



PRODUCT GUIDE





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A. O. Smith maintains a policy of ongoing product improvement. This may result in modification of features and/or specifications without notice.

A. O. Smith Water Heaters



A. O. Smith is a global leader in water technology for over 70 years. Innovation is at the core of everything we do. We employ over 10,000 people worldwide committed to research, innovation and customer service excellence. Our engineering facilities, labs, robust testing procedures, and protective coatings and electronics division deliver the highest quality and advanced designs for water heating. Our investments focus on high quality, advanced manufacturing processes such as robotics, sequencing of critical components and error proofing. This assures proper form, fit and function in all our water heaters.



Powered by  **TAKAGI**

The A. O. Smith powered by Takagi condensing tankless water heaters provide endless hot water*. The durable primary heat exchanger is made of commercial-grade copper while the secondary heat exchanger is made of Type 316L stainless steel, preventing corrosion and prolonging the life of the heater. These direct vent models combine durability and versatility in an easy-to-install space-saving design.

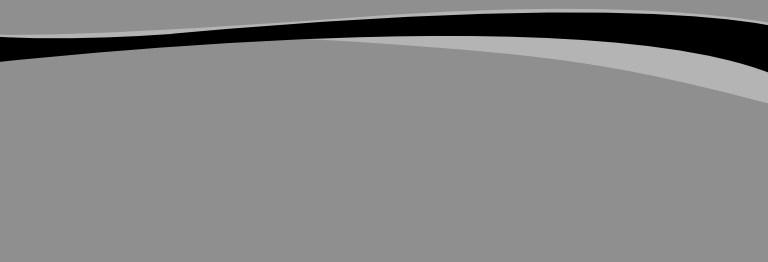


Features of Condensing Tankless Models:

- Integrated temperature and error display
- Advanced safety features
- ENERGY STAR® qualified with a 0.95 EF
- ULC S636 PVC, CPVC, polypropylene pipe or Cat. III/IV stainless steel venting
- Internal freeze protection system
- New 540P model with integrated recirculation pump

*When sized appropriately

Storage-Type

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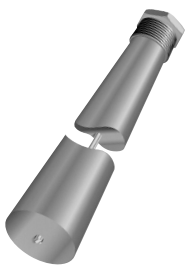
Innovation has a name.

The story is all in the details. Every water heater that bears the A. O. Smith name has a reputation to live up to, one that we've earned through decades of innovations. As an industry leader, we constantly look for new materials and develop new technologies to improve our heaters.



DynaClean™ diffuser dip tubes

Automatic self-cleaning action greatly reduces sediment accumulation and maximizes hot water output. A. O. Smith's PEX cross-linked polymer dip tubes are long-lasting with superior resistance to destructive thermal oxidation.



CoreGard™ – Advanced Anode Rod Protection

The anode rod is a highly effective corrosion fighting system which utilizes cathodic action to protect internal tank surfaces from corrosive elements. CoreGard adds a stainless steel core to magnesium anode rods.

Blue Diamond® glass coating

At the heart of almost every water heater is a steel tank. A porcelain "glass lining" protects the tank against the corrosive effects of hot water. Our breakthrough Blue Diamond formula is enriched with a high level of zircon, producing a lining that is harder and more water-resistant than any other in the industry.

ProLine® XE Effex®

ENERGY STAR® qualified



Features

- Allows for easy replacement of standard atmospheric vent heaters
- Easily connects to existing B-vent
- Plugs into standard 110/120V outlet (10 foot power cord included)
- Tighter differential for more consistent hot water delivery
- The durable hot surface ignitor eliminates pilot relight issues (no standing pilot)
- Easy-to-read, eye level display
- Simple temperature settings and adjustments with service diagnostics in plain text
- Powered anodes are non-sacrificial, so they do not deplete over time
- They provide exceptional performance in all water conditions
- DynaClean™ diffuser dip tube. Helps reduce lime and sediment buildup, maximizes hot water output
- Made from long-lasting PEX cross-linked polymer



PERFORMANCE

MODEL	SERIES	CAPACITY	INPUT*	MAXIMUM CERTIFIED ALTITUDE	RECOVERY RATE AT 90°F TEMPERATURE RISE	FIRST HOUR RATING	ENERGY FACTOR	WARRANTY TANK/PARTS
		USG (L)	BTU/h	FT (M)	GPH (LPH)	GPH (LPH)		YEARS
NATURAL GAS								
GAHH-40	102	40 (151)	40,000	10,100 (3,078)	42 (159)	70 (265)	0.70	6/6
GAHH-50	100	50 (189)	40,000	10,100 (3,078)	42 (159)	81 (307)	0.70	6/6

Available in natural gas only.

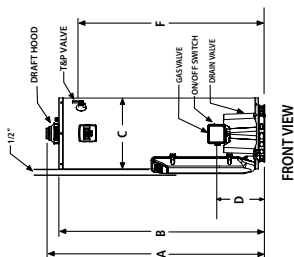
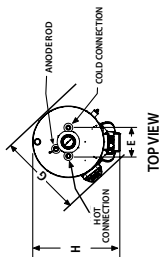
Recovery capacity based on actual performance tests.

Water Connections - ¾" on all models.

All models comply with national energy efficiency regulations.

DIMENSIONS & SHIPPING WEIGHT

MODEL	INSTALLA- TION HEIGHT	HEIGHT TO TOP OF TANK	DIAMETER	HEIGHT TO GAS INLET	HOT CONNECTION TO COLD CONNECTION	HEIGHT TO T&P	DEPTH FROM AIR INTAKE CHAMBER	DEPTH FROM GAS VALVE	DRAFTHOOD CONNECTOR DIAMETER	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	G IN (CM)	H IN (CM)	IN	LB (KG)
NATURAL GAS										
GAHH-40	61 ¾ (157)	58 (147)	20 (51)	13 ¼ (34)	8 (20)	51 ½ (131)	23 ¼ (59)	25 (64)	3 or 4	157 (71)
GAHH-50	60 ⅝ (154)	57 ⅛ (145)	22 (56)	13 ¼ (34)	8 (20)	50 ½ (128)	25 ¼ (64)	27 (69)	3 or 4	171 (78)



ProLine® XE Atmospheric Vent

ENERGY STAR® qualified



Features

- Flue damper for increased energy efficiency and performance
- 24 volt gas valve offers: Diagnostic capabilities, monitors damper to ensure proper operation and safety, spark ignition eliminates the need for a standing pilot
- Robust 1/4" pilot tubing
- Durable brass drain valve
- DynaClean™ diffuser dip tube helps reduce lime and sediment buildup and maximizes hot water output
- Blue Diamond® glass coating provides superior corrosion resistance to industry-standard glass lining
- Plugs into a standard 110/120V outlet (10 ft. power cord included)
- Combustion chamber is easy to access
- Conveniently located T&P and drain valve for ease of installation and serviceability
- CoreGard™ magnesium anode with stainless steel core protects the tank against corrosion

PERFORMANCE

MODEL	SERIES	CAPACITY	INPUT*	MAXIMUM CERTIFIED ALTITUDE	RECOVERY RATE AT 90°F TEMPERATURE RISE	FIRST HOUR RATING	ENERGY FACTOR	WARRANTY TANK/PARTS
		USG (L)	BTU/h	FT (M)	GPH (LPH)	GPH (LPH)		YEARS
NATURAL GAS								
GCFL-40	100/101	40 (151)	40,000	10,100 (3,078)	41 (155)	67 (254)	0.67	6/6
GCF-40	100/101	40 (151)	40,000	10,100 (3,078)	41 (155)	67 (254)	0.67	6/6
GCFL-50	100**	50 (189)	40,000	10,100 (3,078)	41 (155)	81 (307)	0.67	6/6
GCF-50	100/101	50 (189)	40,000	10,100 (3,078)	41 (155)	81 (307)	0.67	6/6

Natural gas models are series 100. Propane models are series 101.

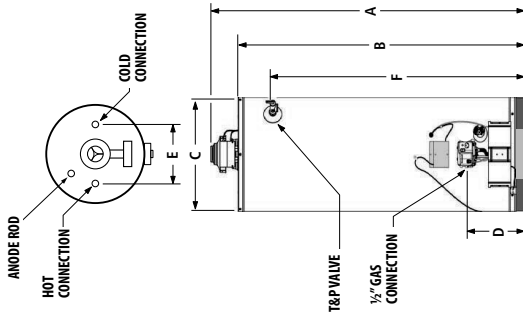
*Propane Gas – 36,000 for the 40 gallon models and 37,000 for the 50 gallon models.

**GCFL-50 is not available for Propane.

All models comply with national energy efficiency regulations.

DIMENSIONS & SHIPPING WEIGHT

MODEL	INSTALLATION HEIGHT	HEIGHT TO TOP OF TANK	TANK DIAMETER	HEIGHT TO GAS INLET	HOT CONNECTION TO COLD CONNECTION	HEIGHT TO T&P	DRAFTHOOD CONNECTOR DIAMETER	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	IN	LB (KG)
GCFL-40	54 (137)	47 ³ / ₄ (121)	22 (56)	13 (33)	8 (20)	41 (104)	3 or 4	149 (68)
GCF-40	64 ¹ / ₄ (163)	58 ¹ / ₄ (148)	20 (51)	13 (33)	8 (20)	51 ³ / ₄ (131)	3 or 4	152 (51)
GCFL-50	55 ³ / ₄ (142)	49 ¹ / ₂ (126)	24 (61)	13 (33)	8 (20)	42 ¹ / ₂ (108)	3 or 4	183 (83)
GCF-50	63 ¹ / ₂ (161)	57 ¹ / ₄ (145)	22 (56)	13 (33)	8 (20)	50 ¹ / ₄ (128)	3 or 4	167 (76)



Maximum Hydrostatic Working Pressure: 150 PSI

ProLine® & ProLine® Master Atmospheric Vent

Proven technology and exceptional reliability



Features

- DynaClean™ diffuser dip tube helps reduce lime and sediment buildup and maximizes hot water output
- Thermopile design provides robust pilot to withstand down drafts and environmental conditions
- Gas valve offers easy temperature adjustments and has LED indicator light for operation, diagnostic and troubleshooting assistance
- Robust 1/4" pilot tubing
- Blue Diamond® glass coating protects steel tank from corrosion and maximizes tank life
- Conveniently located T&P and drain valve for ease of installation and serviceability
- Piezoelectric ignitor allows for lighting of the pilot without matches
- CoreGard™ magnesium anode with a stainless steel core protects the tank against corrosion
- 2 or 4 year tank warranty extension kits are available for 6 year models



PERFORMANCE

MODEL	SERIES	CAPACITY	INPUT†	MAXIMUM CERTIFIED ALTITUDE	RECOVERY RATE AT 90°F TEMPERATURE RISE	FIRST HOUR RATING	ENERGY FACTOR	WARRANTY TANK/PARTS
		USG (L)	BTU/h	FT (M)	GPH (LPH)	GPH (LPH)		YEARS
NATURAL GAS								
GCRL 30	400/401	30 (114)	35,500	10,100 (3,078)	36 (136)	60 (227)	0.64	6/6
GCRL 40	400/401	40 (151)	40,000	10,100 (3,078)	41 (155)	67 (254)	0.62	6/6
GCR 40	400/401	40 (151)	40,000	10,100 (3,078)	42 (159)	70 (265)	0.62	6/6
GCRL 50	400/401	50 (189)	40,000	10,100 (3,078)	43 (163)	93 (352)	0.61	6/6
GCR 50	400/401	50 (189)	40,000	10,100 (3,078)	42 (159)	88 (333)	0.62	6/6
GVRT 60	400/401	60 (227)	52,200	10,100 (3,078)	54 (204)	104 (344)	0.59	6/6
FCG 75L	400/401	75 (284)	75,100	7,700 (2,347)	80 (303)	N/A	N/A	6/6
NATURAL GAS								
HWRL 40	400/401	40 (151)	40,000	10,100 (3,078)	41 (155)	67 (254)	0.62	8/8
HWRL 50	400/401	50 (189)	40,000	10,100 (3,078)	43 (163)	93 (352)	0.61	8/8

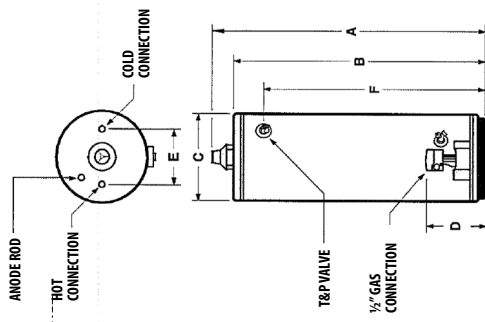
Natural gas models are series 400. Propane models are series 401.

† Propane Gas – 36,000 for the 50 gallon short, 37,000 for the 50 gallon tall, & 36,000 for 40 gallon models and 32,000 input for 30 gallon models
All models comply with national energy efficiency regulations.

DIMENSIONS & SHIPPING WEIGHT

MODEL	INSTALLATION HEIGHT	HEIGHT TO TOP OF TANK	TANK DIAMETER	HEIGHT TO GAS INLET	HOT CONNECTION TO COLD CONNECTION	HEIGHT TO T&P	DRAFTHOOD CONNECTOR DIAMETER	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	IN	LB (KG)
GCRL 30	50 (127)	46 ³ / ₈ (118)	20 (51)	13 ¹ / ₂ (34)	8 (20)	40 (102)	3 or 4	118 (53)
GCRL 40 / HWRL 40	51 ¹ / ₂ (131)	47 ³ / ₄ (121)	22 (56)	13 (33)	8 (20)	41 (104)	3 or 4	135 (61)
GCR 40	61 ³ / ₄ (157)	58 ¹ / ₄ (148)	20 (51)	13 (33)	8 (20)	51 ³ / ₄ (131)	3 or 4	150 (68)
GCRL 50 / HWRL 50	61 ³ / ₄ (157)	58 ¹ / ₄ (148)	24 (61)	13 (33)	8 (20)	42 ¹ / ₂ (108)	3 or 4	175 (79)
GCR 50	61 (155)	57 ¹ / ₄ (145)	22 (56)	13 (33)	8 (20)	50 ¹ / ₄ (128)	4	165 (75)
GVRT 60	62 ³ / ₄ (159)	59 (150)	24 (61)	13 (33)	8 (20)	51 ¹ / ₂ (131)	4	205 (93)
FCG 75L*	61 (155)	57 ¹ / ₄ (145)	26 ¹ / ₂ (67)	14 ³ / ₄ (37)	8 (20)	50 ¹ / ₄ (128)	4	273 (124)

* Model has side connections



ProLine® XE Power Vent

ENERGY STAR® qualified



Features

- Industry-leading energy efficient power vent, with up to a 0.70 EF
- ENERGY STAR® qualified (except 60 and 75 gallon models)
- State-of-the-art electronic gas control features advanced self-diagnostic capability that makes troubleshooting easy
- Ideal as a replacement water heater in a variety of installation applications due to 3-position rotatable blower
- Can be vented with 2", 3" or 4" ULC S636 PVC, CPVC or polypropylene pipe
- Vertical or horizontal venting configurations
- Convenient 3/4" side taps for combination applications on 50 USG high-input and 75 USG models
- 2 or 4 year tank warranty extension kits are available for 6 year models



PERFORMANCE

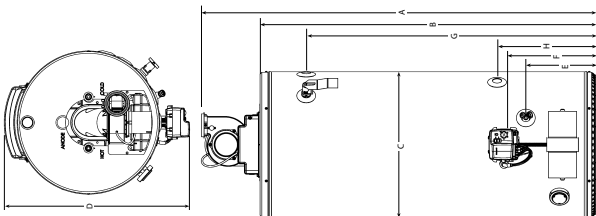
MODEL	SERIES	CAPACITY	INPUT	MAXIMUM CERTIFIED ALTITUDE	RECOVERY RATE AT 90°F TEMPERATURE RISE	FIRST HOUR RATING	ENERGY FACTOR	WARRANTY TANK/PARTS
		USG (L)	BTU/h	FT (M)	GPH (LPH)	GPH (LPH)		YEARS
NATURAL GAS								
GPVL 40	200/201	40 (151)	40,000	10,100 (3,078)	44 (167)	73 (276)	0.70	6/6
GPVT 40	200/201	40 (151)	50,000	10,100 (3,078)	50 (189)	90 (341)	0.70	6/6
GPVL 50	200/201	50 (189)	40,000	10,100 (3,078)	44 (167)	90 (341)	0.70	6/6
GPVT 50	200/201	50 (189)	50,000	10,100 (3,078)	50 (189)	96 (363)	0.70	6/6
GPVX 50L	200/201	50 (189)	62,000	10,100 (3,078)	69 (261)	110 (416)	0.70	6/6
GPVL 60	200/201	60 (227)	42,000	10,100 (3,078)	46 (174)	106 (401)	0.70	6/6
GPVX 75L	200/201	75 (284)	72,000	10,100 (3,078)	80 (303)	155 (587)	0.68	6/6
NATURAL GAS								
HPVL 50	200/201	50 (189)	40,000	10,100 (3,078)	44 (167)	90 (341)	0.70	8/8
HPVX 50L	200/201	50 (189)	62,000	10,100 (3,078)	69 (261)	110 (416)	0.70	8/8

Natural gas models are series 200. Propane models are series 201.
All models comply with national energy efficiency regulations.

DIMENSIONS & SHIPPING WEIGHT

MODEL	INSTALLATION HEIGHT	HEIGHT TO TOP OF TANK	TANK DIAMETER	OVERALL DEPTH	HEIGHT TO DRAIN VALVE	HEIGHT TO GAS INLET	HEIGHT TO T&P	HEIGHT TO UPPER SIDE CONNECTION	HEIGHT TO LOWER SIDE CONNECTION	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	G IN (CM)	G IN (CM)	H IN (CM)	LB (KG)
NATURAL GAS										
GPVL 40	59 (150)	49 5/8 (126)	22 (56)	29 1/8 (74)	11 (28)	13 1/4 (34)	42 1/2 (108)	N/A	N/A	174 (79)
GPVT 40	68 1/2 (174)	59 1/4 (150)	20 (51)	27 1/8 (69)	11 (28)	13 1/4 (34)	53 1/8 (135)	N/A	N/A	176 (80)
GPVL 50 / HPVL 50	60 1/8 (153)	50 3/4 (129)	24 (61)	31 1/8 (79)	11 (28)	13 1/4 (34)	43 3/4 (111)	N/A	N/A	198 (90)
GPVT 50	68 1/8 (173)	58 3/4 (149)	22 (56)	29 1/8 (74)	11 (28)	13 1/4 (34)	51 3/4 (131)	N/A	N/A	192 (87)
GPVX 50L / HPVX 50L*	61 1/8 (155)	52 (132)	24 (61)	31 1/8 (79)	11 (28)	13 1/4 (34)	44 1/2 (113)	44 1/2 (113)	15 1/4 (39)	212 (96)
GPVL 60	67 1/4 (171)	57 7/8 (147)	24 (61)	31 1/8 (79)	11 (28)	13 1/4 (34)	50 3/8 (128)	N/A	N/A	216 (98)
GPVX 75L*	70 5/8 (179)	61 1/4 (156)	26 (66)	33 1/8 (84)	11 (28)	13 1/4 (34)	53 (135)	53 (135)	15 1/4 (39)	277 (126)

* Model has side connections



ProLine® XE Power Direct Vent

ENERGY STAR® qualified



Features

- ENERGY STAR® qualified (except 75 gallon model)
- Sealed combustion chamber design, eliminating the need for a FV sensor
- Ultra-quiet blower
- Convenient 3/4" side water connections for combination applications on high input 62,000 and 72,000 BTU units
- Can be vented with 2", 3" or 4" ULC S636 PVC, CPVC or polypropylene pipe up to 180 equivalent feet (see installation manual for full details)
- Zero clearance to combustibles
- Factory-installed heat trap nipples
- 2 or 4 year tank warranty extension kits are available



PERFORMANCE

MODEL	SERIES	CAPACITY	INPUT	MAXIMUM CERTIFIED ALTITUDE	RECOVERY RATE AT 90°F TEMPERATURE RISE	FIRST HOUR RATING	ENERGY FACTOR	WARRANTY TANK/PARTS
		USG (L)	BTU/h	FT (M)	GPH (LPH)	GPH (LPH)		YEARS
NATURAL GAS								
GPD L 40	200/201	40 (151)	40,000	10,100 (3,078)	44 (167)	71 (269)	0.71	6/6
GPDT 50	200/201	50 (189)	45,000	10,100 (3,078)	50 (189)	93 (352)	0.70	6/6
GPDC 50L*	200	50 (189)	58,000	5,400 (1,646)	67 (254)	100 (379)	0.71	6/6
GPDX 50L**	201	50 (189)	58,000	10,100 (3,078)	67 (254)	100 (379)	0.71	6/6
GPDX 75L	200/201	75 (284)	72,000	10,100 (3,078)	82 (310)	154 (583)	0.69	6/6

Natural gas models are series 200. Propane models are series 201.

*Available in natural gas only.

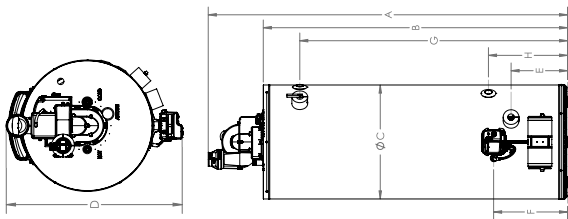
**Available in propane only.

All models comply with national energy efficiency regulations.

DIMENSIONS & SHIPPING WEIGHT

MODEL	INSTALLATION HEIGHT	HEIGHT TO TOP OF TANK	TANK DIAMETER	OVERALL DEPTH	HEIGHT TO DRAIN VALVE	HEIGHT TO GAS INLET	HEIGHT TO T&P	HEIGHT TO UPPER SIDE CONNECTION	HEIGHT TO LOWER SIDE CONNECTION	VENT DIAMETER	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	G IN (CM)	G IN (CM)	H IN (CM)	IN	LB (KG)
NATURAL GAS											
GPDL 40	58 1/4 (148)	49 1/2 (126)	22 (56)	29 7/8 (76)	11 (28)	13 1/4 (34)	42 3/8 (108)	N/A	N/A	2, 3 or 4	174 (79)
GPDT 50	67 1/2 (171)	58 7/8 (150)	22 (56)	29 7/8 (76)	11 (28)	13 1/4 (34)	51 3/4 (131)	N/A	N/A	2, 3 or 4	192 (87)
GPDC 50L / GPDX 50L *	68 7/8 (175)	60 1/4 (153)	22 (56)	29 7/8 (76)	11 (28)	13 1/4 (34)	52 3/4 (134)	52 3/4 (134)	15 1/4 (39)	3 or 4	200 (91)
GPDX 75L *	70 5/8 (179)	60 1/2 (154)	26 (66)	33 7/8 (86)	11 (28)	13 1/4 (34)	53 (134)	53 (134)	15 1/4 (39)	3 or 4	277 (126)

* Model has side connections



ProLine® Direct Vent

A unique balanced flue design



Features

- Thermopile design provides robust pilot to withstand down drafts and environmental conditions
- LED indicator light lets you know when pilot is in operation and provides diagnostic capabilities
- Easy temperature adjustment
- Use outside air for combustion
- Meet latest NRCAN energy efficiency standards
- No external power supply required
- 90" coaxial vent supplied with water heater
- Factory-installed plastic-lined nipples with heat traps
- Sealed combustion chamber design, eliminating the need for a flammable vapour sensor
- 2 or 4 year tank warranty extension kits are available



PERFORMANCE

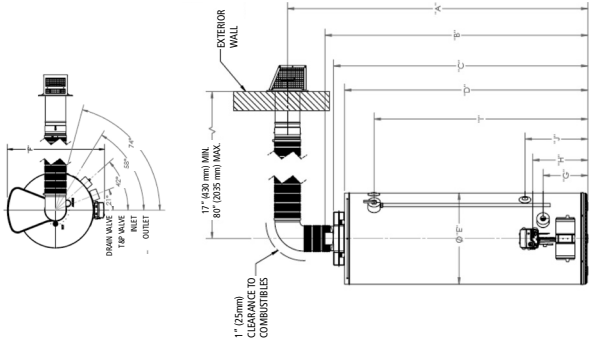
MODEL	SERIES	CAPACITY	INPUT	MAXIMUM CERTIFIED ALTITUDE	RECOVERY RATE AT 90° F TEMPERATURE RISE	FIRST HOUR RATING	ENERGY FACTOR	WARRANTY TANK/ PARTS
		USG (L)	BTU/h	FT (M)	GPH (LPH)	GPH (LPH)		YEARS
GDV 40L	300/301	40 (151)	38,000	7,700 (2,347)	42 (159)	72 (273)	0.63	6/6
GDV 50L	300/301	50 (189)	40,000	7,700 (2,347)	43 (163)	91 (344)	0.62	6/6
GDVT 50L	300/301	50 (189)	47,000	7,700 (2,347)	51 (193)	92 (348)	0.61	6/6

Natural gas models are series 300. Propane models are series 301.
All models comply with national energy efficiency regulations.

DIMENSIONS & SHIPPING WEIGHT

MODEL	HEIGHT TO CENTER OF VENT IN (CM)	HEIGHT TO TOP OF FLUE OUTLET IN (CM)	HEIGHT TO TOP OF AIR BOX IN (CM)	HEIGHT TO TOP OF HEATER IN (CM)	DIAMETER IN (CM)	OVERALL DEPTH IN (CM)	HEIGHT TO DRAIN IN (CM)	HEIGHT TO GAS INLET IN (CM)	HEIGHT TO T&P IN (CM)	HEIGHT TO SIDE TAP (HOT OUT) IN (CM)	HEIGHT TO SIDE TAP (COLD IN) IN (CM)	SHIPPING WEIGHT LB (KG)
GDV 40L	64 (163)	54 ³ / ₈ (138)	52 ¹ / ₂ (134)	49 ⁵ / ₈ (126)	22 (56)	29 (74)	10 ³ / ₄ (27)	13 ¹ / ₄ (34)	42 ³ / ₈ (108)	N/A	J IN (CM)	178 (81)
GDV 50L	73 (185)	63 ⁵ / ₈ (162)	61 ³ / ₄ (157)	58 ⁷ / ₈ (150)	22 (56)	29 (74)	10 ³ / ₄ (27)	13 ¹ / ₄ (34)	51 ⁵ / ₈ (132)	N/A	N/A	200 (91)
GDVT 50L*	74 (188)	64 ³ / ₈ (164)	62 ⁷ / ₈ (160)	60 (152)	22 (56)	29 (74)	10 ³ / ₄ (27)	13 ¹ / ₄ (34)	52 ³ / ₄ (134)	52 ³ / ₄ (134)	15 ¹ / ₄ (39)	215 (98)

*Model has side connections.



Vertex™ Power Direct Vent

96% Thermal Efficiency



50 Gallon Model Shown

Features

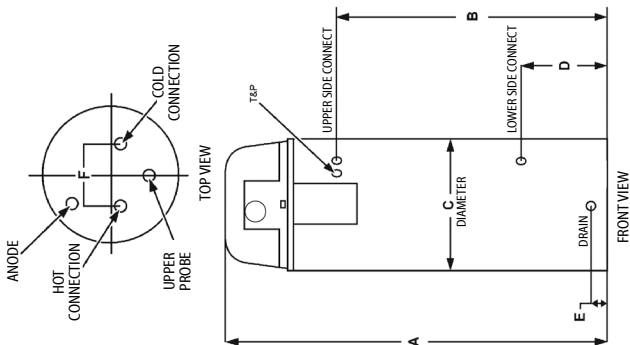
- Power Direct Vent design for installation versatility vents up to 128 equivalent feet using ULC S636 PVC, CPVC or polypropylene pipe (See manual for complete details)
- ENERGY STAR® qualified
- Side water connections for recirculating systems
- Advanced electronic control with large LCD display
- Blue Diamond® glass coating provides superior corrosion resistance compared to industry standard glass lining
- Fully submerged, spiral-shaped condensing heat exchanger
- Concentric vent kits and condensate neutralizer kits available
- Approved for one-pipe (PV) or two-pipe (PDV) venting



PERFORMANCE

MODEL	SERIES	CAPACITY		MAXIMUM CERTIFIED ALTITUDE	INPUT	RECOVERY RATE AT 90°F TEMPERATURE RISE	THERMAL EFFICIENCY	WARRANTY TANK/PARTS
		USG	L	FT (M)	BTU/h	GPH (LPH)		YEARS
NATURAL GAS								
GDHE-50	140/141	50	189	10,100 (3,078)	100,000	128 (485)	96%	6/6
GDHE-75	140/141	75	284	10,100 (3,078)	100,000	128 (485)	96%	6/6

Natural gas models are series 140. Propane models are series 141.
All models comply with national energy efficiency regulations.



DIMENSIONS & SHIPPING WEIGHT

MODEL	HEIGHT TO TOP OF TANK	HEIGHT TO T&P	HEIGHT TO UPPER SIDE CONNECTION	TANK DIAMETER	HEIGHT TO LOWER SIDE CONNECTION	HEIGHT TO DRAIN VALVE	OUTLET TO INLET	TOP WATER CONNECTIONS	SIDE WATER CONNECTIONS	GAS CONNECTION	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	B IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	IN NPT	IN NPT	IN NPT	LB (KG)
NATURAL GAS											
GDHE-50	66 3/4 (170)	49 1/4 (125)	49 1/4 (125)	22 (56)	15 3/4 (40)	3 (8)	8 (20)	3/4	3/4	1/2	255 (116)
GDHE-75	65 1/4 (166)	45 5/8 (116)	45 5/8 (116)	27 3/4 (71)	16 (41)	3 3/4 (10)	8 (20)	1	3/4	1/2	382 (173)

Vertex™ Power Vent

94% Thermal Efficiency



Features

- ENERGY STAR® qualified
- Power Vent design for installation versatility that vents up to 125 equivalent feet using ULC S636 PVC, CPVC or polypropylene pipe (See manual for complete details)
- Side-mounted taps for recirculating systems
- Intelli-Vent™ gas control with silicon nitride hot surface igniter
- Commercial-grade glass lining with two magnesium anode rods
- Available in Natural Gas only
- Blue Diamond® glass coating provides superior corrosion resistance compared to industry standard glass lining



PERFORMANCE

MODEL	SERIES	CAPACITY		MAXIMUM CERTIFIED ALTITUDE	INPUT	RECOVERY RATE AT 90°F TEMPERATURE RISE	THERMAL EFFICIENCY	WARRANTY TANK/PARTS
		USG	L	FT (M)	BTU/h	GPH (LPH)		YEARS
NATURAL GAS								
GPHE-50	120	50	189	5,300 (1,615)	76,000	96 (364)	94%	6/6

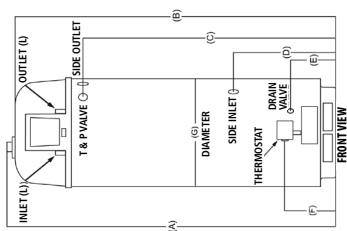
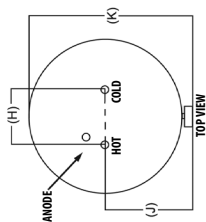
Natural gas only.

All models comply with national energy efficiency regulations.

DIMENSIONS & SHIPPING WEIGHT

MODEL	INSTALLATION HEIGHT	HEIGHT TO TOP OF TANK	HEIGHT TO T&P	HEIGHT TO UPPER SIDE CONNECTION	HEIGHT TO LOWER SIDE CONNECTION	HEIGHT TO DRAIN VALVE	HEIGHT TO THERMOSTAT	TANK DIAMETER	HOT CONNECTION TO COLD CONNECTION	WATER CONNECTION DEPTH FROM FRONT OF TANK	OVERALL DEPTH	TOP WATER CONNECTIONS	SIDE WATER CONNECTIONS	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	G IN (CM)	H IN (CM)	J IN (CM)	K IN (CM)	IN NPT	IN NPT	LB (KG)
NATURAL GAS														
GPHE-50*	71 (180)	68 ⁵ / ₈ (174)	52 (132)	52 (132)	21 (53)	9 ¹ / ₈ (23)	12 (30)	22 (56)	8 (20)	15 ³ / ₄ (40)	27 (69)	³ / ₄	³ / ₄	225 (102)

*Model has side connections.





Features

- High grade stainless steel tank with brass connections for years of dependable service – no anode required
- A submerged combustion chamber with spiral flue provides up to 96% thermal efficiency and ultra-low standby heat loss of approximately 1%
- Whisper quiet operation
- Self-diagnostic control system
- Fully serviceable from the front
- Direct vents up to 120' using ULC S636 PVC or CPVC pipe either through the wall or through the roof
- The perfect choice for combination systems



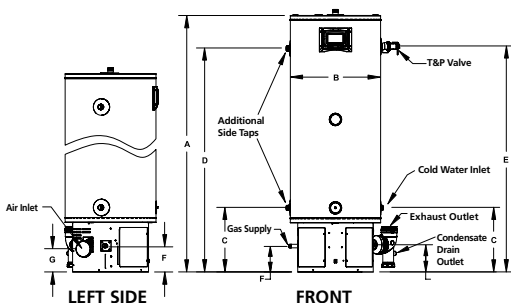
PERFORMANCE

MODEL	SERIES	CAPACITY		MAXIMUM CERTIFIED ALTITUDE	INPUT	RECOVERY RATE AT 90°F TEMPERATURE RISE	THERMAL EFFICIENCY	WARRANTY TANK/PARTS
		USG	L					FT (M)
NATURAL GAS								
PR34-100-2NV	200/201	34	129	7,700 (2,437)	100,000	129 (488)	96%	10/1
PR34-130-2NV	200/201	34	129	7,700 (2,437)	130,000	168 (636)	96%	10/1
PR34-150-2NV	200/201	34	129	7,700 (2,437)	150,000	190 (719)	94%	10/1
PR50-130-2NV	200/201	50	189	7,700 (2,437)	130,000	165 (625)	95%	10/1
PR50-150-2NV	200/201	50	189	7,700 (2,437)	150,000	190 (719)	95%	10/1
PR50-175-2NV	200/201	50	189	7,700 (2,437)	175,000	222 (840)	96%	10/1
PR50-199-2NV	200/201	50	189	7,700 (2,437)	199,000	253 (958)	96%	10/1

For propane models sub N with P. Natural gas models are series 200. Propane models are series 201.

Input, output and recovery may vary depending upon air inlet and exhaust outlet installations, consult manual for details.

All models comply with national energy efficiency regulations.



DIMENSIONS & SHIPPING WEIGHT

MODEL	HEIGHT TO TOP OF TANK	TANK DIAMETER	HEIGHT TO HEATING SYSTEM RETURN	HEIGHT TO COLD WATER INLET	HEIGHT TO HEATING SYSTEM OUTLET	HEIGHT TO T&P	HEIGHT TO GAS SUPPLY	HEIGHT TO AIR INLET	WATER CONNECTIONS	GAS CONNECTIONS	VENT DIAMETER	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	C IN (CM)	D IN (CM)	E IN (CM)	F IN (CM)	G IN (CM)	IN NPT	IN NPT	IN	LB (KG)
NATURAL GAS												
PR34-100-2NV	48 1/2 (123)	22 (56)	15 3/4 (40)	15 3/4 (40)	40 1/2 (103)	41 (104)	6 3/8 (16)	6 3/8 (16)	1	1/2	2 or 3	150 (68)
PR34-130-2NV	48 1/2 (123)	22 (56)	15 3/4 (40)	15 3/4 (40)	40 1/2 (103)	41 (104)	6 3/8 (16)	6 3/8 (16)	1	1/2	2 or 3	150 (68)
PR34-150-2NV	48 1/2 (123)	22 (56)	15 3/4 (40)	15 3/4 (40)	40 1/2 (103)	41 (104)	6 3/8 (16)	6 3/8 (16)	1	1/2	2 or 3	150 (68)
PR50-130-2NV	62 3/8 (158)	22 (56)	15 3/4 (40)	15 3/4 (40)	54 1/2 (138)	55 (140)	6 3/8 (16)	6 3/8 (16)	1	1/2	2 or 3	176 (80)
PR50-150-2NV	63 3/4 (162)	22 (56)	15 3/4 (40)	15 3/4 (40)	55 3/4 (142)	56 1/4 (143)	6 3/8 (16)	6 3/8 (16)	1	1/2	2 or 3	180 (82)
PR50-175-2NV	63 3/4 (162)	22 (56)	15 3/4 (40)	15 3/4 (40)	55 3/4 (142)	56 1/4 (143)	6 3/8 (16)	6 3/8 (16)	1	1/2	3	180 (82)
PR50-199-2NV	63 3/4 (162)	22 (56)	15 3/4 (40)	15 3/4 (40)	55 3/4 (142)	56 1/4 (143)	6 3/8 (16)	6 3/8 (16)	1	1/2	3	180 (82)

ProLine® & ProLine® Master Electric

Unique features and a broad range of models and sizes



Features

- Patented Styropour® base for added energy efficiency
- DynaClean™ diffuser dip tube helps reduce lime and sediment buildup and maximizes hot water output
- Blue Diamond® glass coating protects steel tank from corrosion and maximizes tank life
- Factory-installed plastic-lined nipples
- Thermostatically controlled, long life elements
- Brass drain valve
- Quick recovery models available, suitable for the builder market
- CFC-free foam insulation
- Conveniently located T&P and drain valve for ease of installation and serviceability
- CoreGard™ magnesium anode with a stainless steel core protects the tank against corrosion
- 2 or 4 year tank warranty extension kits are for 6 year models



PERFORMANCE

MODEL	SERIES	CAPACITY			ELEMENTS (UPPER AND LOWER)		STANDBY LOSS	FIRST HOUR RATING	WARRANTY TANK/PARTS
		IG	USG	L	WATTS	VOLTS	WATTS	GPH (LPH)	YEARS
TOP ENTRY									
EPSX 50	250	40	50	182	3000	208	53	60 (227)	6/6
EPSX 50	250	40	50	182	3000+	240	53	60 (227)	6/6
EPSX 50	250	40	50	182	3800++	240	53	60 (227)	6/6
EPSX 50	250	40	50	182	4500	208	53	60 (227)	6/6
EPSX 50	250	40	50	182	4500+++	240	53	60 (227)	6/6
EPSX 50	250	40	50	182	5500	208	53	60 (227)	6/6
EPSX 50	250	40	50	182	6000++++	240	53	60 (227)	6/6
ECT 80	250	60	80	287	3000	208	78	81 (307)	6/6
ECT 80	250	60	80	287	3000+	240	78	81 (307)	6/6
ECT 80	250	60	80	287	3800++	240	78	81 (307)	6/6
ECT 80	250	60	80	287	4500	208	78	81 (307)	6/6
ECT 80	250	60	80	287	4500+++	240	78	81 (307)	6/6
ECT 80	250	60	80	287	5500	208	78	81 (307)	6/6
ECT 80	250	60	80	287	6000++++	240	78	81 (307)	6/6
TOP ENTRY									
HPSX 50*	250	40	50	182	3000+	240	53	60 (227)	8/8
HPSX 50*	250	40	50	182	3800++	240	53	60 (227)	8/8
HCT 80*	250	60	80	287	4500+++	240	78	81 (307)	8/8
BOTTOM ENTRY									
EJSH 50	250	40	50	182	3000	208	65	60 (227)	6/6
EJSH 50	250	40	50	182	3000+	240	65	60 (227)	6/6
EJSH 50	250	40	50	182	4500	208	65	60 (227)	6/6
EJSH 50	250	40	50	182	4500++	240	65	60 (227)	6/6
EJTH 80	250	60	80	287	3000	208	80	81 (307)	6/6
EJTH 80	250	60	80	287	3000+	240	80	81 (307)	6/6
EJTH 80	250	60	80	287	4500	208	80	81 (307)	6/6
FJTH 80	250	60	80	287	4500++	240	80	81 (307)	6/6

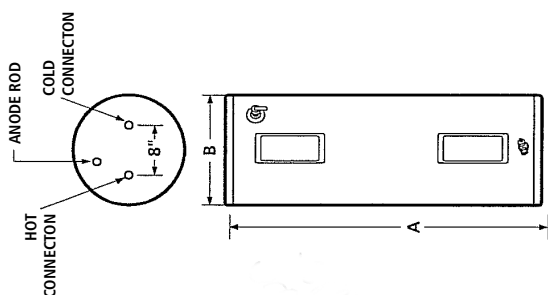
*Model has incoloy elements. All models comply with national energy efficiency regulations.

+Model is dual-rated. At 208V wattage is 2253.

++Model is dual-rated. At 208V wattage is 2854.

+++Model is dual-rated. At 208V wattage is 3380.

++++Model is dual-rated. At 208V wattage is 4507.



DIMENSIONS & SHIPPING WEIGHT

MODEL	HEIGHT TO TOP OF TANK A	DIAMETER B	SHIPPING WEIGHT
	IN (CM)	IN (CM)	LB (KG)
TOP ENTRY			
EPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
EPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
EPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
EPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
EPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
EPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
EPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
ECT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
ECT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
ECT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
ECT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
ECT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
ECT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
ECT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
TOP ENTRY			
HPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
HPSX 50	48 ³ / ₄ (124)	22 (56)	125 (57)
HCT 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
BOTTOM ENTRY			
EJSH 50	48 (122)	22 (56)	122 (55)
EJSH 50	48 (122)	22 (56)	122 (55)
EJSH 50	48 (122)	22 (56)	122 (55)
EJSH 50	48 (122)	22 (56)	122 (55)
EJTH 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
EJTH 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
EJTH 80	60 ¹ / ₂ (154)	24 (61)	170 (77)
EJTH 80	60 ¹ / ₂ (154)	24 (61)	170 (77)

Space Saver® Electric

Put hot water right where you need it



Features

- Designed for installation in cottages, offices, mobile homes and other applications where space is limited
- Meets NRCAN energy efficiency standards
- Personnel protector covers elements and controls for added safety



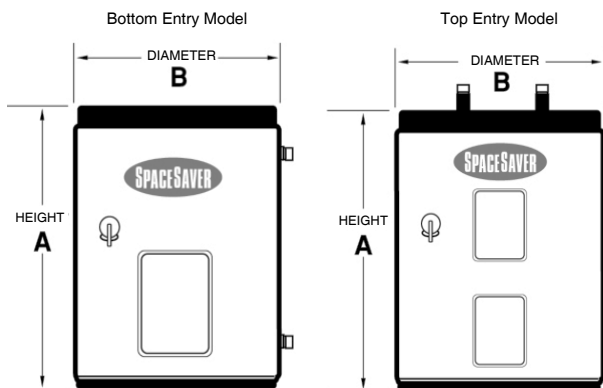
PERFORMANCE

MODEL	SERIES	CAPACITY			INPUT		RECOVERY RATE AT 90°F TEMPERATURE RISE	STANDBY LOSS	WARRANTY TANK/PARTS
		IG	USG	L	WATTS	VOLTS	GPH (LPH)	WATTS	YEARS
PLUG IN SINGLE ELEMENT MODEL									
SS025SE15	N/A	2	2.5	10	1500	120	7 (26)	N/A	5/1
BOTTOM ENTRY SINGLE ELEMENT MODELS									
SS06SEB15	N/A	5	6	23	1500	120	7 (26)	N/A	6/1
SS06SEB30	N/A	5	6	23	3000+	240	14 (53)	N/A	6/1
SS12SEB15	N/A	9	12	43	1500	120	7 (26)	N/A	6/1
SS12SEB30	N/A	9	12	43	3000+	240	14 (53)	N/A	6/1
SS620SSEB-15K	100	14	19	65	1500	120	7 (26)	51	6/1
SS620SSEB-30	100	14	19	65	3000+	240	14 (53)	51	6/1
SS630SSEBN-15K	100	22	30	108	1500	120	7 (26)	48	6/1
SS630SSEBN-30	100	22	30	108	3000+	240	14 (53)	48	6/1
TOP ENTRY DOUBLE ELEMENT MODELS									
SS640SDE3-15K	100	30	40	143	1500	120	7 (26)	54	6/1
SS640SDE3-30X	100	30	40	143	3000	208	14 (53)	54	6/1
SS640SDE3-30	100	30	40	143	3000+	240	14 (53)	54	6/1
LOWBOY TOP ENTRY DOUBLE ELEMENT MODELS									
SS630LDE-45	250	22	30	108	4500++	240	20 (76)	53	6/1
SS640LDE-45	250	30	40	143	4500++	240	20 (76)	62	6/1
SS650LDE-45	250	40	50	182	4500++	240	20 (76)	64	6/1

*Model is dual-rated. At 208V wattage is 2253.

++Model is dual-rated. At 208V wattage is 3380.

All models except LOWBOY TOP ENTRY DOUBLE ELEMENT MODELS comply with national energy efficiency regulations. SS630LDE-45 and SS640LDE-45 are ON compliant.



DIMENSIONS & SHIPPING WEIGHT

MODEL	HEIGHT	DIAMETER*	WIDTH	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	LB (KG)
PLUG IN SINGLE ELEMENT MODEL				
SS025SE15	14 (36)	11 (28)	14 (36)	20 (9)
BOTTOM ENTRY SINGLE ELEMENT MODELS				
SS06SEB15	15 ¼ (39)	14 ¼ (36)	N/A	35 (16)
SS06SEB30	15 ¼ (39)	14 ¼ (36)	N/A	35 (16)
SS12SEB15	22 ¾ (58)	16 (41)	N/A	55 (25)
SS12SEB30	22 ¾ (58)	16 (41)	N/A	55 (25)
SS620SSEB-15K	25 ½ (65)	20 (51)	N/A	65 (30)
SS620SSEB-30	25 ½ (65)	20 (51)	N/A	65 (30)
SS630SSEBN-15K	30 (76)	22 (56)	N/A	101 (46)
SS630SSEBN-30	30 (76)	22 (56)	N/A	101 (46)
TOP ENTRY DOUBLE ELEMENT MODELS				
SS640SDE3-15K	50 (127)	22 (56)	N/A	103 (47)
SS640SDE3-30X	50 (127)	22 (56)	N/A	103 (47)
SS640SDE3-30	50 (127)	22 (56)	N/A	103 (47)
LOWBOY TOP ENTRY DOUBLE ELEMENT MODELS				
SS630LDE-45	31 (79)	22 (56)	N/A	96 (44)
SS640LDE-45	33 ½ (85)	24 (61)	N/A	113 (51)
SS650LDE-45	34 (86)	26 ½ (67)	N/A	164 (74)

*Depth on model SS025SE15

ProLine® XE Heat Pump

ENERGY STAR® qualified



Features

- Improved efficiency design to ensure available hot water at the lowest possible cost
- Absorbs ambient heat from surrounding air to heat water using a compressor and environmentally friendly R134a refrigerant
- Up to a 3.61 Energy Factor (EF) Rating conserves energy and exceeds ENERGY STAR® qualifications
- Select from Efficiency, Hybrid, or Electric modes to match heating requirements to environmental conditions
- Hybrid mode automatically adjusts between compressor and element, depending upon heat requirements
- Vacation mode reduces operating costs and provides freeze protection during extended absence
- Dual voltage 208/240 VAC 60Hz single phase



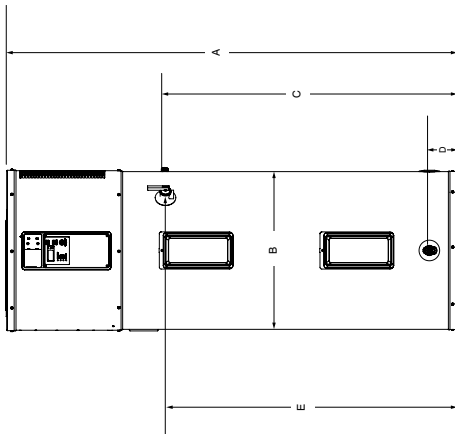
PERFORMANCE

MODEL	SERIES	CAPACITY USG (L)	INPUT	ENERGY FACTOR BY MODE			FIRST HOUR RATING BY MODE GPH (LPH)		
			WATTS	EFFICIENCY	HYBRID	ELECTRIC	EFFICIENCY	HYBRID	ELECTRIC
HPTU-50N	120	50 (189)	4500	3.61	3.24	0.93	44.4 (168)	70 (265)	57.3 (217)
HPTU-66N	120	66 (250)	4500	3.44	3.17	0.92	62.5 (237)	80 (303)	78.6 (298)
HPTU-80N	120	80 (303)	4500	3.27	3.06	0.93	76.3 (289)	95 (360)	90.1 (341)

Requires 30 amp breaker.
Top T&P option not available

DIMENSIONS & SHIPPING WEIGHT

MODEL	INSTALLATION HEIGHT	TANK DIAMETER	HEIGHT TO SIDE TAP (HOT OUT)	HEIGHT TO SIDE TAP (COLD IN)	HEIGHT TO DRAIN VALVE	HEIGHT TO T&P	SHIPPING WEIGHT
	A IN (CM)	B IN (CM)	C IN (CM)	D IN (CM)	D IN (CM)	E IN (CM)	LB (KG)
HPTU-50N	63 (160)	22 (56)	40 ⁵ / ₈ (103)	3 ³ / ₄ (10)	3 ³ / ₄ (10)	40 ¹ / ₂ (103)	196 (89)
HPTU-66N	61 (155)	27 (69)	38 (97)	4 (10)	4 (10)	38 (97)	289 (131)
HPTU-80N	69 (175)	27 (69)	46 (117)	4 (10)	4 (10)	46 (117)	307 (139)



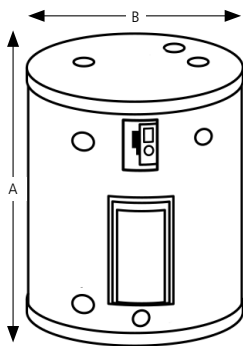
Flow THRU®

Storage tanks specifically designed to complement our series of tankless water heaters



Features

- Exclusive TankSaver® design works to prolong tank life
- Factory-installed dielectric nipples for ease of installation
- T&P valve conveniently located on the side
- Top access junction box for convenient electrical hook-up
- Equipped with an adjustable thermostat, pre-wired and ready for connection to a circulator pump



SPECIFICATIONS

MODEL	SERIES	CAPACITY		HEIGHT	DIAMETER	WATER CONNECTIONS	SHIPPING WEIGHT
		USG	L	A IN (CM)	B IN (CM)	IN NPT	LB (KG)
GST 20	200	19	67	25 ½ (65)	19 (48)	¾	65 (29)
GST 30	200	30	108	31 ½ (80)	22 (56)	¾	94 (43)

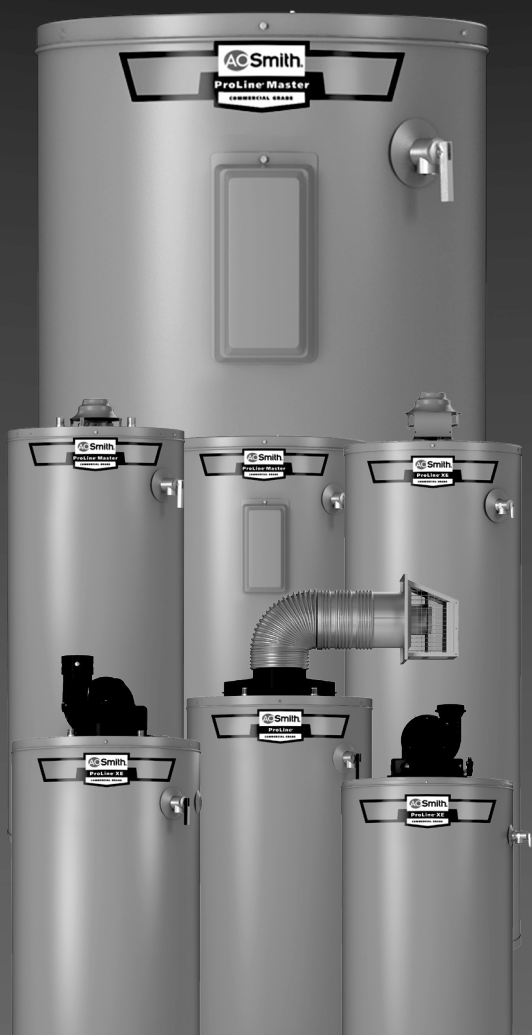
Tankless







RESIDENTIAL WATER HEATERS
WITH
**COMMERCIAL-GRADE
COMPONENTS**



A. O. Smith powered by Takagi Tankless

High-efficiency condensing models



Features

- ENERGY STAR® qualified
- 0.95 Energy Factor
- Durable primary heat exchanger is made of commercial-grade copper while the secondary heat exchanger is made of Type 316L stainless steel, preventing corrosion and prolonging the life of the heater
- Available inputs: up to 199,000 BTU
- Can be vented using ULC S636 PVC, CPVC, polypropylene pipe or Cat. III/IV stainless steel
- Factory-installed power cord and integrated controls
- Concentric vent kit available
- Fully modulating
- New 540P model with integrated recirculation pump
- Easy-link up to 4 units with no additional accessories (ATI-540 model only)
- Multi-link up to 20 units with a multi-unit controller (ATI-540H model only)
- 15-year limited warranty on heat exchanger in residential applications
- 6-year limited warranty on heat exchanger in commercial applications
- 5-year limited warranty on all parts

Flow Rate Guide

Temperature Rise vs. Gallons per minute

Temperature Rise (°F)	ATI-240H	ATI-340H	ATI-540H ATI-540P
30	6.6	8.0	10.0
35	6.6	8.0	10.0
40	6.6	8.0	9.5
45	6.6	7.6	8.4
50	6.1	6.8	7.6
55	5.5	6.2	6.9
60	5.1	5.7	6.3
65	4.7	5.3	5.8
70	4.3	4.9	5.4
75	4.1	4.6	5.0
80	3.8	4.3	4.7
85	3.6	4.0	4.4
90	3.4	3.8	4.2
95	3.2	3.6	4.0
100	3.0	3.4	3.8

Flow rate is determined by temperature rise. To determine your temperature rise, subtract the incoming water temperature from the set output temperature. All units are factory set to 120°F or 122°F but can be changed.
Flow rates are based on default set temperatures.

PERFORMANCE & DIMENSIONS

MODEL	APPLICATION	INPUT	FLOW RATE GPM AT 70°F RISE	ENERGY FACTOR	HEIGHT	WIDTH	DEPTH	SHIPPING WEIGHT
		BTU/h			IN (CM)	IN (CM)	IN (CM)	LB (KG)
NATURAL GAS								
ATI-240H-DV-N	Residential	15,000 - 160,000	4.3	0.95	22 ½ (57)	17 ¾ (45)	10 ¾ (27)	58 (26)
ATI-340H-DV-N	Residential	15,000 - 180,000	4.9	0.95	22 ½ (57)	17 ¾ (45)	10 ¾ (27)	58 (26)
ATI-540H-DV-N	Residential/ Commercial	15,000 - 199,000	5.4	0.95	22 ½ (57)	17 ¾ (45)	10 ¾ (27)	59 (27)
ATI-540P-N	Residential/ Commercial	15,000 - 199,000	5.4	0.95	23 ⅝ (60)	17 ¾ (45)	11 ¼ (29)	61 (28)
PROPANE								
ATI-240H-DV-P	Residential	13,000 - 160,000	4.3	0.95	22 ½ (57)	17 ¾ (45)	10 ¾ (27)	58 (26)
ATI-340H-DV-P	Residential	13,000 - 180,000	4.9	0.95	22 ½ (57)	17 ¾ (45)	10 ¾ (27)	58 (26)
ATI-540H-DV-P	Residential/ Commercial	13,000 - 199,000	5.4	0.95	22 ½ (57)	17 ¾ (45)	10 ¾ (27)	59 (27)
ATI-540P-P	Residential/ Commercial	15,000 - 199,000	5.4	0.95	23 ⅝ (60)	17 ¾ (45)	11 ¼ (29)	61 (28)

A. O. Smith powered by Takagi Tankless

Non-condensing models



Features

- Durable primary heat exchanger is made of commercial-grade copper which has 8 times the tensile strength of standard copper and prevents corrosion, prolonging the life of the heater
- Built-in freeze protection
- Advanced safety features help prevent scalding dangers
- Factory-installed power cord
- Easy-link up to 4 units with no additional accessories (ATI-910 model only)
- Multi-link up to 10 units with a multi-unit controller (ATI-910 model only)
- 15-year limited warranty on heat exchanger in residential applications
- 6-year limited warranty on heat exchanger in commercial applications
- 5-year limited warranty on all parts

Flow Rate Guide

Temperature Rise vs. Gallons per minute

Temperature Rise (°F)	ATI-110	ATI-310	ATI-510	ATI-910
30	6.6	8.0	10.0	14.5
35	6.6	8.0	9.3	14.5
40	5.7	7.8	8.1	14.5
45	5.1	6.9	7.2	13.5
50	4.6	6.2	6.5	12.2
55	4.2	5.7	5.9	11.1
60	3.8	5.2	5.4	10.1
65	3.5	4.8	5.0	9.4
70	3.3	4.4	4.7	8.7
75	3.1	4.1	4.3	8.1
80	2.9	3.9	4.1	7.6
85	2.7	3.7	3.8	7.2
90	2.5	3.5	3.6	6.8
95	2.4	3.3	3.4	6.4
100	2.3	3.1	3.3	6.1

Flow rate is determined by temperature rise. To determine your temperature rise, subtract the incoming water temperature from the set output temperature. All units are factory set to 120°F or 122°F but can be changed. Flow rates are based on default set temperatures.

PERFORMANCE & DIMENSIONS

MODEL	APPLICATION	INPUT RANGE	FLOW RATE GPM AT 70°F RISE	ENERGY FACTOR	HEIGHT	WIDTH	DEPTH	SHIPPING WEIGHT
		BTU/h						
NATURAL GAS								
ATI-110-N	Residential	19,500 - 140,000	3.3	0.82	20 1/4 (52)	13 3/4 (35)	7 3/4 (20)	33 (15)
ATI-310-N	Residential	11,000 - 190,000	4.4	0.82	20 1/4 (52)	13 3/4 (35)	9 1/2 (24)	38 (17)
ATI-510-N	Residential	11,000 - 199,000	4.7	0.83	20 1/4 (52)	13 3/4 (35)	9 1/2 (24)	39 (18)
ATI-910-N	Commercial	15,000 - 380,000	8.7	N/A*	25 1/4 (64)	24 7/8 (63)	12 1/4 (31)	112 (51)
ATI-910-AN**	Commercial	15,000 - 380,000	8.7	N/A*	25 1/4 (64)	24 7/8 (63)	12 1/4 (31)	112 (51)
PROPANE								
ATI-110-P	Residential	19,500 - 140,000	3.3	0.83	20 1/4 (52)	13 3/4 (35)	7 3/4 (20)	33 (15)
ATI-310-P	Residential	11,000 - 190,000	4.4	0.82	20 1/4 (52)	13 3/4 (35)	9 1/2 (24)	38 (17)
ATI-510-P	Residential	11,000 - 199,000	4.7	0.82	20 1/4 (52)	13 3/4 (35)	9 1/2 (24)	39 (18)
ATI-910-P	Commercial	15,000 - 380,000	8.7	N/A*	25 1/4 (64)	24 7/8 (63)	12 1/4 (31)	112 (51)
ATI-910-AP**	Commercial	15,000 - 380,000	8.7	N/A*	25 1/4 (64)	24 7/8 (63)	12 1/4 (31)	112 (51)

* ATI-910N and ATI-910P have a thermal efficiency of 80%. ATI-910AN and ATI-910AP have a thermal efficiency of 82%.

** ASME models

A. O. Smith powered by Takagi Tankless

Non-condensing concentric vent models



Features

- Concentric vent design
- Field convertible from natural gas to propane
- Maximum flow rates up to 10.0 GPM
- Copper heat exchanger: 25x better heat transfer than stainless steel
- Easy-Link up to 4 units with no additional parts or accessories needed (ATI-510C only)
- Multi-link up to 20 units with a Multi-Unit Controller (ATI-510C only)
- Built-in freeze protection
- 15-year limited warranty on heat exchanger in residential applications
- 6-year limited warranty on heat exchanger in commercial applications
- 5-year limited warranty on all parts



(510C-NI models only)



ANSI Z21.10.3

Flow Rate Guide

Temperature Rise vs. Gallons per minute

Temperature Rise (°F)	ATI-110C	ATI-310C	ATI-510C
30	6.6	8.0	10.0
35	6.6	8.0	9.3
40	5.7	7.8	8.1
45	5.1	6.9	7.2
50	4.6	6.2	6.5
55	4.2	5.7	5.9
60	3.8	5.2	5.4
65	3.5	4.8	5.0
70	3.3	4.4	4.7
75	3.1	4.1	4.3
80	2.9	3.9	4.1
85	2.7	3.7	3.8
90	2.5	3.5	3.6
95	2.4	3.3	3.4
100	2.3	3.1	3.3

Flow rate is determined by temperature rise. To determine your temperature rise, subtract the incoming water temperature from the set output temperature. All units are factory set to 120°F or 122°F but can be changed.
Flow rates are based on default set temperatures.

PERFORMANCE & DIMENSIONS

MODEL	APPLICATION	INPUT RANGE BTU/h	INLET GAS PRESSURE*		FLOW RATE GPM AT 70°F RISE	ENERGY FACTOR	HEIGHT IN (CM)	WIDTH IN (CM)	DEPTH IN (CM)	SHIPPING WEIGHT LB (KG)
			MIN. IN. W.C.	MAX. IN. W.C.						
NATURAL GAS										
ATI-110C-NI	Residential	15,000 - 140,000	5.0	10.5	3.3	0.82	20 ½ (52)	13 ¾ (35)	10 ½ (27)	51 (23)
ATI-310C-NI	Residential	15,000 - 190,000	5.0	10.5	4.5	0.82	20 ½ (52)	13 ¾ (35)	10 ½ (27)	51 (23)
ATI-510C-NI	Residential	15,000 - 199,000	5.0	10.5	4.7	0.82	20 ½ (52)	13 ¾ (35)	10 ½ (27)	51 (23)

15- 150 psi water pressure. 40 psi or above recommended for maximum flow.

*For Propane, minimum inlet gas pressure is 8.0 in. W.C. and maximum inlet gas pressure is 14.0 in. W.C.

**Current numbers based on factory testing; 0.5 GPM required for activation; 0.4 GPM required for continuous fire after initial ignition.

Models are certified from sea level to 10,100 ft. (3,078 m) elevations.



An Energy Efficient and
Environmentally-friendly
Solution

ProLine® XE HEAT PUMP

Features

- Absorbs ambient heat from surrounding air to heat water using a compressor and environmentally-friendly R134a refrigerant
- Improved efficiency design to ensure available hot water at the lowest possible cost
- Up to a 3.61 Energy Factor (EF) Rating conserves energy and exceeds ENERGY STAR® qualifications
- Select from Efficiency, Hybrid, or Electric modes to match heating requirements to environmental conditions
- Hybrid mode automatically adjusts between compressor and element, depending upon heat requirements
- Vacation mode reduces operating costs and provides freeze protection during extended absence



Appendices

Appendices

Reference Calculations and Conversions for Electricity

Ohm's Law

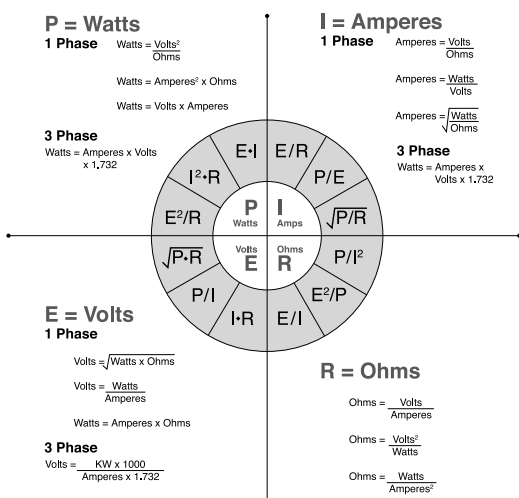
Ohm's Law defines the relationships between (P) power, (E) voltage, (I) current, and (R) resistance. One ohm is the resistance value through which one volt will maintain a current of one ampere.

(I) Current is what flows on a wire or conductor like water flowing down a river. Current flows from points of high voltage to points of low voltage on the surface of a conductor. Current is measured in (A) amperes or amps.

(E) Voltage is the difference in electrical potential between two points in a circuit. It's the push or pressure behind current flow through a circuit, and is measured in (V) volts.

(R) Resistance determines how much current will flow through a component. Resistors are used to control voltage and current levels. A very high resistance allows a small amount of current to flow. A very low resistance allows a large amount of current to flow. Resistance is measured in ohms.

(P) Power is the amount of current times the voltage level at a given point measured in wattage or watts.



Appendices

Reference Guide for Water Heating

One US gallon of fresh water weighs 8.333 lb.

Water expands 4.34% heated from 40° to 212° F.

1 BTU = Amount of heat required to raise the temperature of 1 lb. of water 1° F.

$$\text{Recovery GPH (Electric)} = \frac{\text{KW} \times 3412}{8.33 \times \Delta T}$$

$$\text{Recovery GPH (Gas)} = \frac{\text{Input} \times \text{Efficiency}}{8.33 \times \Delta T}$$

$$\text{Req. BTU Input} = \frac{\text{Water Heater Capacity} \times 8.33 \times \Delta T}{\% \text{ Efficiency}}$$

First Hour Draw (FHD)

$$\text{FHD} = (\text{Storage} \times \% \text{ Efficiency}) + \text{Recovery}$$

% of hot and cold water needed to be mixed to obtain a desired temperature

$$\text{Hot water percentage} = \frac{M-C}{H-C}$$

$$\text{Cold water percentage} = \frac{H-M}{H-C}$$

Water C = Cold Water Temperature

H = Hot Water Temperature

M = Mixed Water Temperature

$$\% \text{ Efficiency} = \frac{\text{GPH} \times 8.33 \times \text{Temp. Rise}}{\text{BTU/Hr. Input}}$$

Appendices

Reference Guide for Water Heating

$$\text{BTU/Output} = \text{GPH} \times 8.33 \text{ lbs./Gal.} \times \text{Temp. Rise}$$

$$\text{BTU/Input} = \frac{\text{GPH} \times 8.33 \times \text{Temp. Rise}}{\% \text{ Efficiency}}$$

$$\text{KW} = \frac{\text{GPH} \times 8.33 \times \text{Temp. Rise}}{3413}$$

Temperatures

To convert from degrees Centigrade (C) to degrees Fahrenheit (F) multiply the number of degrees C by 9/5 (or 1.8) and add 32.

To convert from degrees Fahrenheit (F) to degrees Centigrade (C) first subtract 32 from the number of degrees F then multiply the remainder by 5/9 (or 0.556).

Gas/Oil

Gas		BTU
1 lb. of Butane	=	21,300
1 Gal. of Butane	=	102,600
1 Cu. Ft. of Butane	=	3,260
1 Cu. Ft. of Manufactured	=	530
1 Cu. Ft. of Mixed	=	850
1 Cu. Ft. of Natural	=	1,075
1 lb. of Propane	=	21,600
1 Gal. of Propane	=	91,700
1 Cu. Ft. of Propane	=	2,570

Appendices

Reference Guide for Water Heating

Oil vs. Electric vs. Propane vs. Natural Gas

Oil 1 litre = 36,515 BTUs*
Example Price = 60.0¢/litre

Electric 1 Kilowatt Hour = 3,413 BTUs*
Example Price = 10.1¢/KW (kilowatt)

Propane 1 litre = 24,197 BTUs*
Example Price = 63.0¢/litre

Natural Gas 1 M³ 35,310 BTUs*
Example Price = 44.0¢/M³ (cubic metre)**

Formula
$$\frac{\text{BTUs per Unit} \times \text{Efficiency}}{\text{Cost per Unit}}$$

Example: Propane = $\frac{24,197}{0.63} \times 92\% = 35335 \text{ BTUs per } \1.00

GST is extra on all prices.

* Information supplied by The Ontario Ministry of Energy.

** This price reflects delivery charge and monthly administration charge to service your account.

Formulas and Facts

- 1 gallon of water weighs 8.33 lbs.
- 1 gallon of water has a volume of 231 cubic inches
- 1 cubic foot of water weighs 62.38 lbs. and contains 7.48 gallons of water
- 100 feet of 3/4" copper pipe contains 2.5 gallons of water; 1" pipe contains 4.3 gallons
- 8.33 BTU will raise 1 gallon of water 1° F at 100% efficiency (electricity)

Appendices

Reference Guide for Water Heating

- 11 BTUs are required to raise 1 gallon of water 1° F at 70% efficiency (gas)
- 3,412 BTUs equal 1 kilowatt hour (KW)
- 1 KW will raise 410 gallons of water 1° F at 100% efficiency
- 1 BTU x 0.293 = watts
- 1 KW = 1000 watts
- 2.42 watts are required to raise 1 gallon of water 1° F
 - 1 KW will raise 10.25 gallons of water 40° F at 100% efficiency
 - 1 KW will raise 6.8 gallons of water 60° F at 100% efficiency
 - 1 KW will raise 5.1 gallons of water 80° F at 100% efficiency
 - 1 KW will raise 4.1 gallons of water 100° F at 100% efficiency

Formula for mixing hot water

$$\frac{M-C}{H-C} = \text{Percent of hot water required to produce desired mixed temperature}$$

Where M = mixed water temperature; C = cold water temperature;
H = hot water temperature

For example: How much of a shower is hot water and how much is cold water?

My shower temperature is 105° F, my water heater thermostat is set on 120° F and the cold water inlet temperature is 50° F.

$$\frac{105 - 50 = 55}{120 - 50 = 70} = 79\% \text{ of the shower is } 120^{\circ} \text{ hot water}$$

This formula for mixing hot water is important when explaining a NOT ENOUGH HOT WATER trouble call and the water heater is functioning properly.

Appendices

Reference Guide for Water Heating

ELECTRIC	GAS
Energy Costs:	Energy Costs:
KW x fuel costs = energy costs	Cubic feet x fuel costs = energy costs
$100 \times 0.05 = \$5.00$	$100 \times 0.75 = \$7.50$
To obtain gallons per hour (GPH) recovery $\frac{\text{WATTS}}{2.42 \times (\text{temp rise } ^\circ \text{F})}$	To obtain gallons per hour (GPH) recovery $\frac{\text{HOURLY INPUT (BTUs)}}{11.0 \times (\text{temp rise } ^\circ \text{F})}$
I have a 30-gallon electric heater, non-simultaneous operation, 4,500 watt elements. What is the recovery GPH if my cold water is 40° F and my thermostat is set to 120° F? $\frac{4,500}{2.42 \times 80} = 23 \text{ gallons per hour}$	I have a 30-gallon gas heater, rated at 40,000 BTUs. What is the recovery GPH if my cold water is 40° F and my thermostat is set to 120° F? $\frac{40,000}{11.0 \times 80} = 45 \text{ gallons per hour}$
Temperature Rise (° F) $\frac{\text{WATTS}}{2.42 \times \text{GPH}}$	Temperature Rise (° F) $\frac{\text{HOURLY INPUT (BTUs)}}{11.0 \times \text{GPH}}$
I have a 30-gallon electric heater, non-simultaneous operation, 4,500 watt elements. What is the maximum temperature rise if the heater can recover 23 gallons per hour? $\frac{4,500}{2.42 \times 23 \text{ rise}} = 80^\circ \text{ temp}$	I have a 30-gallon gas heater, rated at 40,000 BTUs. What is the maximum temperature rise if the heater can recover 45 gallons per hour? $\frac{40,000}{11.0 \times 45 \text{ rise}} = 80^\circ \text{ temp}$

Appendices

Reference Guide for Water Heating

Oil		BTU
1 Gal. #1 Fuel	=	136,000
1 Gal. #2 Fuel	=	138,500
1 Gal. #3 Fuel	=	141,000
1 Gal. #5 Fuel	=	148,500
1 Gal. #6 Fuel	=	152,000

1 lb. of Gas = 28" Water Column

1 lb. of Gas = 16 oz.

100 Cu. Ft. = 1 therm.

Conversions

Multiply	By	To Obtain
BTU/HR	0.293	W
Ft.	0.3048	m
Ft./min., fpm	0.00508	m/s
Ft. ²	0.0929	m ²
Ft. ³	0.0283	m ³
Gallon (U.S. 231 in ³)	3.79	L
Gallon	0.00379	m ³
Horsepower (boiler)	9.81	KW
Inch	25.4	mm
Mile	1.61	km
Pound lb. (mass)	0.454	kg
Psi	6.89	kPa

Notes

[illegible]



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