

# Doughpro Ovens.



INSTALLATION  
&  
OPERATION  
MANUAL

**TANDOORI OVEN**  
(UL MARKET)

*a new approach to  
traditional cooking*

**DOUGHPRO**<sup>®</sup>  
**PROPROCESS CORPORATION**

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"READ ALL INSTRUCTIONS BEFORE INSTALLING AND USING THE  
APPLIANCE"

"SAVE THESE INSTRUCTIONS."

## Installation and Operation Manual DoughPro Ovens

### **TANDOORI OVEN**

#### Installation and Operating Instructions

DO NOT THROW THIS MANUAL AWAY

**WARNING:** Improper installation, adjustment, alteration, service or maintenance can result in property damage, injury or death. Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment

It is recommended that this oven be installed by professional personnel as specified herein.

#### **RETAIN THIS MANUAL FOR FUTURE REFERENCE.**

Additional copies of this manual are available from  
DoughPro Ovens Phone: (562) 531-0305

Or your local representative.

#### **IMPORTANT:**

Consult your local gas supplier for a statement outlining a procedure to be followed in the event you smell gas. Post the statement in a prominent location.

## **FOR YOUR SAFETY**

"Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this oven. Keep all such liquids well away from the oven when in use."

"A MAJOR CAUSE OF OVEN RELATED FIRES IS FAILURE TO MAINTAIN REQUIRED CLEARANCES (AIR SPACES) TO COMBUSTIBLE MATERIALS. IT IS OF UTMOST IMPORTANCE THAT THIS OVEN BE INSTALLED ONLY IN ACCORDANCE WITH THESE INSTRUCTIONS."

THE INSTALLATION OF THIS APPLIANCE MUST CONFORM TO LOCAL CODES, OR IN THE ABSENCE OF LOCAL CODES, WITH THE 'NATIONAL FUEL GAS CODE, ANSI Z223.1, NATURAL GAS INSTALLATION CODE, CAN/CGAB149.1, OR THE PROPANE INSTALLATION CODE, CAN/CGA-B149.2 AS APPLICABLE.

*Installation of the exhaust hood should be in accordance with the "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96."*

The minimum hearth extension areas to be covered with relationship to the door opening of the oven for combustible floors. At least the following areas shall be specified:

- 1) 36 inches (914 mm) to each open side of oven.

### **"WARNING"**

- 1) "Do not pack required air spaces with insulation or other materials."
- 2) "If this oven is not properly installed, a fire may result. To reduce the risk of fire, follow the installation instructions."
- 3) "Please read this entire manual before you install the oven. Failure to follow instructions may result in property damage, bodily injury, or even death."

"This oven has not been tested for use with doors. To reduce the risk of fire or injury, do not install doors."

**" This oven has a specific lid provided which has a cut-away section to allow air flow in the oven.  
No other lid should be used as oven air flow is essential."**

The oven flue should be inspected at least twice a year to determine if creosote buildup has occurred.  
If creosote has accumulated, it should be removed to reduce risk of fire."

"Do not use products not specified for use with this oven."

"Oven liner is restricted to cooking Naan only"

"Do not over fire. If flame spills out of the oven opening, you are over firing."

**B.**

**"WARNING"**

**"Disposal of ashes** – Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled."

The following warnings should be adhered to:

- Due to the nature of tandoori ovens the top surface and lid can become very hot.
  - When using the Beech supplied 'venting lid' care should be taken when handling and placing this lid, as it can be very hot.
  - The appliance is not intended for use by young children or Infirm persons without supervision.
    - Young children should be supervised to ensure that they do not play with the appliance.
- A qualified technician should do any installation or maintenance on the gas system.
- Never completely cover the top of the tandoori. Ventilation is always necessary.  
DoughPro Ovens - gas-fired ovens were tested and approved by Underwriter's Laboratories Inc., as specified by ANSI Z83.12-1994, (file no.E215969)

Direct inquiries to  
DoughPro Ovens Phone: (562) 531-0305 or  
your local representative.

## TANDOORI INSTALLATION & OPERATION MANUAL.

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## **THE DOUGHPRO TANDOORI OVEN**

### **INSTALLATION & OPERATION MANUAL**

#### **UL RATED VERSION ALL MODELS**

### **GENERAL**

The DoughPro Tandoori Oven has been designed according to 'refractory engineering principals' to produce an oven which outperforms all competitors through the use of modern hard wearing materials and highest grade insulating materials. This combination produces an oven that will last without failure of the walls and an oven with very little heat transfer through the external walls.

The 'Tandoori' oven comes in a range of sizes. The oven is fully insulated internally. The oven this, can be built around it for presentation purposes or the oven can be built into a bench or a standard brick wall (on site).

Traditionally, tandoori ovens use solid fuels such as charcoal for fuel. The DoughPro tandoori is suitable to use with this method of heating but for modern day cooking, gas is the preferred fuel. The DoughPro Tandoori is regularly supplied with a gas system which can provide heat to the oven with the convenience of easy and simple control of the oven temperature to cover the demands of all cooking conditions.

### **GAS SYSTEM**

The DoughPro Tandoori Oven is available with a gas system factory installed and set up for your particular gas supply type.

For conversion between gas types, contact DoughPro for a conversion Kit.

The gas jet layout has been designed specifically to avoid contamination by food or other contaminants. Food or other contaminants entering the gas jets and clogging the system, have always plagued gas fired Tandoori.

Included in the DoughPro tandoori is a two-part 'gas burner protector' to keep contaminants away from the gas burner. This allows trouble free operation and complete cooking confidence.

The heat energy from the gas system, heats the oven and the oven walls for cooking food on skewers and the traditional method of producing the perfect Naan bread against the walls of the oven. For extra flavor, charcoal or timber chips can be placed on top of the protective plate to smolder and add flavor to the cooked food.

### **GAS SYSTEM SPECIFICATIONS**

The DoughPro supplied gas system can be set up for your style of gas. (Advise factory when ordering the oven, of the gas supply in your area.) The basic layout is a Ring Burner controlled by a Manual Control with an automatic Flame Failure Multi Valve. A Piezo electric device ignites the pilot. The gas system should be connected and commissioned by a qualified technician, on site at the customers expense.

Details of these supplied components are included in the rear of this Manual (P-14) on the component manufactures specification and data Sheets. Input Heat Rating of upto 57,000 BTU's is available.

It is important to have the appliance gas pressure adjusted to the recommended pressure (see chart P-14) by adjustment to the Maxitrol Regulator. (In most cases this should be done while other gas equipment in the kitchen is also running.)

### **THERMOMETER**

All ovens come with a temperature probe in the wall of the oven. The perfect temperature for Naan cooking is 420 – 520°F (220 - 280°C) A remote digital thermometer is available as an accessory. A thermometer enables more consistent quality and reduced wastage by advising the chef that the tandoori oven is at operational temperature.

### **STAINLESS DRUM**

For presentation and portability, the Tandoori Oven can be ordered in a Stainless Steel drum to be used “as such” in a restaurant. This oven can also be ordered with castors to permit transportation to open air venues.

e.g. poolside or outdoor functions or internally where an exhaust Canopy is available nearby.

## **INSTALLATION**

Remove the tandoori oven from the crate. (Note that for ovens on castors, two of the wheels have screw locks for use as brakes when the oven is not being moved about.) Carefully place the oven onto the pallet trolley or equivalent for transit from loading bay to kitchen. The oven can then be loaded onto its wheels and pushed into position. Due to the weight of the oven a lever of some sort may be required to change direction.

## **BUILDING IN**

The oven can be built in to any bench with safety. The top of the tandoori can be easily removed by the removal of 4 rivets. This stainless steel can then be modified to suite a stainless steel bench top. When installing the oven into a bench, ensure access to the gas equipment for periodic cleaning and maintenance.

The oven can be enclosed in a ring of domestic bricks. Provision must be made for access to and the proper functioning of the gas equipment.

## **GAS CONNECTION DETAILS**

Once in place, the oven can be connected to the gas supply. The gas equipment can be located on either side of the position where the chef stands. The system includes, a Main Valve, a Main Burner Control with an automatic flame sensing / failure device and a Pilot light, and a piezo electric igniter. (A 'Maxitrol' regulator is also supplied.)

Have an authorised gas fitter / technician connect gas to the 1/2 " fitting at the end of the gas train. It is the responsibility of the technician to check and adjust the gas supplied is of the required type and pressure for the appliance being connected.

The pilot should only need to be lit once per day as it remains burning whilst the main burner can be adjusted to the temperature desired.

## TANDOORI WALL PREPARATION

PRIOR TO COOKING IN THE BEECH TANDOORI,

This is highly recommended. Your 'Chef' may have personal taste in this area of seasoning.

WE RECOMMEND THE FOLLOWING MIXTURE IS APPLIED TO THE TANDOORI WALL PRIOR TO COOKING.

### Ingredients

1kg spinach (minced very finely in blender)  
Natural Yoghurt (750 grams)  
Mustard/olive oil (thick oil) 750ml  
Salt 400 gram  
Fenugreek (500 gram)

Fenugreek is soaked in tepid water (1.5 litre) for approx. 24 hours and ground finely in a blender.

All the ingredients are then blended together and cooked for half an hour on low heat.

This mixture is then rubbed on the inner of the tandoori and then the oven is lit lightly after an hour. The top cover should be left on after lighting the oven.

The above procedure should be applied three to four times in a day.

The inner should be gently cleaned with a piece of cloth before each application of this mixture.

For a new oven this procedure should be applied at least 6 times (2 days).

For best maintenance this procedure should be applied once a month.

## **GAS IGNITION & OPERATION**

1. Ensure exhaust fan / canopy is on.
2. To use the Tandoori, the gas pilot light is to be lit by turning and depressing the control knob to the pilot position, while holding control knob down, push the button for the piezzo electric igniter. Once the pilot flame is ignited the control knob can be released after 30 seconds and the pilot should remain on. (if it doesn't, repeat the procedure).
3. The tandoori control tap can then be set to the desired setting to cook. The control knob has positions for 'high flame', 'low flame', and in between settings. There is also position for 'pilot only' and 'fully off'.

SHOULD THE PILOT LIGHT GO OUT FOR ANY REASON THE GAS WILL AUTOMATICALLY TURN OFF AND THE IGNITION PROCEDURE WILL NEED TO BE REPEATED.

It is recommended that any adjustment or maintenance is done by a qualified trade's person.

In our tests, a wall temperature of approximately 420 – 520°F (220 - 280°C) has proven perfect for Naan bread. The oven will probably take 2 hours to get to temperature first day. Subsequent days it will be already warm from the previous days cooking. NOTE: This oven has much thicker walls than typical tandoori ovens and will always heat up slower but will retain its heat for much longer.

## **PRECAUTIONS WHEN COOKING GAS.**

The lid to the oven has been built with a cut-out to ensure that there is always an area for exhaust gas to escape. Do not have the mouth of the oven closed off completely (utilising another lid). With the main burner ignited this will lead to a dangerous situation.

**If flame appears at any stage out the burner door** turn the main gas valve off and then start procedure again with the correct amount of flue area. If the jet back fires again, call your gas specialist.

The mouth of the oven can and should be covered after cooking is finished for the night to keep the heat in We would expect the oven to be over 100 degrees C when starting the next day.

## **CLEANING OF GAS RING CAVITY**

On a daily basis and after the oven temperature is at least 100°C: Ashes are to be removed by brushing and wiping with a damp cloth. If there is a build-up of charcoal ash or other material, the method of cleaning this area requires the following preparation.

- Disconnect gas at connection of oven.
- Loosen three mounting screws on the stainless steel cover and remove cover.
- By pulling the complete burner assembly, the complete gas system can be removed from the burner cavity ready for cleaning. (A wire brush is ideal for this purpose.)

It is recommended to have a qualified trades person perform these tasks

## **GAS TROUBLESHOOTING**

### **FOR NATURAL GAS CONNECTION**

A professional gas service technician should be called if problems exist or adjustments are required.

A blue flame with an occasional yellow or pink flare at the top of the flame is required from a natural gas supply. If this is not the case cleaning and/or adjustments maybe required. The gas components should be removed from the oven and cleaned (wire brush and hose) of any build up, inspected and reinstalled.

### **CHARCOAL OPERATION**

Place 2 kgs of charcoal on grate. Ignite with fire starters or light wood. Leave charcoal to burn. When the wall temperature reaches above 420°F, you can cook Naan Bread. Reload with 0.5 kgs lots of charcoal as Required.

## **COOKING WITH THE BEECH TANDOORI**

The / tandoori oven is of a standard size for luxury hotels, which is 500 or 700mm Internal Diameter. The performance of the oven has a lot to do with the operating temperature, the type of fuel used (eg. Gas or Charcoal) and the skill of the operator.

Because there are so many variables and subtleties, there is certainly a learning curve for people not accustomed to this style of cooking. As you may be aware, the tandoori oven typically is very much a manually operated oven having no form of thermostat because of the way it operates.

It is traditionally operated under constant supervision when cooking Naan and a semi regular supervision when cooking with skewers. The gas is adjusted according to what is cooking

Once the oven has been prepared as described in the Operation manual, heat it up until wall temp is approximately 420°F+ to cook Naan. With a tandoori, it is a balancing act to get wall temp and internal oven temp as close as possible so that the bread cooks evenly both sides. You require a scraper and hook. These items and oven spears are available from Beech Ovens.

## **PREPARATION OF DOUGH**

Make up dough and let rise. Make into 5-7 oz. balls and roll to flat ready for use. Pizza dough will work. (Like most cooking recipes there are many variations.) Then get an 18" long x 10-12" wide terry towelling pillow. Stretch a dough over pillow with your hand as support. Then stick your hand in the oven with the dough against the wall. Roll your hand with the pillow against the wall making the dough adhere in a rolling action. It will stick and start cooking. Within 2- 4 minutes, it will start peeling off the wall. Use the hook and scraper tools to remove cooked Naan from the oven. A quick wave past the gas flame may help give it the color you require.

## PROBLEMS WITH NAAN STICKING TO WALL OR FALLING OFF

NOTE: NAAN CAN BE SPONGED WITH SALT WATER PRIOR TO STICKING NAAN TO WALL OF OVEN.

The adhesion of the Naan to the wall can be affected by the following items.

To perfect the Naan, experiment with modifications to the following:-

- Has the wall been prepared originally with the Fenugreek mixture outlined in the 'Operation Manual'?

- How old the wall is and how much oil has had an opportunity to soak into it from the Naan bread. The wall will become oilier with use, which will result in freer removal of Naan. Oil can be rubbed into the wall with a rag. Experiment with a limited area. Be careful not to apply too much Oil.

Temperature of wall.

Experiment between 420 – 520°F (220 - 280°C).

- Water in dough.

- Oil in dough.

- Flour type.

- Water on the outside of the dough once stretched over the pillow.

- Experiment with salty water.

- If there is any remnants of burnt dough on the wall, this should be removed.

Once the perfect combination is found, document it and advise all users of the oven.

Skilled naan cooks actually slap half a dozen on at once, then once the outside looks nice they hook off the bread. The heat of the wall actually makes the naan peel off and eventually it will fall into the fire if left untouched.

There are a variety of tricks in this trade and every tandoori oven wall has a different personality. Experiment! You will find a perfect wall temperature, internal temp and dough moisture content to achieve spectacular results. If one side of the bread is not cooking, that heat source needs more heat ie. if the wall side naan is not toasting, it may need more temp.

The oven is typically used to cook Naan in 3<sup>1</sup>/<sub>2</sub>-5oz (100-150 gram) servings, which stick to the surface of the oven wall.

In perfect conditions, the oven could cook up to 10 naans at once and they take around 2 to 5 minutes per naan. It would therefore be possible to cook approximately 80 naans per hour, which is 20 lbs of Dough.

## SKEWER COOKING

The chicken or other meat is cooked on skewers up to 10 at once and 6 pieces of chicken per skewer. This would total 60 pieces of chicken per 20 minutes. When cooking these figures are of course approximate dependant on conditions mentioned above. Experiment with the flame. You will probably find a low gas flame with the lid on is the best combination for skewer cooking. The skewers need to be rotated whilst cooking. Typical cook time is 10 to 20 minutes for chicken.

**OVEN MATERIALS**

Oven casing may be mild steel with some stainless steel anchors.  
Gas box or shield is stainless steel  
Gas box components are all standard CE approved units (various metals) .  
Oven cavity is "high temperature castable" or steel with ceramic wool (KA)  
insulation between the steel shell and castable or steel.  
All of the oven materials are safe to handle providing they are not hot.  
**Disposal of any materials should be confirmed with a local authority as  
to type of disposal method suitable.**  
The remains of any fire should be handled with care. The ash left in the oven  
**may be hot** and it will be dusty. **Handle with care.**

**PARTS LIST:**

Tandoori Oven Spare Parts List  
All Gas Models:

ITEM	DESCRIPTION	MANUFACTURER	SIZE
NOTE THE GAS SYSTEM INSTALLED HAS COMPLETELY MANUAL TEMPERATURE CONTROL			
1	Thermocouple (pilot)	Sit	11/32 x 900
2	Pilot	Sit	3 way x .35
3	Ignition electrode	Sit	FR
4	Ignition cable	Silicon	7 mm x 400
5	Gas valve c/w mount nut	White Rogers	15 mm
6	Piezo ignitor	-	17 mm
7	Burner ring	Alexander Carmichael	Ac8
8	S/S Pilot tube	-	6 mm
9	Pressure Regulator	Maxitrol Max.Press.	13.6"WC

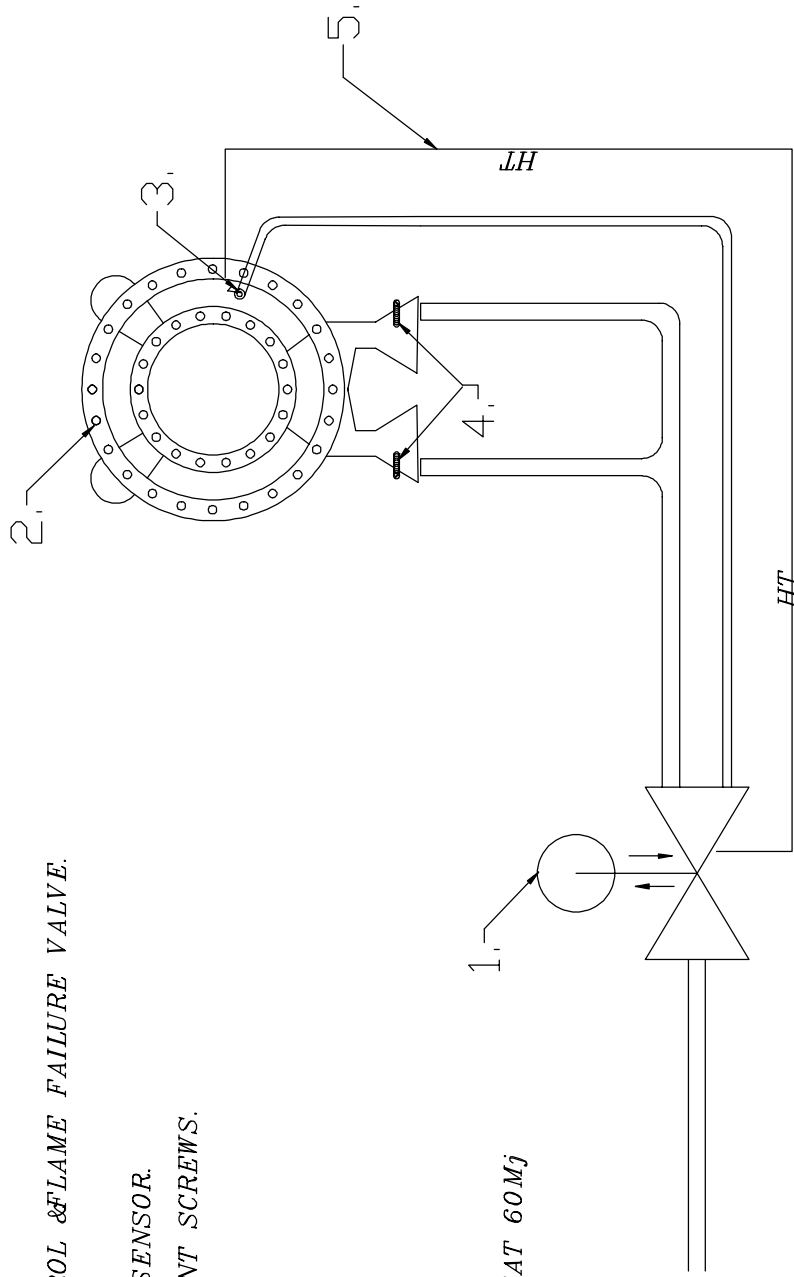
Gas Type	Jet Sizes	Output	Gas Pressure
Natural Gas	2.10(in)3.00mm(O)	57,000BTU's	8"WC
Propane Gas	1.35(in)1.90mm(O)	57,000BTU's	11"WC

For conversion between gas types contact DoughPro for a conversion Kit.

# GAS SCHEMATIC / SPARE PARTS LIST

LEDGER

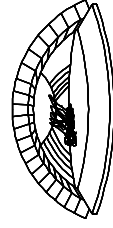
1. SIT. COMBINATION CONTROL & FLAME FAILURE VALVE.
2. BURNER RING.
3. PILOT LAMP & FLAME SENSOR.
4. AIR MIXTURE ADJUSTMENT SCREWS.
5. H.T. LEAD TO IGNITOR



GAS SUPPLY LINE  
 1/2" CONNECTION; INPUT HEAT 60Mj

OPERATION OF MAIN VALVE 1.  
 TURN TO ON AND PRESS FULLY WHILST PRESSING IGNITOR TO LIGHT PILOT. HOLD FOR 20 SEC. UNTIL PILOT REMAINS ALIGHT. ONCE PILOT IS ALIGHT, TURN VALVE TO GET DESIRED FLAME SIZE. TO TURN OFF COMPLETELY PRESS DOWN A LITTLE TO TURN FULLY OFF.

TANDOORI GAS LAYOUT SCHEMATIC.



**DOUGHPRO OVENS**

DWG. 311 REV.

JUNE.1999