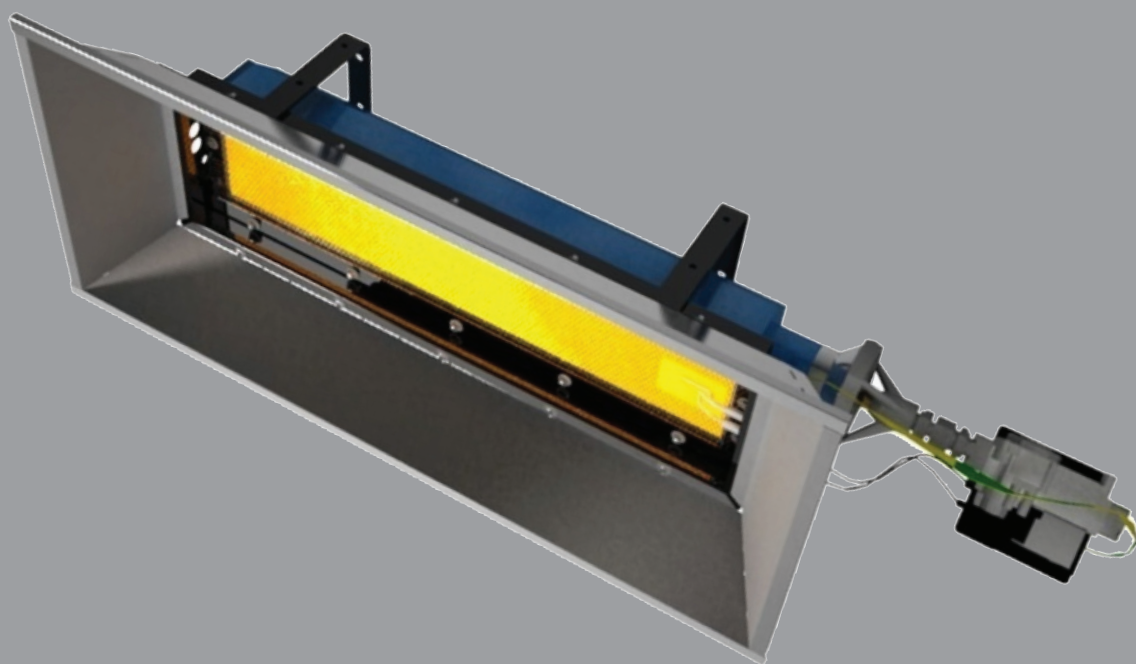


USER'S MANUAL

**NATURAL OR PROPAN -GAS WORKING
GAS INFRARED CERAMIC HEATERS**



Appliance types:
GH-7...36
(SIT, Honeywell)

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1. SAFETY INFORMATION

 **Read and understand this manual thoroughly before installing starting or servicing this equipment. The improper installation or using can cause serious damages! Keep this manual in a safe place in order to obtain information in case of incidental problems!**

GENERAL SAFETY NOTICES


Disregard of instructions and notices of this Manual can cause serious bodily injuries or damages as follows: burning, explosion, suffocation, carbon monoxide poisoning, electric shock and in extreme case death!

 **This appliance can only be used and serviced by such persons who understood and follow the instructions of this Manual If you need help or information concerning the appliances – for example installation guide or labels etc. – in that case contact with the manufacturer!**
This appliance must not be used by children and mentally or sensitively deficient persons! Take care that the children do not handle it and do not play with devices!

 **ATTENTION! Fire, burning, inhalation and explosion hazard! Keep all flammable objects as follows building materials, papers, or carton unites away from heater according to the instructions! Never use this appliance in such rooms where there are flammable volatile materials or the following materials, which can get into the device: petrol, solvent, thinner, fine grained dusty or unknown chemical materials!**

 **ATTENTION! This appliance can not be used in domestic circumstances or mobile home!**

ATTENTION! For your safety, if you smell gas do the followings:

-  **- Open windows.**
- Do not try to light any appliance.
- Do not use electrical switches.
- Do not use any telephone in your building.
- Leave the building.
- Immediately call your local gas supplier after leaving the building. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the Fire Department.

The GH type infrared heater appliances have been developed and certified in compliance with MSZ EN 419 standard and qualified for heating of industrial rooms! The function of these heater appliances to ensure heating of appointed workplace temporarily or continuously! In case of proper using the appliance guarantees safety and energy-saving operation! The combustion products issued during combustion process leave through the flue system into the open air. In case of further possible questions regarding the applicability please turn to the local Fire Protection Office!

Other standards e.g. GMBSZ can give you directions in terms of proper using of natural and propane gas as follows: leading/piping, storing etc.! Concerning the detailed content of these standards the local Bureau of Standards can help.

Carbone-monoxide poisoning: The initial symptoms of carbone-monoxide poisoning are similar to influenza namely headache, dizziness and/or nausea! If these symptoms are observed in that case the appliance probably does not work satisfactorily! First of all go fresh air, ventilate the rooms and have the appliance investigated!

Propane-gas: The propane-gas is odourless! Mercaptan-derivative as scented component is mixed into the gas to be able to observe the possible escape! In spite of the typical smell is not felt the propane gas can be present in the environmental air in case of escaping!

2. GENERAL INSTRUCTION



- Make sure that read and understood all the warnings, correct keeping of which can guarantee the safety and faultless operation!
- During the installation be always circumspect! Follow the valid instructions and recommendations!
- The appliance can be operated by specified voltage and frequency marked on its data board! The electrical connections and groundings are prepared as per MSZ EN 60335 standard!
- Electrical grounding specification: present appliance is equipped with three points grounding connection in the interests of your protection!
- It needed to ensure the sufficient quantity of combustion air if the appliance is installed without outside air supply!
- Keep away the device from the following strong effects: wind, high pressure water jet, rain or dropping water!
- The appliance must not be used in the open air!
- The application of device is STRICTLY PROHIBITED in such rooms, which are used for sleep or continuous stay!
- Keep away the flammable materials from the appliance and its near environment as follows: fuels, thinner or other flammable fluids and vapours!
- In the interests of avoiding of dust explosion do not used the device in such rooms where the degree of dust concentration is high if the device is installed without outside air supply!
- Before starting of appliance in every case check it in order to detect the possible damages! Never use damaged equipment!
- In case of Propane-gas operation never install the device in basement or from that lower being rooms! The propane-gas is heavier specific gravity than the air for this reason in case of possible escaping it will spread towards the lower located rooms!
- Only use that kind of flexible gas pipe and pressure regulator, which is offered for the appliance by the manufacturer!
- Before every starting of heater appliance check the condition of connecting gas hose and if it is particularly worn or damaged in that case exchange it for a new one specified by manufacturer!
- Preserve the equipment in genuine condition, do not leave it to grow old!
- Do not use seriously aged equipments any longer!
- Fix the appliance on such stable surface, which during operation despite warming of appliance preserves its stability!

INSTALLER'S RESPONSIBILITIES

- making up of gas and electrical connection in compliance with the specifications (it is proposed to connect with the local Building Supervisory Authority or Fire-service),
- installation of equipment in accordance with the definitions of this manual,
- installation according to the fire prevention rules,
- supply of the necessary materials/components for installation(which are not belong to appliance),
- planing of air duct systems (ventilation/connections)
- service execution,
- placing the copy of present manual at owner's disposal,
- assuring of sufficient air circulation around the appliance,
- determination and assuring of needed air for burning, ventilation and blowing in according to the specifications.

DATA BOARD

The appliance is equipped with data board, which is placed on outside of device's door. On this data board there are information concerning the type of device, gas type, electrical connection and flue types.

Manufacturer PAKOLE Trade Kft. 8000 Székesfehérvár, Börgöndi út 8-10.		Distribute: PAKOLE Trade Kft. 8000 Székesfehérvár, Börgöndi út 8-10.		 <small>UA.TR.012-10</small>  1008 14
Electrical protection: IP20		Type GH-36		
Electrical connection: AC 230V 50Hz		Nominal input: 36 kW		SVGW Nr. 12-001-3
Max.current entry: 0,15 A		Pconnecting max.: 60 mbar		
Electrical power: 35 W		Jet pressure: 16 mbar		
Category: I12H3+,I12H3P		Pconnecting min.: 20 mbar		<small>Date/place of production</small> 2018.03.20.
Series number: 13-137-P0001		Gas type: Naturalgas		
		Targeted country: GB		
		NOx: 4 PIN: 1009 CL 1599		

1. picture: Data board

CORROSIVE MATERIALS

ATTENTION! Do not use the appliance in such place where corrosive materials can be in the air! If the appliance has to be applied in this circumstances outside air has to be ensured for combustion air!

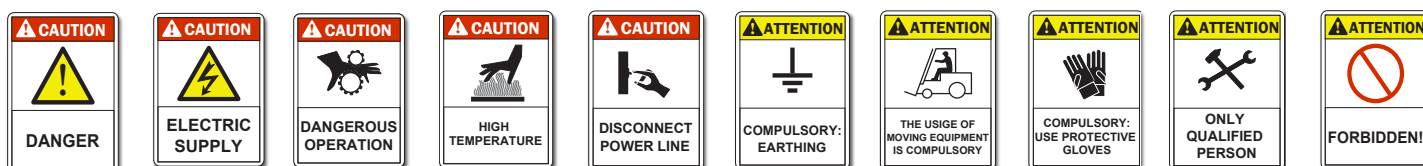
The manufacturer can not assume responsibility for fault of equipment in case the installation is not happened according to the above. This responsibility concerns completely the installer. In order to avoid such eventualities, if it is not certain to fit to the building or activity, ask our colleague for help

Both the owner and the installer have to identify every possible material, which can be present in the building (inflammable materials,corrosive materials, halo hydrocarbons etc.), and with knowledge of these materials must be planed the heater system!

STANDARDS AND LAWS

Every appliance installation must be satisfied the valid laws and standards. These laws refer to the gas and electrical installation respectively the ventilation (special specifications refer to park houses, airplane hangars etc).

SAFETY SIGNS



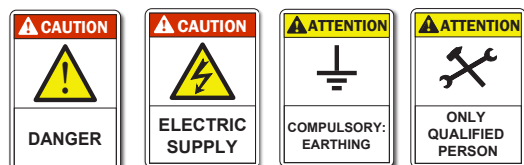
SAFE USAGE



Please observe the following rules during installation, first set-up, usage or maintance:

- Installation must be carried out always strictly complying with the current standards of the country where the appliance is going to be used and following, of course, the instructions given by the producer.
- The installation and maintenance operations of the unit can be carried out by qualified and trained personnel only.

Qualified service engineers are those having specific technical experience and/or valid license in the field of heating and cooling installation for home and industry. In any case, call the Manufacturer office or the closest dealer (www.pakole.com) and ask for further informations.



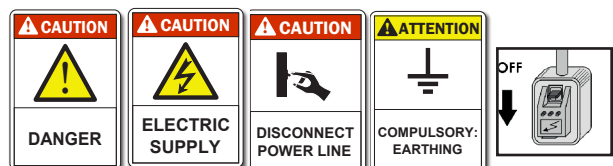
- According to the installation project, install the electric power lines.
- Always make sure that the unit and all its electrical parts have been correctly earthed prior starting up the unit.



- If you have to disassemble the unit, use special protective gloves.
- Beware of sharp edges inside the unit!
- Beware of roof corners of outdoor units!
- Keep suction grids always clear!



- Before cleaning or maintaining the unit, make sure that all electrical parts have been switched off, the appliance gas supply chain is closed and wait until the appliance cools down.



- We recommend to install a safety switch which can be easily reached to cut off the current, near the unit. Before any cleaning and servicing operation, cut off the power line to the unit.
- Before opening the unit, make sure that all electrical parts have been switched off.

CHECK THE EARTHING !!



- This unit is designed to be used for heating purposes only. Any different use is not allowed as it may be dangerous.
- Should the unit work in a house where disabled people and/or children live, it must be placed safely away from their reach. Always make sure that the access door to the inside control board stay locked.
- An incorrect installation can cause damages to people, animals and property. In case of erroneous installation, the manufacturer cannot be held responsible for such damages.
- **The manufacturer cannot be held responsible for such damages by improper uses, errate uses, etc.**



- Never use the unit to support other equipment.
- Never leave tools, spare parts, etc. inside the unit.
- Make sure that all inspection panels are closed properly.
- Do not expose the unit to inflammable gases.



- In case of breakdown or failure: turn unit off, do not try to repair it on your own, call operator.
- If you are going to leave the heater switched off for a long time, first make sure that in no way this could cause harm to anyone in any way.

3. TRANSPORTATION, UNPACKING, HANDLING

- The delivery must be made according to the following:
 - The package must be carefully secured in the loading space.
 - The package must be transferred in a closed space (always keep packing parts away environmental impacts).
- The unit has a special safety packing for transport and delivery which must be kept in good conditions till the unit is positioned on the installation place.
- Make sure that the unit has all its parts, as specified in the order.
- Check if there are any damages and if the unit abbreviation is the same as the one of the ordered model.
- Every unit is factory tested before shipment, therefore, if there are damages, report them immediately to the carrier.

Transporting, unloading and moving is a process which must be made carefully to avoid any kind of damages. Try not to use the unit's components as handholds. When lifting, bear in mind that the centre of gravity of the unit may be off-centre.



The appliances will be delivered in card board box as follows:

- gas ramp with gas magnetic valve and ignition control
- 4 pcs. aluminized reflector plates with all the necessary M5 heat resistance screws
- as well as this instruction manual and a declaration of conformity

The unpacking process of the appliance:

- unload the burner and the accessories from the card board box (assembly in the 5. chapter)
- **do not remove the protection cap from the burners gas connection or from the gas joining set (optional) until You do not connect it to the pipe line.**
- Check the unit and its accessories for any damages which could be arise during the transportation.
- if there are any damages found, report them immediately to the manufacturer or Your closest dealer.

There is an envelope inside the unit containing the Instructions for Installation and Servicing, User's Guide use and Guarantee and services and the warranty documents.

4. OPERATION PRINCIPLE

The appliance operates on the basic of radiant heating. Actually this is an atmospheric burner, where the gas and air mixture flow through the ceramic plate and the flame come into being in the holes of ceramic. The temperature of the surface of the ceramics is 850-900°C. This surface has a high radiant intensity and quick heat passing.

The construction of the equipment is not insure to lead away the being combustion product, so in this case necessary to build this type appliances in a well ventilated halls. (necessary air ventilating see on the 5. chapter)

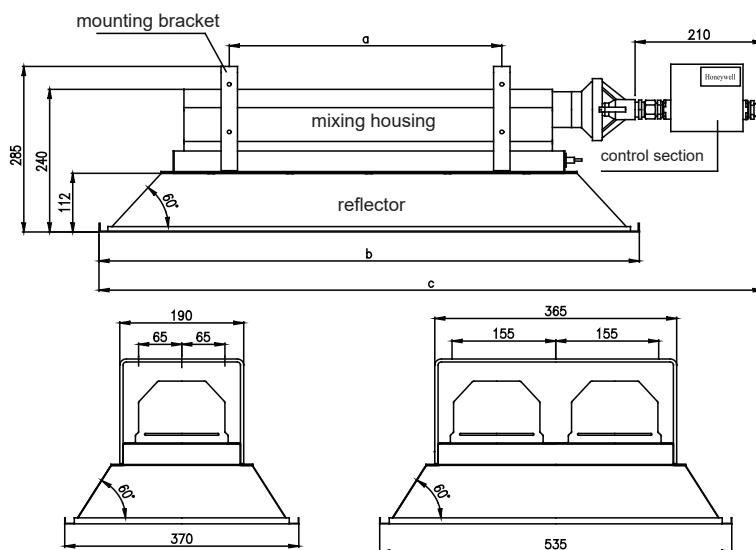
The equipment takes the air from the hall for the burning process.

The variety-list of appliances to be found in the **enclosure 1**.

The heating and consumption values to be found in the **enclosure 2**. as per appliance and gas types.

5. INSTALLATION

DRAWINGS AND DIMENSIONS OF THE APPLIANCES

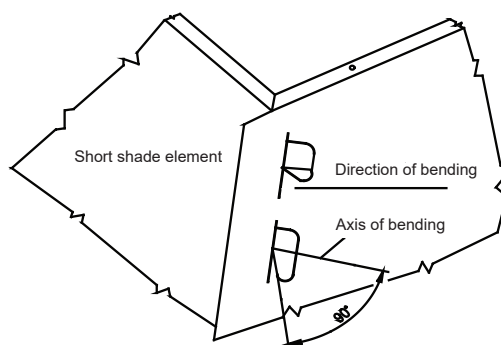


2.picture: Gas working infrared heaters type diagram

Type	Design	a	b	c	Weight (kg)
GH-7/K	K	245	600	796	9
GH-7	A	245	600	830	9
GH-11	A	414	789	1040	12,1
GH-18	A	800	1156	1430	16,1
GH-23	B	414	789	1140	19
GH-36	B	800	1156	1540	28,2

ASSEMBLAGE PROCESS OF THE APPLIANCES

1. Connect the control section to venturi in such a tilting angle, that issued from the tilting angle of device, it should be positioned vertically at future operation. Finish the exact adjustment and total securing of Hollander screw after mounting of device.
2. Assemble the aluminium-coated reflector as follows: put the 3 appendages of matching end of shorter shade element into the 3 gaps of longer screen element placed at its end and bend appendages with narrow pliers by 90°C degrees. Then, it is practical to finish matching and securing of the other short screen, then to finish with the last long screen element and finish assembling at all. In case connecting was well done, it results as a turtle shape. Take care of not let them burst at bending of appendages. Carefully positioned pliers could prevent this, so catch only that part of appendage, which is hanging out above split.



3.picture: Assemblage of the reflector

3. Place the reflector onto the fixing frame so, that data sheet should be positioned from the direction of control section and fit them with packed "M5" screws - applying at the top the plain washer with larger diameter, at the bottom the plain and safety washer - together. Use only the enclosed, heat-resistant screws for connecting!
4. Turn heater into such a position, that frame of device could be reached. In case connecting plates for the angle adjustment of device were bought from the manufacturer, screw them on stirrups.

APPLIANCE INSTALLATION

- SOLELY INTERIOR installation is possible.
- The installation must comply with the valid standards.
- For the sake of appropriate efficiency the position and the high of installation has to be carefully defined.
- The appliance has to be placed in that way that its every part be accessible.

ATTENTION! Only a qualified person can install the appliances who participated in training which was organised by Pakole Trade Kft in every year. It is forbidden to install the device as an user.

GAS CONNECTION

ATTENTION! The appliance can only be operated by gas defined on the data board of appliance !

The nominal values of gas-supply pressure:

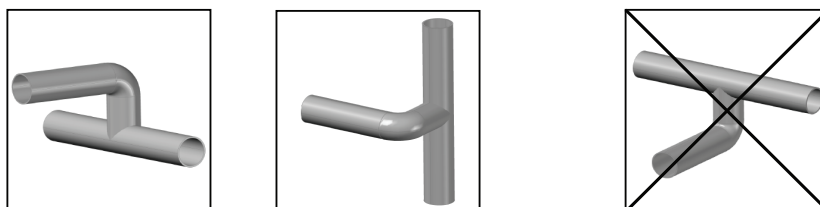
- in case of natural gas: 25 mbar (min. 20 mbar – max. 60 mbar)
- in case of Propan gas: 50 mbar

The allowed maximum pressure of gas-supply: 60 mbar!

ATTENTION! If the pressure of gas-supply is higher than 60 mbar in that case the using of pressure regulator is indispensable becuse the max. allowed pressure of double-closed solenoid valve is: $P_{max} = 60\text{mbar}$

The pressure regulator can be installed before each appliance or centrally namely one piece into the gas-supply pipe. In case of unique solution - namely there is pres-sure regulator before each appliance – before every pressure regulator, in case of centrally mounted pressure regulator before pressure regulator and each appliance **MUST BE INSTALLED GAS FILTER** to be able to avoid the blocking of appliance's gas magnetic valves, which can be caused by possible contamination settled in the supply pipes.(despite blowing out of pipes it can be present)

The connection to the gas-supply pipe must be from above or side (Pic.5) becuse in case of bottom connection the possible contaminations settled on the pipe can influence the proper operation of equipment.

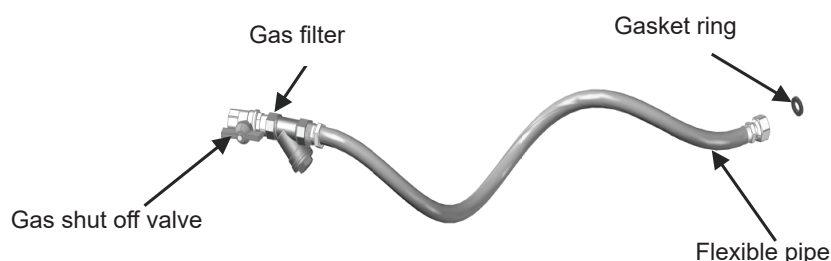


PROPER CONNECTION

IMPROPER CONNECTION

4. picture: Connection to the gas supply

The pressure regulator can be installed before each appliance or centrally namely one piece into the gas-supply pipe. In case of unique solution - namely there is pres-sure regulator before each appliance – before every pressure regulator, in case of centrally mounted pressure regulator before pressure regulator and each appliance **MUST BE INSTALLED GAS FILTER** to be able to avoid the blocking of appliance's gas magnetic valves, which can be caused by possible contamination settled in the supply pipes.(despite blowing out of pipes it can be present)



5. picture: Attachment with flexible pipe
(option, it can be purchased at the appliance manufacturer)

Attachment of flexible gas pipe has to be directly to the outside threaded gas connection of appliance located on the back side of it.

Works to be performed during gas connection

- *Gas pipes clearing*
The thorough clearing of gas-supply system is very important before attachment of appliance.
- *Gas leakage checking*
After installation of appliance make sure about leak-proof mounting of connections. This action must be fulfilled after every dismantling and assembling!

ELECTRICAL CONNECTION

ATTENTION! Both the ignition control needs 230V/50Hz mains voltage.

Before connecting the appliance to the gas pipe line, please disconnect it from the power line and close the gas valve front of the burner. The appliance must be connected to a grounded power supply system! If the above instructions are not followed that can lead to death, heavy injuries or property damages!



PLEASE CHECK THE EARTHING!

- Work out the electrical network system regarding to the diagram was attached to the appliance.

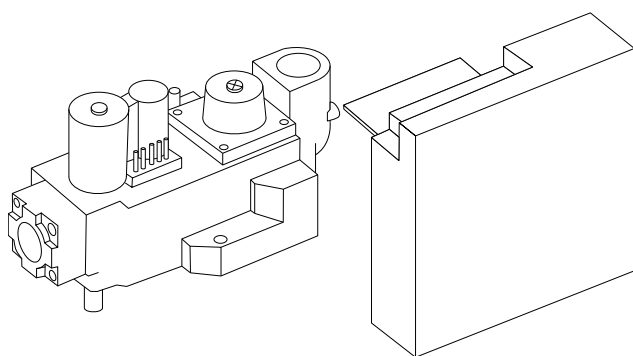


The connection diagram could change anytime: so we recommend to use the diagram which was attached to the appliance.

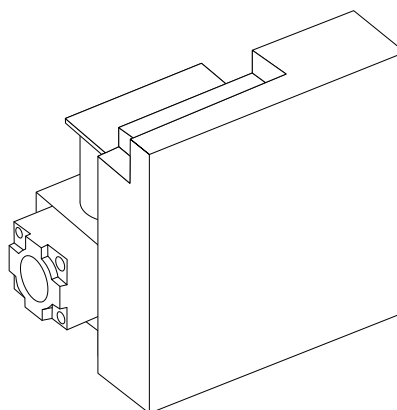
ELECTRICAL CONNECTING SPECIFICATIONS:

- The electrical supply: 230V / 50Hz - grounded
- Approximately 20W electrical performance per appliance
- The appliance must be operated under dry circumstances.
- At electrical installation of appliance the relevant MSZ 2364 standard must be considered.
- The mains connection can be executed by grounded plug or fixed **properly installed phase-null wires**.
- The appliance is phase-sensitive for this reason the connection always be careful

THE SOLENOID TYPE VK4125C 2005 S4965R2027-TYPE GH-MOUNTED AUTOMATIC INFRARED RADIANT ELECTRIC CONNECTION DEVICE (MANUFACTURED BY HONEYWELL)



Independently from one another

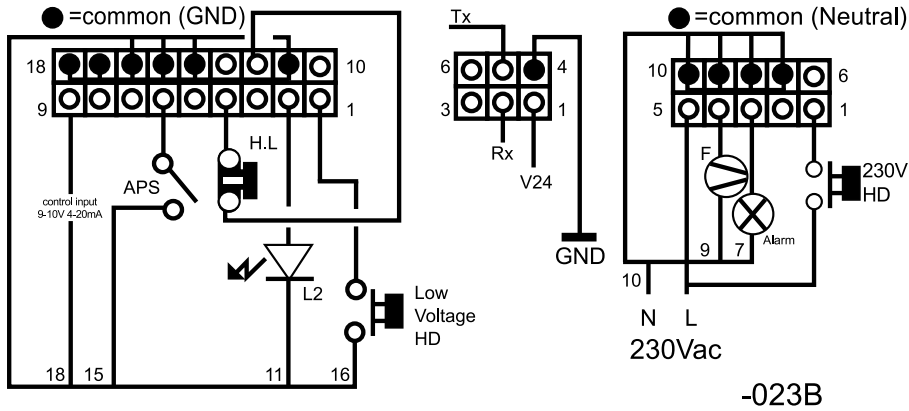


Assembling together

6.picture: Assemblage of the gas magnetic valve

REGULATORY OPTIONS

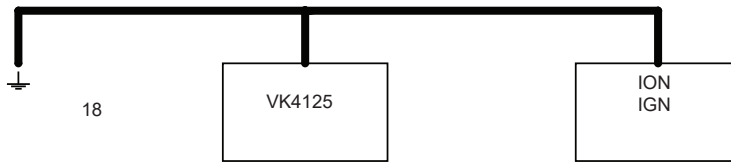
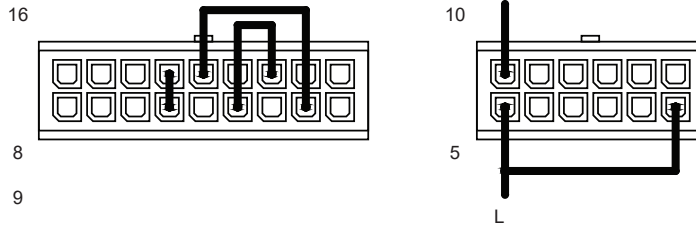
ELECTRICAL CONNECTION SCHEME OF HONEYWELL S4965R2027 TYPE AUTOMATIC BURNER CONTROL



S4965R2027
Made in E.C.
CE-0063BR1922

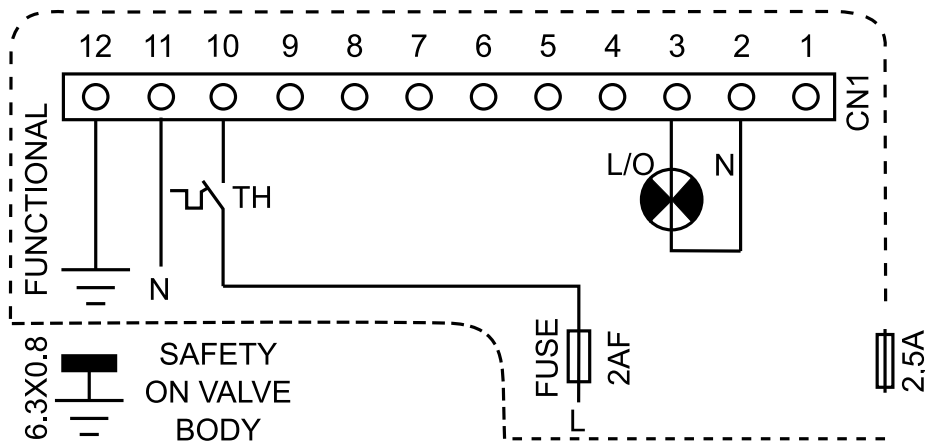
230Vac 50Hz 2.5VA

-023B
Ts=30s
dc 1444 CZ
sn 0222



7. picture: Connection points of S4965R2027 automatic burner control

ELECTRICAL CONNECTION SCHEME OF SIT 579 DBC TYPE AUTOMATIC BURNER CONTROL



8. picture: Connection points of SIT 579 DBC automatic burner control

Warning: the appliance is phase-sensitive! The Black colour wire is the phase, the blue is the Natural and the Green/yellow is the earth (protective ground).

If You followed the above instructions, and the appliance is assembled, installed and electronically connected to the power line, then the following final control is recommended. Check the surface for any kind of damages of the protective grille, the ceramic. Check the fittings of the gas ramp and its connections, and the ignition electrode for any kind of abnormalities. At the ignition electrode check the distance to the ceramic surface and to the protective grid. Furthermore if it is necessary adjust again the desired maximum 4 mm value to the ceramic. Electrodes must not be closer than 10 mm to the protective grid and must not reach the surface of ceramics.

OPTIONAL ACCESSORIES

THERMOSTAT

Recommended temperature controllers for the appliance (these can be purchased at the appliance manufacturer)



FP-1D typed thermostat



Temperature sensor



FP- 4D typed thermostat (programmable)

9.picture: Temperature controller

SUSPENSION

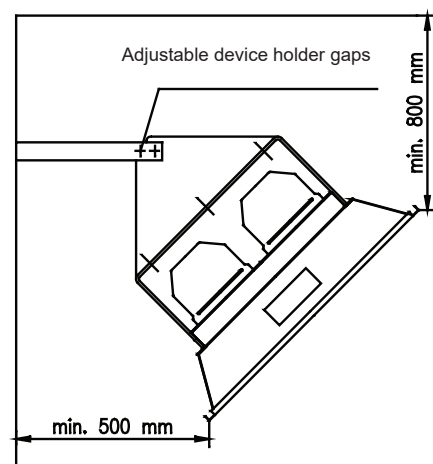
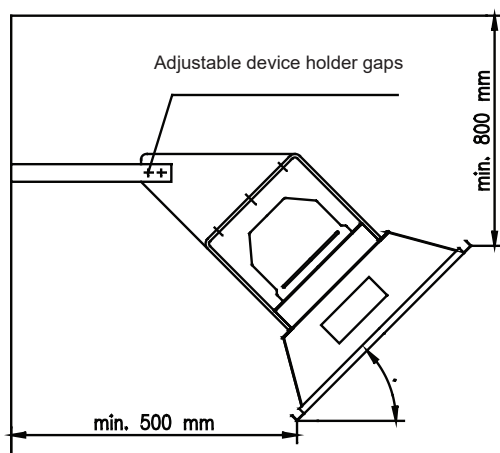
Warning! DO NOT ALLOWED to install he GH appliances into "A" and "B" specified fire-protection class! The installation must comply with the valid standards! Disregard of these instructions can result in death, injury or property damage!

INSTALLATION OF GAS INFRARED HEATERS AND SAFETY INSTRUCTIONS

Infrared heaters are to be mounted on welded or assembled consoles built in the side wall of the hall to be heated, eventually on the ceiling, and secured with M8 bolts.

"A" solution

"B" solution



10. picture: Installation of the GH heaters and safety distances

Tilting angle of heater should be adjusted according to values given in referring plan. Most frequent values: 30°, 45° and 60°, which mean the pitch of ceramic flat to the floor. At hanging from the ceiling, at least 15° minimum tilting must be ensured! The minimal tilting what is allowed at GH-23 and GH-36 appliances is 30°!

PROTECTIVE DISTANCES TO BE KEPT CONSIDERING FLAMMABLE MATERIALS

The distance of any inflammable materials from the heater must be chosen with ensure, that the surface temperature of these materials could NOT reach 50 °C. In cases when it is not possible, a fireproof heat protection plate must be used.

VENTILATION

The heaters do not possess integral combustion product exhausting system, so must be ventilate the room. Min. 16 max. 24 m³/h air exchange is necessary at every built-in/kW.

6. APPLIANCE OPERATION

**Warning! The installation of appliance must be only executed by qualified service or specialist authorized by retailer.
The 2 years guarantee of appliance can be ensured only in this case.**

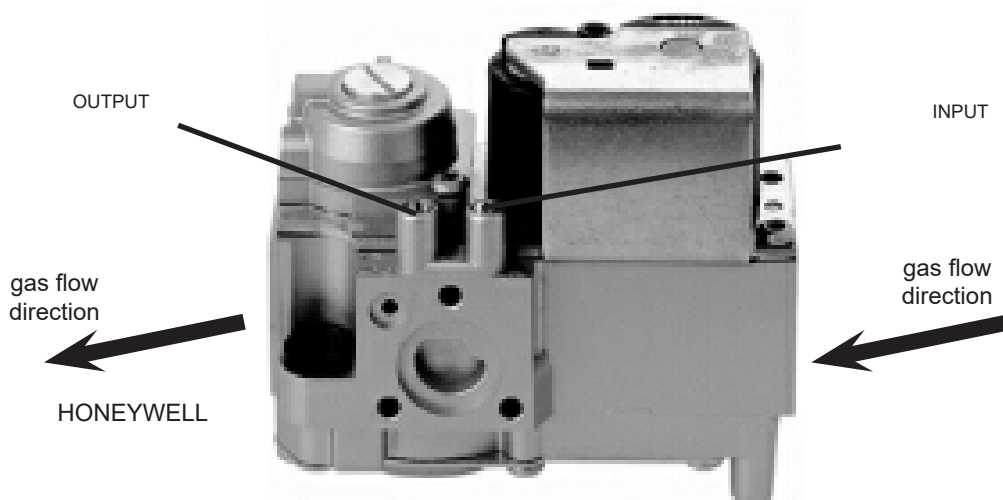
Before putting operation of appliance the leak-proof/pressure test of gas supply system must be fulfilled. Clean duct system of gas supply from any contamination.

- Check the presence and cleanness of gas filter located before the appliance
- Check the presence and suitability of pressure regulator located centrally or before every appliance.(the pressure regulator is needed if the gas supply pressure is higher than 60 mbar,in this way the capacity of pressure regulator can be max. 60 mbar)
- Make sure of protective ground of appliance.
- Check the proper electrical connection of temperature regulator.
- Open the gas supply valve.
- Check the gas pressure on the inlet side of (magnetic) solenoid valve.(the maximum allowed pressure is 60 mbar).
- Connect the mains voltage to the appliance by temperature regulator or central stage main-switch.
- Check the outlet pressure of solenoid valve, whether the set up pressure –nozzle pressure – is suitable for the type of gas.

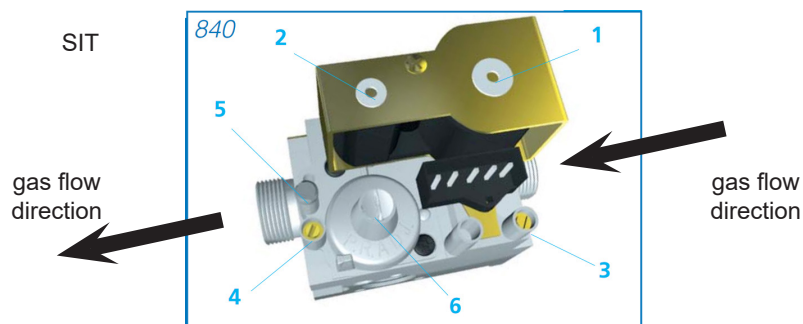
Adjustment of gas pressure happens only in that case, when device does not operate satisfactorily within the value adjusted by the manufacturer. Device is factory-adjusted, but because of the different positioning circumstances it is practical to adjust it after the on-the-spot installation. The characteristic heat technical data is only expected from well-adjusted devices. A qualified technician should make adjustment of heating device.

The first adjustment of the appliance must be carried out only from a well educated technician! To fulfil this requirement the easiest way if You order this procedure by the producer or by the nearest distributor. If You decide to order the first adjustment procedure by the producer or by the distributor please feel free to contact our colleagues!

The flame sensor is self-monitoring and only performs an intervention on the burner it controls, insensitive to other environmental effects (eg.: external heat, light)



11. picture: Input and output gas pressure cheking connections in case of HONEYWELL solenoid valve



1. On-Off solenoid valve EV1
2. On- Off solenoid valve EV2
3. Inlet pressure test point
4. Outlet pressure test point
5. Connection for pressure regulator / combustion chamber compensation
6. Servo pressure regulator

12.picture: Input and output gas pressure cheking connections in case of SIT solenoid valve



ATTENTION! At the first start need to check the outlet gas pressure!

Value of the outlet gas pressure:

Automatic appliances

- Natural gas and S-gas: 16 mbar
- Propane gas and PB gas: 45 mbar

Manual appliances:

- Natural gas and S-gas: 20 mbar
- Propane gas and PB gas: 50 mbar

In some countries in a case of a 37 mbar gas line system pressure we must set a 32 mbar nozzle pressure.

General informations

The flame control is a self controlling device and it controls only the Burner which it will intervenes and it is not sensitive against other environmental effects such as external heat, light, and so on...

7. MAINTANCE



**WARNING! Before every maintenance the appliance must be detached from the elektrical supply and the gas supply must be turned off!
Disregard of these instructions can result in death, injury or property damage!**

MAINTANANCES

Besides supervision and clearing of ceramic plates and reflector (see: Maintenance supervisions by the customer), GH infrared heater does not need a separate maintenance, but to keep its SAFETY OPERATION and LONG LIFETIME, it is recommended to check appliance once a year by a qualified technician.

MAINTENANCE SUPERVISIONS BY THE CUSTOMER

- a) Check the statement of reflectors and clean them if it is necessary. Clean them by a soft cloth or a diluted detergent.
- b) Check, if catalytic grid made of heat-resistant steel placed in front of ceramic plates touches ceramic plates or not. In case it touches it at some places, then drag it away from ceramics by a thin bent steel wire.
- c) Check ceramic plates. Blow them sometimes through by compressed air when it is switched off and cool enough.
- d) Check, if ceramic plates are broken or not by a survey. There is a bright line dur-ing glowing position at a broken appliance, which line indicates the place of breaking.
- e) Check mountings screw fastenings at fixing frame by survey.

It is advisable to make a maintenance contract for the proper maintenance or call our qualified service department for regular maintenance.

CHECK AT THE BEGINNING OF SEASON

Test system start-up and check the regular operation of device.
Checking the regular operation

- a) **At automatic appliance:** Switch on device, let it operate some minutes, then push the gas control knob to the OFF position. Burner stops operating. Wait for 6-8 minutes then turn the gas control knob to the ON position and appliance will start to operate after the pre-purge time again.
- b) **At manually ignited appliance (GH-7 G20/K, GH-7 G30/K, GH-7 G31/K):** When pushing thermo-valve down gas flow starts across the nozzle then the Venturi and finally reaches mixing nozzle. Matches, etc. could light gas coming out of bores of ceramic plate. After gas catches fire push button must be pushed for approx. 30 s. After all, thermo-element should ensure keeping the valve in opened position.



ATTENTION! In case operational circumstances of appliance (atmosphere is contaminated with corrosive substances, dirt etc.) need it, then supervision and cleaning may have done more often! The main reason of this that the settled dirt on the radiant tubes can damage the efficiency of it and load the tubes hereby loading the suspensions of it significantly!

MAINTENANCE SUPERVISIONS BY A QUALIFIED SERVICE DEPARTMENT

all kinds of interventions for which dismantling of device is necessary

- a) Supervision of nozzle pressure (at the secondary outlet of solenoid valve)
- b) Supervision of electrical connection
- c) Supervision of ignition module and spark interval
- d) Supervision of thermo-element and thermo-valve at manually ignited appliance

GAS CHANGE

In case you would like to operate your appliance by another type of gas (for example by Propane or PB instead of Natural gas), then turn to the local authorised representative or a qualified service department.



In case you would like to operate your appliance by another type of gas (for example by Natural Gas or Propane instead of butane gas), then turn to the local authorised representative or a qualified service department.



ATTENTION! This operation can be made just the qualified service department or specialist, who is entrusted by the manufacturer!



**ATTENTION! If an intervention needs the disassembling of burner turn to a qualified service department, which is authorized by the representative!
Disregard of these instructions can result in death, injury or property damage!**

8. TROUBLESHOOTING

MALFUNCTIONS

Symptom		POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Ignition checkout and flame sensing control	Gas burner		
There is no spark between electrodes of ignition module		<ul style="list-style-type: none"> - Ignition module is polluted - Electrical connection between ignition module and automation was interrupted - Spark interval is too large - The ceramic that insulates ignition module is split - Automation went wrong 	<ul style="list-style-type: none"> - Clean electrodes of ignition module - Check electrical connection between ignition module and automation - Check spark interval between electrodes of ignition module - Replace automation
Ignition cycle finishes normally	Device does not operate after the first ignition cycle	<ul style="list-style-type: none"> - Gas control knob is closed - Air was not removed enough from gas piping - Pressure of nozzle is not suitable 	<ul style="list-style-type: none"> - Open gas control knob - Remove air - Check in- and output pressure at solenoid valve
Ignition cycle finishes normally	Device does not operate after several ignition cycles	<ul style="list-style-type: none"> - Solenoid valve went wrong - Unstable electrical connection between ignition module and automation - Pressure of nozzle is not suitable 	<ul style="list-style-type: none"> - Replace solenoid valve - Check electrical connection - Check in- and output pressure at solenoid valve
	Gas burner ignites but shuts down soon	<ul style="list-style-type: none"> - Phase and null are inverted - Pressure of nozzle is not suitable - Ceramic plates are polluted - Ignition module touches catalytic grid 	<ul style="list-style-type: none"> - Check phase fitting - Check in- and output pressure at solenoid valve - Clean ceramic plates - Drag ignition module away the grid
	Device operates but with low efficiency and temperature of ceramic plates is lower than operation temperature	<ul style="list-style-type: none"> - Ceramic plates are polluted - Pressure of nozzle is not suitable 	<ul style="list-style-type: none"> - Clean ceramics - Check in- and output pressure at solenoid valve
	Device operates, but burning is uneven and noisier than it should be	<ul style="list-style-type: none"> - Pressure of nozzle is not suitable 	<ul style="list-style-type: none"> - Check in- and output pressure at solenoid valve
After igniting, thermo-element does not stay opened at manually ignited appliance		<ul style="list-style-type: none"> - Thermo-element went wrong - Thermo-element became dirty 	<ul style="list-style-type: none"> - Replace thermo-element - Disassemble and clean thermo-element

9. ENCLOSURE

ENCLOSURE 1.: TYPE AND TECHNICAL DATA OF INFRARED HEATER

Type	Design	Useful Capacity (kW)	Connecting gas pressure	
			NG/S-gas (mbar)	Pr/PB (mbar)
GH-7/K	K	6	20 v. 25	50
GH-7	A	7	20 v. 25	50
GH-11	A	11*	20 v. 25	50
GH-18	A	18,2*	20 v. 25	50
GH-23	B	22**	20 v. 25	50
GH-36	B	36,4	20 v. 25	50

* At the GH-11 appliances the net heat input is 10 kW, with propane gas.

** At the GH-23 appliances the net heat input is 20 kW, with propane gas.

"A" = version with one piece of mixing house

"B" = version with two pieces of mixing

ENCLOSURE 2.: GAS CONSUMPTION OF GH HEATERS

Type	Input power (kW)	Gas consumption		
		m ³ /h	(kg/h)	
	Natural gas	PB	Propane	
GH-7/K	6	0,63	0,50	0,50
GH-7	7	0,74	0,58	0,58
GH-11	22	1,16	0,92	0,91
GH-18	18,2	1,91	1,52	1,50
GH-23	22	2,31	1,84	1,82
GH-36	36,4	3,82	3,04	3,01

ENCLOSURE 3.: TARGET COUNTRIES/GAS CATEGORIES

TARGET COUNTRIES	APPLIANCE CATEGORY	GAS PRESSURE OF CONNECTION (MBAR)		EXHAUST POSSIBILITIES
		2. FAMILY	3. FAMILY	
AT	II2H3B/P	20	50	A ₁
BE	II2E+3+, I3P	20/25	30/37, 50	
BY	II2H3B/P	20	30, 50	
CY	II2H3+, I3B/P	20	30/37, 50	
CZ	II2H3P	20	37	
DK	II2H3B/P	20	30	
GB	II2H3+, II2H3P	20	37/50, 37, 50	
EE	II2H3B/P	20	30	
FI	II2H3B/P	20	30	
FR	II2E+3+, II2H3P	20/25	30/37	
GR	II2H3+, II2H3P	20	30/37, 37	
NL	I3B/P, I3P, II2L3B/P	25	30, 50	
IE	II2H3+, II2H3P	20	30/37, 37	
PL	II2E3P, II2E3B/P	20	37, 30	
LV	II2H3B/P	20	30	
LT	II2H3B/P	20	30	
LU	I2E	20		
HU	II2HS3B/P	25	30, 50	
DE	II2ELL3B/P, II2ELL3P	20	50	
NO	II2H3B/P	20	30	
IT	II2H3+	20	30/37	
PT	II2H3+, II2H3P	20	30/37, 37	
RO	II2H3B/P	20	30	
ES	II2H3+, II2H3P	20	30/37, 37	
CH	H2H3B/P, II2H3+, II2H3P	20	50, 30/37, 37	
SE	II2H3B/P	20	30	
SK	II2H3B/P, II2H3P	20	30, 37, 50	
SI	II2H3B/P, II2H3P	20	30,37	
TR	I2H, I3P, I3B/P	20	37	
UA, RU, BA, BG, MD, RS, HR	II2H3B/P	20	30,50	
IS	I3B/P		30	

GUARANTEE AND SERVICES

PRESERVE THIS WARRANTY

Type: _____
Serial no.: _____
Date of purchasing: _____

LIMITED GUARANTEE *

The manufacturer guarantee the customer that the product and its parts are free from material and production failures. During normal use the warranty is 2 years. This warranty concerns the first retail customer.

The guarantee concerns the costs of laboratory investigations and the parts, which are needed for proper operation. The delivery and unforeseeable costs belong also to the mending costs and do not contain compensation costs.

Guarantee mending can only be realized by authorized retailer or service centre.

The guarantee does not concern the following failures, which are caused by: improper using, damaging, neglect, accident, lack of maintenance, normal attrition, transformation, modification and operation influenceable factor, contaminated fuel, installation of non-suitable part and mending which is done by not authorized retailer or service station.

The regular maintenance is the owner's responsibility.

The manufacturer does not assume the responsibility in case of accidentally happened or directly caused mistake respectively improper using.

*We reserve the right to change of this specification without extra notification. The guarantee can be applied in accordance with above defined.
Additional guarantee is not accepted.

Guarantee servicing

If your appliance needs guarantee service in that case it can be requested at nearest authorized service station giving in the appliance for repairs.

Mending services

Take the appliance to the nearest authorized service station. If the device is not under guarantee the service cost will be invoiced to the customer at defined price. The service centres are independent from one another and may have different owners. We reserve the right to change of this specification without extra notification. If you would like to contact us the type and serial number of device

always be at hand. In case of other needed information write to the following address:

PAKOLE TRADE Kft.

H-8000 Székesfehérvár, Börgöndi út 8-10.

Tel.: +36 22 316 484

Fax.: +36 22 316 074



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