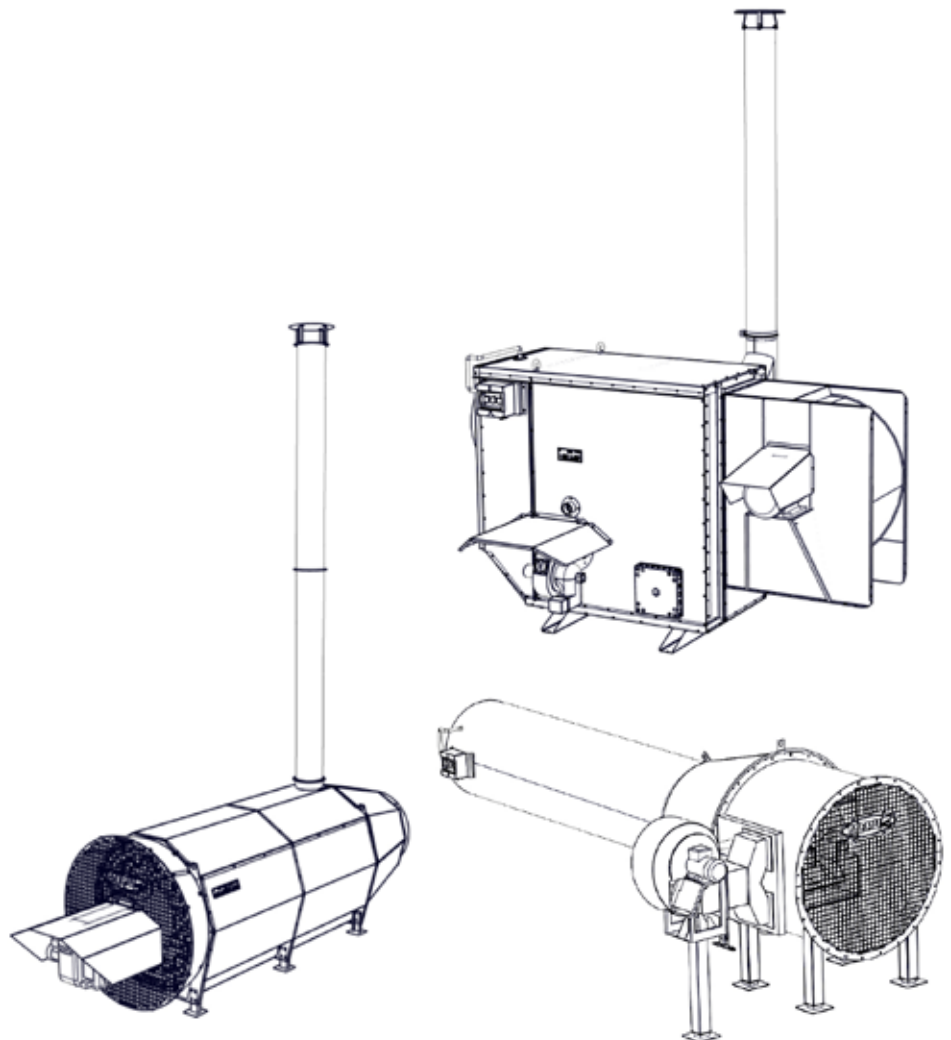




# Dryer furnaces

## USER GUIDE

**YP170**  
**YP210**  
**YP250**  
**YP310**  
**YP400**  
**YP500**  
**AP750**  
**AP1000**  
**AP1500**  
**APS1220**  
**APS1630**  
**APS2500**



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

ID: D03635\_EN  
REV: 2017A



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## **INTRODUCTION**

This guide contains instructions on using dryer furnaces manufactured by Mepu Ltd.

In order to ensure efficient use and safe installation of the equipment, read all the instructions carefully. Additionally, make sure that any other persons present on-site are aware of all the safety essentials. Keep this manual on hand and introduce it to any new personnel members.

If you need more information or assistance, contact your dealer or Mepu service.





## **WARRANTY AND WARRANTY CONDITIONS**

The product is intended for professional use. Installation, use and maintenance of the equipment require normal general knowledge and skills related to machines and equipment that a professional farmer should presumably possess.

### **Warranty conditions**

The dryer machinery is covered by a 12-month warranty from the commissioning date, but the maximum duration of the warranty is 18 months from the invoice date of the Goods. Mepu Oy cannot be held responsible for any defects discovered after the aforementioned time limits. Mepu Oy undertakes to eliminate any design, raw materials, or workmanship-related faults in the Goods through repair or replacement. Mepu Oy is not responsible for any other direct or indirect damages or losses.

The warranty does not cover faults arising from materials provided by the Purchaser or structural solutions specified or set out by the Purchaser. Moreover, Mepu Oy's warranty and liability for faults do not cover minor faults and deviations that exert no substantial influence on the use and functionality of the dryer machinery. The warranty does not cover faults caused by any factors discovered after transfer of the burden of risk. For example, the warranty does not cover faults caused by failure to comply with the use and storage conditions specified for the Goods or instructions for use, or improper use of the Goods. In this connection, inter alia, feeding the equipment with material significantly differing from the average quality of the material processed or with material that does not belong in the equipment is also considered improper use, for example, feeding of grain dryers with material of significantly higher-than-average moisture content and / or of significantly higher-than-average weed and / or other impurities (such as rocks, dirt or foreign objects) content, or feeding of material containing large rocks onto the conveyors. The warranty does not cover faults arising from inadequate maintenance or incorrect installation carried out by the Mepu Oy, or faults arising from modifications or repairs performed without the Seller's written consent. Moreover, the warranty does not cover normal wear and tear.

Whenever a fault is detected, the Seller is required to submit a written fault report without undue delay. The fault report must describe the nature of the fault. If there is reason to assume that the fault could cause additional damage, use of the Goods must be discontinued and the fault report submitted immediately. Otherwise, the Purchaser shall lose its right to submit claims regarding damages that could have been avoided by immediate termination of the use and/or submission of a fault report. If the Purchaser has reported a fault and it is determined that the Goods are free of faults covered by Mepu Oy's warranty, Mepu Oy shall have the right of demanding compensation for the work and expenses incurred because of the fault report. If intervention with Goods other than those delivered by Mepu Oy is required in order to repair a fault, Mepu Oy shall not be responsible for the related works and expenses. If a fault in some component of the Goods has been eliminated, Mepu Oy shall be liable for the repaired or replaced component in the same way as for the original delivery for 18 months. However, Mepu Oy shall not be liable for faults in any component of the Goods or damage caused by the Goods for longer than 36 months from the beginning of the original liability period.

## EC DECLARATION OF CONFORMITY OF THE MACHINERY



### Manufacturer

Name of the company:	Mepu Ltd
Address:	Mynämäentie 59, 21900 Yläne, Finland


### Partly completed machine

Description:	dryer furnace
Type:	YP170, YP210, YP250, YP310, YP400, YP500 AP750, AP1000, AP1500 APS1220, APS1630, APS2500
Serial number:	81000-

### Directives and standards

We hereby declare that the equipment complies with the directives:	2006/42/EC 2004/108/EC 2006/95/EC
Harmonised standards (or parts / clauses) that have been used:	EN ISO 12100 EN ISO 13849-1 EN ISO 13850 EN ISO 13857 EN 60204-1:2006
Other technical standards and specifications that have been used:	EN 953

### Signature of authorized person

Date and place:	12.6.2015 Yläne
Signature:	 Iiro Uusi-Salava
Title:	Product development Manager / Mepu Ltd

## SAFETY

*The general safety section contains instructions related to all safety routines. Instructions pertaining to certain specific subjects (for example, assembly-related safety) can be found in the respective section. Always read all the instructions, not only the summary of safety practices, before commencing any operations with the equipment.*

YOU are responsible for SAFE use and maintenance of the product. YOU need to make sure that you and any other persons working in the vicinity of the product are aware of all procedures and information related to SAFETY and contained in this manual. Remember – YOU are the key to safety. Good safety practices will keep you and the people around you safe. Make these procedures a functional part of the safety programme.

- The user or operator is responsible for reading, understanding, and following the manual's safety instructions. All accidents can be avoided.
- The equipment owner needs to provide guidance and go through the instructions prior to commissioning of the equipment and at least once a year with all the employees before they are allowed to use the equipment. Untrained users/operators expose themselves and bystanders to the risk of serious or fatal injuries.
- Use the equipment only for its intended purpose.
- Do not modify the equipment in any way. Unauthorised modifications may impair the functionality and / or safety and affect the product's service life. Any modification of the product voids the warranty.
- Keep children and unauthorised persons away from the work area.
- Keep first aid means available at all times and make sure you know how to use them.
- A fire extinguisher must be readily available at the work site. Keep it in a visible place.
- Electrical equipment: Before electrical equipment maintenance, adjustment or repair, disconnect the plugs, set all switches to the neutral or OFF position, stop the motors, remove the ignition key or disconnect the power supply, and wait for all moving parts to stop.

- Use proper personal protection equipment:

- hard hat
- work gloves
- anti-slip safety shoes
- safety goggles
- hearing protection
- coveralls



- Comply with good work area practices:
  - Keep the usage area clean and dry.
  - Make sure the electrical outlets and tools are properly grounded.
  - Use adequate lighting for works performance.
  - Consider SAFETY! Work SAFELY!



### General safety instructions

The safety-related warning sign marks important safety instructions on the product and in the manual. If you see this symbol, consider the possible risk of serious or fatal injury. Follow safety instructions.



### Signal words

Pay attention to the following signal words in the safety instructions: DANGER, WARNING, CAUTION, and NOTE. The signal words used in the safety instructions have been chosen based on the following definitions.

<b>DANGER</b>	Indicates an imminent danger to life that may result in serious or fatal injuries unless avoided.
<b>WARNING</b>	Indicates a potential danger to life that may result in serious or fatal injuries unless avoided.
<b>CAUTION</b>	Indicates a dangerous situation that may result in minor or moderate injuries unless avoided.
<b>NOTE</b>	Indicates a potentially dangerous situation that may result in property damage unless avoided.

### Important safety instructions for dryer furnace user

Mepu dryer furnaces have been designed to be as safe as possible. However, depending on local conditions, installation, and equipment configuration, the user needs to consider some safety precautions when using or servicing the device.



#### **Risk of a hearing damage**

Use hearing protection in the furnace building and near the furnace during use. Avoid needless staying near the furnace.



#### **Fire safety**

Ensure sufficient first aid fire-fighting equipment. Check the extinguishing means, note the dates and the pressure. In Finland, at least the following equipment must be available near the furnace in the course of drying:

- Near the furnace 1pc 6kg 27A 144 B-C hand-held extinguisher
- Near the dryer 1pc 6kg 27A 144 B-C hand-held extinguisher





# 1. Installation

Check relevant regulations of the local authority prior to installation. Dryer furnace installation works must be performed by an electrician and an oil burner technician holding the necessary official qualifications, as well as a dryer machinery installation specialist. In Finland, ensuring compliance with instructions specified by insurance companies is recommended, such as Pohjolan Suojeluohje: *Viljankuivaamoiden paloturvallisuus S920/2012* (Fire safety of grain dryers) and Finanssialan Keskusliiton suojeluohje: *Maatilojen palontorjunta 6/2007* (Farm fire protection). Other official regulations: National Building Code of Finland and 474/2014 of the Ministry of Agriculture and Forestry on fire technical requirements to supported construction. Published in Helsinki on 25th of June 2014.



## **WARNING**

Check country-specific and local building and fire safety regulations.

Mepu furnaces should be installed indoors or under a canopy. Outdoor installation is allowed if the motors, electrical equipment, and burners are provided with protection against rain. The thermal device location should be such that the thermal device and chimney can be appropriately cleaned and maintained. When determining the dryer furnace location, take into account that the intake air of the furnace and burner must be clean. The dryer furnace intake and dryer machinery exhaust pipes must be located on opposite sides of the machinery.



## **WARNING**

Take measures to avoid underpressure in the furnace room.

When positioning the heat source in the furnace room, ensure availability of sufficient free air to the furnace, for example, by installing an outdoor intake air channel from the main fan to the furnace (YP furnaces) or installing at least inlet opening-sized doors to the furnace room (AP furnaces). The doors must be lockable to the open position. Dryer furnace intake air may not originate from inside the furnace room.

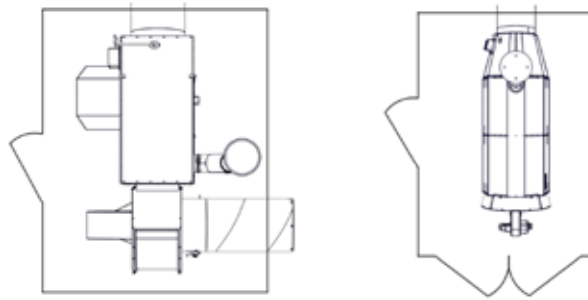


## **RISK OF FIRE**

Debris in furnace intake air causes a fire hazard!

For furnace room ventilation and combustion air supply, there must be two at least 600cm<sup>2</sup> openings equipped with protection mesh at the thermal device accommodation room, one of which must be located in the top part and the other in the bottom part of the room. Check the building's fire ratings and requirements from the officials and comply with the guidelines. If protected against rain or provided with a canopy, the thermal device may also be placed outdoors, to the distance of at least 4m from the grain dryer or other buildings.

The furnace room of dryer furnaces consuming more than 30kg/h of oil must be provided with overpressure-based mechanical ventilation (not included in the delivery).



## 1.1. Fuel connections

The furnaces are delivered without oil or gas pipes. The customer must take care of oil and gas connections to the distribution network or tank. Oil / gas burners may be connected to the fuel source only by an authorised installer. For information on burner and installation thereof, see the burner's nameplate and user guide included in the product's documentation.

### 1.1.1. Gas supply

When ordering the product, check the local gas pressure and ensure sufficient gas supply. In case of Tecflame burners, the gas pressure is ordered customer-specifically. When using Oilon burners determine the local gas pressure and ensure sufficient gas supply. Read the Oilon manual for the requirements and instructions for use.

### 1.1.2. Oil tank

The oil tank complying with the requirements should be installed on a concrete slab. Check installation regulations with the local authority. The distance between the tank and the burner must be at least 3m.

Oil connection means:

- metal oil pipe
- steel braided reinforced oil hose
- oil hose intended for oil transfer

The oil pipes or hoses must be fastened for the duration of use to the oil tank so that their separation is avoided. The oil heating system must be inspected and approved by the rescue authority. For the oil pipe lengths and thicknesses, see the burner manual supplied with the burner. The same goes for oil tank installation height as compared to the burner height.

In the course of installation, make sure that:

- Oil hoses are connected correctly (arrows on the pump indicate the correct flow direction).
- Oil filter is in the vertical position and the flow direction is correct.
- Valves in the oil tank are open.

## 1.2. Furnace lifting operations

Furnaces must be lifted using the intended lifting lugs. Use appropriate, sufficiently long lifting means for the lifting operations. Always use a sufficiently powerful lifting machine.

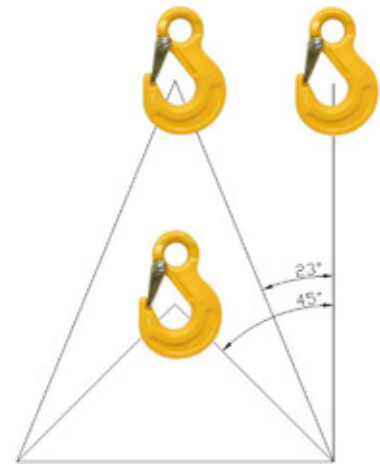


### RISK OF BEING CRUSHED

Stay away from (under) the item lifted.

### 1.2.1. Furnace model weights

FURNACE MODEL	TYPE	WEIGHT [kg]
<b>YP170</b>	overpressure	570
<b>YP210</b>	overpressure	607
<b>YP250</b>	overpressure	702
<b>YP310</b>	overpressure	785
<b>YP400</b>	overpressure	1 054
<b>YP500</b>	overpressure	1 055
<b>AP750</b>	negative pressure	1 336
<b>AP1000</b>	negative pressure	2 755
<b>AP1500</b>	negative pressure	3 969
<b>APS1220</b>	direct gas	380
<b>APS1630</b>	direct gas	422
<b>APS2500</b>	direct gas	550



The lifting rope or chain length is set between 0 - 45° (see adjacent figure). Any angles between 0 and 45° are allowed. Use chains or ropes of the same size for lifting.

### 1.3. Location

Leave enough space around the furnace for maintenance and cleaning; do not install in a room too small. Install the furnace on stable and level (preferably concrete) base. In such a case, the furnace needs not be fastened to the base.

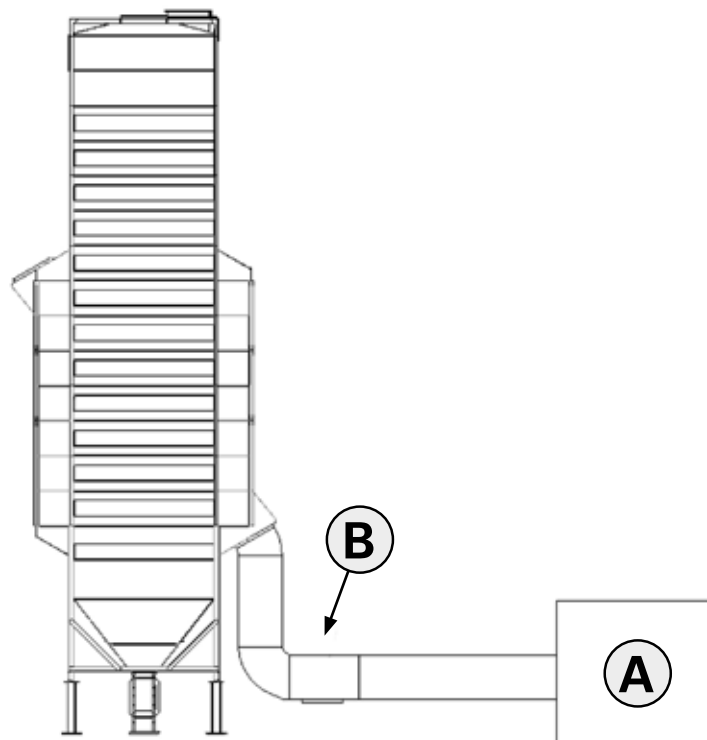
The furnace must be placed so that drying-induced dust cannot end up inside it. The furnace intake air must be absolutely clean. Leave sufficient space on the sides of the furnace for the required maintenance works. When determining the future location of the furnace and chimney, follow the instructions of the local fire authority.

Install the grain pocket (T branch) horizontally in the air pipe section. The recommended location in the horizontal pipe is right after bend.

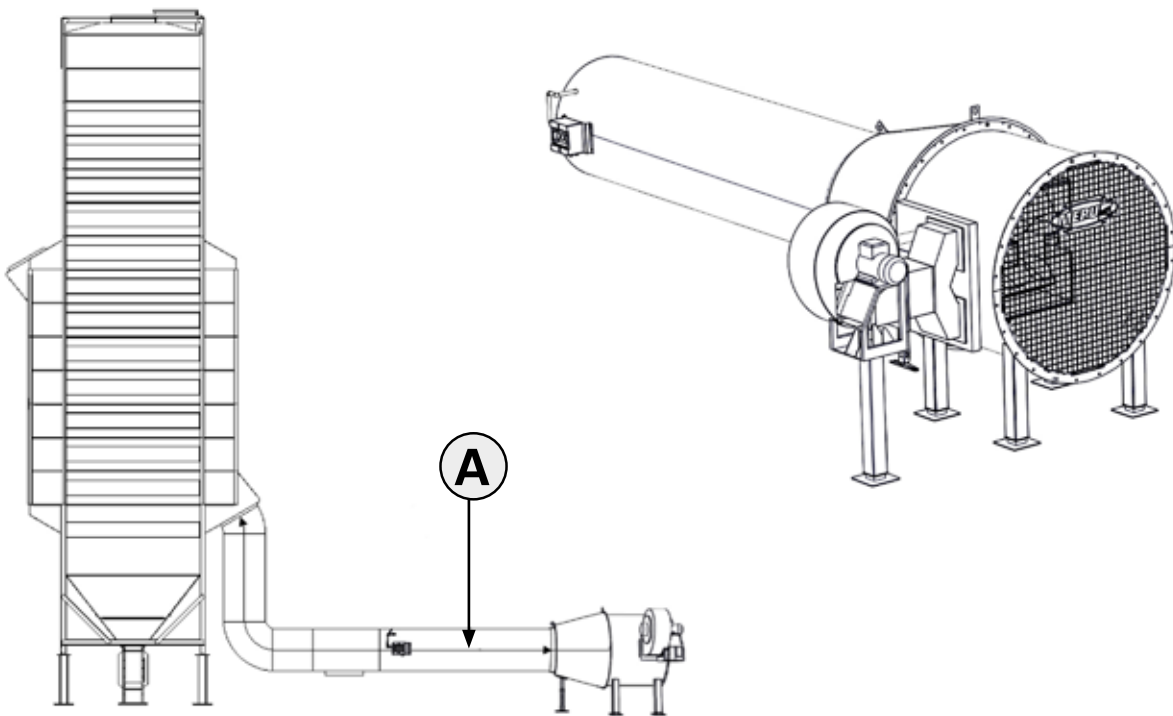


#### **RISK OF FIRE**

Debris ending up in furnace causes a fire hazard!



Install the grain pocket (B) in the furnace pipe before the furnace (A). Before furnace installation, plan the routing of electrical cables and fuel supply to the furnace. The air pipe must be located at the height of at least 1m from the ground surface.



### 1.3.1. Direct gas furnaces

Install the capillary sensors in the thermostat enclosure to the distance of at least 3m from the furnace flame. In total, the air piping must be at least 6m long. The distance is measured from the furnace to the dryer's intake enclosure and pipe joint (see centre line A in the figure).

### 1.3.2. Chimney

The unit is supplied with a chimney (excl. direct gas furnaces), transition couplings, ash removal / cleaning elbows (depending on model), and a rain cap. If supplied, the ash removal / cleaning elbow must be installed as close as possible to the chimney outlet joint of the furnace. The chimney must always be capped with the rain cap.

The chimney must always be supported on another structure, either by stays or supports for couplings. The chimney weight may not lie upon the furnace if the chimney length exceeds 4m. Longer chimneys must be supported on structures other than the furnace. In case of horizontal installations, the chimney weight may not be supported on the furnace.



#### **WARNING**

Check the requirements chimney location and height with the local fire and / or building control authority.



## 1.4. Power supply

Only a professional installer may make electrical thermostat connections. Thermostat connections are electrical centre-specific. Thermostat enclosure is selected as required from among two models:

Model 1:

- A. Fan thermostat
- C. Overheating thermostat

Model 2:

- A. Fan thermostat
- B. Burner thermostat
- C. Overheating thermostat
- D. 2-flame thermostat

The thermostats are coiled inside the thermostat enclosure. Remove the cable ties and unwind the thermostats carefully. Thread the thermostats out of the centre.

Install the capillaries in the air pipe, in the middle of the furnace's airflow. The capillaries should be installed on a strong iron support that does not swing in the airflow.

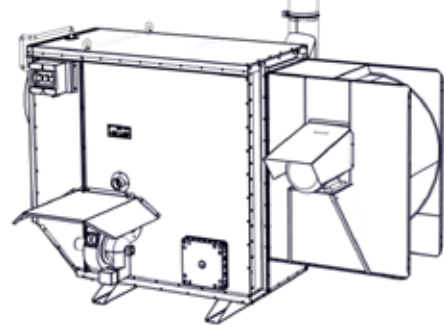
To prevent the thermostats from swinging in the airflow, use fire-resistant wool to insulate the iron support and the capillaries. The measurement accuracy of capillary thermostats is approx. 4°C.



## 2. Furnace models

### 2.1. Overpressure furnace (YP)

In the cylindrical fire chamber, the burner flame burns in the centre of the fire chamber and the heat generated is led to vertical lamella heat exchangers and finally to chimneys. The fire chamber is made of fireproof steel. Vertical heat exchangers release the heat uniformly and efficiently. This ensures high furnace efficiency and excellent durability.



OVERPRESSURE FURNACE	500002	500002_2	500003	500003_2	500004	500005	500006	500007
	YP170PP	YP170PP	YP210PP	YP210PP	YP250PP	YP310PP	YP400PP	YP500PP
<b>Weight [kg]</b>	570	570	607	607	702	785	1 054	1 055
<b>Max. power [kW]</b>	170	170	202	202	244	308	404	510
<b>Max. performance [kg / h]</b>	16	16	19	19	23	29	38	48
<b>Heating capacity with standard nozzles [kW]</b>	151	166	151	200	229	275	372	502
<b>Standard nozzle / nozzles [gal]</b>	4	2,75 + 1,35	4	3,5 + 1,5	4 + 2	5 + 2	6 + 3	8,5 + 4
<b>Fuel consumption with standard nozzles [kg / h]</b>	14,2	15,67	14,2	18,8	21,6	25,9	35	47,3
<b>Oil pressure [bar]</b>	10	10	10	10	10	10	10	10
<b>Spraying angle [°]</b>	80	80	80	80	80	80	80	80
<b>Effective calorific value of fuel [kW / kg]</b>	11,8	11,8	11,8	11,8	11,8	11,8	11,8	11,8
<b>Fan power [kW]</b>	3	3	4	4	4 / 5,5	5,5/75	11	11

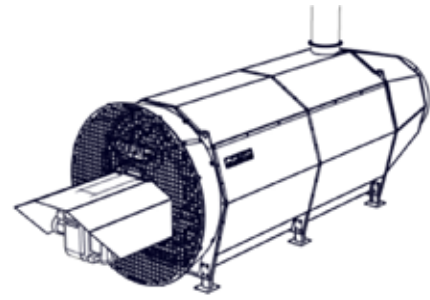


BURNER	TYPE	MODEL	FUEL	FURNACE
<b>900106</b>	oil burner	KP-26	oil	YP170 /YP210
<b>900107</b>	oil burner	KP-26H	oil	YP170 /YP210
<b>900174</b>	gas burner	GP-26H	natural gas (NG)	YP250 /YP310
<b>900174_2</b>	gas burner	GP-26H	liquefied petroleum gas (LPG)	YP250 /YP310
<b>900178</b>	combined burner	GKP-26H	natural gas (NG)	YP250 /YP310
<b>900178_2</b>	combined burner	GKP-26H	liquefied petroleum gas (LPG)	YP250 /YP310
<b>900109</b>	oil burner	KP-50H	oil	YP400 /YP500
<b>900177</b>	gas burner	GP-50H R2"	natural gas (NG)	YP400 /YP500
<b>900177_2</b>	gas burner	GP-50H R1 ½"	liquefied petroleum gas (LPG)	YP400 /YP500
<b>900181</b>	combined burner	GKP-50H R2"	natural gas (NG)	YP400 /YP500
<b>900181_2</b>	combined burner	GKP-50HR1 ½"	liquefied petroleum gas (LPG)	YP400 /YP500



## 2.2. Negative pressure furnace (AP)

The burner flame burns in the centre of the cylindrical fire chamber and the heat generated is led to outer layers and finally to chimneys. In the multi-layered round furnace, the heat is distributed evenly. This ensures high furnace efficiency and excellent durability.

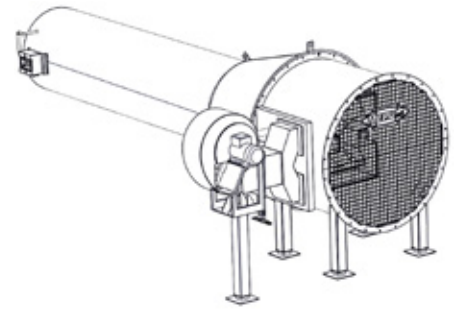


NEGATIVE PRESSURE FURNACE	560042	560043	560044
	AP750	AP1000	AP1500
<b>Weight [kg]</b>	1 336	2 755	2 969
<b>Heating capacity [kW]</b>	740	1 015	1 510
<b>Standard nozzles [gal]</b>	10 + 8,5	15 + 10	19,5 + 17
<b>Fuel consumption with standard nozzles [kg / h]</b>	71	99	144
<b>Oil pressure [bar]</b>	10	10	10
<b>Spraying angle [°]</b>	60	60	60
<b>Effective calorific value of fuel [kW / kg]</b>	11,8	11,8	11,8

BURNER	TYPE	MODEL	FUEL	FURNACE
900116	oil burner	KP80H 60°	oil	AP750
923505	gas burner	GP-80 H R2"	natural gas (NG)	AP750
923595_2	gas burner	GP-80 H R1 ½"	liquefied petroleum gas (LPG)	AP750
923425	combined burner	GKP-80 H R2"	natural gas (NG)	AP750
923425_2	combined burner	GKP-80 H R1 ½"	liquefied petroleum gas (LPG)	AP750
900115	oil burner	KP90H 60°	oil	AP1000
903002	gas burner	GP-90 H R2"	natural gas (NG)	AP1000
903002_2	gas burner	GP-90 H R1 ½"	liquefied petroleum gas (LPG)	AP1000
903003	combined burner	GKP-90 H R2"	natural gas (NG)	AP1000
903003_2	combined burner	GKP-90 H R1 ½"	liquefied petroleum gas (LPG)	AP1000
900114	oil burner	KP150H 60°	oil	AP1500
900184	gas burner	GP-150 H R2"	natural gas (NG)	AP1500
900184_2	gas burner	GP-150 H R2"	liquefied petroleum gas (LPG)	AP1500
923426	combined burner	GKP-150 H R2"	natural gas (NG)	AP1500
923426_2	combined burner	GKP-150 H R2"	liquefied petroleum gas (LPG)	AP1500

## 2.3. Direct gas furnace (APS)

In the direct gas furnace the flame burns in the intake air and the flue gases are mixed with the drying air. Owing to this, the furnace efficiency is exceptionally high.



DIRECT GAS FURNACE	136976	136975	136721
	APS1220	APS1630	APS2500
<b>Weight [kg]</b>	380	422	550
<b>Heating capacity [kW]</b>	1 220	1 630	2 500
<b>Max. gas pressure [mbar]</b>	300	300	300
<b>Min. gas pressure [mbar]</b>	0,2	0,2	0,2
<b>Operating temperature [°C]</b>	0... +35	0... +35	0... +35
<b>Effective calorific value of fuel [kWh / m<sup>3</sup>]</b>	9,89	9,89	9,89
<b>Fuel consumption (nominal power) [m<sup>3</sup> / h]</b>	123	165	253
<b>Adjustment range</b>	1:10	1:10	1:10
<b>Natural gas (NG) *</b>	+	+	+
<b>Liquefied petroleum gas (LPG) *</b>	+	+	+

\* The fuel is specified at order submission.

### 3. Operating

Before commissioning of the machinery, adjust and check the motor protection in the electrical centre, check motor rotation directions, and functionality of the various equipment. For the correct fan direction of rotation, see the indication arrow on the fans. Also, test the functionality of all thermostats.

#### 3.1. Settings

Furnace efficiency depends on the settings – therefore, it is reasonable to take the time and find the correct settings ensuring the best results.

##### 3.1.1. Air flow rate

In case of overpressure furnaces, the air flow rate can be reduced using the shutter supplied with the furnace, if required. Note that reduction of the flow rate may lead to furnace overheating and the related disturbances. When reducing the furnace's air flow rate, consider the actual power in order to prevent excessive temperature rise in the furnace.

##### 3.1.2. Thermostat settings

The following thermostat settings are indicative; the best settings can be determined based on practical experience.



#### **WARNING**

Do not exceed the overheating thermostat setting.  
Exceeding this setting annuls the warranty.

THERMOSTAT	TYPE	SETTING
Fan thermostat	capillary	50 °C
Burner thermostat 1-flame	digital	90 °C
Burner thermostat 2-flame	digital	80 °C
Overheating thermostat	capillary	120 °C

**Fan thermostat:**

The thermostat controls furnace aftercooling. The temperature inside the furnace is lowered after drying completion to the set value. In the course of cooling, the main fan cannot be switched off from the mains switch. If the setpoint is too low, the furnace may restart because of the heat contained in outdoor air.



**WARNING**

The main fan starts when the thermostat's temperature setting is exceeded. De-energize before maintenance.

**1-flame burner:**

The burner must be provided with such a nozzle (temperature) that the furnace thermostat does not turn off the burner. Thus, it may be necessary to constrict the nozzle if the weather is warm and enlarge it if the drying takes place at night. Flame 1 of the burner should burn continually during the drying; flame interruption strains the furnace and causes explosion hazard inside it.



**WARNING**

Do not exceed the furnace maximum power and settings.

**2-flame burner:**

The burner thermostat's settings or nozzles are adjusted so that flame 1 burns throughout the drying process. Flame II is used for temperature adjustment. I.e., flame 2 is extinguished if the drying air temperature reaches the setpoint and lit if the temperature drops.



**WARNING**

Do not exceed the furnace maximum power and settings.

**Overheating thermostat:**

Protects the furnace against overheating. If tripped, causes a failure signal to be acknowledged separately.

### 3.2. Furnace burners and nozzles

The nozzle performances in the table apply in case of 10 bar oil pressure. If necessary, the nozzle performances can be downgraded as compared to the values in the table. Similarly, flame 1 and 2 proportions can be changed.



#### WARNING

The maximum performance of nozzle(s) may not be exceeded and the spraying angle must be as specified in the tables. Exceeding / modification of the values annuls the warranty.

When constricting the nozzles, the flue gas temperature in the chimney must not fall below 170°C. If the flue gas temperature drops below 170°C, condensate water starts to accumulate on the chimney and the structures.

1kg of fuel oil = 1,18 litres of fuel oil

The nozzle sizes and burner data provided in the tables may differ as compared to the actual delivery.

#### 3.2.1. Nozzles for overpressure furnaces (spraying angle 80°, oil pressure 10bar)

FUR-NACE	BURNER OILON	MAX. POWER [kg / h]	NOZZLE SIZE 1-FLAME	NOZZLE SIZE 2-FLAME	NOZZLE POWER [kg / h]	FLAME PLATE ADJUSTMENT [mm]
YP170	KP26	16	4 gal		14,2	46
YP210	KP26	19	4 gal		14,2	46
YP210	KP26H	19	3,5 gal	1,5 gal	12,9+5,84 = 18,8	42
YP250	KP26H	23	4 gal	2 gal	14,2+7,4 = 21,6	43
YP310	KP26H	29	5 gal	2 gal	18,5+7,4 = 25,9	50
YP400	KP50H	38	6 gal	3 gal	23,4+11,6 = 35	2,7
YP500	KP50H	48	8,5 gal	4 gal	33,1+14,2 = 47,3	4,6

#### 3.2.2. Nozzles for negative pressure furnaces (spraying angle 80°, oil pressure 10bar)

FUR-NACE	BURNER OILON	MAX. POWER [kg / h]	NOZZLE SIZE 1-FLAME	NOZZLE SIZE 2-FLAME	NOZZLE POWER [kg / h]	FLAME PLATE ADJUSTMENT [mm]
AP750	KP80H	71	10 gal	8,5 gal	37,7+33,1 = 70,8	3,6
AP1000	KP90H	99	15 gal	10 gal	60,4+37,7 = 98,1	6 + 5
AP1500	KP150H	144	19,5 gal	17 gal	76,2+67,4 = 143,6	*

\* adjusted using an air analyser



## 4. Maintenance

### 4.1. Maintenance before drying season

Before the start of the drying season, check the furnace electrical equipment and cabling. Check the condition of the grain dryer furnace and chimney and eliminate the deficiencies discovered. Only a qualified professional is allowed to repair oil and electrical equipment.

Check through the furnace maintenance hatches that there is no debris inside the furnace. Close all the hatches. Check that the grain pocket is clean. Open the grain pocket door and check that the air pipe is clean. At the same time, check the furnace condition, if the furnace is visible from the grain pocket. Close / check all inspection hatches opened.

Check the extinguishing means, note the dates and the pressure. Minimum requirements in Finland:

- Near the furnace 1pc 6kg 27A 144 B-C category hand-held extinguisher
- Near the dryer 1pc 6kg 27A 144 B-C category hand-held extinguisher

Carry out oil burner maintenance and a start-up test to check the condition of the dryer equipment. Test the functionality of thermostats.

Fan:

1. Switch the dryer power on.
2. Turn the burner thermostat to 0°C position (minimum).
3. Fan switches on › OK
4. Restore the burner thermostat setpoint value.

Overheating thermostat:

1. Start the drying process.
2. Check that the oil burner flame is clean and there is no black smoke.
3. Adjust overheating to the minimum level.
4. The overheating thermostat trips and a failure signal follows › OK
5. Restore the overheating settings.
6. Acknowledge the alarm.
7. Restart the drying and activate cooling, so that the dryer remains in the normal mode.



## **4.2. Equipment maintenance and preparation for winter**

Basic burner maintenance is to be carried out after each drying season. Thoroughly clean the furnace. Remove soot from the furnace and chimney.

Clean the intake pipes of debris (grain pocket) and clean the furnace inside surfaces through the hatches. Leave the cleaning hatches open to allow the air to circulate in the furnace and remove the humidity. Keep the furnace as dry as possible at all times. If possible, prevent water ingress to the furnace through the chimney.

Check the fire chamber and chimney condition in connection with the cleaning.

Close the oil or gas line shut-off valves and fill the oil tank.

## **4.3. Supervision during use**

During the operating season, keep the surroundings of the furnace clean. Make sure the furnace intake air is clean.

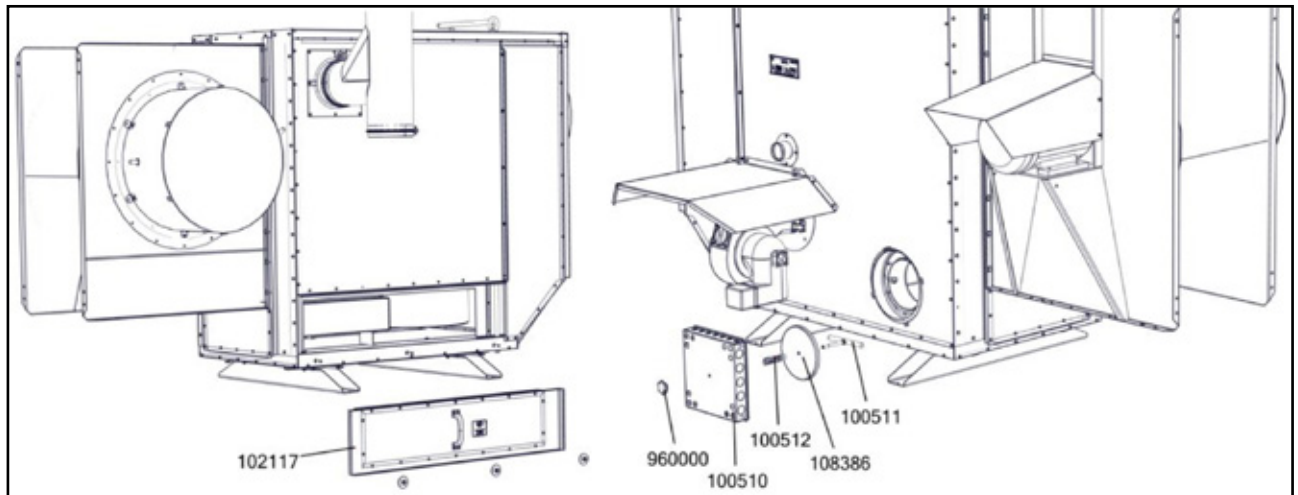
Regularly check burner operation. If necessary, correct possible problems – do not use a smoke-emitting or otherwise defective burner.

Remember also to check if there is enough fuel.

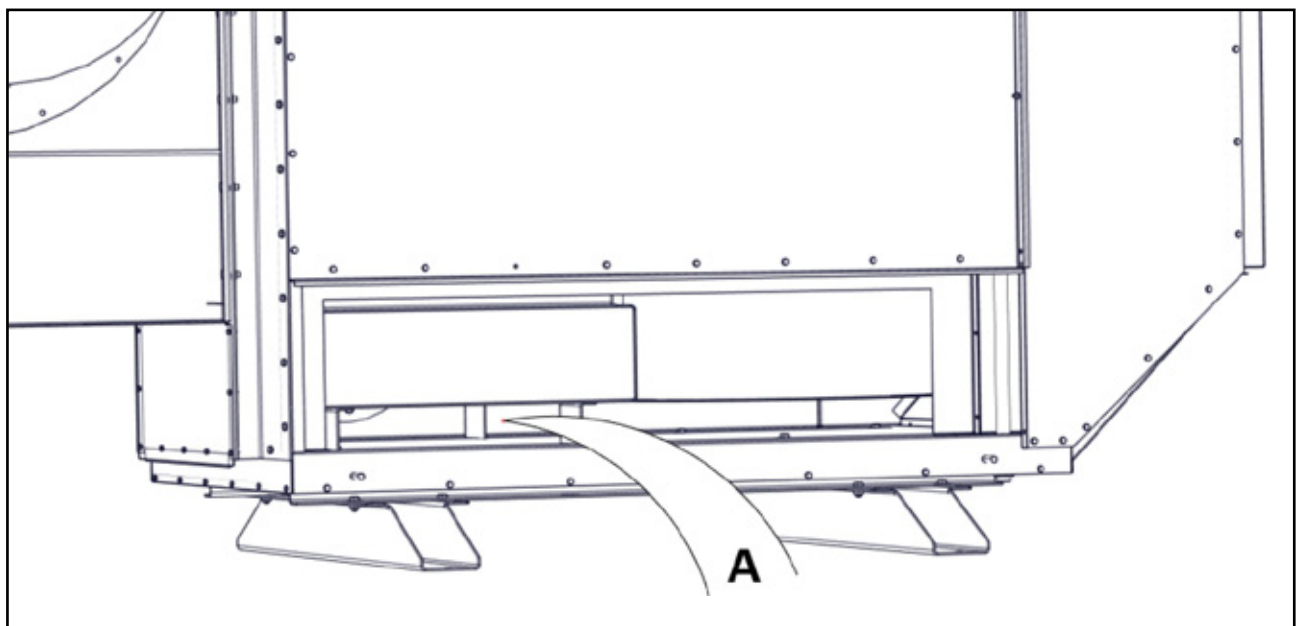
## 4.4. Model-specific cleaning instructions

### 4.4.1. Overpressure furnaces

The dryer furnace needs to be cleaned and soot removed right after operating season. There is an explosion / cleaning hatch in the front wall. There are screw-mounted cleaning hatches in the bottom part of the furnace.



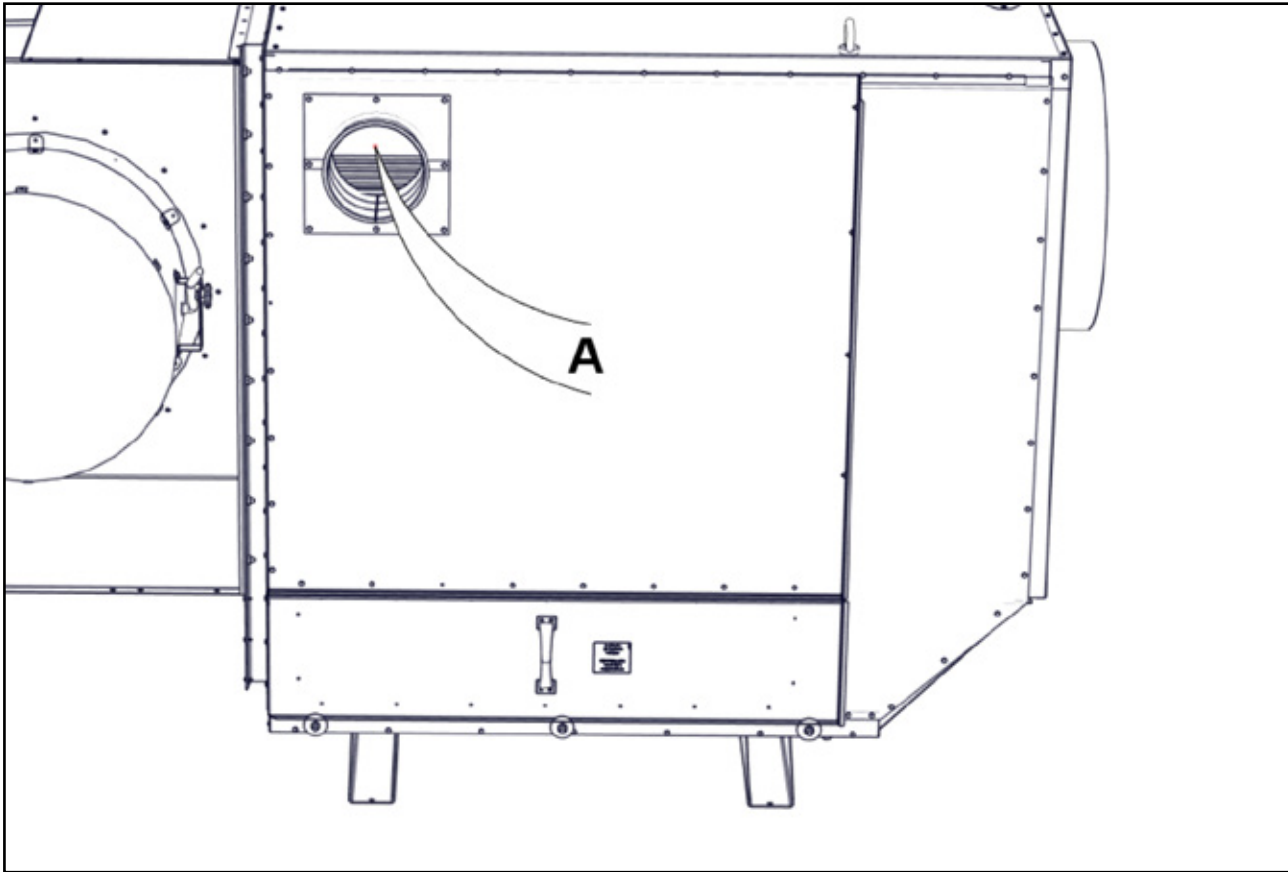
Before the start of a drying season, make sure there is no debris or dust on the internal furnace bottom. If necessary, use vacuum to remove debris from (A).



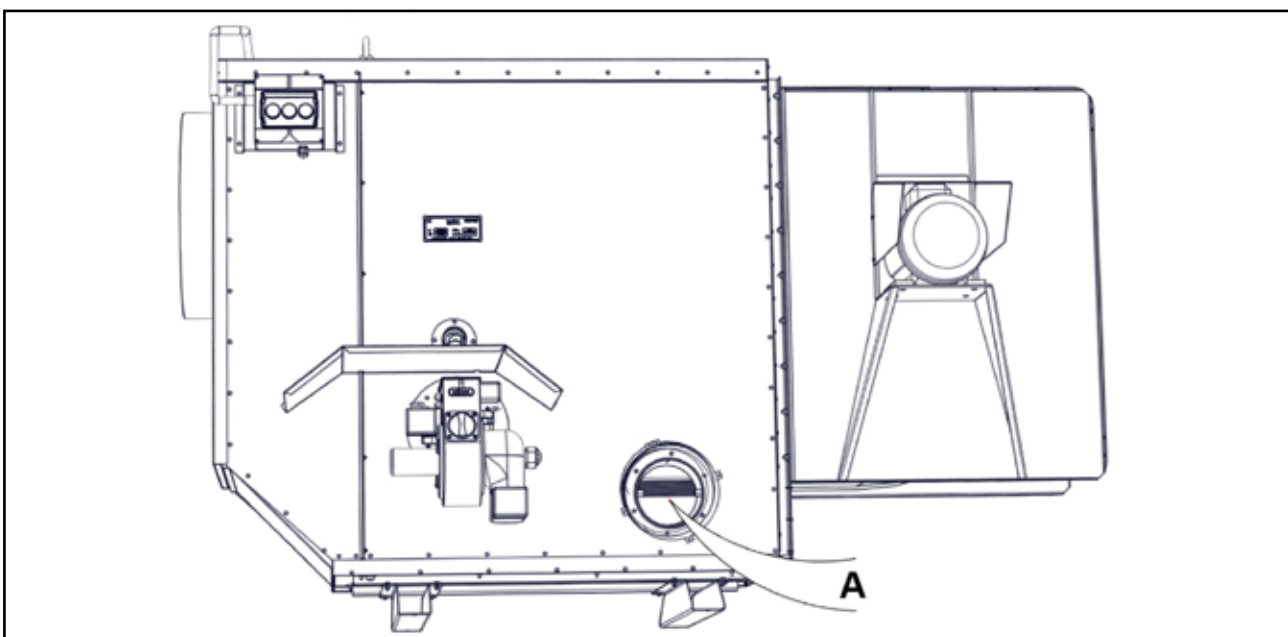
The furnace must be cleaned of soot at least once a year. The only chemicals that may be used for cleaning the furnace are chemicals accepted by the fuel supplier for adding to the fuel. There are two methods for cleaning the furnace of soot.

**Method 1 (furnace models YP170, YP210 and YP250):**

Disassemble the furnace chimney. Remove soot from above, through the chimney aperture (A).

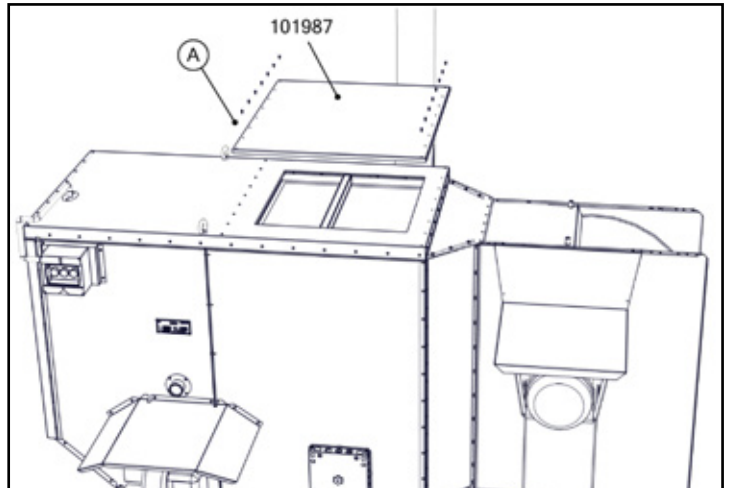


Complete the cleaning through the explosion hatch. Remove the cleaning leftovers through the explosion hatch (A).

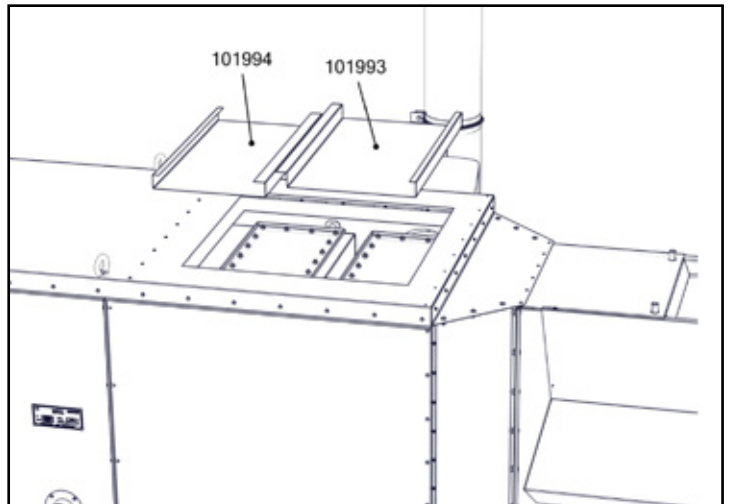


**Method 2 (furnace models YP310, YP400 and YP500):**

Detach the plate 101987 from the furnace roof. The plate is fixed by self-drilling screws. Carefully remove the wools under the plate.



Detach the plates 101994 and 101993. The plates are fixed by self-drilling screws.

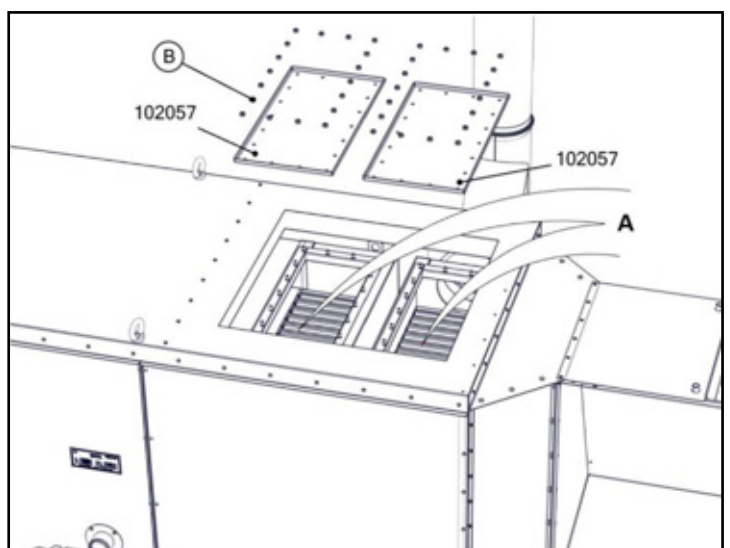


Detach the furnace heat exchanger covers 102057 and 102057. The covers are fixed by copper nuts M8 (B).

Clean the heat exchanger fins (A).

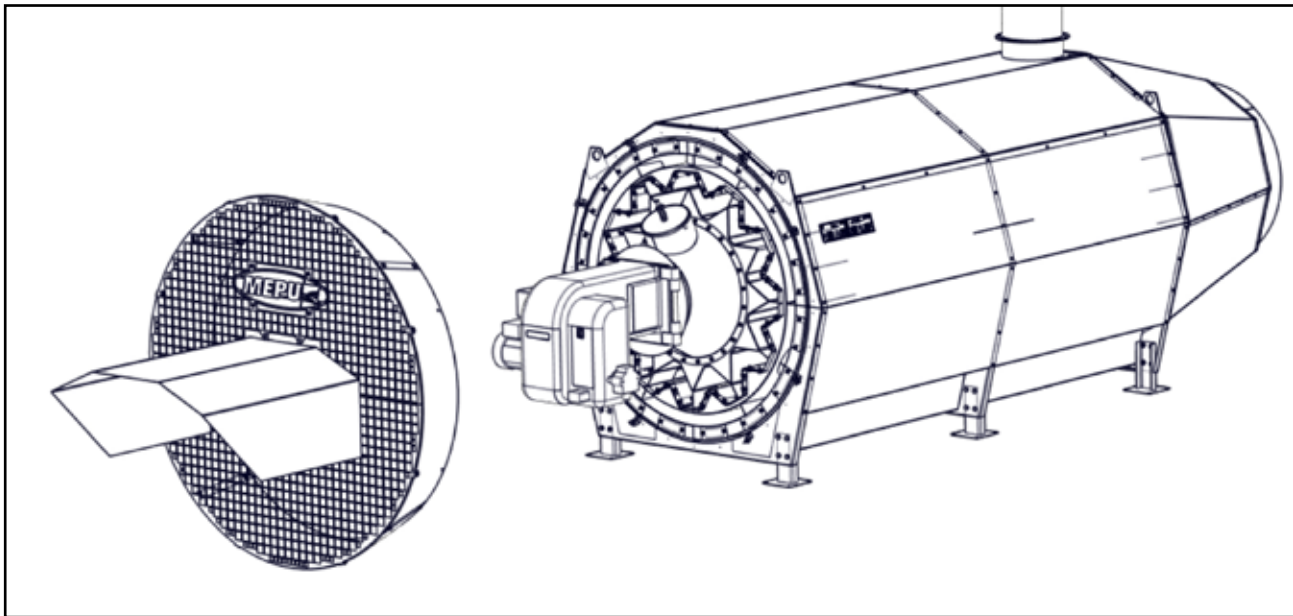
Remove ash through the explosion hatch.

Assemble the structure in the reverse order.

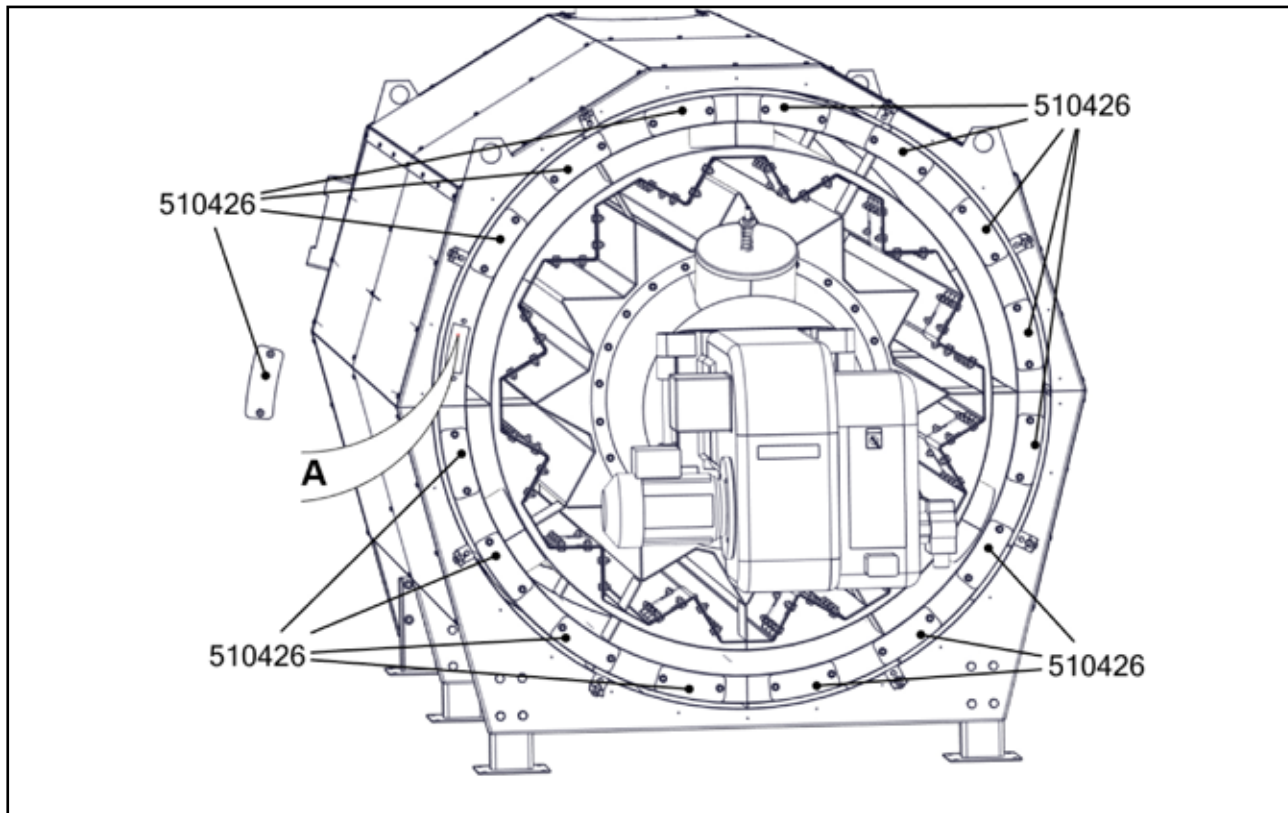


### 4.4.2. Negative pressure furnaces

Start the cleaning by removing the covers in front of the furnace. The sides should also be dismantled to make more room.



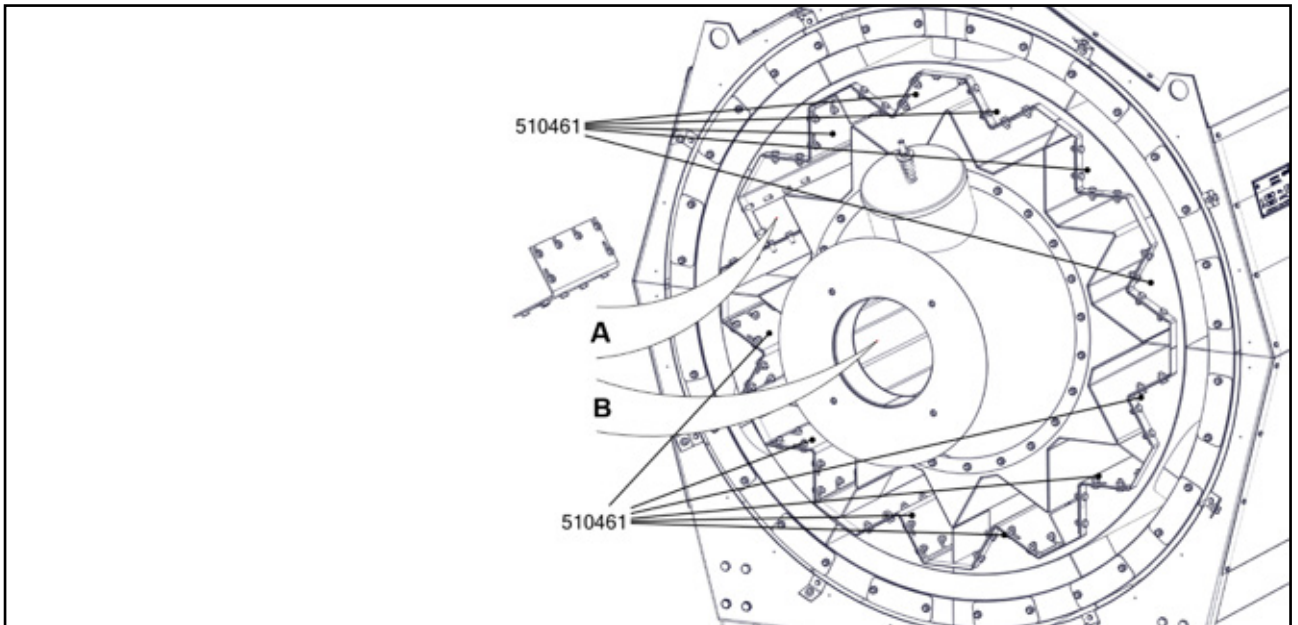
Open hatches 510426 and clean the outer furnace housing through the openings (A). Remove ash through the bottommost hatches. If the need arises, the hatches 510426 on the opposite side may also be opened.



Open hatches 510461 of the inner housing and clean the inner housing through the openings (A). Hatches 510461 are provided only on the burner end of the furnace.

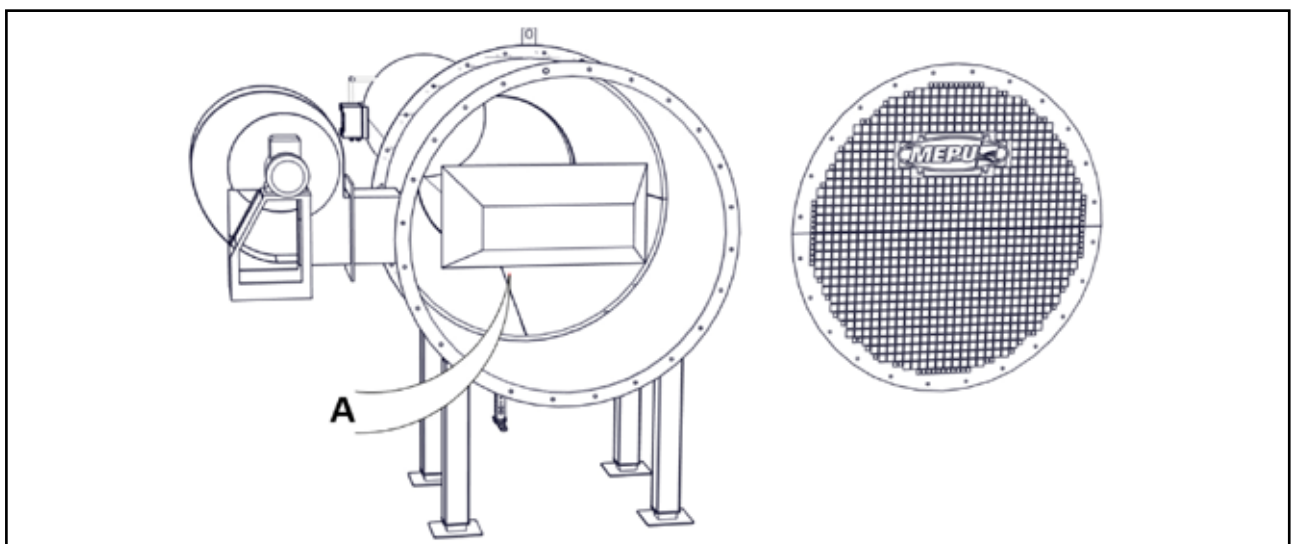
Turn the burner to the side and check fire chamber cleanness and the need for soot removal (B). If the need is there, the burner and the cone in front of the burner may be removed for cleaning the fire chamber.

Assemble the components in the reverse order.



#### 4.4.3. Direct gas furnaces

After an operating season, check that the flame combustion space is clean and free of debris (A). Clean if required. Carry out maintenance according to the burner user guide.





## 5. Commissioning




These are some of the steps to be taken before commissioning of the furnace:

WHAT	TASK	HOW
<b>Installation</b>	Check furnace	Find out local official requirements.  Check that the chimney has been installed in compliance with instructions.
<b>Chimney</b>	Check chimney	Find out local official requirements.  Check chimney supporting.
<b>Foreign objects</b>	Check air channels and furnace	Open maintenance hatches.  Check there are no foreign objects (for example, nuts and bolts) in the equipment.
<b>Flammable material</b>	Check air channels and furnace	Open maintenance hatches.  Check that there are no flammable materials inside the equipment.  Check that there are no flammable materials near the furnace.
<b>Electrical connections</b>	Check connections	Check that the electrical connections have been made properly.  Check that the motors rotate in the right direction.  See control system instructions.
<b>Hatches</b>	Check hatches	Make sure the soot cleaning and explosion hatches are closed.
<b>Fuel connections</b>	Check fuel connections	Check that there are no leaks from fuel connections.
<b>Air supply</b>	Check air intake	Check and clean furnace air intake from debris.
<b>Test use</b>	Test use the furnace	Furnace function check by qualified electrician and burner installer.



## 6. In-season maintenance

Before starting any maintenance procedures turn off main power.

WHAT	TASK	HOW	WHEN
<b>Debris</b>  <b>RISK OF FIRE</b>	Check / clean	Open maintenance hatches and remove any debris.	<p>Before operating season and periodically during the season.</p> <p>When drying oil crops – after every batch or, in case of a continuous flow dryer, every 12 hours.</p> <p>Direct gas burner – every 12 hours.</p>
<b>Air pipes</b>  <b>RISK OF FIRE</b>	Check / clean	Open maintenance hatches and remove any debris.	<p>Before operating season and periodically during the season.</p> <p>When drying oil crops – after every batch or, in case of a continuous flow dryer, every 12 hours.</p> <p>Direct gas burner – every 12 hours.</p>
<b>Fuel connections</b>  <b>RISK OF FIRE</b>	Check / repair	Check fuel connections and lines. Repair if necessary.	Before operating season and periodically during the season.
<b>Fire extinguishing means</b>	Check	Check first aid firefighting equipment.	<p>Before operating season.</p> <p>Note stipulated inspection dates.</p>
<b>Test use</b>	Test use	Carry out test use of furnace functions	Before operating season.



## 7. Troubleshooting

Before starting any maintenance procedures turn off main power.

PROBLEM	POSSIBLE CAUSE	REMEDY
<b>Main motor protection trips</b>	<ul style="list-style-type: none"> <li>• Incorrectly adjusted motor protection</li> <li>• Loose centre cable connector</li> <li>• Defective motor</li> </ul>	<p>Call an electrician. Instructions to electrician:</p> <ul style="list-style-type: none"> <li>• Check motor protection values and motor nameplate values.</li> <li>• Make sure the centre's connectors are tight.</li> <li>• Check motor condition, replace if necessary.</li> </ul>
<b>Main fan vibrates</b>	Fan rotor is dirty / unbalanced	<p>De-energize the dryer.</p> <p>Clean / replace rotor.</p>
<b>Overheating trips</b>	Dryer furnace overheated, thermostat interrupts heating / Possible burner thermostat fault or incorrect setpoint	<p>Check overheating thermostat setting.</p> <p>Check burner thermostat settings.</p> <p>If the settings are correct, have an electrician check the thermostat operation.</p>
<b>Main air fan switches on when the mains supply switch is switched on</b>	Incorrect fan thermostat setting / Faulty fan thermostat	Check fan thermostat setting. Check the temperature of the channel in which the thermostat is located. If the channel temperature is below the setpoint, the thermostat is faulty. Have an electrician replace the thermostat.
<b>During drying, burner 1-flame is extinguished and lit again</b>	Burner thermostat is incorrectly adjusted / Nozzle is too large	Increase the burner thermostat's temperature value. Constrict the nozzle to keep 1-flame lit.
<b>Impossible to light burner (dryer is in operation), burner warning lamp is off</b>	<ul style="list-style-type: none"> <li>• Burner power switch in position 0</li> <li>• Burner thermostat is incorrectly adjusted</li> <li>• Tripped burner automatic fuse</li> <li>• Tripped motor protection</li> </ul>	<ul style="list-style-type: none"> <li>• Check burner power switch</li> <li>• Check burner automatic fuse</li> <li>• Check burner thermostat settings</li> <li>• Check drying thermostat settings</li> <li>• Check motor protection</li> </ul>

PROBLEM	POSSIBLE CAUSE	REMEDY
<b>Impossible to light burner (dryer is in operation), burner warning lamp is on</b>	<ul style="list-style-type: none"> <li>• No more fuel</li> <li>• Fuel filter blocked</li> <li>• Incorrect burner settings</li> <li>• Burner damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Check if there is fuel</li> <li>• Check if the fuel valves are open</li> <li>• Check fuel hoses condition</li> <li>• Check hose installation</li> <li>• Check / replace filter and gaskets</li> <li>• Acknowledge fault</li> <li>• If the burner fails to start or the failure reoccurs, call a burner maintenance specialist</li> </ul>
<b>Oil burner fan starts, the flame is ignited, but failure is detected</b>	Boiler photocell is dirty / defective photocell	Clean photocell. If the cleaning does not help, have a burner maintenance specialist replace the element.
<b>The oil burner cannot be fired up, oil for the burner is available</b>	<ul style="list-style-type: none"> <li>• Possible ignition fault</li> <li>• Incorrectly adjusted ignitersPossible ignition transformer fault</li> <li>• Possible software relay</li> <li>• fault</li> </ul>	Check igniter position. Have a qualified burner service technician identify the exact problem.

## 8. Spare parts

### 8.1. YP210 (50003 B)

POS	CODE	QTY	Nimitys	Description	По предмету	Type
1	100503	1	levy	levy	шасси	40kW
2	10110410E	1	istara	Sticker	шасси	10000 50h
3	103381	1	Sovuttipöytä	Chimney	Труба дымовая	M150K-M200K
4	103966_2	1	Tyypäpläki	Type plate	мануальная дверца	MEPU 210
5	103885	1	Puuhellin	van	Березовый	4kW (6000)
6	130006	1	Termosuoja	Termoisol	Термоизолятор	2
7	130007	1	Suoja	Cover	Защита	
8	200254	1	Uuri	Furnace	Котел	210 kW p.l.p.
9	250020	1	Suoja	Cover	Защита	
10	900106	1	Pöytä	Burner	Копелка	Open top 3k
11	910076	10	Kuulokuvut	Hex bolt	Болт	M10x20
12	912510	31	Ponnusruuvi	Hex head screw	Саморез	4.8x13
13	920007	18	Kuulokuvut	Hexagon Nut	Гайка	M10

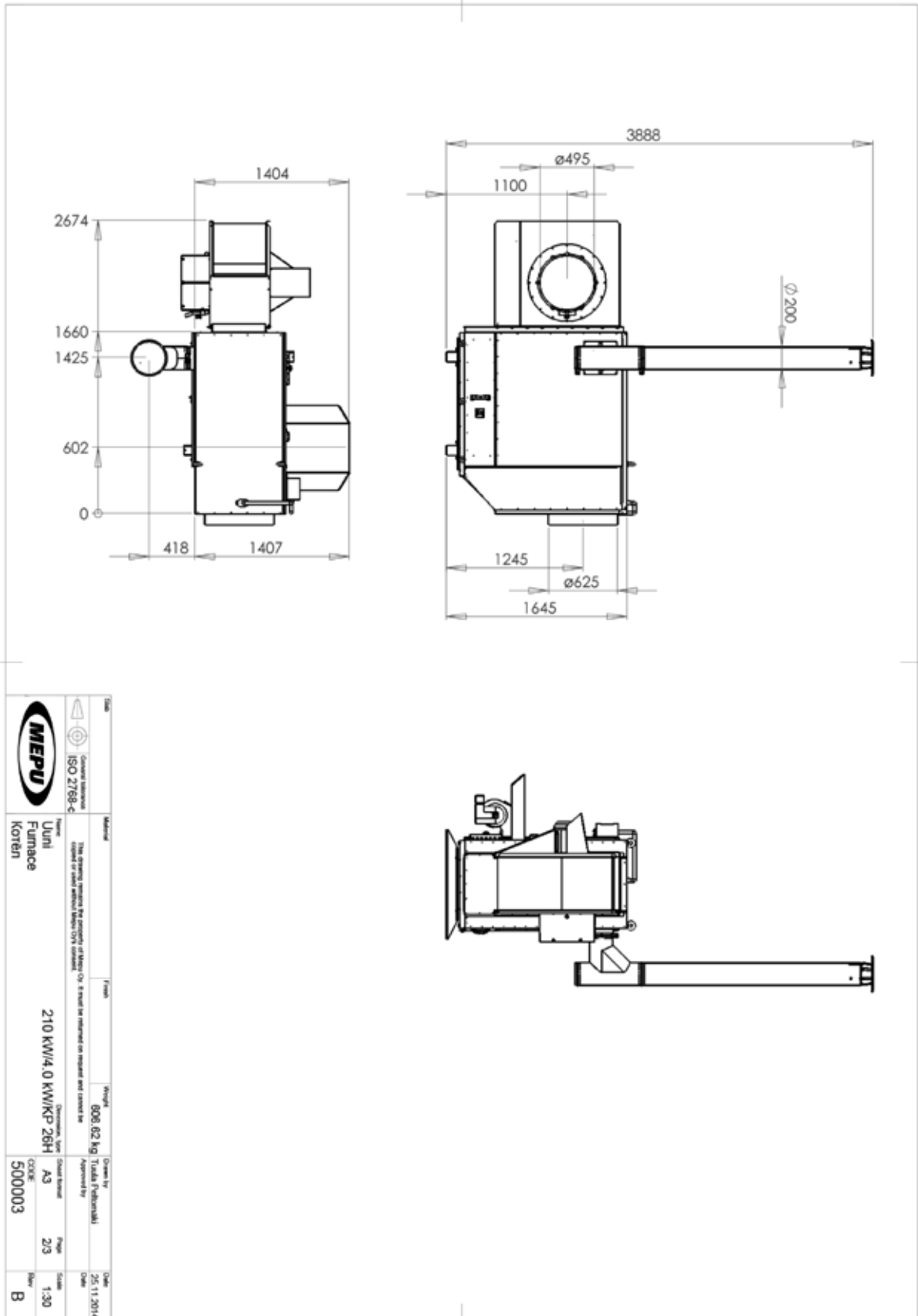
General Information: ISO 2708-C

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Drawn by: 6006-62 Mj (Salla Työsuojelu)

Checked by: A3

Approved by: 28.11.2014



## 8.2. YP250 (50004 B)

POS	CODE	QTY	Наимен.	Описание	По русским	Тип
1	101104RSE	1	Топка	Щетка	индивидуал	Топка 50h
2	1025254	1	Улит	Фуркаса	Котва	250h KW
3	1033811	1	Самурдурду	Самурду	Труба алюминев	М150h-KP20h
4	103846_2	1	Турдурду	Турдурду	Корпус котла	MEPU 250
5	1038864	1	Пидан	Пидан	Корпус котла	5.5kW 1450mm
6	107844	1	Леву	Пидан	Пидан	5.5kW
7	1300054	1	Терморидит	Терморидит	Терморидит	2
8	1300197	1	Сиджа	Сиджа	Защита	Защита
9	250400	1	Сиджа	Сиджа	Защита	Защита
10	9001107	1	Пидан	Пидан	Пидан	KP-24-11
11	910076	18	Корпус котла	Корпус котла	Корпус котла	M10000
12	9125110	31	Пидан	Пидан	Корпус котла	4h-13
13	920007	18	Корпус котла	Корпус котла	Корпус котла	M10

**MEPU**  
Furnace  
KOTEN

250 kW/5,5 kW/KP 26H

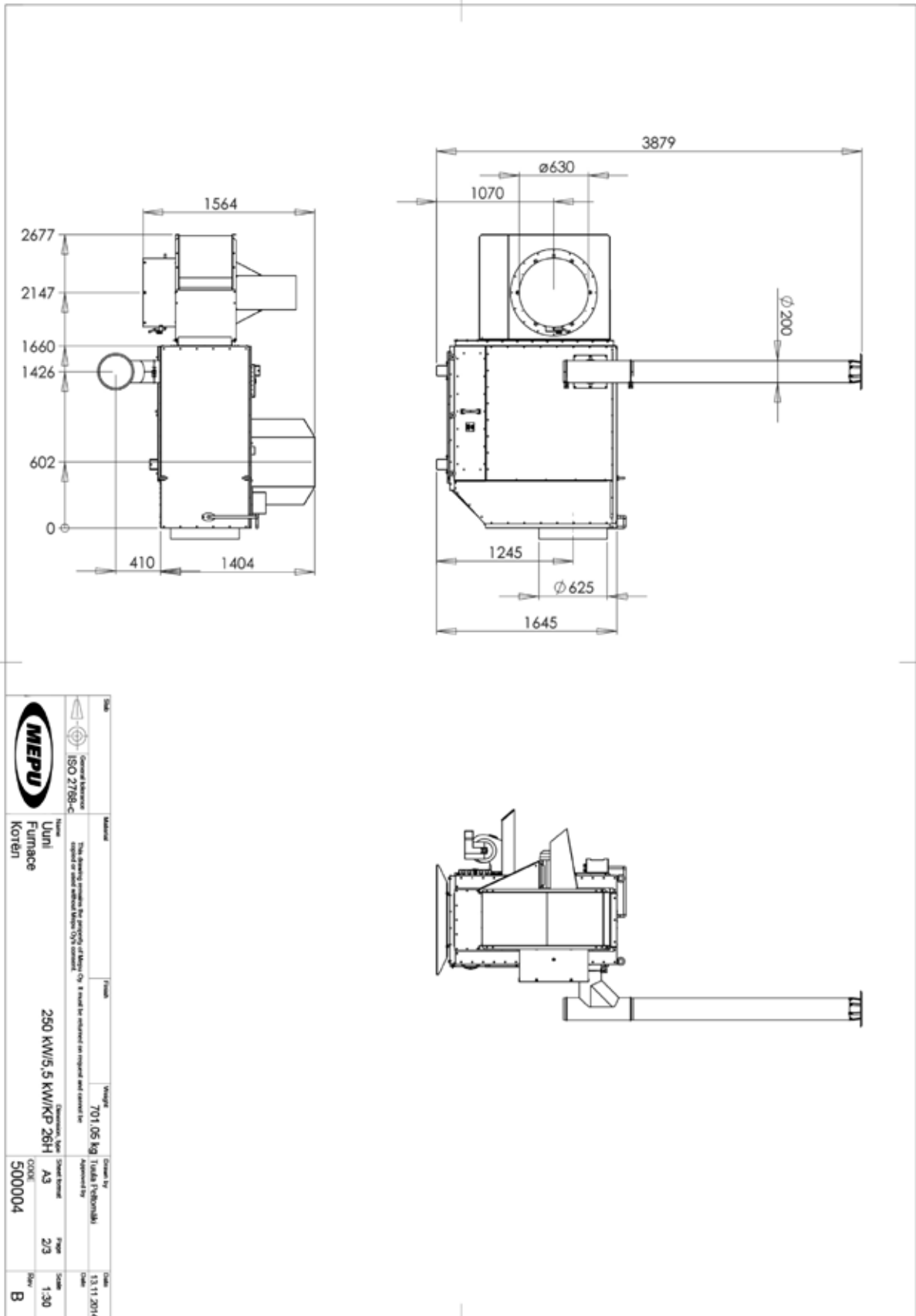
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Rev: B

ISO 2798-C

701 06 kg (Total including fuel)

13.11.2014



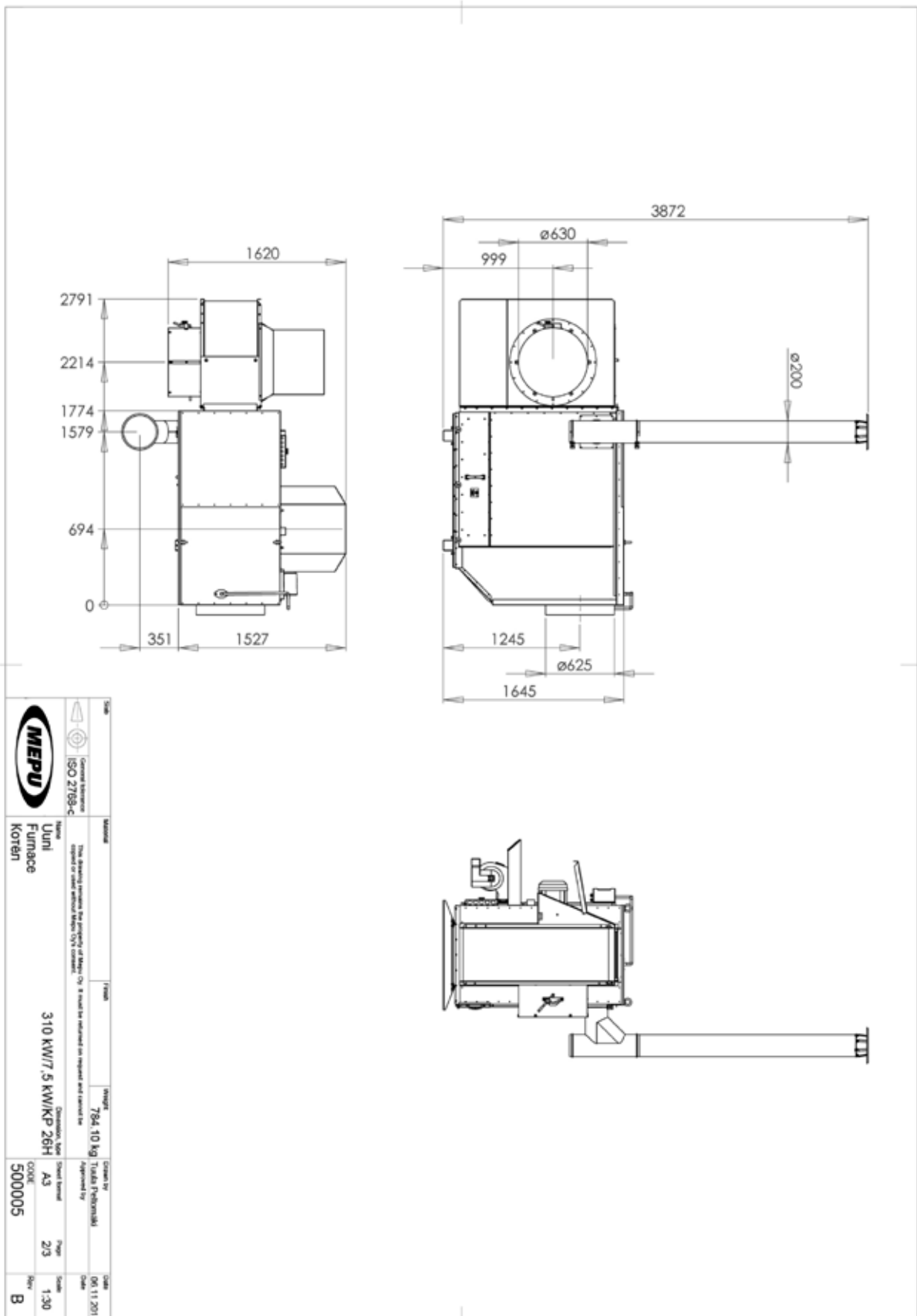
### 8.3. YP310 (500005 B)

POS	CODE	QTY	Nimitys	Description	По предмету	Type
1	1011049FE	1	Torni	Sticker	маркировка	Torshita 50h
2	103381	1	Sorvopelturi	Chimney	Грыфол дымовая труба	M150h-M205k
3	103846_4	1	Tyypöytäliik	Type plate	жаропрочный толкатель	MEPU 310
4	103881	1	Suoja	Cover	Защита	
5	103887	1	Puhodin	fan	Вентилятор	7.5kW 1.450rpm
6	138006	1	Termohöytäli	Thermobarrel	Термокачтор	2
7	300377	1	Uuseli	Furnace	Котёл	310 kW
8	200620	1	Suojajo	Cover	Защита	
9	900107	1	Peltin	Burner	Горелка	GP-26 H
10	910096	22	Kalustelevä	Hex bolt	Болт	M10x20
11	912510	25	Pöytäruuvi	Die head screw	Саморез	4.8x13
12	920007	22	Kuusiörmöliik	Hexagon Nut	Гайка	M10

Name: **Uuni**  
 Description: **Furnace**  
 Weight: **784,10 kg**  
 Code: **5000005**  
 Scale: **1:20**  
 Date: **08.11.2014**

ISO 2768-C  
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### 8.4. YP400 (500006 C)

POS	CODE	QTY	Nimitys	Description	Но позиция	Type
1	10110419E	1	Isena	Sticker	наклейка	Isostala 50H
2	103381	1	Sovopistev	Chimney	дымоотводная труба	M150H-M200K
3	103846_5	1	TypypaTыл	Type plate	типослэццоц'нон'накно	MEPU 400
4	1	Suoja	Cover	Защита		
5	103888	1	puhkaalin	fan	Вентилятор	11kW 1450rpm
6	139004	1	termoerottin	Thermobat	термоэлектрон	Z
7	250400	1	Suoja	Cover	Защита	
8	565446	1	Uuni	Furnace	Котел	400kW
9	900109	1	Poltin	Burner	горелка	DP-50 H
10	910096	22	Kuulokoulu	Heat coil	Солит	M10/020
11	912510	16	Poivoukset	Oil hood screw	Самодержатель	48x13
12	920007	22	Kuulokoulu	Heat coil	Самодержатель	M10

Weight: 1053,92 kg (Total Puhkolin)

ISO 2709-C

MEPU Logo

Uuni Furnace Kotelin

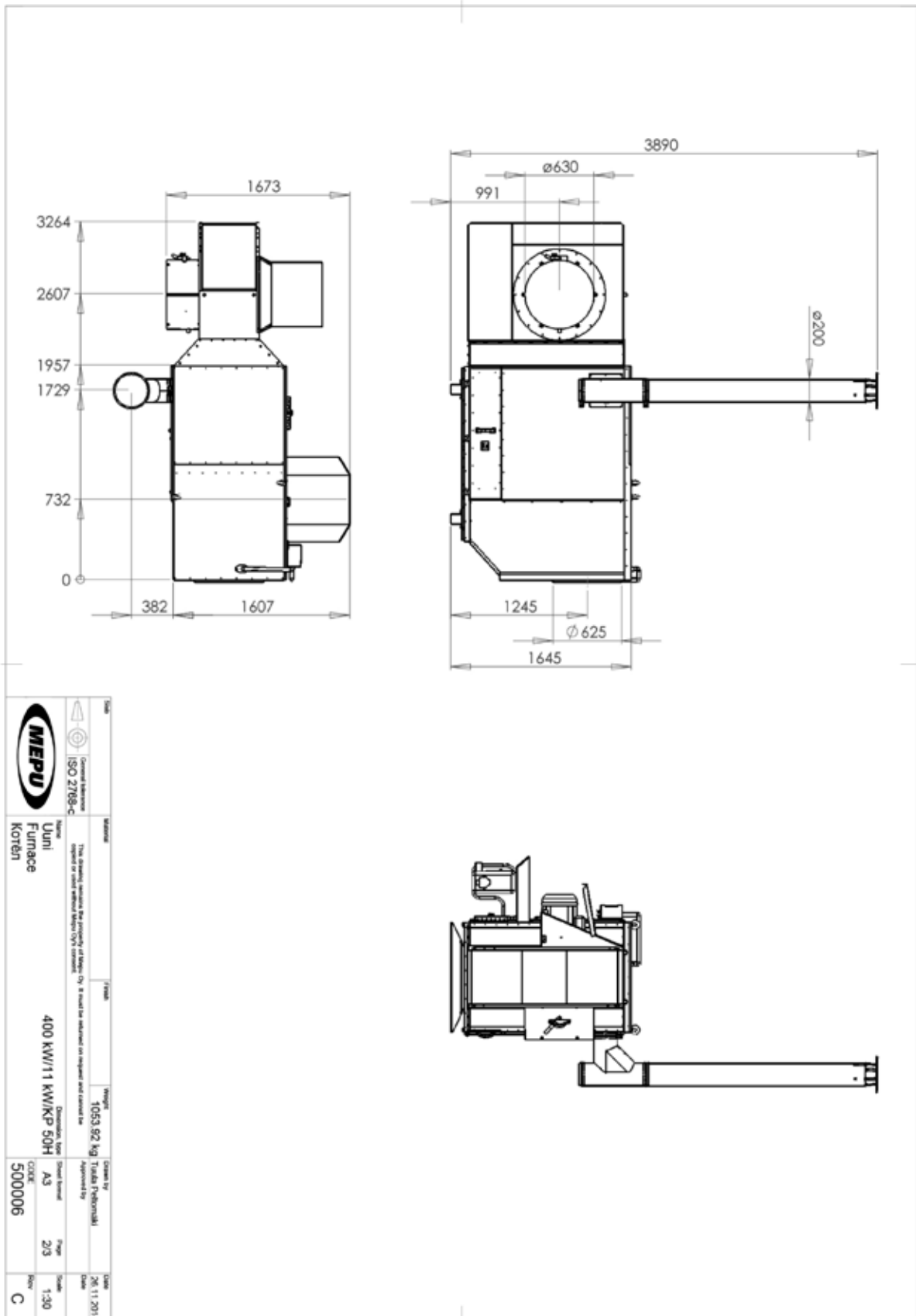
400 kW/11 kW/KP 50H

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Date: 20.11.2014



### 8.5. YP500 (500007 C)

POS	CODE	QTY	Nimitys	Description	По предмету	Type
1	10110495E	1	Tarno	Säcker	накваша	Torbilla 50H
2	1010381	1	Särväpötyyppi	Chimney	тырвя жамакон	М1150H-M202K
3	102866_5	1	Tyypöytäkieli	Type plate	жонкацый падшэе	MEPU 400
4	1032881	1	Suoja	Cover	Зашыта	
5	1038888	1	Puhdaisin	Fan	Венуватэп	11kW 1450rpm
6	1383006	1	Termostaatti	Thermostat	Тэрмаацтар	2
7	200-900	1	Uuni	Furnace	Катла	500 kW
8	2506200	1	Suoja	Cover	Зашыта	
9	565654	1	Luoppo	Furnace	Функцыя	YP500
10	900109	1	Poltin	Burner	Бурат	BP-501H
11	910075	4	Kuulokuvut	Hex bolt	Бурт	M8x25
12	910096	26	Kuulokuvut	Hex bolt	Бурт	M10x20
13	912510	16	Porkutavat	Drill thread screw	Сверт	4.8x13
14	920007	22	Kuulokuvut	Hexagon Nut	Гайка	M10

Weight: 1054,83 kg

ISO 2768-C

MEPU logo

Uuni Furnace

500 kW/11 kW/kP 50H

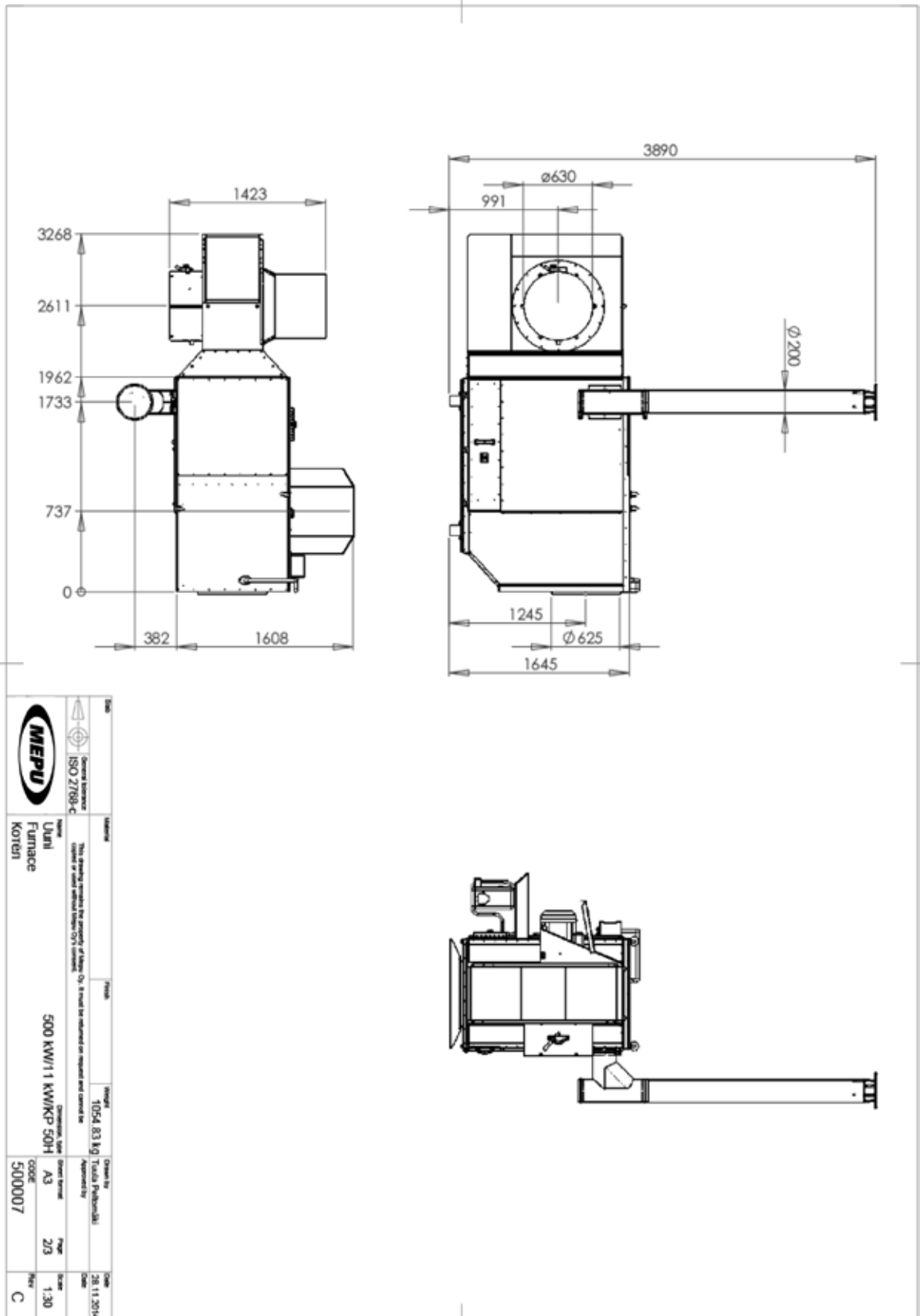
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Author: C



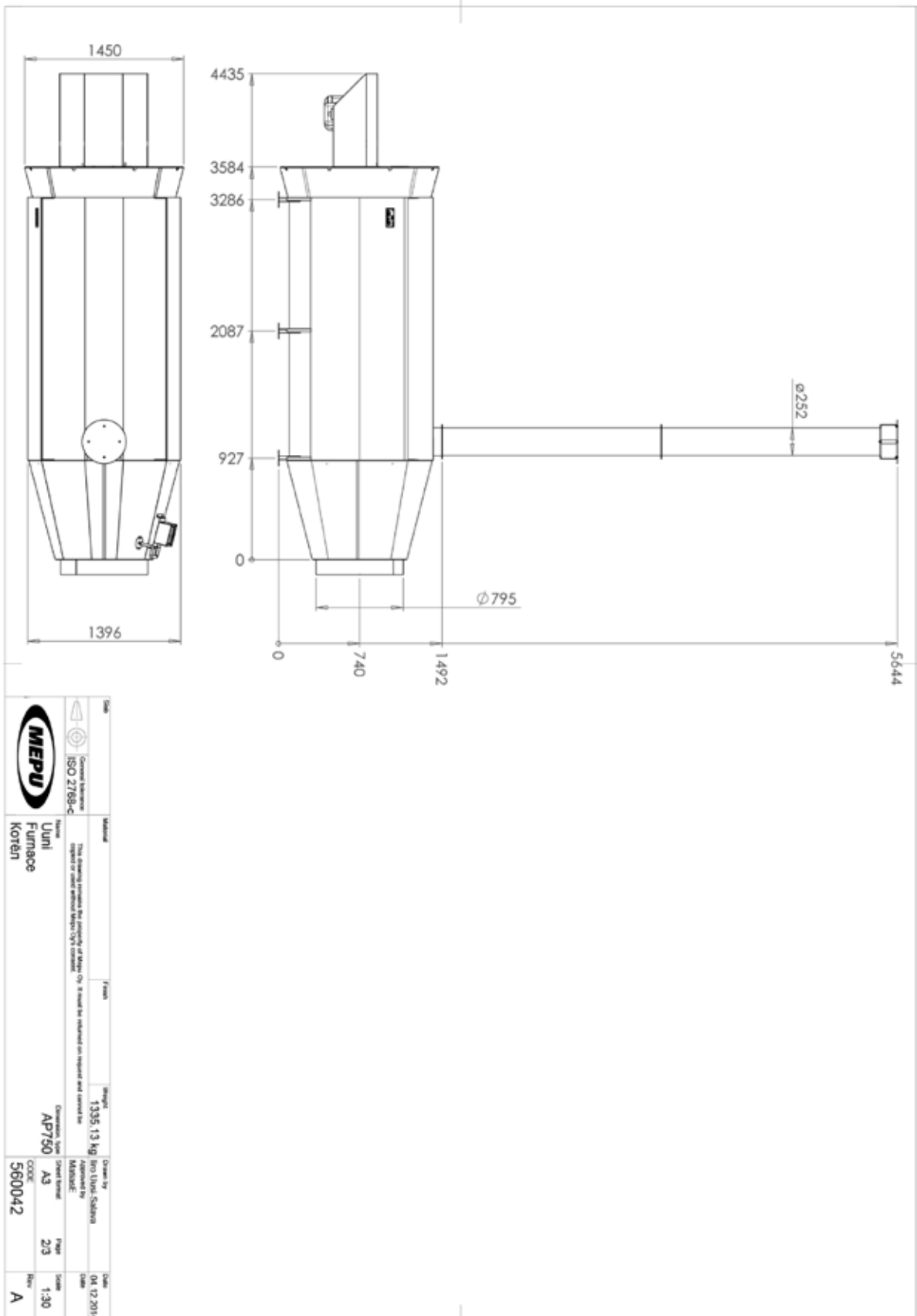
### 8.6. AP750 (560042 A)

Posl	CODE	QTY	Имя/Иг	Description	Но процесс	Type
1	103798	1	Подп	Holder	Агрегатная	
2	103804_2	1	Тыпгазоп	Type pipe	Исполнительное	AP-750
3	137928	1	Зовуаппу	Силикней	Трива аааааааа	аааа
4	138004	1	Термоаааа	Термоаааа	Термоаааааа	2
5	200004	1	аааааа	Роаааа	аааааааааа	
6	550423	1	Уаааа	Руроааа	КОАА	AP750
7	900116	1	Роааа	Роааа		AP-80 H

**MEPU**  
 UNANI  
 FURNACE  
 KOTEN

Weight: 1335,13 kg  
 Dimension, max: AP750  
 CODE: A3  
 CODE: 560042

Approved by: MARCHÉ  
 Date: 04.12.2014  
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 Rev: A



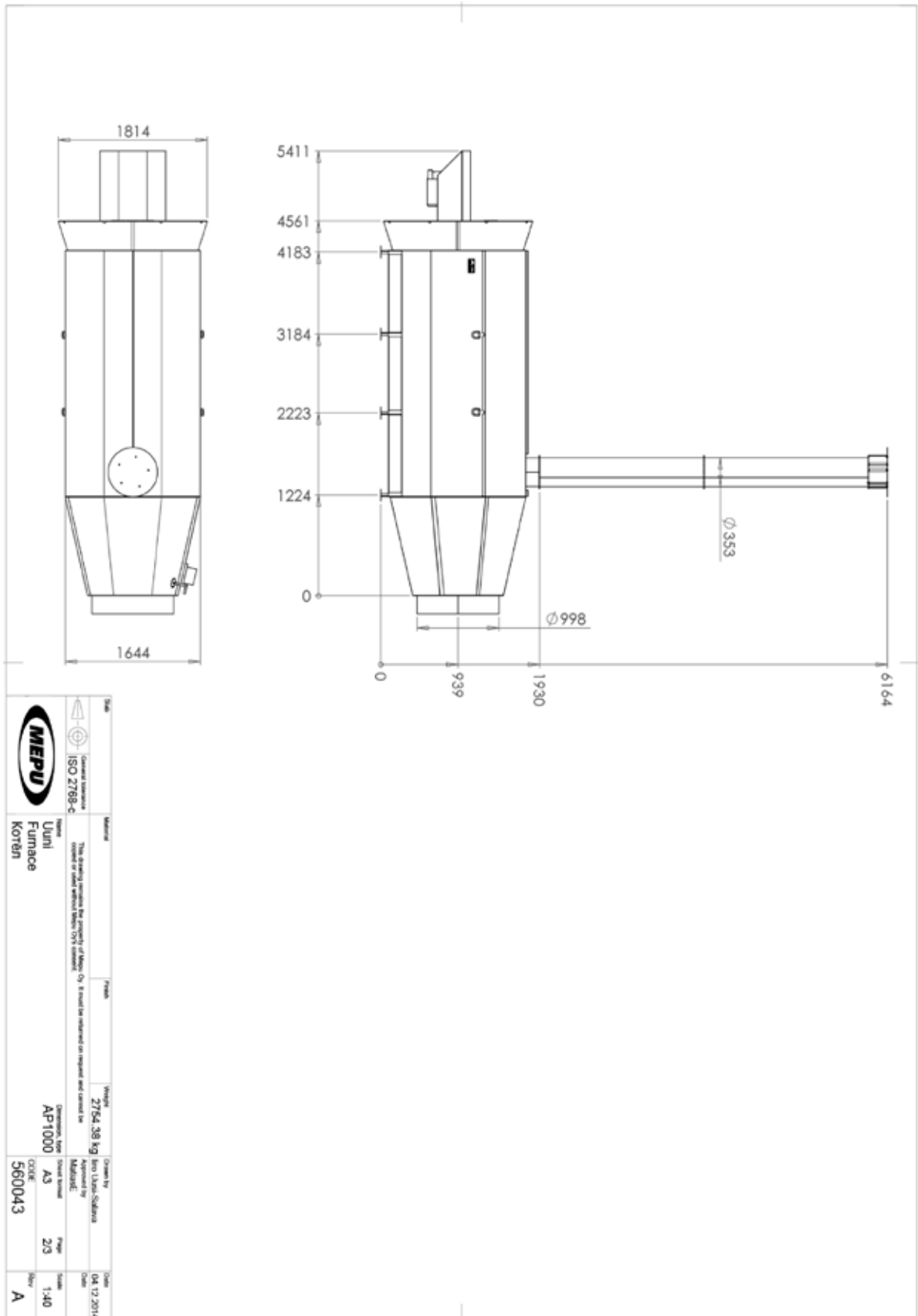
### 8.7. AP1000 (560043 A)

POI	CODE	QTY	Nimitys	Description	Py pycyau	Type
1	103798	1	pidin	hooder	защитный кожух	AP1000
2	103844_8	1	tyypnallu	Type pipe	типовая трубка	8250
3	137554	1	scruppppu	Chimney	труба дымохода	AP1000
4	138004	1	termoosidni	Thermocouple	термопара	AP1000
5	150400	1	uvuni	Pytnooc	корпус	AP1000
6	200204	1	skranitke	Pytnooc	сепаратор	AP1000
7	900113	1	pidin	burner	горелка	AP1000

Name: **Uuni**  
 Furnace  
 Kõrtn  
 Weight: **2754,38 kg**  
 (ISO 2768-C)  
 This drawing contains the property of MEPU. It is found in internet or internet web cannot be copied or used without MEPU's consent.

Drawn by: **AP1000**  
 Checked by: **A3**  
 Date: **04.12.2014**  
 Scale: **1:40**  
 Code: **560043**  
 Rev: **A**





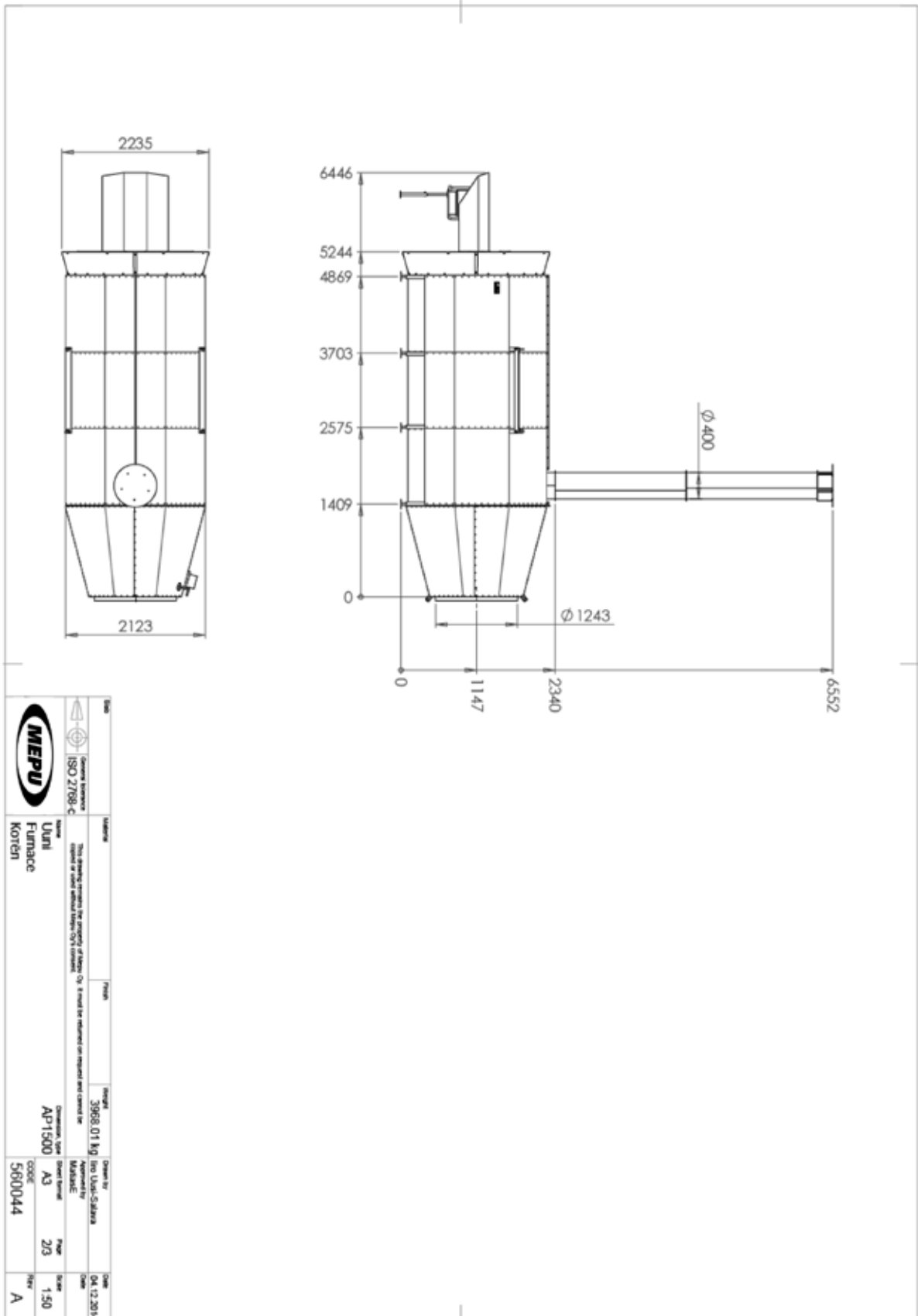
### 8.8. AP1500 (560044 A)

POZ.	CODE	QTY	Název	Description	Pro výrobu	Type
1	103798	1	POZEM	POZEM	АВТОМАТИКА	AP1500
2	103844_2	1	Typovými	Typovými	ПОДРОБНОСТИ	AP1500-D1400
3	137941	1	SOULPUSOU	Chemický	ПОДРОБНОСТИ	AP1500-D1400
4	138008	1	Technickým	Technickým	ПОДРОБНОСТИ	AP1500
5	130400	1	UUN	Furnace	КОША	AP1500
6	800004	1	SPRÁVA	Provoz	SPRÁVA	AP1500
7	5200114	1	POZEM	Provoz	SPRÁVA	AP1500

Name: **Uun**  
 Furnace  
 KOTEN

Weight: 3968,01 kg  
 Invo Unit: Štuka  
 Date: 04.12.2014

Order No: AP1500  
 Code: A3  
 Rev: 1/3  
 Part No: 560044  
 Rev: A



### 8.9. APS1220 (136976 D)

POS	CODE	QTY	Nimitys	Description	По описанию	Type
1	1362715	1	Korpi	Conus		Tectam VDCR90
2	1362719	1	Varkko	Neting		Tectam VDCR90
3	1362720	1	Varkko	Neting		Tectam VDCR90
4	137506	1	Kytki	Sign	Индикатор	MEPU
5	138006	1	Tennolaitin	Thermolait	Термолацун	2
6	311057	1	Jalka	Leg	Нога	
7	903011	1	Pohja	Burner	Опекана	Tectam VDCR 90 GAH
8	912510	4	Pörmurvi	Drill head screw	Саморез	4.8x13
9	912531	2	Pörmurvi	Drill head screw	Саморез	5.3x19
10	920006	24	Kuusiinruuvi	Hexagon Nut	Гайка	M12
11	910188	1	Kierrosruuviporaus	Special joint pipe	Труба со специальным соединением	SR 6.1000 (4.3000)
12	910125	24	Kuusiinruuvi	Hex bolt	Болт	M12x30

**BOM**

General reference: ISO 2768-C  
The drawing is the property of MEPU Oy. It must be returned or signed and stored by the customer.

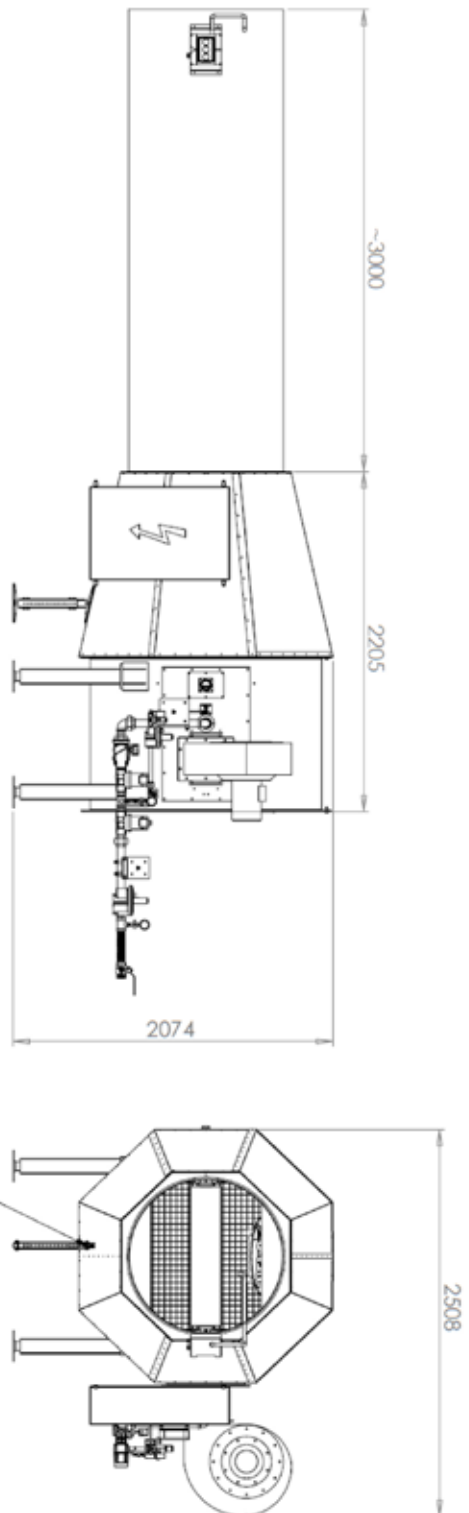
MEPU  
Suoraakaasu-uuni  
Direct fired furnace  
Газовая печь с прямой горелкой

Order No: APS1220  
Code: A3  
136976

Weight: 898 21 kg  
Approx. by: M12x30

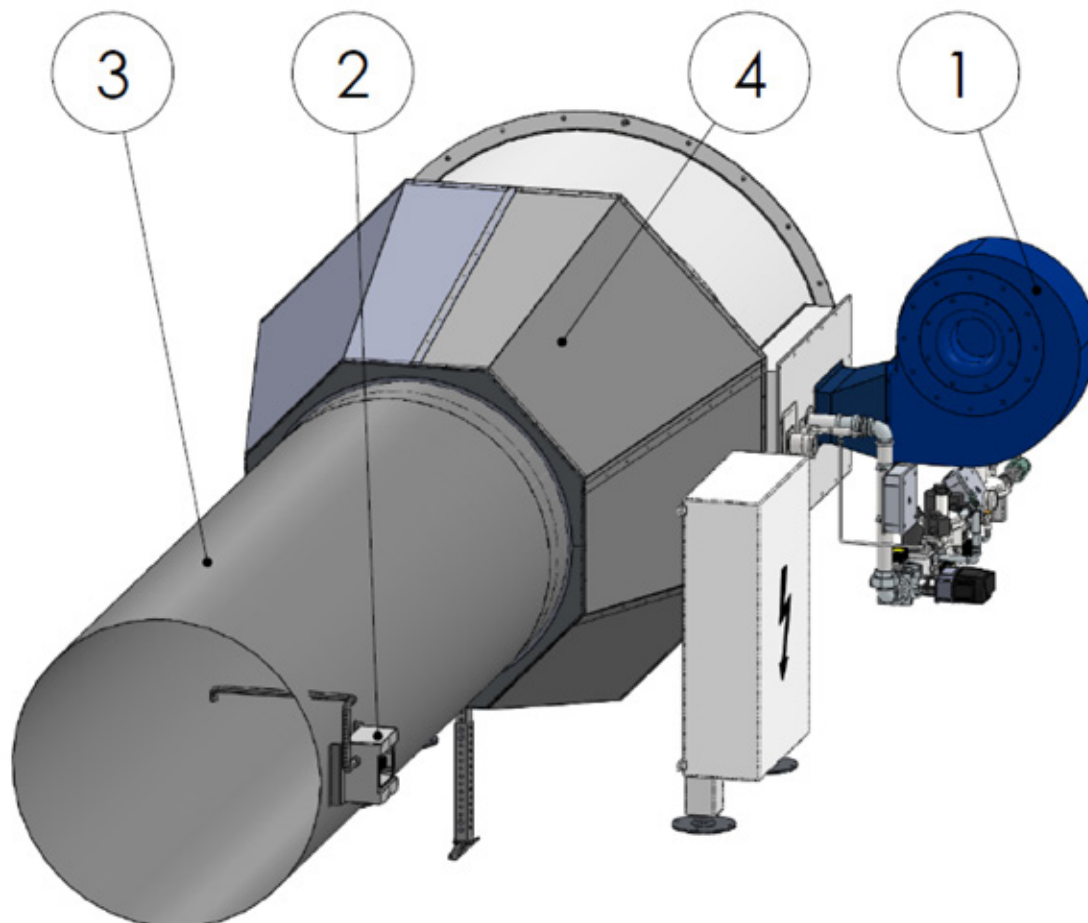
Page: 1/4  
Scale: 1:30  
Rev: D  
Date: 20.05.2013

Etäisyys kuivauskemosta min. 6m.  
Distance from drying cell min. 6m.  
Расстояние от шахты мин. 6м.




Jalka 311057 hitsataan tarvittaessa kartioon kiinni.  
Leg 311057 will weld to the cone if it is necessary.  
Нога 311057 будет сварной конуса, если это необходимо.

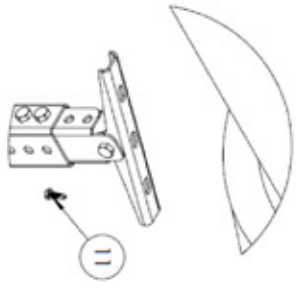
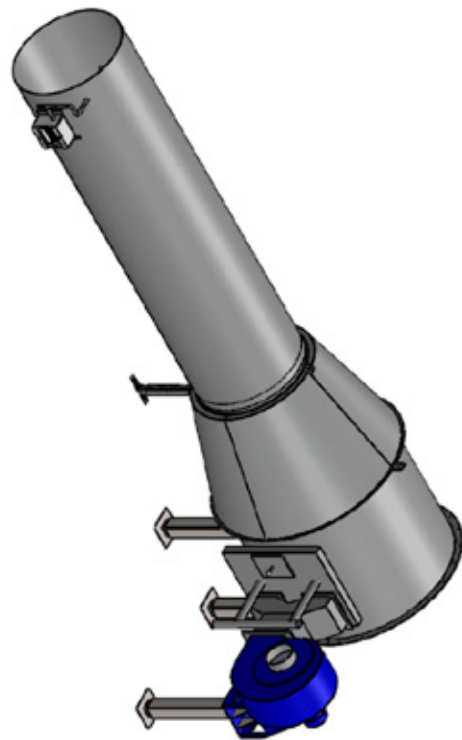
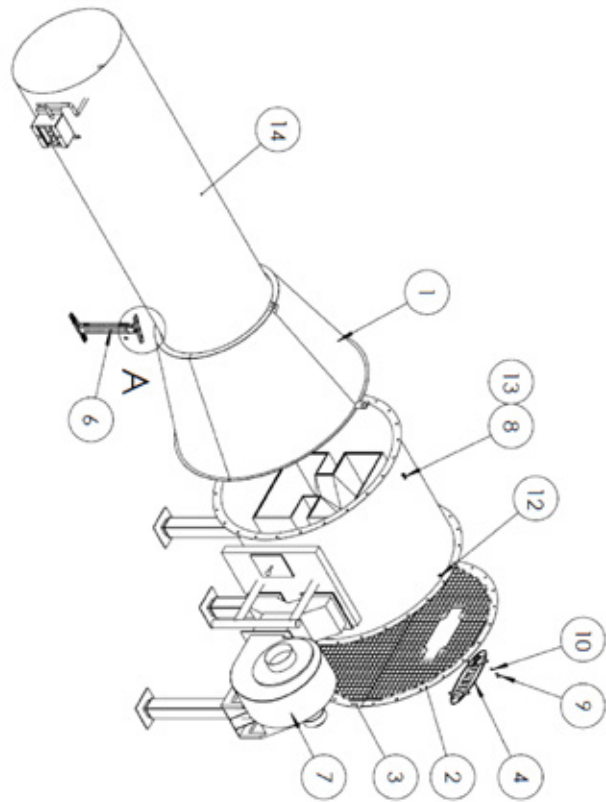
Scale	Material	Finish	Weight	Drawn by	Scale
ISO 2768-C	This drawing contains the property of Mepu Oy. It must be retained in original and cannot be copied or used without Mepu Oy's consent.		698,21 kg	Action Nurmenniemi	20.05.2013
	Суроккаасу-чурни Direct fired furnace Газовая горелка прямой впрыск		Dimension type APS1220	Sheet format A3	Page 2/4
			CODE 136976	Rev D	Scale 1:30



POS	CODE	QTY	Nimitys	Description	По русски	Type
1	903011	1	Poltin	Burner	Горелка	Tecflam VDCR 90 GM
2	138006	1	Termostaatti	Thermostat	Термостат	2
3	970183	1	Kierresaumakanava	Spiral joint pipe	Труба воздушная	SR ø1000 L=3000
4	136715	1	Kartio	Conus		Tecflam VDCRH90

Slab	Material	Finish	Weight 698.21 kg	Drawn by Anton Nieminen	Date 20.05.2013
	General tolerance ISO 2768-c	This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.			Approved by
	Name Suorakaasu-uuni Direct fired furnace Газовая горелка прямой впрыск	Type APS1220	Sheet format A4	Page 3/4	Scale 1:20
			Code 136976	Rev D	

### 8.10. APS1630 (136975 D)



DETAIL A  
SCALE 1 : 5

POS	CODE	QTY	Nimitys	Description	No piece	Type
1	136979	1	Korho	Ceruz		rectform VDCSRH
2	136982	1	Veikko	Veikko		rectform 2,3MW VDCSRH
3	136983	1	Veikko	Veikko		rectform 2,3MW VDCSRH
4	137504	1	Kyylle	Sign		MEPU
5	138004	1	Termistori	Thermocouple	2	
6	311047	1	Jalka	Leg		
7	900008	1	Poltin	Burner		rectform VDCSRH2
8	910072	24	Kuulionruuvi	Hex bolt		M8x1,6
9	910129	24	Kuulionruuvi	Hex bolt		M12x20
10	912510	4	Potkuruuvi	Drill head screw		4.8x13
11	912531	2	Potkuruuvi	Drill head screw		4.8x19
12	920008	24	Kuulionruuvi	Hexagon Nut		M12
13	921013	24	Aluslehti	Washer		22-10
14	920147	1	Keräsuojakotelo	Spinal joint pipe		Ø8 e8000 L=2000

General tolerance ISO 2768-C

This drawing represents the property of MEPU Oy. It must be returned on request and cannot be copied or used without MEPU Oy's consent.

Weight: 421,68 kg

Drawn by: Antton Nikström

Approved by:

Date: 18.04.2013

MEPU

Model: Suoraakaasu-uuni

Direct fired furnace

Модель: Прямая топчатая горелочная установка

Revision: A3

Drawn: APS1630

Page: 1/4

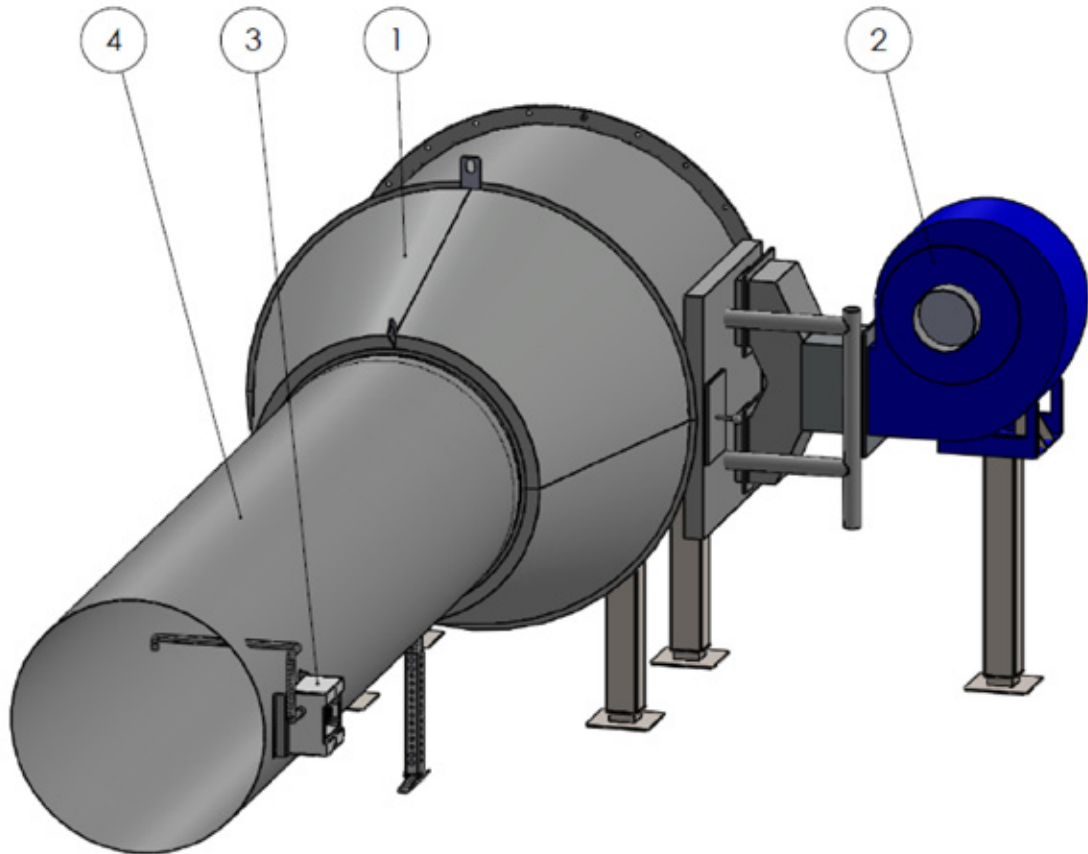
Scale: 1:30

Code: 136975

Rev: D







POS	CODE	QTY	Nimitys	Description	По русски	Type		
1	136979	1	Kartio	Conus		Tecflam		
2	903008	1	Poltin	Burner	Горелка	Tecflam VDCRH60 (1630kW)		
3	138006	1	Termostaatti	Thermostat	Термостат	2		
4	970147	1	Kierresaumakanava	Spiral joint pipe	Труба воздушная	SR ø800 L=3000		
Slab		Material		Finish	Weight	Drawn by	Date	
General tolerance		Material		Finish	421.68 kg	Anton Nieminen	18.04.2013	
ISO 2768-c		This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.				Approved by		Date
		Name		Type	Sheet format	Page	Scale	
		Suorakaasu-uuni		APS1630	A4	3/4	1:20	
		Direct fired furnace			Code	Rev		
		Газовая горелка прямой впрыск			136975	D		

### 8.11. APS2500 (136721 E)

POS	CODE	QTY	Nimitys	Description	To pyrocoo	Type
1	136715	1	Korpi	Conus		teclom V0CCH90
2	136719	1	Veslo	Welling		teclom V0CCH90
3	136720	1	Veslo	Welling		teclom V0CCH90
4	137504	1	Sydy	Sign	Moayna	MEPU
5	138006	1	Termovaliti	Thermostat	Termostaatti	2
6	311007	1	Jalka	Leg	Hoira	
7	903012	1	Poltin	Burner	Poltturi	teclom V0CCH 90 2500XW
8	910123	24	Kuulokuvut	Hex bolt	Sout	M12x20
9	912510	4	Porokuvut	Drill head screw	Caavoget	4x12
10	912531	2	Porokuvut	Drill head screw	Caavoget	4x19
11	920008	24	Kuulokuvut/Hevi	Hexagon Nut	Caavoget	M12
12	920183	1	Kemuriputkustansona	Spool joint pipe	Tevelo astumavara	Ø25 @1000 LxØ300

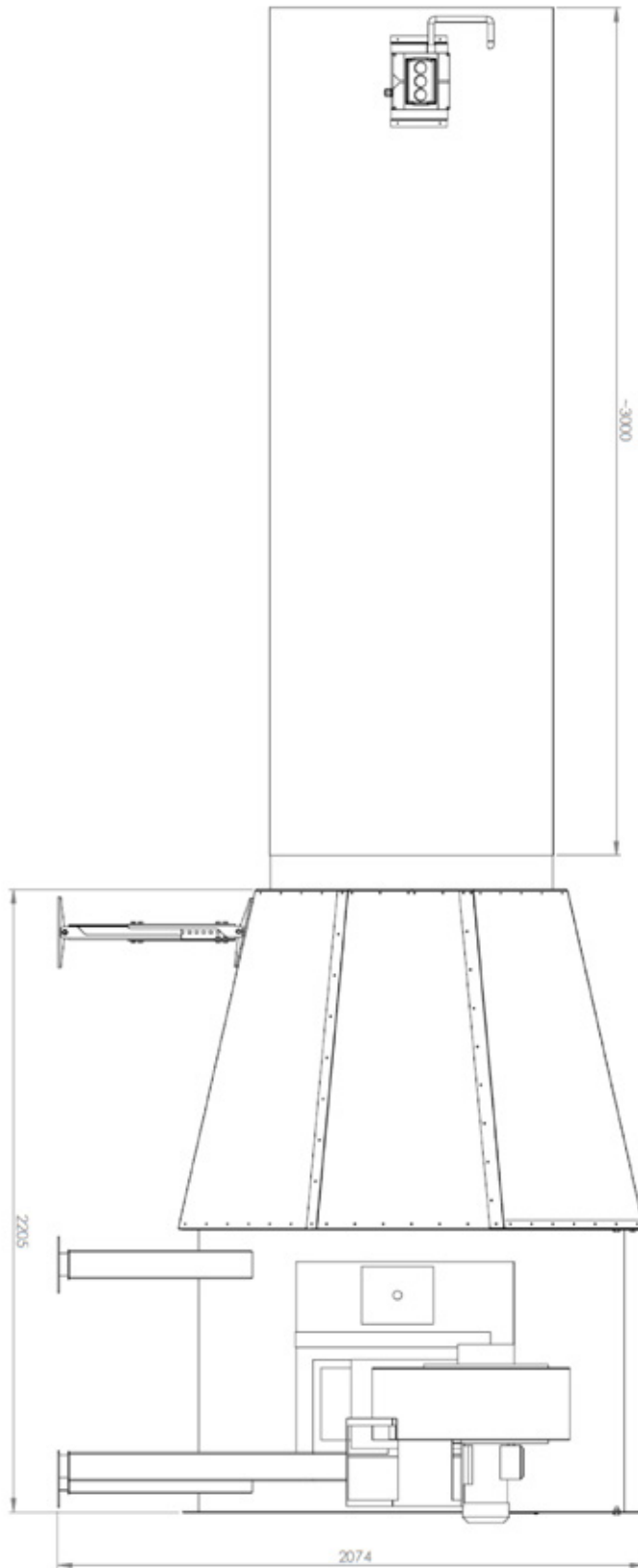
**MEPU**  
 Suora-asennus  
 Direct fired furnace  
 Rasobin ropanna ripausohje

Model: APS2500  
 Code: 136721

Weight: 5419.65 kg  
 Dimensions: 1411x1012x1112 mm

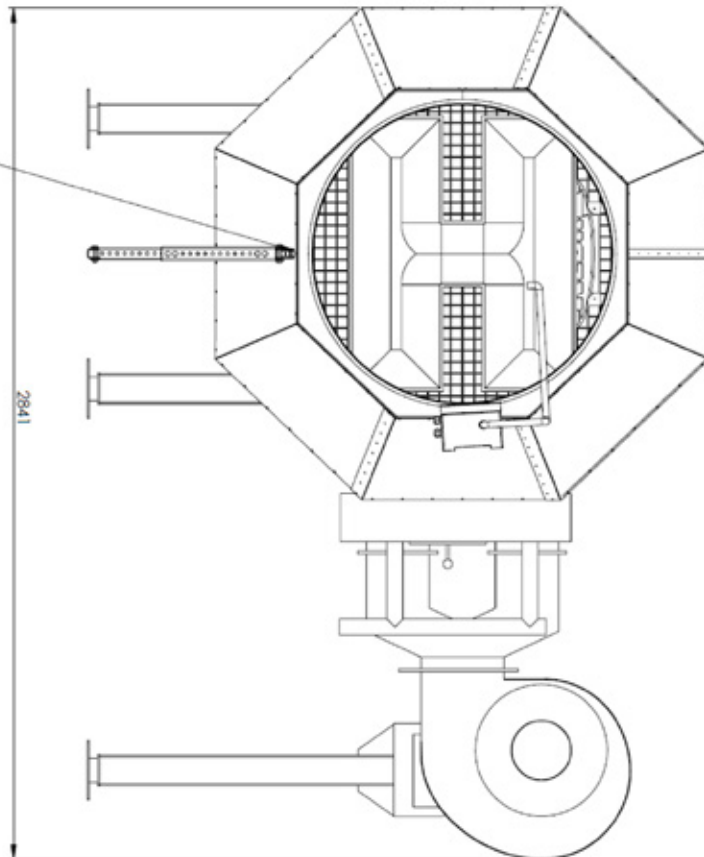
Drawn by: Jarmo Lindfors  
 Checked by: A3  
 Scale: 1:15  
 Date: 14.11.2012

Etäisyys kuivauskämöistä min. 6m.  
Distance from drying cell min. 6m.  
Расстояние от шахты мин. 6м.

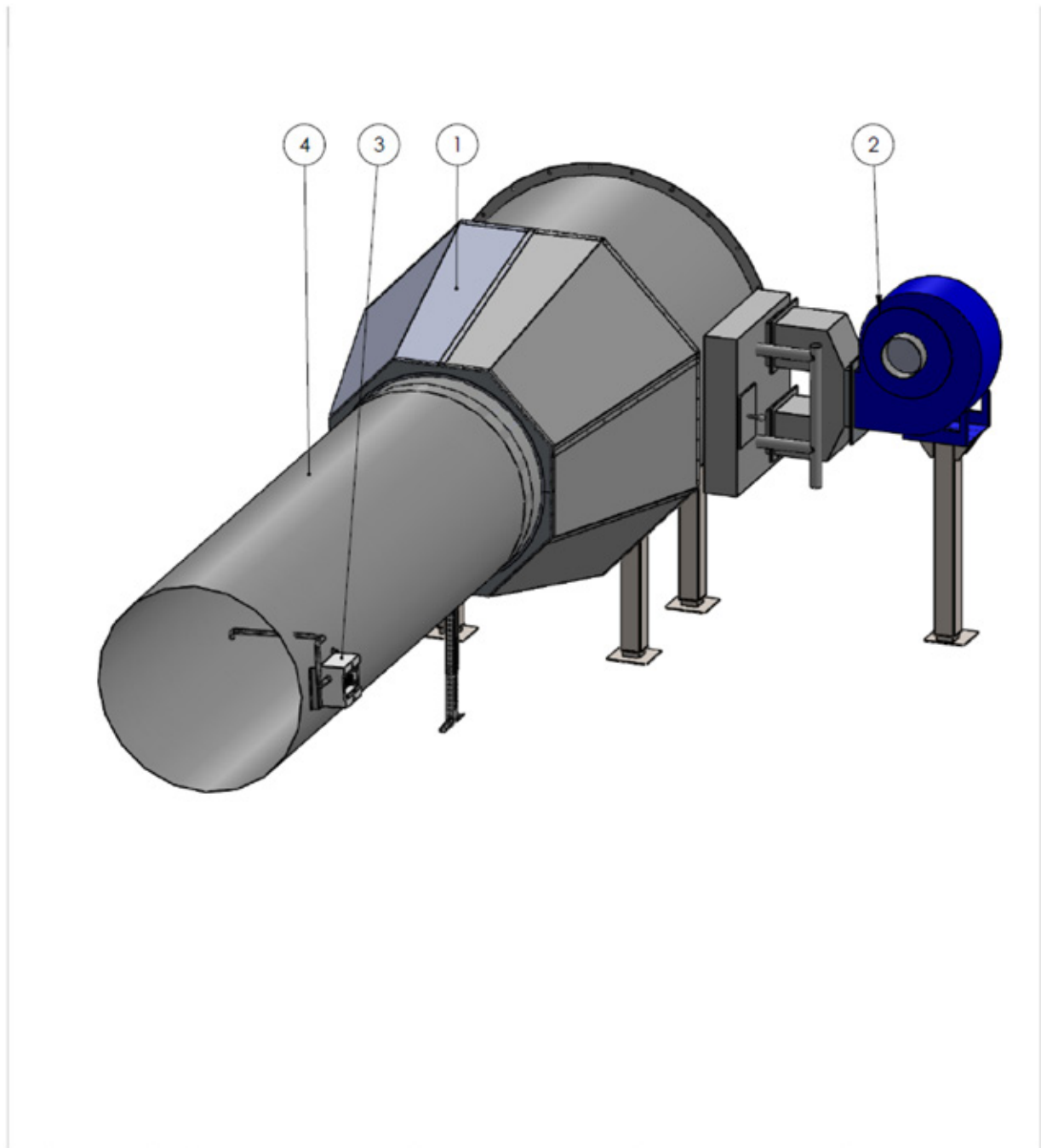




 General Machine ISO 2768 C	Name Suoraakaasu-uuni Direct fired furnace Газовая горелка прямой горюльк	Weight 549 65 kg 12136.0 Lb	Drawn by Approved by Date
Scale 1:15	This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.	Sheet format A3	Page 2/5
Model APS2500	Code 136721	Date 14.11.2012	Rev E

Jalka 311057 hitsataan tarvittaessa kartonoin kiinni.  
 Leg 311057 will weld to the conus if it is necessary.  
 Нога 311057 будет сварной конуса, если это необходимо.



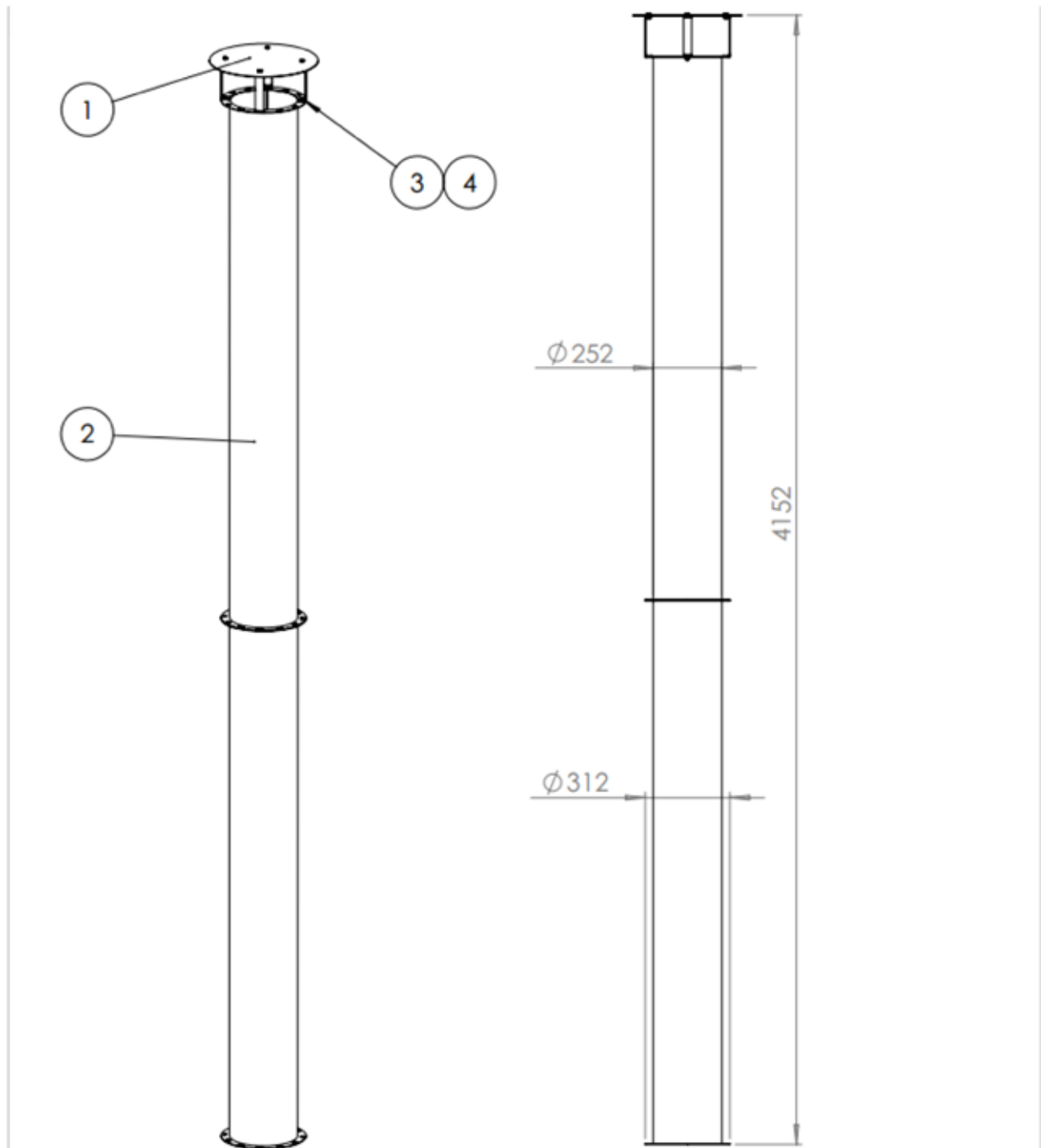
<b>MEPU</b> Suorakaasu-uuni Direct fired furnace Газовая горелка прямой подачи	Model APS2500	Weight 3419,65 kg	Drawn by Jukka Lindfors
This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.	Sheet format A3	Date 14.11.2012	Date 14.11.2012
APS2500	Page 3/5	Scale 1:15	Rev E
136721	136721		



POS	CODE	QTY	Nimitys	Description	По русски	Type			
1	136715	1	Kartio	Conus		Tecflam VDCRH90			
2	903012	1	Poltin	Burner	Горелка	Tecflam VDCRH 90 (2500kW)			
3	138006	1	Termostaatti	Thermostat	Термостат	2			
4	970183	1	Kierresaumakanava	Spiral joint pipe	Труба воздушная	SR ø1000 L=3000			
Slab		Material		Finish	Weight	549.65 kg	Drawn by Jaakko Lindfors	Date 14.11.2012	
 General tolerance ISO 2768-c		This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.				Approved by		Date	
		Name Suorakaasu-uuni Direct fired furnace Газовая горелка прямой впрыск			Type APS2500		Sheet format A4	Page 4/5	Scale 1:25
							Code 136721	Rev E	

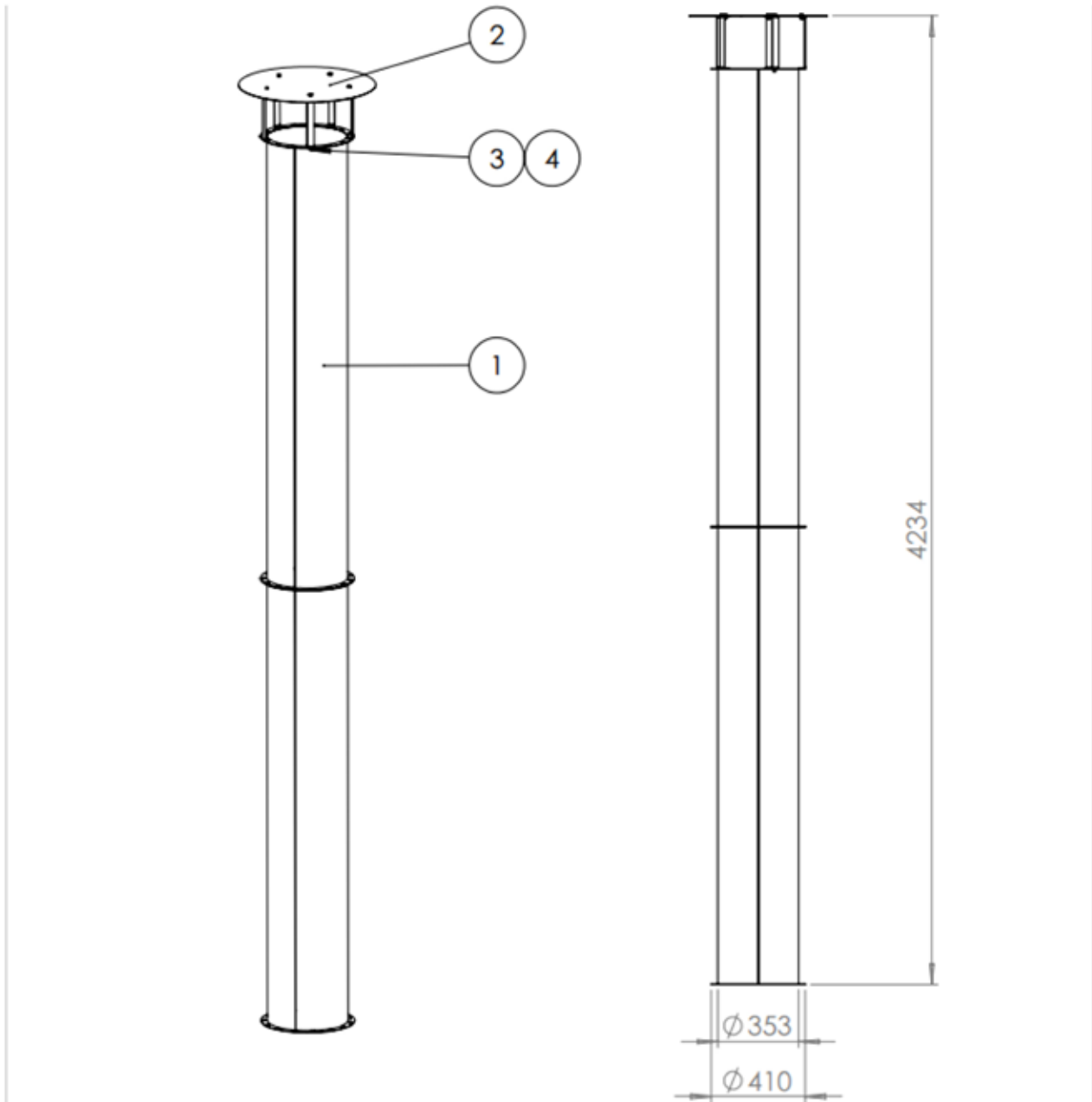


### 8.13. Chimney Ø250mm (137525)



POS	CODE	QTY	Nimitys	Description	По русски	Type	
1	510505	1	Sadehattu	Rain cup	Дождь чашки	ø250	
2	510507	2	Savupiippu	Chimney	Трубы дымовая	ø250 L=2000	
3	914501	32	Kuusiouuvi	Hex bolt	Болт	M8x16 A4	
4	923789	32	Kuusiomutteri	Hexagon Nut	Гайка	M8 A4	
Slab		Material		Finish	Weight	Drawn by	
					29.76 kg	Jaakko Lindfors	
General tolerance		This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.				Approved by	Date
ISO 2768-c						MatiasE	19.05.2014
		Name		Type	Sheet format	Page	Scale
		Savupiippu Chimney Трубы дымовая		ø250	A4	1/1	1:20
					Code	Rev	
					137525	B	

### 8.14. Chimney Ø350mm (137526)



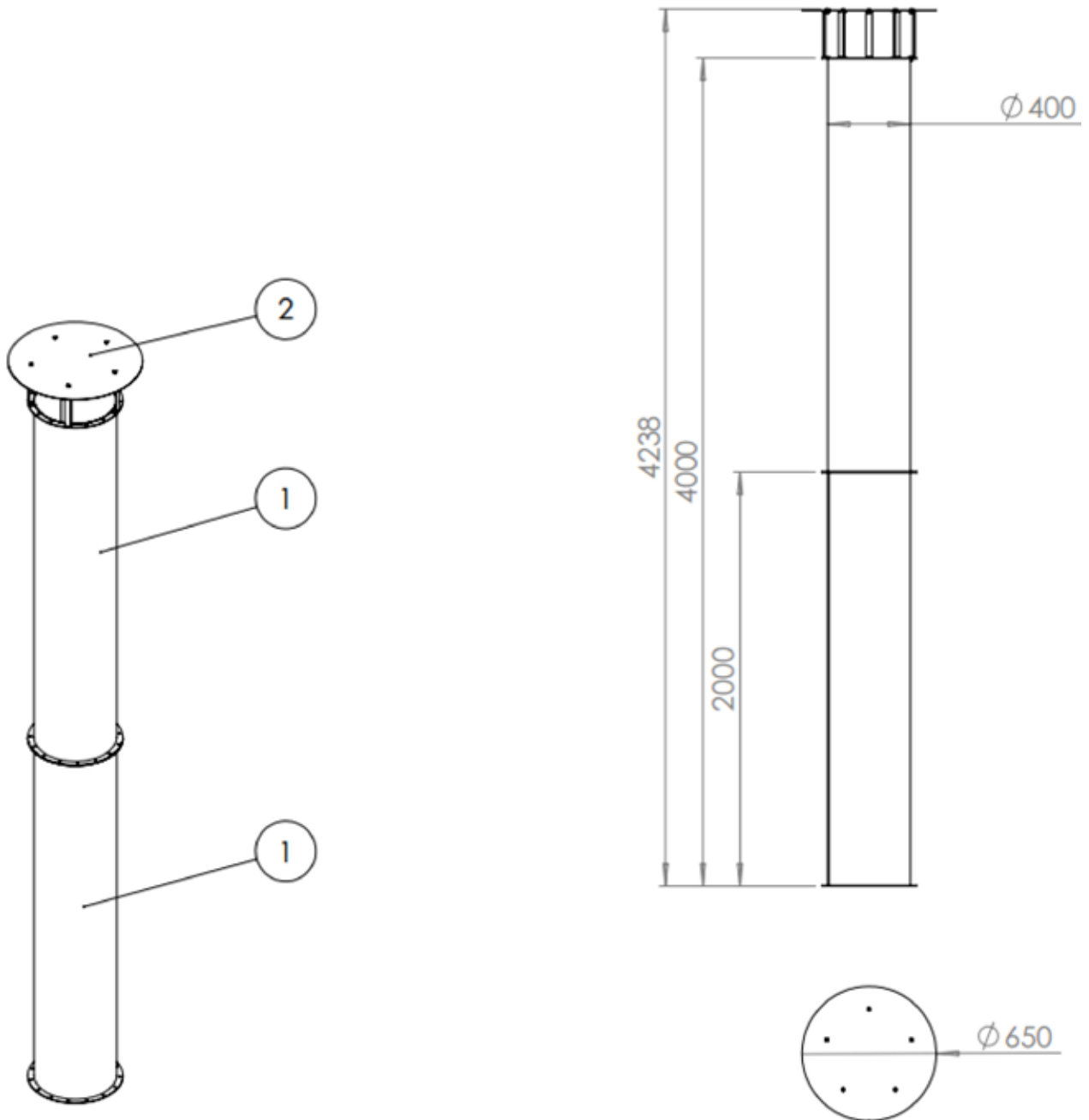
POS	CODE	QTY	Nimitys	Description	По русски	Type
1	550340	2	Savupiippu	Chimney	Chimney	ø350 L=2000
2	550360	1	Suoja	Cover	Cover	ø350
3	914501	38	Kuusioruuvi	Hex bolt	Болт	M8x16 A4
4	923789	38	Kuusimutteri	Hexagon Nut	Гайка	M8 A4

Slab	Material	Finish	Weight 61.54 kg	Drawn by Jaakko Lindfors	Date 19.05.2014
	General tolerance ISO 2768-c		This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.		Approved by
	Name Savupiippu Chimney Трубы дымовая	Type ø350	Sheet format A4	Page 1/1	Scale 1:25
			Code 137526	Rev B	



### 8.15. Chimney Ø400mm (137941)



POS	CODE	QTY	Nimitys	Description	По русски	Type	
1	150436	2	Savupiippu	Chimney	Трубы дымовая	AP-1500 hormi	
2	550420	1	Sadehattu	Rain cup	Дождь чашки	AP-1500	
3	914501	35	Kuusioruuvi	Hex bolt	Болт	M8x16 A4	
4	923789	35	Kuusiomutteri	Hexagon Nut	Гайка	M8 A4	
Slab		Material		Finish	Weight	Drawn by	
General tolerance ISO 2768-c		This drawing remains the property of Mepu Oy. It must be returned on request and cannot be copied or used without Mepu Oy's consent.				90.21 kg	MiikkaH
		Name		Dimension, type	Sheet format	Page	Date
		Savupiippu Chimney Труба дымовая		AP1500, D=400	A3	1/1	24.10.2014
					CODE	Scale	Rev
					137941	1:30	A







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[www.mepu.com](http://www.mepu.com)