

# OIL-MATIC

THERMAL FLUID HEATER

**OMV**  
SERIES



HIGH FLEXIBILITY AND INNOVATION

**Cannon**  
**BONO ENERGIA**

## A TAYLOR MADE SOLUTION

**OIL - MATIC OMV heaters** have been developed upon BONO ENERGIA's significant technical and technological expertise in manufacturing complex, high-capacity thermal equipment up to 40 MW with HTH box type design.

With over **4,000** installations, **OIL - MATIC OMV heaters** represent a remarkable achievement and a valid response to the needs of the industrial market, as they offer reliability and high performance.

**OIL - MATIC OMV heaters are flexible:** a wide range of models from 200 kW to 7 MW vertical or horizontal type, compact structure.

**OIL - MATIC OMV heaters are innovative:** the new multitubular design ensures a better fluid protection and prevents undesirable thermal shocks between the inner and outer coils.



**OIL - MATIC OMV heaters offer several options** to optimise the excellent 'dynamic properties', allowing thus to exploit further 'potential energy savings':

- Integrated electronic control system "Optispark"
- Air pre-heater
- Inverter on thermal fluid pumps and air-fan

## TECHNICAL STRENGTHS

- **Large heated surfaces**, sized according to the most conservative parameters, ensure extremely low superficial and volumetric thermal loads. Special attention is paid to the furnace sizing. In Oil-Matic heaters a low heat flux, as well as a small difference between the film temperature and the bulk temperature, lead to negligible fluid degradation.
- **A new coil design and the fluid turbulent flow** guarantee excellent heat transfer conditions and the best temperature profile. This results in better fluid protection especially in severe heat conditions. High turbulence and velocity of fluid in the radiant section prevent the formation of stagnant areas that might lead to flash event and fluid degradation.
- **Different fluid-dynamic conditions are setup between the radiant and the convective sections** of the furnace to ensure maximum heat transfer and fluid protection. The multicoil assures the gradual heating of the fluid and prevents undesirable thermal shocks between the inner and the outer coils.
- **Low hydraulic pressure losses** allow for low energy consumption at the circulation pump and therefore lower operating costs. This feature plays an important role in the operation of the equipment, especially if compared to the capital cost of the investment.



## CONFIGURATION

**OIL - MATIC OMV heaters** are supplied according to European norms in a package execution ready for connection to customers' utilities and include:

- Burner and relevant accessories
- Regulation and control systems
- Electric Wiring and Control panel

- **Low thermal inertia and maximum fluid protection** are the result of the minor presence of refractory materials, which ensures low heat retention in case of fluid circulation failure. The tubes screening located on the upper cover of the furnace ensures a reduced radiation effect.
- **92% thermal efficiency** is achieved optimising heat exchange in the flue gases pass through the convective area and by using a heat recovery system.
- **The air preheater** reduces a consistent part of the heat in the flue gases before they are released to the stack, thus optimising the heater's thermal efficiency. The heat recovery system can be fully and easily inspected and requires limited floor space. The use of preheated air improves thermal efficiency and considerably reduces fuel consumption.
- **The overall dimension** of the heater is the result of accurate design of the structure offering large heated surfaces in a compact size.
- **The package mode heaters** are entirely built in Bono's plants and tested before delivery. They are equipped with thermal insulation as well as combustion and automation systems.



**BONO ENERGIA**, part of **CANNON GROUP**, is the Italian leader for the production of industrial boilers and thermal fluid heaters. A staff of 150 dedicated specialists, with more than 30 engineers, are distributed in three modern production facilities.

Bono Energia currently operates according to ISO 9001:2000 and ASME Quality Systems (ASME stamp, American Society of Mechanical Engineers).

Design, construction and testing are carried out according to the strictest international standards: PED, ASME, EN, DIN, GOST-R, SQLO, R.I.Na., A.B.S., Ukrsepro.

## MAIN APPLICATIONS

**OIL - MATIC OMV heaters are used in a wide range of high temperature (up to 380°C) intensive industrial processes for heavy-duty applications:**

- Oil & Gas
- Chemical
- Packaging
- Bitumen & Asphalt
- Textile
- Food



# FLEXIBILITY, INNOVATION AND PERFORMANCE

FEATURES		RANGE													
		200	300	400	600	800	1.000	1.250	1.500	2.000	2.500	3.000	4.000	5.000	6.000
Thermal capacity	Mcal/h	200	300	400	600	800	1.000	1.250	1.500	2.000	2.500	3.000	4.000	5.000	6.000
	kW	233	349	466	698	931	1.163	1.454	1.745	2.326	2.907	3.489	4.652	5.814	6.977
Efficiency	%	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Max. fluid temperature	°C	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Inlet/outlet delta T	°C	30	30	30	30	30	33	40	40	40	40	40	50	50	50
Pressure drop fluid side	bar	1,0	1,0	0,6	1,3	1,1	1,4	0,7	1,1	0,8	1,5	1,5	2,0	2,0	2,5
Thermal fluid conten <sup>t</sup>	L	75	96	165	165	418	418	670	670	1070	1083	1530	2250	3000	3570
Flow rate	m <sup>3</sup> /h	20	20	25	40	60	60	65	75	105	125	150	165	205	250
Circulation pump head	m.c.l.	40	40	40	40	40	40	40	40	40	45	45	50	50	60
Installed total electric powers:															
Heavy fuel oil	kW	4,2	6,0	6,0	9,6	19,4	20,9	20,9	31,6	31,6	35,7	35,7	47,6	59,5	71,4
Natural gas or Diesel oil	kW	0,4	0,5	0,7	1,5	1,5	2,2	4,6	4,6	10,2	15,3	15,3	20,4	25,5	30,6
Consumption:															
Heavy fuel oil	kg/h	24	36	48	73	96	120	150	180	239	299	359	479	599	718
Diesel Oil	L/h	26	39	53	79	104	130	163	195	260	325	390	520	650	780
Natural gas	Nm <sup>3</sup> /h	27	41	55	82	108	135	169	203	270	338	406	541	676	811
Overall dimensions:															
Length L	mm	1.250	1.400	1.620	1.620	1.880	1.880	2.020	2.020	2.120	2.420	2.470	2.635	2.800	3.000
Width A	mm	1.200	1.300	1.380	1.380	1.600	1.600	1.790	1.790	1.950	2.140	2.330	3.665	3.000	3.100
Max height H	mm	2.050	2.090	2.710	2.780	3.400	3.400	3.650	3.650	4.000	4.350	4.600	5.360	6.120	6.300
Empty weight	t	1,1	1,4	1,6	1,7	2,7	2,7	3,3	3,3	4,4	5,7	7,2	10,6	14,0	16,8

## Fuels:

Heavy fuel oil ( l.h.v 9.700 Kcal/kg, viscosity < 5-7°E at 50°C pressure 2 bar)

Diesel oil (l.h.v 10.200 Kcal/kg pressure 1,5 bar)

Natural gas (l.h.v 8.500 Kcal/Nm<sup>3</sup>)

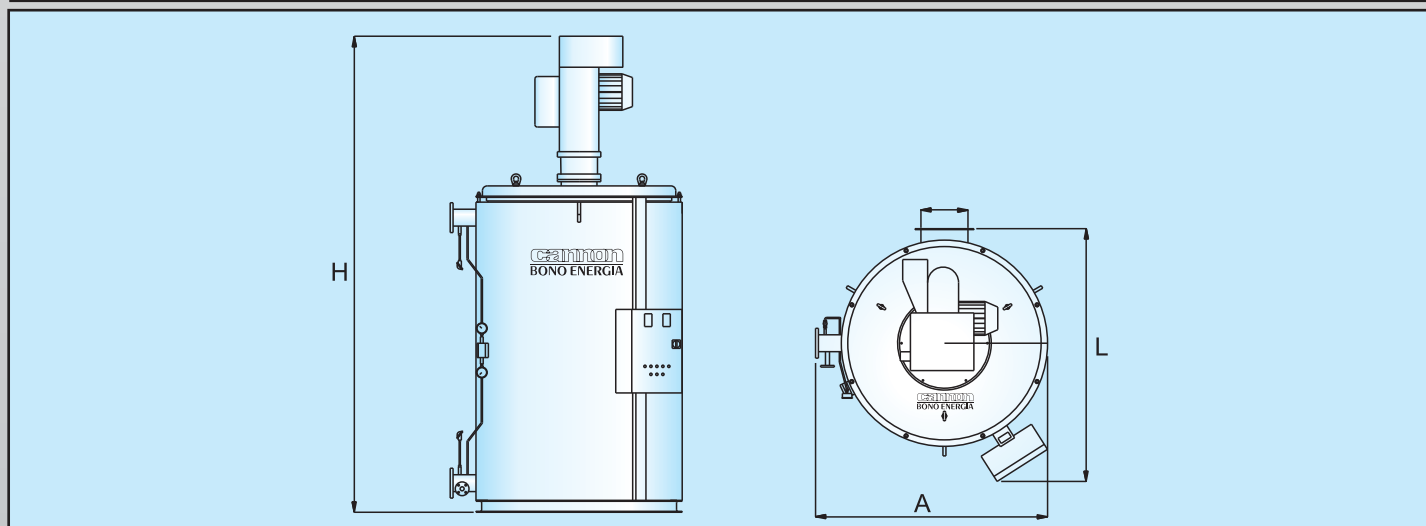
Stabilized pressure: 50 mbar up to OMV 600 200 mbar up to OMV 3000 300 mbar up to OMV 6000

## Electric power

380 V 50 Hz 3 ph + N

## Auxiliaries power

220V



**CERTIFIED**  
UNI EN ISO 9001:2000  
LR 170324



**U** **S**  
Cert. 28,818 - Cert. 28,817  
Company Authorized to  
Use the indicated ASME  
Symbols



**Cannon**  
**BONO ENERGIA**

**Bono Energia S.p.A.**

Via Resistenza, 12 - 20068 Peschiera Borromeo (MI) - Italy

Tel. +39/0255302848 - Fax +39/025471955

E-mail: sales.bono.en@bono.it

**www.bono.it**