:

- A. Remove the Bag-in-Box connector.

- B. Place the end of the oil tube into a pail of hot soapy water.
- C. Cycle pump sufficiently to flush system. Be sure to have a container to catch the water at the discharge tube above the kettle.
- D. Change the oil tube to clean hot water and cycle pump to flush soapy water from system.
- E. Reinstall Bag-in-Box connector to the oil tube and reconnect to a bag of oil.
- F. After system is cleaned, the pump must be filled with oil by cycling the pump until oil is discharged from the oil tube over the kettle. This will prevent any damage to the steel components of the pump. Never leave water in the pump or oil lines.

To Clean Bag-in-Box Connector

- A. Remove from tubing.
- B. Remove probe body from clamp by spreading clamp body tabs and sliding probe body out.
- C. Remove probe spout adapter from probe body by unscrewing stem from probe body.
- D. Remove seal body and spring from stem and nut assembly by unsnapping seal body from stem.
- E. Clean all parts in accordance to NSF and local requirements. (Hot, soapy water, rinse, and dry). Do not use petroleum based cleaning agents or abrasive cleaners. Damage to sealing surfaces may occur and jeopardize the sanitary integrity of the connector.
- F. Inspect the three "O" rings for damage or imbedded particles. Replace as required.
- G. Reassemble by reversing steps A - D.

SAFETY FIRST



The information in this manual is essential for the safe installation and maintenance of your Cretors popcorn machine. The manual must be read and understood before installing, operating or maintaining this equipment, or equivalent training must be provided.



"The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury". Ref.: 29 CFR 1926.20 (b)(4)(a)(2)



It is understood that safety rules within individual companies vary. If a conflict exists between the safety procedures contained in this manual and the rules of a using company, the more stringent rule should take precedence.

This manual is filled with time-saving and money-saving information regarding your Cretors popcorn popper. There is nothing, however, more important than the safety aids and warnings found throughout this document.

If you have any questions, contact your local dealer and if there are any additional questions, feel free to contact the Customer Service Department at C. Cretors and Company.

Additional copies of this manual can be obtained from C. Cretors and Company at the address listed below. Please provide model and serial number when requesting additional copies of this manual. There will be a nominal charge for additional copies.

Cretors guarantees this machine to be free of defects in parts, materials and workmanship for two years. Please take this time to fill out the factory registration card and return it to the factory to activate your warranty. If you have any questions concerning the Cretors' warranty, please contact your local dealer or the Customer Service department at C. Cretors and Company.



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