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AGRH – ASPHALT GAS RADIANT HEATER

OPERATING MANUAL

WARNING! Read carefully before installing. The producer reserves the right to make any changes without permission.

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1. GENERAL RULES

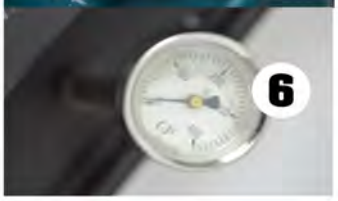
The manual is an integral and essential part of the device and should be carefully stored near the device, for easy use. Read fully the manual and the warnings included in the instruction, as it brings important information about safety, usage and conservation.

Warning!

In case of loss you should order a new copy of the manual from the supplier of the device.
The heater PDA 16 is designed to perform minor repairs of roads with asphalt surface. The heater can be used only in the open air. The device can work in wide range of air temperature, so it can be used in current repairs of roads as well as on summer time as on winter time. The devices can be connected in teams that allow to work simultaneously on a larger area. The device is adapted for direct connection to the gas cylinder, equipped with a left thread valve (1/2"). The heater is equipped with gas pressure reducer and automatic temperature controller that controls the temperature of the heated surface. To ignite the device the piezoelectric igniter is used. The device does not require additional power sources.
The use of the device may only be carried out in protective clothing and gloves, maintaining all safety rules. The heater holder may be heated due to the work of the device.

2. SPECIFICATIONS

Dimensions		
Height	mm	500
Width	mm	550
Lenght	mm	1170
Weight	kg	45
Specifications		
Nominal power	kW	25
Number of tiles		16
LPG gas consumption	kg/h	1,7
Type of gas		Propan / Propane - Butan
Diameter of the nozzle	mm	1,8
Nozzle max pressure	mbar	26
Ambient temperature	°C	-10 do 50
Temperature range	°C	100 do 340
Automatic control		Manual
Gas safety		termo-electric
Surface heated	cm	55 / 115



1 **MAXITROL Valve**
(GV30)

2 **Regulator GOK**
(01-008-037)

3 **Manometer**
(611.10.100 6kPa)

4 **Pilot nozzle**
(typ C)

5 **Pilot extension**
(PG4)

6 **Termometer bimetal**
(TB63T 0-400ST C R300)

7 **Ceramic tile**
(K-02 SUN)

8 **Ceramic tile**
(K-04 SUN)

9 **Wheels fi 200**
(Kod 87307)

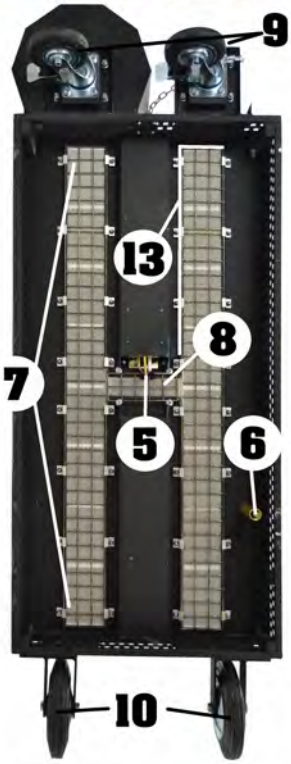
10 **Wheels fi 250**
(Kod 87323)

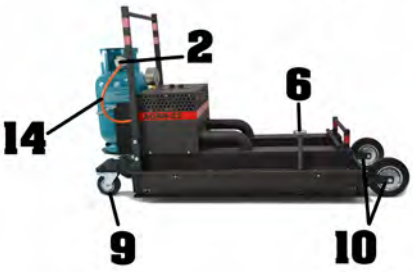
11 **Injector**
(AK-37)

12 **Injector nozzle**
(D-SBC)

13 **Sealing paper Hcram**
(MA-004/HC-R)

14 **Gas hose**
(MAXITROL valve)





3. MAIN COMPONENTS OF THE DEVICE

a) The gas control - compact device for regulation and control of gas flow with piezoelectric lighter, temperature sensor of heated surface and gas safety

OPERATING UNIT	
Producer	Mertik Maxitrol
Model	GV30
Temperature of working	-0° ÷ 80 °

b) reducer - adjusts the pressure of the gas cylinder to the gas supply unit

REDUCER	
Producer	GOK
Model	NDR 0416
Setting	37/50mbar
Efficiency	12 kg/h

Or

REDUCER	
Producer	GOK
Model	FL 92-4
Setting	37 mbar
Efficiency	6 kg/h

4. LAUNCH

a) connect to the propane-butan gas cylinder
b) unscrew the cylinder valve (the pressure will appear on the manometer
c) the switch ignition/work set in position „·"
d) turn the switch ignition/work in the position „«". Press the knob and turn to the position „S (a small flame symbol).The audiable effect will be clearly heard when the device will strat to work.
e) through the sight glass check whether the pilot flame appeared.
f) when the flame appears, hold the switch ignition/work for few seconds in position „S " until thermocouple will obtain the temperature that allows to maintain pilot flame, then release the switch.
g) turn the ignition/work switch to the position indicating large flame
h) set the temperature dial to the desired position.„1" corresponds to the setting of approximately 100°C and „7" about 340°C.

5. EXPLOITATION

Warning!

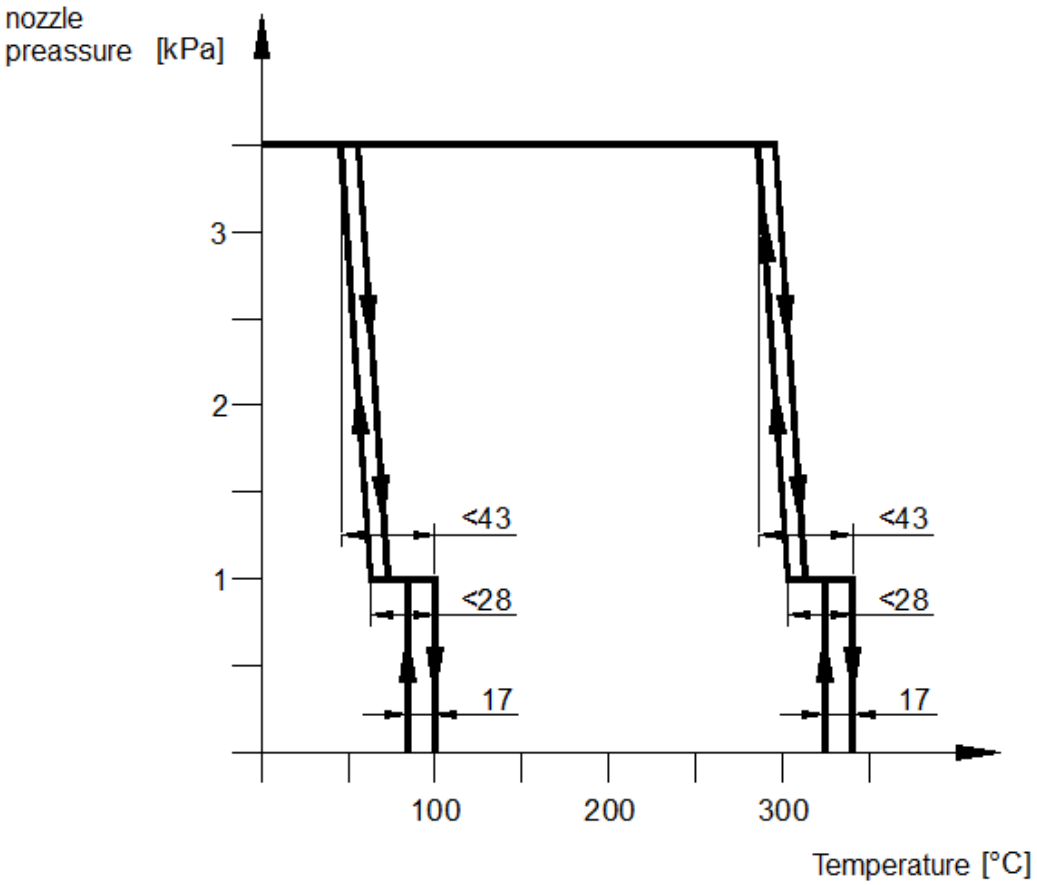
The temperature set on the heater PDA is an information for the sensor mounted near the asphalt surface and does not specify the real temperature.
Except for the dial "thermostat" the device does not require other controls during the operation. Pressure greater than 0 on the manometer mounted on the device informs about the gascombustion on the tiles, which shows that the asphalt is heated. When the heater is running and after the "thermostat" dial is set to the positions 1-7 perform a test on a piece of asphalt involving a selection of the appropiate dial position and the heating time. Depending on the density, compostion, type of asphalt as well as the temperature of the enviroment the controller point will be different. The optional thermometer mounted on the heater can determine the approximate temperature of the asphalt and does not affect any process of heating. The thermometer should be screwed after the device is set to its work place.
After the completion of the heating process the ignition/work switch should be set to the "S" position. This knob position leaves the device in standby for further work : burning pilot lights, but the asphalt will not be heated. Remember, if you leave the device in standby mode the gass supply valve does not close and the burning pilot is constantly lighting. In this case the heater can not be set aside on the area where nearby materials or plants could be ignited.

6. OPERATING CHARACTERISTICS

In the "work" mode it is possible to set the temperature smoothly in the range from 100 ° C to 340 ° C. The temperature is measured with the help of :temperature sensor" (Fig. 1) permamently connected to the gas module. If the sensor is damaged, it is necessary to replace the entire gas valve assembly. The graph shows the operating characteristics of the heater depending on the setting of the dial " thermostat" (Fig. 1) . The valve is adjusted in the pressure range from 10 mbar to 35mbar . The left side of the graph shows the setting temperature control to position 1. The graph shows that after reaching a temperature of approximately 60 ° C the gas pressure drops to approximately 10 mbar resulting in a reduced capacity of the cylinder. When the power is decreased the achieved temperature is 100 ° C. Exceeding this temperature will cut off the gas supply and turn off the burner. In this case the heater all the time is in the "work" mode. Turning off the burner does not transition into " standby" mode . The temperature drop of 17 ° C causes the re- activation of the burner at reduced pressure and heating to reach by the sensor the temperature of 100 ° C. The cycle is repeated until the device switches off . Analogously the right side of the graph is the sensor temperature reaches 340 ° C.

7. TURNING OFF

The turning off of the device is done via ignition/work switch. To do this, turn the knob to the right. In this knob position the pilot flame is still lighting (the heater remains in "standby" mode"). To completely turn off the device, press the knob and re-turn to the right.
When the work is finished spin the cylinder valve to the right.



8.REGULATION

The delivered device is adjusted and ready to use. In special cases it is possible to change some parameters.

a) maximum pressure (factory setting 35mbar) can be changed by the adjusting screw under the plastic cover of gas control. The adjustment is carried out with a flathead screwdriver 2.5 mm. Rotate left to decrease the pressure, and rotate right to increase.

b) the minimum pressure (10 mbar factory settings) can be changed using the screws "Low pressure regulator" (Fig. 1) on the side of the gas control. The adjustment is carried out with a flathead screwdriver 5mm.

c) regulation of the gas flow to the pilot. To adjust use screw loctaed under the plastic housing of the gas control which faces the gas delivery tube to the pilot.

9. DESCRIPTION OF THE MALFUNCTIONING DEVICE

DEFECTS	CAUSE	SOLVING
The pilot flame does not light up	a) no gas	a) check the indications of the manometer on the inlet of the device b) check the gas hose kinks
	b) no spark	a) set the electrode 4mm from pilot tile b) check the correct connection of the cable to the electrode
When you release the ignition/work switch light goes out work	a) lack of control pilot flame	a) check the setting of the thermocouple pilot flame. b) check the connection to the gas valve. c) replace the thermocouple with original new
In the "standby" mode pilot light goes out	a) Improper pilot flame	a) check the "steering" pilot flame b) check the patency of the pilot air holes c) check the patency of the nozzle orifice pilot
Burner (tiles) lights up as "explosive"	a) Improper pilot flame	a) regulate the size of the pilot flame screw on the gas valve
	b) cracked tile / tiles	b) Replace the plate with an original new
Burner (tiles) goes out unexpectedly in the"work" mode	a) improper gas pressure	a) Check the maximum(35mbar) and minimum (10 mbar) pressure b) pass the heater to authorized service facility.