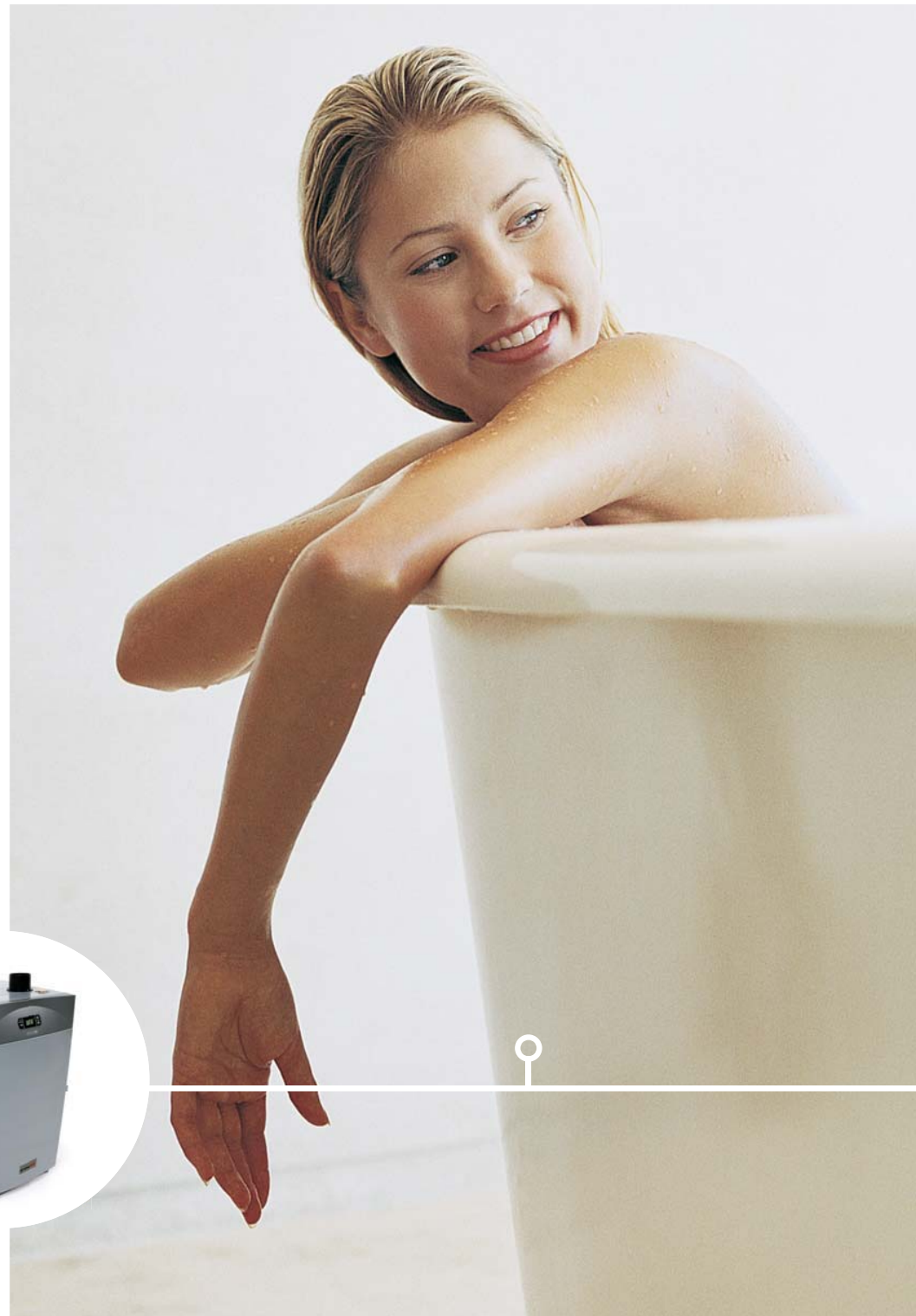




eternal ®
the world's first hybrid water heater





Life is better with Eternal

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HYBRID EVOLUTION

Grand Hall® brings tank and tank-less technologies together in the first of its kind Eternal® Hybrid water heater. The patented and powerful Hybrid design replaces multiple tanks, consumes less energy and space than a single tank and produces endless hot water on-demand to meet all your water heating needs.

The intelligent Eternal computer module monitors performance, safety, and changing conditions precisely to provide reliable heat output. Relax, the computer does the worrying, so you don't have to.

The advanced Hybrid technology also makes Eternal one of the cleanest gas burning appliances on the market. Go ahead; take long showers completely guilt-free.

The Eternal Hybrid is the latest example of Grand Hall's mission to bring life improving innovations to home owners by utilizing efficient and environmentally friendly designs.

THE ETERNAL HISTORY

William, Grand Hall's founder and president, is a guy who loves to find solutions to everyday problems. As a frequent traveler, William likes to unwind with a hot bath. However, he returned home frustrated trip after trip because the traditional water heater in the house cannot supply enough hot water for the tub. William decided to end his frustration by installing a tank-less water heater.

The story could have ended happily ever after, but William quickly experienced the limitations of tank-less technology. During the morning rush-hour when showers and appliances are running, the person in the shower would be hit with a sobering cold shock.

Determined to solve the age old water heating problem, William commissioned a team of engineers to design a water heater that supplied endless hot water and maintained consistent temperature and pressure; 6 years and countless prototypes later, the Eternal Hybrid Water Heater was born.



UNCOMPROMISED ENGINEERING

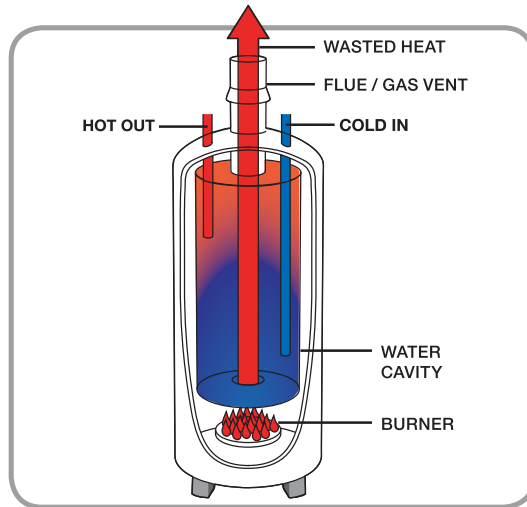
Tank water heaters supply hot water for multiple applications at the same time, but you are limited by how long the supply can last. Tank-less water heaters supply endless hot water, but you are limited to only a few applications at the same time.

Grand Hall engineers refused to compromise the Hybrid design to known limitations. Through innovation, Eternal Hybrid technology offers you consistent hot water for multiple applications at the same time, endlessly and efficiently.

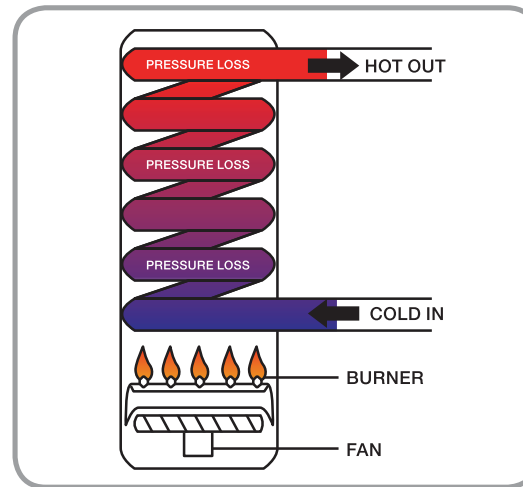


BREAKING THE LAW

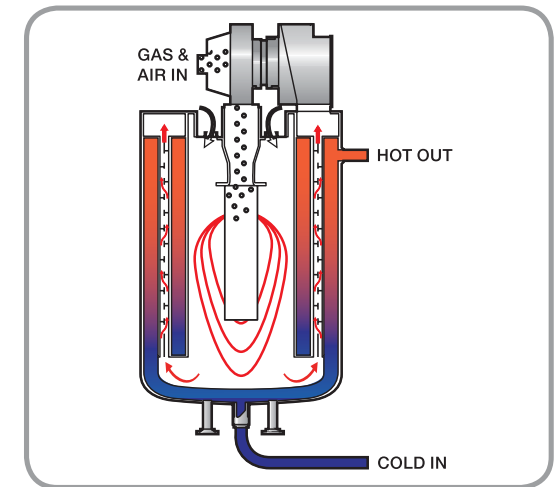
Being a good citizen of the environment sometimes means breaking the laws of physics. Eternal Hybrid technology achieves high heating efficiency by utilizing a brilliant counter-flow design that contradicts physics as we know it.



In a **traditional tank** water heater, heat is produced at the bottom of the tank and cold water is deposited from the top. Naturally, heat rises and escapes through the exhaust while cold water rests at the bottom of the tank with little energy transfer. This is why a tank heater takes time to recover once it runs out of hot water.



Tank-less water heater passes water through a heat exchanger made of coiled copper pipes. The unit superheats water almost instantly and endlessly. But passing water through winding pipes means the flow of water is slowed down. Reduction of flow is necessary for energy transfer but at the cost of lower pressure to your shower, tub, sink or appliance.



Eternal Hybrid's patented system works on the principle of counter flow, with cold water entering from the bottom of the tank and a top mounted turbo burner that forces heat downward. This reversal of physical elements achieves an impressive 86% thermal efficiency, which produces hot water quickly. Our breakthrough Hybrid technology uses no coiled pipes in the heat exchanger tank, so water is heated with no pressure loss.

DIVIDE AND CAPTURE

There are two variables in water heating: velocity of heat and velocity of water.

In the tank design, heat and water pass each other quickly, resulting in low energy transfer and low efficiency. In the tank-less design, water flow slows down to capture as much escaping heat as possible. Eternal Hybrid's counter flow design takes the opposite approach by trapping the heat.

Eternal smartly directs escaping heat into 44 individual heat transfer pipes, each containing a heat trapping baffle. Because heat doesn't escape, water flows at full speed while capturing all the heat.

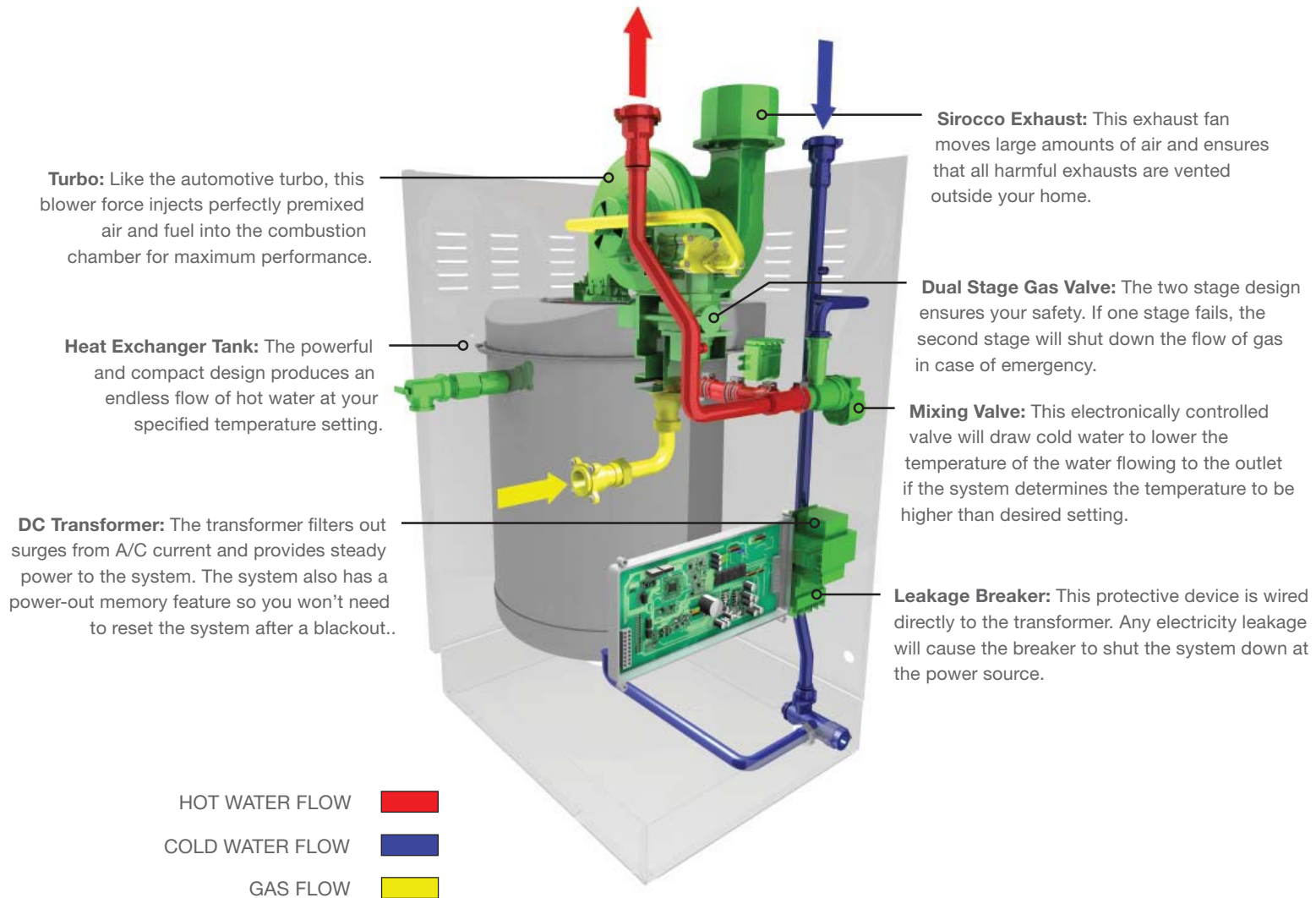
Another secret to Eternal's highly efficient heating process is spreading water thinly and evenly around the 44 heat transfer pipes. Because of the even and wide surface contact between water and heating elements, hot water is produced quickly without sacrificing pressure.



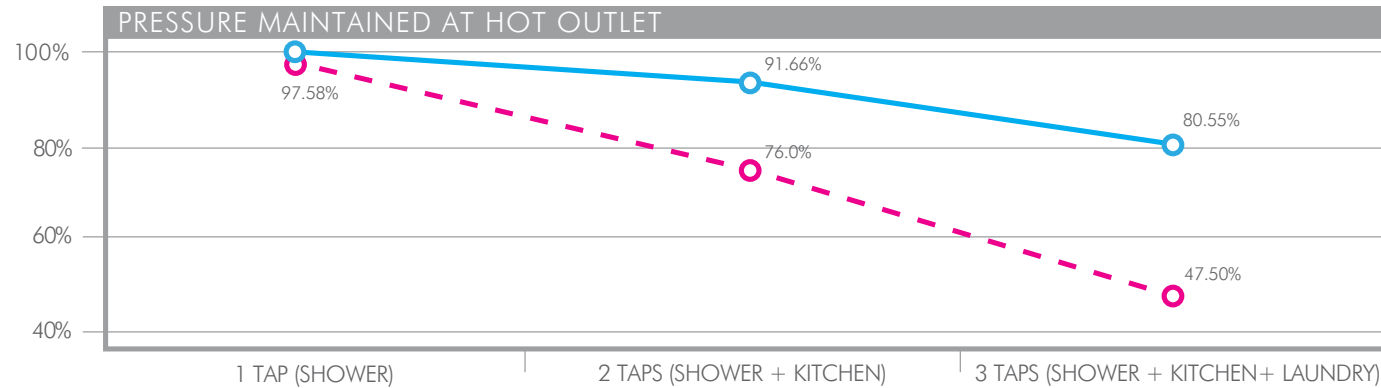


BRAIN AND BRAWN

Eternal's highly intelligent computer module controls and monitors the entire heating system, ensuring all components are working in harmony to deliver exactly the temperature of water you asked for.

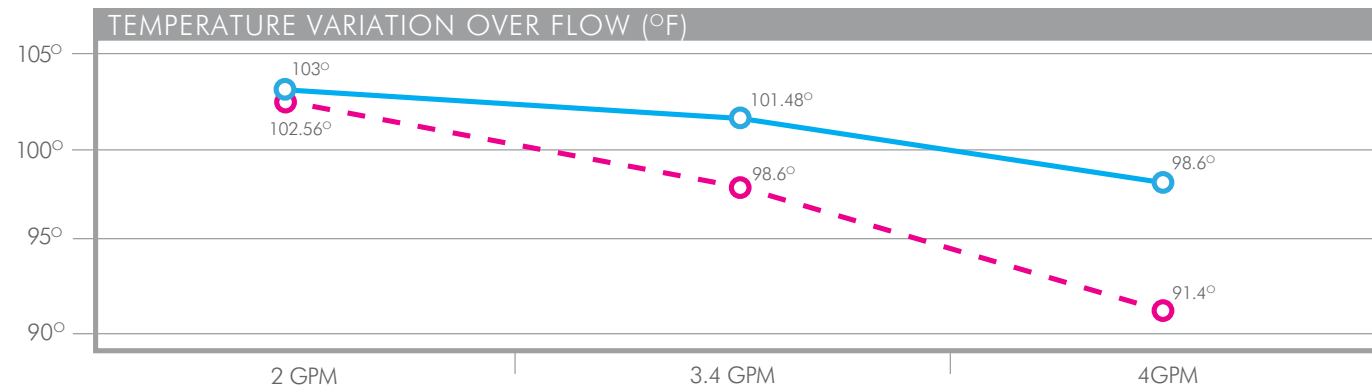


PERFORMANCE



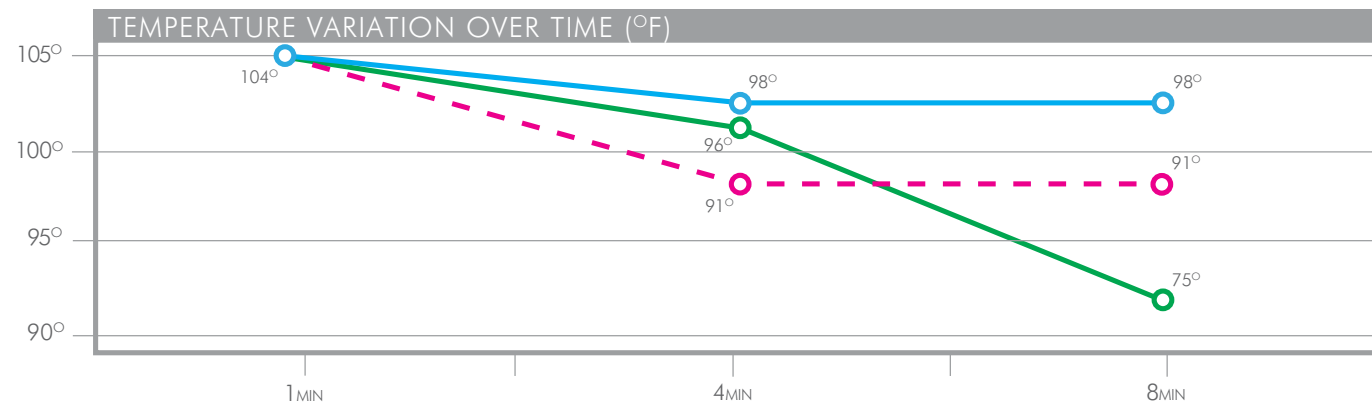
ETERNAL
TANKLESS

This graph illustrates the difference of inlet and outlet pressures between ETERNAL and tank-less. Note as demand increases, the tank-less unit starts to lose pressure at the outlet.



ETERNAL
TANKLESS

The temperature variation across different flow rates mimics the pressure drop pattern seen above. Note that under higher demand, the shower temperature cooled by 13 degrees with the tank-less.



ETERNAL
TANKLESS
TANK

This graph shows how all 3 types of water heaters perform over time. Only shower tap is used for the first 3 minutes and additional taps are opened at 4 minutes. The temperature variation is most noticeable on the tank-less; however, as time progresses, the storage tank water heater runs out of hot water.

TESTIMONY

So, what does it take to convince skeptics that hybrid technology is the ideal water heating solution for the modern home? How about a 5,300 sq ft home with 4 full baths, 3 half baths and an outdoor shower? Featured at the Villa Pacifica, recent “People’s Choice” winner of the Dallas Parade of Homes, one single Eternal provided endless and instant* hot water throughout the home. So convinced were the builder and plumber, they have installed Eternal systems in many projects since.

Custom homebuilder Steve Penhollow says:

“The Eternal Hybrid is the next generation in water heating and helps me build energy efficient, intelligent homes. And with the space savings I get immediate payback on the decision.” Evan Ford, master plumber adds *“The Eternal is installation friendly and goes in just like a traditional tank system. Once I installed my first Eternal Hybrid, I knew immediately this was going to become the frontrunner in the water heater industry.”*

*installed in a closed loop system with recirculation pump



Steve Penhollow, president of Penhollow Custom Homes and Evan Ford of the Plumbing Connection with their Eternal Hybrid installation.

GREEN LIVING

Did you know that home appliances are the fastest growing group of pollution emitters after automobiles? According to Worldwatch Institute, home appliances such as water heaters account for 12 percent of greenhouse gases emitted in industrial countries. The Union of Concerned Scientists, in turn, has stated if homes in the US replaced their existing appliances with more efficient models, 175 million tons of heat-trapping gases would be eliminated! Grand Hall recognizes the responsibility in designing earth friendly products to protect our most precious asset – the environment.

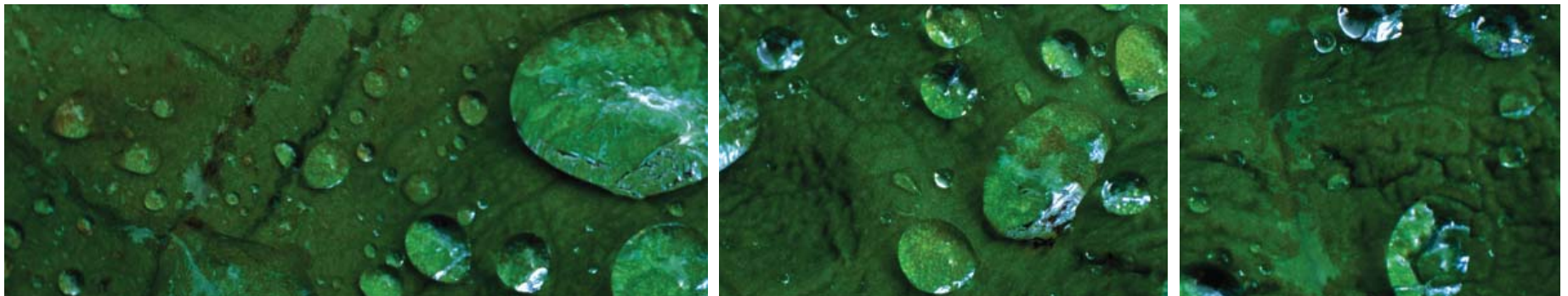
SCAQMD (South Coast Air Quality Management District) stipulates that water heaters must meet certain emission guidelines in order to be sold and operated in Southern California, which has one of the toughest emission requirements. According to SCAQMD, a water heater should have less than 55ppm NOx under maximum combustion.

At its lowest, the Eternal Hybrid water heater emits 5ppm NOx. The low emission means an earth friendly product that not only saves you energy but also keeps our environment clean.

Low emission is achieved by the efficient combustion process. The turbo injects a perfectly premixed ratio of air to gas for combustion. Unlike traditional combustion which draws air from surrounding areas resulting in uneven mix of air to gas ratio, Eternal's clean combustion produces less byproducts. The exhaust simultaneously moves the byproducts out of the combustion chamber so efficiency is not reduced.

Eternal is certified to meet SCAQMD low emission standards.

Please reference the environmental comparison chart in the back of the brochure for details.



ENERGY EFFICIENCY

Eternal Hybrid is an on-demand water heater, meaning that the burner is triggered by the opening of a hot water tap. There is no pilot to waste gas and no heating and reheating 40, 50, or 75 gallons of water all the time.

In addition to on-demand design, Eternal Hybrid also has a high thermal efficiency of 86%. The higher the thermal efficiency, the more heat is transferred onto water from the combustion process.

Don't forget that Eternal is capable of replacing multiple tanks, yet uses less energy and space than a single tank water heater!

Please reference the energy efficiency comparison chart in the back of the brochure for details.

SAFETY AND PRECISION

Our engineers are not just concerned with performance, but most importantly, your safety. That is why Eternal is designed with double stage safety features.

For example, Eternal is equipped with a dual stage gas valve. The two stages are arranged in serial connection so one stage can shut down gas flow should another stage fail.

Another example, the heat exchanger tank is equipped with dual stage overheat protection switches and fuse. Should the heat exchanger overheat, the thermostatic switches will kick in and shut the system down, but if the switches failed, a fuse wired directly to the gas valve will shut down the gas flow and the system.

Eternal is designed to be precise by means of its computer monitoring system. For example, if the heat exchanger is producing 150°F water, but the set temperature is 120°F, the computer will send a signal to add cold water mix to the water for final outlet at precisely 120°F.

You can rest assured that what you set is what you get. No need to worry about cold shock or scalding. Eternal is precision designed for your safety.



endless. efficient. eternal [®]
the world's first hybrid water heater

Grand Hall has over 30 years of manufacturing experience in gas components and appliances. Our experience translates into quality construction and Eternal reliability.

Grand Hall operates a 200,000 sq. foot distribution center located in Dallas, Texas with 20 years of customer support experience. So you can trust we'll be here to take care of you.



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~~www.eternalwater.com~~

grandhall[®]
living style

US Patent No 6,945,197

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WARRANTY

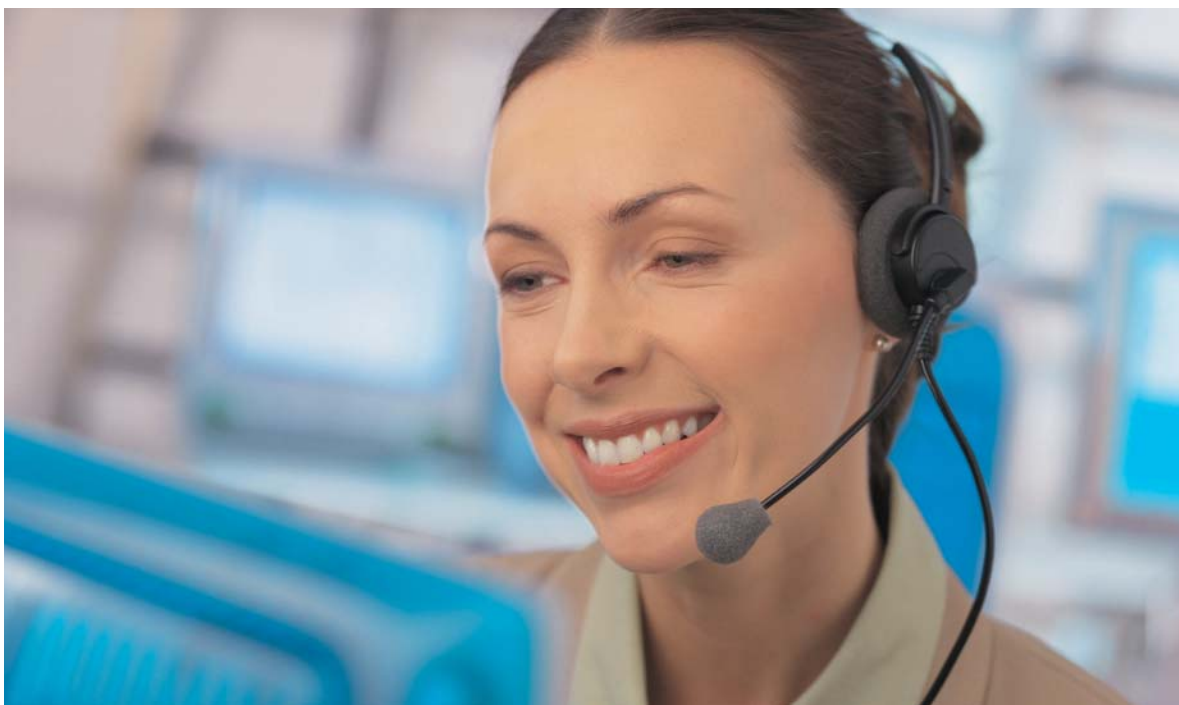
Eternal Hybrid is made of Stainless Steel, a recyclable material that is highly corrosion-resistant. The consistent quality is accomplished by our robotic manufacturing. This allows the Eternal Hybrid heat exchanger tank to outlast the competition. The patented counter flow design means the tank is completely self-cleaning. There will be no sedimentation to wear out the tank or degrade efficiency over time.

All Eternal components are monitored by the computer and should a malfunction occur, the front display will flash an error code for easy troubleshooting. The modularized design makes replacing any of the components quick and easy.

Lifetime No Leak Warranty - Heat Exchanger Tank

Limited 3 year Warranty - All other parts

1year Warranty - Reasonable labor

**contact:**

Grand Hall USA, Inc.

3838 W. Miller Road

Garland, Texas 75041

Tel: 877-934-7455

Or visit www.eternalwaterheater.com

INSTALLATION REQUIREMENTS

Eternal is designed with ease of installation in mind. A licensed professional familiar with installation of tank water heaters will be able to install an Eternal Hybrid just as easily. Please make sure all local plumbing codes are followed when installing the Eternal.

Gas Supply

Eternal is installed with $\frac{3}{4}$ " gas connection. Please ensure proper gas line sizing for optimal performance. Sufficient gas supply is crucial to proper operation of the unit. The Eternal is preprogrammed for LP/NG and easily field configured for either fuel type.

Water Supply

Eternal is installed with $\frac{3}{4}$ " water connections. A Thermal Expansion Tank may be required by your local code.

Electricity Supply

Eternal requires 120VAC (60Hz) electrical supply and must be grounded to operate properly.

Unit Clearance

Install Eternal in accordance with code requirement and the manufacturer's recommended clearance as shown in the Operator's Manual and labeled on the unit itself.

Venting Material

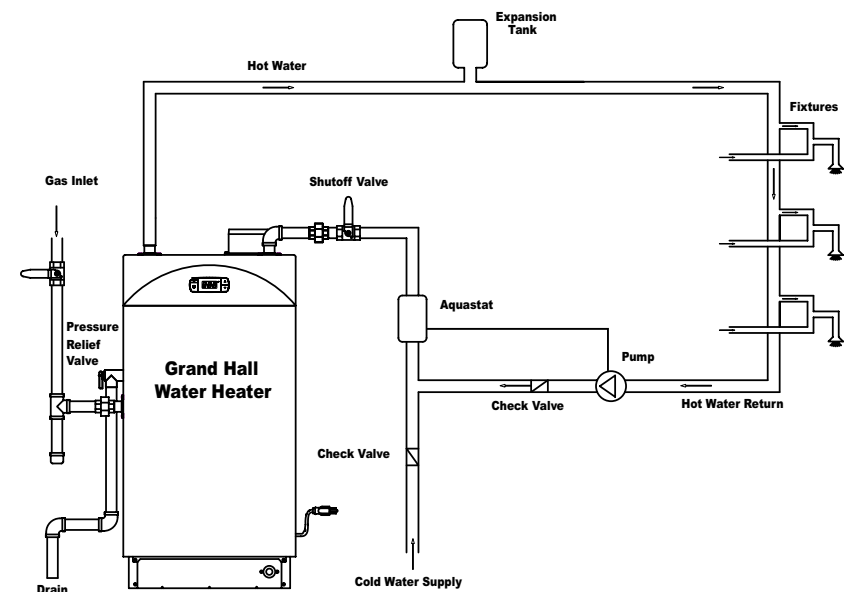
Because Eternal is power vented it can be installed with either 4" Schedule 40 PVC or 4" Category III stainless steel venting. Termination can be either horizontal or vertical.

Combustion Air Supply

Eternal draws combustion air from its surrounding. Please ensure sufficient air flow to the unit. Install Eternal in accordance with code ventilation requirement.

Recirculation

Eternals built-in reservoir tank makes it an ideal candidate for closed loop systems.

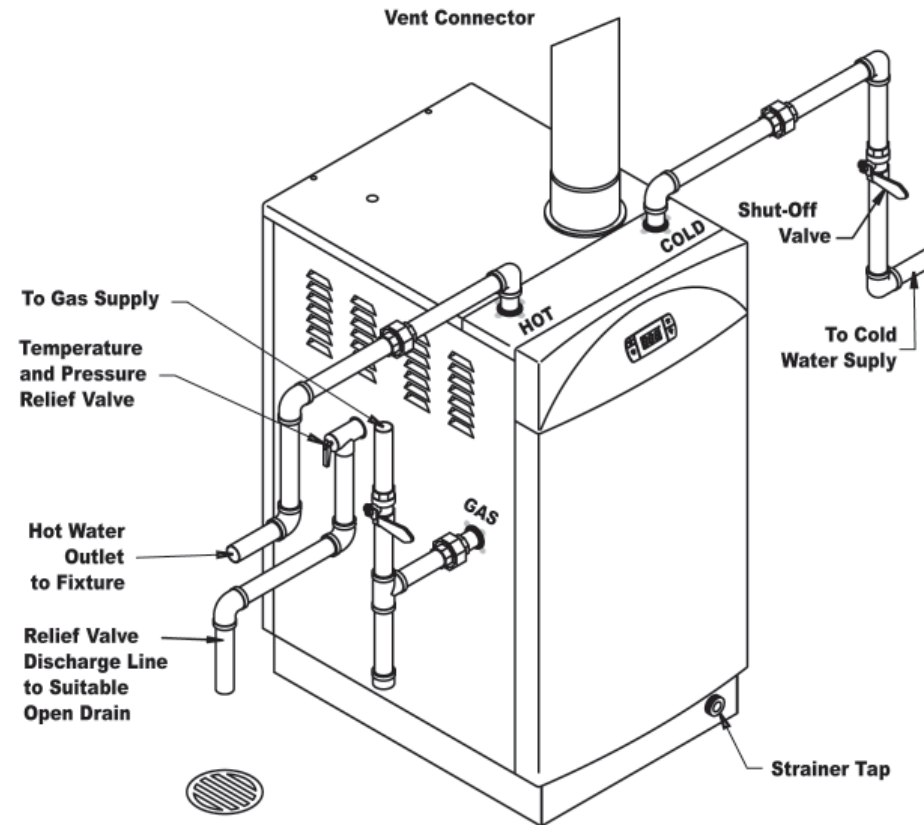


Recirculation System with the Eternal Hybrid Water Heater

TYPICAL INSTALLATION

Each unit is pre-programmed for LP or NG (simply change one nozzle) and can be installed indoor or outdoors. With one Eternal unit you can satisfy a wide range of installation options.

Typical Installation



ENERGY EFFICIENCY COMPARISON

Eternal Hybrid is an on-demand water heater, meaning that the burner is triggered by the opening of a hot water tap. There is no pilot to waste gas and no heating and reheating 40, 50, or 75 gallons of water all the time. In addition to on-demand design, Eternal Hybrid also has a high thermal efficiency of 86%. The higher the thermal efficiency, the more heat is transferred onto water from the combustion process. Don't forget that Eternal is capable of replacing multiple tanks, yet uses less energy and space than a single tank water heater!

Eternal GU26 model qualifies the homeowner for up to a \$300 FEDERAL ENERGY TAX credit.

\$300



ETERNAL HYBRID



TANK-LESS



TANK

	ETERNAL HYBRID	TANK-LESS	TANK
Thermal Efficiency	86%	80%	60%
Average cost for 15 minute shower 3 times per day	\$0.60	\$0.65	\$0.86
Average cost for 15 minute shower 3 times per day for a year	\$219.98	\$236.40	\$315.20
Estimated Energy Saving Compared to Traditional Tank	30%	25%	0%

ENVIRONMENTAL COMPARISON

Did you know that home appliances are the fastest growing group of pollution emitters after automobiles? Nitrous Oxide (NOx) is identified by the EPA as one of the six main pollutants, and is a contributor to global warming, acid rain, as well as other environmental and health problems. According to SCAQMD, (South Coast Air Quality Management District) a water heater should have 55ppm NOx under maximum combustion. At its lowest, the Eternal Hybrid water heater emits 5ppm NOx. The low emission means an earth friendly product that not only saves you energy but also keeps our environment clean.

	 ETERNAL HYBRID	 TANK-LESS	 TANK
Construction	Stainless steel	Copper	Steel
Efficiency	86%	Avg 80%	Avg 60%
NOx (ppm)	5 - 30	30 - 40	60 - 90
CO (ppm)	40 - 45	190 - 200	200 - 250
Exhaust Temp (F)	128 - 155	390 - 410	480 - 500

Certified to meet SCAQMD
low emission standard



ETERNAL HYBRID

TANK-LESS

TANK

Stainless steel

Copper

Steel

Efficiency

86%

Avg 80%

Avg 60%

NOx (ppm)

5 - 30

30 - 40

60 - 90

CO (ppm)

40 - 45

190 - 200

200 - 250

Exhaust Temp (F)

128 - 155

390 - 410

480 - 500

PRODUCT SPECIFICATIONS



GU26 Eternal Hybrid



GU32 Eternal Hybrid

Installation		Indoor/Outdoor (outdoor kit req.)	
Venting		PVC or Category III Stainless	
Gas Type		Pre-programmed for NG or LP	
Gas Input BTU/H		47,500 - 180,000	47,500 - 236,000
Res. Tank Size (Gal)		3.8	6.4
Flow Rate GPM	35 F Rise	9.5	12.1
	45 F Rise	7.4	9.4
	60 F Rise	5.3	7
	70 F Rise	4.6	6
	80 F Rise	4	5.2
	90 F Rise	3.5	4.6
Capacity Range (GPM)		0.5 - 9.5	0.5 - 12.1
Thermal Efficiency		86%	
Ignition System		Electronic Direct Ignition	
Temperature Range		100 - 167 in 15 steps	
Unit Weight (LBS)		148.7	178.9
Dimension (HxWxD)		33.4"x17.3"x22.8"	40.9"x17.3"x22.8"
Connection	Gas	3/4" Female	
	Water	3/4" Female	
	Vent	4"	

US Patent No 6,945,197

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PRODUCT SPECIFICATIONS

Features

- World's first Hybrid heat exchanger tank
- Stainless steel construction
- Intelligent computer monitoring system
- Easy troubleshooting with error code on front display
- Built-in power vent with flexible venting options
- Preprogrammed for LP/NG and easy in-field configuration
- Self cleaning counter-flow design
- Energy and space saving, environmentally friendly

Benefits

- Capable of replacing multiple tanks with a single unit
- Consistent temperature and pressure of hot water
- Endless hot water on demand for simultaneous applications
- Faster hot water delivery with built-in reserve tank
- Ideal for closed loop system with built-in reserve tank
- Durable stainless steel tank resists corrosion
- Low NOx and CO for green building
- Installer friendly with flexible installation options

Safety

- Dual stage gas valve
- Dual stage overheat protection
- Feedback sensor
- Flame sensor
- Leakage breaker
- Remaining flame detection
- Freeze protection
- T&P valve

Precise

- Digital temperature setting from 100 to 167 in 15 steps
- Electronic ignition with flow sensor
- Modulating gas valve as low as 47,500 BTU
- Thermistor sensors monitor water temperature
- Computer controlled mixing valve

US Patent No 6,945,197

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