2019 TSSC National Sales Meeting

May 8-9; Baltimore, MD

JAMES SCHNORR
PRESIDENT

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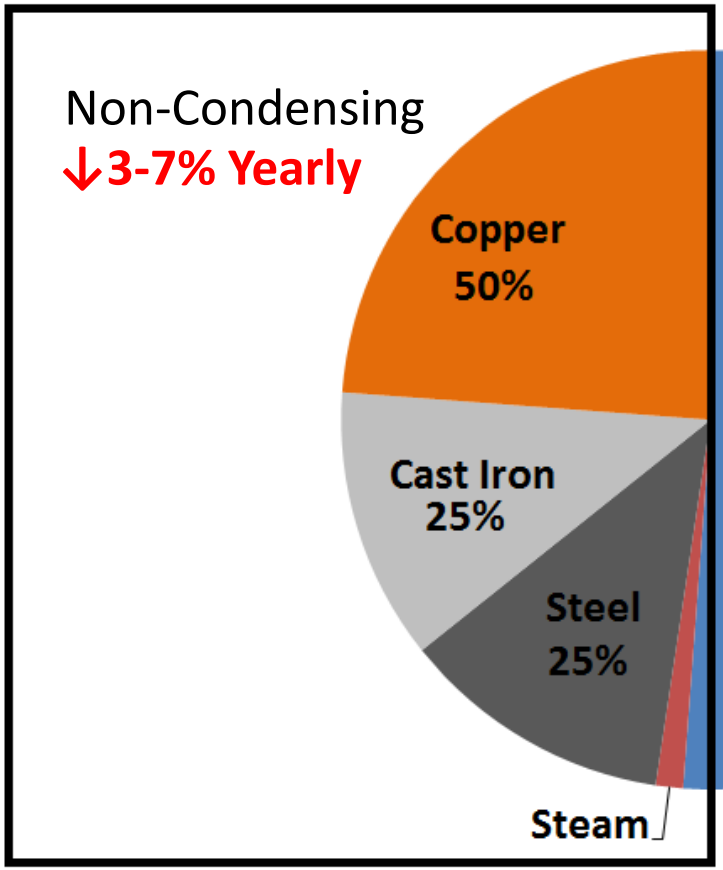
Goals and Focus

- Best route to service legacy & grow condensing
- Easier to do business
- See engineers – get word out on new products
- Grow condensing business

Marketplace 2017

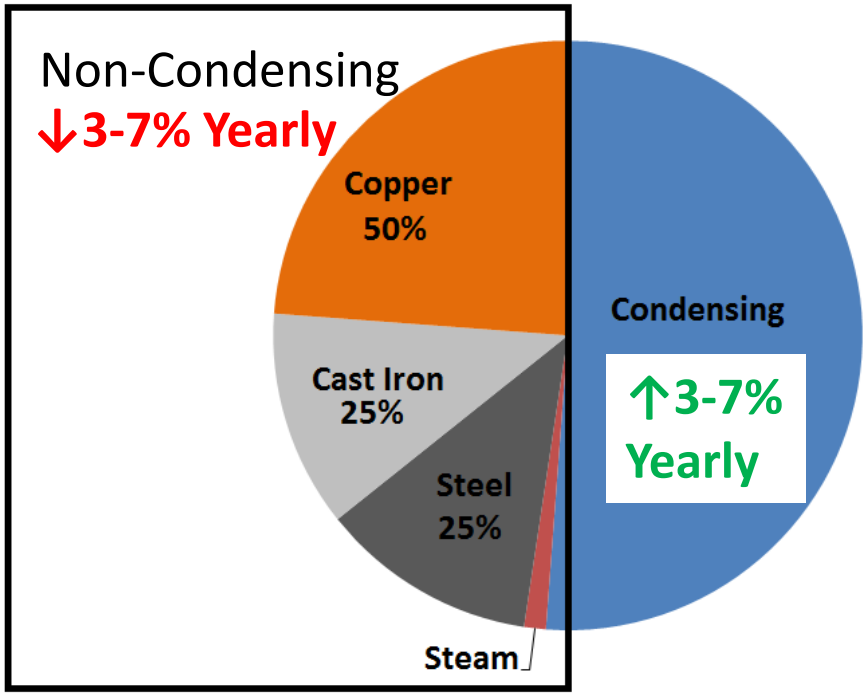
- North America – 65,000 units / ↑300 MBH



Growth will come from Condensing

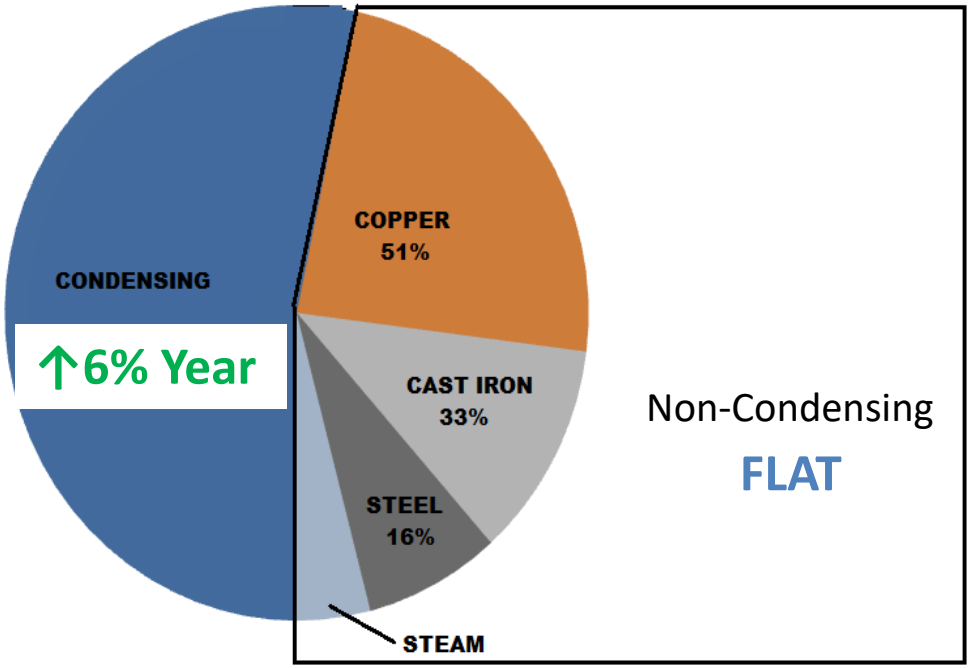
Marketplace - North America

2017 65,000 units / ↑ 300 MBH



90% Hot Water
10% Steam

2018 68,800 units / ↑ 300 MBH



87% Hot Water
13% Steam

Condensing Growth Shift to Larger Sizes

Who's Who and Where

Bryan Support, Peru	TS Support, Lancaster
Joe Tinney	Greg Hughes
Kyle Eckerley	Joyce Vino
Sandy Mitting	Sonia Frush
Bruce Carlson	Tammy Landis
	Sue Derr

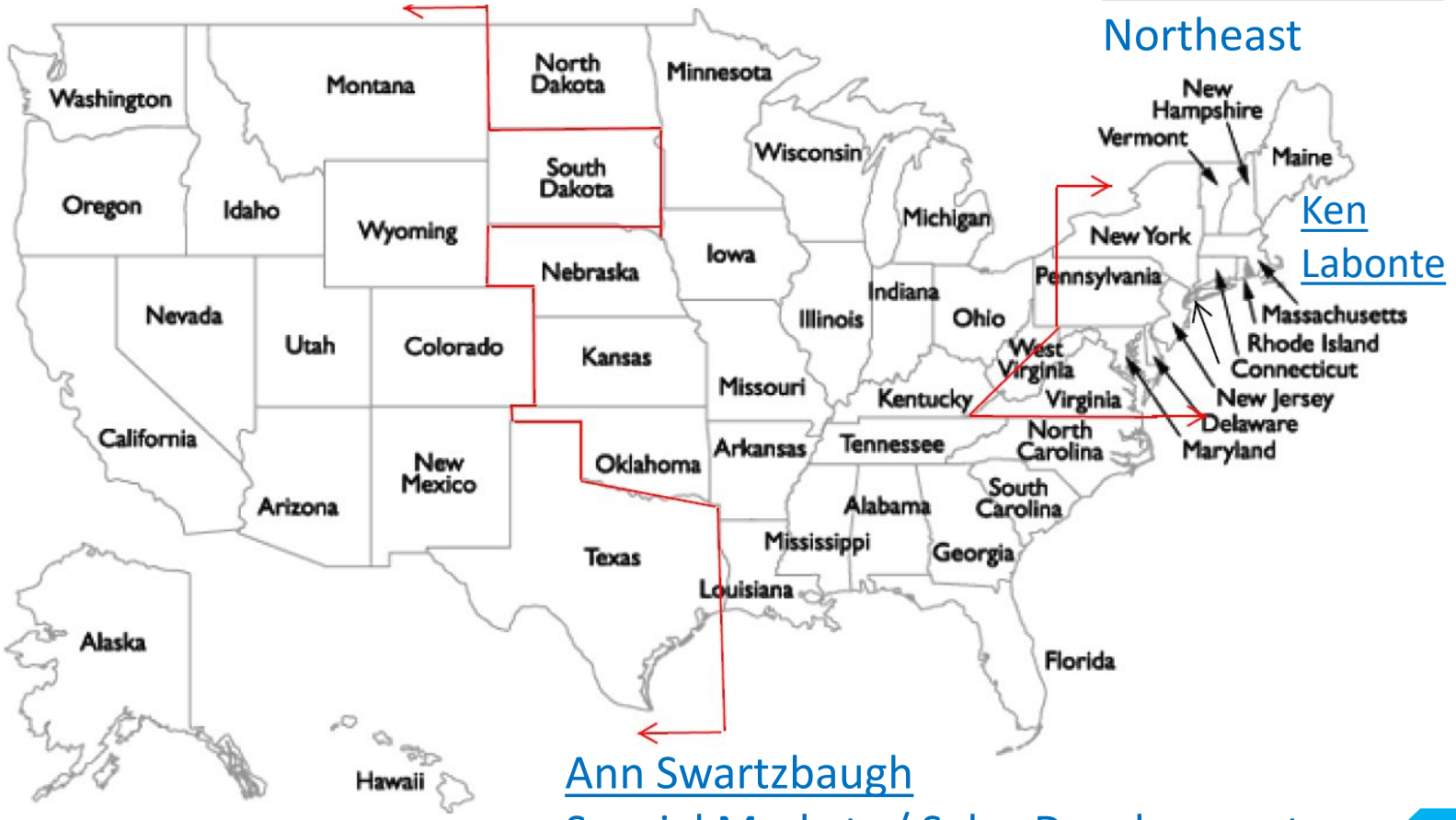
Day-to-Day business is the same today as it was before

Who's Who and Where

Jim Donnelly
West

Blane Holland
Central

Mike McStravock
Northeast



Ken
Labonte

Ann Swartzbaugh
Special Markets / Sales Development

Chris Drew

Burnham Holdings Companies

Residential Products		Commercial Boilers	Vertical Integration
Boiler	Furnace/AC/Heat Pumps		
Crown Boiler	Thermo Products	Bryan Steam	Casting Solutions
New Yorker Boiler		Burnham Commercial	Lancaster Metal Manufacturing
US Boiler		Thermal Solutions	Norwood Manufacturing Inc.
Velocity Boiler Works			

2018 Financial Performance

2018 Financial Highlights

- Net sales were **$198mm, up $22 mm or 12.5%**
  - Residential sales were up 15%
  - Commercial sales were up 5%
- **Gross Profit was $41.6 mm, up $5.8mm or 16%**
  - Margin flat at 21% of Sales
- **Reported Net income was a loss $0.5 mm, or $0.12/sh**
  - Includes one time $6.8 mm after tax Goodwill Impairment charge
  - Net Income excluding one time items was $1.37/sh v $1.06/sh in 2017
- **Dividends of $0.88 per share**

Solid Performance On Improved Sales and Operational Performance

Q1 2019 Results

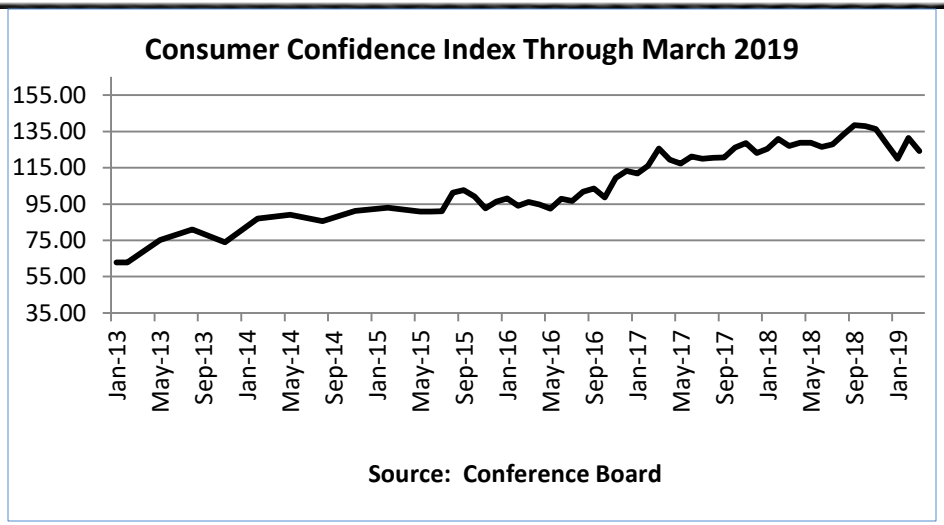
First Quarter Results

	2015	2016	2017	2018	2019
Net Sales ($mm)	$38.5	$33.2	$35.6	$40.8	$45.5
Net Income ($mm)	($0.6)	($1.1)	($0.9)	($0.2)	$0.9
EPS	($0.13)	($0.25)	($0.19)	($0.05)	$0.19
Dividend/SH (Mar 2019)	$0.22	$0.22	$0.22	$0.22	$0.22

- **Net sales up $4.7mm, or 12%, representing highest Q1 last 10 years.**
- **Net income for the quarter of $0.9 was an improvement of $1.1 million, compared to first quarter of 2018.**

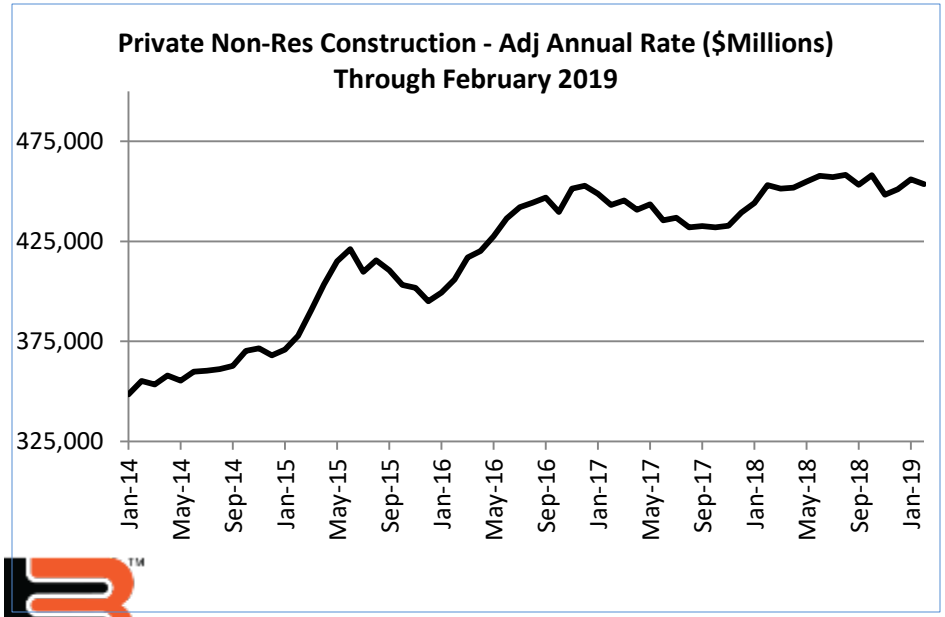
Strong First Quarter Across all Product Categories

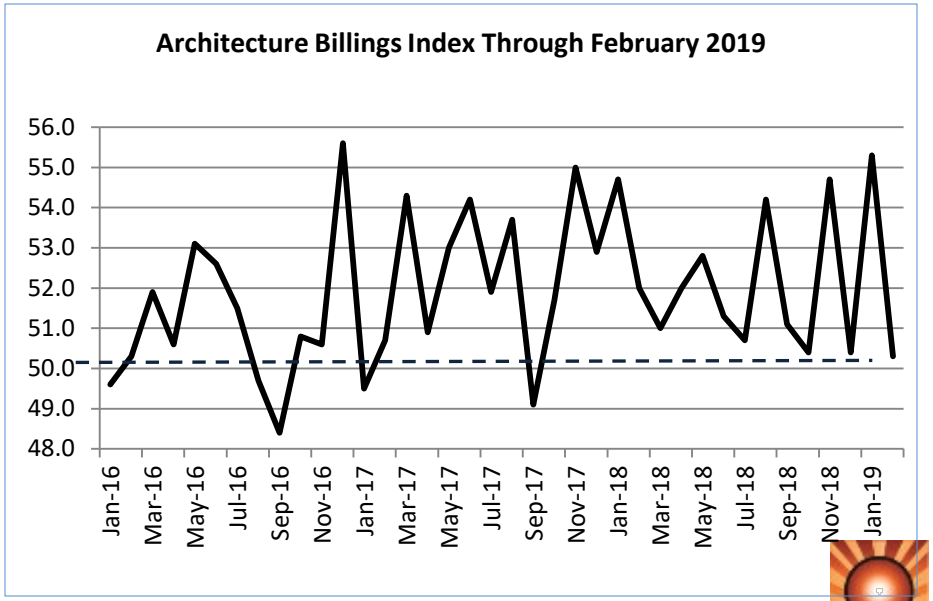
Macro Economic Indicators



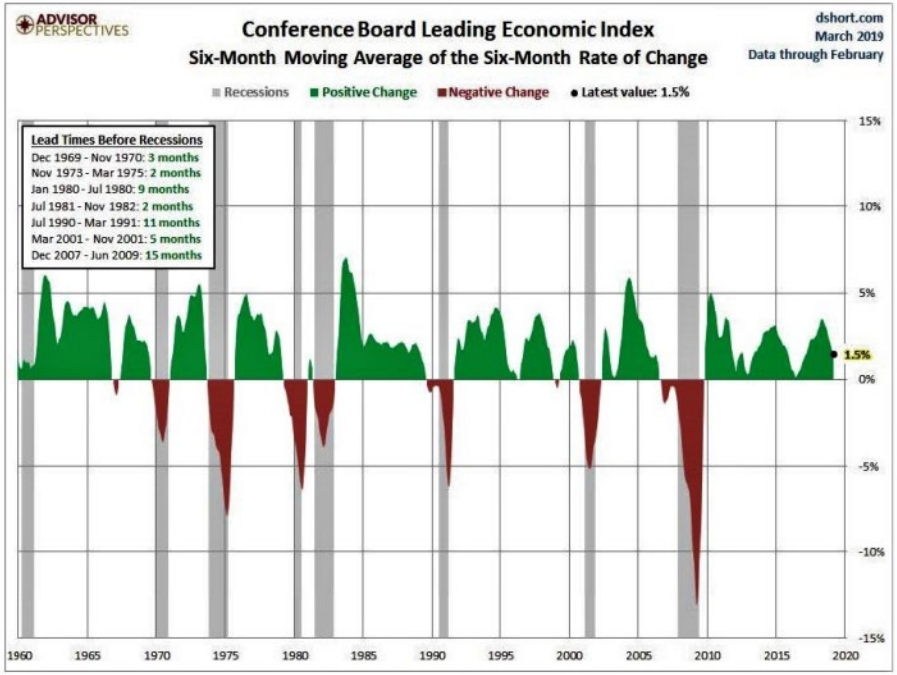
U.S. Indicators

- Consumer Confidence - 7.3 pts
- Employment Trends Index - 0.58 %
- Help Wanted OnLine - 1.6 %
- Leading Economic Index + 0.2 %
- Measure of CEO Confidence + 1.0 pts

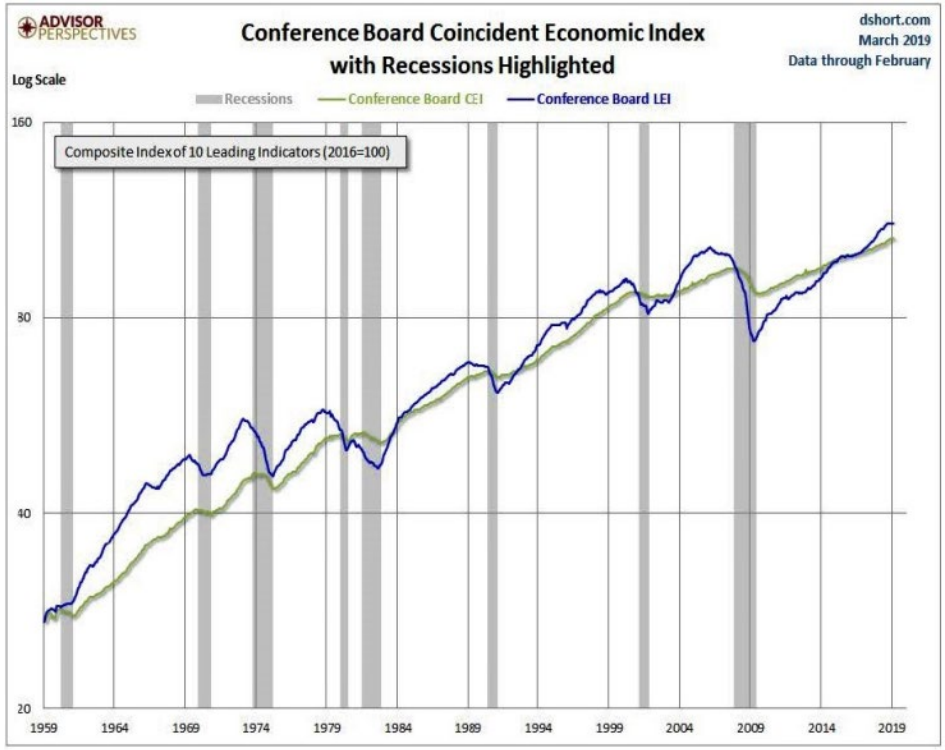




Leading US Economic Indicators

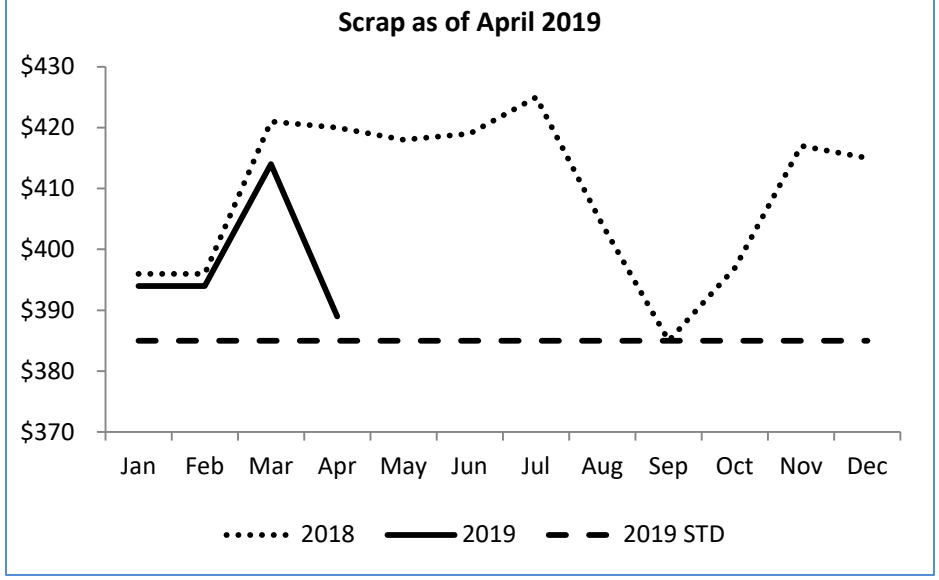


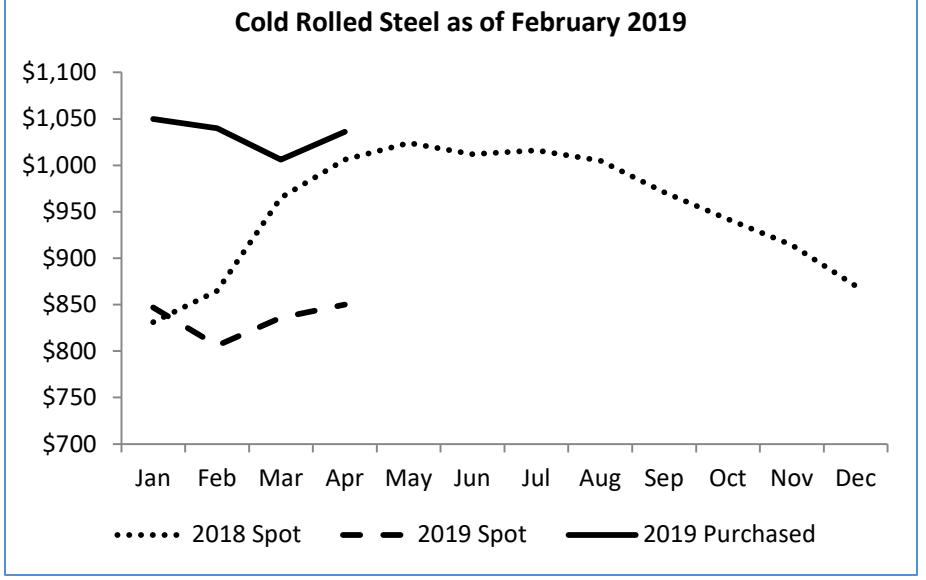
As we can see, the LEI has historically dropped below its six-month moving average anywhere between 2 to 15 months before a recession. The latest reading of this smoothed rate-of-change suggests no near-term recession risk. Here is a twelve month smoothed out version, which further eliminates the whipsaws:

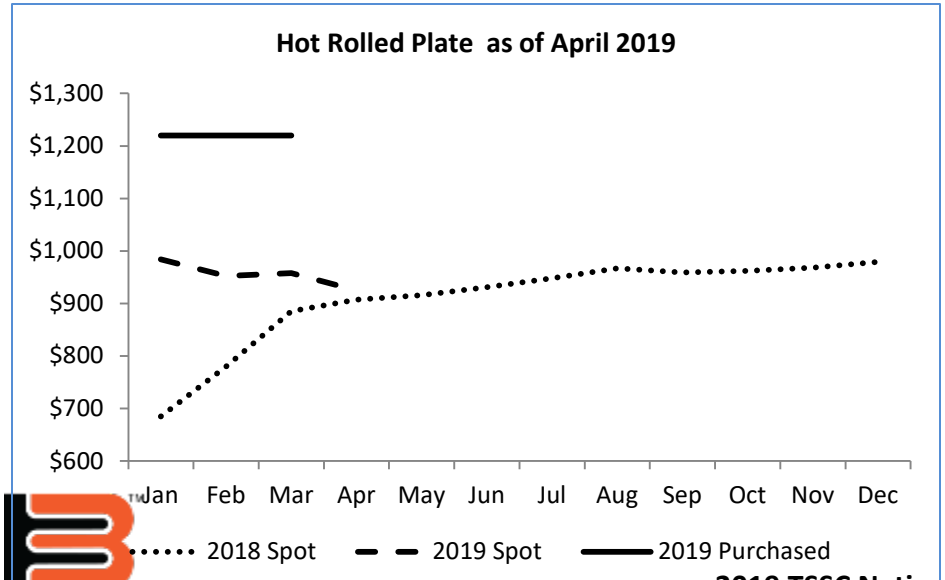


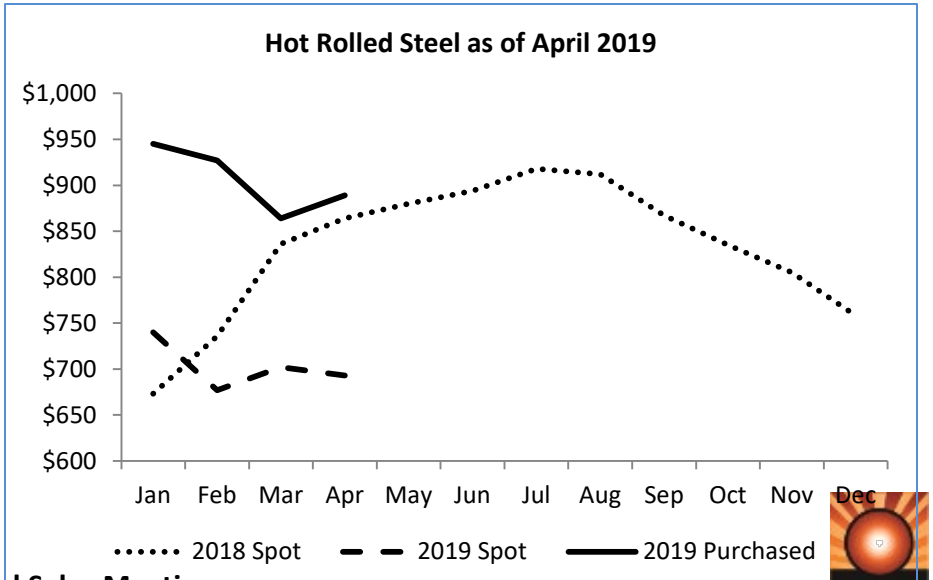
Here is a chart of the LEI/CEI ratio, which is also a leading indicator of recessions.

Inflation

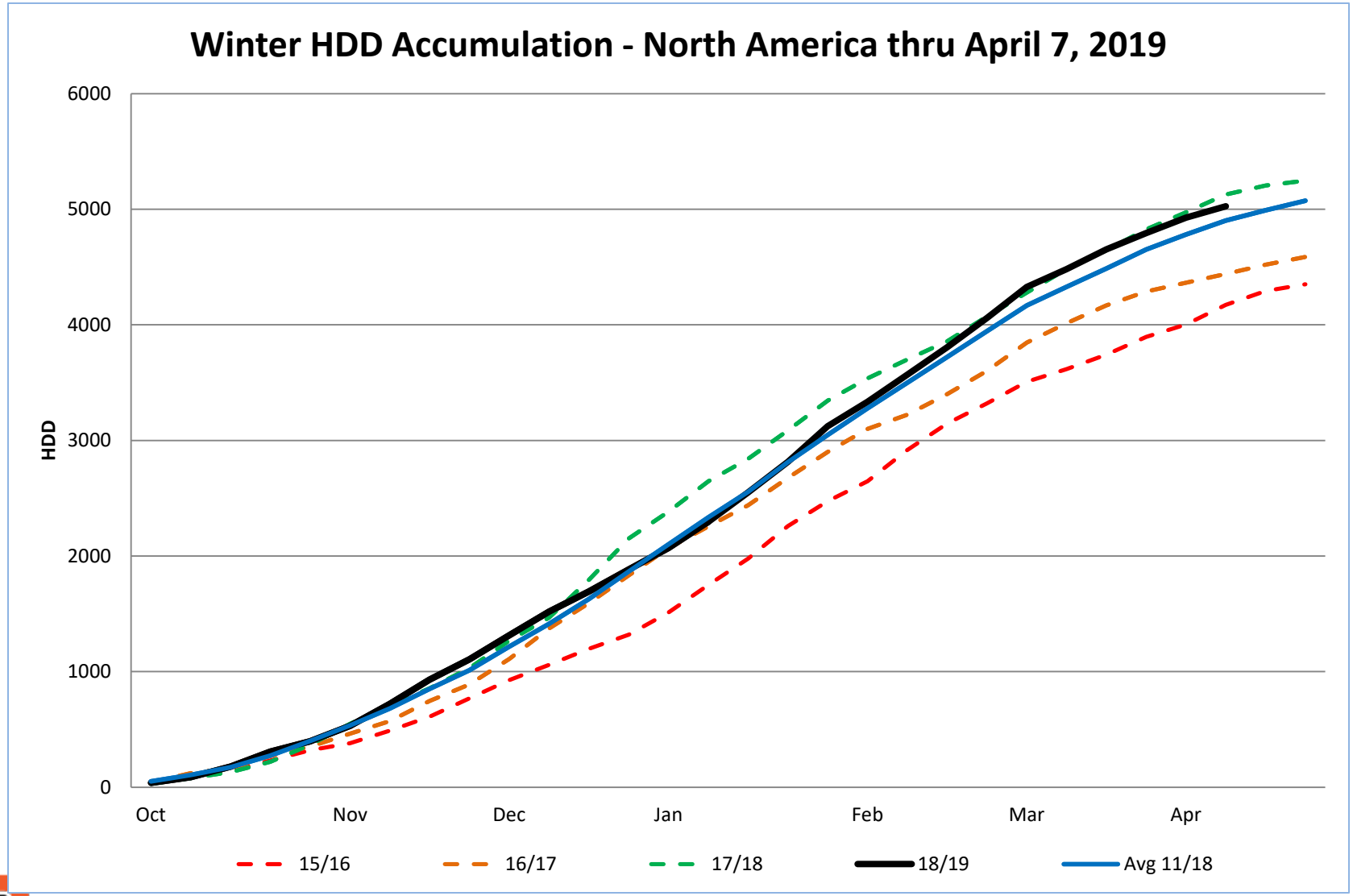

Scrap as of April 2019
$430
$420
$410
$400
$390
$380
$370
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2018
2019
2019 STD


Cold Rolled Steel as of February 2019
$1,100
$1,050
$1,000
$950
$900
$850
$800
$750
$700
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2018 Spot
2019 Spot
2019 Purchased

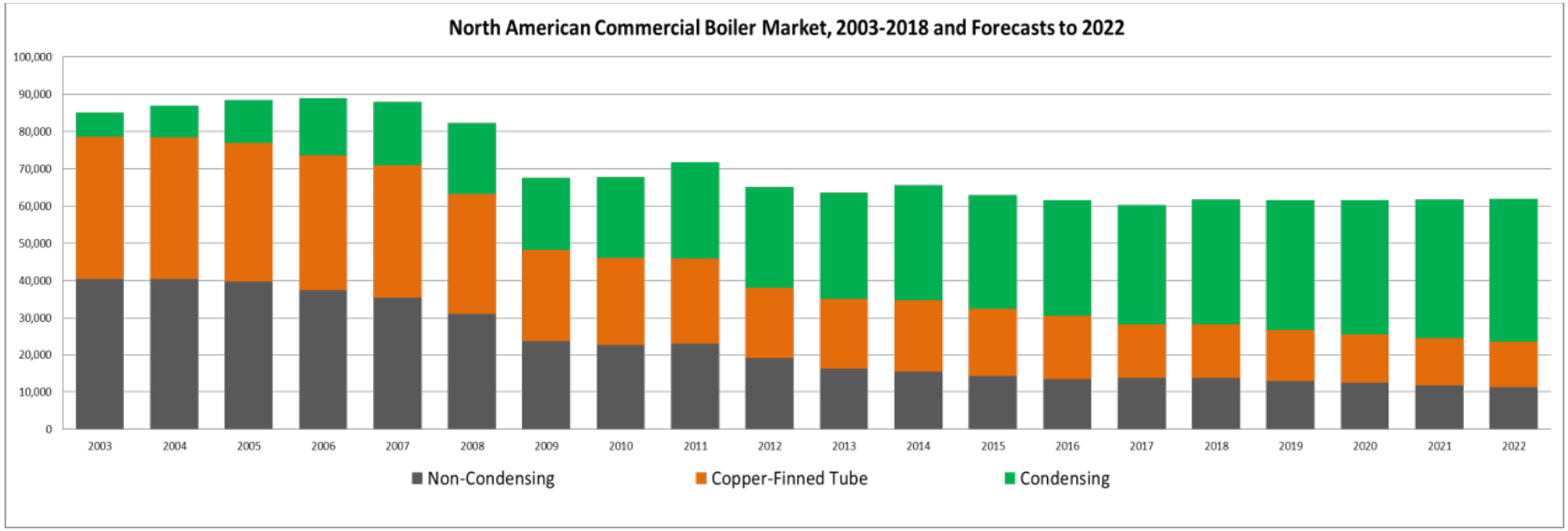

Hot Rolled Plate as of April 2019
$1,300
$1,200
$1,100
$1,000
$900
$800
$700
$600
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2018 Spot
2019 Spot
2019 Purchased


Hot Rolled Steel as of April 2019
$1,000
$950
$900
$850
$800
$750
$700
$650
$600
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2018 Spot
2019 Spot
2019 Purchased

Northern North American Degree Days



Commercial - Summary



- Commercial Group bookings over 44% ahead YTD of prior year
- TSP 28% over prior ,condensing unit bookings 14% ahead of prior
- Commercial steel bookings 122% ahead of prior YTD; Bryan +32%
- Backlogs higher versus last year

Investing for the Future – New Products

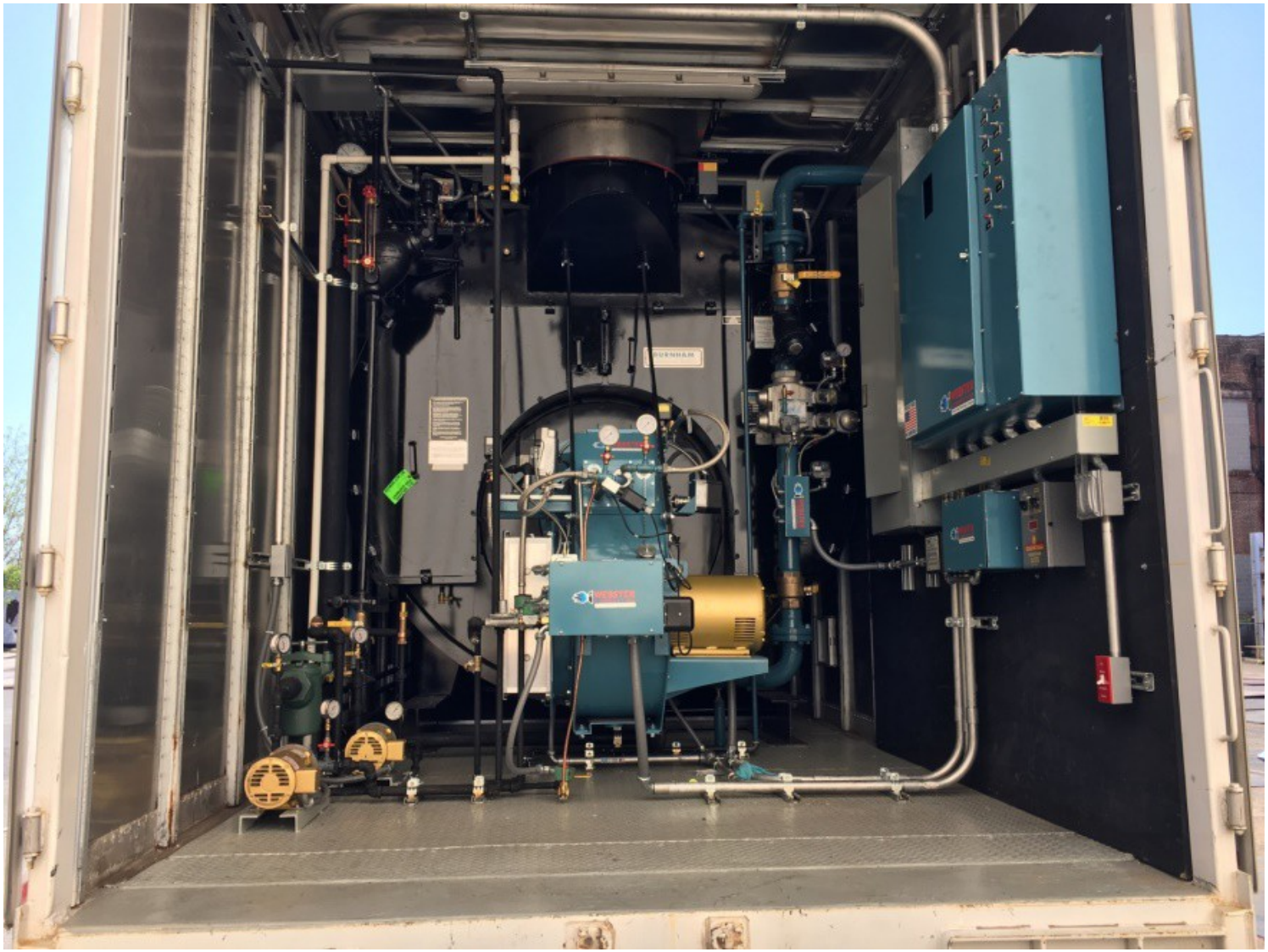
Primary areas of focus:

1. Hi-Efficiency condensing products
   - Commercial Condensing – AMP/B-Fit and Arctic (2018-19)
   - AMP/B-Fit commercial water heater
   - "AMP" based replacement for the APEX
   - "Phoenix" gas adaptive residential condensing products
2. Product Line Enhancements
   - Outdoor Versions of the AMP
   - Dual Fuel – Natural Gas/LP on AMP and Arctic
   - Updated version of the Evolution - EVX
   - Eco-Propel, variable speed pumping for Arctic and AMP platforms
3. Other Commercial developments
   - New Scotch designs for the rental boiler industry
   - Portable boiler rooms
   - Exploring dual fuel commercial condensing
   - Combined Heat and Power opportunities

Investing for future growth with leading edge technologies and product designs

800 HP Rental Boiler

Building out the Trailer



$8 Million in Planned Capital Investment

Sheet Metal Operations

- Panel Bender at LMM
- Fiber Laser at LMM
- Lathes for Steel Nipple Fabrication at LMM
- Laser and Press Brake refurbishment at NMI

Cast Iron

- Patterns for “Kappa” (First all new casting in 12 years)

Commercial

- Expansion of Thermal Solutions lab
- Burn table replacement at Burnham Commercial
- Gantry drill replacement at Burnham Commercial
- AMP/BFIT production facilities at Thermal Solutions
- New tube benders at Bryan Steam

Transforming our manufacturing capabilities to support future growth

External Influences

- Government Regulations
- De-Carbonization efforts
- Natural Gas pipeline opposition
- Co-Generation

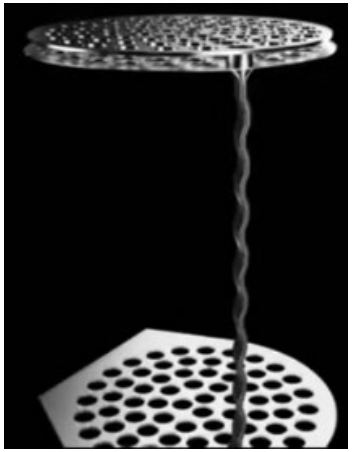
TSSC

JIM SCHNORR

Condensing Backdrop

- KC 1988, Benchmark 1997
- Firetube vs. copper traits
- Shaped trends of market
- Efficient Turndown…
- Same concept…changing components

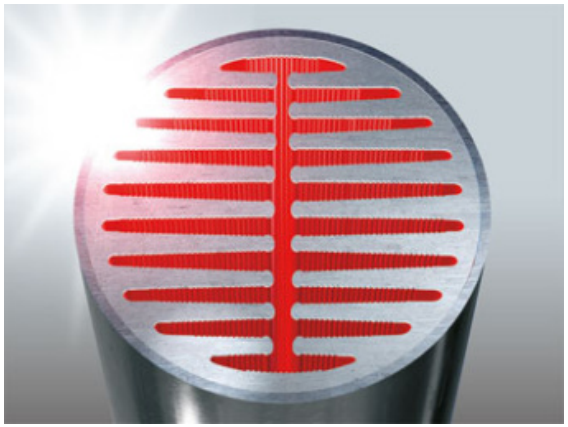
Condensing Backdrop



- Me too… Polish
- Tubes & turndown
- 6 years-2 valve system
- New version last year?

Condensing Backdrop

- Me too…… from Hoval
- More tubes… insert
- Cleaver firetube experience

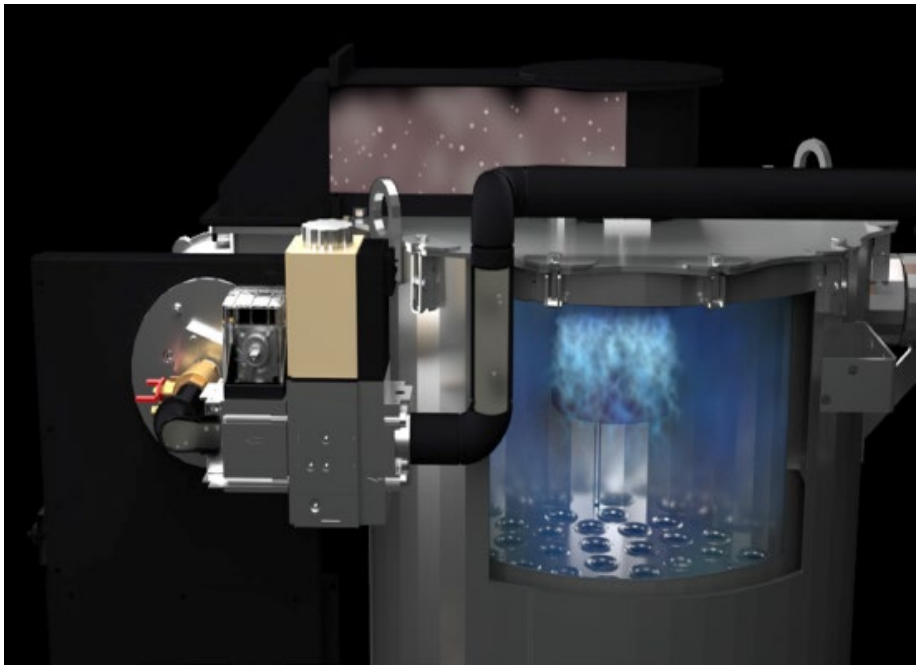


Condensing Backdrop

- Me too…
- Polish…. phase 3
- Tube sheet focus
- 5:1

Condensing Backdrop

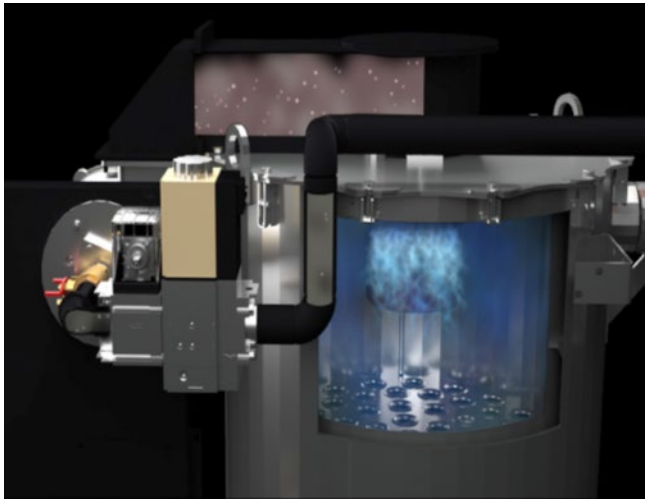
- Me too……
- Polish phase 2
- 20:1



Condensing Backdrop

- Me too…
- Polish
- Light commercial

Vertical Firetubes are all the same
Share good traits… and hide several flaws

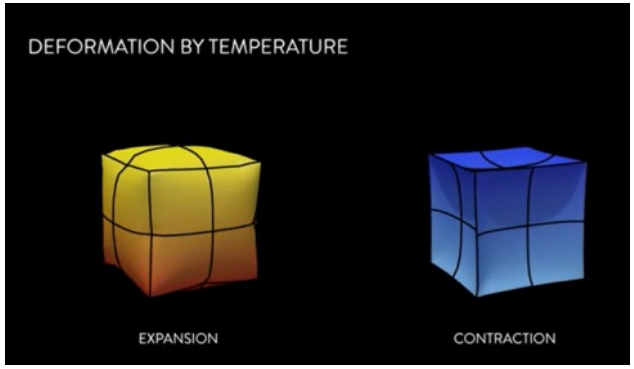


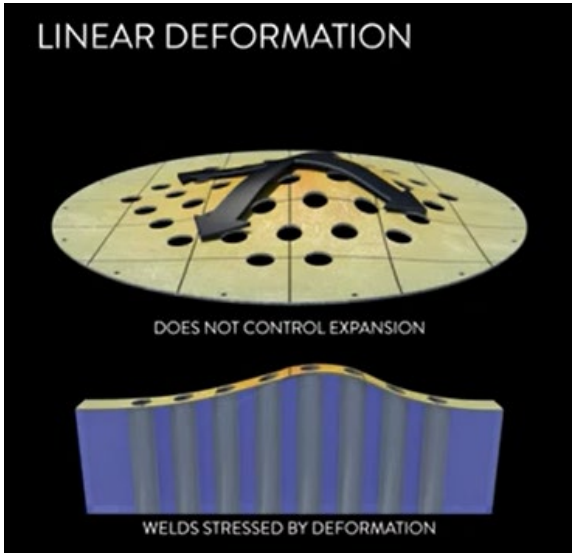
Firetube Positives

- Lower waterside pressure drop
  - Smaller HP pump or eliminates pump
  - Electrical savings
- Variable primary system design
  - One system pump
  - Motorized isolation valves on each boiler
- Vertical design/footprint
- Holds up better in bad water…

Same Traits…. Not so friendly to contractors or owners

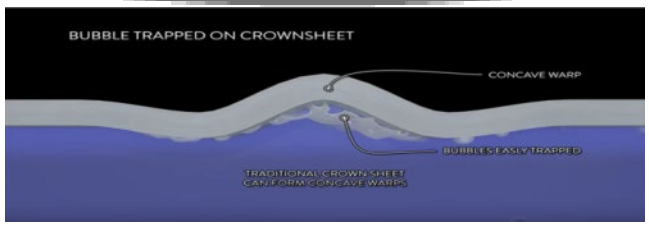
Expansion & Contraction



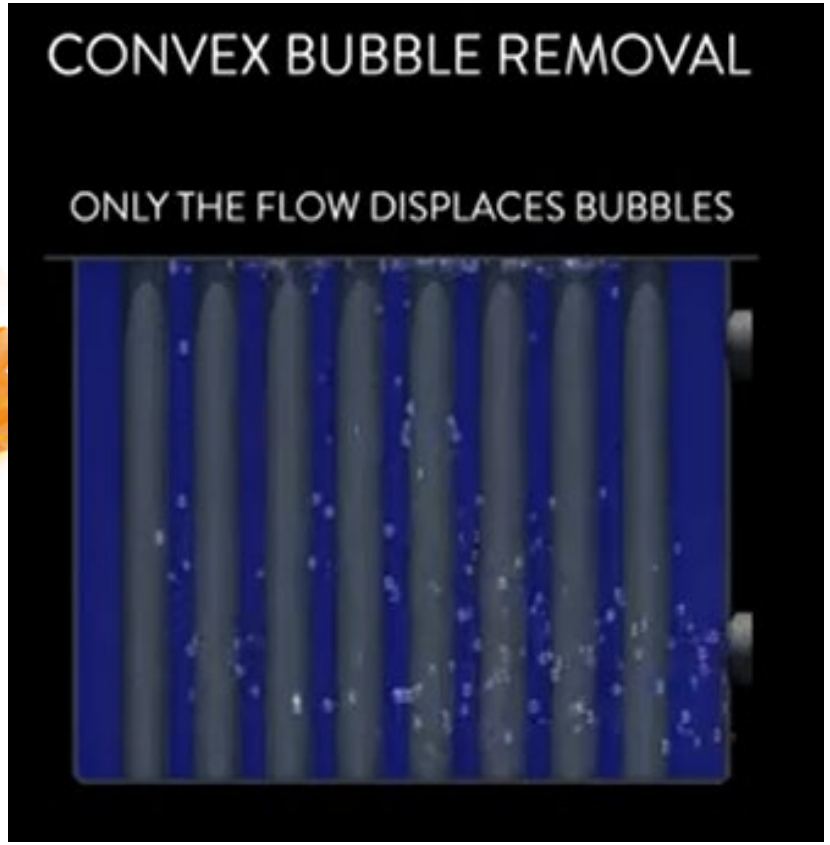


Same Traits…. Not so friendly to contractors or owners

TUBE SHEETS

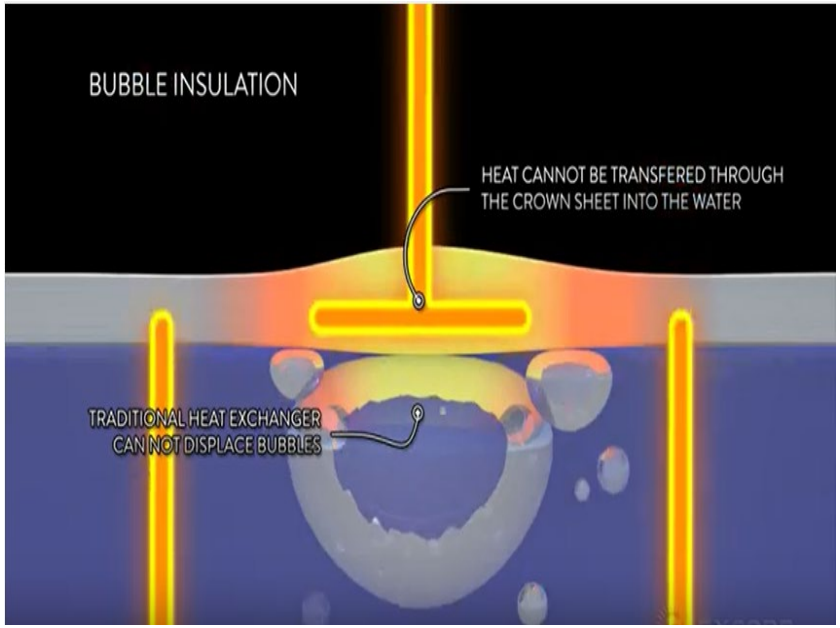


Air Entrapment



Same Traits…. Not so friendly to contractors or owners

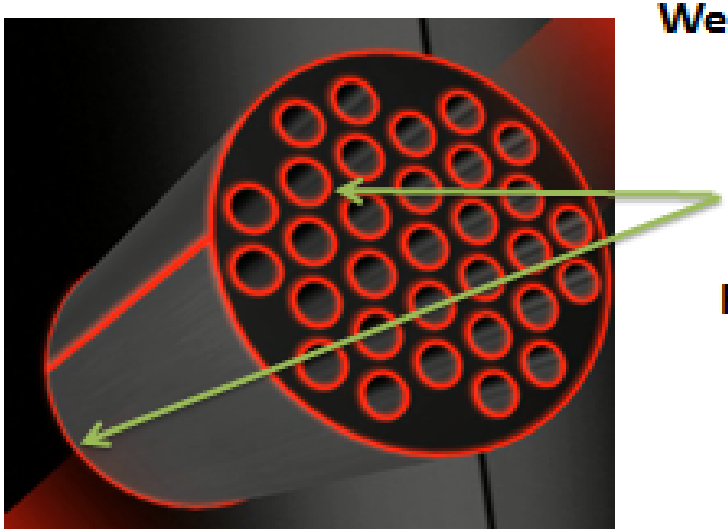
TUBE SHEETS



Air Entrapment

Same traits……not so friendly to contractors & owners

FIRETUBE Considerations



Welded non-repairable construction

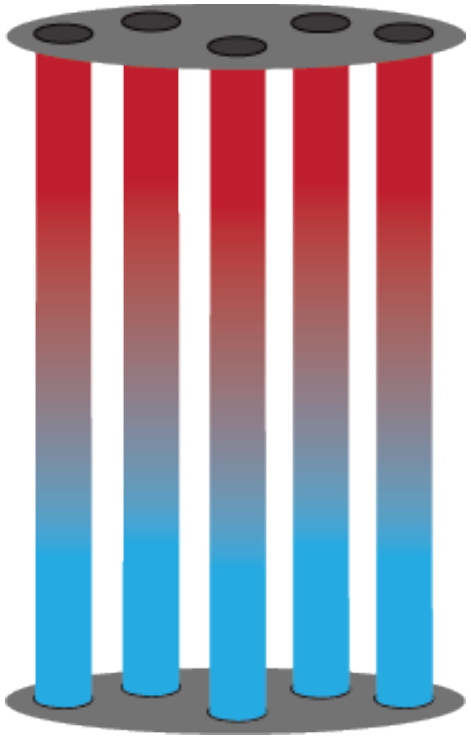
100's of feet of welds
to seal water from the fire

Rigid welds restrict movement

Over time welds do not hold up well to expansion and contraction.
Stainless steel resists corrosive condensate.

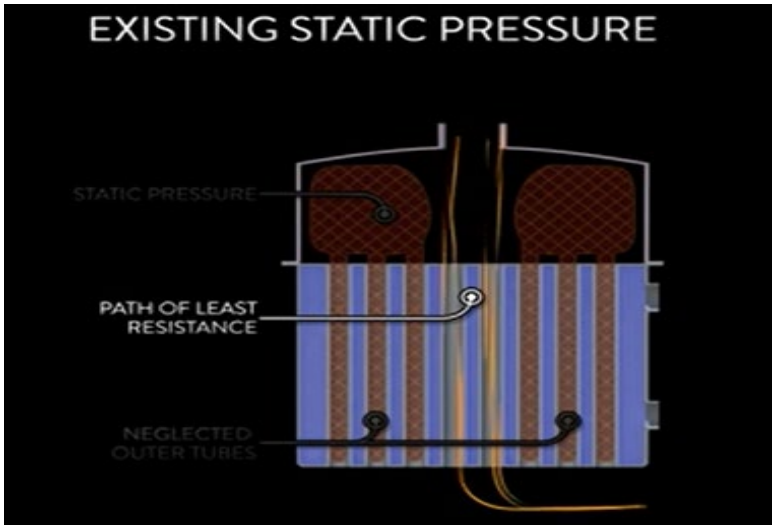
Same traits……not so friendly to contractors & owners

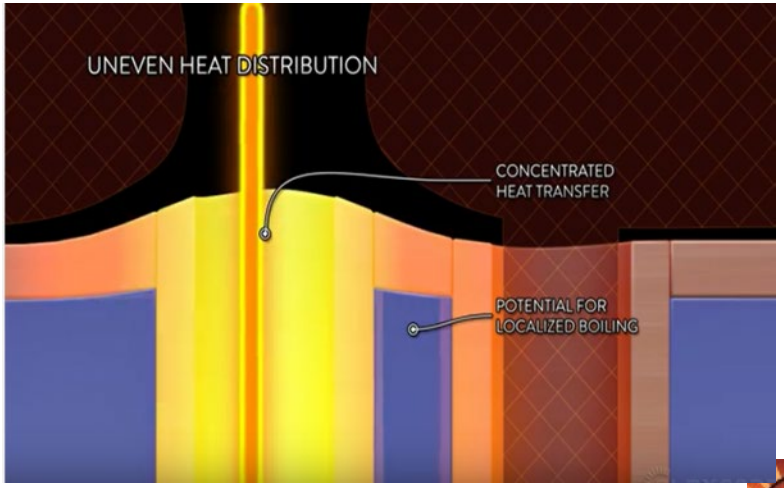
- Tube Talk
  - Temperature at difference at top & bottom
  - Expansion & contraction at different rates
  - weld must hold … no movement
  - Where does the stress go?
  - Cleanable?



Same traits……not so friendly to contractors & owners

- Tube Talk
  - Path of least resistance (low fire)
  - Localized boiling trigger





Same traits……not so friendly to contractors & owners

- Serviceable ????
  - Welded fortress
  - Cant clean tubes
  - Can’t repair
  - Cant knockdown
  - Burner over-head
    - Heavy &cumbersome

So…. this is the condensing landscape

- A market of similar products… me too!
  - Share same traits
- Largely unchanged from 1st designs
- No thought of service
- Longevity? inherent STRESS of vertical firetube

- So why is this the platform of choice?

Condensing Backdrop

“ I thought I was looking for another firetube condensing boiler, but what you guys are saying makes sense.”

Arctic & FreeFlex Condensing

1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, and 6000

Combining Watertube Longevity with Firetube Pressure Drops

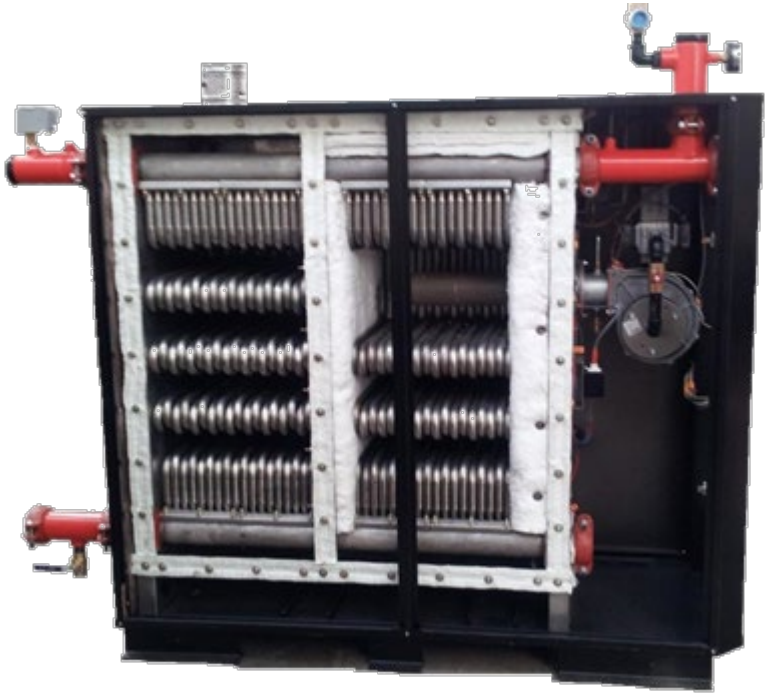
2019 TSSC National Sales Meeting

Watertube Traits

- Renown for longevity
- Why do they last so long…true to original design
  - Flex and move naturally with heat
  - Tubes fitted mechanically, not welded
- Serviceable

History

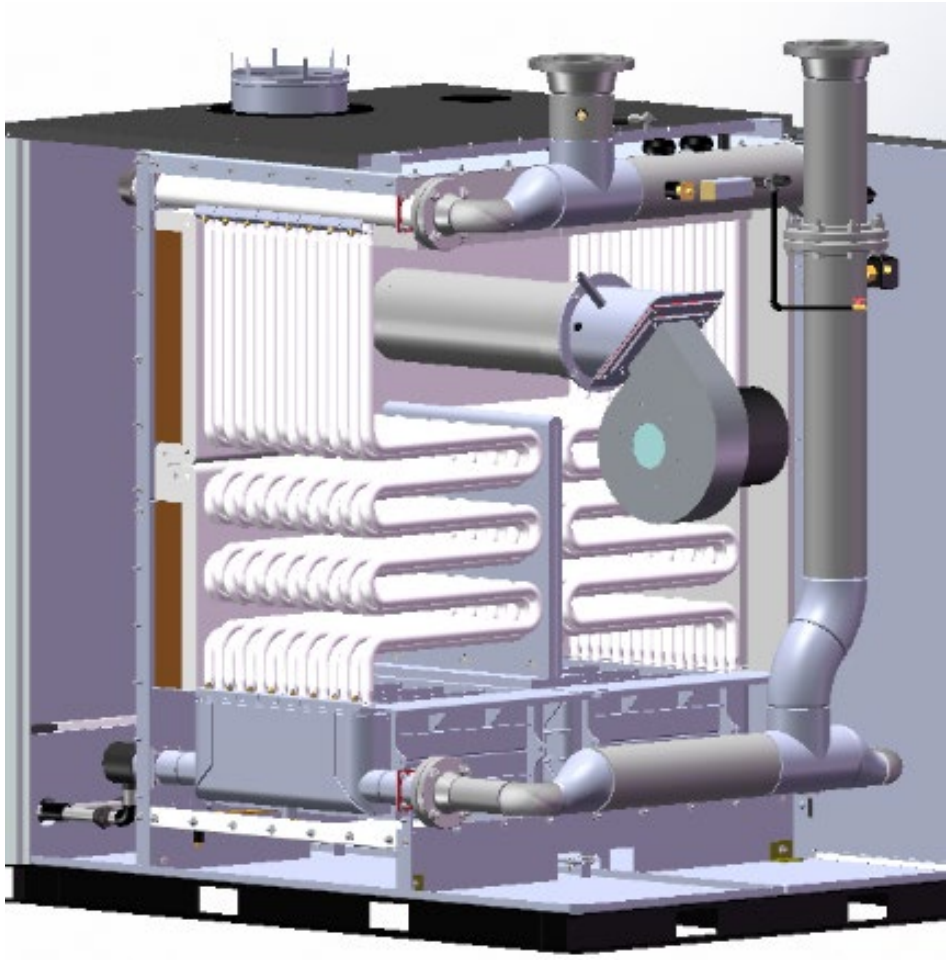
June 2014 1000mbh



Nov 2015 1500-3000mbh

History

Nov 2018 3500-6000mbh



BRYAN® BOILERS

FREE FLEX

Free to Move

- Ultra-high efficiency
- Built for longevity
- Weld-free seal of tube to header
- Field repairable condensing boiler
- Variable primary or primary secondary piping

Arctic Condensing Boilers

- Ultra-high efficiency
- Built for longevity
- Weld-free seal of tube to header
- Field repairable condensing boiler
- Variable primary or primary secondary piping

Arctic & FreeFlex

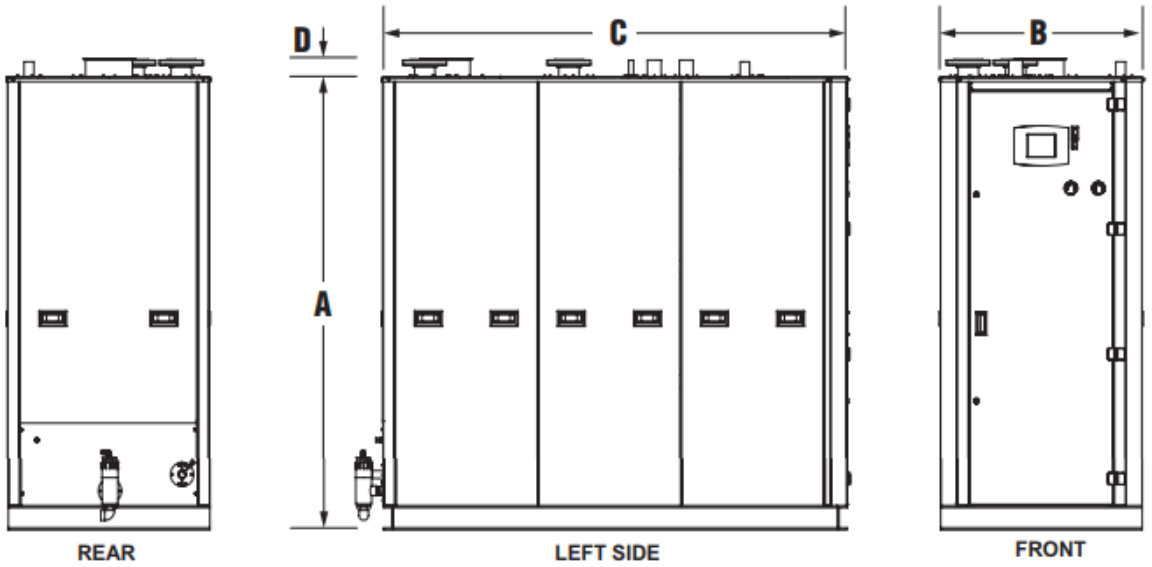
- 1000 to 6000 MBH input – 11 sizes
- Stainless steel watertube heat exchanger design
- 95% AHRI Thermal Efficiency
- 5:1 turndown (1000-3000)
- Up to 20:1 turndown Tru O_2 High Turndown (3500-6000)
- Natural gas fired
- 4”wc – 14”wc gas pressure (1000-3000)
- 7”wc – 14”wc gas pressure (3500-6000)

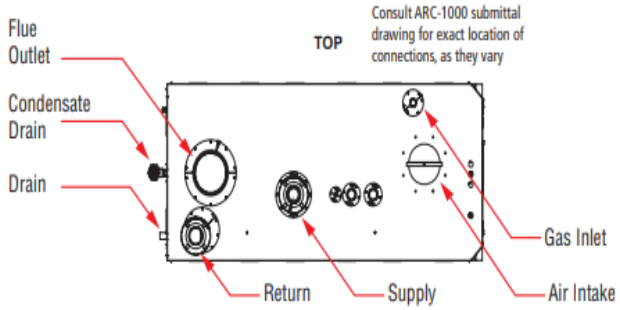
Coming Soon…

- Propane firing
- Dual Fuel (Nat Gas & Propane)

Arctic & FreeFlex

BOILER OVERVIEW 1000 – 3000 MBH





MODEL	Ratings			THERM EFF. %	"A" HEIGHT (IN.)	"B" WIDTH (IN.)	"C" LENGTH (IN.)	"D" CONN. HEIGHT (IN.)	SUPPLY/ RETURN CONN. (IN.)	VENT DIA. (IN.)	AIR INTAKE DIA. (IN.)	CONDENSATE & BOILER DRAIN CONN. (IN.)	GAS CONN. (IN.)	APPROX. SHIPPING WEIGHT (LBS)
	MIN INPUT (MBH)	MAX INPUT (MBH)	GROSS OUTPUT (MBH)											
ARC-1000	200	1000	950	95.0	64	29	72	6	3 Victaulic	6	6	1	1	1185
ARC-1500	300	1500	1425	95.0	75	35	80	3	3 Flange	8	8	1	2	2020
ARC-2000	400	2000	1900	95.0	75	35	80	3	3 Flange	8	8	1	2	2020
ARC-2500	500	2500	2375	95.0	75	35	93	3	3 Flange	10	10	1	2	2500
ARC-3000	600	3000	2850	95.0	75	35	93	3	3 Flange	10	10	1	2	2500

Size Comparisons

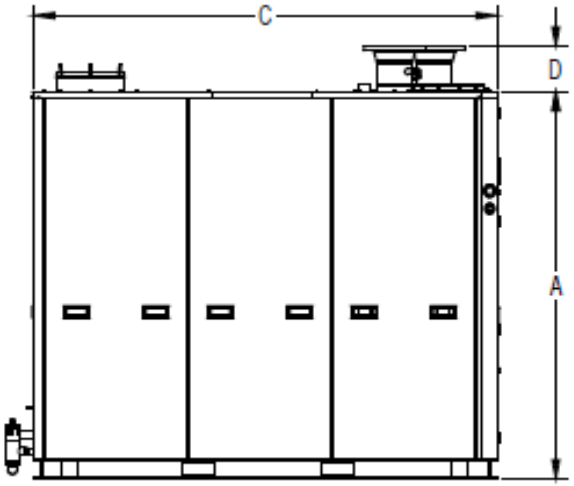
Competitive Footprint

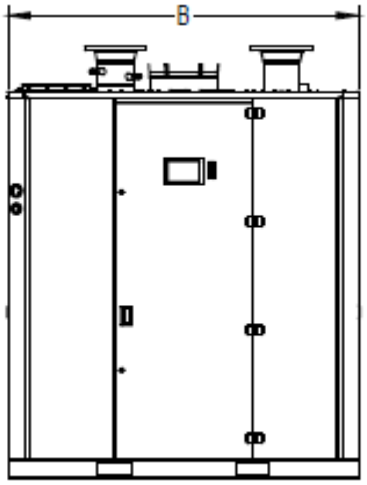
Condensing Products	1500 Stand-Alone*	1500 Installed Length	2000 Installed Length	2500 Installed Length	3000 Installed Length
Benchmark	46 x 28 x 79	70	70	91	91
Crest	78 x 31 x 80	78	78	84	88
Clearfire	66 x 44 x 82	74	74	84	98
Arctic XL	80 x 35 x 77	80	80	93	93

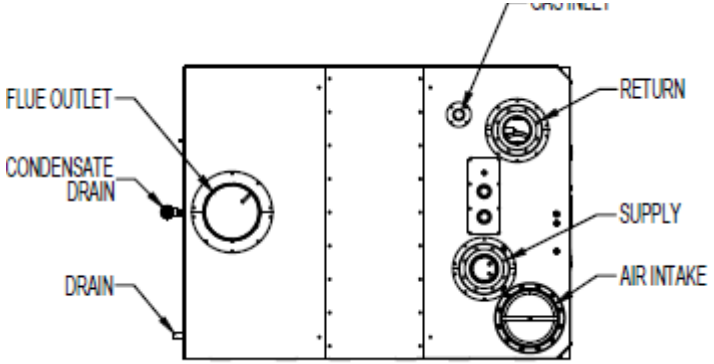
*Dimensions are L x W x H

Arctic & FreeFlex

BOILER OVERVIEW 3500-6000 MBH

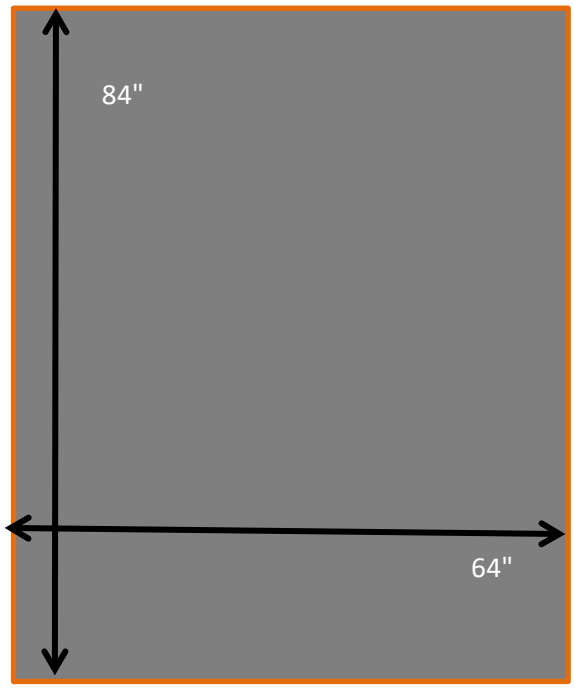




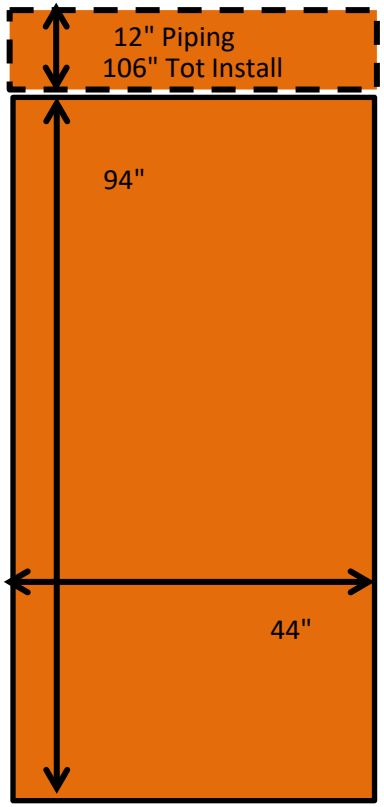


MODEL	RATINGS		THERM EFF. %	"A" HEIGHT (IN.)	"B" WIDTH (IN.)	"C" LENGTH (IN.)	"D" CONN. HEIGHT (IN.)	SUPPLY/ RETURN CONN. (IN.)	AIR INTAKE/ VENT DIA. (IN.)	CONDENSATE & BOILER DRAIN CONN. (IN.)	GAS CONN. (IN.)	APPROX. SHIPPING WEIGHT (LBS)
	INPUT (MBH)	GROSS OUTPUT (MBH)										
ARC-3500	3500	3325	95.0	81	64	84	10	6 Flange	12	1	2	4500
ARC-4000	4000	3800	95.0	81	64	84	10	6 Flange	12	1	2	4500
ARC-4500	4500	4275	95.0	81	64	102	10	6 Flange	14	1	2	5400
ARC-5000	5000	4750	95.0	81	64	102	10	6 Flange	14	1	2	5400
ARC-5500	5500	5225	95.0	81	64	102	10	6 Flange	14	1	2	5400
ARC-6000	6000	5700	95.0	81	64	102	10	6 Flange	14	1	2	5400

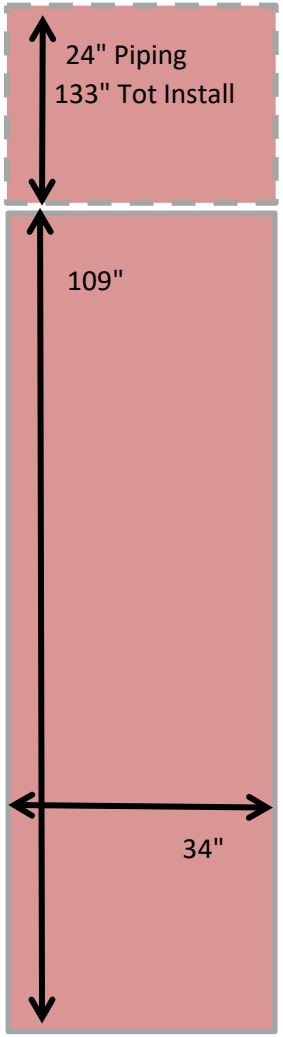
Arctic & FreeFlex – 4000 Comparison



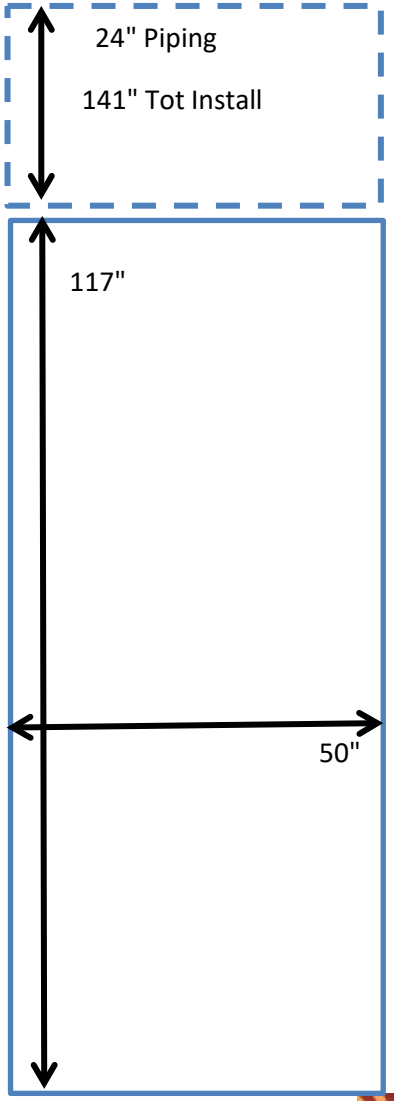
ARC-4000, 81" H



AMP-4000, 48" H

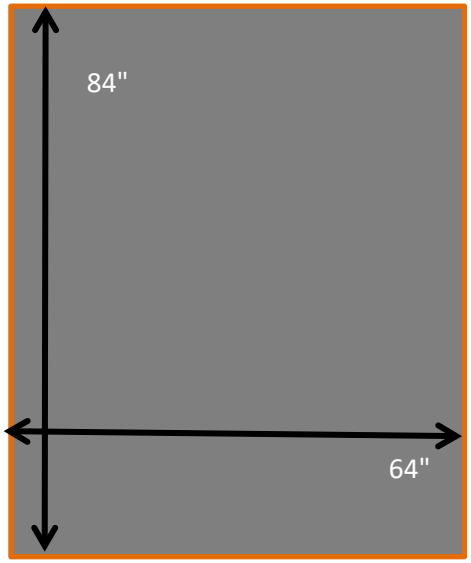


RBI Flexcore 4000, 80" H

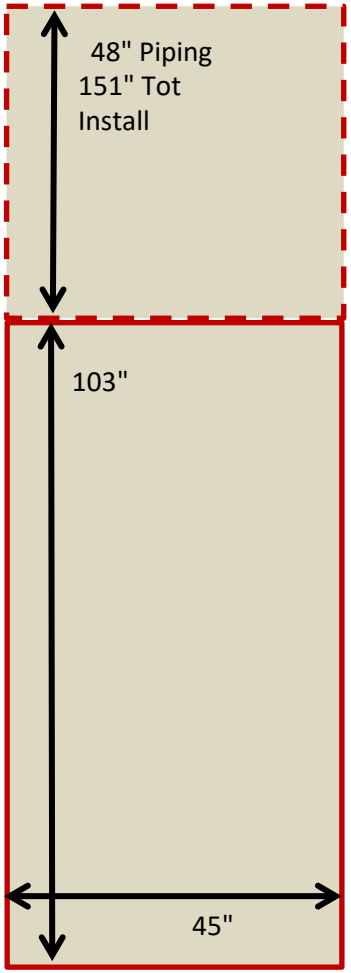


CB ClearFireLC 4000, 96" H

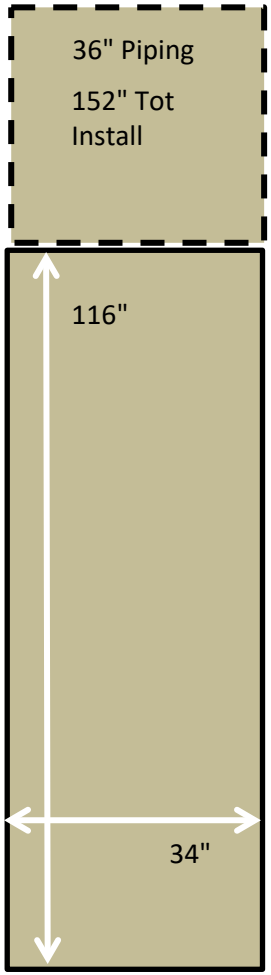
Arctic & FreeFlex – 4000 Comparison



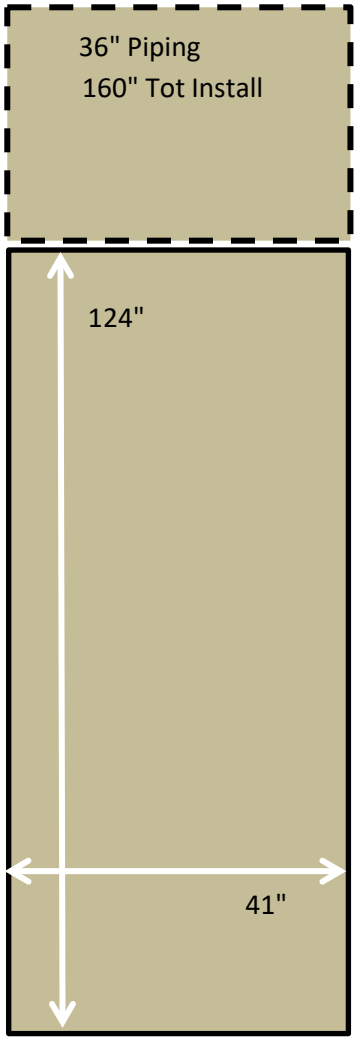
ARC-4000, 81" H



Lochinvar Crest 4000, 80"H

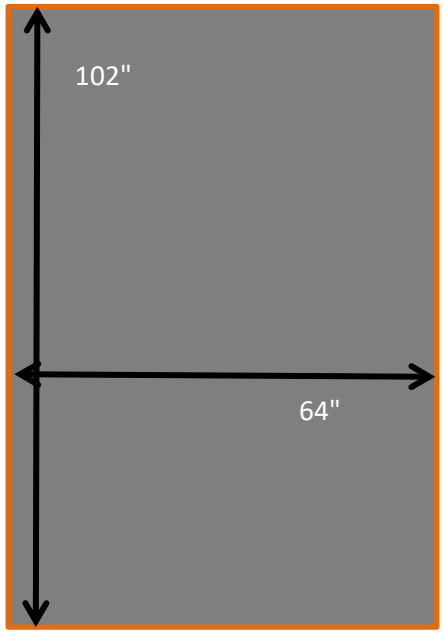


Fulton Endura 4000, 79" H

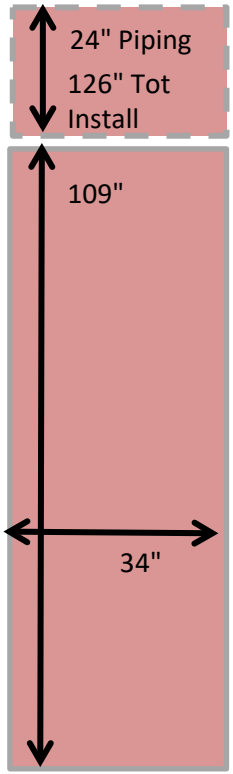


Fulton Vantage 4000, 90" H

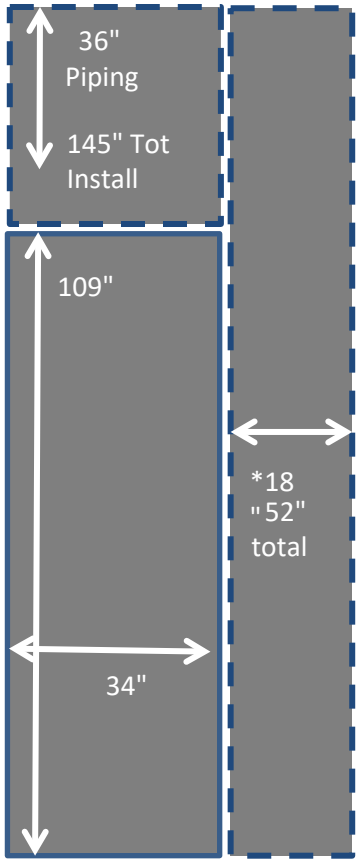
Arctic & FreeFlex – 6000 Comparison



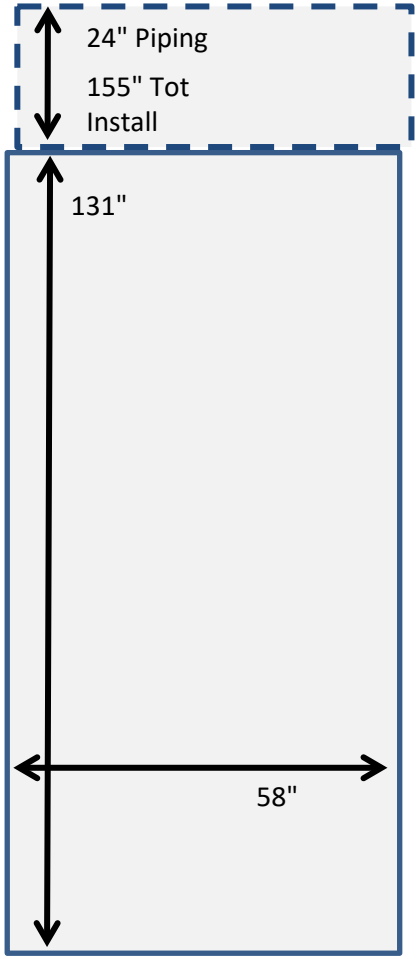
ARC-6000, 81" H



RBI Flexcore 6000, 80" H

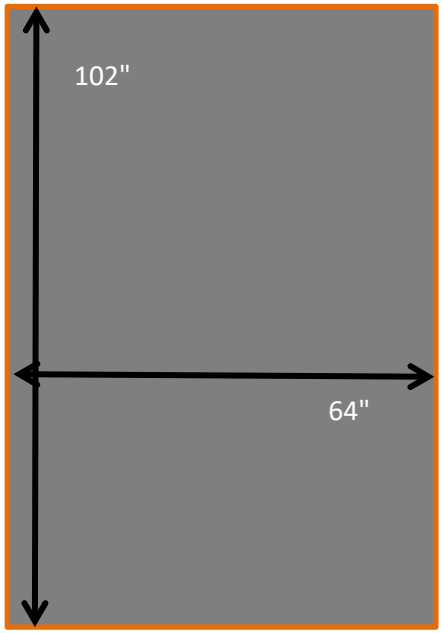


Aerco BMK 6000, 78.8" H

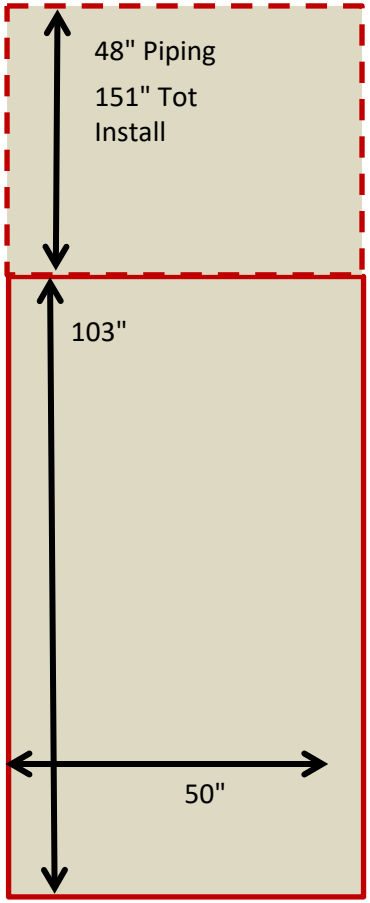


CB ClearFire LC 6000, 106" H

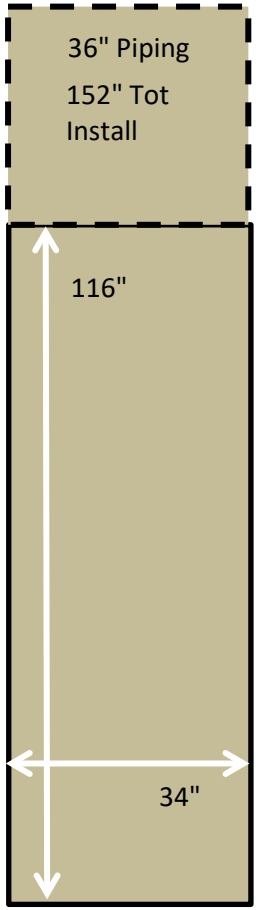
Arctic & FreeFlex – 6000 Comparison



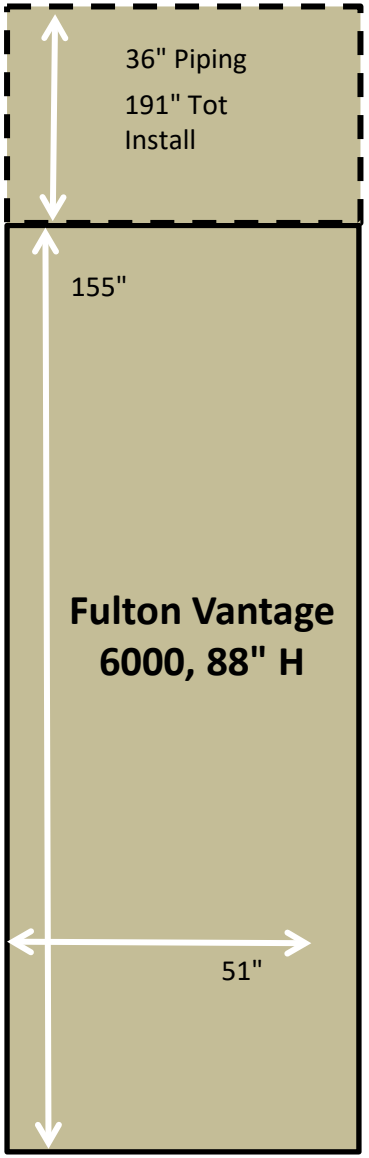
ARC-6000, 81" H



Lochinvar Crest 6000, 80" H



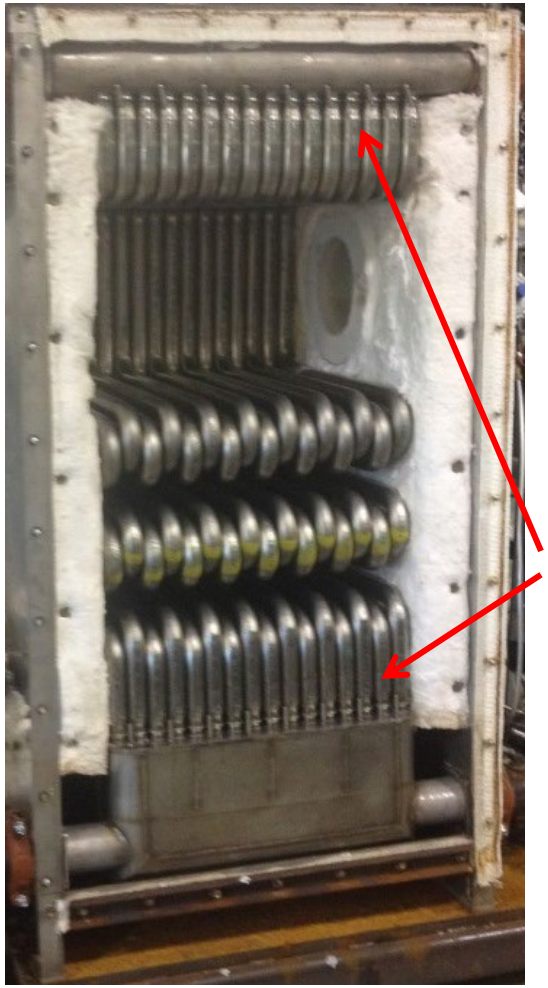
Fulton Endura 6000, 79" H



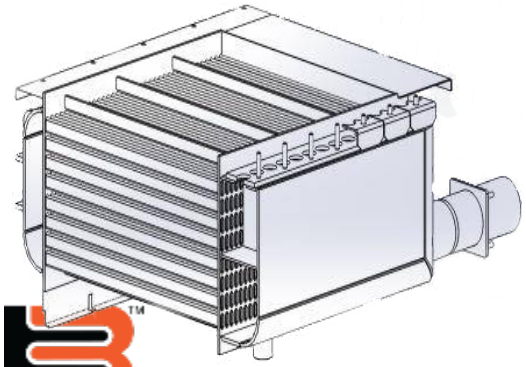
Fulton Vantage 6000, 88" H

Arctic & FreeFlex

High Temp
Supply Header



Return Header
(Low Temp Zone)



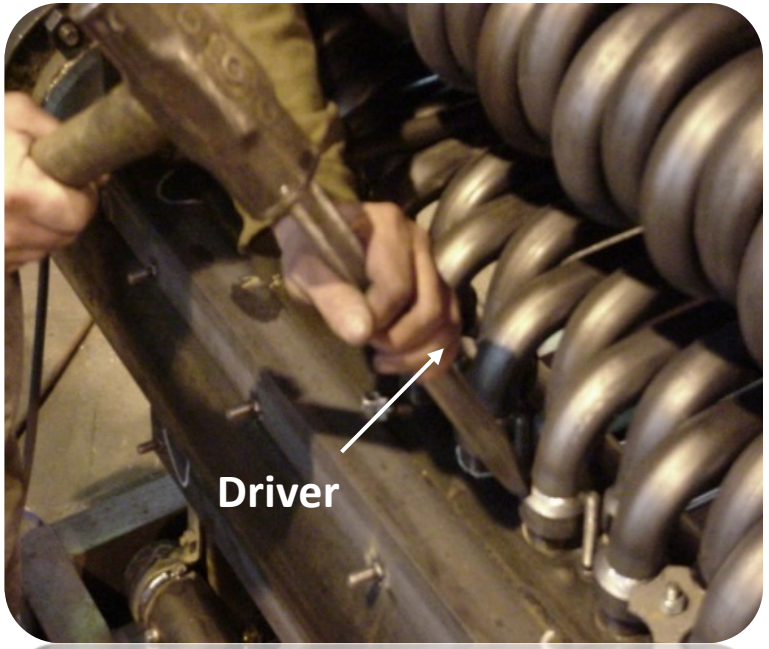
BRYAN BUILT

- Known for Longevity
- Absorb Intense Heat
- Low Pressure Water Side Drop
- Lifetime Thermal Shock Warranty
- Service Friendly
- Field Replaceable

Arctic & FreeFlex

- Header
  - 316L
  - ***NO WELDS***
    - Tubes easily swedged into top & bottom headers
  - ***Independently Replaceable***
    - No special tools or equipment needed
    - Does not require ASME "R" stamp for repair (local code)
  - 30 plus years in field

Field Repairable Heat Exchanger



Changes everything you know about turndown...

3 Keys

- Singular linear relationship between GAS pressure and AIR pressure (pneumatic)
- Effects of excess air
- Light off & reliability

Dan Collado

SIEMENS

Ingenuity for life

Why I'm here…..

- Understand current condensing controls
- Explain how the LMV3 works…HTD!
- How to sell it!

Current Burner Controls

Pneumatic Ratio Control

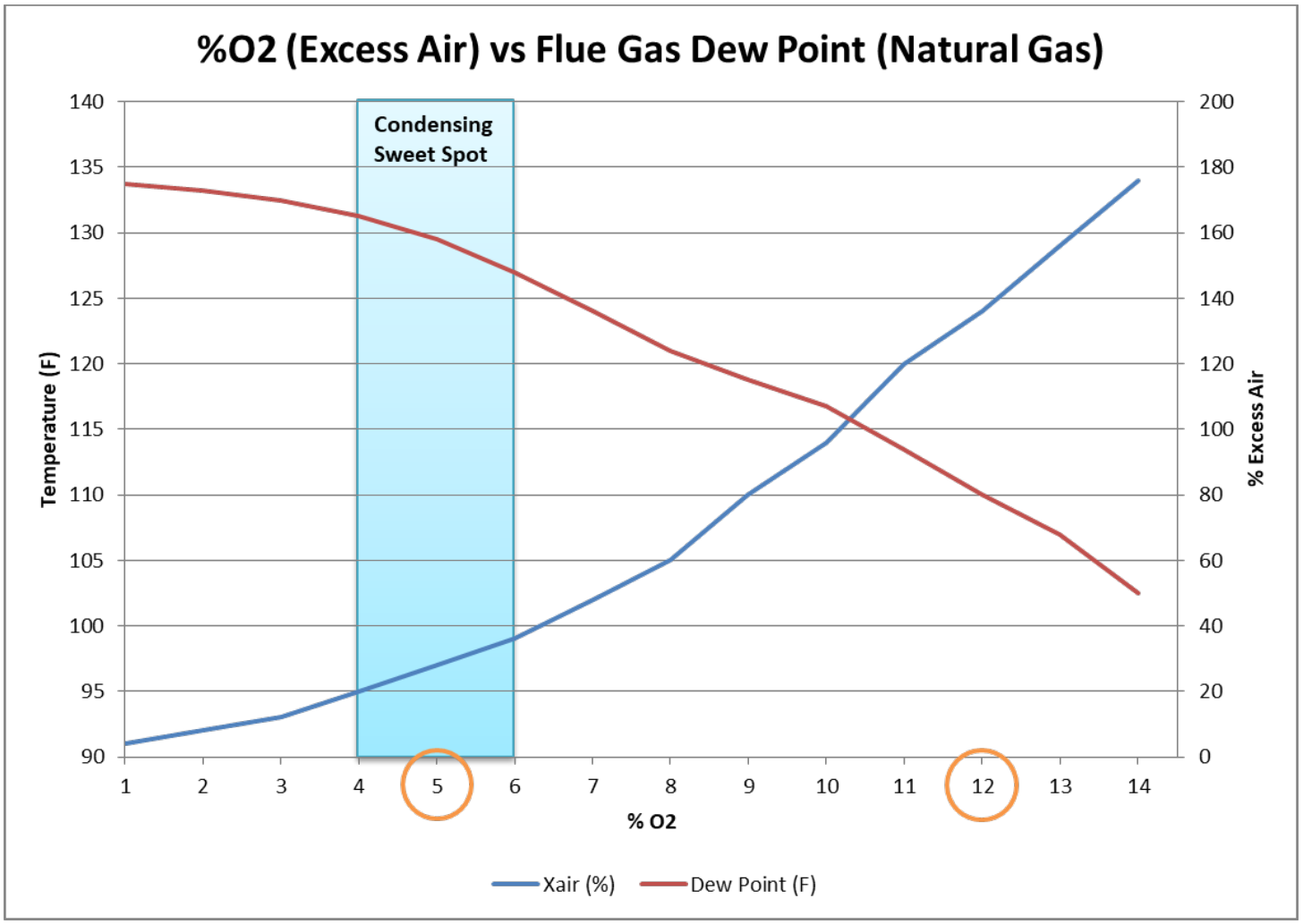
- No adjustment between high and low fire
- Excess O_2 different between high and low fire
- Limited by blower speed
- 5:1 Turndown
- Low fire = ignition position

Current Burner Controls

Existing “HTD” Solutions

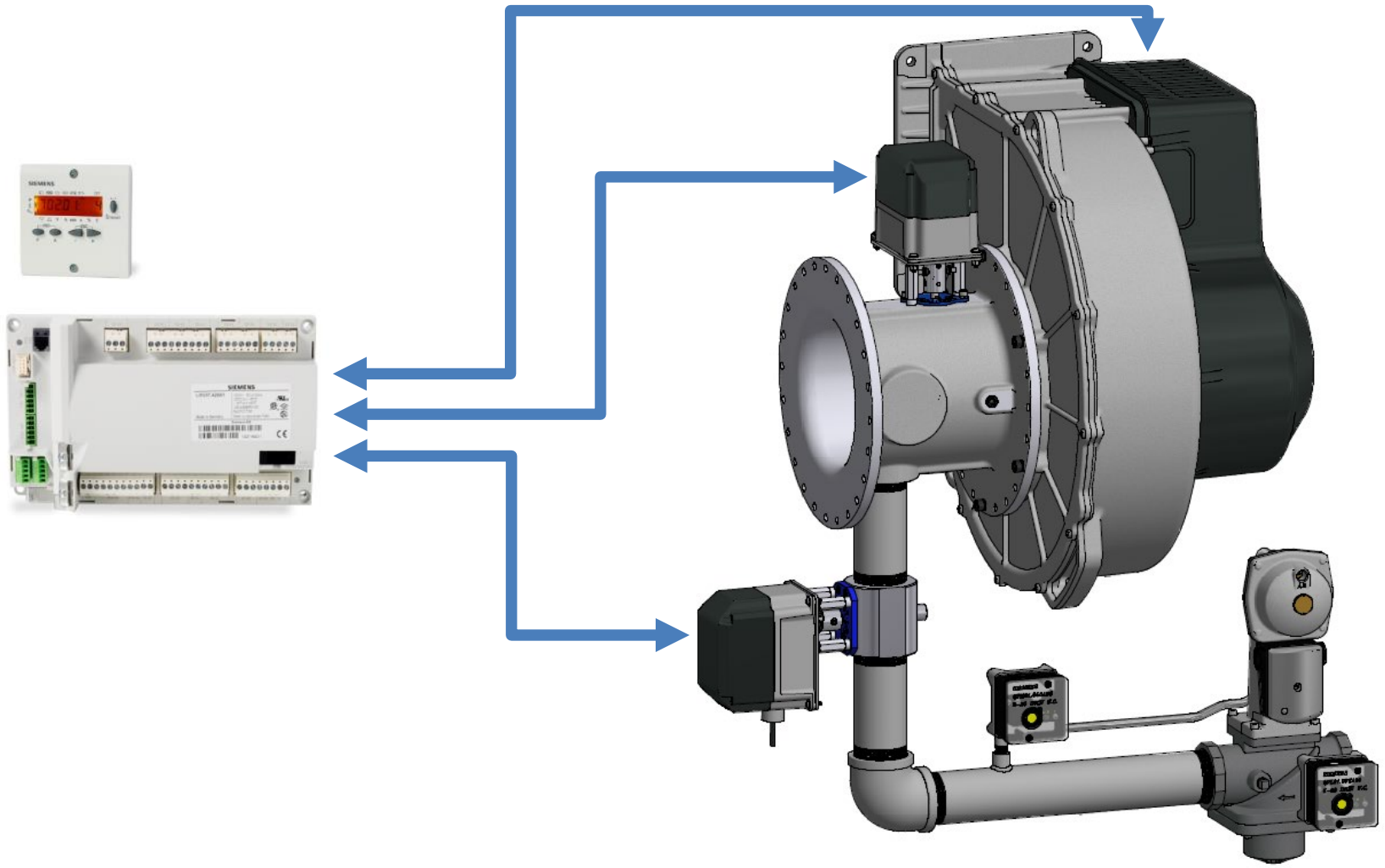
- Gas and air are still linked (Mech/Pneumatic)…
- Low fire position is ignition position
- Blower has to turndown very low…poor mixing
- Increased excess air at low fire…

Effects of Excess Air

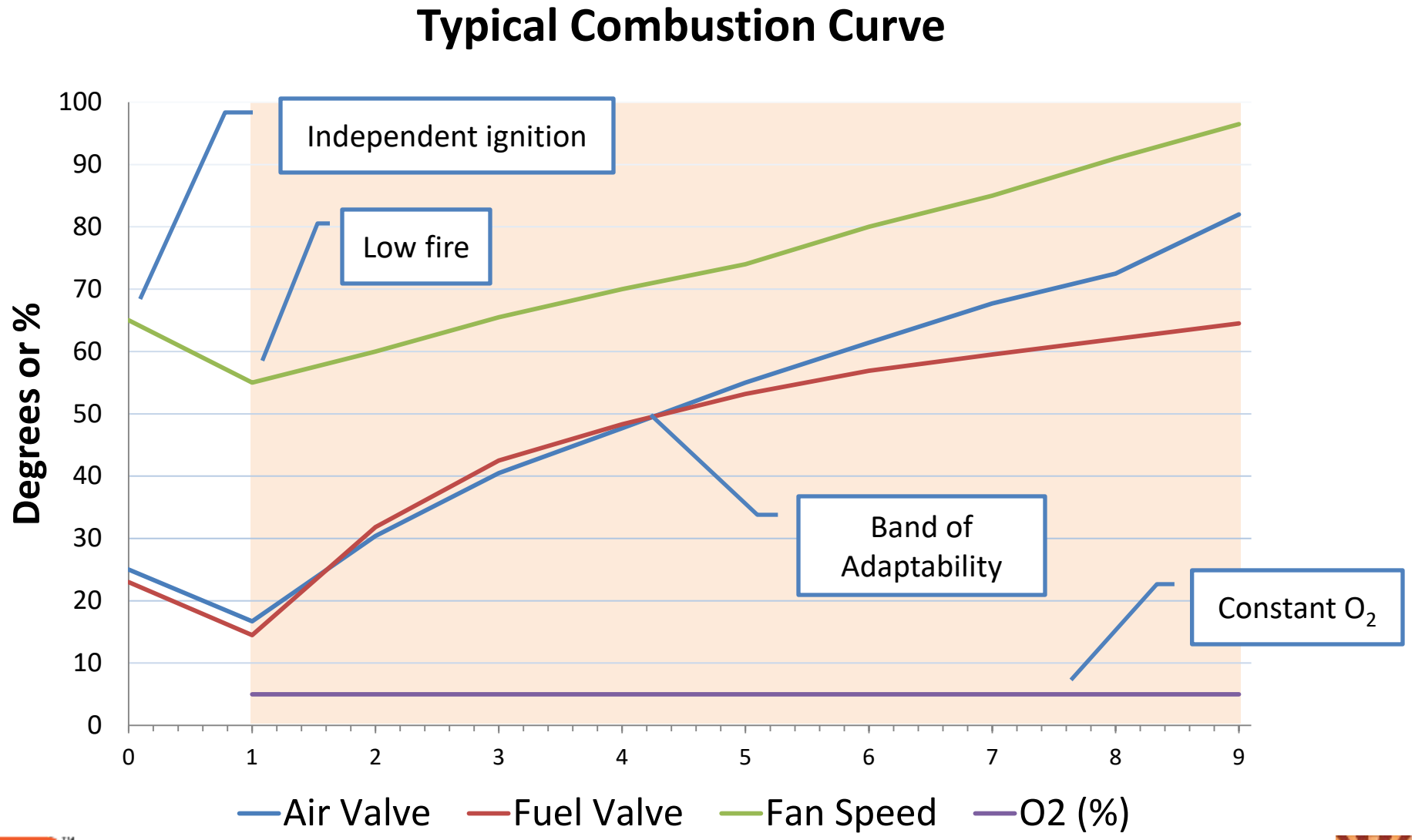


O2	Excess %	CO2	Dew Point
3.0%	15.0%	10.0%	133°F
4.0%	20.0%	9.5%	131°F
5.0%	29.0%	9.0%	130°F
6.0%	36.0%	8.4%	128°F
7.0%	46.5%	7.9%	123°F
8.0%	56.5%	7.3%	122°F
9.0%	68.6%	6.7%	118°F
10.0%	83.5%	6.2%	116°F
11.0%	100.0%	5.6%	113°F

How Does The LMV3 Work?



How Does The LMV3 Work?



Selling Features

High Turndown!

and

Condensing!

Selling Features

Reliability!

- Independent ignition – Golden start!

Adjustability!

- 9 point adjustable curve – No rough spots!
- High RPM at low fire – Protects your burner!

Questions?

2019 TSSC National Sales Meeting

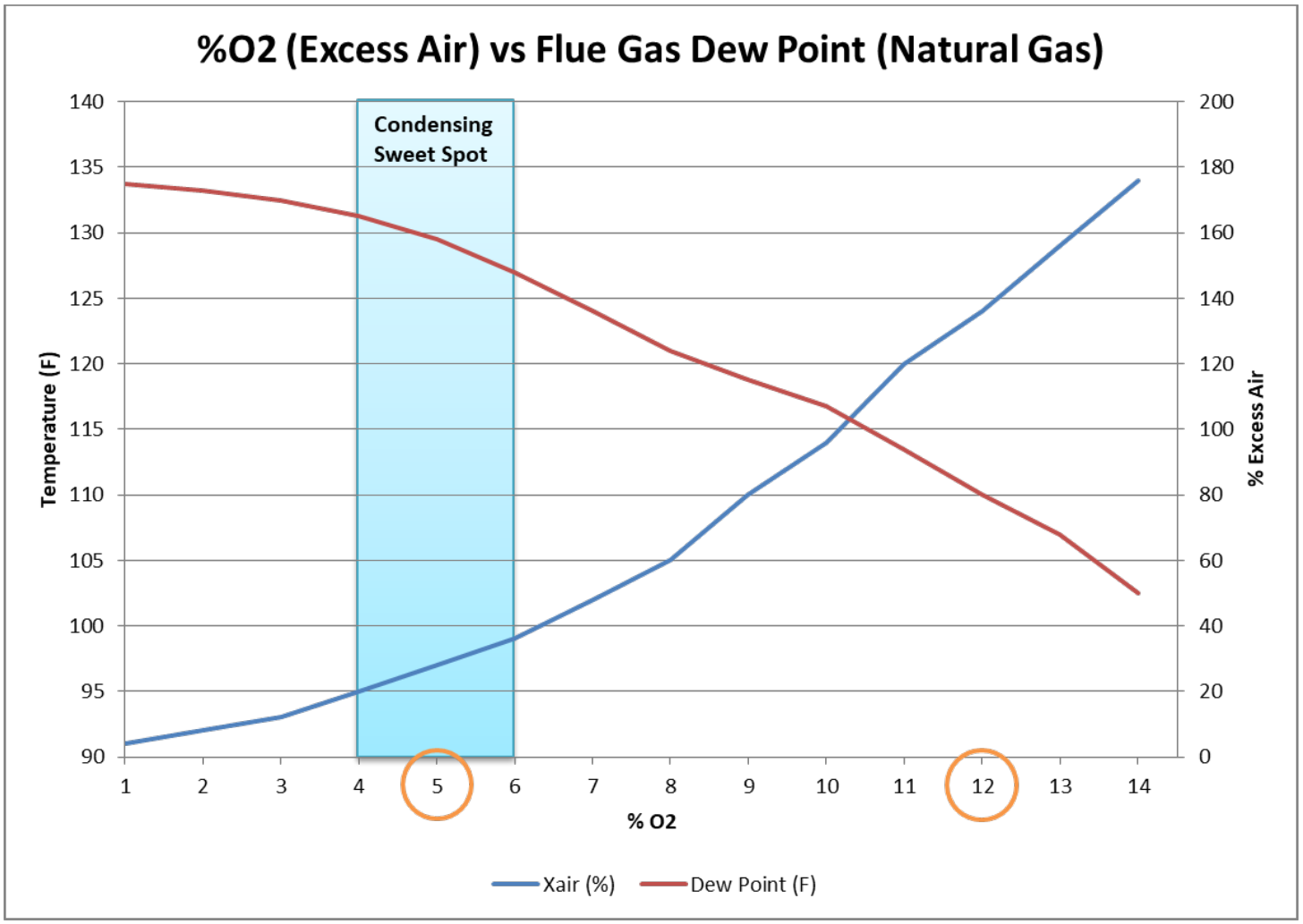
May 8-9; Baltimore, MD

BREAK

TSSC

JIM SCHNORR

Effects of Excess Air



O2	Excess %	CO2	Dew Point
3.0%	15.0%	10.0%	133°F
4.0%	20.0%	9.5%	131°F
5.0%	29.0%	9.0%	130°F
6.0%	36.0%	8.4%	128°F
7.0%	46.5%	7.9%	123°F
8.0%	56.5%	7.3%	122°F
9.0%	68.6%	6.7%	118°F
10.0%	83.5%	6.2%	116°F
11.0%	100.0%	5.6%	113°F

Comp 1

Comp 2

O2's

Table 1
Combustion Oxygen Levels for a 40% Firing Rate

Inlet Air Temp	Oxygen (±0.2)	Carbon Monoxide
100°F	7.3%	<50 ppm
80°F	7.7%	<50 ppm
70°F	7.9%	<50 ppm
60°F	8.1%	<50 ppm
50°F	8.3%	<50 ppm
40°F	8.5%	<50 ppm
20°F	8.9%	<50 ppm
0°F	9.3%	<50 ppm
-20°F	9.7%	<50 ppm

11. Once the oxygen level is within the specified range at 40%, lower the firing rate to 16%.

12. Oxygen levels at the 16% firing rate should be as shown in Table 2. No adjustment should be necessary. Contact the Factory if the oxygen or carbon monoxide levels are not within the specified range.

Table 2
Combustion Oxygen Levels for a 16% Firing Rate

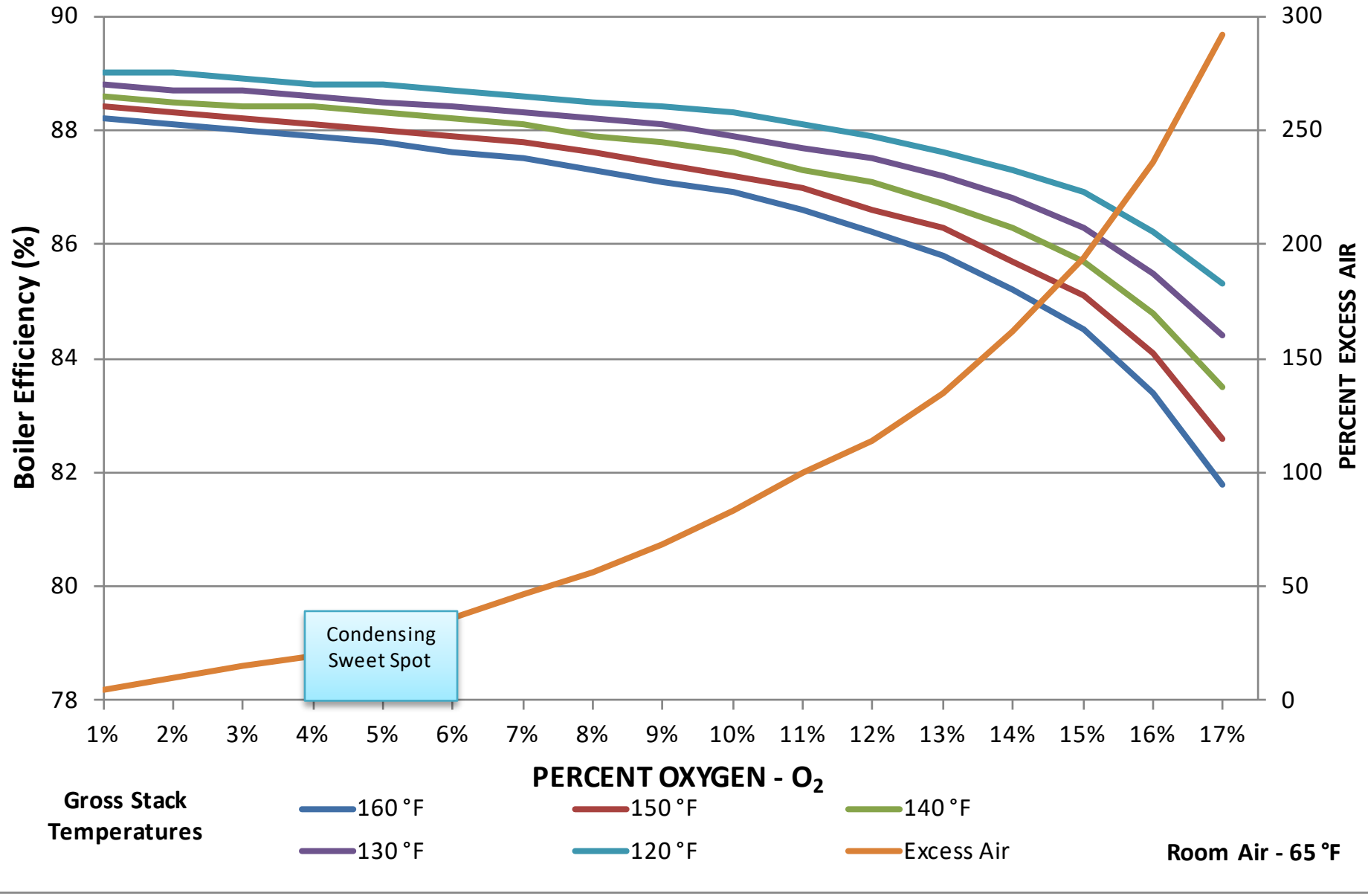
Inlet Air Temp	Oxygen	Carbon Monoxide
100°F	12% or less	<100 ppm
80°F	12% or less	<100 ppm
70°F	12% or less	<100 ppm
60°F	12% or less	<100 ppm
50°F	12% or less	<100 ppm
40°F	12% or less	<100 ppm
20°F	12% or less	<100 ppm
0°F	12% or less	<100 ppm
-20°F	12% or less	<100 ppm

4-4

***Table 9B** Flue Products Chart*

Flue Products	Natural Gas								
Units	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	ALL
Gas Valve	CO_2 (%)	CO_2 (%)	CO_2 (%)	CO_2 (%)	CO_2 (%)	CO_2 (%)	CO_2 (%)	CO_2 (%)	O_2 (%)
Valve 1 High	4.8	4.6	5.2	4.5	4.9	5.4	6.2	5.9	14.2 - 9.2
Valve 1 Low	1.1	1.4	1.7	1.4	1.4	1.9	2.8	2.7	19.0 - 15.6
Valve 2 High	8.2	8.4	8.1	8.1	8.4	8.7	8.9	9.5	6.9 - 4.8
Valve 2 Low	7.8	7.6	7.5	7.1	7.4	8.8	8.1	8.2	8.9 - 4.9
Propane									
Valve 1 High	5.4	5.6	6.1	5.7	6.4	6.6	7.3	7.6	13.0 - 9.5
Valve 1 Low	1.4	1.6	2	1.8	2	2.8	4.8	4.3	19.2 - 13.3
Valve 2 High	10.7	10.5	10	9.8	10.2	11	10.2	11.3	6.3 - 3.8
Valve 2 Low	8.7	8.5	9.1	8.7	8.7	10.8	9.7	9.9	8.3 - 4.1
All set points should be within +/- 0.2%									

COMBUSTION EFFICIENCY CURVES

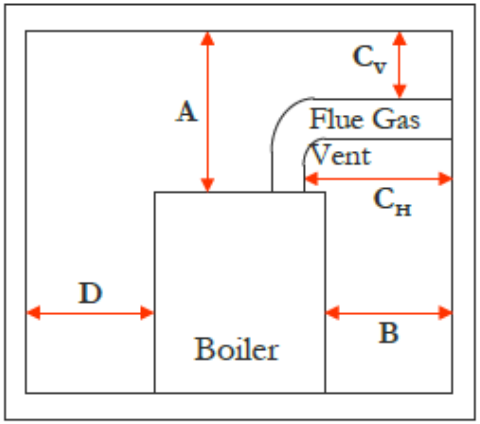


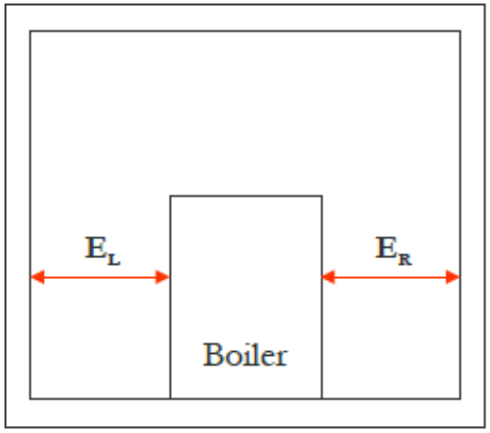
Takeaways

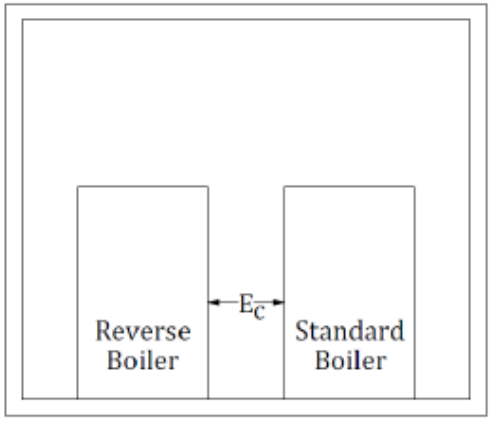
- Constant 02 at highest & lowest rate
- It's SIMPLE…. no sensors
- 9 point curve…"Band of Adaptability"
- Independent ignition position
- It's a Siemens System…..

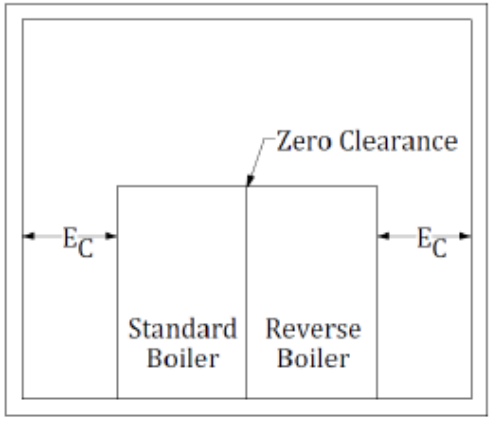
Tru O2
High Turndown

Arctic & FreeFlex 1000-3000 MBH









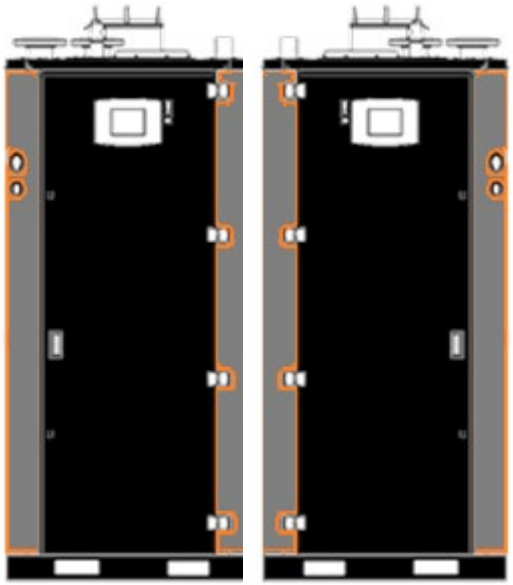
Dim	Description	1000	1500-3000	3500-6000
A	Clearance Above Top of Boiler	6"	6"	6"
B	Front of Boiler – Burner End	24"	32"	43"
C_H	From Chimney or Vent Collector measured horizontally	18"	18"	18"
C_V	From Chimney or Vent Collector measured vertically	18"	18"	18"
D	Rear of Boiler - opposite burner end	6"	6"	6"
E_L	Left Side - tube access side on standard construction	16"	23"	23"
E_R	Right Side – tube access side on standard construction (FF3500-6000)	6"	6"	23"
E_C	FF1500 -3000 only	N/A	23"	N/A

DESIGN FEATURES

Reverse Construction (1500-3000)

- Reverse (or mirror) construction is available when two or more boilers are needed for side-by-side installation in a tight space.
- Allows full access for serviceability of the heat exchanger, burner/blower/gas train assembly on the right-hand side instead of the standard left-hand side.

Standard Construction

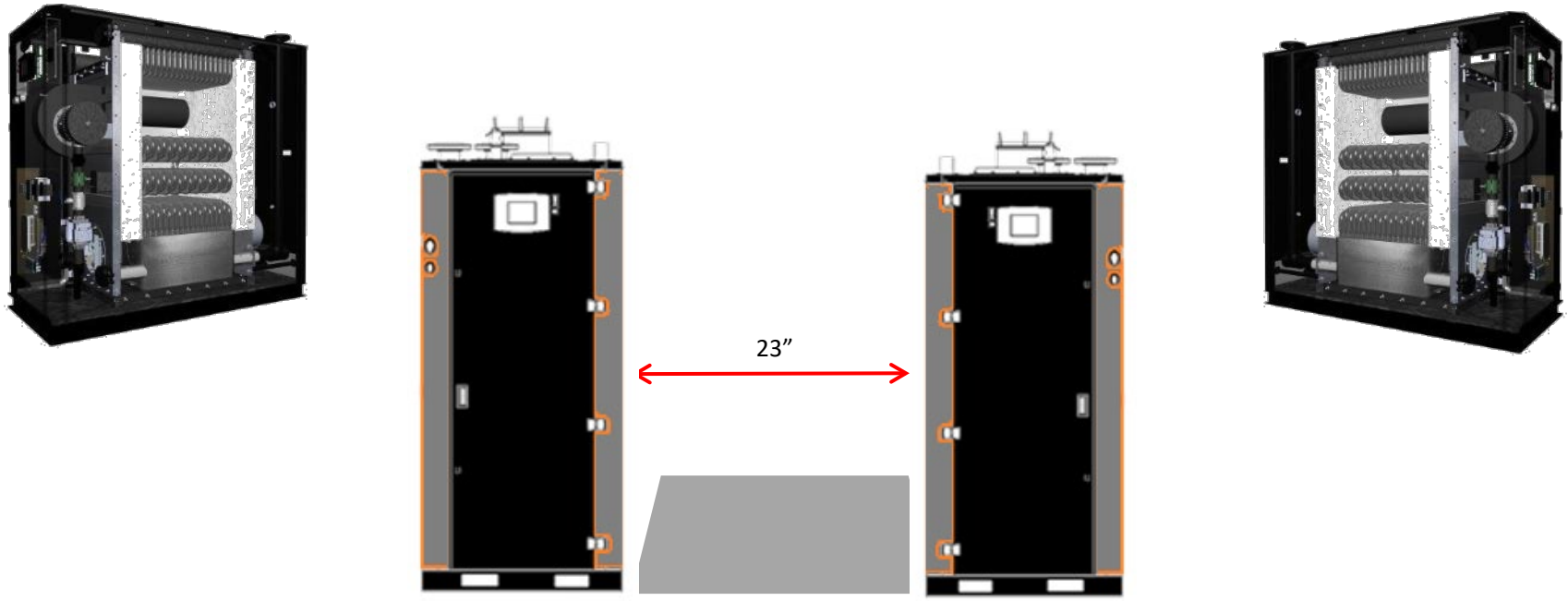


Reverse Construction

DESIGN FEATURES

Reverse Construction (1500-3000)

- Reverse (or mirror) construction can also be used to allow for a common work space to pull tubes in between the boilers

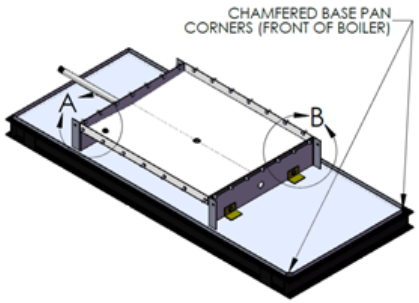


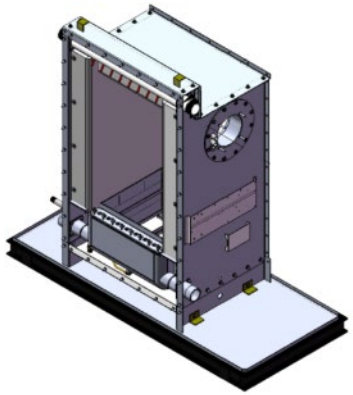
JOE TINNEY

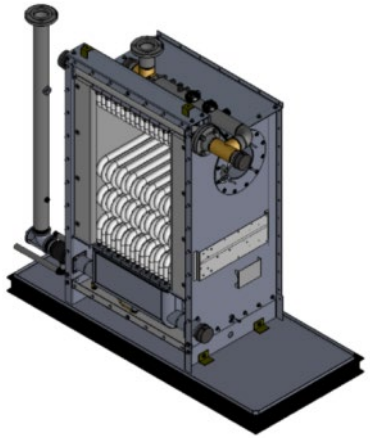
DESIGN FEATURES

Knockdown or Fully Packaged

- Fully packaged for installations where access to the building and into the mechanical room is no problem.
- Knockdown for installations where access is nearly impossible.
  - Standard knockdown configurations:
    - KD-1 - Ships with jacket, flue collector/heat exchanger, and base in separate cartons.
    - KD-2 - Ships with jacket, flue collector, tubes, burner, stack, LT exchanger and base in separate cartons.
  - Custom knockdown configurations to suit specific needs
  - Product completely assembled and firetested prior to disassembly



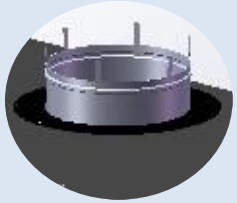




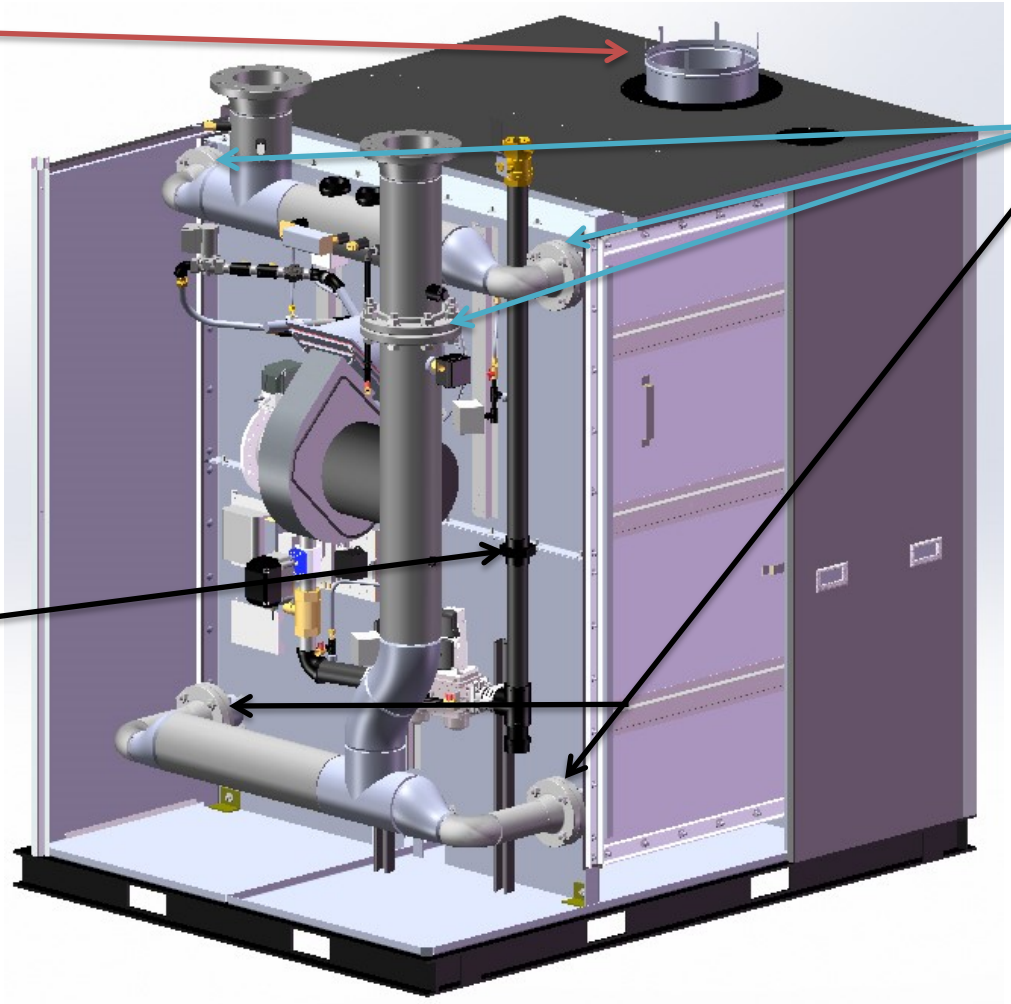
Artic / Free-Flex Knockdown

- **Available in various levels of Knockdown stages.**
- **Knockdown only to the level needed to move into the room.**

Top Clearance



Stack is removable for clearance

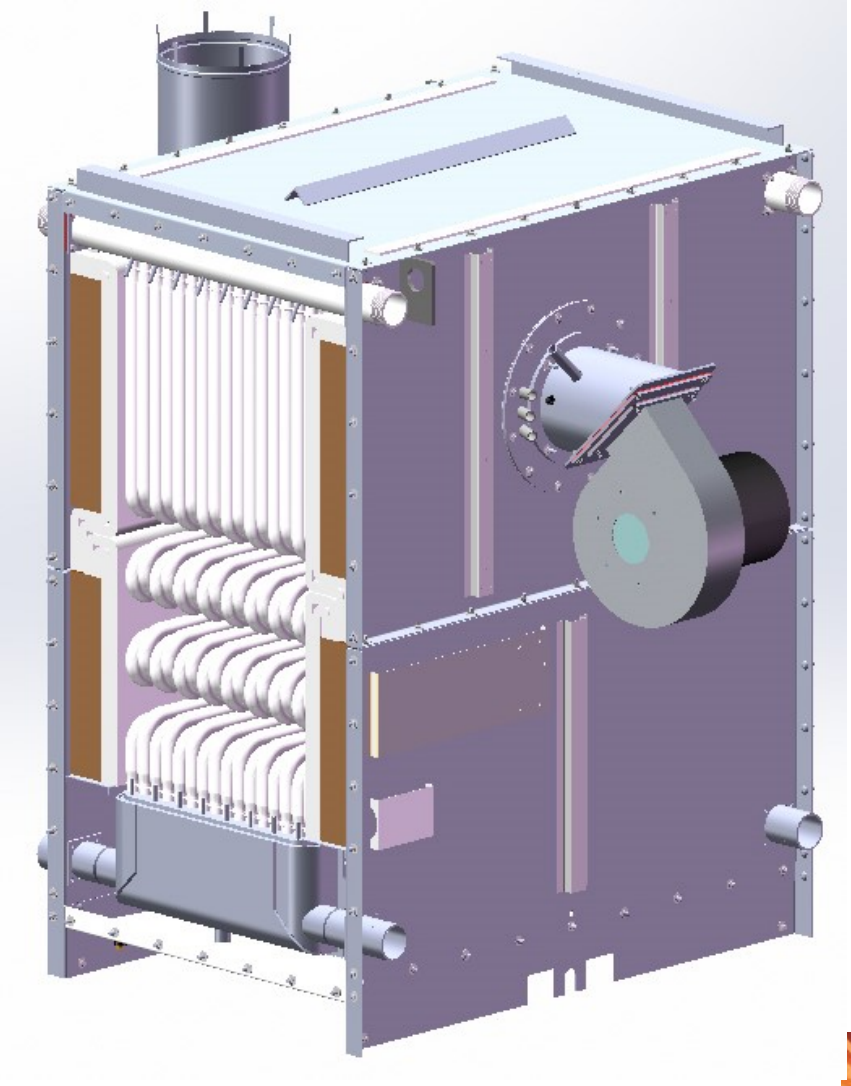


Supply & Return Flanged for easy removal.

Gas Supply Union

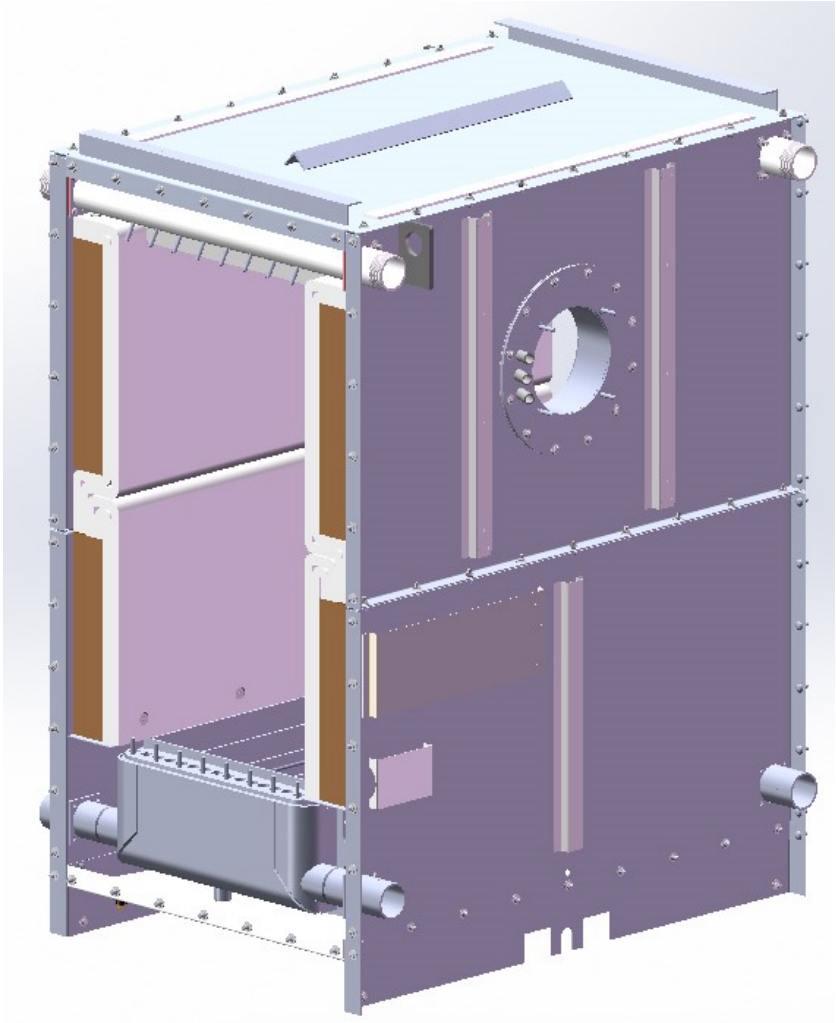
FC, Heat EX, Blower, Flue & Tube

Flue Collector & Heat Exchanger With Blower, Flue and Tubes		
Model	**L x W x H**	**Wt. (Lbs)**
ARC-1500	84x32x79	1460
ARC-2000	84x32x79	1460
ARC-2500	86x32x79	1960
ARC-3000	86x32x79	1960
ARC-3500	73x61x83	2720
ARC-4000	73x61x83	2720
ARC-4500	90x61x83	3450
ARC-5000	90x61x83	3450
ARC-5500	90x61x83	3450
ARC-6000	90x61x83	3450



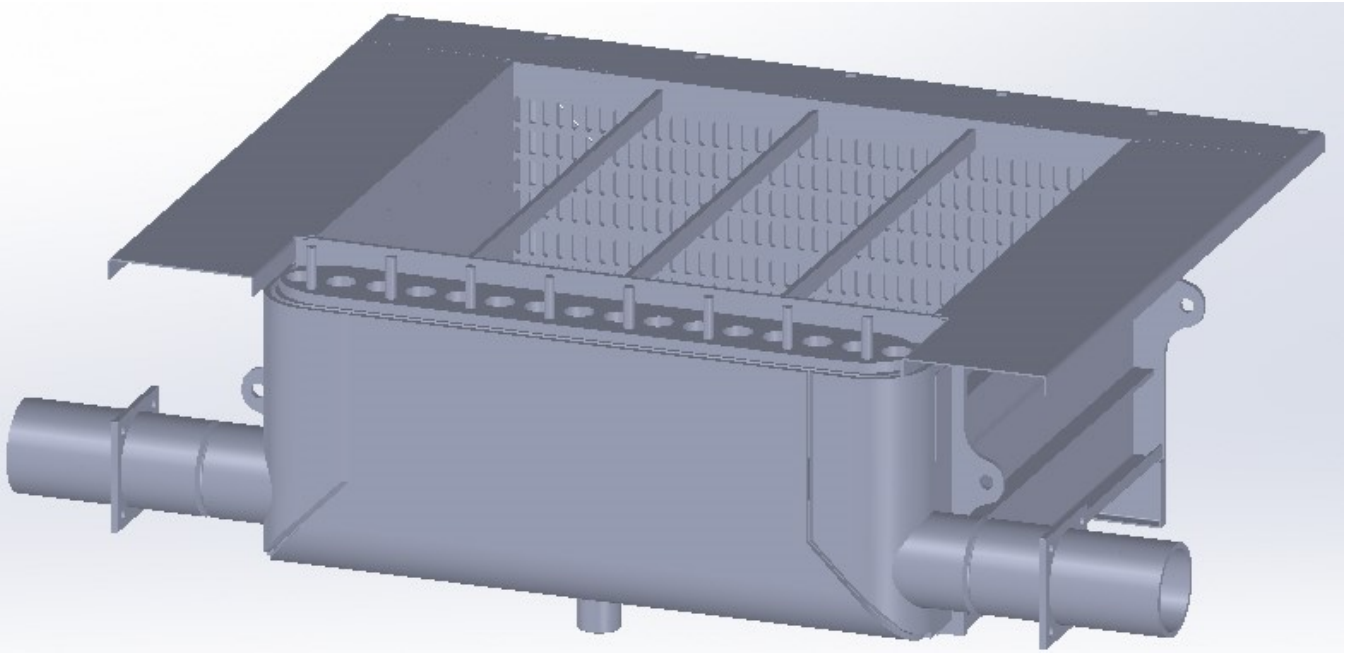
Flue Collector & Heat Exchanger

Flue Collector & Heat Exchanger NO Blower, Flue or Tubes		
Model	L x W x H	Wt. (Lbs)
ARC-1500	41x32x71	1220
ARC-2000	41x32x71	1220
ARC-2500	53x32x71	1600
ARC-3000	53x32x71	1600
ARC-3500	41x61x77	2070
ARC-4000	41x61x77	2070
ARC-4500	53x61x77	2510
ARC-5000	53x61x77	2510
ARC-5500	53x61x77	2510
ARC-6000	53x61x77	2510



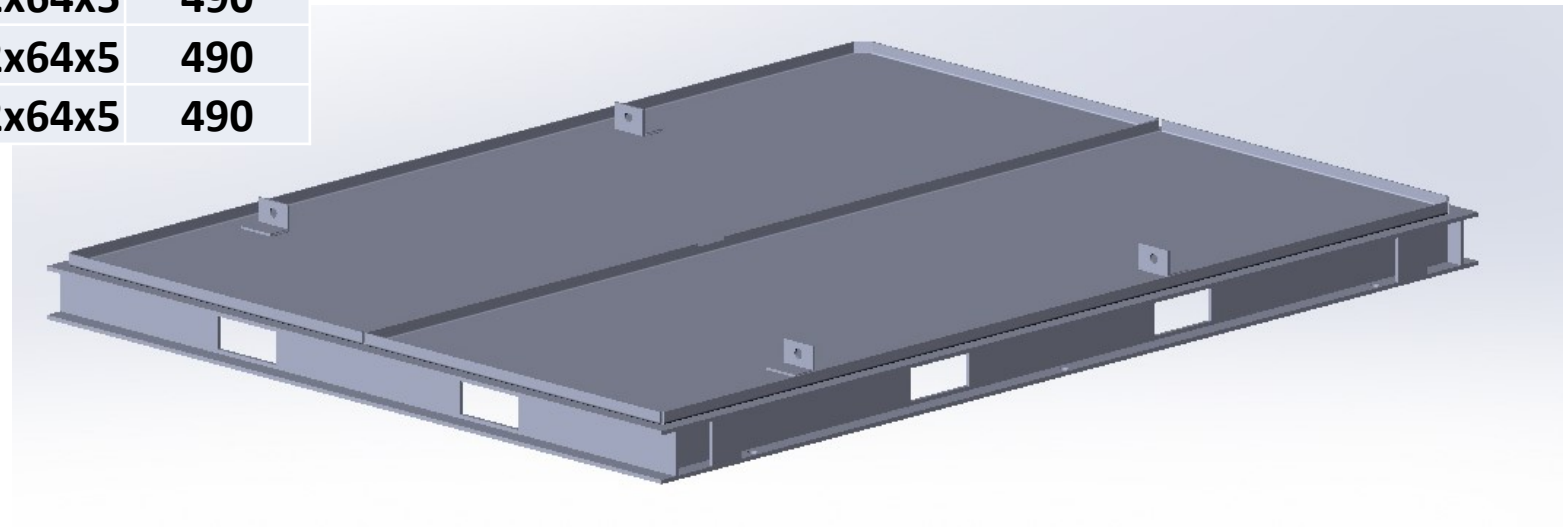
Lower Tube Rail (Heat Exchanger)

Lower Tube Rail		
Model	L x W x H	Wt. (Lbs.)
ARC-1500	45x29x16	335
ARC-2000	45x29x16	335
ARC-2500	57x29x16	480
ARC-3000	57x29x16	480
ARC-3500	(2) 45x29x16	670 (2x335)
ARC-4000	(2) 45x29x16	670 (2x335)
ARC-4500	(2) 57x29x16	960 (2x480)
ARC-5000	(2) 57x29x16	960 (2x480)
ARC-5500	(2) 57x29x16	960 (2x480)
ARC-6000	(2) 57x29x16	960 (2x480)



Base Dimensions

Base Frame Only		
Model	L x W x H	Wt. (Lbs)
ARC-1500	80x35x5	260
ARC-2000	80x35x5	260
ARC-2500	93x35x5	285
ARC-3000	93x35x5	285
ARC-3500	84x64x5	420
ARC-4000	84x64x5	420
ARC-4500	102x64x5	490
ARC-5000	102x64x5	490
ARC-5500	102x64x5	490
ARC-6000	102x64x5	490



Knockdown Assembly Support

1. KD Assembly Instruction Manual
2. Factory visit for training
   - Witness dismantle and packaging of boiler
   - Take Pictures of the various stages of assembly
   - Q&A with Production on Tips & Tricks
3. Field Support by Factory
4. Onsite Tech Support for Assembly

Arctic & FreeFlex Warranty

- Thermal Shock – Lifetime (Can Design for 100 F DT)
- Seal of tubes to header - Lifetime
- Heat Exchanger – 10 year
- Flue Gas Corrosion
  - **Headers – 10 year**
  - **Flexible tubes – 5 years**
  - **Flue collector doors – 5 years**
- Burner – 1 year
- Parts – 1 year & optional extended parts warranty

Product Positioning

- Truly the High End with Unique Feature Set
  - Tru O_2 High Turndown simple, reliable, efficient
  - Designed for after the sale
  - “Free to Move”
  - Lifetime seal vs. stressed 10 year weld
  - Field Service & Replacement
  - Knockdown
  - Meets firetube pumping traits

PRODUCT DEVELOPMENT
BRYAN O'TOOLE

What have we accomplished

- Meet the team
  - Tom Moore
    - Stephen Sherwood
    - Henok Abebe
    - Josh Windhausen
    - Arie Reichardt
    - Bruce Roland
    - Nelson Torres
    - Jeff Tinney
    - Alex Weissert

What have we accomplished

- 2018 was a busy year
  - Finished our lab at Thermal Solutions

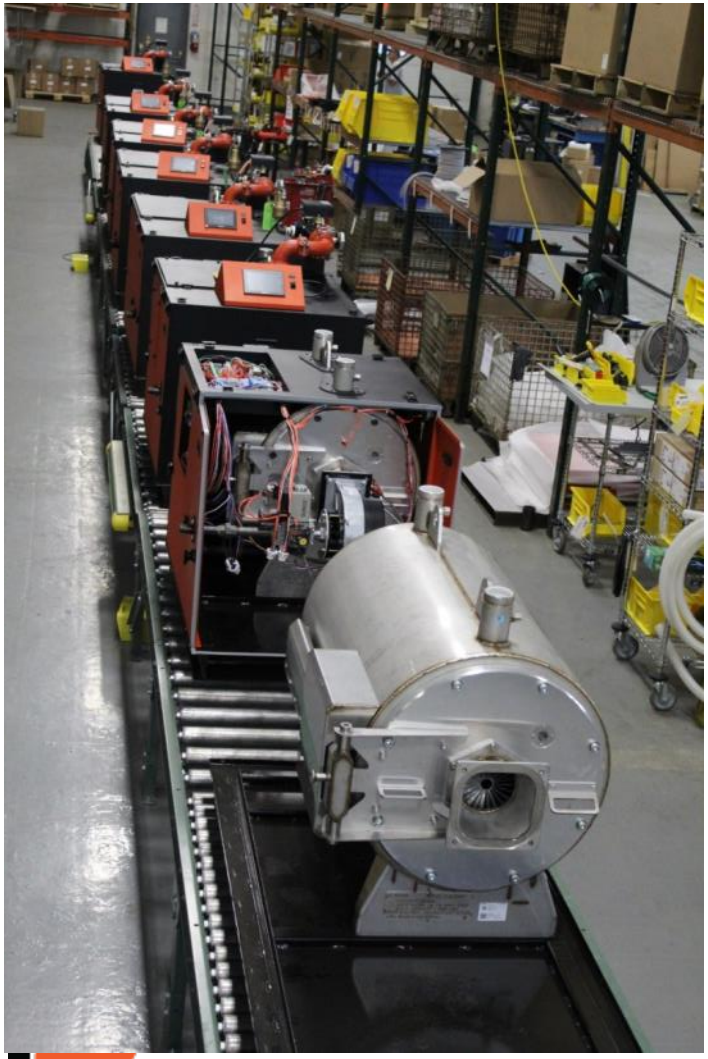
Lab Upgrade

Improve TSP lab to accommodate testing up to 4,000 MBH

What have we accomplished

- 2018 was a busy year
  - Finished our lab at Thermal Solutions
  - AMP / BFIT Hydronic Boiler launch (1M-2M)
    - Less than 12 months from start to launch
    - Leverage existing combustion system and controls
    - Compact footprint
    - Aggressive price point

AMP / BFIT Hydronic Boiler launch (1M-2M)



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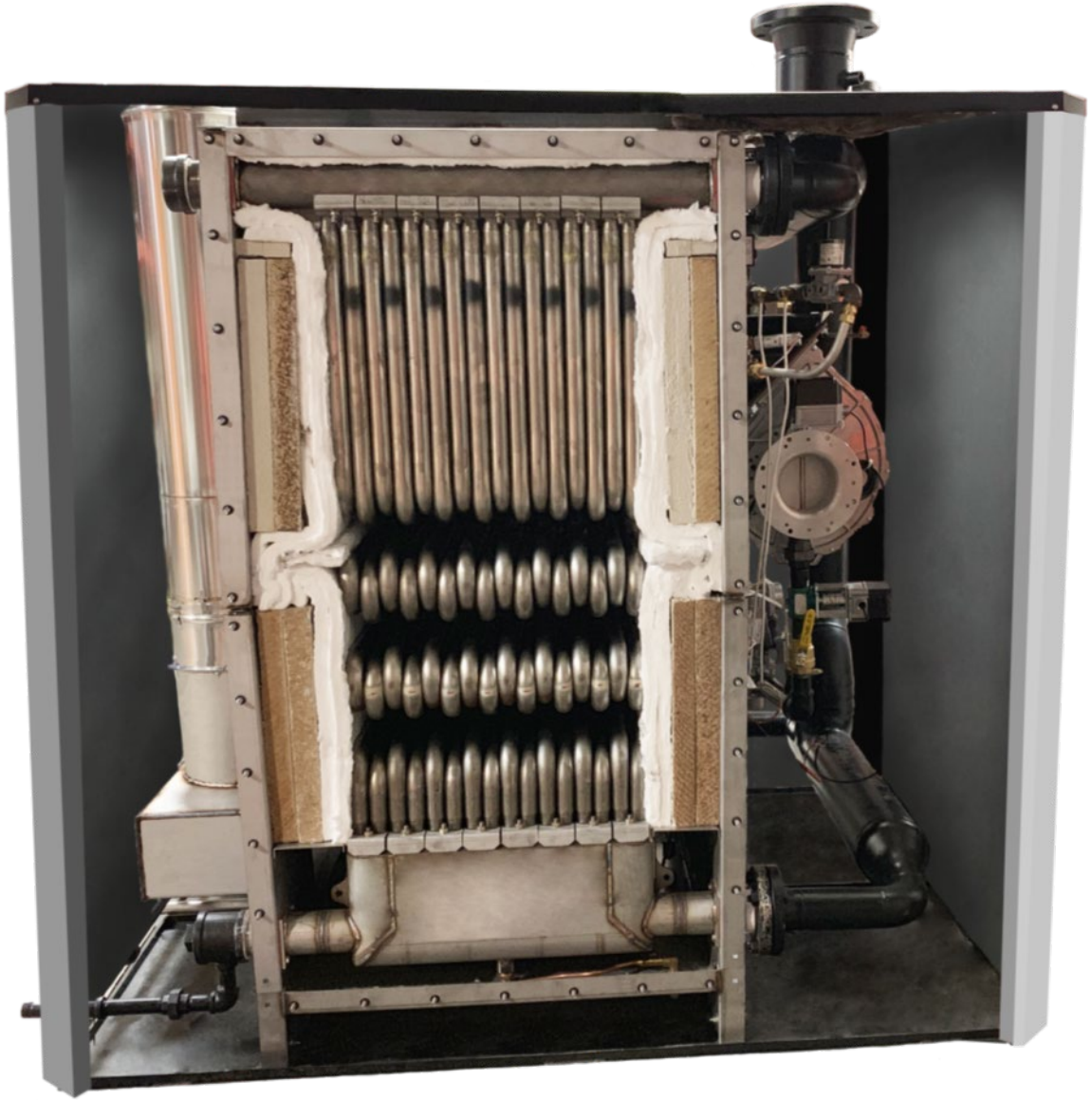
  - Arctic / FreeFlex 3.5M-6M Phase 1
    - Extend size range of existing product
    - Tru-O2 combustion system
    - Reparability and installation flexibility

Arctic / FreeFlex 3.5M-6M Phase 1

Arctic / FreeFlex 3.5M-6M Phase 1



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    - Compact footprint
    - Aggressive price point
  - Arctic / FreeFlex 3.5M-6M Phase 1
    - Extend size range of existing product
    - Tru-O2 combustion system
    - Reparability and installation flexibility
- 2019 has been busy as well
  - AMP / BFit Hydronic Boiler launch (2.5M-4M)
    - Larger sizes as a very competitive price
    - Compact footprint

AMP / BFIT Hydronic Boiler launch (2.5M-4M)

AMP / BFIT Hydronic Boiler launch (2.5M-4M)

AMP / BFIT Hydronic Boiler launch (2.5M-4M)

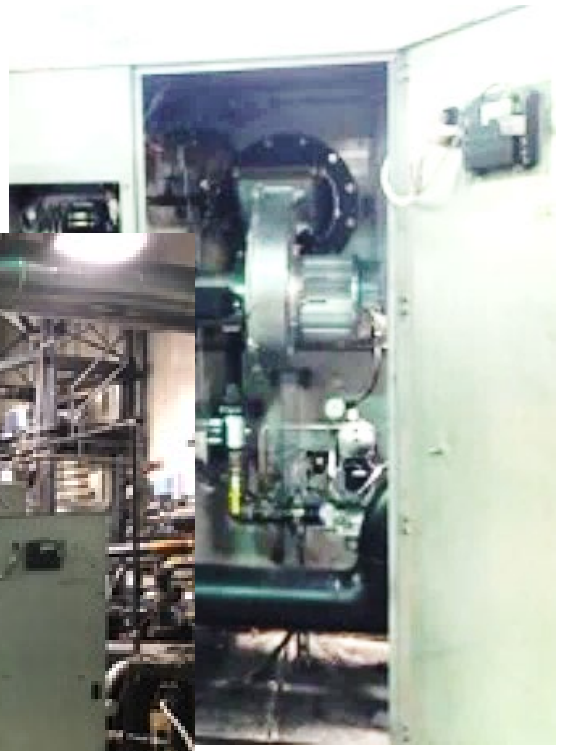
What's on the plate right now

- Arctic / Free Flex 3.5M-6M Phase 1
  - Concert control
    - Sequencing and lead/lag
    - Hydronic control

Arctic / FreeFlex 3.5M-6M Phase 2

Arctic / FreeFlex 3.5M-6M Phase 2

Arctic / FreeFlex 3.5M-6M Phase 2



What's on the plate right now

- Arctic / Free Flex 3.5M-6M Phase 1
  - Concert control
    - Sequencing and lead/lag
    - Hydronic control
- EVX 1M-2.5M
  - Burner Resonance issues in lab resolved
  - UL/ETL Safety Testing on going
  - June/July 2019 field trial units available

EVX 1M-2.5M

What's on the plate right now

- Arctic / Free Flex 3.5M-6M Phase 1
  - Concert control
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    - Hydronic control
- EVX 1M-2.5M
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  - UL/ETL Safety Testing on going
  - June/July 2019 field trial units available
- AMP / BFit water heater 1M-2M
  - HLW Heat exchanger
  - UL/ETL Safety Testing on going
  - June/July 2019 launch

AMP / BFit water heater 1M-2M

What's on the plate right now

- Arctic / Free Flex 3.5M-6M Phase 1
  - Concert control
    - Sequencing and lead/lag
    - Hydronic control
- EVX 1M-2.5M
  - Burner Resonance issues in lab resolved
  - UL/ETL Safety Testing on going
  - June/July 2019 field trial units available
- AMP / BFit water heater 1M-2M
  - HLW Heat exchanger
  - UL/ETL Safety Testing on going
  - June/July 2019 launch
- Feature / Options add-ons
  - Propane and Dual Fuel Gas/Propane
  - High Turndown AMP / BFit and Arctic / Free Flex 1-3M
  - Eco-Propel

Where are we going next

- Apex product line reboot
  - NEHXT based design from 400K up to 800K
    - Concert control
    - Boiler & Water heater
    - Aggressive footprint and pricing
- Dual Fuel condensing (Gas/Oil)
  - Early stages of concept development

2019 TSSC National Sales Meeting

May 8-9; Baltimore, MD

Meet in the lobby at 7:15 pm for shuttle to dinner