

AIR CONDITION UNITS MANDÍK

GHM GAS CONDENSING AIR HEATERS



Starting with 2018 Mandík Company markets new gas/oil condensing air heaters GM/OHM in stainless steel design with heating outputs 95–600 kW designed for use in MANDÍK air condition units. The combination of quality and reliable air heaters fully adapted to M and P dimensional lines brings with innovative utilisation of heat condensing component a totally new quality to the sector of modular air condition units. Based on intensive research, testing and certification the excellent technical parameters of Mandík condensing boilers offer efficiency which, in optimal condensing conditions, may exceed 100 %.

- heating chamber boiler in stainless steel version –resistant to high temperatures
- 10 power sizes up to 600 kW
- operator's side, fluid connections and flue gas exhaust - all at one place and from one –side
- fuel natural gas (ZP) or light fuel –oil (LTO)
- selection of burners from two manufacturers- Weishaupt and RIELLO
- continuous regulation from min. 35% to max. 100 % of nominal output – modulation version
- gas connection pressure 15-100 (500) mbar
- total system efficiency 92-94 % in non-condensing– mode
- maximum heat AT 45 Kelvin
- obligatory content of the supply is the box with emergency thermostat pre-set– to 90 °C
- flue gas exhaust necks with diameters 110/–450 mm
- can be supplied including flue gas ducting
- heating units can be furnished with complete regulation and automatics
- version with and without by pass in chamber upper or bottom parts.
- can be in indoor or outdoor –version
- outdoor version with thermal insulated burner –cover (sandwich pane–ls) in frame free design with servi–ce doors, air suction grills, own subframe and heating for fixtures
- outside surface treatment with– powder coating in any RAL colour
- emphasize on easy access to unit–components for maintenance and service

Excellent shell parameters according to EN 1886 -certified by TUV SUD Munich MB583

Mechanical stability: D1 (M)

Box leakage: L1 (M)

Leakage between filter and frame: < 0,5 % - F9 (M)

Cold bridges: TB2

Thermal insulation: T3

Shell attenuation dB in range 125 Hz – 8 kHz:

Hz	125	250	500	1000	2000	4000	8000
dB	14	23	26	36	38	40	47

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Table of offered air heater power lines:

Heater type	GHM 95	GHM 120	GHM 150	GHM 188	GHM 240	GHM 300	GHM 375	GHM 473	GHM 540	GHM 600
Minimal heating power [kW]	95	120	150	188	240	300	375	473	540	600
Nominal air flow (m ³ /h)	6300*	8000*	10000*	12500*	16000*	20000*	25000*	31500*	36000*	40000*

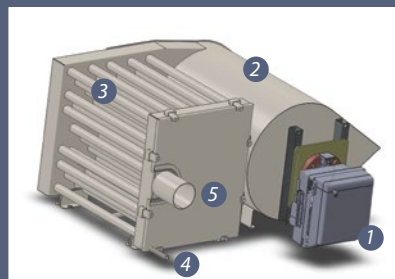
* nominal air flow is mentioned for particular size of condensing exchanger only, not for given unit. Residual air can be led through exchanger by pass and it is subsequently mixed with heated air.

Optimal conditions for operating in condensing mode:

- the lower input temperature in front of the heater the more probable vapour condensing in flue gas
- with higher cross-sectional velocity of air passing through the heater, it is easier to obtain –condensing mode
- the lower current heating power of the heater in proportion to its nominal output (or even when occurs burner cyclic – switching on and off at its min.output), the more frequently water vapour condenses in flue gas

Heater basic parts:

1. burner
2. tube flue
3. tube sheet
4. condensation removal
5. flue gas exhaust



Types of offered burners:

- Weishaupt
 - manufacturer in Schwendi, Germany Founded in 1932, 29 branches in Germany and 21 subsidiaries within the Concern. Represented in 38 countries, over 3400 employees
 - gas burners (WG and WM) with two-stage or modulated regulation, electronically controlled air shutter, fan speed control, low emissions, integrated leakage control of gas and magnetic valves
 - oil burners with one or two-stage power regulation low NO_x emissions, electronically controlled air shutter, tight nozzle
- RIELLO
 - manufacturer in Legnaco, Italy Founded in 1920, 9 production plants, over 2000 employees, represented in more than 60 countries
 - gas burners (BS and RS) with low emission burner with two-stage modulated regulation, microprocessor automatics, stainless steel burning head resistant to high temperatures, air shutter with servodrive
 - oil burners (RG and RL) with one or two-stage power control, flame electronic-control, stainless steel burning head



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