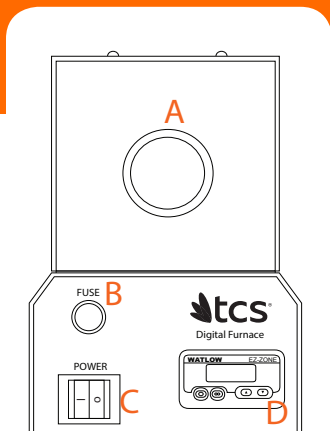


# TCS Digital Furnace

## Operating Instructions



The TCS Digital Furnace is designed to be simple and easy to use. This digital furnace is used to melt thermoplastic dental material and then be immediately transferred to an injection unit. The melting cylinder, knock out kit, and bronze plugs are used in conjunction with the furnace.

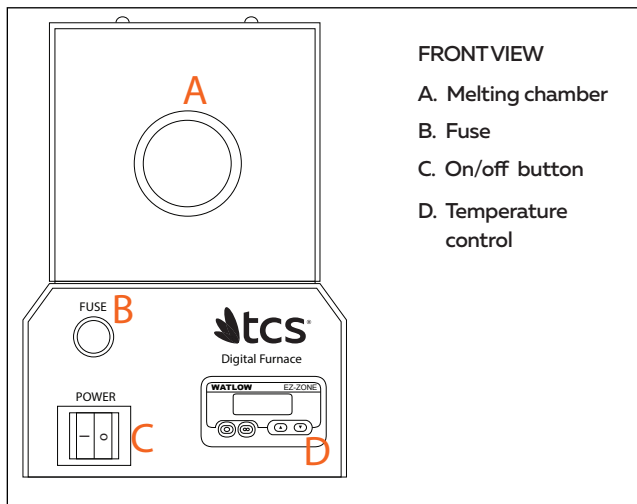
Item #3512-01 (110V)

Item #3512-02 (220V)

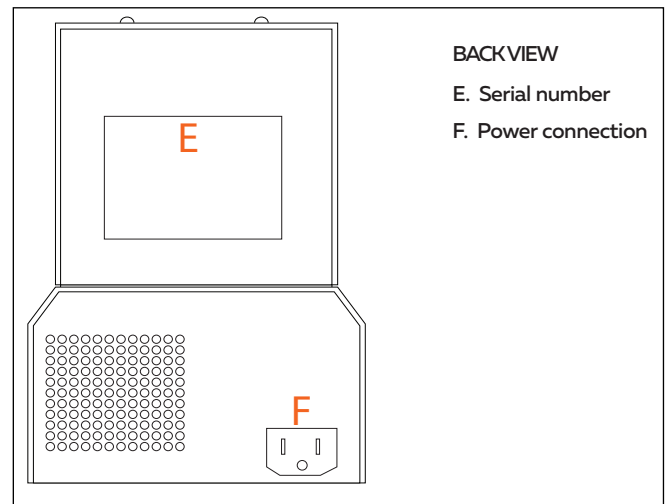


PLEASE READ MANUAL PRIOR TO USE

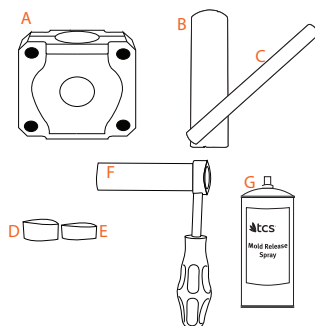
### 1. Get to Know Your Machine



- FRONTVIEW**
- A. Melting chamber
  - B. Fuse
  - C. On/off button
  - D. Temperature control



- BACKVIEW**
- E. Serial number
  - F. Power connection



- ITEMS NEEDED**
- A. Injection flask (Item #3701-01)
  - B. Knock-out stand (Item #3705-01)
  - C. Knock-out rod (Item #3707-01)
  - D. Thick bronze plug (Item #3712-01)
  - E. Thin bronze plug (Item #3709-01)
  - F. Melting cylinder (Item #3703-01)
  - G. Mold release spray (Item #3814-01)

- SPECIFICATIONS**
- Yield:** Approx. 30 cases per day
  - Weight:** 5 lbs | 2.3 kilos
  - Dimensions:** Width 5" | Height 7.5" | Depth 5.5"
  - Available voltage:** 110V & 220V

## 2. Unpacking and Safety

Your safety and the safety of others are very important. We have provided important safety messages in this manual. Please read these messages carefully. A safety message alerts you to potential hazards that could hurt you or others. Each safety message is associated with a safety alert symbol. The definition of these symbols are described below:



**General Safety Hazard:** Refer to the instructions for details on the specific hazard.



**Caution:** Hot surface warning



**Caution:** Electrical shock hazard



**Technical Symbol:** All operations marked with this symbol are to be performed by qualified maintenance personnel only.

### Ventilation Clearance:

AREA	MINIMUM REQUIRED CLEARANCE
Back of the unit	10 cm / 4 inches
Sides of the unit	20 cm / 8 inches
Above	30 cm / 12 inches
Below	N/A

## 3. Getting Started

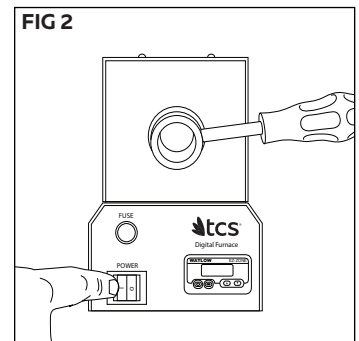
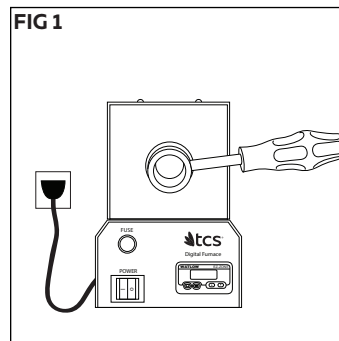


**Caution:** High voltages are present. The line power connections must have a functioning ground connection and over voltage protection in the form of a fuse or circuit breaker.

\*\* DO NOT DEFEAT THE GROUND WIRE ON POWER PLUG

\*\* TURN OFF FURNACE BEFORE CONNECTING OR DISCONNECTING ELECTRICAL PLUGS.

1. Select a place near the injector to place the furnace. The furnace should be close enough to the injector to allow easy transfer of the molten resin to the injector.
2. Plug the furnace power plug into a grounded, three-pronged outlet. This furnace is manufactured in 110V and 220V, make sure the line power matches the voltage and the frequency rating listed on the power cord. **FIG 1**



## 4. Operating the Furnace



**Caution:** Some of the components of the furnace get very hot! Always use protective gloves, clothing and eye protection.

1. Turn on the furnace by pushing ON/OFF switch to the "I" position. **FIG 2**

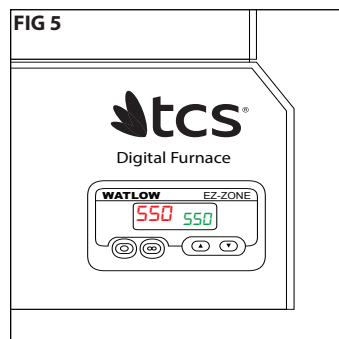
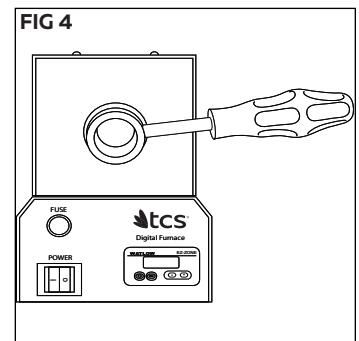
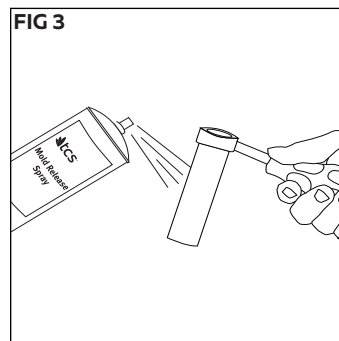
**Note:** The furnace is pre-calibrated to 550°F (ideal temperature for Unbreakable™). Please refer to product (resin) label for time and temperature for iFlex™ and Karadent™. *Refer to page 3, "if change in temperature is needed".*

2. Lightly spray the cylinder with TCS Mold Release Spray inside and out. **FIG 3** Insert the cylinder into the furnace so that it begins to heat as well. It is important that the cylinder heats up with the furnace. **FIG 4**

**Note:** The cylinder needs to be heated up with the furnace, otherwise it will not be at the proper temperature when the cartridge is inserted.

3. Wait until the furnace temperature reads 550°F. This can take up to 10 minutes. The green and red digits should match for at least 30 minutes prior to use. **FIG 5**

**Note:** It is important to wait approx. 30 minutes once the furnace reaches desired temperature in order to allow the entire unit to stabilize.



- Spray the cartridge with TCS Mold Release Spray. **FIG 6**
- Place the cartridge into the receptacle with crimped top first. **FIG 7** In other words, the end of the cartridge that is crimped will be closest to the back of the furnace. **FIG 7a**
- Spray the bronze plug with TCS Mold Release Spray and place into the cylinder directly in front of the cartridge. Use the large plug for small and medium cartridges and the small plug for large cartridges. **FIG 8 & 8a**
- Immediately set a timer (not included) for the minutes necessary for injection: **FIG 9**

**E.G. Unbreakable™:** 550°F for 11 min

**iFlex™:** 450°F for 13 min

**Karadent™:** 560°F for 16-17 min

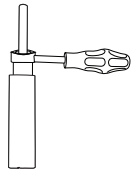
**After specified melt time, TCS resin is ready to be injected.**

- When the resin is ready for injection carefully remove the cylinder from the furnace and transfer to the injector by keeping the cylinder in a horizontal position **FIG 10** until you lean it over the sprue opening of the flask **FIG 10a**, you can then bring it to vertical position and proceed to inject **FIG 10b**.
- Allow the injection to compress for at least 3 minutes prior to removal.

**Note:** BE ACCURATE with melting time as it is crucial to the end result.

**After injection purge the melting cylinder:**

Insert cylinder into knock out stand and purge using the knock out rod. For best results, this should be done while the mechanisms are still hot.

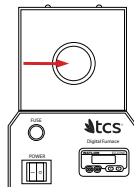


**If change in temperature is needed:** **FIG 11**

Simply press UP arrow to increase temperature and DOWN arrow to reduce temperature (desired temperature indicated in green). Always wait until the green and red numbers match each other prior to use.

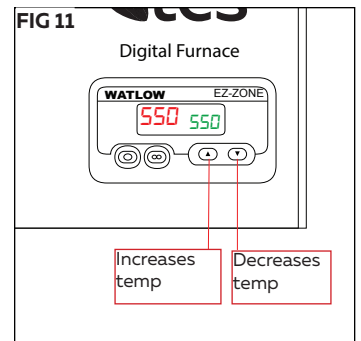
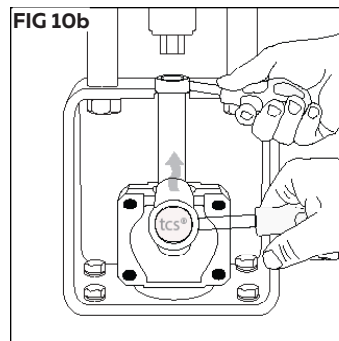
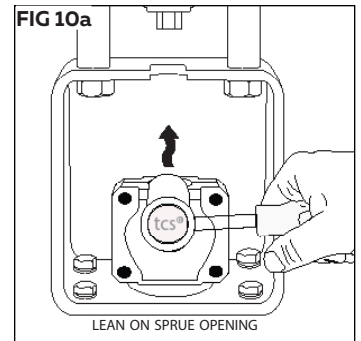
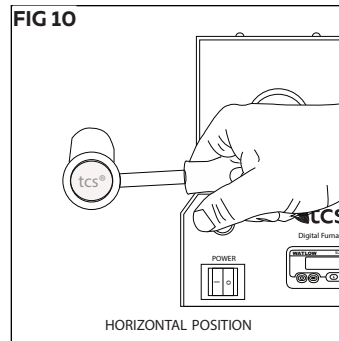
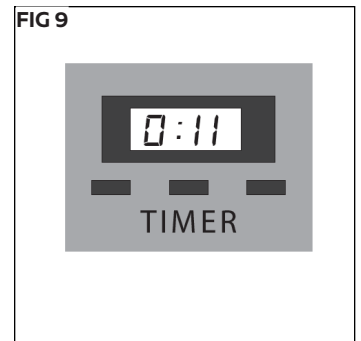
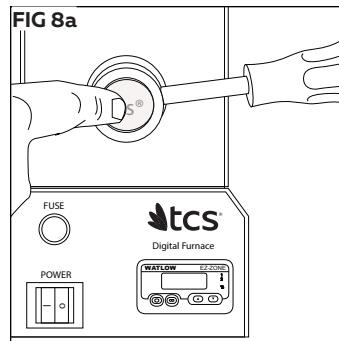
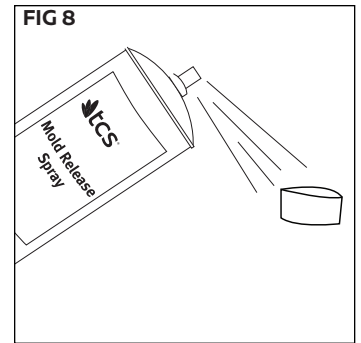
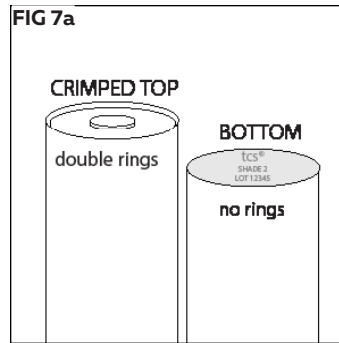
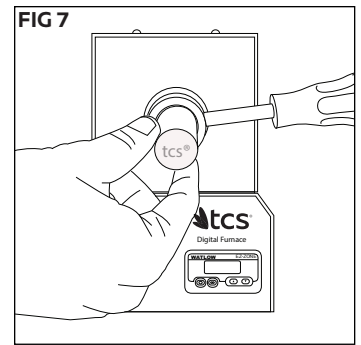
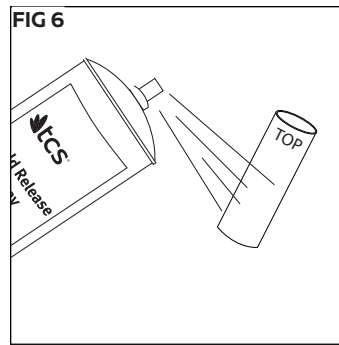
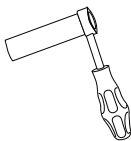
## 5. Maintenance

- With a soft damp rag keep the inside of the melting chamber clean. When the unit is cold wipe in an up-and-down motion rather than circular.
- If the inside of the melting chamber has resin residue stuck to it, with the unit cold, use a scouring sponge to lightly scrap off residue and then wipe down with a soft damp cloth.



**Melting Cylinder**

- TCS Mold Release Spray leaves a residue that needs to be cleaned. With a soft damp rag keep the inside and the outside of cylinder clean. Wipe in an up-and-down motion rather than circular.



**Thermoplastic Comfort Systems, Inc.**  
2619 Lime Ave., Signal Hill, CA 90755 USA  
866-426-2970 | 562-426-2970  
[info@tcsdentalinc.com](mailto:info@tcsdentalinc.com)  
[www.tcsdentalinc.com](http://www.tcsdentalinc.com)

