

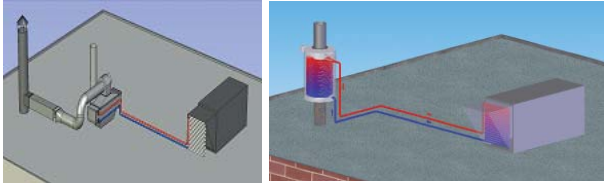
## HEAT YOUR BUILDING WITH RECOVERED ENERGY!

With a ConDex Heat Recovery System we can show you how to heat your building using recovered energy in your boiler exhaust or other process exhaust gas.

By recovering and transferring the heat from your exhaust stream into your building heating system, the ConDex system can reduce your energy consumption, reduce costs, and substantially increase your building's energy efficiency rating.

On top of all that, the energy efficiency improvement will also significantly lower your building's carbon footprint.

To find out more about how to safely and effectively recover and re-use your building's waste energy, contact ConDex Energy Systems at [condexenergy.com](http://condexenergy.com), or contact the local ConDex Energy representative in your State or Province.



## CYLINDRICAL CONDEX ENERGY SAVINGS BY MODEL NUMBER

Model Number	Outer Diameter	Height (Inches)	Weight (lb Wet)	Energy Saved BTU/HR	\$ Savings (Per Year)	CO2 Greenhouse Reduction (Tons / Year)
100	42	100	2,500	580,000	\$60,800.00	358
200	49	110	3,350	963,326	\$100,978.00	595
300	57	110	4,280	1,357,942	\$142,338.00	839
400	63	120	5,700	1,740,951	\$182,485.00	1,076
500	70	114	6,200	2,135,560	\$223,850.00	1,320
600	76	115	7,100	2,506,970	\$262,775.00	1,550

Notes  
 1 Energy saved, savings per year and CO2 green house gas reduction are calculated at peak design conditions.  
 2 Savings per year calculation is based on \$10.00 per MCF gas cost, 8700 hours operation and 83% boiler efficiency.  
 3 Typical water flows are used based on 100% boiler make up.  
 4 Flue gas temperature is assumed at 300 F.

Energy can be recovered from any type hot exhaust and transferred to any type of process fluid; source exhaust does not have to be from a boiler.

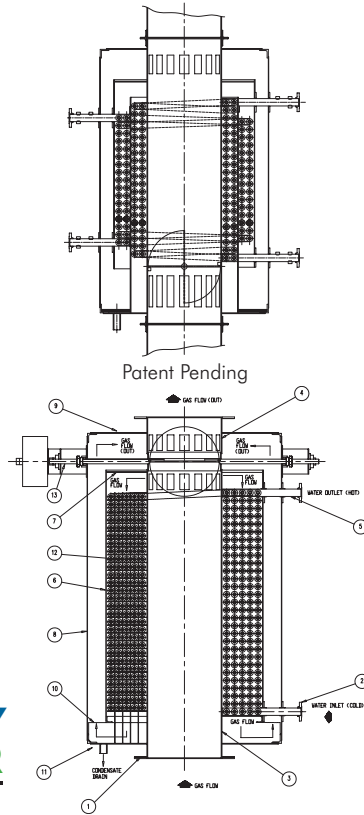
Each and every ConDex unit is designed for your specific application and maximizing energy recovery and payback. Your savings are fully backed and guaranteed. Our history and experience and market reputation show you will not be disappointed. Do not settle for an "off-the-shelf" or web site designed system where your energy recovery rates and savings will not be maximized.

With offices in the United States and Canada, ConDex Energy is available for all of your energy recovery inquiries.

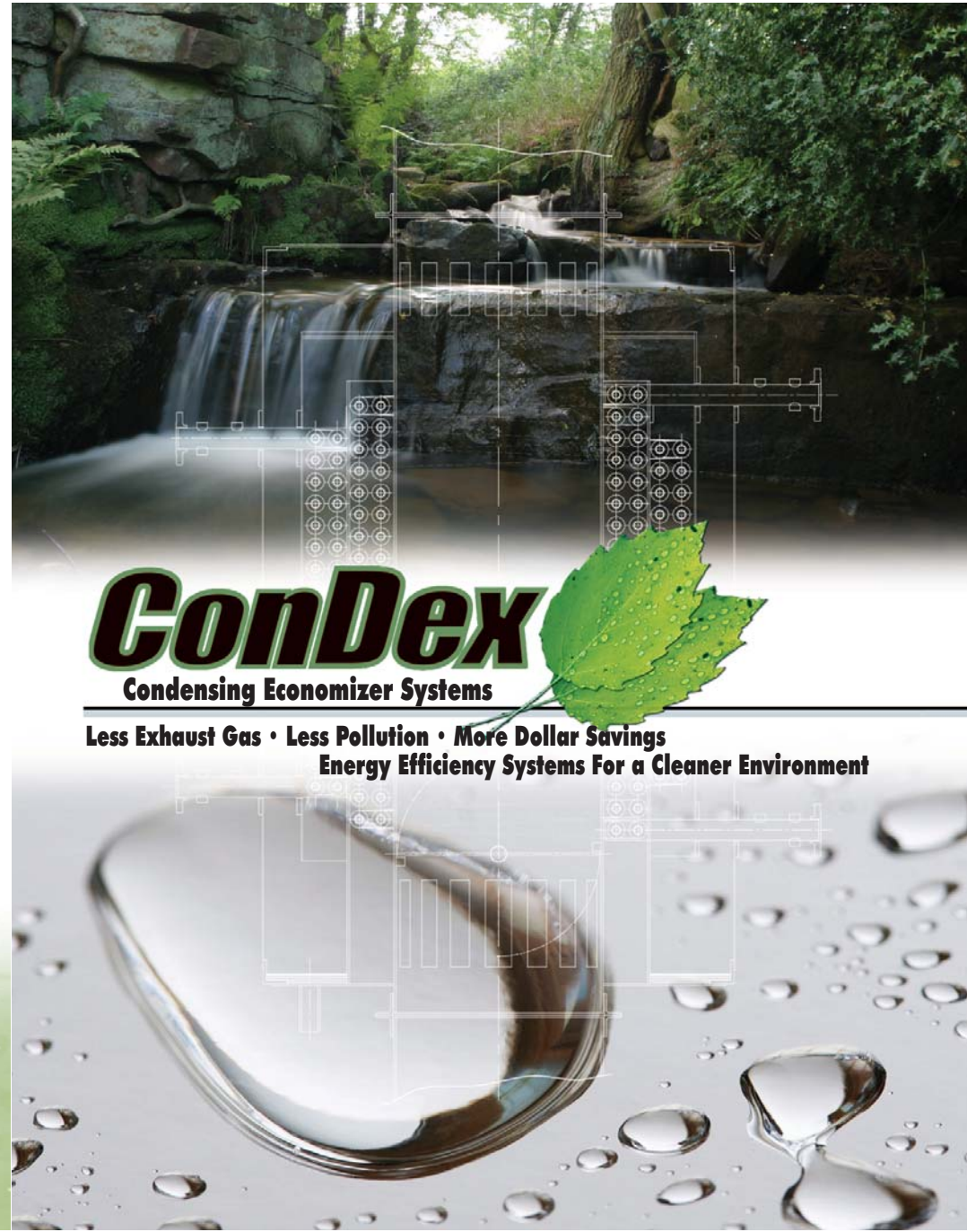
ConDex Energy USA: 309-695-4414

ConDex Energy CDA: 905-415-9400

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



**"WHILE OTHERS SEEM TO BE DEDICATED TO SELLING "EASILY REPLACEABLE" SPARE PARTS SEEMINGLY FOCUSED ON A SHORTER EQUIPMENT LIFE SPAN, AT CONDEX WE DESIGN OUR CONDENSERS FOR RUGGED USE, LONG LIFE AND ALMOST ZERO MAINTENANCE. ALL UNITS COME WITH A 5 YEAR HASSLE-FREE LIMITED WARRANTY. "**



# ConDex

Condensing Economizer Systems

Less Exhaust Gas • Less Pollution • More Dollar Savings  
 Energy Efficiency Systems For a Cleaner Environment

# CYLINDRICAL CONDEX

Combustion & Energy Systems Ltd. is pleased to introduce the ConDex in-stack condensing economizer system, the next breakthrough in efficient and cost-effective energy recovery systems from the people that have pioneered condensing heat recovery in North America.

Since 1977 Combustion & Energy Systems Ltd. has been helping our customers recover energy in the most effective ways possible by providing systems that bridge the gap between waste heat sources and the best uses for the recovered energy. Waste heat sources and the possible uses for the recovered energy are extremely varied, which is why Combustion & Energy Systems customizes its energy recovery equipment to suit each application. Combustion & Energy Systems Ltd. has the knowledge and experience to take you past a standard heat exchanger application and provide you with an energy recovery solution best fit to maximize your energy savings needs.

With the maximization of energy recovery in light industrial and commercial applications in mind, Combustion & Energy Systems has designed an instack condensing heat recovery system. The unique and patented design of the ConDex cylindrical in-stack condensing economizer allows it to recover more energy at a lower price than previously thought possible.

In applications where live energy is being used to heat cold fluids or heat buildings for example, while at the same time hot flue gas is leaving your process or boiler stack, then a cylindrical ConDex can be designed to cost effectively recover and reuse that energy.

## DESIGN FEATURES

- Condensate completely isolated from boiler stack.
- Built in internal by pass for temperature control or off line by-pass operation.
- Temperature control option allows for any process fluid to be heated, regardless of boiler firing rate.
- Patented Reverse Flow technology - Design eliminates stack & boiler corrosion concerns.
- True counter-current design for maximum energy recovery.
- No reliance on baffles or catch-rings for corrosive condensate collection.
- Suitable for any stack size up to 24" in diameter.
- ASME Code construction.



## CONDENSING ECONOMIZERS CAN RECOVER HEAT FROM A VARIETY OF SOURCES INCLUDING:

Steam boilers  
Hot water boilers  
Thermal oxidizers  
Ovens  
Dryers  
Hot oil heaters



## CONDENSING ECONOMIZERS CAN BE APPLIED TO CREATE SAVINGS FOR MANY PROCESSES:

Preheat boiler make up water.  
Preheat clean in Place water.  
Preheat process water.  
Heat recovery to heat glycol loop for building heating.

# MAXIMUM ENERGY RECOVERY

The cylindrical ConDex can recover heat from exhaust gas at temperatures in excess of 1000F and cool the exhaust to well below its dew point. During the combustion process of natural gas, hydrogen and oxygen are combined chemically to form water, which is instantly vaporized by the heat of combustion. The consumption of energy required to initiate this phase change is called the latent heat of vaporization loss. This process absorbs 19% of the total heat energy released by the fuel, and it is typically lost right out the exhaust stack. Only by recovering heat from the exhaust gas to the point that it is cooled below its dew point can you recover this large amount of energy. The Cylindrical ConDex system achieves this task.

Traditional economizers are designed to avoid the dew point for fear of corrosion of the economizer materials. The Cylindrical ConDex is designed with specialized metallurgy that not only maximizes heat transfer but has been laboratory and field proven to withstand the corrosive environment created when energy recovery is maximized.

Traditional economizer designs have often been modified in an attempt to reclaim the latent heat and become condensing economizers but often with limited success and in many cases the designs are inadequate to protect the boilers from condensate water infiltration. The patented "Reverse Flow" design of the ConDex system allows not only maximum energy recovery but also keeps the condensed water vapor completely separate from the process equipment heat source.

A cylindrical ConDex economizer will off-set fuel costs by utilizing recovered energy to replace purchased fuel consumption. The goal is to recover the maximum amount of usable heat possible from your exhaust gas – you paid for that energy, you might as well use it!

The installed payback for a ConDex is often one year or less. And in addition to the financial benefits achieved through energy recovery, there are also significant and measurable environmental benefits. For every 1 million Btu of natural gas burned there is approximately 118 pounds of CO<sub>2</sub> created. By maximizing energy efficiency and burning less fuel you can reduce your carbon footprint by 118 pounds of CO<sub>2</sub> emissions for every million Btu's of natural gas saved.

Another significant benefit of the Cylindrical ConDex is the recovery and reuse of water that would normally be lost to the atmosphere and wasted. With a ConDex system the water can be recovered and reused as boiler make up water or other process uses. The typical Cylindrical ConDex system recovers from 2 to 20 gallons per minute of water that would otherwise be lost!

