



COMBI BOILER

SALES TRAINING

1

TRAINING AGENDA



Combi Boiler
Essentials



Technology, Performance,
and System Design



Customer Engagement
and Value Identification



Competitive Positioning
and Sales Strategy



Application Demand &
Sizing Requirements

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COMBI BOILER ESSENTIALS



- What Is a Combi Boiler?
- How It Works
- Market Context
- System Comparisons

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COMBI BOILER ESSENTIALS

What Is a Combi Boiler?

- A combi (combination) boiler provides:
 - Space heating (radiant floors, baseboard, fan coils)
 - Domestic hot water (DHW) for faucets, showers, appliances
- Combines heating boiler + water heater into one compact unit
- No storage tank required
- Immediate value: **space savings + efficiency**



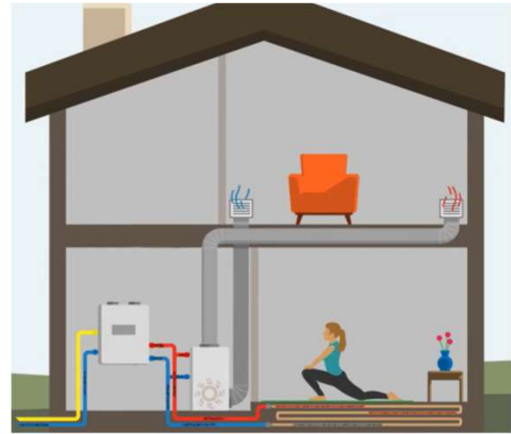
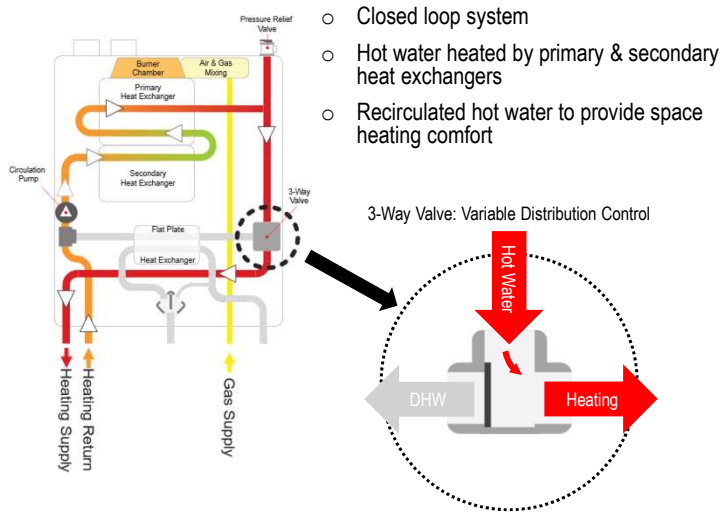
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COMBI BOILER ESSENTIALS

How Noritz Combi Boiler Works

Heating Only

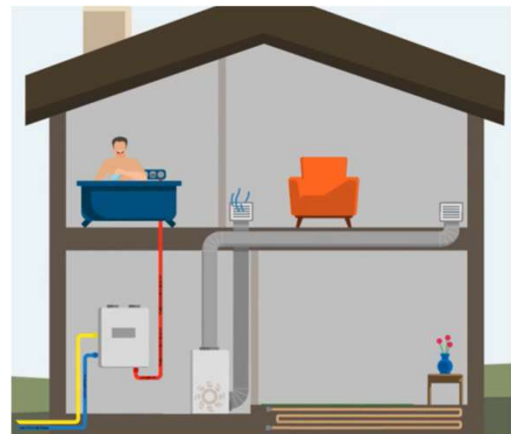
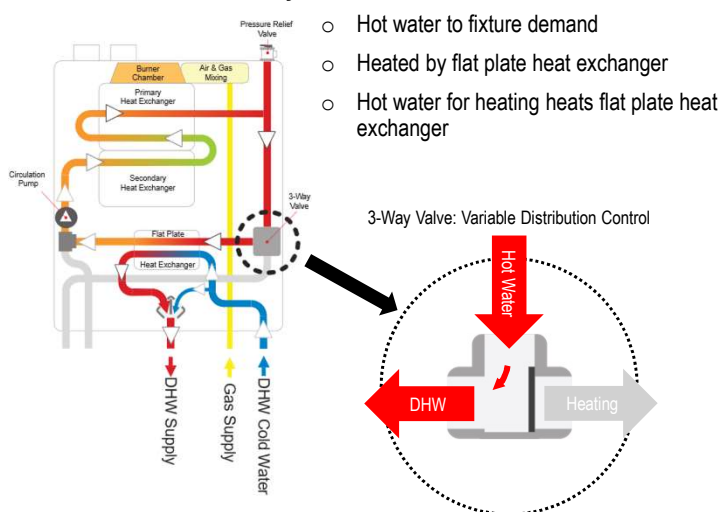


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COMBI BOILER ESSENTIALS

How Noritz Combi Boiler Works

Domestic Hot Water Only



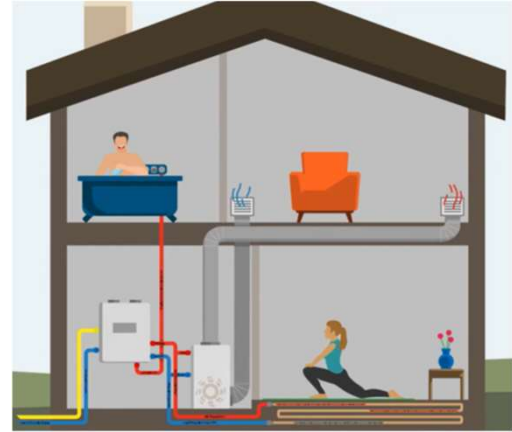
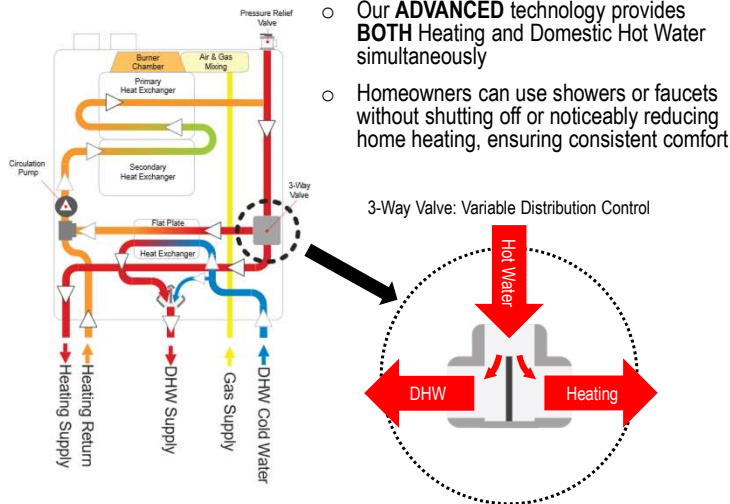
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COMBI BOILER ESSENTIALS

How Noritz Combi Boiler Works



Simultaneous Heating & DHW



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COMBI BOILER ESSENTIALS

Market Context

Market Shift

Large Storage & Low-Efficient
Atmospheric Systems

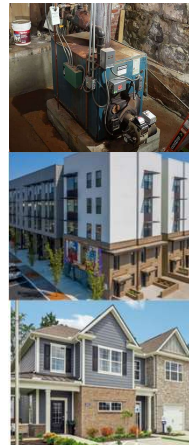


High-Efficient,
Compact Solution



Strong Demand

- Retrofits
 - Replacing aging boilers and storage tanks
- Urban Housing
 - Condos, townhomes, accessory dwelling units (ADUs)
- New Construction
 - Energy codes
 - Smaller footprint
 - Reduction in termination for furnace



Combi boilers win where **space, efficiency, simplicity, & high utility rebates** are primary drivers

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COMBI BOILER ESSENTIALS

System Comparisons

Noritz Combi Boiler VS

Tank Water Heater

- Endless Hot Water, Higher Efficiency, No Standby Loss

System Boiler & Indirect Tank

- Lower Upfront Cost, Smaller Footprint, Fewer Components

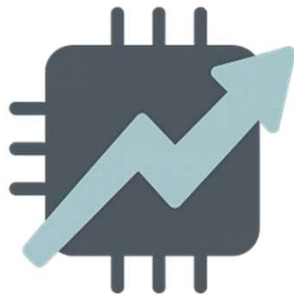
Most Combi Boilers

- Best overall comfort control with simultaneous performance, most combi boilers will do heating OR domestic hot water

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN



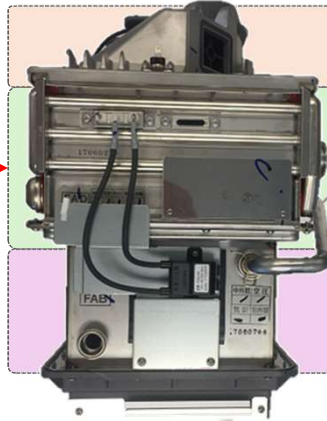
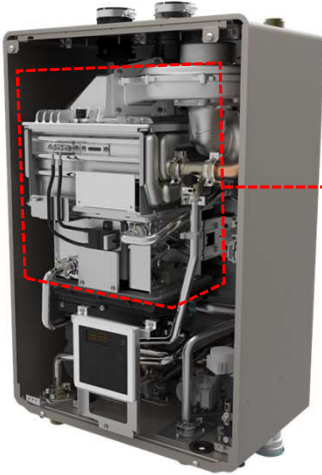
- Core Technologies
- Performance Metrics
- System Design Fundamentals
- Venting Options
- Wiring Options
- Plumbing Diagrams
- Heating Applications

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Core Technologies



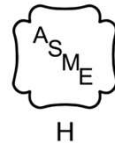
- Premix Burner**
 - Single stage, Ceramic fiber
 - Significantly reduces harmful flue gases

- Primary Heat Exchanger**
 - ASME H Stamp
 - 316L Austenite Stainless Steel, most Corrosion Resistance Material

- Secondary Heat Exchanger**
 - 316L Austenite Stainless Steel
 - Pre-heats water with exhaust gases

Burner & Heat Exchangers

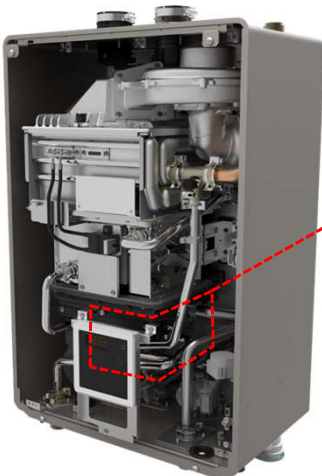
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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Core Technologies



- Flat Plate Heat Exchanger**
 - SCR (Stress Corrosion Resistant) Austenite Stainless Steel
 - Indirectly heats the DHW side of the system, less scale build up on the DHW side due to the lower heating temperatures

Heat Exchanger

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Performance Metrics

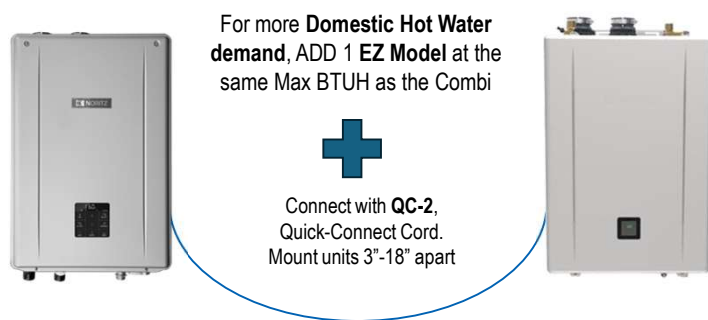
Models (2)	NRCB180DV	NRCB199DV
Standard Gas Input (BTUH)	Min: 18,000 Max: 180,000	Min: 18,000 Max: 199,900
Heating Gas Input (BTUH)	Min: 18,000 Max: 100,000	Min: 18,000 Max: 120,000
DHW Flow Range (GPM)	0.4 – 9.8	0.4 – 11.1
AFUE	95%	
DHW Burner Off Flow (GPM)	0.29	
Heating Temp Range	100F – 180F (As low as 80F with setting)	
DHW Temp Range	90F – 140F	
Simultaneous Heating & DHW	YES	
Max Elevation	10,000 feet	
Connection Sizes	¾" DHW & Gas, 1" Heating, ½" Auto Feeder & Condensate	
Quick Connect Capable	YES (With same BTU EZ or CDV Unit)	
Outdoor Temp Sensor	INCLUDED	
Warranty	10 Year Heat Exchanger, 5 Year Parts, 1 Year Labor	

Key Specifications

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Performance Metrics

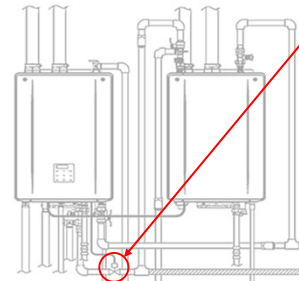


Expansion

IMPORTANT NOTE

- Solenoid Valve is needed when using a QC System with any EZ Unit
- The Solenoid Valve must be Normal Closed Valve and Slow Closing to avoid water hammer

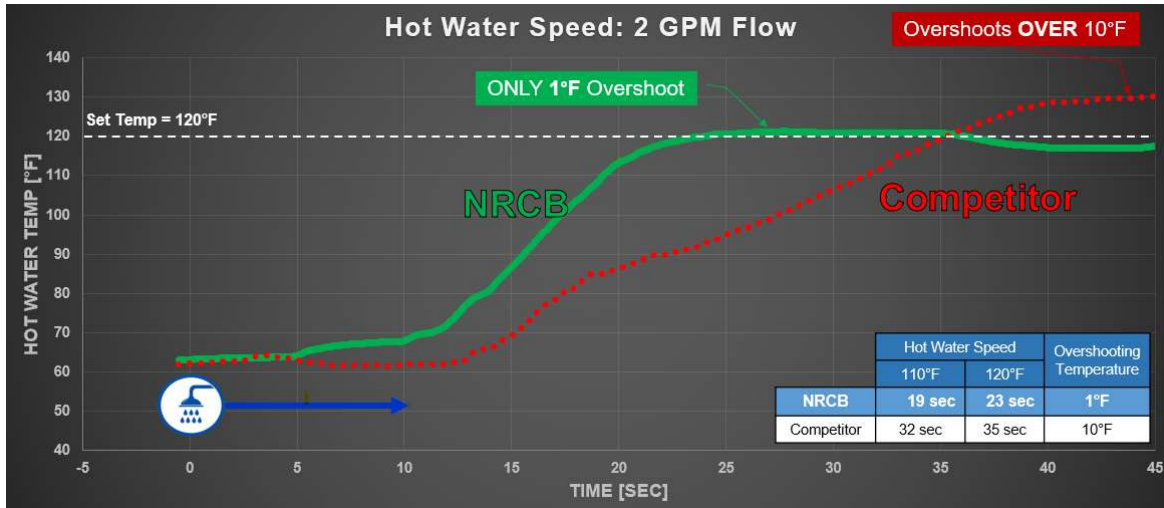
Solenoid Valve must be ¾" 120V AC - 1.5 Amp Max



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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

System Design Fundamentals

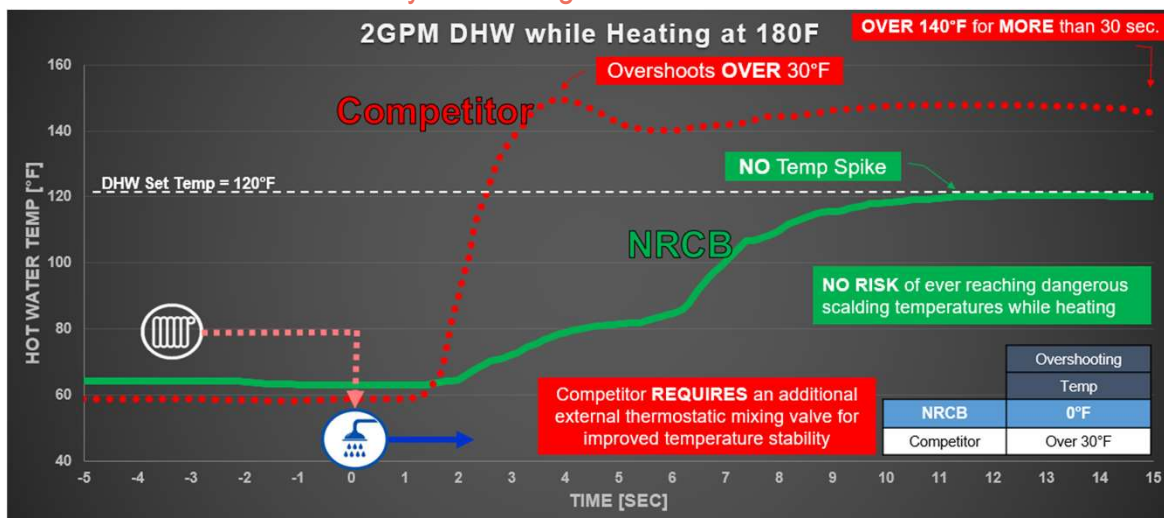


Quick Temperature Control & Stability

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

System Design Fundamentals



Quick Temperature Control & Stability

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

System Design Fundamentals

Heating Control Settings

- 1. Standard (Manual Heating Settings) most common
- 2. Outdoor Reset Control
- 3. External Control (0-10 V) not common

User Mode – 5 Options

Installer Mode – 19 Options

Maintenance Mode

Diagnostic Mode – 3 Options

Pre-Heat Timer Setting



Control Panel

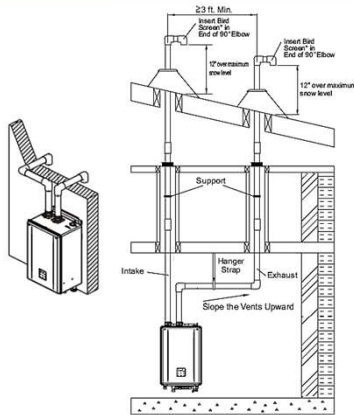
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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

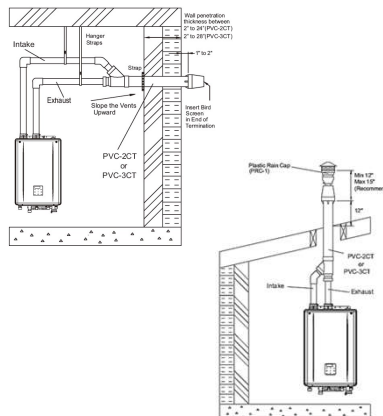
Venting Options

2" or 3" Diameters: PVC, CPVC, or PP Material (Horizontal / Vertical Termination Options)

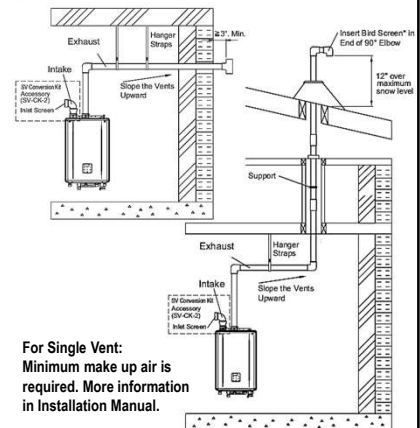
Direct Vent (2 Pipes: Exhausting Outdoor and Pulling Intake Outdoor Clean Air) – 2 Terminations



Concentric Vent (Pipe in a Pipe: Exhausting Outdoor and Pulling Intake Outdoor Clean Air) – 1 Termination



Single Vent (Exhausting Outdoor and Pulling Intake from Indoor Combustion Air) – 1 Termination

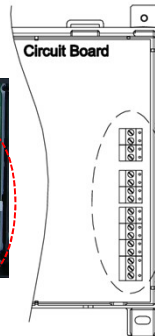
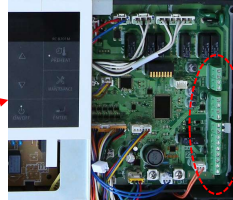
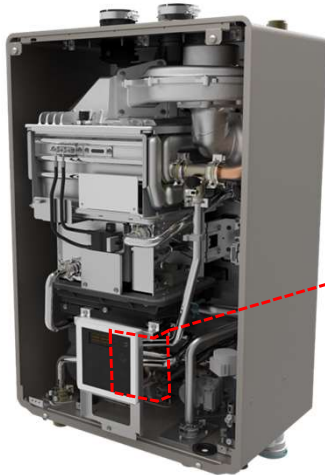


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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Wiring Options

- For accessories, controls, sensors, other equipment to compliment Combi Boiler system



[CN238]	SV		Solenoid Valve
[CN237]	Pump		External Pump
[CN236]	O / S		Outdoor Temperature Sensor
[CN235]	0 - 10 V	(-)	Heat Demand(0-10VDC)
[CN234]	LWCO	(+)	LWCO * The factory installed a jumper on the terminals.
[CN233]	T - T		Heat Demand(T-T)
[CN232]	A / H		Air Handler
[CN231]	24VAC OUT		24V AC for LWCO

Circuit Board

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Plumbing Diagrams

Combi Boiler as a Water Heater Only (Space Heating to be installed in the future)

Primary/Secondary Piping with Zone Valves

Primary/Secondary Piping with Zone Pumps

Air Handler Piping

Recirculation System on DHW side

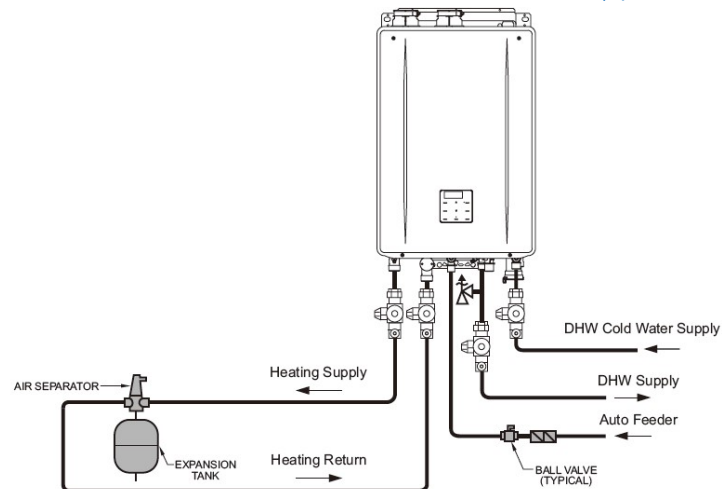
Key applications for most system needs

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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Plumbing Diagrams

Combi Boiler as a Water Heater Only
(Space Heating to be installed in the future)

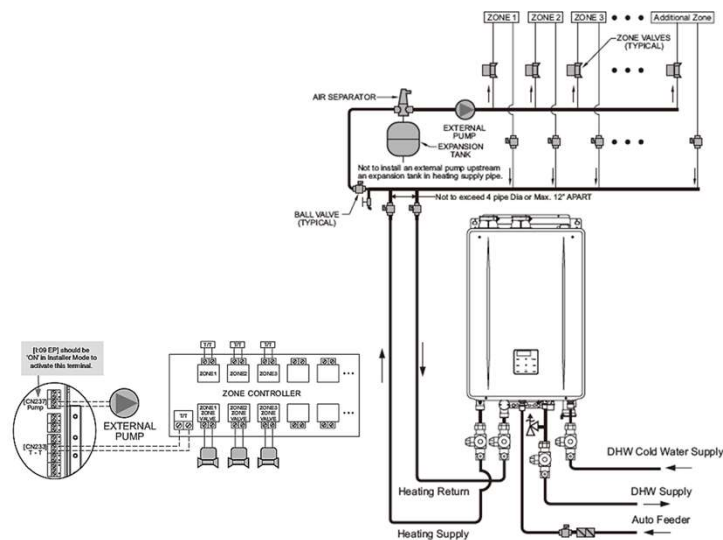


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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Plumbing Diagrams

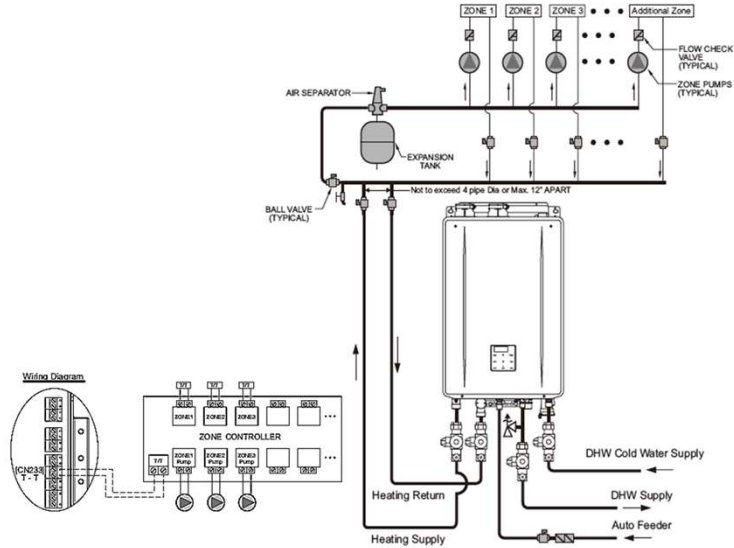
Primary/Secondary Piping with Zone Valves



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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

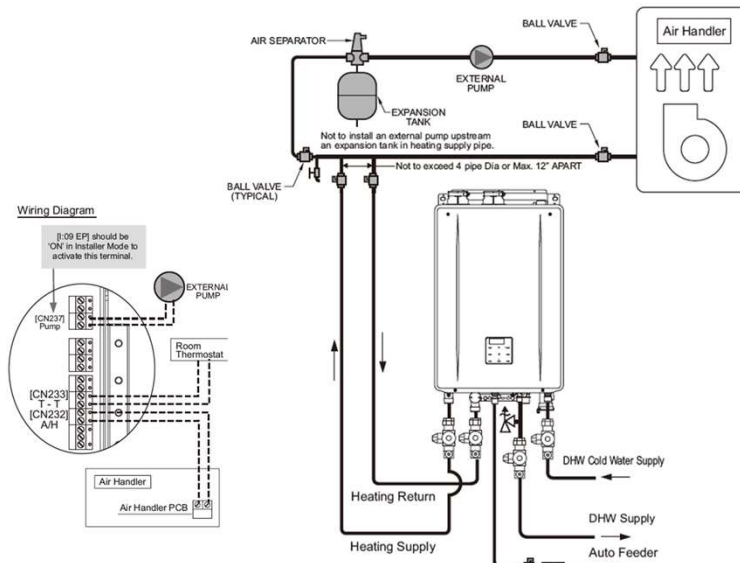
Plumbing Diagrams Primary/Secondary Piping with Zone Pumps



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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

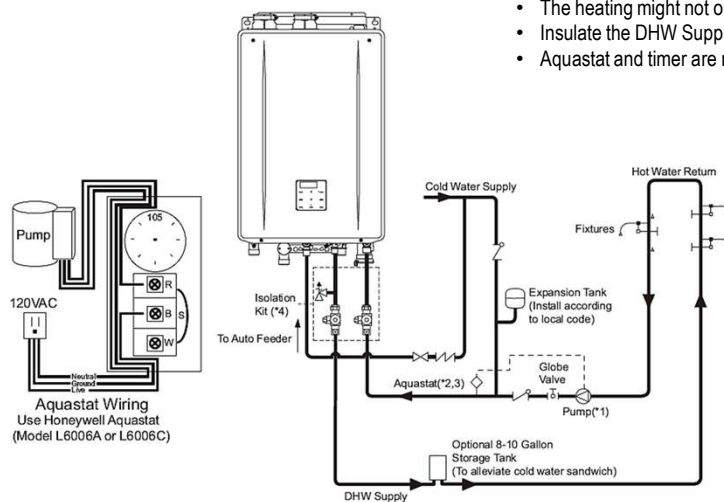
Plumbing Diagrams Air Handler Piping



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TECHNOLOGY, PERFORMANCE, AND SYSTEM DESIGN

Plumbing Diagrams Recirculation System on DHW side



- The heating might not operate in some conditions during recirculation
- Insulate the DHW Supply and Return pipe completely
- Aquastat and timer are required to control recirc loop.

REQUIRED

This should only be installed when Heat loop is set minimum 20 F higher than the domestic side. If not possible then Quick Connect system with recirculation would be recommended.

Flow on recirculation pump should be from 1 to 1.5 gpm.
(If higher, simultaneously heating and DHW **may not work**)

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HEATING APPLICATIONS

Hydronic Systems

Radiant Floor Heating

- Warm water circulates through tubing embedded in floors.
 - Best for:
 - New construction
 - High-efficiency homes
 - Comfort-focused customers
 - Key advantage
 - Low-temp operation = high efficiency



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HEATING APPLICATIONS

Hydronic Systems

Baseboard Radiators (Fin-Tube)

- Baseboard Units along walls
 - Best for:
 - Retrofits
 - Traditional homes
 - Key advantage
 - Simple, proven



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HEATING APPLICATIONS

Hydronic Systems

Panel Radiators

- Integrated into limited wall spaces
 - Best for:
 - Modern hydronic retrofits
 - Zoned comfort
 - Key advantage
 - Faster response than radiant



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HEATING APPLICATIONS

Hydronic Systems

Snow Melt

- Integrated into limited wall spaces
 - Best for:
 - Driveways, walkways
 - Key advantage
 - Activating the heating only when needed, reducing labor and time spent snow removal.

NOTE

A flat-plate heat exchanger may need to be installed due to the limit of 35% glycol limit of the NRCB



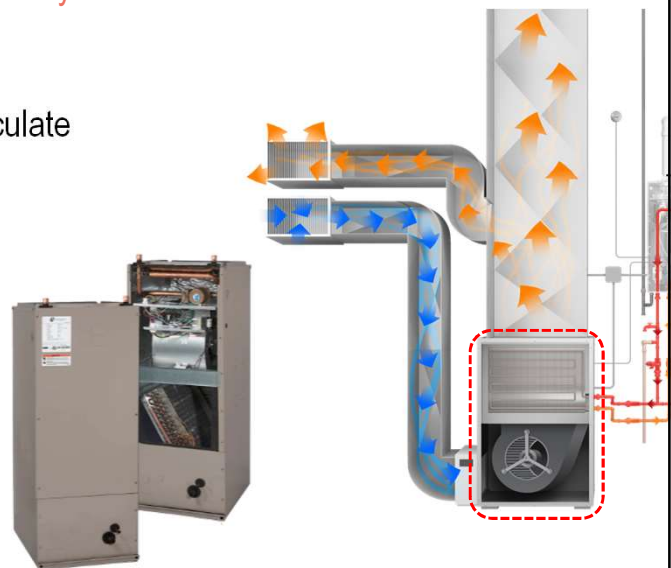
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HEATING APPLICATIONS

Hydronic Systems

Air Handler

- Equipment designed to regulate and circulate air within a building using hot water
 - Best for:
 - Gas furnace replacement
 - In conjunction with cooling source
 - Key advantage
 - Complete system



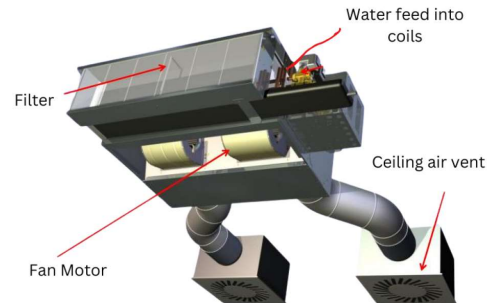
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HEATING APPLICATIONS

Hydronic Systems

Fan Coil Unit

- Utilizes hot water to move heated air
 - Best for:
 - Ceiling application
 - Localized rooms
 - Key advantage
 - Smaller, self-contained device



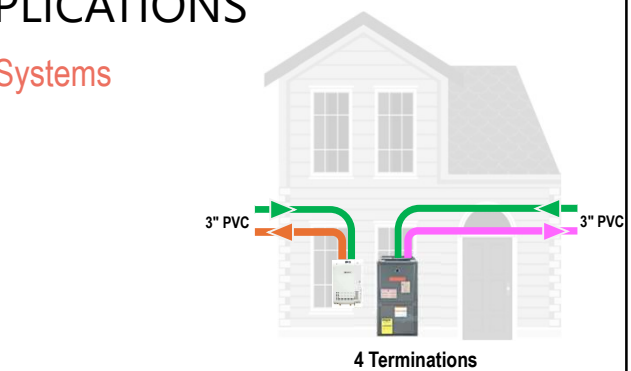
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HEATING APPLICATIONS

Hydronic Systems

Use Case

- New Construction – Builder Advantage
 - Baltimore, MD
 - Single-Family Home (Tankless with Gas Furnace)



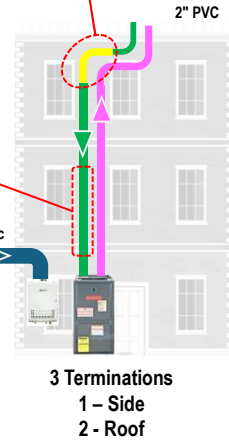
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HEATING APPLICATIONS

Hydronic Systems

Use Case

- New Construction – Builder Advantage
 - Baltimore, MD
 - Townhome (Tankless with Gas Furnace)



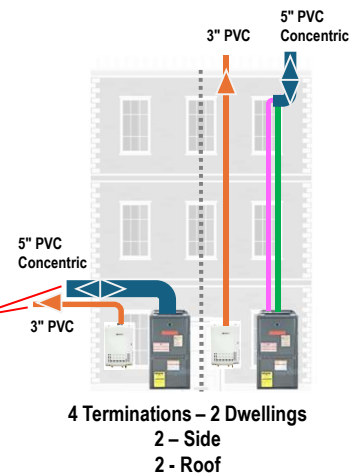
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HEATING APPLICATIONS

Hydronic Systems

Use Case

- New Construction – Builder Advantage
 - Baltimore, MD
 - Multi-Family (Tankless with Gas Furnace)



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HEATING APPLICATIONS

Hydronic Systems

Use Case - Challenges

- New Construction – Builder Advantage
 - Installers are struggling with venting water heater and gas furnace
 - Not ideal in attic and mechanical rooms

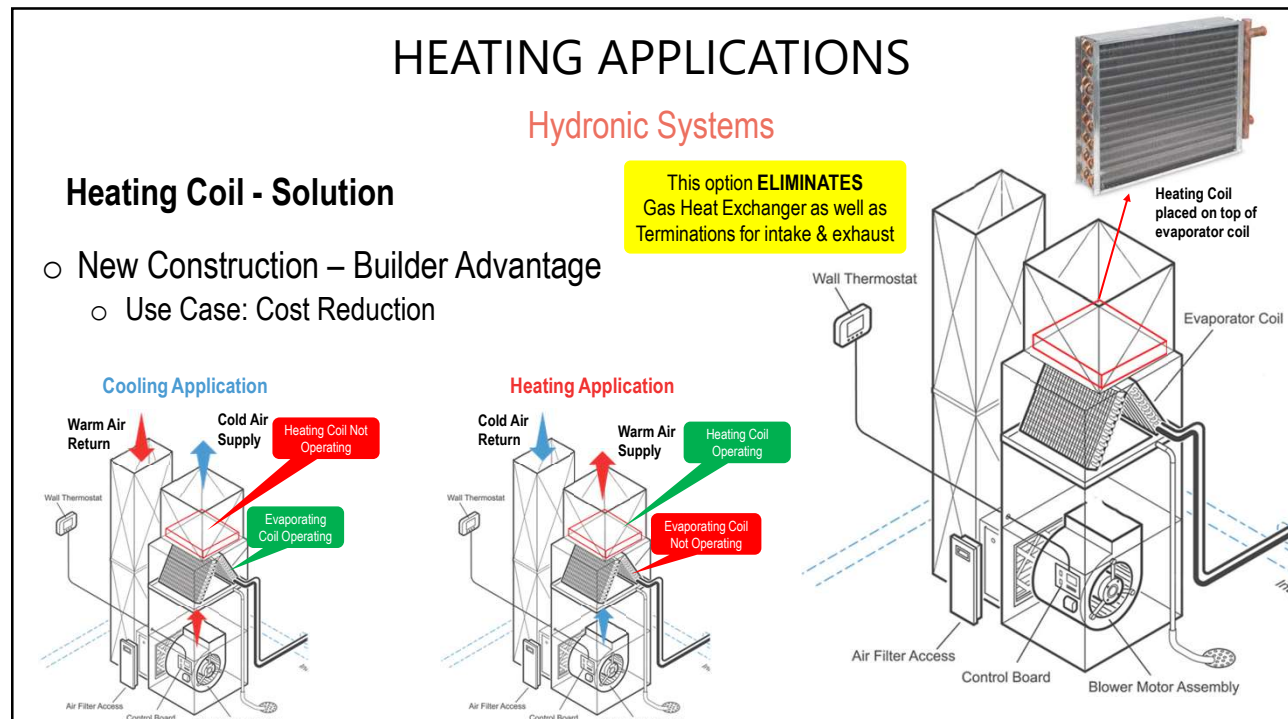
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HEATING APPLICATIONS

Hydronic Systems

Heating Coil - Solution

- New Construction – Builder Advantage
 - Use Case: Cost Reduction



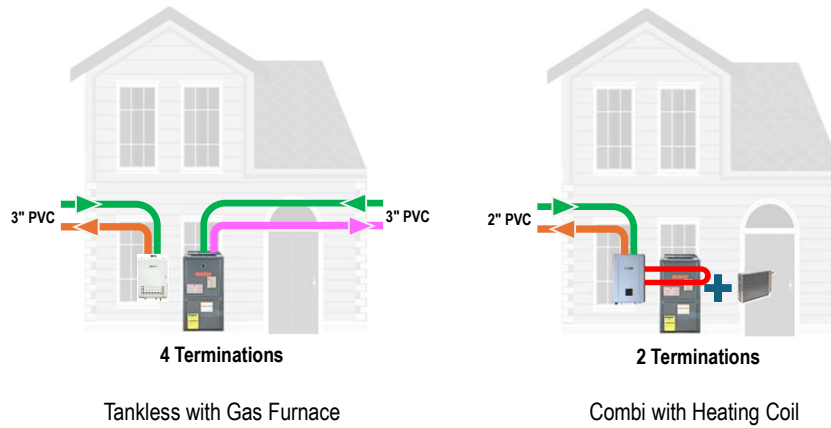
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HEATING APPLICATIONS

Hydronic Systems

Heating Coil - Solution

Single-Family Home



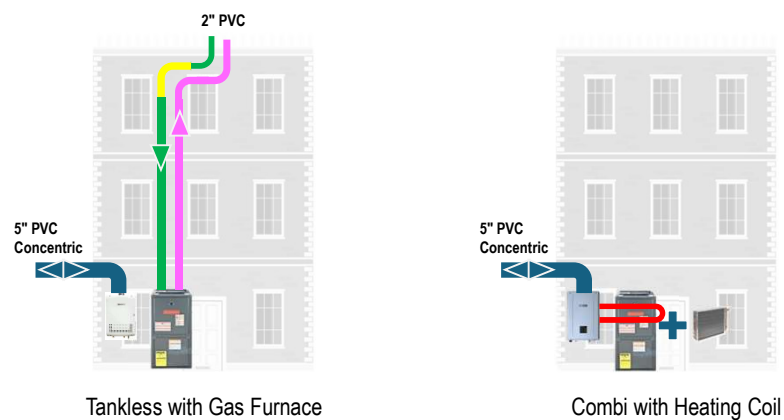
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HEATING APPLICATIONS

Hydronic Systems

Heating Coil - Solution

Townhome

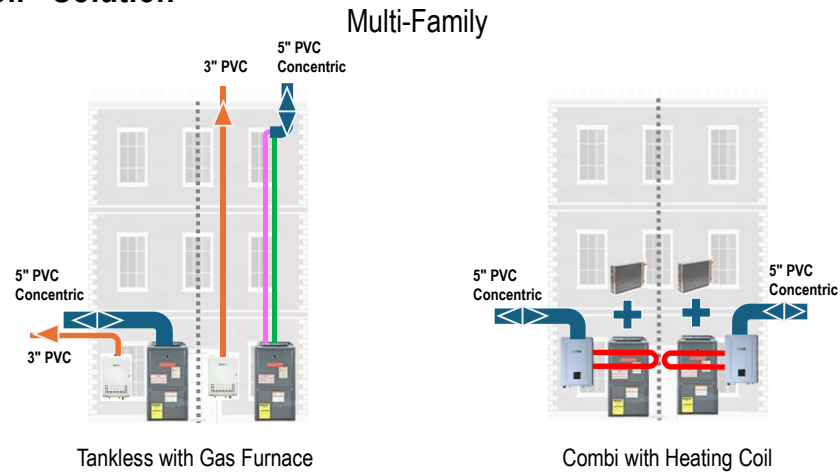


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HEATING APPLICATIONS

Hydronic Systems

Heating Coil - Solution



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HEATING APPLICATIONS

Hydronic Systems

Heating Coil

- New Construction – Builder Advantage – Other Features
 - 40/60/80/100 KBTU heating coils available
 - Direct connection between combi boiler and heating coil.
 - Primary/secondary system and external/additional pump are not required.
 - No electrical wiring is required to the heating coil.
 - Heating is controlled by the combi boiler (and room thermostat)
 - Heating coil can be put anywhere on the duct system.
 - Simultaneous DHW/Heating technology.
 - Less water quality issue (scale/corrosion) than regular tankless water heaters

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CUSTOMER ENGAGEMENT AND VALUE IDENTIFICATION



- Target Customer Segments
- Customer Pain Points
- Translating Features → Benefits
- Value Drivers by Persona

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TARGET CUSTOMER SEGMENTS

- Retrofit: replacing old boiler + tank
- New build: efficiency + space

Homeowners



- Ease of install
- Callbacks and service friendliness

Contractors



- Cost per unit
- Mechanical room footprint

Builders /
Developers



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CUSTOMER PAIN POINTS

Rethinking Home Comfort: Heating & Hot Water, Simplified

Today's systems are outdated, inefficient, and frustrating. There's a better way.

Most homes are still running two separate systems.

A boiler/furnace + a tank water heater.

TWO SYSTEMS TO MAINTAIN



MORE SPACE REQUIRED



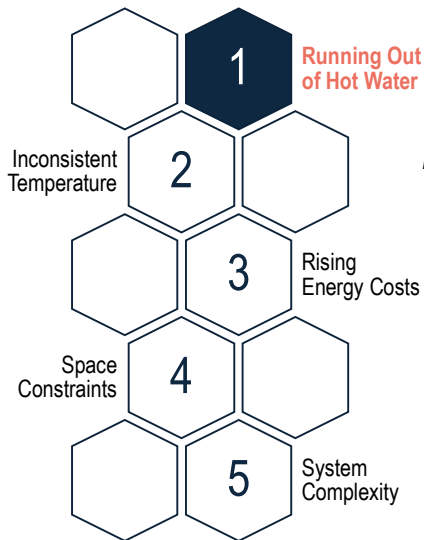
HIGHER ENERGY USE



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CUSTOMER PAIN POINTS



Everyone has experienced it—back-to-back showers and suddenly... cold water.



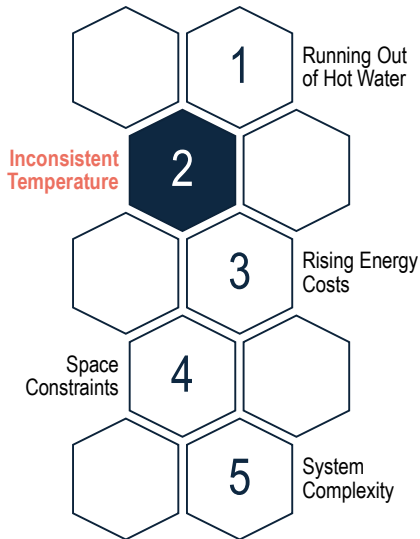
Impact:

- Household frustration
- Peak demand failures

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CUSTOMER PAIN POINTS



Temperature swings during showers or fixtures running simultaneously.



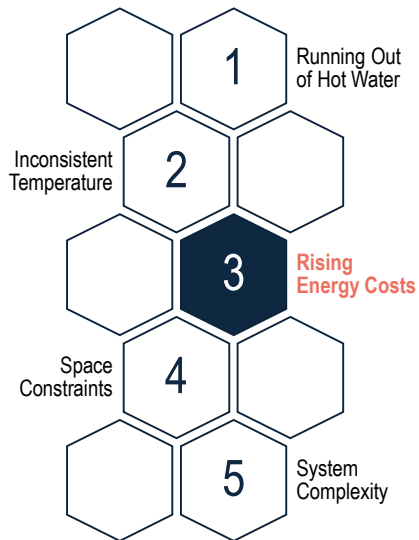
Impact:

- Poor user experience
- Perception of unreliable system

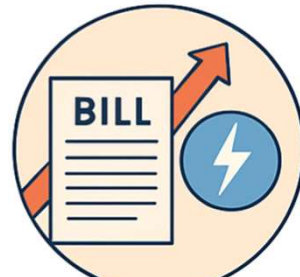
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CUSTOMER PAIN POINTS



Traditional systems waste energy just keeping water hot.



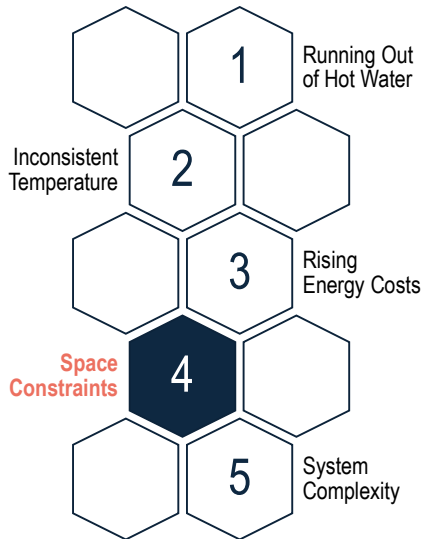
Impact:

- Higher monthly bills
- Inefficient standby losses

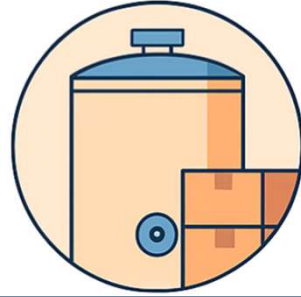
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CUSTOMER PAIN POINTS



Mechanical rooms, garages, & basements are crowded - especially in modern homes.



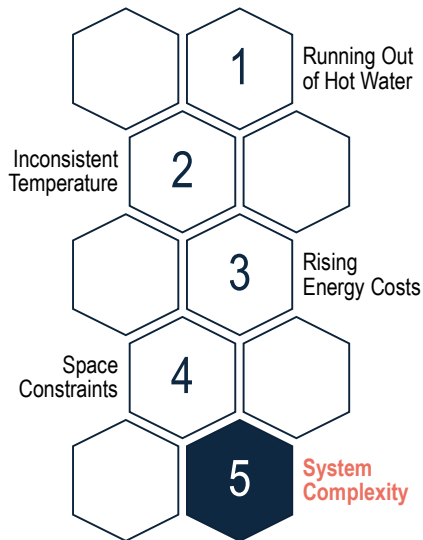
Impact:

- Lost usable space
- Installation limitations

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CUSTOMER PAIN POINTS



Two appliances = more parts, more failure points, more confusion.



Impact:

- Harder to service
- More things that can break

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CUSTOMER PAIN POINTS

The Turning Point: There Has to Be a Better Way

Bridge from frustration to solution

Homeowners don't want
more equipment

they want a smarter
solutions

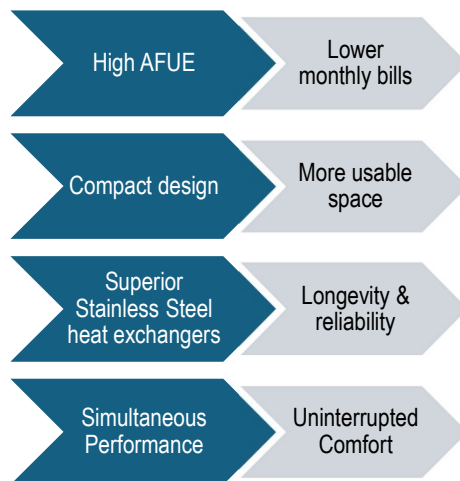


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TRANSLATING FEATURES → BENEFITS

The Turning Point: There Has to Be a Better Way



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VALUE DRIVERS BY PERSONA



Homeowner

- comfort, savings, peace of mind



Contractor

- simple install, fewer callbacks



Builder

- cost-effective, compact, code-friendly

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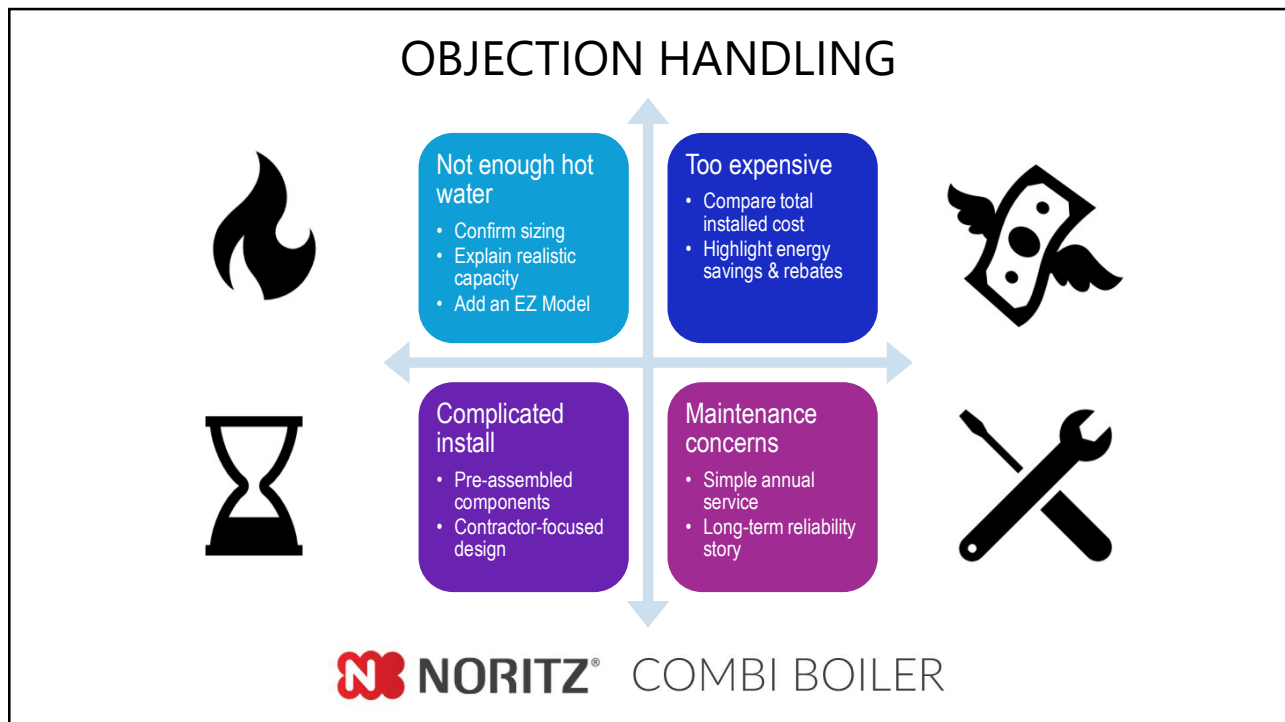
COMPETITIVE POSITIONING AND SALES STRATEGY



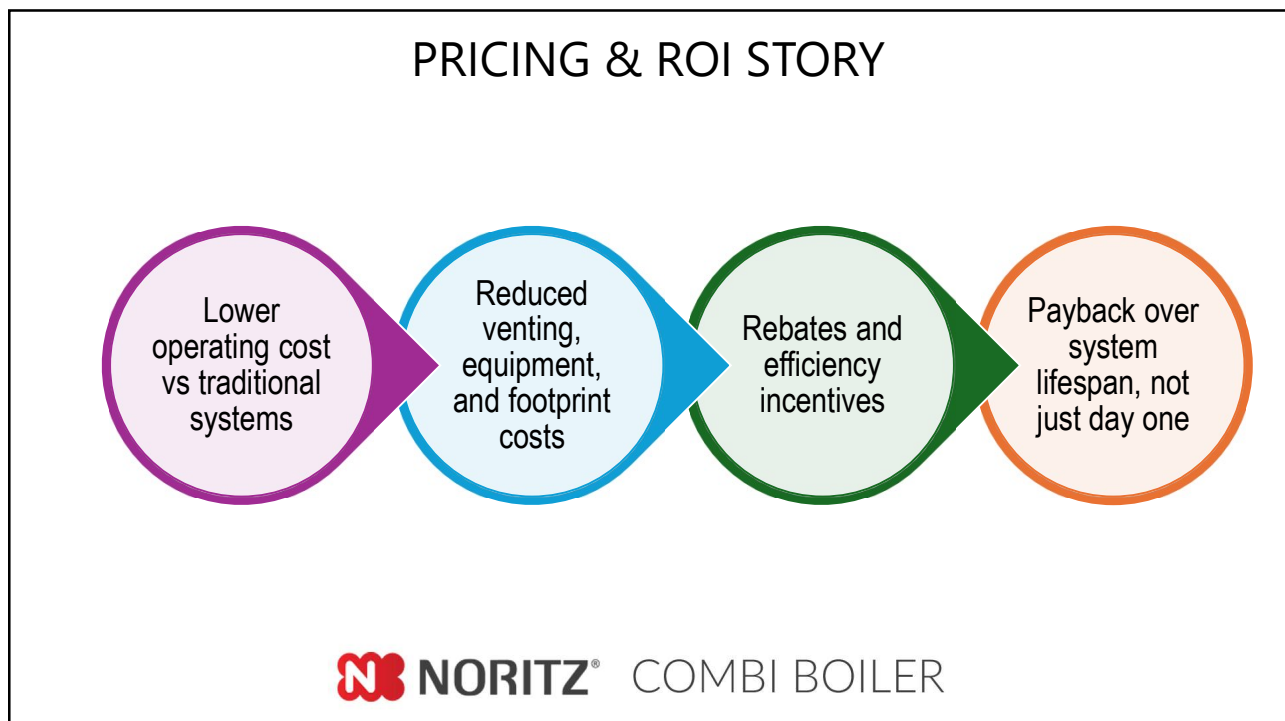
- Objection Handling
- Pricing & ROI Story
- Sales Process Framework

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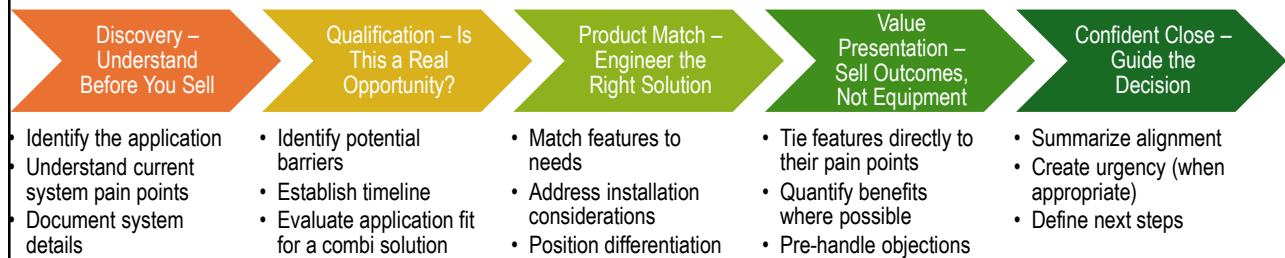


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SALES PROCESS FRAMEWORK



Each step should clearly connect to the next - no gaps, no assumptions



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APPLICATION DEMAND & SIZING REQUIREMENTS



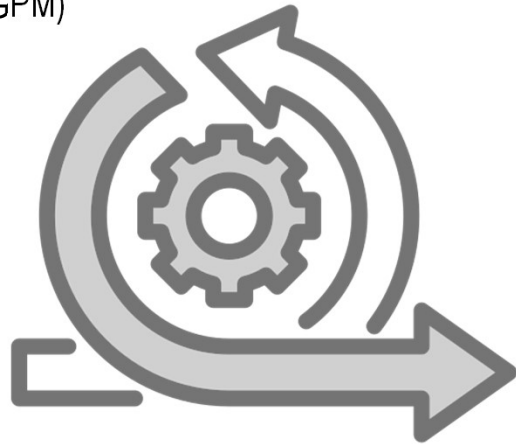
- Sizing Methodology
- Additional Accessories



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SIZING METHODOLOGY

- Calculate peak Domestic Hot Water demand (GPM)
- Calculate heating load (BTUs)
- Select unit that meets both requirements
- Verify gas and venting feasibility



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ADDITIONAL ACCESSORIES



1/2" pressure reducing valve is needed on the auto feeder connection line to reduce the inlet water pressure to below 30 psi

Part # MK-NRCB-1

Premade to align with the heating supply and return ports. Shut off valves and ports to flush the HEX along with a drain port to bleed out air in the system

Air Separator is required at the highest point of the heating system



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HOW THE 5 SECTIONS CONNECT



Combi Boiler
Essentials



Technology, Performance,
and System Design



Customer Engagement
and Value Identification



Competitive Positioning
and Sales Strategy



Application Demand &
Sizing Requirements

**What
it is**

**How it
works**

**How to
sell it**

**How to
win**

**How to get
it right**

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QUESTIONS?

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