ORC FOR INDUSTRIAL WASTE HEAT RECOVERY

Our ORC modules improve the energy efficiency of plants by converting waste heat from flue gases or industrial processes into electricity. Typical examples of an ORC application for industries are:

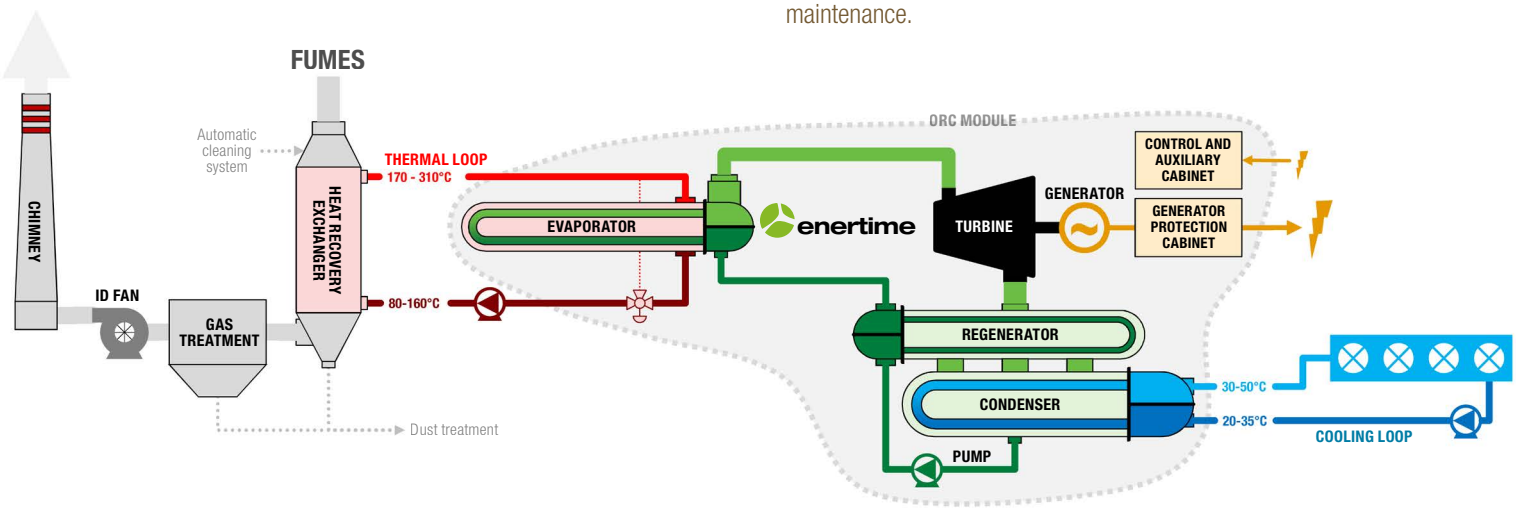
- Fumes or hot air at temperatures above 200°C
- Liquids or steam above 130°C
- Replacement of conventional cooling systems (for gases or liquid) with waste heat recovery system and ORC

Industrial customers improve their energy efficiency and decrease electricity bills by consuming or selling to the grid the generated power, without greenhouse gas emissions.

Our ORC systems are best suited for raw material processing plants and heavy industry, where technological processes generate large quantity of waste heat (several MWth): Cement, Glass, Foundries, Steel mills, etc.

One of the major advantages of Enertime ORC units is a high efficiency at part load, which is critical due to the fluctuating nature of industrial processes.

Robust and efficient, our ORC machines can be fully automated and operated remotely, without a dedicated technician, nor specific knowledge for ordinary maintenance.



3500 kWe ORCHID© module – BaoSteel, Shanghai, China

Dense organic fluids give our ORCs a higher electrical efficiency than conventional steam cycles on small-scale applications and at partial load.

ORC modules do not require traditional steam auxiliary equipment (tanks, water treatment, etc.). Compact and modular, our ORC solutions are easy to install on-site without any affect to a technological process and require little civil and mechanical works.

In addition to the standard range of machines presented overleaf, Enertime manufactures customized ORC modules, tailored to the specific needs and requirements of customers: adjustment to the available thermal source, special heat requirements (steam, pressurized water), and integration in to a limited space or, to a space with specific accessibility constraints.

Enertime also offers a full range of services for the maintenance and remote monitoring and control of ORC machines.

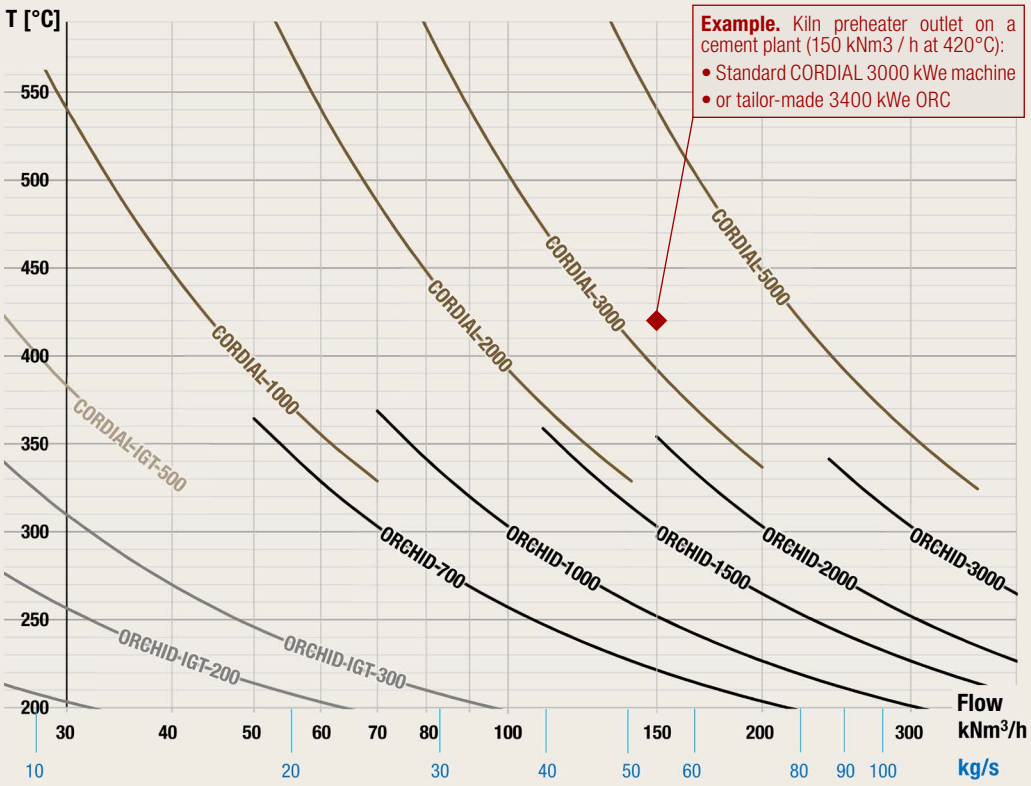
WASTE HEAT RECOVERY POTENTIAL

The following chart determines the characteristics of Enertime standard ORC modules, adapted to the most common fumes volume flows and temperatures.

Enertime also offers:

- IGT (Integrally Geared Turbine) from 100 to 500 kWe specifically designed for small capacity applications.
- tailor-made machines adapted to the needs and constraints of your projects (temperatures, with cogeneration, steam production, location constraints).
- FEED studies to validate a turnkey solution before finalizing the contract conditions.
- High temperature heat pumps for a low temperature waste heat recovery.

Contact us for further details



STANDARD MACHINES

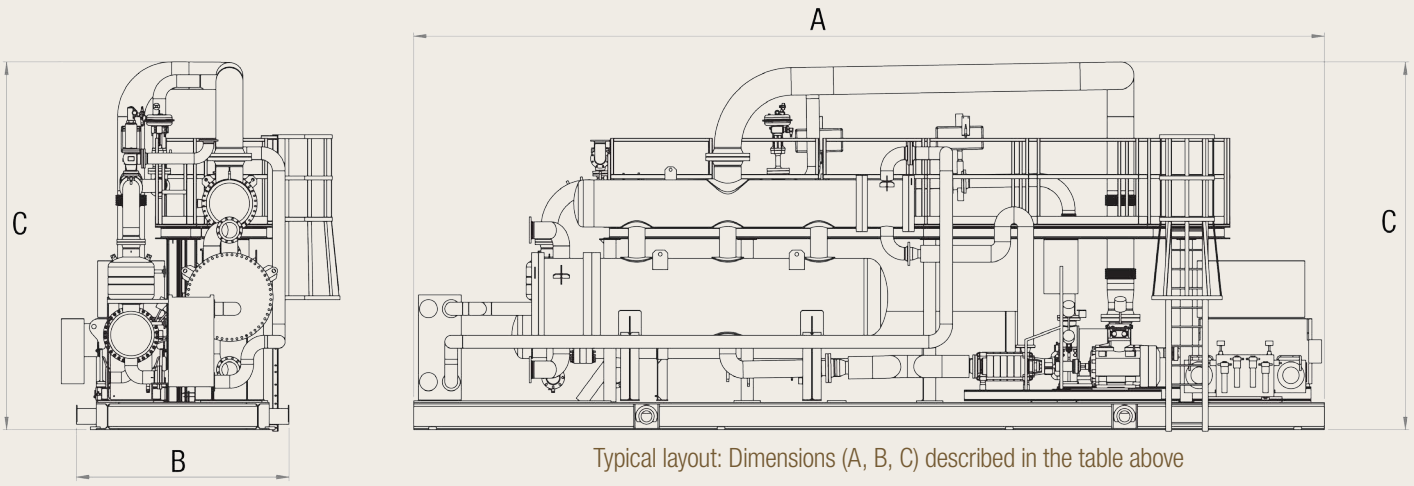
RANGE		ORCHID© IGT	ORCHID©					CORDIAL© IGT	CORDIAL©			
Thermal carrier		Pressurized water / Steam						Thermal oil				
Temperatures (In/out)		200 / 130 (min)						310 / 150 (min)				
Thermal power		700 to 2 050	4 200	6 000	9 000	12 000	18 500	500 to 2 500	4 500	8 700	13 000	22 000
NOMINAL POWER		**100 to 300**	**700**	**1 000**	**1 500**	**2 000**	**3 000**	**100 to 500**	**1 000**	**2 000**	**3 000**	**5 000**
Gross efficiency	%	14,5% to 15,0%	16,5 to 17,0%					19,0 to 20,0%	22,0 to 23,0%			
Cooling water	°C	20 à 25						20 to 25				
Structure		**1 SKID**	**1 SKID**		**2 SKID**	**on-site erection**		**1 SKID**	**1 SKID**	**2 SKID**	**on-site erection**	
Length (A)	m	Standard 40' container	12	12	12	12	16	Standard 40' container	12	12	18	20
Width (B)	m		2,5	3	6	8	10		4	5	6	7
Height (C)	m		4,5	5	5	5	6		5	5	5	8
EXW Delivery	months	10	10	10	11	11	11	10	10	11	11	11

** Depending on the actual load of the plant at order

OPTIONS:

- Thermal insulation
- Access platform
- Cooling System
- Storage tank
- Synchronous generator
- Insular/isolated grid
- Warranty extension
- Maintenance contract
- Delivery
- On-site erection
- Mechanical and electrical connections

Additional options and tailor-made machines are also available to meet the specific requirements of your projects.



Typical layout: Dimensions (A, B, C) described in the table above

August 2017

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