

## Technical conditions

Tube gas fired infrared radiant heater

KM 10-U; KM 15-U; KM 22,5-U; KM 30-U; KM 36-U; KM 45-U

## Attachment B2



# Assembly guide for tube radiant heaters KM-U 8 and 9 meter long

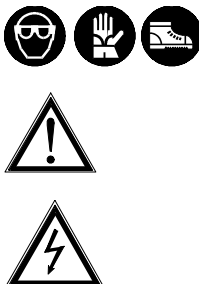
**REGULATIONS and WARNING:**

Installation, assembly, repair work on gas and gas supply facilities can only be carried out by qualified personnel of an authorized organization (In CZ - Decree No. 458/2000 Sb.). During installation, the technical and safety regulations (relevant norm, regulations, etc.) must be observed. The installation must be carried out according to the design documentation and the relevant standards.

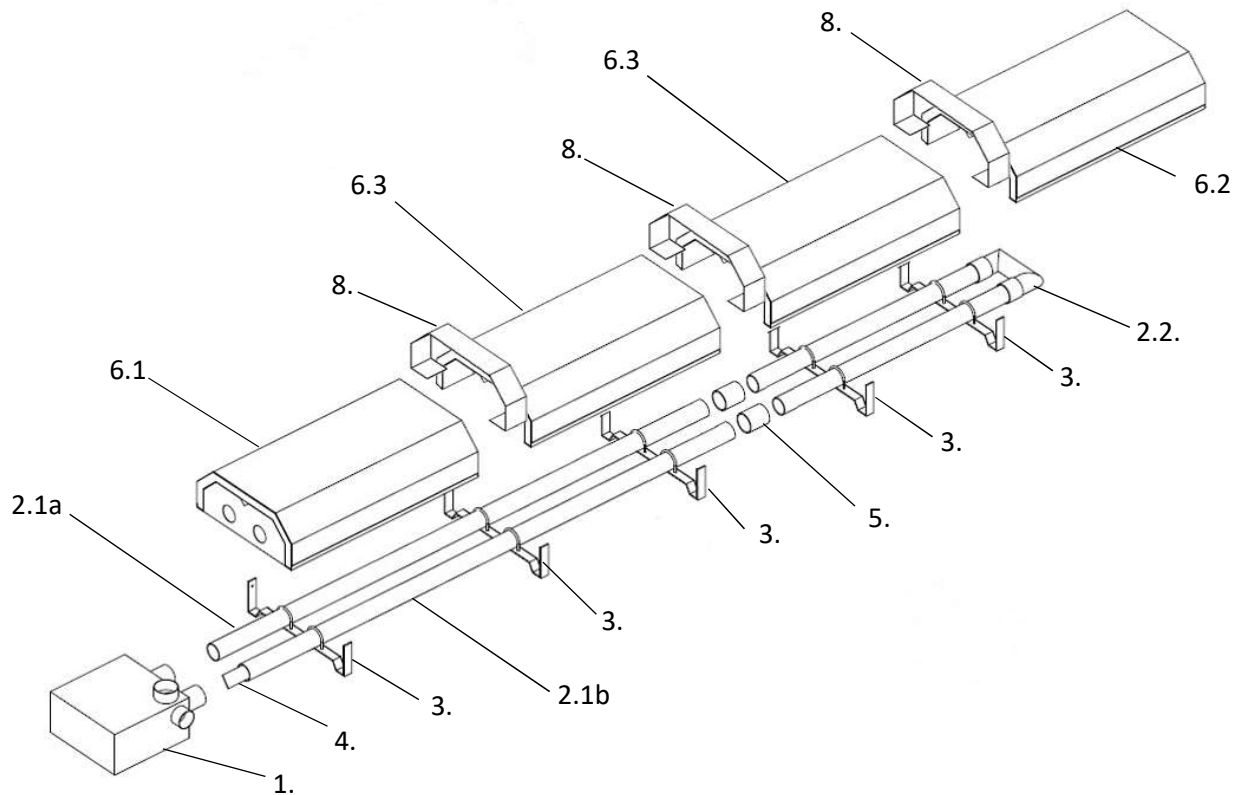
**BEFORE INSTALLATION, CHECK IF THE LOCAL CONDITIONS OF FUEL DISTRIBUTION, FUEL FEATURES, PRESSURE AND SETUP OF THE APPLIANCE ARE COMPATIBLE!**



The infrared heater may only be commissioned by a Kotrbatý company service technician or a technician certified by Kotrbatý company for this purpose. **The commissioning of the radiant heater can be done only after revision of electro and gas piping.**



The manufacturer is not responsible for damage caused by unprofessional or unauthorized assembly. When installing radiant heaters, it is the duty of the assembly organization to ensure the full safety of workers and persons moving around the installation site and to take all precautions to prevent damage to surrounding devices. Work actions performed at height above 1.5 m are classified as **work at heights** with all the mandatory consequences!

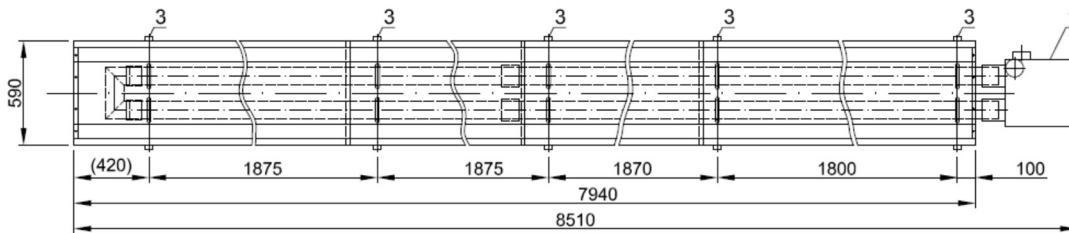


**Fig.I**

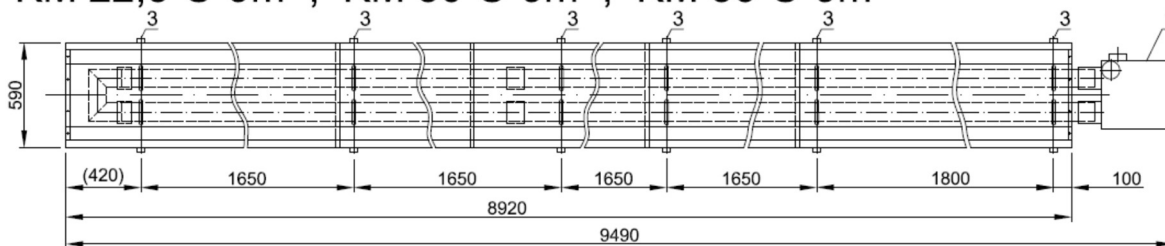
Legend:

- 1. Burner box
- 2. Heating surface - tubes
  - 2.1 Heating surface - entering part
    - 2.1a Burner's tube
    - 2.1b Fan's tube
  - 2.2 Heating surface - end part
- 3. Hangers
- 4. Baffle
- 5. Joints – Tube heating surface (*assembled*)
- 6. Stainless-steel reflector (*order based with or without insulation*)
  - 6.1 Stainless-steel reflector front
  - 6.2 Stainless-steel reflector end
  - 6.3 Stainless-steel reflector middle
- 7. Fan box (*KM-1 and KM45-U only*)
- 8. Insulation clip (*version with insulation only*)

### KM 22,5-U-8m



### KM 22,5-U-9m , KM 30-U-9m , KM 36-U-9m



**Fig.II**

- 1) Check, if delivery contains all parts according to specification and **fig.I, resp. II**

Delivery contain electrical connecting cables with special connectors – keep for commissioning technician

- 2) Fasten to the ceiling (or other construction) with sufficient load capability required number of suspension points with nodal chain long enough to be able to suspend the heater to demanded height. Distance between hangers (3) according to **fig. II**. **NOTE** - it is recommended to leave 15 cm longer suspensions for easier adjustment of water level later
- 3) Move the loose hangers (3) from the transport position to the positions according to **fig.II** and demanded heater type. **NOTE !** - The first hanger from the burner is from manufacture fixed and tight to position and has to remain on the same place!



- a) Tube paint is not abrasion resistant so work carefully!
- b) Hangers (3) with exception of the first one are all loose with defined spaces around the tube - **DO NOT TIGHT THEM!**

- 4) Lift the heating surface (tubes (2) with allocated hangers (3)) to the defined height. First the front heating surface (2.1) with the fixed hanger and then the rear one (2.2) with the end elbow

**ATTENTION!**



- a) Underlay before lifting the heating surface in the touching point with some carton paper or textile, paint is not abrasion resistant!
- b) It is necessary to perform the lifting uniformly and protect the heating surface from falling down

- 5) Attach the prepared nodal chains to the screws on heating surface's hangers. Done by screws M8, which are located on the hangers (3). **The eye on the nodal chain has to be always secured by second nut M8**
- 6) The same way (steps 4, 5) continue with the end part of the heating surface (2.2)
- 7) Align both parts of the heating surface (2) into one water level using spirit level
- 8) Connect parts of heating surface (2) by two joints (5)  
There are fixed joints (5) on the tubes 2.1a and 2.1b. Insert the tubes of end heating surface (2.2) into joints (5) and mark through the nut centre points. Pull both tubes out of the joints (5) and drill in one wall of both tubes (2.2) hole of inside diameter  $\varnothing$  8,5 mm. Insert the tubes (2.2) back to the joins (5) and secure them by screws M10
- 9) Check water level and demanded height of suspension (2)
- 10) Insert the baffle (4) into the end part of FAN tube (2.1b) according to fig. I
- 11) Locate the stainless-steel reflectors (6):



**ATTENTION!**

**Before installation, it is necessary to check whether the protective foil has been removed from the stainless-steel cover.**

- a) First fix the front reflector (6.1) on the side with fixed hanger (3)
  - b) Tight the reflector to the first hanger (3) by given screws (holes are located on the reflector in the bottom bend in about 100 mm from the side)
  - c) Connect the other reflectors (6.2,6.3) with two screws and pre-drilled holes in bottom bend of the reflector (6) (screws can be found in delivered accessories)
- 12) Locate the burner box (1):
- a) Thread the burner box (1) on the tubes (2.1) on the side of the first fixed hanger (3), the window screen is located to the bottom
  - b) Through the nut mark the centre point on the tubes (2.1a) and (2.1b)
  - c) Remove the burner box (1)
  - d) Drill a hole of inside diameter  $\varnothing$  8,5 mm in one wall of the tubes (2.1a) and (2.1b)
  - e) Locate the burner box (1) back on the tubes (2.1a) and (2.1b) and secure it by screws M10
  - f) Connect the safety chain (between two nuts) to the screw M8 at the end part of the burner box (1). The second end fix to the nodal chain suspending the first hanger (3)



**ATTENTION!**

**Safety chain shall not be tight but loose**

- g) Check whether the U-screws on the first hanger are firmly tight (they may be looser because of transport or manipulation)
- 13) Assembly of gas hose:
- a) Connect the heater to the gas net by suitable gas hose



**Instructions of the gas hose manufacturer shall be followed!**

- b) Connect one end of the hose to the cock valve on the gas piping. Seal the connection
- c) The end of the hose with union nut is to be connected to the threaded end on the burner box (1)



**ATTENTION!**

**There shall be placed the sealing from delivered accessories between union nut and the threaded end on the burner box (1)!**

- d) It is important to assembly the gas hose so not to create thrust force to the heater!
- e) At the end perform thorough gas leakage test of all the joints

14) Electro assembly:

- a) Install an ACIDUR distribution box with an inner ring at a distance of max. 1 m from the radiant heater housing
- b) Connect the corresponding cables to the distribution box according to the electrical wiring diagram of the control box
- c) If common cable routes with other power cables (e.g. crane, machine, etc.) are proposed from the control box to the radiant heater, it is recommended to use shielded cables such as JYTY instead of standard CYKY cables. The reason for this is to prevent undesired induction of voltage and thus caused faults in operation of emitters. Please contact us if necessary!



**Connection between distribution box ACIDUR and heater's burner box is performed by the service technician while commissioning the radiant heater.**

- 15) The installation of the flue gas tube is done next and eventually combustion air inlet as well according to the project documentation.