Optimized Efficiency in Heat Exchange & Pumping Technology.

Environmental, Energy & Technical Committee Meetings
Presentation by Carl Bozzuto

Radisson Hotel, Reagan National Airport
Arlington, VA (Crystal City) September 11, 2012

Fisonic.US Robert Kremer, CEO 233 Broadway NY 10279 212-732-3777 Info@Fisonic.US

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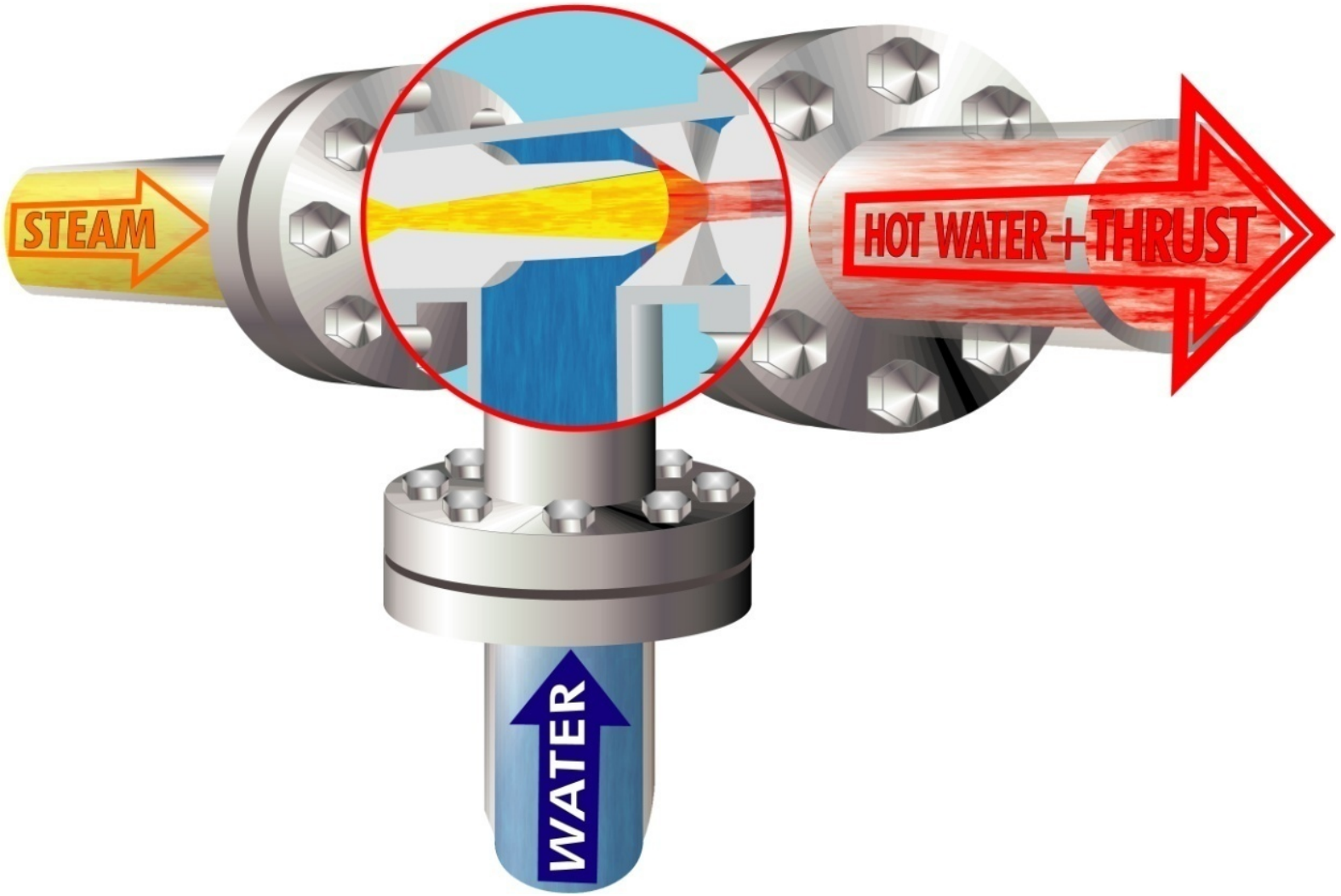
Outside it looks like a code compliant “Tee”



Inside is a highly efficient heat exchange/self-pumping technology with no moving parts.

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Fisonic Technology

Fisonic technology is based upon the many patents of Dr. Vladimir Fisenko and Robert Kremer related to the nature of two-phase flows:

1.The differences in the speed of sound (Mach 1) through different media.
(It is approximately 5 times faster in water than it is in a gas (air, or steam, as in this particular case). Mach is depended on compressibility of media.

2.In a mixture of water and gas (i.e. water and steam-Two Phase Flow), Mach 1 is only 1/10 of the speed in a gas. (Two-phase flows are highly compressible.)

The technology itself utilizes unique patented internal geometries of the Fisonic devices to exploit these natural phenomena.

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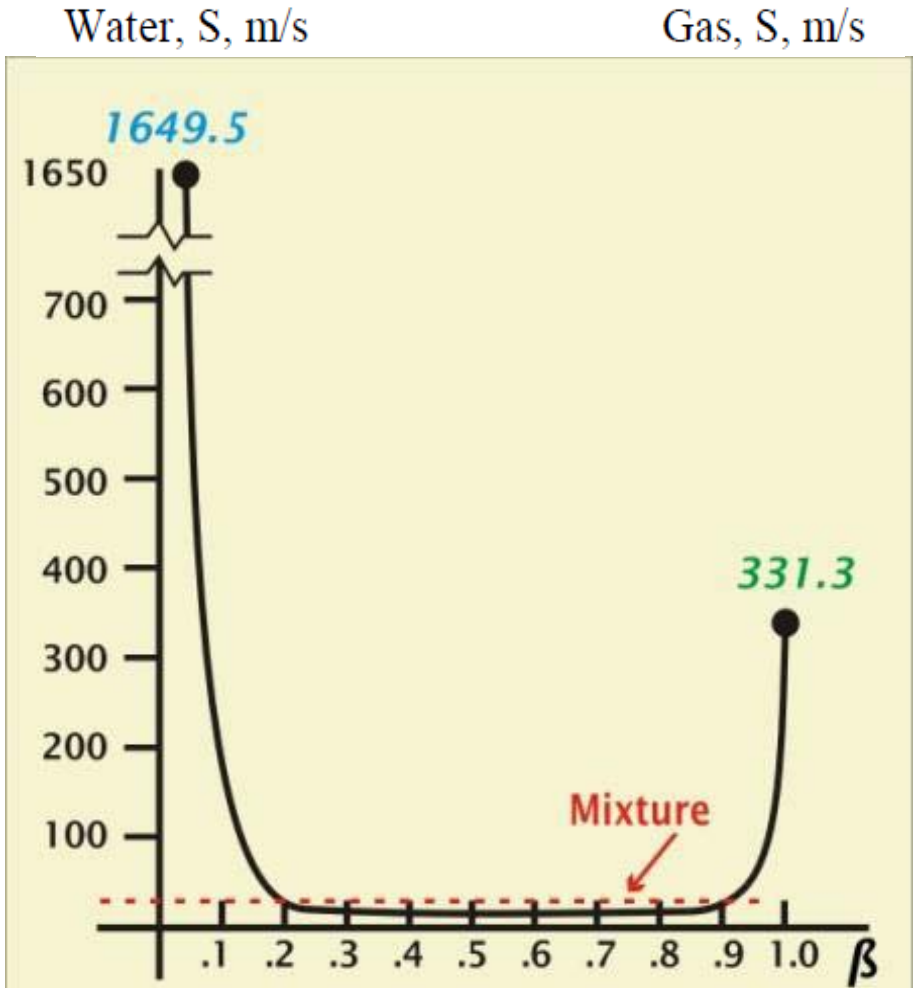
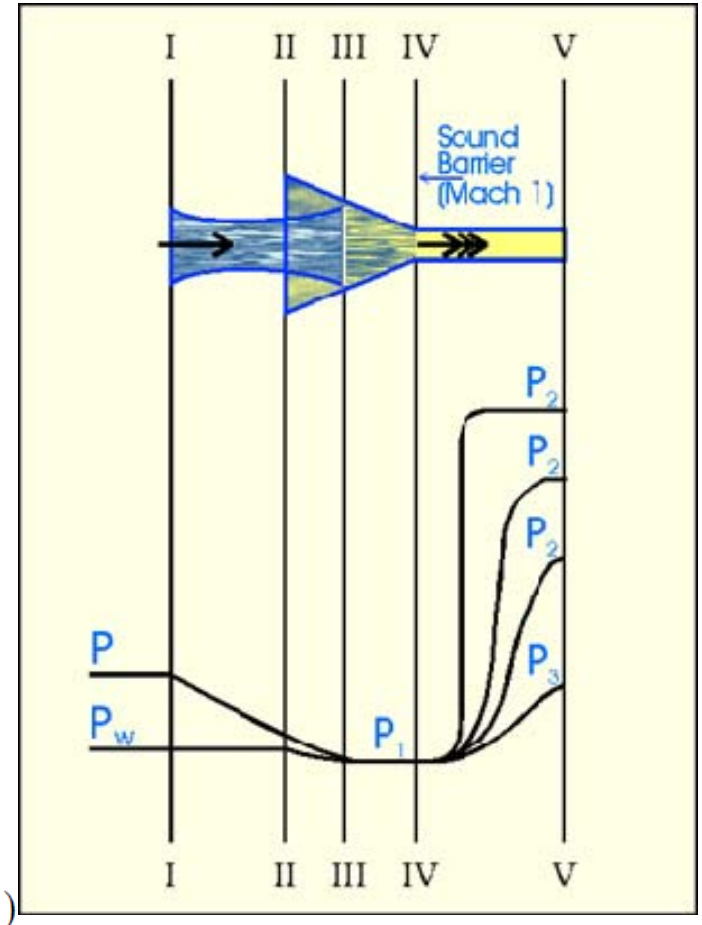
2-phase flow in Fisonic technology





β = ratio of volumetric gas to liquid plus gas composition ($\beta = \frac{V_g}{V_g + V_{ld}}$)

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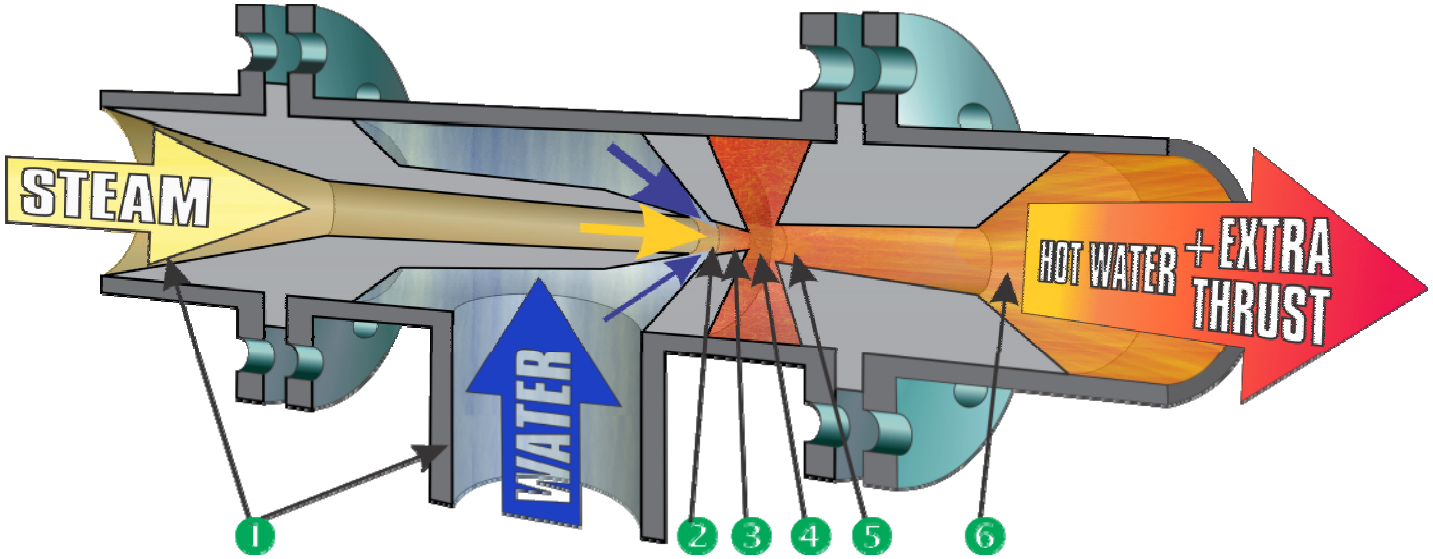
Fisonic technology 2-phase operation



1. Water and steam enter the Fisonic unit separately,

2. They merge into a highly compressible 2-phase mix with a dramatically lower Mach 1 threshold.

3. Narrowing inlet compresses and accelerates 2-phase mix as it crosses Mach 1 threshold.

4. At Mach 1, the 2-phase mix converts to a single phase (hot water comprised of even hotter nanobubbles); the nanobubbles collapse (cavitation) as pressure increases.

5. As determined by system design, cavitation can be converted to extra thrust or additional thermal energy .

6. Hot water exits the system at a higher pressure than the combined inlet pressures.

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Fisonic system installation 39-45 Broadway, New York City

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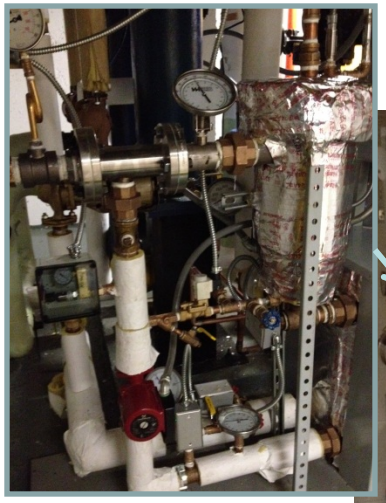
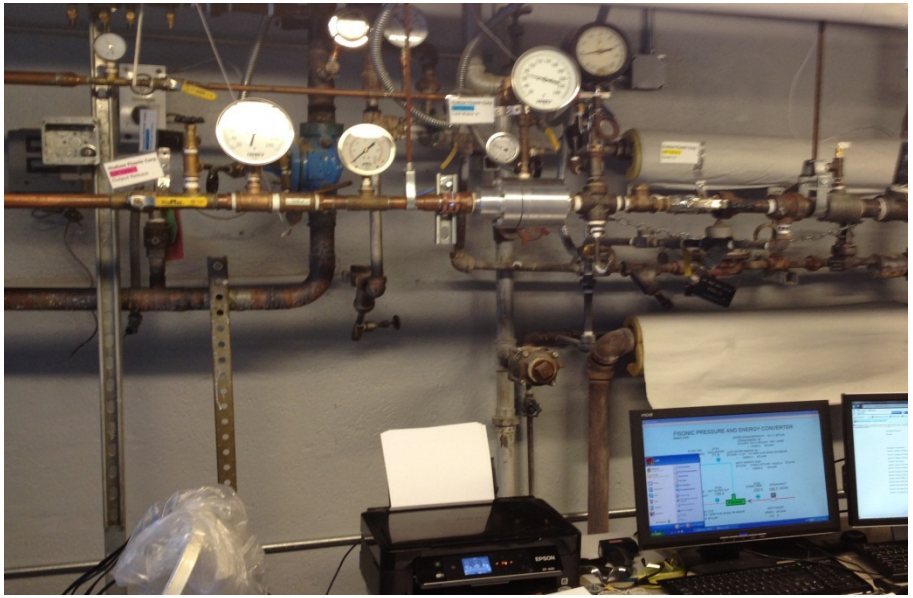
More NYC Commercial Building Fisonic Retrofit Installations…





Typical Monthly Energy Bill Savings: 30%

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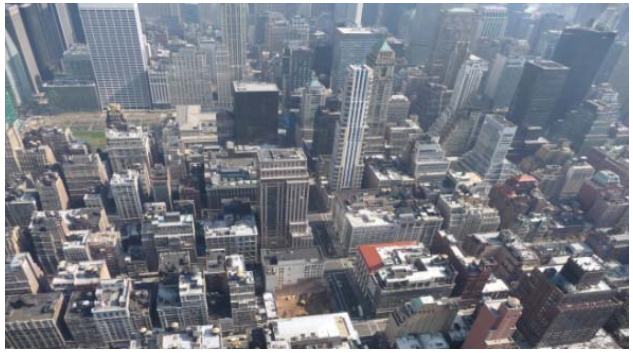
Fisonic technology applications for heat transfer, pumping and mixing.

- Replacement of surface type heat exchangers for space and district heating, power plants and various industrial applications.
- Waste heat recovery systems.
- Partial or complete replacement of electric driven pumps.
- Deaeration processes.
- CHP applications.
- Feedwater water makeup pumps and heaters.



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Fisonic technology saves:

- ELECTRICITY… cuts pumping requirements
- ENERGY… optimizes usage of steam energy inputs; condenses all steam
- FUEL… increased system efficiencies cut fuel consumption
- WATER… enables capture of low pressure waste streams
- SPACE… compact; light weight; small footprint
- EQUIPMENT… reduces piping sizes & can be installed as bypass
- MAINTENANCE… no catastrophic failure
- Eliminates pump cavitation…
- Minimizes stream traps…

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Fisonic technology's benefits

- Eliminates pump cavitation…
- Minimizes stream traps…
-

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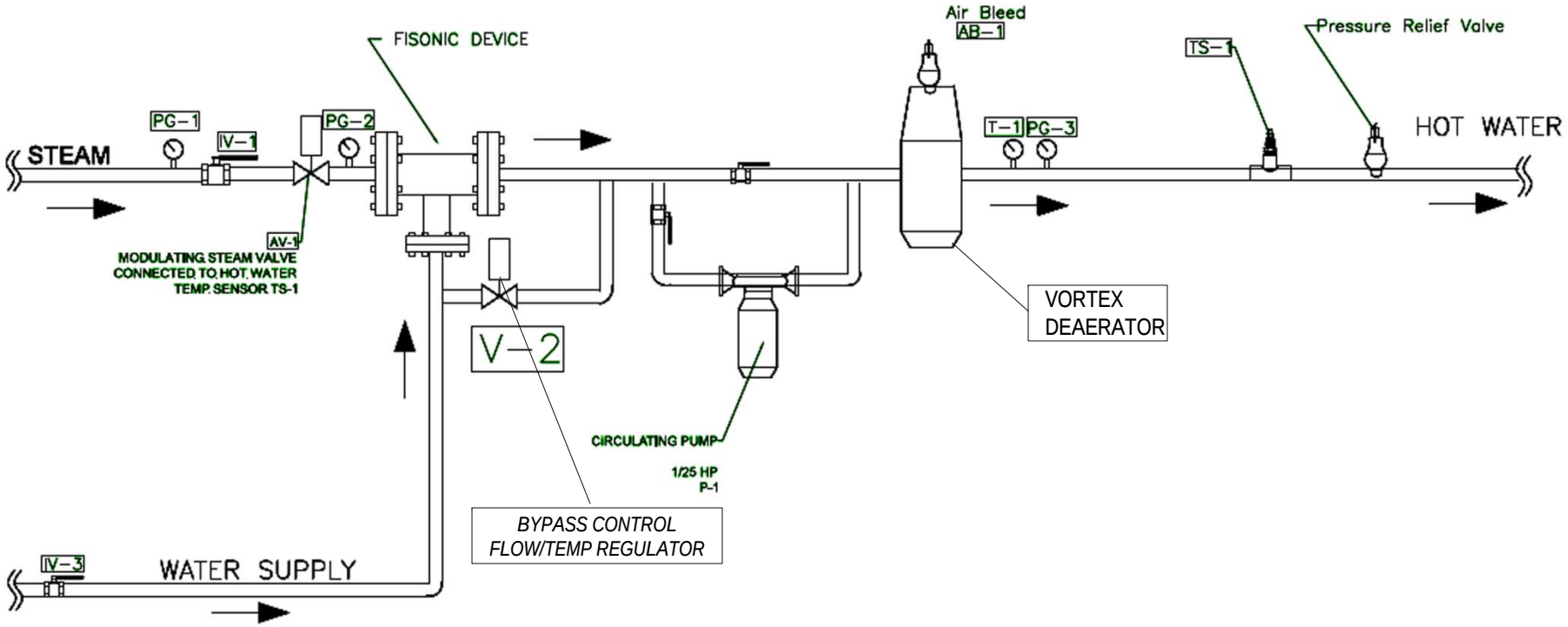
Fisonic Hot Water System

with bypass control flow/temperature regulator and vortex deaerator



TS – Temperature Sensor
PS – Pressure Sensor
T – Temperature Gauge
PG – Pressure Gauge
IV – Isolation Valve
HX – Heat Exchanger

USED ON DEMO		PART NAME HOT WATER SYSTEM	
FOR DEMO			
DR. ABB	DATE 11/25/11	FISONIC CORP.	SCALE CAD DRAWING
CH.			DIMENSIONS NONE
APPROVED		44–02 23rd street.	FILE DESIGNATION 105BRFP–1a.dwg
SUPERSEDES NO. 11/25/11		Long Island City, NY 11101	DWG. NO. 105–BRFP–2

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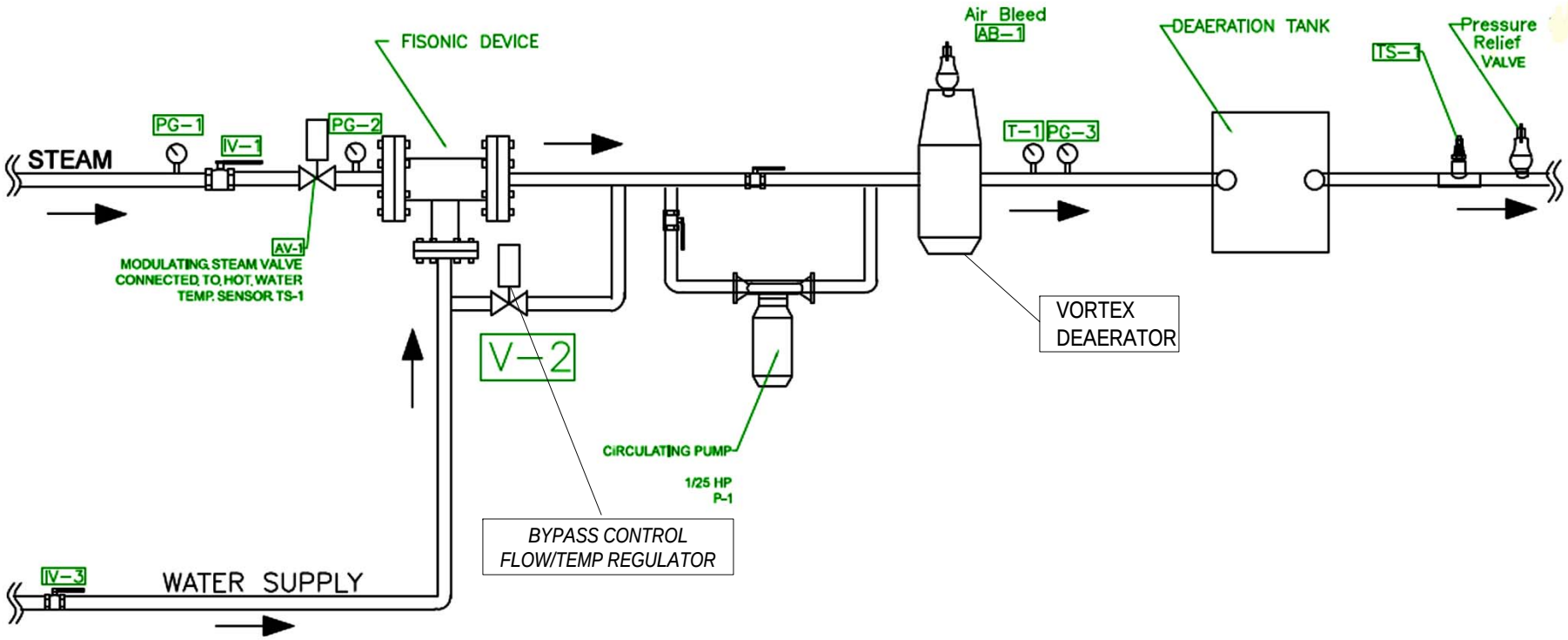
Fisonic Industrial Hot Water System

with bypass control flow/temperature regulator and deaerator



TS – Temperature Sensor
PS – Pressure Sensor
T – Temperature Gauge
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USED ON		PART NAME: INDUSTRIAL HOT WATER SYSTEM	
FOR			
DR. ABB	DATE 11/25/11	FISONIC CORP.	SCALE: CAD DRAWING
CH.		44–02 23rd street.	DIMENSIONS: NONE
APPROVED		Long Island City, NY 11101	FILE DESIGNATION: 105BRFP–1a.dwg
SUPERSEDES NO. 11/25/11			DWG. NO. 105–BRFP–2

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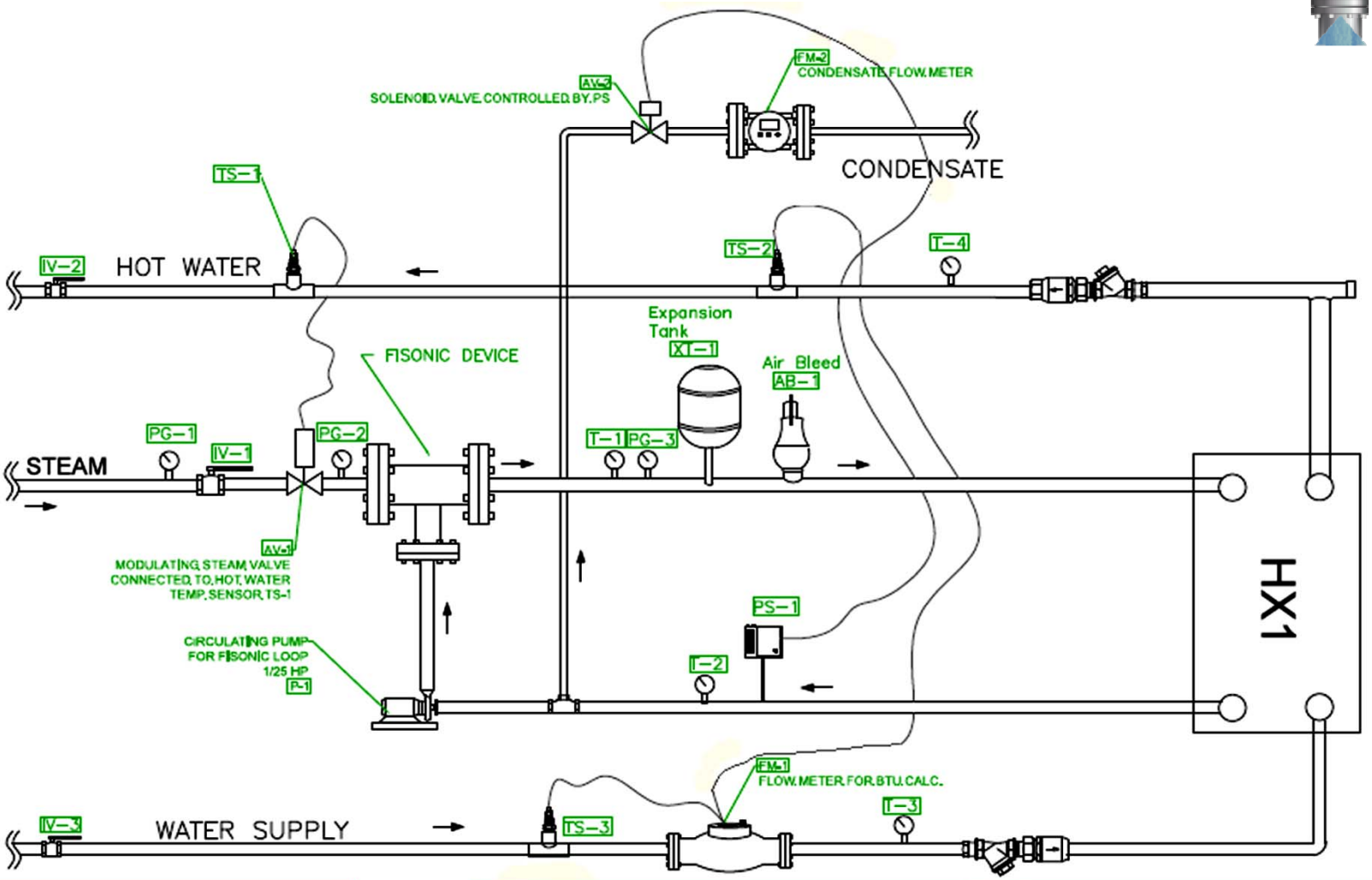
Fisonic Domestic Hot Water System



TS – Temperature Sensor
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PG – Pressure Gauge
IV – Isolation Valve
HX – Heat Exchanger

USED ON DEMO		PART NAME DOMESTIC HOT WATER SYSTEM	
DR. ABB	DATE 11/25/11	FISONIC CORP.	SCALE CAD DRAWING
CH.		44-02 23rd street.	DIMENSIONS NONE
APPROVED		Long Island City, NY 11101	FILE DESIGNATION 105BRFP-1a.dwg
SUPERSEDES NO. 11/25/11			DWG. NO. 105-BRFP-2

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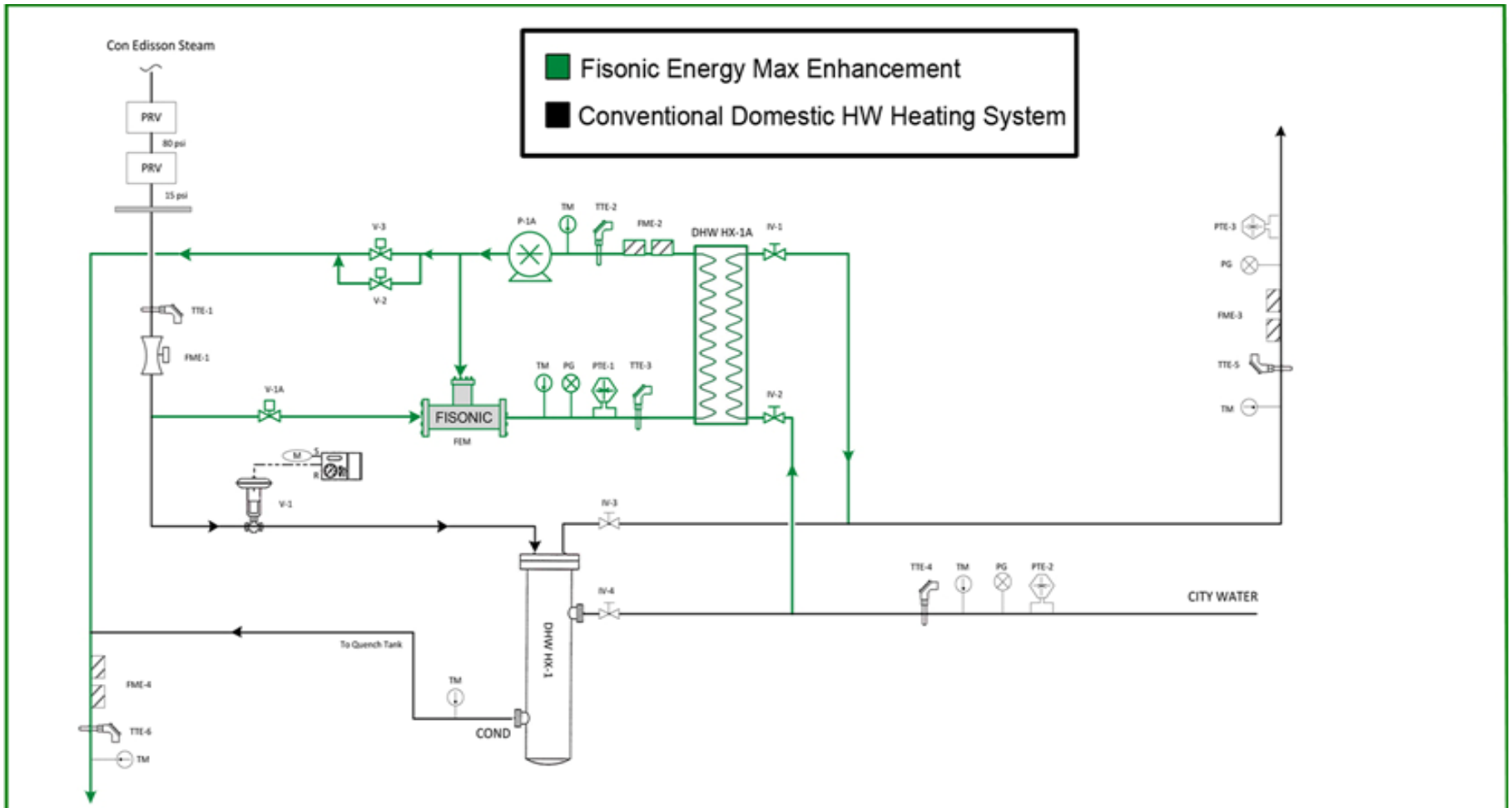
Typical Fisonic Bypass Retrofit of Hot Water System



REVISION HISTORY			
#	Date	Initials	Description

FISONIC GREENER SYSTEMS CORP.
A Fisonic Company
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New York, NY 10023
212-732-3777
www.fisonic.us
info@fisonic.us

Typical Fisonic Bypass Retrofit of Hot Water System

ENG:	DR:	CH:	1ST REL:	LAST ED:

Domestic Hot Water Energy MAX

M-001 0000-00

M-001

Nature's Technology Partner

Fisonic.US

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