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3243 North California Avenue, Chicago, IL 60618

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# DIGITAL DIPLOMAT 20 and 32 oz POPCORN MACHINE OPERATION MANUAL

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

230 Volt,  
Single Phase, 50 Hz

400 Volt, 3N~  
Three Phase, 50 Hz

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

**Included in this manual:**

- \*One Pop Option
- \*Salt/Sugar Option
- \*Self Serve Option



**READ and UNDERSTAND these operating and safety instructions before operating this popcorn machine!**

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## I. SAFETY ALERT SYMBOL

The symbol shown is used to call your attention to instructions concerning your personal safety and the safety of others. Watch for 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.



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## II. SAFETY FIRST



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



“The employer shall instruct each employee in the recognition and avoidance of unsafe conditions, as well as, the regulations applicable to his work environment and 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.

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## III. INTRODUCTION

This manual is filled with time-saving and money-saving information regarding your Cretors popcorn machine. There is nothing more important than the safety aids and warnings that are 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 service and accident prevention.

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

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## IV. PURPOSE OF MANUAL

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

It is important that this manual be kept available to operating personnel.



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

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## V. PRODUCT IDENTIFICATION

<u>CRETORS POPCORN MACHINE DIPLOMAT MODELS:</u>	DI20CP
	DI32CP
	DI20FP
	DI32FP
	DI204
	DI324
	DI205
	DI325
	TDI326

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## VI. PRINCIPLES OF POPCORN MACHINE OPERATION

### Theory and Observations of Popcorn Machine Operation

- A. 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.
- B. 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 is controlled using a temperature control to maintain the kettle at an operating temperature of approximately:

<u>KETTLE</u>	<u>SALTED CORN</u>	<u>SUGAR CORN</u>
20 OZ.	410-420° F(210-215° C)	375-385° F. (190-193° C)
32 OZ.	410-420° F(210-215° C)	375-385° F. (190-193° C)



Contact with these surfaces will burn and scald you. Do not touch the kettle, oil or parts in direct vicinity of the heating elements.

- C. The kettle is provided with an agitator to assist in the quick and even distribution of heat throughout the kernels.



The oil is heated to high temperatures in a kettle provided with electric heating elements to reach a 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.

- D. 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.
- E. 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.
- F. A conditioner is provided and consists of a blower, heating element, and thermostat. The conditioner circulates hot air through the corn stored in the popcorn case to keep the product fresh and crisp.
- G. A two-stage filter system traps odor and smoke produced by popping corn.
- H. One Pop Option only allows the kettle to pop one batch of corn at a time and then shut down. The One Pop Option makes it impossible to leave a kettle heat turned on.
- I. With the One Pop Option, the kettle heat switch is turned on; however, the kettle will not begin to heat until the One Pop button is pressed. When the One Pop button is pressed the green indicator light will go on, the kettle will begin to heat, and the kettle heat indicator light will turn on. The kettle will then heat until the temperature control opens at the end of the popping cycle. When the temperature control opens at the end of the popping cycle the kettle heat indicator light goes out and the heat turns off. The kettle will not begin to heat again until the kettle has cooled and the One Pop button is pressed.
- J. If the machine is equipped with an oil pump, and the pump switch is turned on, pressing the One Pop button will begin the pumping cycle, as well as, the heat cycle. (When cleaning the kettle and oil is not wanted, turn off the oil switch and the oil pump will not run.)
- K. If the machine is equipped with the Salt/Sugar option, the operator moves the toggle switch to either the salt or sugar position for desired corn type. Kettle temperature and oil amount will change automatically. In the salt position, the thermostat will turn off at the sugar temperature but a timer will allow the heat to remain on until it reaches the salt temperature.
- L. With the Digital Temperature Control, the operator can adjust the set point of the popping cycle on the controller. There is no thermostat in side the kettle. Temperature of kettle will also be displayed. To adjust, see service manual.

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**VII. CONTROL SWITCHES (Not all machines contain all of these switches.)**

KETTLE HEAT	-Turns the kettle heat On/Off.
AGITATOR	-Turns the stirrer blade motor On/Off.
EXHAUST	-Turns exhaust blower On/Off.
CORNDITIONER	-Turns the cornditioner blower and heat On/Off.
LIGHTS	-Turns interior lights On/Off.
OIL	-Provides power to the oil pump.
DELIVERY	-Initiates the pump cycle.
FUSE/CIRCUIT BREAKER	- Provides protection to all circuits, except the kettle.
ROTARY SWITCH	-Turns power On/Off to all circuits.
ONE POP	-Turns the kettle heat on and initiates pump cycle.
SALT/SUGAR	-Sets the pump and kettle temperature to proper settings.
DIGITAL CONTROLLER	-Displays and controls kettle temperature.

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**VIII. OPERATING INSTRUCTIONS**


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.



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.



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



Always turn the kettle heat switch off when not popping corn. Failure to do so will cause oil to stain the kettle, possibly resulting in an unsanitary condition. It may also cause a "flash" fire if oil is added to a kettle left unattended with the heat on, resulting in serious burns or death.

A. To operate your Cretors popcorn popping machine:

1. Fill the corn drawer with corn on floor models.
2. Fill the salt box and hang it on the inside edge of the corn drawer.
3. Connect and adjust the pump as explained in the installation instructions. Pre-heat the popping oil until liquid, if necessary.

4. Fill the corn measure with corn and the salt measure with the salt, and empty these into the kettle. When making sugar corn, add the correct amount of sugar, rather than salt, with the measure for corn.



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



Avoid contact with the kettle. Contact with a hot popping kettle may result in serious burns or scalds.

5. Close the kettle lid by pulling the kettle cover knob down.
6. If equipped, move Salt/Sugar switch to desired mode.
7. Turn on the agitator, the exhaust fan, and then turn on the kettle heat and press the oil delivery button.
8. If machine is with the One Pop option, press the One Pop button to begin the popping cycle and oil delivery.



**WARNING!** 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 cups 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. 10 ml
32 oz.	32 oz. 946 ml	10.5 oz. 310 ml	3 tsp. 15 ml

#### 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

9. 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, when there are about four seconds between pops 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.

10. Repeat steps 4-9 as desired, adding corn to the corn drawer and salt to the salt box as necessary.
11. When the oil container is empty, replace with a new full container of oil. See Pump Instruction manual.

**NOTE:** The ideal time for maximum volume (corn expansion) 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. The pilot light should turn off approximately 10-20 seconds before the corn finishes popping. If this is not the case, please refer to the "Troubleshooting" section in your Service Manual.

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## IX. 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.

### A. Popping Kettle

1. The Cretors kettle is designed to be cleaned in place. There is no need to remove the kettle to clean.



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

2. Do not use steel wool or other similar abrasives to clean the nickel plated kettles, as they will ruin the kettle by removing the nickel plating. Stainless steel kettles can be cleaned aggressively.
3. Do not clean the kettle with power connected unless you are boiling the CKC cleaning compound to clean the inside of the kettle. Follow instructions in step 6.



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



Do not throw ice into a hot kettle. Doing so can cause damage to the pan and invalidate the warranty.



4. The kettle either has a polished nickel finish or is a polished stainless steel finish and is very easy to clean if oil is not allowed to burn. 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 solidify, 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.
5. A thorough cleaning every week with CKC cleaning compound is recommended. This will prevent the accumulation of carbon on the bottom and internal sides of the kettle. When boiling the CKC cleaning compound in the kettle, do not fill the kettle with more than  $\frac{3}{4}$ " high of water inside the kettle. 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.

Cretors has developed a cleaning kit for your Diplomat machine. The kit is sold separately under P/N 10831. If you need more information, please feel free to contact your local distributor or call Cretors at 1-800-228-1885.

6. Cretors Outside Kettle Cleaner COC should be used periodically to remove popping oil that may become baked on to the outside of the kettle.
7. The kettle agitator assembly should be removed weekly for thorough cleaning. The stirrer blade is disassembled by removing the spring pin that goes through the top of the stirrer blade. Lift off the stirrer blade.
8. Clean all parts thoroughly, making sure to use CKC. Do not use any harsh abrasives or cleaning materials.
9. There are two new Cretors cleaners. Carbon OFF in the blue can is to be used with no heat. The red can would require the kettle to be heated. Read the directions on the cans.
10. Reassemble in reverse order, following the directions given.

## B. Cabinet

1. 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 to clean cabinet may result in a fire hazard due to restricted airflow from the conditioner.

2. 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. Do not soak unit with water. Avoid wetting the inside of electrical enclosure.

3. The doors can be cleaned with Cretors' Plastic Polish. This product is specially formulated to clean plastic doors. Do not use cleaners that have ammonia or alcohol. The use of these cleaners will cause the doors to become brittle and crack.
4. Counter model Diplomats require the installation of 4" legs, which are included with this unit. The use of the 4" legs is to conform with food sanitation regulations.
5. The popper case bottom of the 48" (DI-4), 60" (DI-5) and 72" (TDI-6) cabinets should be removed at least weekly to thoroughly clean the air chamber beneath. Empty the scraps in the hot air well by removing the clean-out drawer from under the popper case bottom and sliding it under the hot air well. Pull out the clean-out slide and the scrap will fall into the scrap drawer. Dispose of the products found in the popper case bottom, and replace the clean-out slide and the clean-out drawer.

This appliance should not be cleaned with a water jet.

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 regarding the operation or cleaning of your Cretors popcorn popper, contact your local distributor. Should you have any difficulties or are unable to reach them, 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 the 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 distributor or the Customer Service Department at C. Cretors and Company.



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# Appendix A

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## I THEORY AND OBSERVATIONS OF MACHINE OPERATION

The Diplomat Self Serve™ Warmer is designed to allow users to access popped corn and topping for themselves. The warmer provides popped corn and topping storage, and a conditioner circulates heated air to keep popcorn fresh. Popcorn is distributed through chutes on the front of the unit at the pull of a slide, while fluid oil topping is available nearby at the push of a button.

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## II CONTROL SWITCHS

LIGHT SWITCH	-Turns lights and sign(s) ON/OFF
CORNDITIONER SWITCH	-Turns cabinet heat and blower ON/OFF
PUMP SWITCH	-Turns topping pump and oil warmer ON/OFF

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## III OPERATING INSTRUCTIONS

1. This warmer is designed to warm and dispense popcorn and oil topping. Do not use warmer to heat or hold any other products.
2. The lighted sign and cabinet lights are turned ON/OFF by pressing the switch marked "Lights."
3. The cabinet heat and blower are turned ON/OFF by pressing the switch marked "Cornditioner."
4. The topping oil pump and oil heater are turned ON/OFF by pressing the switch marked "Pump."

All three switches are located on the machine's top back side.



Operate your warmer only under sanitary condition (SEE SANITATION INSTRUCTIONS).

### Installing the Oil Topping Bag



Use only liquid topping oil. Oil which is not in liquid form will clog the oil pump. If other types of topping are to be used, the pump will need to be changed. Contact your distributor or Cretors for more information.

1. If the topping bag is within a box, carefully remove it. Be sure to avoid puncturing or cutting the bag. If the bag is broken, discard; the bag must not be torn or pierced.
2. Carefully place the oil topping bag into the heated butter shelf, avoiding damage to the bag.



If the bag is ever broken in the machine, be sure to clean up the spilled oil immediately, to avoid contamination.

3. Remove the travel cap from the bag spout. The travel cap prevents dirt and dust from coming into contact with the internal slider for sanitary hook-up.
4. 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 bi-directional locking action does two things: One, it eliminates any possibility of accidental disconnect, giving the user a “foolproof” positive connection. Two, it opens the channel, allowing product to flow.
5. When the bag is empty: Disengage the connector, snap 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.
6. No disassembly of connector is required when switching from one oil topping bag to another. Repeat steps 1 - 4 to properly re-connect oil topping bag to pump.

\*NOTE: Prior to each attachment of oil topping bag, ensure that the probe has not been contaminated. If this has occurred, clean the connector as described in **Sanitation Instructions**.

### Filling the Cabinet

1. Slide open one side of the Plexiglas doors and fill the warmer with popcorn through the back.



Do not fill the warmer with popcorn higher than the base of the doors; doing so may put unnecessary strain on the auger motor, or cause jamming.

2. Close doors.

### Use

1. Be sure all switches are turned ON.
2. Dispense popcorn from the warmer by placing an open popcorn bag or box beneath either popcorn chute on the front of the machine. Pull the spring-loaded slide out. The auger will turn to dispense the popcorn. To close, slide the door gently back.
3. Oil topping is dispensed from the middle front of the warmer. Place the popcorn bag or box beneath the spout and press the large dispense button.

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## VI SANITATION INSTRUCTIONS



Be certain all switches on the machine are turned "OFF" and power is unplugged before sanitizing this machine. Failure to do so could result in injury.



CAUTION: HOT. Do not clean appliances until they have been given sufficient time to cool. Failure to do so may result in serious burns.

### Emptying the Clean Out Drawers

Remove and empty the clean out drawers daily, or whenever they are full. Under heavy use, this may need to be done more often.



Failure to empty the drawers may result in a fire hazard due to restricted airflow from the conditioner.

### Cleaning the Cabinet

The cabinet should be cleaned with a damp cloth and any good grade glass or household cleaner suitable for glass and plastic surfaces. A cleaning agent that is acceptable for food contact surfaces is recommended. Do not soak unit with water. Avoid wetting of inside of electrical enclosure.

1. Clean the interior and exterior of the cabinet.
2. Allow cabinet to dry fully.

### Cleaning the Cabinet Doors

The doors can be cleaned with Cretors' Plastic Polish. This product is specially formulated to clean plastic doors. Do not use cleaners that have ammonia or alcohol. The use of these cleaners will cause the doors to become brittle and crack.

1. Lift the Plexiglas doors from their tracks.
2. Clean the tracks and the doors.

### Cleaning Beneath the Popper Case Bottom

Clean the interior of the warmer, beneath the popper case bottom, at least once a week.



Failure to clean beneath the popper case bottom may result in a fire hazard due to restricted airflow from the conditioner.

1. Remove each corn auger by compressing the auger coil and removing the auger head from its seat at the rear of the warmer. The auger may be removed from the front end, where its tip fits into the cabinet wall. Clean each auger similar to cleaning the cabinet (see **Cleaning the Cabinet**).
2. Remove the two popper case bottoms using the handle lifts at their sides. Clean each bottom similar to cleaning the cabinet (see **Cleaning the Cabinet**).
3. The interior beneath the popper case bottom should be cleaned similar to the cabinet (see **Cleaning the Cabinet**). Be sure to clear the blower vents of debris.
4. Return the popper case bottoms and augers to their previous positions.

### **Cleaning Oil Topping Connector**

Once a week, the oil topping connector should be thoroughly cleaned.

1. Remove the probe body from the bag clamp by spreading the body clamp tabs, sliding the clamp body tabs and the probe body out.
2. Remove from tubing.
3. Remove the probe spout adapter from the probe body by unscrewing the stem from the probe body. Use a screwdriver to do this.
4. Remove the seal body and spring from the stem and nut assembly by unsnapping seal body from the stem.
5. Clean all parts in accordance to NSF and local requirements (warm, soapy water, and rinse). Do not use petroleum base cleaning agents or abrasive cleaners. Damage to sealing surfaces may occur and jeopardize the sanitary integrity of the connector.
6. Inspect the three "O" rings for damage or imbedded particles. Replace as required.
7. Reassemble by reversing steps 1 - 4.

### **Flushing the Oil Delivery System**

The oil topping delivery 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. Instructions for cleaning the connector are listed above. Instructions for cleaning the pump are listed below.

1. Remove the oil topping bag by disengaging the connector, snapping the connector probe into the out position, and removing it from the bag spout. This disconnects and reseals the bag.
2. Remove the connector from the oil tube.
3. Place the end of the tube into warm, soapy water in a pail.
4. Plug in the warmer and turn the pump switch to "ON." Be sure the other switches are set to "OFF."



**CAUTION: Do not spill water into the warmer. Doing so could result in injury.**

5. Cycle the pump sufficiently to flush system by pressing the mushroom dispense button on the front of the warmer. Be sure to have a container to catch the water at the discharge spout beneath the button.
6. Place the end of the oil tube into clean, warm water in a pail.
7. Cycle the pump long enough to completely rinse soap from the system.
8. Remove tube from the clean water, and cycle pump to clear lines.

### **Cleaning the Oil Topping Heater Shelf**

Once every month (unless a spill has occurred), clean the heater shelf similar to the cabinet (see **Cleaning the Cabinet**).

Sanitation of your popcorn machine and oil pump is imperative for production of an appetizing product. Failure to follow proper sanitation procedures for food contact surfaces or usage of contaminated ingredients (salt, oil, seasonings) could result in poor product quality and may cause illness to your customers. Use pure ingredients, always emphasize machine sanitation, and follow the sanitation procedures outlined in this manual to protect the welfare of your customers.