

*Slant/Fin*

# INTREPID

World class oil-fired boilers

**THESE BOILERS FIGHT OFF  
THE TOUGH STUFF...**

**COLD OIL  
COLD AIR  
LOW DRAFT**



***Intrepid is one of the world's best oil-fired boilers***

# *Slant/Fin* **INTREPID**

High efficiency, cast-iron oil-fired boiler

## **Your best choice for home heating comfort, reliability and energy savings.**

Intrepid is not just another oil-fired boiler. It is an upgraded version of the Slant/Fin Liberty boiler, found in tens of thousands of installations. It represents years of research and development, aimed at producing a boiler that would perform with efficiency and reliability, even during seasonal extremes that threaten the performance of ordinary boilers. Intrepid can reduce your fuel bills by up to 30% or more, while providing years of dependable service. Intrepid is constructed of durable, high-quality cast-iron and fitted with the finest controls and components.

- High performance through computer aided design
- Cast-iron, wet base heat exchanger
- Expert workmanship. Reliable name-brand components
- Hot water and steam models, with domestic hot water coil option
- Installer-friendly features for installation and service

**Advanced design ensures superb performance, even during extreme seasonal operating conditions**

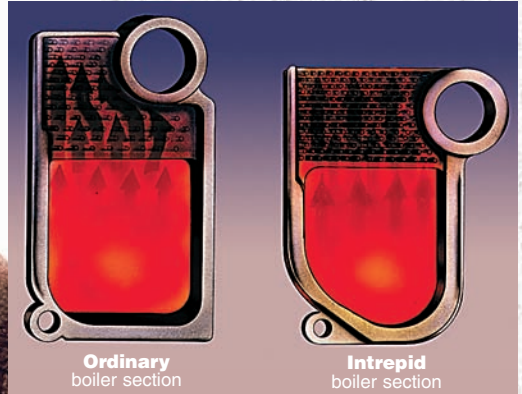
The performance level of many ordinary boilers is good following a tune-up, but it deteriorates when operating conditions change. The Intrepid boiler is designed to protect against adverse operating conditions. The contoured shape of Intrepid's combustion chamber is computer-designed to support stable combustion. The uniquely configured heat exchanger has one of the lowest draft losses in the industry. Burners are configured for each specific model to provide smooth, clean, efficient operation. These characteristics combine to ensure a robust flame that is virtually unaffected by reduced draft, low oil temperature or low air temperature.



*The Intrepid boiler's draft loss is less than .02" w.c., one of the lowest in the industry—important for better performance and prolonged life.*



**Advanced design boiler sections minimize soot buildup.**



**Ordinary**  
boiler section

**Intrepid**  
boiler section

*In most boilers, the hot flue gases which rise from the combustion area must pass around the push nipples that join the heating sections. This results in uneven heat transfer, concentrations of soot buildup and undesirable draft loss.*

*Intrepid's push nipples are located to the side, out of the way of the flue gases. This unobstructed flue passage creates more uniform heat transfer, minimizes draft loss and reduces soot build-up.*



*The contour and spacing of thermal pins in Intrepid's heat exchanger turbulate flue gasses and increase heat transfer surface area. Superior heat transfer properties permit use of smaller, compact heat exchanger sections that generate more Btu's per section than ordinary boilers.*

Slant/Fin is a world leader in boiler-baseboard-radiant heating systems for homes and commercial applications. Visit our website for more product and application information.

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



# The best components, plus expert Slant/Fin workmanship and integrity, create incomparable dependability.

There's no better built oil-fired boiler than Intrepid. Every component we use in the Intrepid boiler is of the highest quality. Heat exchanger sections, for example, are made of only the finest cast iron, finished to exact specifications on automated high precision machining centers. Final assembly of each boiler is performed by hand.

Multiple checks are made for quality and overall boiler integrity. Every boiler section, for instance, is tested under pressure at least 8 times the normal residential operating pressure. Repetitive testing -- individual sections, assembled heat exchanger and completed boiler -- ensure the leak-free integrity of every boiler shipped.

## **Burner performance optimized for each specific model. Every burner factory tested.**

The Intrepid boiler is equipped with an advanced design Beckett, Carlin, or optional Heatwise or Riello oil burner. The burner for each Intrepid boiler is custom manufactured to Slant/Fin specifications. It is engineered for each specific model to provide smooth, clean, efficient operation under all job conditions. The flame is up to 200°F hotter and up to 35% more efficient than older non-retention head burners.

For reliability, every burner is factory tested before shipping. It's given a full combustion test and fine tuned for optimal performance on the specific size boiler it is mounted on. Final adjustments are easily made by the installer, if necessary, based on the unique chimney draft conditions of each individual house.

## **For dependability, metal push nipples; name brand controls and circulator pump**

Slant/Fin uses only metal push nipples that expand and contract with the individual boiler sections that they connect. The rubber gaskets that are substituted for push nipples in many other boilers could deteriorate. This could result in water leaking from the boiler and major repair bills.

Dependable performance is further ensured with nationally known brands of controls and circulator pumps. All controls are mounted and fully wired. Steam models include float type or electronic low water cut-off.



*Advanced design cast-iron boiler sections*



*Extended hot water heater coil performs better.*

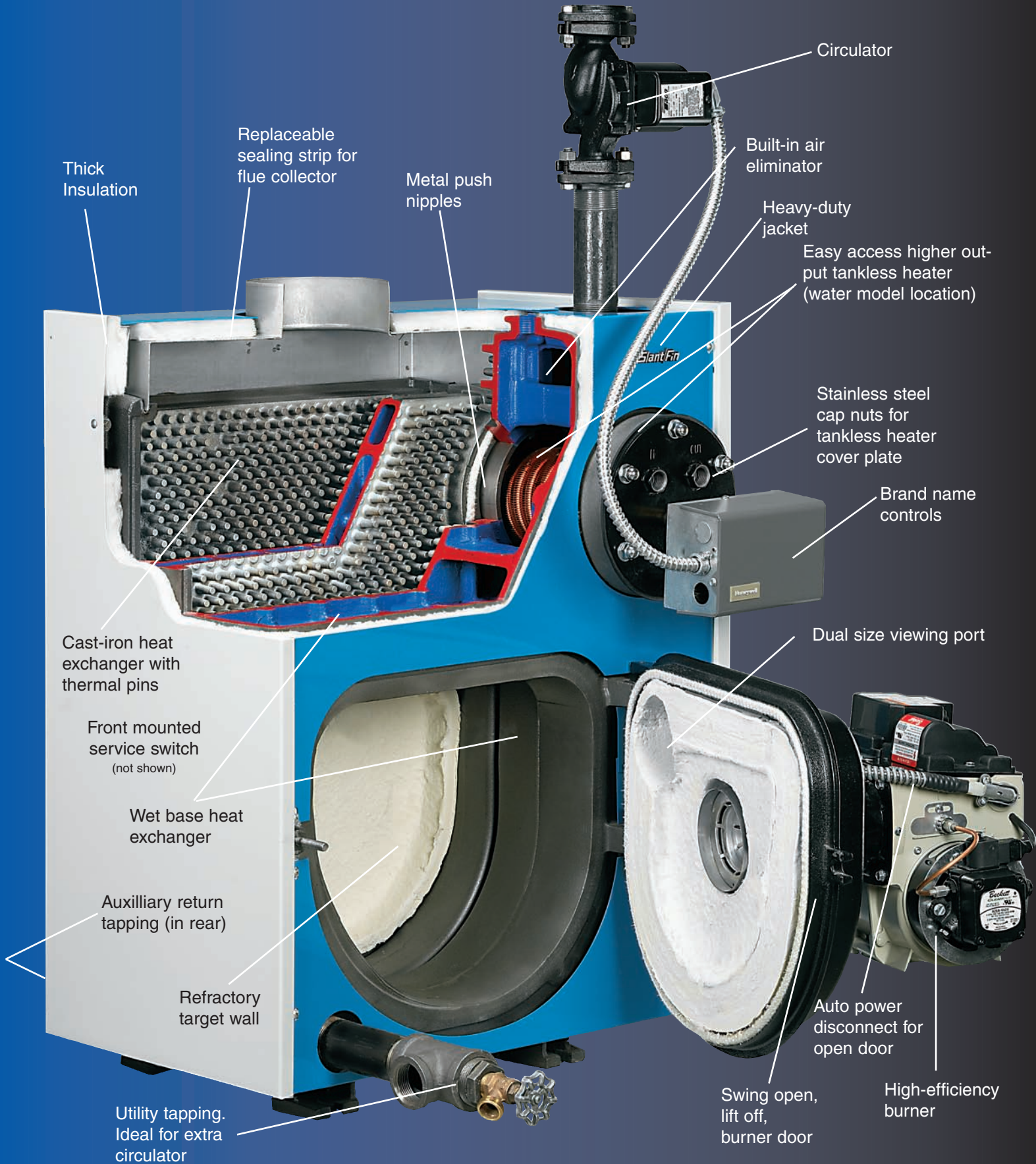


*Metal push nipples outperform rubber gaskets.*

**Lifetime limited warranty.** The Intrepid boiler is engineered and built for a long, dependable life. Hot water models are covered under Slant/Fin's lifetime limited warranty. Steam models have a limited ten-year warranty. Contact Slant/Fin for details.

# Slant/Fin INTREPID

The world class oil-fired boiler





### **Intrepid steam boiler**

*A generous 3" supply tapping on steam models helps produce drier steam, resulting in quieter operation of your steam heating system.*

## **Installation is faster, service is easier with these special Intrepid features.**

Your Slant/Fin heating contractor can usually install a new Intrepid boiler in about a day. Its compact size and removable burner door allows it to fit through doors and stairwells with ease. A strong wooden crate protects the Intrepid from factory to basement. Its low profile, only 32 inches high, simplifies installation. Packaged models come pre-wired with the burner mounted, ready for final setup. Controls are mounted up front for easy access. The circulator is prewired and bolted to the skid for shipping. Wiring is long enough for supply side or return mounting. For your convenience, all models include front and rear return tapings. All tapings are sized and positioned to give the installer flexibility in connecting the Intrepid boiler to your heating system.



### **Burner door swings open, lifts off**

Intrepid's extra large door swings open for routine servicing. It also lifts off, making it easy to fit the boiler through tight spaces and down stairs. For added safety, a disconnect plug automatically cuts power to the burner when the door is opened.



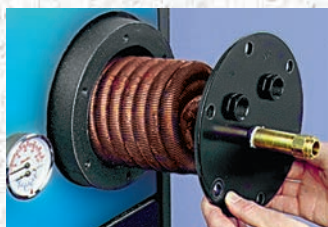
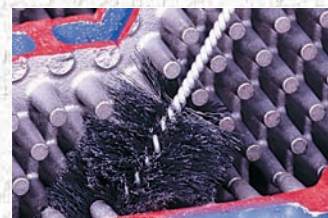
*No furnace cement is required with Intrepid's speedy-service flue collector. Can be quickly and repeatedly removed and pressed back into place in a channel containing a replaceable sealing strip. No furnace cement required. Flue collector locks positively tight with a single wing nut. Reduces cleaning time dramatically.*



*Front mounted service switch makes servicing convenient.*

### **Top cleanout is easy.**

With the flue collector removed, it's easy to reach all of the heat exchanger surfaces with a flue brush for routine cleaning. Since the refractory wall is recessed, it is protected from damage by the flue brush during cleaning. The spacing between Intrepid's section walls and the arrangement of thermal pins permit fast effective cleaning.



### **Easy access, higher output tankless heater coil.**

Tankless cover plate is mounted on cast-iron extended flange which protrudes 2 inches through front of boiler jacket. Provides constant visibility for easy inspection. Out-in-front bolts permit easy removal of seal or coil. Deeper well accommodates longer coil to maximize output of domestic hot water.

### **Long-life stainless steel cap nuts.**

Ordinary bolts in the domestic hot water cover plate can deteriorate in time and make routine maintenance a major repair should the bolt heads snap off. The stainless steel studs and cap nuts used on Intrepid's tankless water heater resist corrosion, helping to keep long term maintenance costs to a minimum.



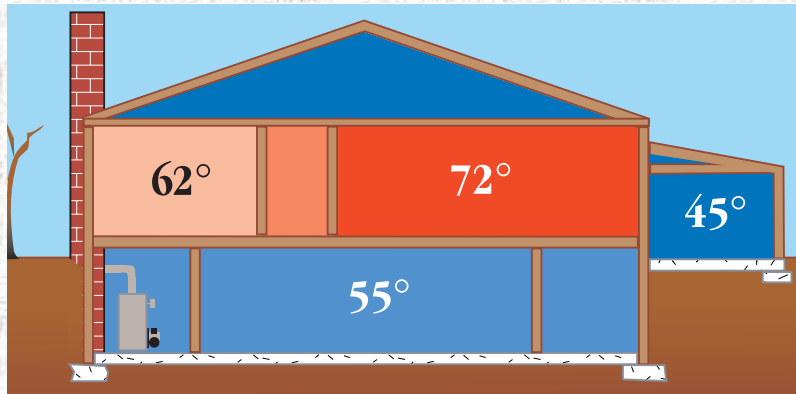
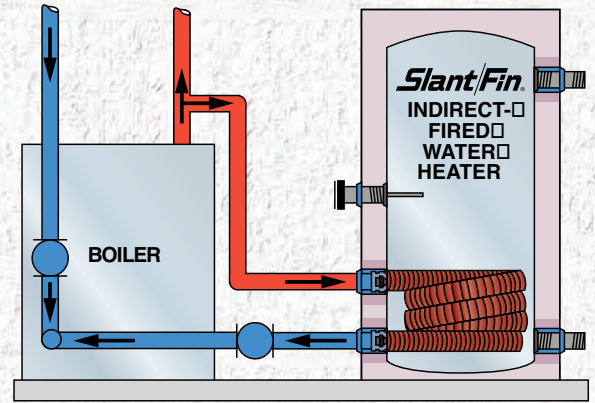
# Intrepid can provide hot water all year long for your kitchen, bath and laundry.



**Optional high output tankless heater.** This coil type "instant" hot water maker is located inside the boiler where the constant flow of hot boiler water heats your fresh water as it passes through the coil. Intrepid's extended coil well accommodates a larger coil to maximize output. Recovery is fast and the total capacity will vary with the boiler size.

**Indirect water heaters.** If you prefer to have a larger reserve of hot water, your installer can provide a hot water storage tank that is easily connected to the Intrepid boiler.

These tanks typically store between 20 and 60 gallons of hot water. Some require the boiler's tankless heater coil to make hot water. Others have built-in heating coils which are connected to your boiler in the same fashion as a heating zone. Your heating contractor can recommend which domestic hot water system is best for your needs.



## Zone your heating system for even greater fuel savings.

By dividing your home into separate heating zones, you can save energy by heating only those areas you're using. Depending on your existing piping arrangement, it may be quite simple to zone your system. An auxiliary return tapping on the Intrepid boiler gives the heating installer added flexibility in setting up two or more heating zones in your home.

STANDARD EQUIPMENT	P	PT	PPT	PZ	PZT
Assembled sections	x	x	x	x	x
Jacket with insulation	x	x	x	x	x
Target wall *	x	x	x	x	x
Pressure and temperature gauge	x	x	x	—	—
Pressure relief valves (ASME), in carton	x	x	x	x	x
Flame retention oil burner with nozzle, primary relay and cadmium sulfide flame detector	x	x	x	x	x
Draft regulator, in carton	x	x	x	x	x
Circulator: 1 1/4" (TR-20 thru TR-40) 1 1/2" (TR-50 thru TR-60) (No circulator supplied with TR-70)	x	x	x	—	—
Drain cock, in carton	x	x	x	x	x
Flue brush, in carton	x	x	x	x	x
Combination hi-limit control and circulator relay (TR-20 thru TR-60)	x	—	x	—	—
Tankless water heater	—	x	—	—	x
Provision for tankless water heater	—	—	x	—	—
Cover plate instead of tankless heater	—	—	x	x	—
Combination hi and low limit control, circulator relay (TR-20 thru TR-60)	—	x	—	—	—
Hi and low limit control (TR-70)	—	x	x	—	—
Hi-limit control (TR-70)	x	—	—	—	—
Pressure-retail with siphon, in carton	—	—	—	x	x
Burner mounting plate with swing out door	x	x	x	x	x
Burner mounting plate/insulation *	—	—	—	—	—
Inspection door	x	x	x	x	x
Service switch	x	x	x	x	x
Low water cutoff, No. 67 MM, installed	—	—	—	x	x
Steam trim, gauge and glass gauge in carton	—	—	—	x	x
Low limit control	—	—	—	—	x

Standard working pressure 30 PSI water, 15 PSI steam.

All boilers hydrostatically tested — A.S.M.E.

P Packaged water boiler less tankless heater

PT Packaged water boiler with tankless heater

PPT Packaged water boiler with provision for tankless heater

PZ Packaged steam boiler less tankless heater

PZT Packaged steam boiler with tankless heater

\*All packaged boilers are equipped as shown in Standard Equipment chart. In addition, the following models are provided with a blanket in the combustion area: water models TR-60 and TR-70; steam models TR-30, TR-40, TR-50, TR-60 and TR-70. All "KD" and "U" boilers are equipped with full combustion chamber, burner mounting plate and insulation, except that model TR-20 is equipped with blanket in combustion area.

### OPTIONAL EQUIPMENT

Two-stage fuel pump.

Choice of alternate brand circulators and burners.

### TRDV sealed combustion models



For installations without a chimney, Intrepid TRDV models vent directly to the outdoors. See Pub. No. TRDV-10.

Note: Basic Intrepid TR-Series boilers, described in this literature (Pub. TR-10), are not designed for direct vent applications.

# Slant/Fin INTREPID®

World class cast-iron oil-fired boilers

Boiler Model No.	I=B=R Burner Capacity Oil Input		D.O.E. Heating Capacity MBH		I=B=R Burner Net Ratings			I=B=R Chimney Size		A.F.U.E. %		Dimensions (inches)					Boiler section		Tankless Heater GPM*	
	GPH†	BTUH	Water	Steam	Water MBH‡	Steam MBH‡	Steam Sq. Ft.	Nom. Rect. x Height§ (in x in x ft)	I.D.Round x Height (in x ft)	Water	Steam	Boiler Length "A"	Front to Flue c "B"	Flue Dia. "C"	Return Circulator Flange "D"	Overall Length "E"	Water	Steam	Water	Steam
TR-20	0.75	105,000	91	—	79	—	—	8 x 8 x 15	5 x 15	83.50	—	11½	8¾	6 <sup>Δ</sup>	1¼	24¼	2	—	2.20	—
TR-30H	1.00	140,000	121	—	105	—	—	8 x 8 x 15	6 x 15	86.00	—	14%	10½	6	1¼	27%	3	—	3.00	—
TR-30 <sup>†</sup>	1.10	154,000	134	134	117	101	421	8 x 8 x 15	6 x 15	84.85	84.15	14%	10½	6	1¼	27%	3	3.20	3.00	
	1.25	175,000	151	—	131	—	—	8 x 8 x 15	6 x 15	83.50	—	14%	10½	6	1¼	27%	3	3.40	—	
TR-40H	1.50	210,000	182	179	158	134	558	8 x 8 x 15	6 x 15	86.00	84.00	18%	11¾	7	1¼	31	4	3.80	3.40	
TR-40 <sup>†</sup>	1.60	224,000	195	195	170	146	608	8 x 8 x 15	7 x 15	84.45	83.80	18%	11¾	7	1¼	31	4	3.90	3.50	
	1.80	252,000	218	—	190	—	—	8 x 8 x 15	7 x 15	83.33	—	18%	11¾	7	1¼	31	4	4.15	—	
TR-50H	2.00	280,000	243	239	211	179	746	8 x 8 x 15	7 x 15	86.00	84.00	21%	13¾	8	1½	34%	5	4.40	3.90	
TR-50 <sup>†</sup>	2.10	294,000	256	255	223	191	796	8 x 8 x 15	8 x 15	84.06	83.45	21%	13¾	8	1½	34%	5	4.40	4.00	
	2.35	329,000	272 <sup>#</sup>	—	237	—	—	8 x 12 x 15	8 x 15	—	—	21%	13¾	8	1½	34%	5	4.70	—	
TR-60 <sup>†</sup>	2.60	364,000	298 <sup>#</sup>	298 <sup>#</sup>	259	224	933	8 x 12 x 15	10 x 15	—	—	25	15¾	8	1½	37%	6	4.90	4.50	
	2.85	399,000	327 <sup>#</sup>	—	284	—	—	8 x 12 x 15	10 x 15	—	—	25	15¾	8	1½	37%	6	5.20	—	
TR-70 <sup>†</sup>	3.10	434,000	352 <sup>#</sup>	354 <sup>#</sup>	306	266	1108	8 x 12 x 15	10 x 15	—	—	28%	16¾	9	—	41%	7	5.45	5.00	
	3.35	469,000	381 <sup>#</sup>	—	331	—	—	8 x 12 x 15	10 x 15	—	—	28%	16¾	9	—	41%	7	5.70	—	

\* Add Suffix: (P)Packaged water boiler less tankless heater, (PT)Packaged water boiler with tankless heater, (PPT)Packaged water boiler with provision for tankless heater, (PZ)Packaged steam boiler less tankless heater, (PZT)Packaged steam boiler with tankless heater.

† Ratings apply to the use of light oil at 140,000 Btu per gallon, and a .02% draft (negative pressure) over the fire.

‡ The net I=B=R output ratings shown are based on an allowance for piping and pickup of 1.15 (water) or 1.33 (steam). D.O.E. capacity gross output is divided by the allowance to obtain net rating.

§ The manufacturer should be consulted before selecting a boiler for unusual piping and pickup requirements such as intermittent system operation, extensive piping, etc.

¶ Nominal clay tile liner dimensions.

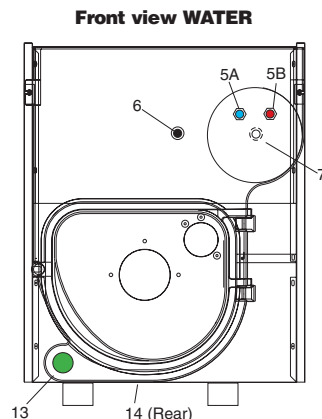
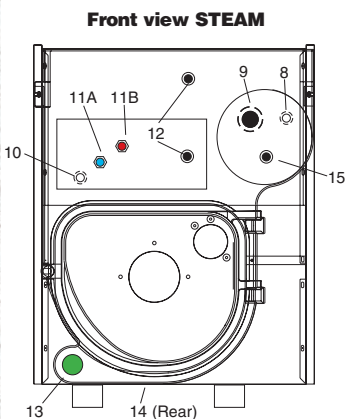
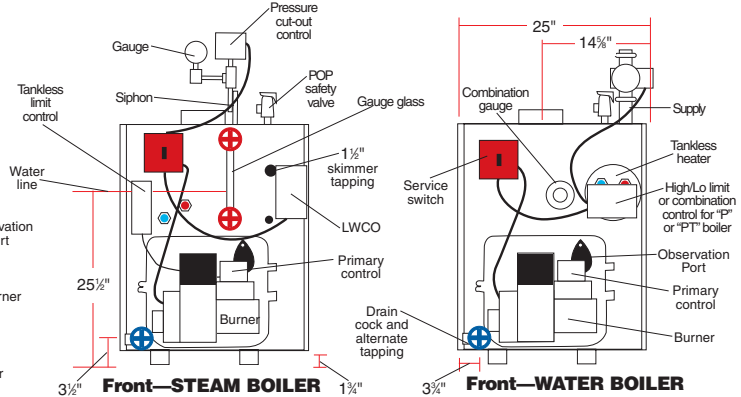
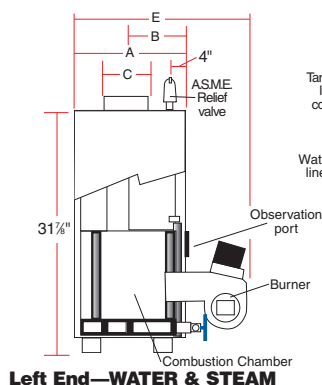
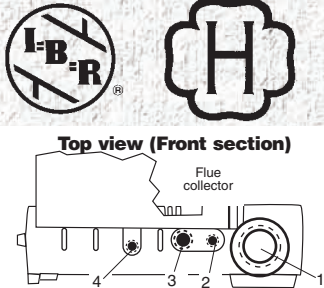
‡ Tankless heater rating based on intermittent draw.

¶ Water boiler models TR-30, TR-40, TR-50, TR-60 and TR-70 have two firing rates. The boiler is factory shipped at the lower firing rate. To obtain the higher firing rate, refer to the Intrepid boiler installation instructions for the appropriate field adjustments.

# I.B.R. gross output

Δ Collar is oblong, will fit 6" diameter nominal connector.

NOTE: All boilers under 300,000 Btu/h input are tested and rated for capacity under the U.S. Department of Energy (D.O.E.) Test Procedures for Boilers.



Tapping Location	STEAM BOILER	WATER BOILER
1	3" supply	1½" supply
1A	2" supply tapping (rear section of L-50, L-60 & L-70 models only)	—
2	Second ¼" siphon, pressure gauge & pressure cut-out	¾" air vent or expansion tank
3	¾" steam safety valve	¾" water relief valve
4	¾" siphon, pressure gauge & pressure cut-out	—
5A	—	½" tankless inlet
5B	—	½" tankless outlet
6	—	¼" pressure temp. gauge
7	—	½" hi limit, hi/lo or comb. control
8	¾" low water cut-off, alternate	—
9	1½" skimmer tapping	—
10	¾" low limit for tankless	—
11A	½" tankless inlet	—
11B	½" tankless outlet	—
12	1½" steam gauge glass & 67 LWCO	—
13	1½" return & ¾" drain cock	1½" return & ¾" drain cock
14	1½" condensate return	1½" alternate return
15	¾" zone tapping	—

# Slant/Fin®

SLANT/FIN CORPORATION, Greenvale, NY 11548 • Phone: (516) 484-2600  
 FAX: (516) 484-5921 • In Canada: Slant/Fin LTD/LTEE, Mississauga, Ontario  
[www.slantfin.com](http://www.slantfin.com)

©Slant/Fin Corp. 2004. Printed in the U.S.A. 604. Publication No. TR-10.