

## Burner Comparisons

	INOV8's	Typical Competitor's Burner
Automatic nozzle cleanout	Yes	No
Available BTUs rated as "input"	100,000 to 1,000,000	76,500 to 500,000
Burner Motor - hp	1/5	1/7
Combustion safety control	Industrial type	Fuel oil type
<ul style="list-style-type: none"> <li>Automatic re-start (one attempt)</li> </ul>	Yes	No
<ul style="list-style-type: none"> <li>Flame sensor – controls fuel flow</li> </ul>	UV – sees only actual flame not light	Cad cell – sees any light
<ul style="list-style-type: none"> <li>Fuel shutoff (any safety shutdown)</li> </ul>	3 seconds	15 to 45 seconds
<ul style="list-style-type: none"> <li>Remote reset</li> </ul>	Optional	No
<ul style="list-style-type: none"> <li>Self diagnostics &amp; safe-start mode</li> </ul>	Yes	No
<ul style="list-style-type: none"> <li>Trial-for-ignition</li> </ul>	10 seconds	No
<ul style="list-style-type: none"> <li>Main flame trial-for-ignition</li> </ul>	6 seconds	No
Filters oil out of tank	Yes	Yes
Flame retention head	Enhances oil/air mixing	Typical fuel-oil type
Floating oil pickup assembly – allows settling time	Yes	No
Ignition test button	Yes	No
Modular features for convenient servicing	Yes	No
Oil lines	Oil hose for greatest flexibility, copper & steel where appropriate	Copper or rigid lines
Oil pump features:		
<ul style="list-style-type: none"> <li>Oil pre-heat controls</li> </ul>	Digital control with LED & fully adjustable	Fixed at one temperature
<ul style="list-style-type: none"> <li>Oil pump</li> </ul>	Built-on burner, in most cases auxiliary pump is not necessary	Auxiliary pump used, requires separate wiring, mounting, expensive to service
<ul style="list-style-type: none"> <li>Pumping capabilities</li> </ul>	Up to 175 weight oil	Metered pump up to 50 weight oil
<ul style="list-style-type: none"> <li>Pressure at nozzle – consistent with varying viscosities</li> </ul>	Yes	No
<ul style="list-style-type: none"> <li>Pressure relief valve (prevents oil spills from dirty filter)</li> </ul>	Yes	No
Oils that can be burned as fuel:	Crankcase oil, ATF, hydraulic, gear box, fuel oils (#2, #4 & #5, heat transfer oil (up to 175 weight), machine cutting oils, solvents, synthetic, jet fuel, new, crude & used vegetable oil, bunker oil, liquid animal fats	Crankcase oil (up to 50 weight), ATF, fuel oils #2, #4 & #5
On/off heater switch (saves energy & for better burn of low flash point oils like jet fuel & fuel oil)	Yes	NO

*While INOV8 strives to sell products on the basis of superior features - customers frequently are deluged with negative and false information. This document was written to assist in your purchase decision and hopefully dismiss any confusion that is being created. Information on competitor's products is based on what is readily available via internet websites, existing users, and/or from documentation provided by competitors. The specific safety & function features should be provided upon request.*

Pre-heater system	Patented loop system moves oil at 4 feet per second to prevent burned oil	Pot method applies heat in stagnant setup that cokes oil
• Vapor elimination during preheat	Yes – patented process	No
• Filters hot oil	Yes	No
• Warm up period	6 – 7 minutes (first time only)	Immediate (cokes oil)
• Smokey start-up	No	Yes
Operating Requirements:		
Compressed air requirements	3 cfm @ 30 psig	2 cfm and 20 psig
Draft requirements	0.03 to 0.04	0.03 to 0.04
Electrical standards	120v/60hz, 220v/50hz	110v 60hz
Required factory work to maintain warranty	No	Yes
Transformer	Long life because it runs for 10 seconds only during trial-for-ignition startup	Transformer has shortened life because it is on continuously
Wall thermostat	120 volt (industrial quality)	24 volt
Warning & operating indicators	Lights: dirty filter, operating, safety shutdown, pre-purge, airflow, & ignition Indicators: hour meter, oil & air gauges	Oil & air pressure gauges
Warranty on burner	1 year (parts & shipping)	1 year

Blue – superior feature, Red – inferior feature, Black – neutral

**INOV8 burners are installed on the following furnaces, boilers & wastewater evaporators:**

<b>F125</b>	140,000 input	86% efficiency	heats 1,000 to 3,000 sq. ft.	blower unit	ceiling hung or bench tank mounted
<b>F240</b>	240,000 input	83% efficiency	heats 3,000 to 6,000 sq. ft.	prop fan or ductible	ceiling hung or bench tank mounted
<b>F240SC</b>	240,000 input	83% efficiency	heats 3,000 to 6,000 sq. ft.	prop fan or ductible	ceiling hung or bench tank mounted
<b>F450</b>	500,000 input	85% efficiency	heats 6,000 to 12,000 sq. ft.	ductible blower	ceiling hung or bench tank mounted

**Boilers Systems:** 12 sizes available from 175,000 to 1,000,000 BTUs and 4 sizes for vegetable oil from 135,000 to 300,000 BTUs.

**Evaporators** Three sizes: 20, 40 & 60 gallons per hour of evaporation, utilizing available used oils and/or gas as the fuel.

**Gas / Oil Burner:** Specialty burner for custom applications. Two sizes available from 100,000 to 600,000 BTUs, capable of burning natural or propane gas only or in combination with used oil (with as much as 90% water)

**Safety Certification:** All furnaces & burners were recently “re-certified” by Intertek ETL-Semko to the latest UL & Canadian standards.



*While INOV8 strives to sell products on the basis of superior features - customers frequently are deluged with negative and false information. This document was written to assist in your purchase decision and hopefully dismiss any confusion that is being created. Information on competitor's products is based on what is readily available via internet websites, existing users, and/or from documentation provided by competitors. The specific safety & function features should be provided upon request.*

## Used Oil Burning Furnace Cabinet Comparisons

Cabinet features	INOV8's	Typical Competitors'
Ash retention capabilities (in furnace vs. on roof)	High retention (due to 3-pass design)	Low retention (due to single-pass)
Burner hinge or door	Yes	Yes
Ceramic target in combustion chamber	Yes – since 1992 (3200°F)	Yes
Ductible capability	Yes	Yes
Easy access cleanout panel	Yes	Only on select units
Factory support on any issue	Yes	No
Frequency of cleaning	500-600 hours (on 3-pass)	500-600 hours (on 3-pass) 1000 hours (on single-pass)
Heat exchanger design	Three-pass (most efficient)	Single-pass (least efficient)
Laser cut fabrication for precision fit on cabinet	Yes	Unknown
Make-up air capability in some models	Yes	No
Methods of installation	Ceiling hung or bench tank mounted	Ceiling hung or bench tank mounted
Motor size for blower / fan	1 hp to 1 ½ hp (heavy duty)	Unknown
Oil storage tank finish	Powder coat – Ford Blue	Wet paint finish
Oil storage tank with support stands	Yes	Yes
Furnace paint finish	Powder coat – Ford Blue	Wet paint finish or galvanized
Rated Efficiency	83% to 86%	60% to 70% (single vs 3-pass)
Sealed combustion available on burner	Yes	No
Steel fatigue (stress cracking)	Rare or Never (special design to prevent)	Common
Steel in combustion chamber	Aluminized (best for heat transfer & corrosion protection)	Stainless (poor heat transfer) or Cold-rolled (poor corrosion prevention)
Steel in heat exchanger	Aluminized (Stainless where appropriate)	Stainless or Cold-rolled
Thermal expansion design in heat exchanger prevents steel fatigue	Yes	No
Warranty provisions on cabinet	Prorated over 10 years	Prorated over 10 years

*Blue – superior feature, Red – inferior feature, Black – neutral*

### INOV8 burner, model B200 are installed on the following furnaces:

<b>F125</b>	140,000 input	86% efficiency	heats 1,000 to 3,000 sq. ft.	ductible blower	350 pounds
<b>F200</b>	240,000 input	83% efficiency	heats 3,000 to 6,000 sq. ft.	prop fan	500 pounds
<b>F240 SC</b>	240,000 input	83% efficiency	heats 3,000 to 6,000 sq. ft.	ductible blower	550 pounds
<b>F450</b>	500,000 input	85% efficiency	heats 6,000 to 12,000 sq. ft.	ductible blower	1,000 pounds

**INOV8 furnaces** are shipped with the burner and accessory cartons steel strapped to a pallet, then plastic wrapped. Crating is available upon request (a \$100 add-on). Additional items included with each furnace: 8” barometric damper, room thermostat, hanging brackets, spare fuses, spare VE filter, and in-line oil filter assembly, check valve, floating pickup assembly and complete installation, operating and service manual.



**Safety Certification:** All furnaces & burners were recently “re-certified” by Intertek ETL-Semko to the latest UL & Canadian standards.

*While INOV8 strives to sell products on the basis of superior features - customers frequently are deluged with negative and false information. This document was written to assist in your purchase decision and hopefully dismiss any confusion that is being created. Information on competitor's products is based on what is readily available via internet websites, existing users, and/or from documentation provided by competitors. The specific safety & function features should be provided upon request.*

## Oil Storage Tanks with Furnace Supports Comparison

Tank Features	INOV8's	Competitors'
Cleanout openings on bottom	Two	One
Finish	Powder coat for durability & appearance	Wet paint
Internal settling reservoir	Yes	No
Mounting arms for furnace support	¼" square tubular steel	N/A
Oil level gauge	Yes	No
Openings on top	Four	Three
Standard size in gallons	300	150, 215, 250
Steel construction	11 gauge	N/A
Supply lines provided	Yes	No
Support for tank	Three 3" channel iron skids	N/A
Safety Certification with UL & Canadian Standards	UL80 & CAN/ULC-S602-03	UL80 (not all have this certification)

INOV8 Tank Specifications		
Model:	Weight:	Dimensions: (length, width, height)
T300 HB (for F125 & F240 furnaces)	475 lbs	60", 34", 37"
T300 FB (for F450 furnaces)	500 lbs	60", 41", 32"

### Available options:

- Custom sized tanks to accommodate most special applications
  - Outdoor storage tanks - single and double wall
  - Auxiliary/boost pumps for longer distance pumping



## Multi-fuel Boiler System Comparisons

Boiler features	INOV8's	Competitors'
INOV8 Boiler Packages or Systems, include		
Air Compressor	Optional	Yes
Approvals: ASME certified, IBR, AGA & Energy Star	Yes	No
Aquastat	Yes	Included with some
Boiler	Yes	Yes
Boiler Brushes	Yes	No
Burner, sized appropriately	Yes	Yes
Draft Inducer, sized appropriately	Yes	No
Floating Oil Pickup	Yes	No
Oil line filter assembly	Yes	Yes
Oil Regulator Assembly	Yes	No
Optional boost pump	Yes	Yes
Other Boiler Features:		
Access for cleaning	Via hinged door	Via hinged door
BTUs available	120,000 to 1,000,000 in 12 sizes	Limited selection under 500,000
Cleaning frequency	300 to 500 hours	300 to 750 hours
Construction of boiler	Cast iron	Steel or coil type (usually)
Efficiency of boiler (in clean condition)	84-86%	60 – 75%
Insulation wrap on boiler	Yes	Unknown
Refractory required	No	Yes
Thermostream design (protects boiler from cold return water shock)	Yes	No
Warranty	5 years	Unknown
Durability of boiler	Lifetime	Limited (5-8 years)

**INOV8 burner, model R200 or R700 is installed on the following boilers:**

**Petroleum Based Boiler Model Numbers:** B175, B225, B325, B400, B500, B650, B750, B850 & B1050 (input rating is number x 100)

**Vegetable Based Boiler Model Numbers:** V135, V170, V220, and V300 (input rating is number x 100)

**INOV8 boiler systems** come in two shipments: **1)** the “assembled” boiler castings are shipped directly on a pallet and require a forklift for unloading. Each boiler includes: a full-size burner door hinged left or right (field selectable), supply & return connections (at rear of the boiler), removable baffles for stack temperature adjustments, viewing & pressure ports for combustion test, and blue enamel jacket with 3 1/2” wrap-around thermal insulation, the boiler data plate, and a boiler installation manual. **2)** The burner and accessory carton is steel strapped to a pallet, and plastic wrapped. This will follow the first shipment by one week. This shipment includes: an (optional) appropriately sized draft inducer, Aquastat, specially sized boiler brushes, spare fuses, spare filter, in-line oil filter assembly, check valve, floating pickup assembly, a burner data plate and a complete installation, operating and service manual.