

# **Quantity Food Production EQUIPMENT**

## **INTRODUCTION**

The time cooking in the vessels evolved, starts the history of cooking equipments. Right from stones, clay pots to automatic microwave ovens, and the innovation in this field never ends. Using the accurate recipe and cooking with the right equipments will give excellent results with respect to taste, freshness, cooking time, easiness of cooking, portion control etc. It is very essential to use the right equipments so that the end product for the customer is of superior quality. Other than the standard equipment used in a quantity kitchen there are many traditional/ethnic ones used at different parts of the world.

## **CLASSIFICATION**

### **I. WEIGHT or SIZE**

- HEAVY DUTY EQUIPMENT.
- MEDIUM DUTY EQUIPMENT.
- LIGHT DUTY EQUIPMENT

### **HEAVY DUTY EQUIPMENT**

- Made from heavy metal and are heavy.
- Cannot be moved
- Installed at a place.
- Fixed on a platform or free standing with 10 cm or 6inches above the floor for ease of cleaning.

## **FEATURES**

- Perform heavy work
- Operates for long hours.
- Longer operational life.
- Increase productivity.
- Improve cleaning and manufacturing.

## **HEAVY DUTY EQUIPMENT**

1. High Pressure Cooking Ranges with A Star Pipes
2. Brat Pan or Tilting Pan – combination of tawa and handi without stick pan
3. U kettles
4. Steamer
5. Industrial Pressure Cooker – Food is cooked in higher pressure and temperature - cooking is faster.
6. Griddle: Cast iron surface with ribbon burner emits bottom heat.
7. Salamander: Heat from up. E.g. Toasting - cheese, Bread
8. Tandoor:

## **MEDIUM DUTY EQUIPMENT.**

It is referred to equipment which can be moved around for rearrangement and for occasional cleaning. Medium heavy metal are used

### **FEATURES:**

- It can be dismantle for ease of cleaning.
- On wheels for easy mobility.

## **MEDIUM DUTY EQUIPMENT.**

- i. Induction pan – use magnetic field to create heat
- ii. Deep fat fryer , strainer, spider, ideal frying temp – 170 degree C
  - a. Wastage less

- b. Uniform
  - c. Hygiene
  - d. Bulk quantity
- iii. Industrial Milk Boiler
  - iv. Mixers, Blenders , Grinder
  - v. Mincer
  - vi. Bone cutter: Meat held to the sharp rotating blade give neat unsplintered desired size across the bone.
  - vii. Potato peeler
  - viii. Garbage pulverizers.
  - ix. Storage and service Equipment: - 140° F service food.

### **LIGHT DUTY EQUIPMENT.**

Light in weight and convenient in construction.

#### **FEATURES:**

- Thinner metal or material.
- Can be moved to work area, cleaning area and washing area.

### **LIGHT DUTY EQUIPMENTS AND TOOLS.**

- i. Colander
- ii. Sieve
- iii. Soup strainers
- iv. Rolling pin
- v. Chopping boards (color coded : Red –beef, yellow –fish)
- vi. Conical strainers
- vii. Egg beater.
- viii. Frying spoon
- ix. Flat spoon

- x. Thali
- xi. Sharping steel
- xii. Scooper

## **II. ORDER OF USE**

The classification is based on the order in which the equipment is used in the food production and service cycle.

- **RECEIVING AND STORAGE EQUIPMENT.**
- **FOOD PRODUCTION EQUIPMENT.**
- **SERVICE EQUIPMENT**
- **CLEANING EQUIPMENT.**
- **CLEANING AND WASTE DISPOSAL EQUIPMENT.**

**RECEIVING AND STORAGE EQUIPMENT.** Receiving of food and Non food material.

Equipment like: Weighing machine. Trolleys Trays, Shelves, Storage bins, Lifts etc.

**FOOD PRODUCTION EQUIPMENT.** All equipments required for food preparation, cooking, holding, and cleaning. e.g. Cooking ranges, ovens, refrigerators, Trolleys, Food processor, Small oven, Cooking Pans.

**SERVICE EQUIPMENT.** It covers all heating and holding equipments portioning tools, table dishes and disposables, cutlery, crockery and glassware.

**CLEANING EQUIPMENT.** For cleaning kitchen and service equipment. Sinks, Dishwasher, shelves and trolleys.

**CLEANING AND WASTE DISPOSAL EQUIPMENT.** Installed away from the main area. Garbage bin or bags. Wet (refrigerated) and dry garbage storage area and incinerator.

### **III. MODE OF OPERATION**

The classification is based on the method of operation.

**HAND OPERATED.**

**SEMI- AUTOMATIC.**

**AUTOMATIC.**

### **IV. TEMPRATURE**

The classification is based on the Heating Or Cooling effect.

#### **HOT.**

- i. Hot case display units: Meant for savory items and fried food
- ii. Bain Marie: Meant for liquid items and gravies. 160° F – 180° F double bath.

#### **COLD,**

Below 20 degree F

- i. Cold food display units – salad / fruits 20° F
- ii. Refrigerated table tops / Cold counter.
- iii. Cold Room
- iv. Traulsen: reach-in fridge/freezer bigger than domestic smaller than commercial walk in.

#### **Blast chiller / Freezer:**

F- Food surface

A – Acidity

T – Time

T- Temperature

O – Oxygen

M – Moisture

Bacterial media of growth

Blast chiller is use to cut the bacterial growth. It gives cool air and within 1 ½ hours temperature goes down to 40° F.

**Butcher wood:** Made up of maple wood / Fiber wood / hard rubber wood. Tamarind is commonly used in India. Whatever is the case; the surface should be resilient; should not chip or crack upon continuous usage.

**Treatment:** *Salt* for moisture so no bacteria growth takes place and *Turmeric* acts as antiseptic. 5 ppm chlorinated water may also be used as disinfectant Color coded fiber boards play a major role in hygiene upkeep.

### **FACTORS AFFECTING PURCHASE**

1. MENU.
2. VOLUME OF OPERATION.
3. EASE OF OPERATION
4. COST.
5. SAFETY AND MAINTENANCE.
6. DURABILITY.
7. HYGIENE
8. PRODUCTIVITY
9. SPACE AVAILABLE.
10. FUEL CONSUMPTION
11. ECO-FRIENDLINESS

Chefs and cooks stationed at the ranges function best when

- 1) Cooking space matches production needs
- 2) Pots, pans and other cooking equipments are conventionally at hand.
- 3) Work space and holding space is within easy reach.

Considering above points, quantity food kitchen must have following equipments.

### **Heavy equipments**

- 1) Refrigerator
- 2) Heavy duty mixer
- 3) Walk in cooler

- 4) Mincer
- 5) Masala grinder
- 6) Dough mixer
- 7) Potato peeler
- 8) Hot-plate (Tawas)
- 9) Convection oven
- 10) Griller
- 11) Deep fat fryer
- 12) Tandoor
- 13) High & low pressure burners
- 14) Tilting pan

**Light equipments:**

- 1) Degchis of different size
- 2) Karai
- 3) Spoons
- 4) Flat spoons
- 5) Colanders
- 6) Mixer
- 7) Chopper
- 8) Hand-bowl
- 9) Flat karai
- 10) Pressure cooker

**EQUIPMENTS: OPERATION**

**1) Mincer (kheema machine)**

- a) Fix attachments i.e., rotating rod, blade, sieve, and rings, tightly with the machine.
- b) Keep tray on
- c) Put vegetable dices/boiled potatoes / or meat without fat in the tray.
- d) Put on main switch, and then turn mincer's switch

- e) Slice vegetable or meat little at a time, press with wooden rod/Fibre stopper.
- 2) Masala grinder:**
- Wash grinder and stone
  - Keep stone in grinder, attach belt to it put masala ingredients in grinder with enough to moisture.
  - Put on main switch of grinder.
- 3) Dough mixer:**
- Wash bowl and dough kneading rod or creamer or whisk.
  - Fix bowl on mixer, then attach rod or creamer as per requirement.
  - Put ingredients in the bowl, lift up the bowl by turning handles anti-clock wise.
  - Press green switch, increase speed by turning clockwise.
  - After use reduce speed, press red switch lift-down the bowl by turning handle clockwise remove mixing rod and then remove the finished product.
- 4) Potato peeler:**
- Wash peeler from inside; tightly close the door.
  - Put potatoes from top. Start main switch as well as water supply.
  - After peeling open door of the peeler. Switch off the main.
- 5) Convection Oven:**
- All electric models are fitted with an on-off switch, which operates the entire oven. These will be linked to an indicator light in time models that lights up when the oven is switched on.
  - On gas oven, an on/off switch will also be fitted to operate the electrically driven fan, the interior light and ignition system if fitted.

**Operation Instruction:**

- Switch an oven, set the temperature once it reaches desire temperature.



- Always load the lower compartment first.
- Always load each shelf evenly, spacing pan, trays away from each other and the side of the oven.
- Never add material to a section after food already have started to bake-unbalanced baking will result.
- Open doors as seldom as possible.

**6) Griller – Hot plate:**

- Wipe griller – hot plate with damp duster
- Put on the switch, once it becomes, hot, put pre-prepared item on it and cook.

**7) Deep fat fryer:**

- Clean and wipe deep fat fryer
- Pour oil/fat in containers, put on main switch turn temperature control knob, press operating switch.
- Once oil reaches desire temperature adds frying food to the frying.
- When breaded foods are prepared, strain fat frequently.
- Load fry basket, to one-half and never more than 2/3 of capacity.
- Never salt foods directly over the fat. Salt in the fat reduces its life.
- Discard fat as soon as it tends to bubble excessively before food is added gummy film collects on the frying basket or heating element.
- Raw, wet foods such as potatoes and oysters should be drained or wiped dry before frying to extend the life of the fat.

**8) Tilting pan:**

Ensure that pan is tightly fitted by moving handle of the pan.

- Switch on the main, and then switch on operating switch, turn temp. Control on high.
- Start gas connection

c) Press ignition switch for 20 secs. Put fat or oil and then use according to preparation.

**9) High-pressure burners range:**

- a) Start main connection of gas
- b) Slightly turn the operating knob towards left and light the gas with help of match-stick or gas lighter.
- c) Do not increase gas pressure before lighting the burners.

**10) Tandoor:**

- a) Put charcoal in tandoor separately light some coal on gas burner. Pour live coal in tandoor.
- b) Keep the ash-door half open

**LIGHT EQUIPMENTS:** Clean and wash all the light equipment thoroughly wipe them and then use.

**PRESSURE COOKER:** Fill the cooker only  $\frac{3}{4}$  cover it with lid, check rubber and safety valve. Keep weight (whistle) on and keep it on slow flame. Do not keep cooker on high-pressure burner.

**MIXER:** Put little mixture at a time in mixer. Do not overload the mixer.

**EQUIPMENTS: UPKEEP**

**1.Mincer:**

- a) Remove all the attachment of the mincer, soda in warm water for 10-15 min. Remove and wash with soap water. Wipe with clean duster. Keep all the attachments in one cupboard.
- b) Always keep mincer dry
- c) Grease/oil the mincer once in a week.

**2.Masala grinder:**

- a) Detach belt from grinding stone; remove all the masala from stone. Wash thoroughly and wipe dry.

- b) Remove all the potato peels from it, scrub thoroughly with scrubber, wash and dry completely.
- c) Fix upper deck and check for its function.

### **3. Convection oven:**

- a) The oven should be switched off. The oven should be allowed to cool until only warm.
- b) Remove all removable shelves or rack for separate cleaning.
- c) Using a clean cloth soaked in hot soap solution, wipe the oven. Rinse the cloth as necessary.
- d) The shelves and racks should be cleaned in the same way.

### **4. Griller hot plate:**

- a) Cast iron grill plates may occasionally need scraping
- b) After every season, it is best to wash the plates with a mild detergent solution, rinse and dry.

### **5. Deep fat fryer:**

- a) Switch off the fryer and allow to cool
- b) Drain all the oil in normal way
- c) Remove all debris and particle matter from; the fryer
- d) Fill the fryer compartment with soap solution.
- e) Brush inside using a bristle brush (never use steel wool).
- f) Flush with clean water to which vinegar has been added. Dry with cloth.

### **6. Tilting pan:**

- a) The equipment should be cleaned thoroughly after use. Normally washing with hot soapy water and rinsing with clean will be sufficient.
- b) Wire scourers or scouring powders are not recommended for models with an all stainless steel finish.
- c) If the pan has been used for frying, care should be taken to remove all oil film build up.
- d) The tilting mechanism may require occasional accessing with light non-toxic oil. This will ensure easy and trouble from operation.

### **7. High-pressure burners range:**

To keep range top clean – immediately wipe up all the spillings and boilers. If during cooking periods, spillings are left to bake and harden on hot surfaces the cleaning becomes much more difficult.

An inspection should be made after each cooking cycle when the equipment has been turned off and is in the cooling state. Obvious grease and other matter should be cleaned off immediately.

### **8. Tandoor**

- a) Allow the tandoor to cool
- b) Once in a week coat the tandoor with mixture of ash, earth and water.
- c) Season inside of tandoor with mustard and oil.

### **9. Light equipments**

- a) All light equipments should be cleaned and washed with hot soapy solution immediately after use.
- b) All degchies flat spoons, frying spoons should be wiped dry.

**10. Pressure cooker:** Wash pressure cooker with hot soapy water; wipe dry keep in cupboard. Check safety valve, rubber ring regularly.