

INSTALLATION MANUAL

TDR 8 P GAS FIRED ROTISSERIE OVEN

MODELS

Programmable controls TDR 8 P

Gas types:

Natural Gas G20/25

Propane G31

(Butane G30)



Model TDR 8 P Gas

- NOTICE -

This manual is prepared for the use of trained Service Technicians and should not be used by those not properly qualified. If you have attended a training for this product, you may be qualified to perform all the procedures in this manual.

This manual is not intended to be all encompassing. If you have not attended training for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained technician.

Reproduction or other use of this Manual, without the express written consent of Fri-Jado, is prohibited.



USA

EMPTY PAGE

Versions		
Version	Issue date dd/mm/yy	Remarks
04/2014	01/04/2014	First release.

INDEX

Index	4
General technical data.....	5
Technical Data	5
Installation procedures.....	6
Unpacking of the unit	6
Removal of pallet.....	7
Location.....	7
Location (continued)	8
Connecting the rotisserie	8
Electrical supply	8
Gas connection.....	9
Gas pressure and orifices.....	9
Gas inlet pressure.....	9
Gas technical data.....	10
Timing diagram gas burner safety control.....	10
Gas block Honeywell type VK4115V	11
Flue gas analyser	12
Gas consumption	12
Legs / castors	13
Tethering of the unit	13
Extraction of the rotisserie.....	14
First use test run.....	14
Instructions for operators.....	14
Maintenance	15
Placing and connecting.....	16
TDR 8 P Gas	16
TDR 8 P Gas on base	17

GENERAL TECHNICAL DATA

This manual covers the TDR 8 P gas fired rotisserie ovens suitable for Natural gas G 20/25, Propane G 31, Butane G 30 and LPG.

- TDR 8 – Oven with eight spits (32 to 40 chickens).

All of the information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing.

TECHNICAL DATA

Type	TDR 8 Gas	
Gas power (BTU - KW)	55.000 - 15,9	
Fuses needed with power connection 115 V, 1N ~50...60 Hz (1 phase with zero)	1x 15 A	
Standard plug from factory single pole	NEMA 5-15	
Net weight	208kg	459 Lbs
Gross weight	233 kg	514 Lbs
Height	1065 mm	41 3/4 "
Width	1005 mm	39 1/2 "
Depth	830 mm	32 5/8 "

Tools

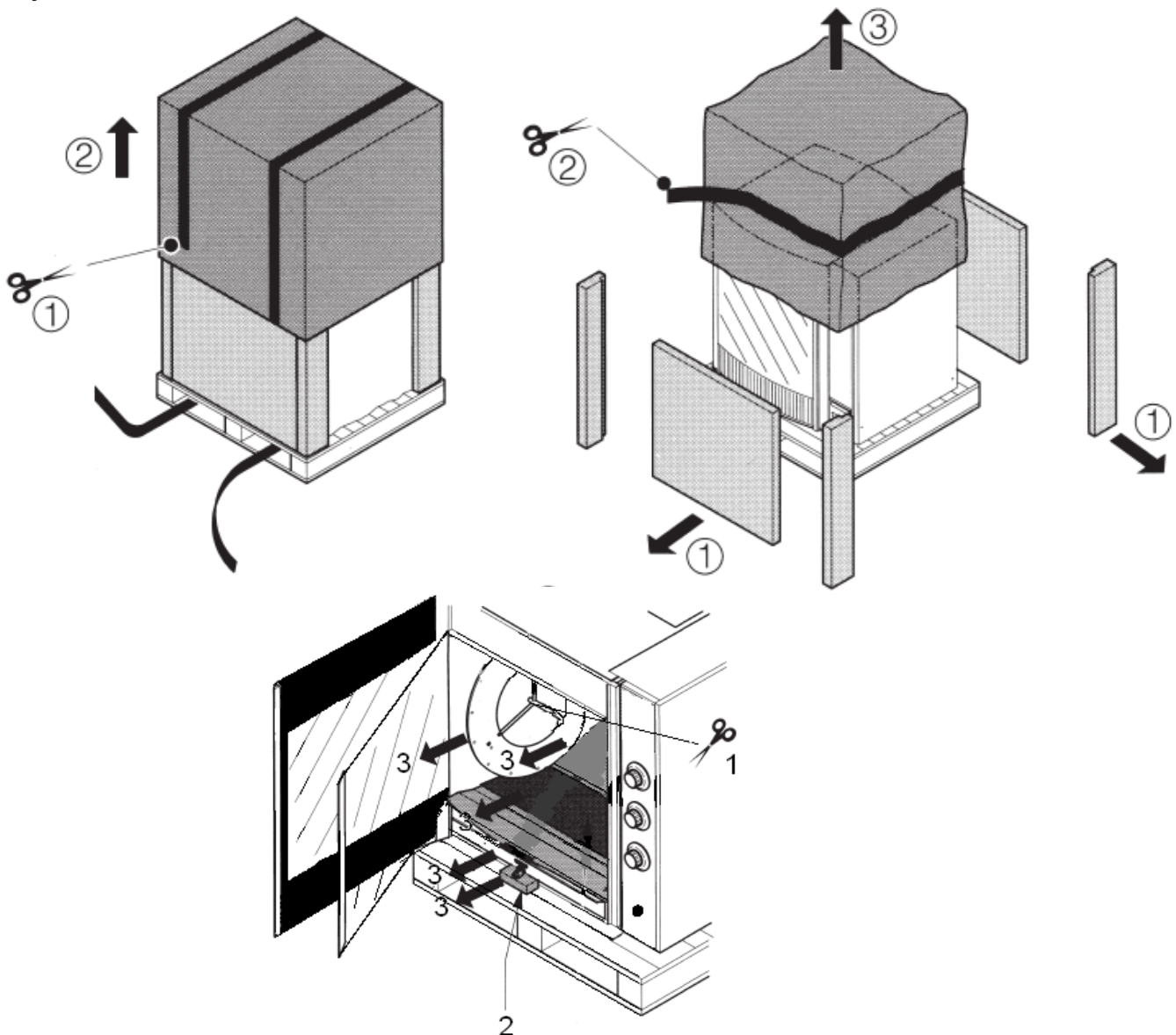
- Standard set of tools.
- Metric wrenches, sockets and hex socket key wrenches.
- Multi-meter.
- AC current clamp tester.
- Temperature tester.
- Insulation value tester (Megger).
- Toxicity meter.
- Gas pressure meter.
- Gas consumption/flow meter.
- Field Service Grounding Kit.

INSTALLATION PROCEDURES

- Unpacking of the unit.
- Remove the pallet under the unit with the help of a fork lift.
- Put the unit on his location.
- Check if there is enough free space around the unit (see installation drawing).
- Check the electrical supply.
- Check gas pressure control valve
- Tethering of the unit.
- Load a program in the memory and make a test run on 482°F.
- Give instructions to the operator.

UNPACKING OF THE UNIT

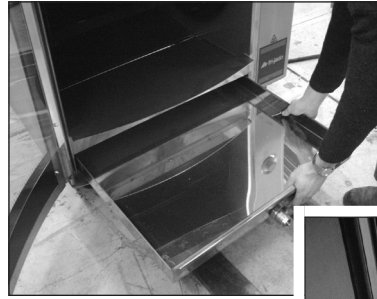
Immediately after unpacking of the oven, check for possible shipping damage. If the oven is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.



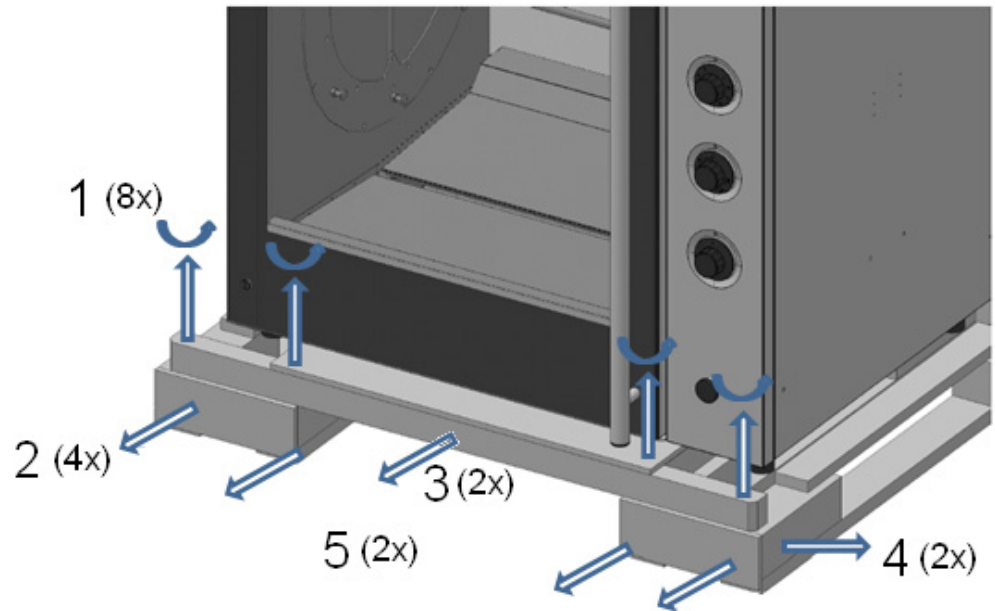
REMOVAL OF PALLET

The standard way to remove the rotisserie from a pallet is with a fork lift. See pictures. Open door and remove the drawer. Lift the unit from pallet and put the unit in its place.

Note: when lifting a stacked unit, always use the drawer of the bottom unit.

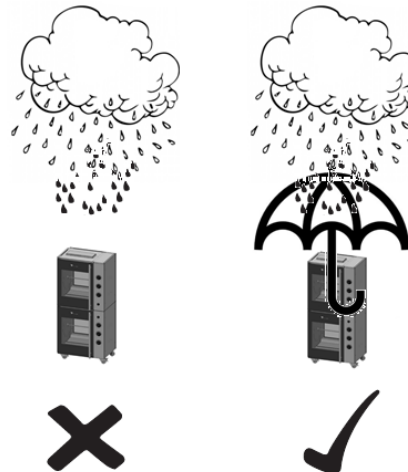


Another possibility is to disassemble the pallet. For the pallet of the TDR 8 follow the procedure on the drawing.



LOCATION

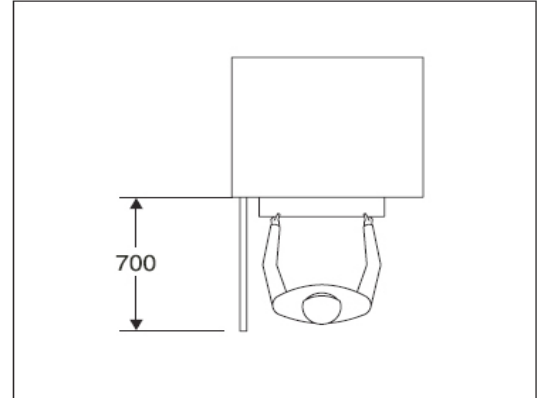
To avoid short-circuiting, the units may not be used outdoors. Placing under a screen is allowed.



LOCATION (CONTINUED)

The rotisserie must be installed on a level surface. The installation location must allow adequate clearances for servicing and proper operation.

IMPORTANT: Make sure you leave sufficient space around the rotisserie to easily remove or insert the rotor. If the base has (rotating) wheels, the floor on which it rests must be level.



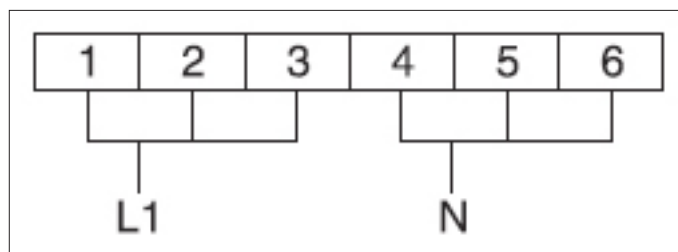
CONNECTING THE ROTISSERIE

ATTENTION: All external connections to the rotisserie must be made according to local, state and national regulations by skilled installers.

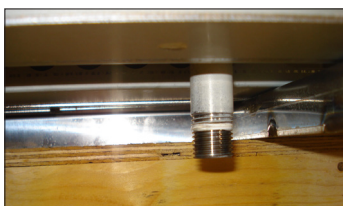
ELECTRICAL SUPPLY

Prior to installation, test the electrical service to assure that it agrees with the specifications on the machine data plate located on the right side panel near the controls. The connecting cable for the unit must be equipped with an approved plug connection. If use is to be made of a permanent connection, the connecting cable must be connected to a manual on/off switch that is installed near the unit in a clear visible manner.

For a 1-phase 208 V ~ circuit with neutral, the unit must be connected according to the figure below.



GAS CONNECTION



All gas supply connections and any pipe joint compound used must be resistant to the action of propane gases. Codes require a gas shutoff valve be installed in the gas line ahead of the oven.

The gas inlet is located on the bottom side, under the electric compartment. This connection is 1/2". Separate packed with the delivery you will find a knee with 1/2" inside thread and a tube of 6" length. On one side of the tube the connection is 1/2" and on the other side 1/2" with NPT thread (marked by a notch in the tube). With this knee and tube you can lead the gas connection to the main gas supply. Connect the rotisserie to the gasline after leveling. Gas supply line must be at least the equivalent of 1/2" (12.7 mm) iron pipe. Make sure the pipes are clean and free of obstructions, dirt, and piping compound.

Note: After the piping has been checked for leaks, fully purge gas pipes to remove air. Disconnect the rotisserie from the gas supply piping system during any pressure testing on the gas supply piping system.

Note: Check all joints in the gas supply line for leaks prior to start up the rotisserie. You can use a soap and water solution. Do not use an open flame.

GAS PRESSURE AND ORIFICES

Natural gas and Propane gas.

The burner orifices are sized to deliver the nameplate input rating at a gas manifold pressure between 7" and 22" W.C. (water column) (17-55 mbar).

GAS INLET PRESSURE



The inlet pressure has to be according the table on the next page.

The pressure can be checked on the gas block with a pressure meter (see also gas block).

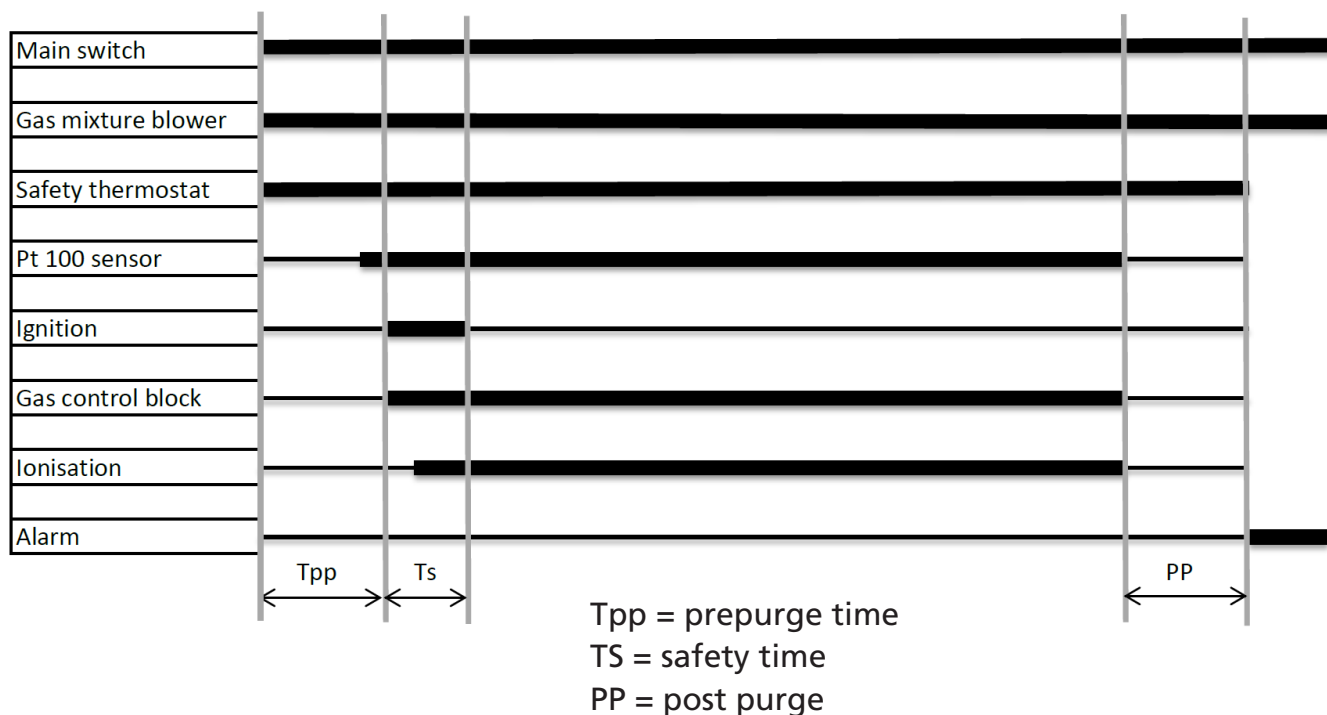
GAS TECHNICAL DATA

Gas type	Inlet pressure mbar - inch wc - PSI	min pressure (Qn-Hi) max pressure (Qn-Hi) mbar - inch wc - PSI	Consumption kg - cfm - LBS	Consumption m3/h	Specific density kg/m3 - lb/cf
G20	20 - 8 - 0,3	17 - 7 - 0,25 25 - 10 - 0,36	1,0 - 0,80 - 2.2	1,37	0,718 - 0,044
G31	37 - 15 - 0,54	25 - 10 - 0,36 55 - 22 - 0,36	1,0 - 0,29 - 2.2	0,49	2,011 - 0,128

Gas type	Orifice mm - inch	Air inlet mm - inch	Power KW - BTU
G20	4,2 - 1/6	18,1 - 17/24	14.7 - 50.000
G31	3,2 - 1/8	18,1 - 17/24	14.7 - 50.000

Qn = power (inlet)
Hi = inferior caloric value
LPG should contain at least 50% Propane!

TIMING DIAGRAM GAS BURNER SAFETY CONTROL



GAS BLOCK HONEYWELL TYPE VK4115V

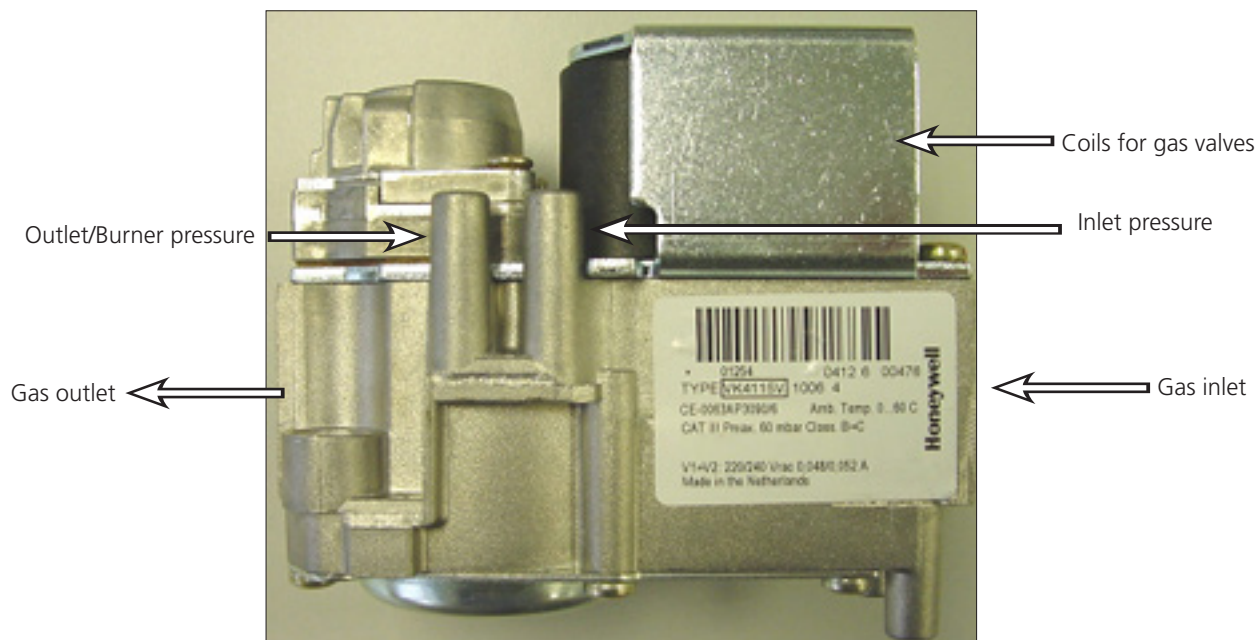
Gas inlet: Inlet of gas after gas pressure reduction valve (max. 22" H₂O). Pressure depending of gas type.

Gas outlet: Outlet of gas into gas mixture blower.

Coils: 2 Coils for the gas valves.

Inlet pressure: Measuring tube for gas pressure after reduction valve. In order to measure loosen the screw on inside of tube.

Outlet or burner pressure: Measuring tube of gas going into gas mixture blower. In order to measure loosen the screw on inside of tube.



Measuring notes:

1. Inlet pressure: During operation you measure the pressure of the setting of the reduction valve.

2. Outlet pressure: During operation you measure a pressure of zero.

You can use this measuring point also to check if the gas valves are opening. When you start up the machine and the valve is not opened yet you measure a underpressure due to the suction of the gas mixture blower and this pressure will be zero when the valve is opened.

FLUE GAS ANALYSER

With the flue gas analyser you can measure the exhaust gas on the rotisserie for toxicity. With the use of a Testo 330-1LL you get the following measurements:

Testo 330-1LL

V1.21	01297080	
100035026	G 20	
06.03.2014	11:42:13	
Fuel:	Natural gas	
O2 ref.:	3.0%	
CO2 max:	9.1%	
5.2 %	Oxygen	
9.0 %	CO2	
1.33	Lambda	
5 ppm	CO	
0.01	GI	
26.7 %	qR	
73	efficiency	
130 °F	dew point	54°C
713 °F	Exhaust gas temp.	378°C
74 °F	Ambient temp.	23°C



The 2 most important values are the CO2 percentage and the exhaust gas temperature.

CO2% G 20 between 9.0 - 9.2%

CO2% G 30 between 11.9 - 12.3%

CO2% G 31 between 11.7 - 11.9%

Exhaust gas between 698 - 788 °F (370 - 420 °C)

GAS CONSUMPTION

With a flow meter you can measure the gas consumption/flow. See table on page 10. To get an accurat consumption you have to do a measurement of 3-5 minutes. During this period the rotisserie the rotisserie may not turn off.



LEGS / CASTORS

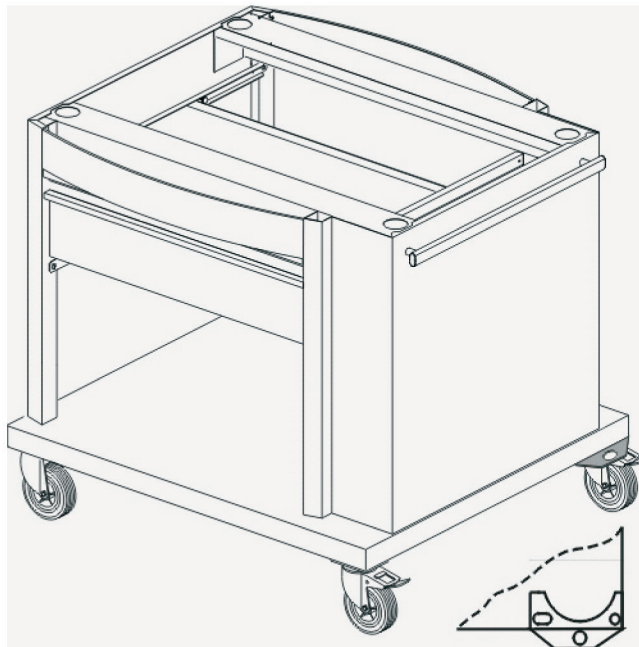
Each rotisserie is furnished on 2 " legs. A caster-equipped stand with convenient storage drawer is available. The rotisserie is mounted on top of the stand.

TETHERING OF THE UNIT

(For units with fixed wiring or placed on bases with castors)

Warning: Safety standards require that, when this appliance is properly connected to the electrical power supply using flexible conduit, adequate means be provided to limit movement of the appliance without depending on or transmitting stress to the electrical conduit. **This means that, as part of the installation, the base or bottom unit of stacked models must be secured to the building structure (typically either wall or floor) to limit the movement of the appliance and, thus, helping to prevent damage to the conduit during cleaning, maintenance and service operations.**

A tether bracket, as shown on the drawing below, is provided with the base or stacking kit. Based on the routing of the flexible conduit, the bracket must be installed along with the caster to one corner of the base using the hardware provided. The remaining open hole in the center of the tether bracket is to be used to secure one end of the tether (locally supplied chain, cable, etc.). The other end of the tether is to be secured to an anchoring point in the building structure. Note: Length of tether must be shorter than the flexible conduit to make sure that during appliance movement, no stress is transmitted to the conduit.



Warning: Following installation, check to confirm that, when the appliance is moved to the limits of the tether in each direction, no stress is transmitted to the electrical conduit.

EXTRACTION OF THE ROTISSERIE

Ventilation requirements will vary with each installation and must comply with applicable portions of NFPA Standard #96 and with state and local codes.

Considerations to be kept in mind include :

- Flue connections should never be made directly to the oven.
- The rotisserie should be located under a hood which has adequate connection to an exhaust duct and extends 8" beyond the oven sides.
- Clearance above the rotisserie flue should be adequate for the products to escape so that there is no interference with the heat circulation in the oven. Refer to ANSI/NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations" (latest edition). The TDR 8 produces about 400 cf water vapor per cycle. When placing the rotisserie under an extraction hood you have to consider the following guide lines:
 - The minimum capacity of the extraction hood has to be 600 cfm
 - The extraction hood has to extend minimum by 8" on all sides of the rotisserie
 - The extraction hood has to have a free height, above the rotisserie, of a minimum of 16"
 - The rotisserie has to be accessible for service purposes

FIRST USE TEST RUN

The rotisserie must be burned in to release any odours that might result from heating the new oven surfaces. For this purpose the rotisserie will start up the first time with a program called "First Use". This is a program of the maximum temperature setting of 482°F for 30 minutes. Smoke with an unpleasant odour will normally be given off during this burn-in period.

INSTRUCTIONS FOR OPERATORS

After installation of the rotisserie, the operator of the unit has to be instructed. The instruction has to cover the following subjects:

- Programming and options.
- Working of the unit.
- Free space of unit for cooling of drive motor and blowers.
- Run through the user manual.
- Refer to the storyboard, training guide and laminated sheet with pre-programmed programs (only for Wall-mart).
- Periodical maintenance:
 - o Cleaning of fan plate every month.
 - o Cleaning of fans on blower every month.
- How to react for information or service calls.

MAINTENANCE GAS PROCESSING

The customer should have the gas rotisserie periodically checked by a skilled technician according local, state or national regulations.

First remove the right side panel according to the service manual.

- Check for gas leaks and/or bad connections of the gas supply inside and outside.
- Check the gas burner and the ignition/ionisation set.
- Check the adjustment of the ignition/ionisation set.
- Check all gaskets.
- Check the inlet pressure and re-adjust if necessary. For the correct value, see table page 10.
- Check the consumption of the gas, see table on page 10.
- Measure the exhaust gas with a flue gas analyzer, see page 12.
- Check the electrical supply.
- Check the software version.
- Make a test run.

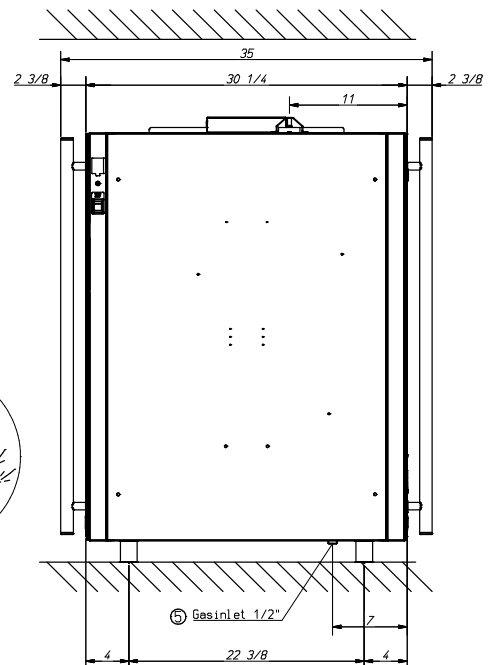
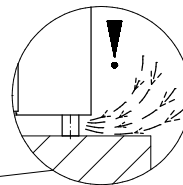
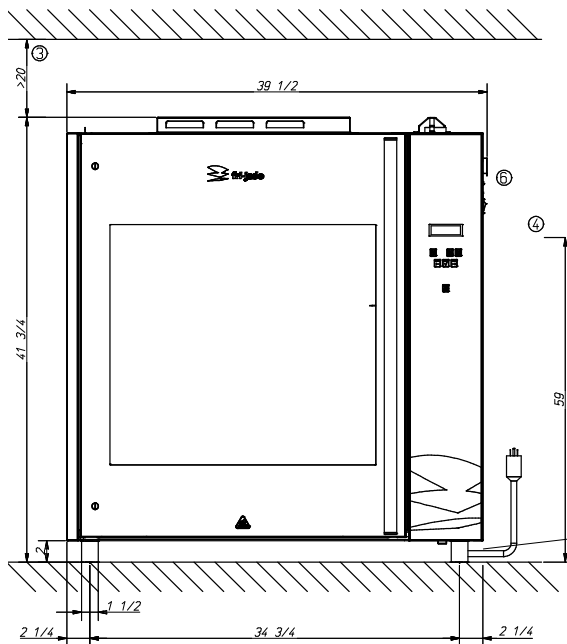
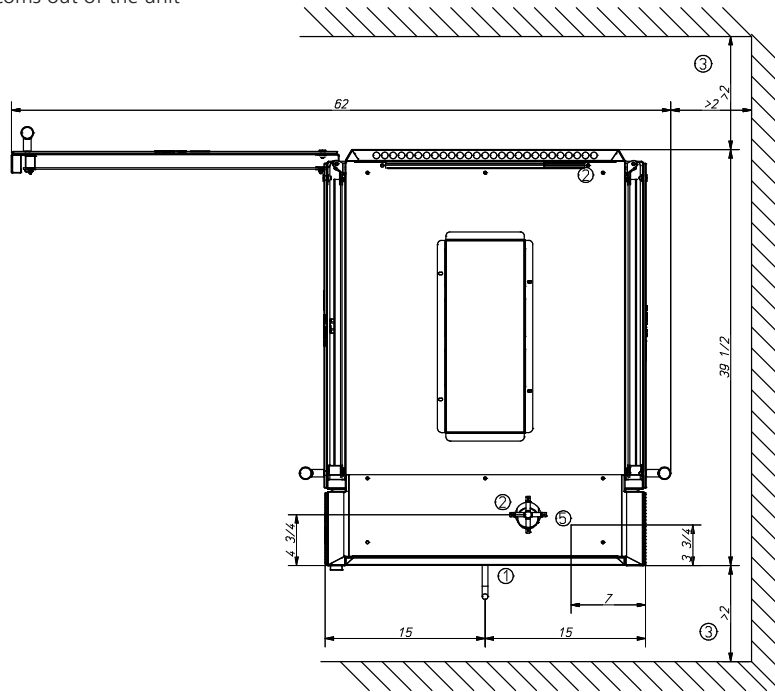
PLACING AND CONNECTING

TDR 8 P GAS

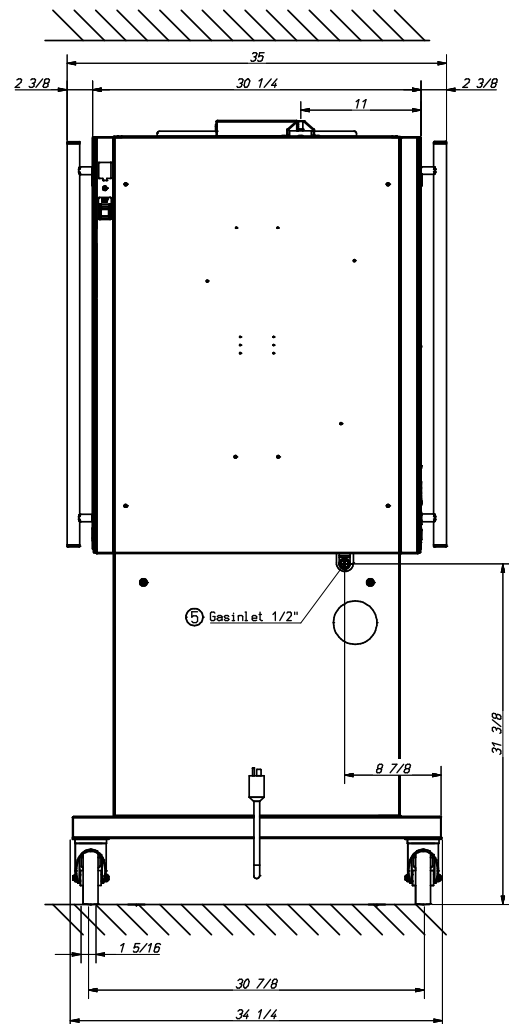
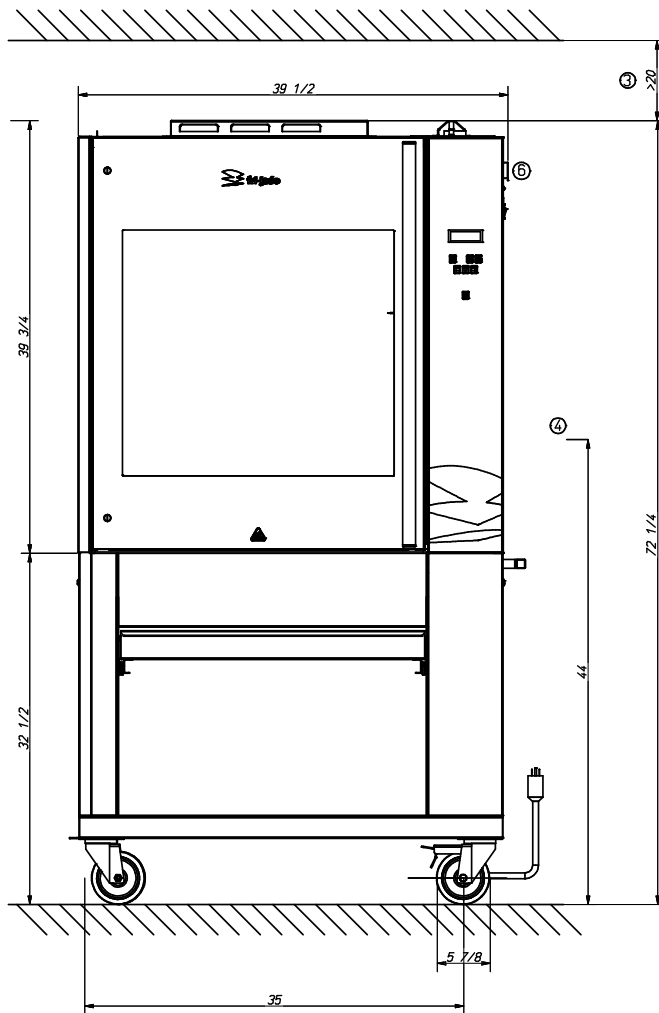
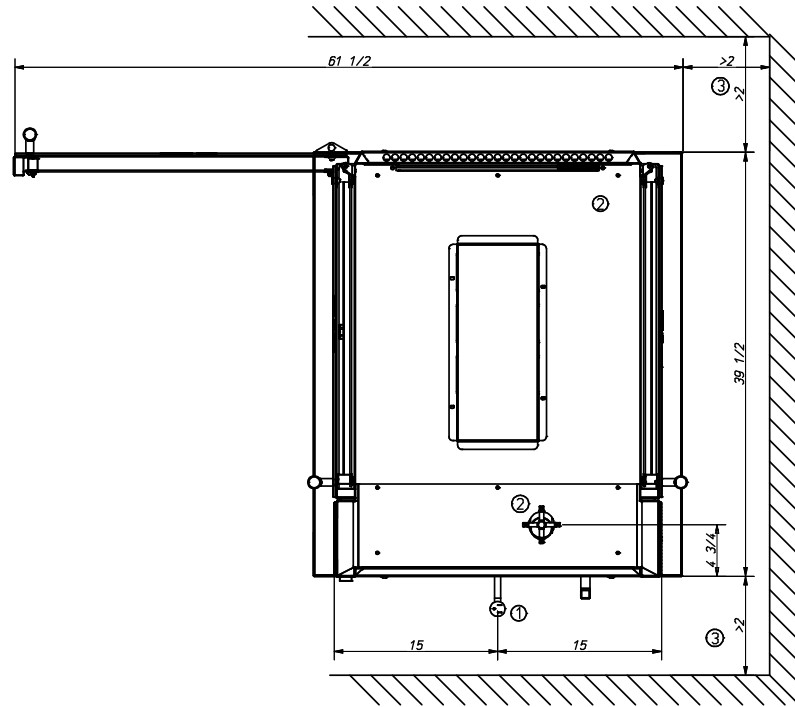
Description belonging to the labels on the drawings

Label	Description
1	Power cable, length 70" *
2	Exhaust opening
3	Space between a rotisserie and a wall or ceiling
4	Location for socket
5	Gas connection
6	USB connection

*) length is measured from the point where the cables come out of the unit



TDR 8 P GAS ON BASE



EMPTY PAGE

EMPTY PAGE

