

## Manual for assembling Tigchel ovens 4-D, 6-D, 8-D and 10-D.

1. Make sure you have a firm surface. The weights of the Tigchel ovens are 600, 800, 1000 and 1200 kg respectively.
2. From the connection of the flue, determine with a plumb line where to place the oven precisely. For this purpose, in the case of a connection at the top, use the top plate for the time being. For a rear connection, use the bottom plate, together with the (back) plate with the connection hole in it, for the time being. Carefully measure this out and mark out the position of the oven.
3. Make sure the bottom plate is in level at the place marked out. For wooden floors use fire resisted board, with a thickness of 1 cm minimum, under the bottom plate. Make sure that the bottom plate of the Tigcheloven is supported equally. Check this support by standing diagonally on the plate and shifting your weight from one leg to the other. Within the four corners, the bottom plate must be filled up with thin metal plates, until it remains immovable. THIS IS VERY IMPORTANT.
4. Using the drawings and numbering supplied continue to assemble the Tigchel-oven. Continually secure the outside wall elements with a screw clamp or securing belt for the time being. When using tools, make sure that the sharp parts do not scratch the elements. Work with clean hands and clean tools. Place all the elements without hitting or bumping.
5. Secure/lock the firebox elements with wedges. All inside elements are already dilated with 2mm glass band. Only bring strings  $\varnothing$  10 mm between 1L, 1R, 1F and 1V (page 4).
6. Glass fibres or rockwool will be laid up from the heat exchanger to the closing plate, complete full.
7. Make the connection (flue) tube to the correct length, make sure that this pipe slides 5 cm minimum down into the hole of the back plate, with (self adhesive) fibres between them! Fix the tube on the wall, to be sure that it stays into the oven and tight.
8. Place the fireplace door into the opening and secure it with the cramp-irons in the pre-drilled holes with screws. Cut the cramp-irons after, as short as possible.
9. Drill a hole of 22 mm in the flue tube. Assemble the flue tube (included thermometer and damper) between the Tigchel oven and the connection.
10. The Tigchel oven is now ready to be stoked, according to the instructions on the information sheet '**Dry stoking' advice for Tigchel-ovens.**

## INSTRUCTIONS FOR TIGCHELKACHEL-OVENS USE AND HIGH PERFORMANCE ADVICE.

1. Use untreated and **BONE DRY** wood. (sawn and chopped firewood)  
Measurements of the firewood for the Tigchel-ovens 4 D, 6 D, 8 D and 10 D length, lying 25 cm and upright a 30 cm maximum. Round and/or square, around measuring approx. 20-30 cm. ( Also see the sheet the treatment of wood).
2. Open the damper in the flue and the by-pass, the last one is a sort of choke. (See also the illustrations).
3. Open the fireplace door(s) and sweep the grate a little clean. Place the firewood upright (see illustration 1) or lying in the firebox, Be careful that the air holes in the sides remain open.

(In the fore-season and after-season, if in supply, use firewood from light types of wood and in the colder periods, use heavier types of wood, with the measurements recommended. When using pine planks or other plate material, with has a high gasification, place this firewood always upright, compactly, in-groups, against each other to reach the specific surface recommended. It is very important to strongly reduce the specific surface area of this type of firewood in order to give a slow gasification. A slow gasification gives a certain guarantee of clean burning. Make sure there are vertical air holes, between the 'groups', in order to get enough combustion air from the grate.)

4. Lay on top of this, criss-cross, thin "kindling wood" (preferably pine) with a maximum thickness of 1 cm. Two or three layers high is enough. On top of this again, lay pieces of cardboard and then light them. (see illustration). Then close the furnace door/s. After lighting, partly open the primary air slide valve (is also the ash drawer door) or the air slide, as well as the secondary air slide valves in the fireplace door(s). (See illustration).

(In contrast to traditional methods of stoking, the wood is stoked in these furnaces from the top. The by-pass remains open until the thermometer indicates a flue temperature of approximately 180 °C. This temperature is necessary to create and keep a (thermal) "draw". This "draw" is necessary in order to draw in the air needed to burn the wood. This amount of wood is enough for a whole day of heat storage, with continual use. Try to continue to stoke at around 180 °C. The by-pass has a continuous variable adjustment and after some sliding back and forth the correct temperature can be found. Too low flue temperatures, e.g. under 150 °C, can have a negative influence on the "draw". Higher flue temperatures than 200 °C result in too much loss of energy. Possibly after ten to fifteen minutes, the by-pass can be closed completely, or a small opening may still be needed during the further course of stoking. This depends on each stoking process).

5. Allow the wood (gas) to burn with clear white flames. This is an easy and also important indication for a clean burning.

(In order to be able to continue to burn with this colour of flames, that requires sufficient combustion air. See point 4. Sometimes more air is needed than the primary air slide valve can let through. The ash drawer door must be set ajar mostly for more air inflow).

6. If the flames become smaller (the wood gas begins to run out), less combustion air will be needed. Then close the primary air valve of the ash drawer door and the air slide valves of the fireplace door. Later, when there are no flames at all left, close the primary air slide valve. Only when there are no (small bleu) flames at all left, than can be closed the damper in the flue.

7. **WARNING:** Avoid touching the furnace door/s during burning. Touching it can cause burns.

(For the Future type of furnace door, the door handle can be removed after lighting and as a result of this it remains cool. Otherwise, wear gloves to protect your skin.)

8. Regularly empty the ash drawer. The grate must always be properly accessible for combustion air.
9. If more heat is required, stoke up more than once every twenty-four hours.
  1. SPHERE FIRE. The possibility of enjoying a long/longer sphere fire is described below. This can be done instead of a High Performance stoke. A method which has much in common with the method of 'stoking in'.
  2. Open the chimney valve/slide and the by-pass. They both remain open during the sphere fire. Open the furnace door(s) and sweep the grid clean.  
Lay a number of layers of kindling wood, preferably a heavy type of wood, diagonally across each other, in the stoking pot. On top of this, lay a thin layer of kindling wood. Only fill the stoking pot partly. Lay pieces of cardboard on top and then light this and close the furnace door/s.
  3. Then open the primary air slide-valve and the second one.
  4. Keep the fire going by continually adding a small amount of firewood. Never stoke with a died away fire, but continue to stoke with clear flames, by means of secondary air. Fire is sphere, however, the flue temperatures may never exceed 200 °C. Also see the sheet on stoking in.
  5. Only close the slide in flue when there are no (bleu) flames at all left. Then the heater will give off heat again for a long periode.