



# USER'S MANUAL

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## PROPANE OR NATURAL GAS-FIRED GTV-TYPE WARM AIR BLOWERS



### Appliance types:

GTV-20A, C, CL	GTV-68A
GTV-27A, C, CL	GTV-78A
GTV-33A, C, CL	GTV-87A
GTV-40A, C, CL	GTV-97A
GTV-48A, C, CL	GTV-107A
GTV-58A, C, CL	GTV-116A

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

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**EN**

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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!**



**WARNING! 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!**



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



**WARNING! 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 GTV-type warm air blower appliances have been developed and certified in compliance with MSZ EN 1020 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 propan gas as follows: leading/piping, storing etc.! Concerning the detailed content of these standards the local Bureau of Standards can help.

**Carbon- monoxide poisoning:** The initial symptoms of carbon-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!


**Propan-gas:** The propan-gasis 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 propan 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 Propan-gas operation never install the device in basement or from that lower being rooms! The propan-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 equipment any longer!
- Fix the appliance on such stable surface, which during operation despite warming of appliance preserves its stability !
- If the appliance is put out of use in every case it must be cut off the current and gas!
- Never block the air supply and exhaust pipes!
- Keep away the children and animals from the equipment!
- Never service/mend such devices, which are hot and during operation or electrical charged!
- Never mount such air duct unit on front or back side of device, which is not approved by manufacturer!
- Use exclusively genuine-approved by manufacturer-spare parts, do not install similar quality spare parts for substitution! These kind of substitute parts can cause serious damages concerning the operation of appliance!
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### DATA BOARD

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

<b>Manufacturer</b> PAKOLE Trade Kft. 8000 Székesfehérvár, Börgöndi út 8-10.		<b>Type</b> <b>GTV-20A</b>		 EAC UA.TR.012-10 CE 1008 17 PIN: 1008 CQ 2928 Date/place of production 2017.01.24.
<b>Electrical protection:</b> IP20		<b>Nominal input:</b> 20,25 kW	<b>Pconnecting max.:</b> 60 mbar	
<b>Electrical connection:</b> AC 230V 50Hz		<b>Jet pressure:</b> 7 mbar	<b>Pconnecting min.:</b> 20 mbar	
<b>Max.current entry:</b> 1,3 A		<b>Stat. air pressure:</b> 30 Pa	<b>Airflow:</b> 2270 m <sup>3</sup> /h	
<b>Electrical power:</b> 218,5 VA		<b>Gas type:</b> Naturalgas	<b>Targeted country:</b> RS NOx 4	
<b>Category:</b> I12H3B/P				
<b>Series number:</b> <b>51-7432-4272</b>				

1. picture: Data board

**CORROSIVE MATERIALS**

**WARNING! 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 and circulation as well („CL” type)!**

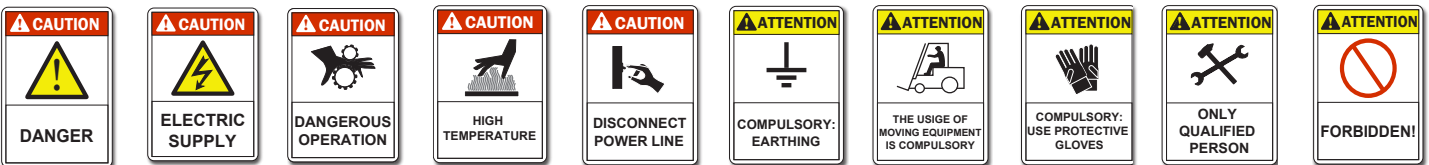
The manufacturer can not assume responsibility for fault of equipment in case the installation is not happened according to the above. This responsibility concerns completely the installer.

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**



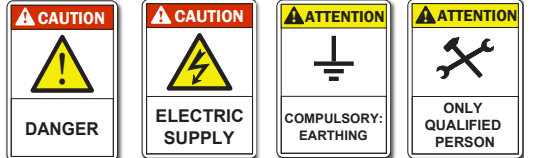
**SAFE USAGE**



**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.

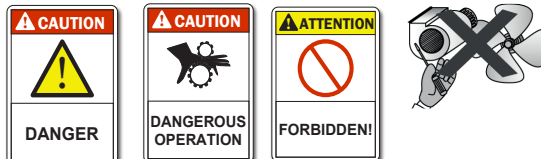
Qualified service engineers are those having specific technical experience and/or valid license in the field of heating and cooling installation for home and industry. In any case, call the Manufacturer office or the closest dealer ([www.pakole.com](http://www.pakole.com)) and ask for further informations.



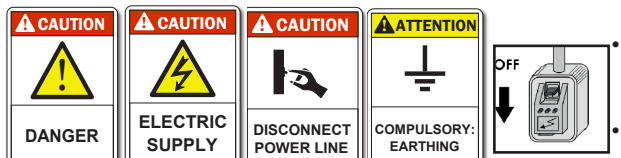
- According to the installation project, install the electric power lines.
- Always make sure that the unit and all its electrical parts have been correctly earthed prior starting up the unit.



- 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. In particular, make sure that the fan is off and cannot be inadvertently started prior to opening inspection panels.
- Fans can reach a speed of 1000 rpm. Do not insert any object nor hands in the electric fan.



- 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. In particular, make sure that the fan is off and cannot be inadvertently started prior to opening inspection panels.

**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.

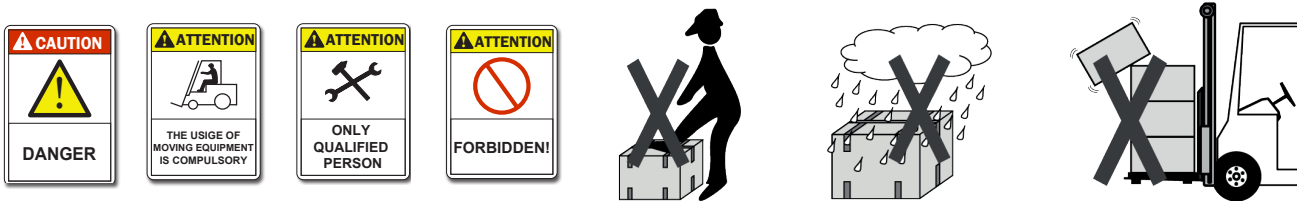


- In case of breakdown or failure: turn unit off, do not try to repair it on your own, call operator.
- If you are going to leave the heater switched off for a long time, first make sure that in no way this could cause harm to anyone in any way.

### 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 hand holds. When lifting, bear in mind that the centre of gravity of the unit may be off-centre.



The device is placed in cardboard box, one-way pallets are delivered.

Unpacking process:

- remove the bands from packing of device, the carton box and the covering foil. Screw off the 4 pcs M8x45 fixing bolts on back side of pallet hereby the device can be removed from pallet.
- **do not remove the protection caps from device and gas installing set until the gas attachment**
- investigate the device if it is not damaged during the transportation
- if it is damaged in that case notify the retailer from whom the device was bought!

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 based on direct heater principle, that means the heater air is blown into the heated room directly for assuring of requested temperature. Besides HEATING (winter) mode the appliance can achieve the VENTILATION of room as well (summer mode).

**Principle:** The warm air blower appliance burns up the sucked mixture of combustion air and gas (S-,L-,Propan or natural gas), in this way making the heater air, which is blown into the heated room (by direct blowing or through air duct) in order to ensure the keeping of temperature on requested value.

The heating and consumption values to be found as per appliance and gas types in the **enclosure 1.b**.

*The supply of combustion air of appliance can be realized in two ways:*

- directly from the heated place (A,C)
- from open air (CL), it can be used in case of such plants, which are working with dangerous materials as follows: painting workshops and workshops, which are using explosive or corrosive materials etc...

The combustion products flow through the exchanger pipes towards the flue system while heat up it, parallel with this process the blower fan circulates the sucked inside or outside air through the heat exchanger assuring the needed warm air for heating. (the heater air is average 50°C)

The air supply of blower fan can be solved in two ways:

- by direct sucking in from the heated place (A, C, CL types),
- by sucking in from outside (CL type).

The made warm air can be passed into the heated place in two ways:

- by direct blowing in through the leading lamellas (A, C types),
- by blowing in and leading through air duct to the demanded places (in this case there are no lamellas on the device). Such as the C and CL type of GTV.

The technical data of appliance can be found in the **enclosure 1**.

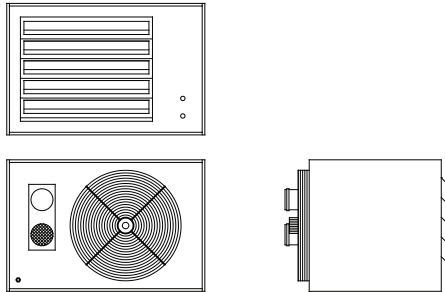
**APPLIANCE TYPES**

The overall dimension of appliances are in **enclosure 2**.

**AXIAL FAN-TYPE EXECUTION (GTV-...A)**

Features:

- suction in of heater air is executed from the heated place, it can not be connected to air duct
- blowing in of warm air is executed directly through the air leading lamellas

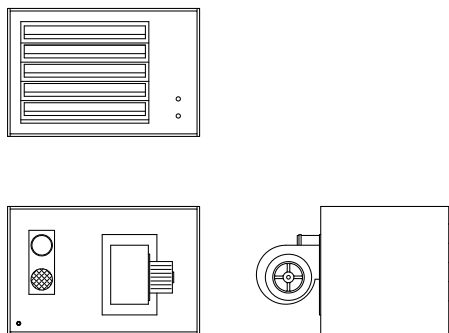


5. picture: Axial fan-type warm air blower

**CENTRIFUGAL FAN-TYPE EXECUTION(GTV-...C)**

Features:

- suction in of heater air is executed from the heated place,
- blowing in of warm air is executed directly through the air leading lamellas or through the attached air duct to the demanded places

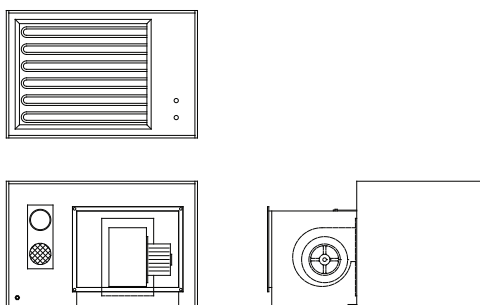


6. picture: Centrifugal fan-type with lamella execution

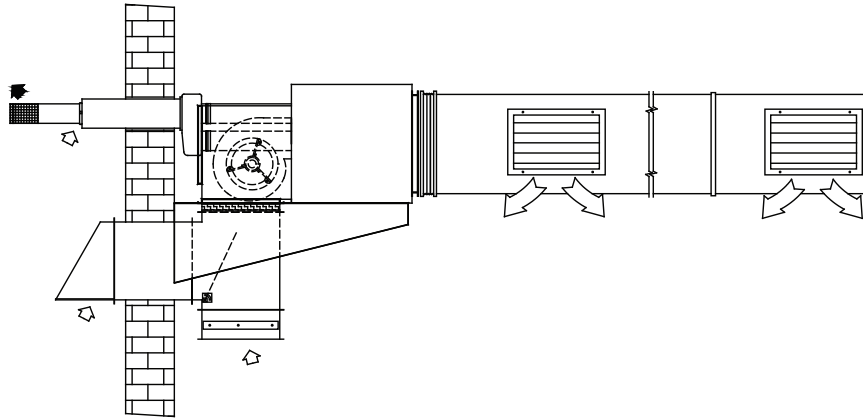
**CENTRIFUGAL FAN-TYPE EXECUTION (GTV-...CL)**

Features:

- suction in of heater air can be from inside or outside respectively in case of installed „winter-summer” mode relay the suction in of mixed inside-outside air is executed through air duct
- blowing in of warm air is executed through the attached air duct system to the demanded places



7/a. picture: Centrifugal fan-type with air duct execution

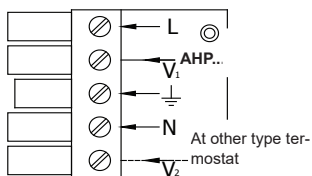


7/b. picture: Air duct execution at „CL” type

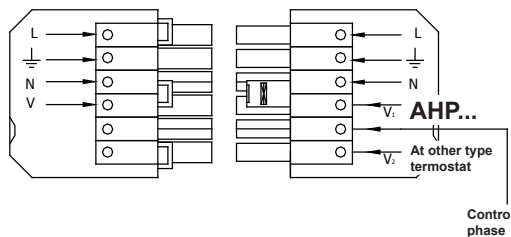
## 5. INSTALLATION

### APPLIANCE INSTALLATION

- **SOLELY INTERIOR** installation is possible,
- for the sake of appropriate efficiency the position and the high of installation has to be carefully defined,
- the mounting of appliance can be executed by cantilever respectively suspension
- the appliance has to be placed in that way that its every part be accessible.



Legend	
L	Phase
⊥	Ground
N	Null
V	Control

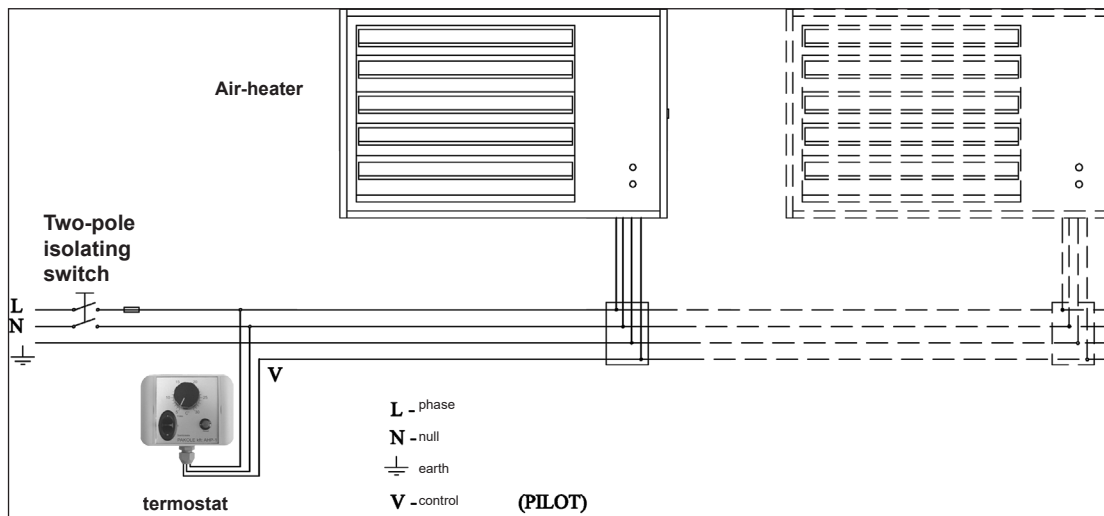


Legend	
L	Phase
⊥	Ground
N	Null
▷	Diode
V	Control

8. picture: Electrical connection for 5- or 6-pole plug

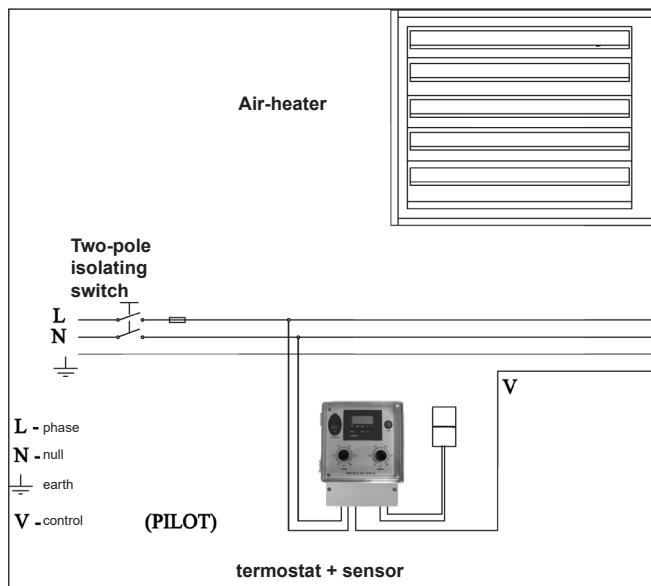
### REGULATION POSSIBILITIES

APPLICABLE REGULATORY OPTIONS ACCORDING TO REGULATION ECO DESIGN EU2016/426 3-POINT, MODULATION: GTV-20...78 kW



9. picture: Possible regulation mode controlled by AHP-1-type thermostat





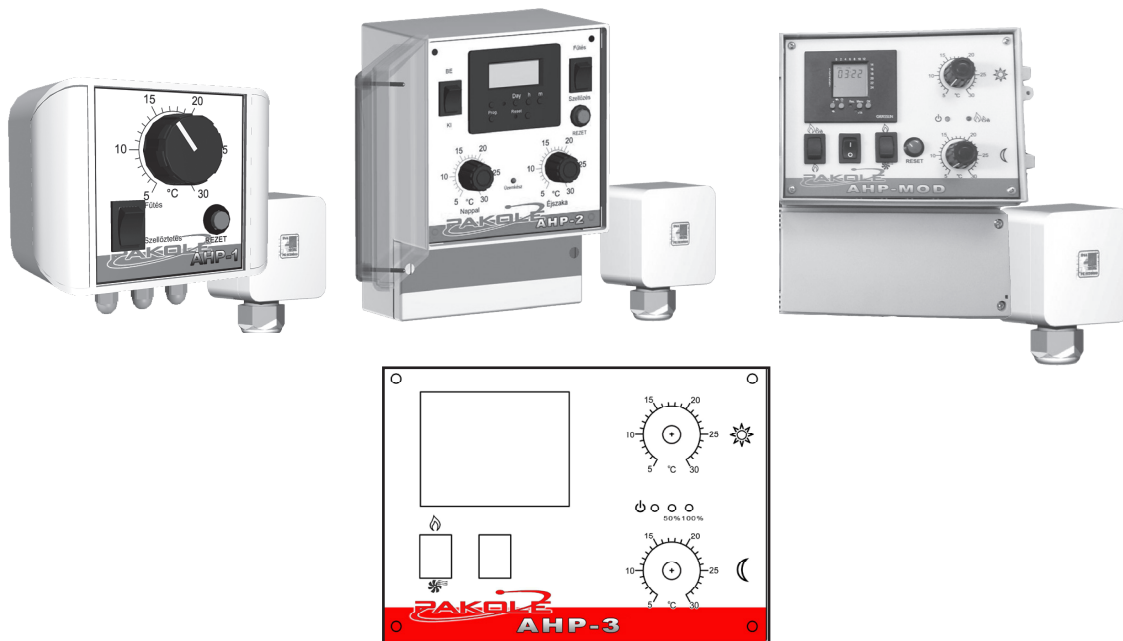
24. picture: Possible regulation mode controlled by AHP-2-type thermostat

This type of control is the so-called PILOT control, at which the communication between the programme clock and warm air blower is solved by just one wire namely by „control cable”. The automatic burner control located in the appliance receives and processes the transmitted control signals from the temperature regulator – transmitted by the mentioned control cable – and as a function of these signals starts the requested programme.

**OPTIONAL ACCESSORIES**

**TEMPERATURE CONTROLLERS**

Recommended temperature regulators for appliances:  
Please find the description of thermostats in supplied with these



21. picture: AHP-1, AHP-2, AHP-3, AHP-Mod type of thermostat

**6. APPLIANCE SPECIFICATION**

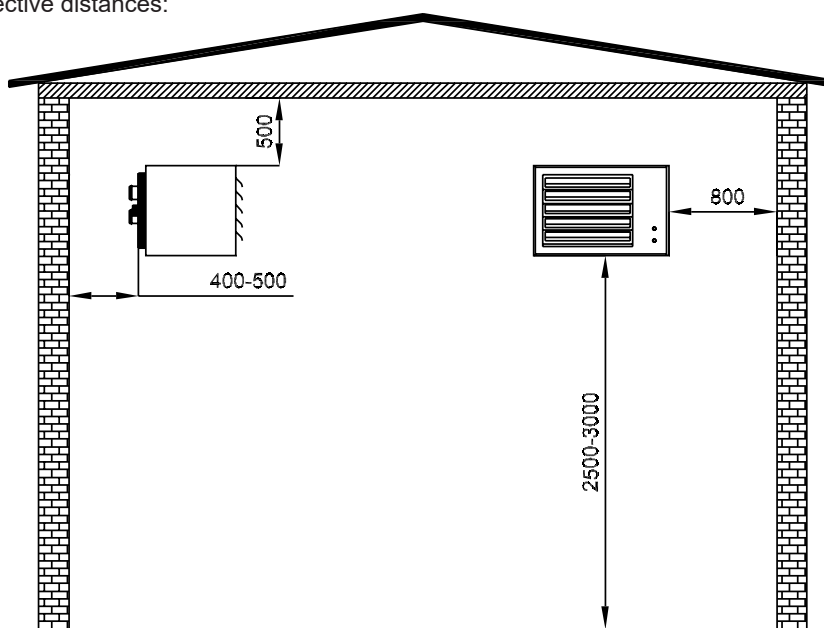
**VENTILATION**

The appliance operates either using of inside air or outside air respectively inside-outside mixed air, which can be sucked in through of located air duct system.  
If the appliance uses indoor air than need replace the air by ventilation.

## PROTECTIVE DISTANCES

From flammable materials it is obligatory to keep **SAFETY OF OPERATION** and **FIRE PREVENTION** distances!

Minimal dimensions of protective distances:



25. picture: Protective distances

**Warning:** In case of between 68-116 KW power of devices this fixing mode is not applicable!

## 7. APPLIANCE OPERATION

### START, RESTART

The properly installed appliance according to the control sign received from temperature regulator - in the present case heating – starts the exhaust fan, which executes the 30 seconds prepurge time. This time period is also enough for biggest power appliance to ensure the satisfactory air exchange namely the triple of combustion air volume. When the ventilation happened the sparking is started and the dual magnetic valves are opened the gas ignites.

If the continuous burning is formed within 5-10 seconds the appliance is operating normally the green control lamp is lighting..During operation the appliance continuously monitors the status/sign of differential pressure switch and flame detector, if needed the electronic control intervenes in the process.

If the status of differential air pressure switch is changed during operation namely switches over from work/switched on position to basic/standstill position in that case the automatic electronic control stops the gas supply by closing of magnetic valves and controls the appliance in error mode moreover the red control lamp located on front side of device is lighting.

In case the flame detector of automatic burner control does not sense flame formation during ignition in that case stops the gas supply and controls the appliance in error mode moreover the red control lamp is lighting.

In case during burning process the pressure difference decreases under the permissible minimal value on the air pressure switch than the automatic control prohibits the operation as follows:

- stops the gas supply
- stops the operation of exhaust fan
- controls the appliance in error mode and red control lamp is lighting

**ATTENTION!** The restart of appliance, which is in safety status can only be possible by pushing of „RESET” push button located on the PCB (inside of appliance) or on the temperature regulator!

**General information:** The flame detector is self-checking and can just operate with the burner, other environmental effects (ambient temperature, lights) can not influence it.

**CONTROL AND REGULATION OF APPLIANCE**

The control of appliance is performed by temperature regulator(room thermostat). It can be manually operated or equipped with programme-clock according to the request.

**MANUALLY OPERATED THERMOSTAT (AHP-1):**

the thermostat is equipped with a mode switch HEATING / 0 / VENTILATING and equipped with a „RESET” (remote-restarter) push-button. The requested temperature can be adjusted on a calibrated scale by the driving knob and the thermostat turns on/off the appliance according to the temperature.

**PROGRAMMABLE THERMOSTAT (AHP-2):**

the thermostat is equipped with a mode switch HEATING / 0 / VENTILATING and with a „RESET” push button and with PROGRAMME-CLOCK. The requested day/night-temperature can be adjusted on calibrated scales by two driving knobs. The programmable thermostat turns on/off the appliance depending on part of the day according to the temperature. The programme-clock makes the daily and weekly programming possible.

The gas-powered warm air blower is equipped with an electrical board(built into the appliance), which processes the sign of thermostat in this way the air heater and the thermostat can communicate by one wire, it is the so-called PILOT control.

**AHP-3:**

The appliance is controlled by a HEATING/0/COOLING selector and RESET button. It has a time switch. Use the two rotatable knob to set the temperature. Thermostat can TURN ON and TURN OFF the appliance, it depends on the room temperature. You have a chance daily and weekly programming with time switch.

Thermostat and appliance: Appliance is under voltage with selector. In this case the green lamp is lighting and you can choose from heating or cooling mode.

Operation:

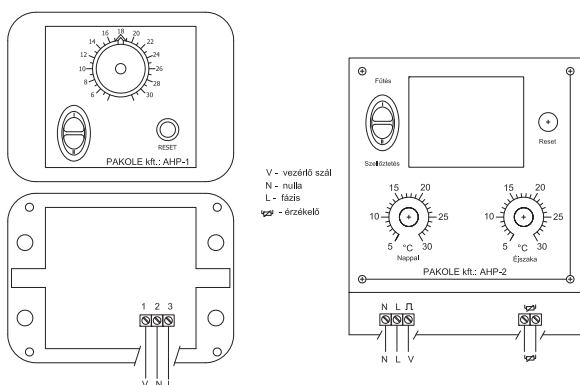
In heating mode, use the knob to set the maximal pressure (2 red lamp is lighting) and after turn the button back (50 % LED is lighting) to set the minimal pressure. Next step to set required temperature with the knob.

**AHP-MOD:**

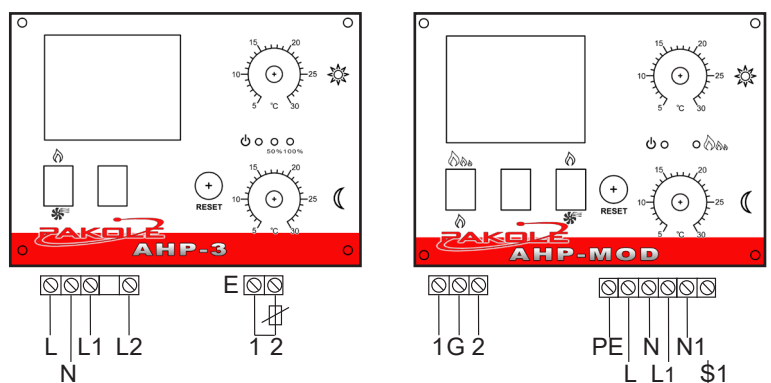
Controller has HEATING / 0 / VENTILATION switch, „RESET” button, MODULATION/100% switch and has PROGRAM HOURS. Set day and night temperature by two calibrated rotary knobs. The programmable thermostat turn on device depending on the time of day if required by the room temperature.

Set control device: turn on the device by switch 0/1 (green LED lights up) Turn on HEATING by HEATING / VENTILATION mode switch.

Setting mode: In heating mode set the knob to 30°C then the device working at 100%. Set the solenoid valve at maximum upper pressure. Turn back the knob until red LED flashes. Check out the output voltage S1 and L1 between 110V and 115 V. Set the solenoid valve at minimum pressure. After that set the room temperature value.



42.picture: AHP-1 and AHP-2 temperature regulator



43.picture: AHP-3 and AHP-MOD temperature regulator

**ATTENTION!** The GTV warm air blowers can be operated by AHP-1 and AHP-2-type temperature regulator, which may be purchased at appliance manufacturer . In case of using different temperature regulator, please contact with the manufacturer in interest of proper installation!

## 10. MAINTANCE

The GTV-type warm air blowers apart from the checking of suspension and cleaning of cover, lamellas and circulating fan do not need extra maintenances but to be able to preserve the long lifetime of appliance it is recommended to have yearly supervision done with a qualified service or expert.

### MAINTENANCE PROCEDURES

Maintenance supervisions by the costumer: (recommended half a yearly)

- supervision of circulating fan, if needed clean it (by high pressure air),
- supervision of outblowing apertures (lamellas)
- supervision of suspension points/surfaces by survey



**WARNING! Before every maintenance the appliance must be detached from the electrical supply by switching off the main-switch and disconnecting the connection plug located on the back side of appliance!**



**ATTENTION! In case operational circumstances of appliance (atmosphere is contaminated with corrosive substances,dirt) need it, then supervision and cleaning may have done more often! The main reason of this that dirt placed on the fan may damage efficiency of appliance!**

### MAINTENANCE SUPERVISION SOLELY BY A QUALIFIED SERVICE DEPARTMENT

(ALL KINDS OF INTERVENTIONS FOR WHICH DISASSEMBLY OF APPLIANCE IS NECESSARY):

- supervision of nozzle pressure (at the outlet of solenoid valve),
- check of the condition of pressure regulator
- check of the protective ground
- check of the electrical connection
- check of the exhaust fan and circulating fan: check the free rotation of fan and remove the possible contaminations from the impellers
- supervision of the heat exchanger
- supervision of working of the temperature controller
- check of the ignition and ionization electrode, if necessary change it
- check of the exhaust fan and circulating fan, if necessary clean those
- supervision of the quality of combustion
- dismounting and clean of the gas filter by high pressure air



**ATTENTION! After every maintenance the appliance must be again adjusted !**

Constructional components,which ensure the suitable operation:

- double-closed solenoid valve
- automatic burner control
- electrical board (sign processing)
- differential pressure switch
- exhaust fan
- combined thermostat (bimetal),
- heat-limiter thermostat (100oc),
- circulating fan

Apart from cleaning of exhaust fan and circulating fan the a.m. components do not need maintenance! The cleaning of fans is expedient to carry out by high pressure air.



**WARNING! Never block the outflow of fume and inflow of combustion air!  
Never change the original adjustments what the expert made!  
Never allow that water or water -vapour can be got on the appliance!**

**GAS CHANGE**

**ATTENTION!** In case you would like to operate your appliance by another type of gas (e.g. by Natural gas instead of Propane gas), then contact the local authorized representative or a qualified service department!



**ATTENTION!** This action can only be realized by authorized expert or service!



**ATTENTION!** If the heater appliance is working, than it is prohibited to close the shutters completely!

**11. TROUBLESHOOTING**

There are installed mode indicator lamps on the front side of appliance:

- *GREEN*: operation indicator lamp
- *RED*: error indicator lamp

# 12. ENCLOSURE

## ENCLOSURE 1 / A . : APPLIANCE PERFORMANCE DATA

Modell		GTV-20A	GTV-27A	GTV-33A	GTV-40A	GTV-48A	GTV-58A
Input (NCV)	kW	20,25/13,5	27,05/18,12	33,4/22,38	40,35/27,03	47,3/31,69	58,8/39,4
Output (NCV)	kW	18,6/12,2	24,9/16,4	30,8/20,2	37,2/24,4	43,6/28,6	54,3/35,6
Effeciency [3 pont/Mod]	%	72,7/73,4	72,8/73,6	72,6/73,4	72,7/73,5	72,7/73,5	72,8/73,5
Gas Consumption	Natural gas	m <sup>3</sup> /h	2,15/1,44	2,87/1,92	3,54/2,37	4,27/2,86	5,01/3,36
	Propan	kg/h	1,67/1,12	2,23/1,49	2,76/1,85	3,33/2,23	3,9/2,61
Air flow	m <sup>3</sup> /h	2350	2900	3600	4300	5200	6100
Quantity of pressure	db	1	1	1	1	1	1
Different of air temperature $\Delta T$ [max/min]	°C	25,2	25,6	25,1	24,8	25,7	25,3
Air throw	m	12	16	18	20	22	25
Exhaust pipe / air supply diameter	mm	Ø100/Ø100					
Gas connection		G1/2" ISO 228 OD					
Electrical connection		230V / 50Hz					
Nominal current consumption	A	0,9	0,9	1,77	1,77	1,9	1,9
Electrical performance	W	0,21	0,21	0,41	0,41	0,44	0,44
Noise level	dB(A)	53	53	55	55	55	57
Weight	kg	64		86		95	
IP protection of device		IP21					

Modell		GTV-68A	GTV-78A	GTV-87A	GTV-97A	GTV-107A	GTV-116A
Input (NCV)	kW	68,03/45,58	79,1/53,0	85,48	98,9	103,4	118,8
Output (NCV)	kW	63,1/41,7	72,9/48,3	78,9	91,0	95,2	109,1
Effeciency [3 pont/Mod]	%	73,5/74,3	72,4/73,2	-	-	-	-
Gas Consumption	Natural gas	m <sup>3</sup> /h	7,21/4,83	8,38/5,61	9,06	10,48	12,58
	Propan	kg/h	5,61/3,76	6,53/4,37	7,05	8,16	9,80
Air flow	m <sup>3</sup> /h	7300	8100	8300	8300	11000	11000
Quantity of pressure	db	1	1	1	1	1	1
Different of air temperature $\Delta T$ [max/min]	°C	24,2	26,2	25,1	26,2	25,4	26,2
Air throw	m	33	33	35	35	37	37
Exhaust pipe / air supply diameter	mm	Ø100/Ø150					
Gas connection		G3/4" ISO 228 OD					
Electrical connection		230V / 50Hz					
Nominal current consumption	A	4,15	4,15	4,15	4,15	4,25	4,25
Electrical performance	W	0,95	0,95	0,95	0,95	0,98	0,98
Noise level	dB(A)	67		69		72	
Weight	kg	148		167		198	
IP protection of device		IP21					

Modell			GTV-20C,CL	GTV-27C,CL	GTV-33C,CL	GTV-40C,CL	GTV-48C,CL	GTV-58C,CL	
Input (NCV)	kW		20,25/13,5	27,05/18,12	33,4/22,38	40,35/27,03	47,3/31,69	58,8/39,4	
Output (NCV)	kW		18,6/12,2	24,9/16,4	30,8/20,2	37,2/24,4	43,6/28,6	54,3/35,6	
Efficiency [3 pont/Mod]	%		72,7/73,4	72,8/73,6	72,6/73,4	72,4/73,6	72,7/73,5	72,8/73,5	
Gas Consumption	Natural gas	m <sup>3</sup> /h	2,15/1,44	2,87/1,92	3,54/2,37	4,27/2,86	5,01/3,36	6,23/4,17	
	Propan	kg/h	1,67/1,12	2,23/1,49	2,76/1,85	3,33/2,23	3,9/2,61	4,85/3,25	
Air flow	m <sup>3</sup> /h		2350	2900	3600	4300	5200	6100	
Quantity of pressure	db		1	1	1	1	1	1	
Different of air temperature ΔT [max/min]	°C		25,2	25,6	25,1	24,8	25,7	25,3	
Air throw	m		12	16	18	20	22	25	
Exhaust pipe / air supply diameter	mm	Ø100/Ø100							
Gas connection		G1/2" ISO 228 OD							
Electrical connection		230V / 50Hz							
Nominal current consumption	A		7,9/4,1	7,9/4,1	8,3/5	8,3/5	9,2/6	9,2/6	
Electrical performance	kW		943	943	1150	1150	1380	1380	
Noise level	dB(A)		56	58	56	58	58	58	
Weight	C	kg	70		93		121		
Weight	CL	kg	75		98		126		
IP protection of device			IP21						

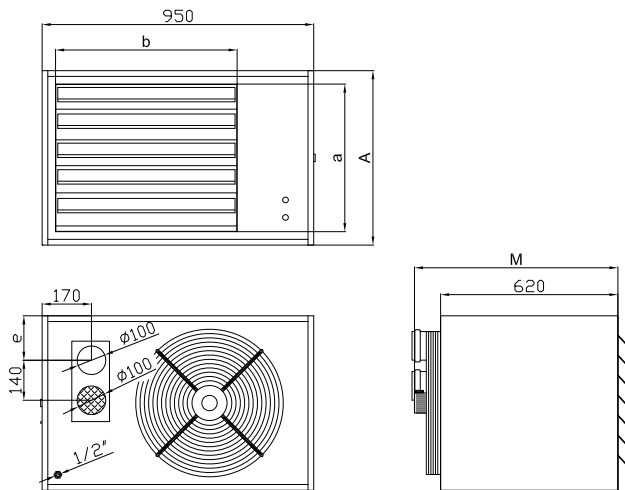
**ENCLOSURE 1 / B : GAS CONSUMPTION**

Type	Input		Output		Gas consumption			
	2 point	3 point/ modulation	2 point	3 point/ modulation	2 point	3 point/ modulation	2 point	3 point/ modulation
	[kW]		[kW]		Natural gas [m3/h]		Propan [kg/h]	
GTV-20	20,25	20,25/13,5	1,6	18,6/12,2	2,15	2,15/1,44	1,67	1,67/1,12
GTV-27	27,05	27,05/18,12	24,9	24,9/16,4	2,87	2,87/1,92	2,23	2,23/1,49
GTV-33	33,4	33,4/22,38	30,8	30,8/20,2	3,54	3,54/2,37	2,76	2,76/1,85
GTV-40	40,35	40,35/27,03	37,2	37,2/24,4	4,27	4,27/2,86	3,33	3,33/2,23
GTV-48	47,3	47,3/31,69	43,6	43,6/28,6	5,01	5,01/3,36	3,90	3,9/2,61
GTV-58	58,8	58,8/39,4	54,3	54,3/35,6	6,23	6,23/4,17	4,85	4,85/3,25
GTV-68	68,3	68,03/45,58	63,8	63,1/41,7	7,21	7,21/4,83	5,61	5,61/3,76
GTV-78	79,1	79,1/53,0	72,9	72,9/48,3	8,38	8,38/5,61	6,53	6,53/4,37
GTV-87	85,48	-	78,9	-	9,06	-	7,05	-
GTV-97	98,9	-	91,0	-	10,48	-	8,16	-
GTV-107	103,4	-	95,2	-	10,95	-	8,53	-
GTV-116	118,8	-	109,1	-	12,58	-	9,80	-

\* The 2-point regulation's appliance does not have an energy certificate.

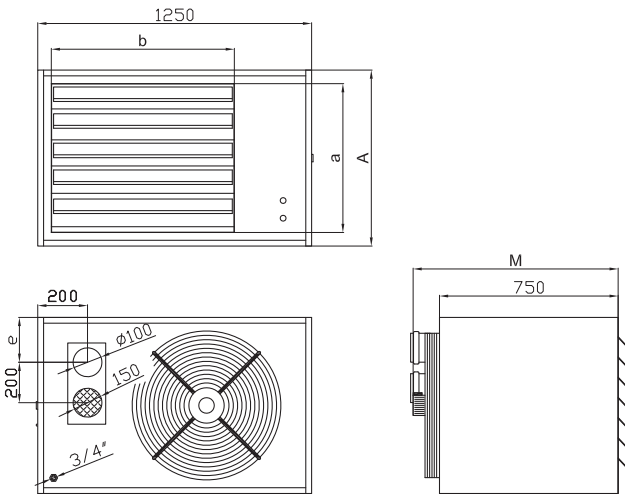
**ENCLOSURE 2.: APPLIANCE DIMENSIONS PER TYPES**

**GTV-...A AXIAL FAN-TYPE 20...58 kW**



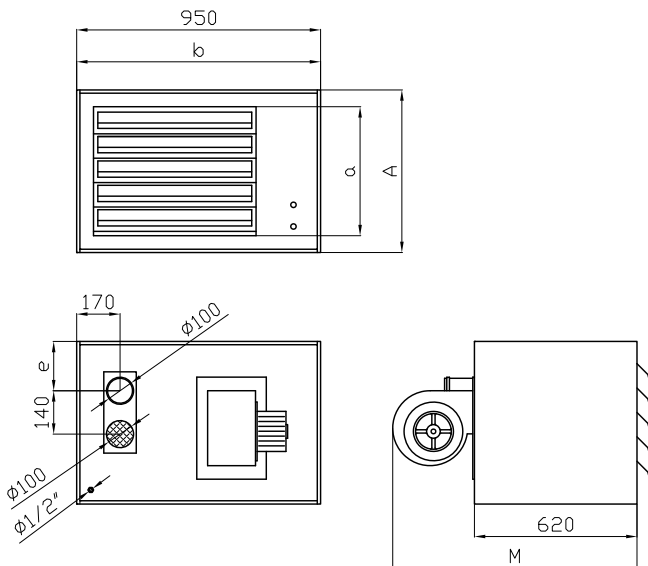
Type	A	a	b	M	e
GTV -20A	470	370	625	700	135
GTV -27A	470	370	625	700	135
GTV -33A	610	510	625	805	187
GTV-40A	610	510	625	805	187
GTV-48A	750	650	625	805	252
GTV-58A	750	650	625	805	252

**GTV-...A AXIAL FAN-TYPE 68...116 kW**



Type	A	a	b	M	e
GTV-68A	810	700	840	970	238
GTV-78A	810	700	840	970	238
GTV-87A	960	850	840	970	318
GTV-97A	960	850	840	970	318
GTV-107A	1110	1000	860	990	412
GTV-116A	1110	1000	860	990	412

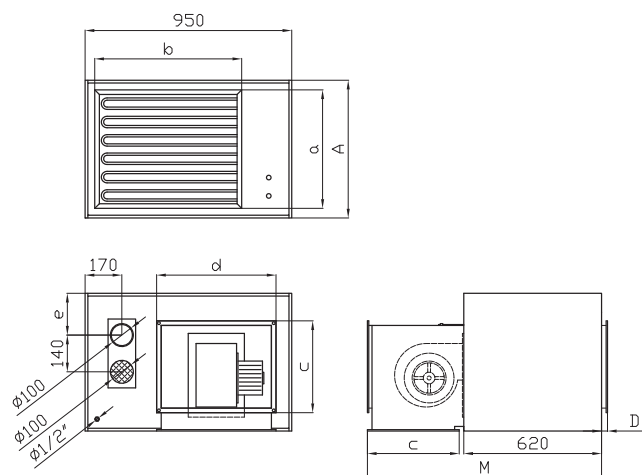
**GTV-...C CENTRIFUGAL FAN-TYPE 20...58 kW**



Type	A	a	b	M	e
GTV-20C	470	370	625	990	135
GTV-27C	470	370	625	990	135
GTV-33C	610	510	625	1040	187
GTV-40C	610	510	625	1040	187
GTV-48C	750	650	625	1110	252
GTV-58C	750	650	625	1110	252



GTV-...CL CENTRIFUGAL FAN-TYPE 20...58 kW



Type	A	a	b	c	d	M	D	e
GTV-20CL	470	350	600	350	500	1050	50	135
GTV-27CL	470	350	600	350	500	1050	50	135
GTV-33CL	610	500	600	400	550	1100	50	187
GTV-40CL	610	500	600	400	550	1100	50	187
GTV-48CL	750	650	600	450	600	1150	50	252
GTV-58CL	750	650	600	450	600	1150	50	252

**ENCLOSURE 3.: FLUE LONGS, ALLOWED PRESSURE DROPS**

**ATTENTION!** The joint of pipes must be sealed and fixed! Not allowed longer flue system as the above chart shows!

**Supplement:** The fresh air supply and venting set can contain an elbow 90°. In case of use more elbows, you need to reduce the length of fresh air supply and venting set, as follow:

- See the following:
- the pressure drop of 1m inox Ø100mm pipe is 2Pa
- elbow 90° is equal about 1m-length pipe (2-3Pa)

**It is allowed to use longer fresh air supply and venting set with isolation and condensate outlet. In this case, contact the manufacturer!**

Type	GTV-20A, C, CL	GTV-27A, C, CL	GTV-33A, C, CL	GTV-40A, C, CL	GTV-48A, C, CL	GTV-58A, C, CL
Venting set type	Maximal lenght of venting set Ø 100 mm [m]					
B22	3	4	6	6	8	8
C12	3	4	6	6	8	8
C32	3	4	6	6	8	8
C52	3	4	6	6	8	8
Venting set type	Maximal pressure drop of venting set Ø 100 mm [Pa]					
B22	6	8	12	12	16	16
C12	6	8	12	12	16	16
C32	6	8	12	12	16	16
C52	6	8	12	12	16	16

Type	GTV-68A	GTV-78A	GTV-87A	GTV-97A	GTV-107A	GTV-116A
Venting set type	Maximal lenght of venting set $\varnothing$ 100 mm [m]					
B22	12	14	16	18	20	20
C12	12	14	16	18	20	20
C52	12	14	16	18	20	20
Venting set type	Maximal pressure drop of venting set $\varnothing$ 100 mm [Pa]					
B22	24	28	32	36	40	40
C12	24	28	32	36	40	40
C52	24	28	32	36	40	40

#### ENCLOSURE 4.: TARGET COUNTRIES/GAS CATEGORIES

Modell	Appliance category	Gas pressure of connection (mbar)	Target countries
GTV-20A, C, CL GTV-58A, C, CL GTV-68A ... GTV-116A	$I_{2H}$	20	DK, EE, FI, LT, LV, NO, SE
	$I_{2E}$	20	LU, DE
	$I_{3P}$	37	BE, FR
		50	CY, DE
	$I_{2H3P}$	20, 28-30	BA, BG, MD, RO, RU, SK, UA, HR, RS
		20, 37	CH, ES, GB, IE, PT, SI
		20, 28-30, 37	CZ, GR, IT
		20, 50	AT, TR
$I_{2E3P}$	20, 37	PL	
GTV-20A, C, CL... GTV-58A, C, CL	$I_{2HS3P}$	25, 28-30, 50	HU
GTV- 68A... GTV-116A	$I_{2H3P}$	25, 28-30, 50	HU
	$I_{3P}$	50	NL

The appliances were tested together with the flue system, recommended by the manufacturer.

The applied flue system parts: LIM-MONT ECO DIM, DW,  
LIM-MONT ECO DIM DE.

Model: **GTV-20A / C / CL-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	18,59	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	82,73	%
Minimum capacity	$P_{min}$	12,22	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,19	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,068	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,050	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	94,21	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	72,7	%

Model: **GTV-20A / C / CL-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	18,59	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	82,73	%
Minimum capacity	$P_{min}$	12,22	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,19	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,068	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,050	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	94,21	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,4	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10

Model: **GTV-27A / C / CL-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	24,94	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,09	%
Minimum capacity	$P_{min}$	16,40	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,55	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,068	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,050	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,70	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	72,8	%

Model: **GTV-27A / C / CL-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	24,94	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,09	%
Minimum capacity	$P_{min}$	16,40	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,55	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,068	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,050	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,70	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,6	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10

Model: **GTV-33A / C / CL-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	30,8	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,00	%
Minimum capacity	$P_{min}$	20,2	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,28	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,072	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,060	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,71	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	72,6	%

Model: **GTV-33A / C / CL-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	30,8	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,00	%
Minimum capacity	$P_{min}$	20,2	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,28	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,072	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,060	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,71	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,4	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10

Model: **GTV-40A / C / CL-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	37,24	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,2	%
Minimum capacity	$P_{min}$	24,39	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,3	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,072	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,060	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,70	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	72,7	%

Model: **GTV-40A / C / CL-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	37,24	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,2	%
Minimum capacity	$P_{min}$	24,39	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,3	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,072	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,060	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,70	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,5	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10

Model: **GT-48A / C / CL-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	43,56	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,0	%
Minimum capacity	$P_{min}$	28,55	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,2	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,095	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,074	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,87	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	72,7	%

Model: **GTV-48A / C / CL-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	43,56	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,0	%
Minimum capacity	$P_{min}$	28,55	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,2	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,095	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,074	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,87	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,5	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10

Model: **GTV-58A / C / CL-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	54,27	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,2	%
Minimum capacity	$P_{min}$	35,61	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,5	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,095	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,074	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,54	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	72,8	%

Model: **GTV-58A / C / CL-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	54,27	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,2	%
Minimum capacity	$P_{min}$	35,61	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	81,5	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,095	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,074	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,54	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,5	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10



Model: **GTV-68A-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	63,13	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,6	%
Minimum capacity	$P_{min}$	41,71	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	82,5	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,165	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,142	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,70	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,5	%

Model: **GTV-68A-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	63,13	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,6	%
Minimum capacity	$P_{min}$	41,71	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	82,5	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,165	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,142	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	93,70	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	74,3	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10

Model: **GTV-78A-3P 3-point controlled gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	72,85	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,0	%
Minimum capacity	$P_{min}$	48,33	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	82,2	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,165	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,142	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	92,64	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	72,4	%

Model: **GTV-78A-MOD Modulated Indirect gas-fired forced convection air heater with axial fan**

B<sub>1</sub> Warm air heater: No

C<sub>2</sub> Warm air heater: No

C<sub>4</sub> Warm air heater: No

Type of fuel: Gas

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Capacity				Useful efficiency			
Rated heating capacity	$P_{rated,h}$	72,85	kW	Useful efficiency at rated heating capacity	$\eta_{nom}$	83,0	%
Minimum capacity	$P_{min}$	48,33	kW	Useful efficiency at minimum capacity	$\eta_{pl}$	82,2	%
Electric power consumption				Other items			
At rated heating capacity	$e_{l,max}$	0,165	kW	Envelope loss factor	$F_{env}$	0,0	%
At minimal capacity	$e_{l,min}$	0,142	kW	Ignition burner power consumption	$P_{ign}$	0,0	kW
In standby mode	$e_{l,sb}$	0,0	kW				
Regulation (EU) 2016/2281				Emission efficiency	$\eta_{s,flow}$	92,64	%
				Seasonal space heating energy efficiency	$\eta_{s,h}$	73,2	%

Contact details

PAKOLE Trade Kft. H-8000, Székesfehérvár, Börgöndi út, 8-10

## GUARANTEE AND SERVICES

### PRESERVE THIS WARRANTY

Type: _____ Serial no.: _____ Date of purchasing: _____
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### 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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[www.pakole.com](http://www.pakole.com)

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