



TANKLESS WATER HEATERS





ATHR

X3® Scale Prevention Technology

The other major differentiator isn't just the heat exchanger—it's **what protects it**.

Most tankless manufacturers recommend:

- Annual descaling in hard-water areas.
- Isolation valves for flushing.
- Vinegar or chemical cleaning.

The Adapt X3 models use an integrated **X3® Scale Prevention Technology** designed to inhibit mineral buildup inside the heat exchanger. A. O. Smith states this can extend heat exchanger life by up to three times and significantly reduce or eliminate routine descaling under many water conditions.

It's worth noting that many plumbing professionals still recommend periodic inspection and maintenance, especially in very hard-water areas, even with X3 technology.

**Adapt®+ Premium Condensing
Ultra-Low NOx Natural Gas Tankless
Water Heater with X3® Scale
Prevention Technology. Internal
Recirculation.**

Adapt+ Premium – Helical Stainless Heat Exchanger

This is the biggest difference. Instead of using separate copper and stainless exchangers, the Adapt+ uses **one heavy-duty stainless-steel helical heat exchanger**.

Why that's different

Most manufacturers use:

Burner



Copper heat exchanger



Secondary stainless
exchanger



Vent

The Adapt+ instead routes water through a **single multi-pass helical stainless-steel exchanger**, eliminating the need for a separate secondary exchanger. According to A. O. Smith, this reduces weld points, improves corrosion resistance, and simplifies the heat-transfer path.

Benefits

- Fewer potential leak points.
- Excellent corrosion resistance.
- Uniform heat transfer.



ATM

**Adapt® SC Standard Condensing
Ultra-Low NOx BTU Natural Gas
Tankless Water Heater available
with or without X3® Scale
Prevention Technology**



ATI

**Adapt® NC Non-Condensing Ultra-
Low NOx Indoor Natural Gas
Tankless Water Heater available
with or without X3® Scale
Prevention Technology**

COMMERCIAL TANKLESS



**Adapt® Premium Condensing Ultra-Low NOx 199,000 BTU
Natural Gas Commercial Tankless Water Heater**



**ACTH-199M
100**



Commercial Tankless Rack System - Wall Mount



**Ultra-Low NOx Indoor 199,000 BTU
Condensing Natural Gas Tankless
Commercial Water Heater**

ACT-199I-N 100

Rinnai



RXP/RX

Sensei RXP Series with built in pump and Smart-Circ Intelligent Recirculation RX Models less recirculation



REP/RE

High Efficiency Non-Condensing tankless water heater available with or without recirculation

Navien



NPE

NPE Series available with or without recirculation



NWH

COMMERCIAL TANKLESS

Rinnai



CX199iN

SENSEI CX Series is the Built for the PRO, by the PRO with a new, more compact combustion design that makes it easier to install with enhanced operational performance and serviceability.



Navien



TANKLESS COMPARISON

Mfg	Model	Gas conv	Exchanger Warranty	Parts Warranty	Hard Wtr Exclusion Warranty	Pump	ISO Required	Venting
AO SMITH	ATHR199X3	YES	15		5 YES	YES	NO	PVC
AO SMITH	ATHR180X3	YES	15		5 YES	YES	NO	PVC
AO SMITH	ATHR160X3	YES	15		5 YES	YES	NO	PVC
AO SMITH	ATHR199M	YES	15		5 NO	YES	NO	PVC
AO SMITH	ATHR180M	YES	15		5 NO	YES	NO	PVC
AO SMITH	ATHR160M	YES	15		5 NO	YES	NO	PVC
AO SMITH	ATM199X3	NO	15		5 YES	NO	NO	PVC
AO SMITH	ATM180X3	NO	15		5 YES	NO	NO	PVC
AO SMITH	ATM160X3	NO	15		5 YES	NO	NO	PVC
AO SMITH	ATM199	NO	15		5 NO	NO	NO	PVC
AO SMITH	ATM180	NO	15		5 NO	NO	NO	PVC
AO SMITH	ATM160	NO	15		5 NO	NO	NO	PVC
AO SMITH	ATI199X3	NO	15		5 YES	NO	YES	CONC
AO SMITH	ATI180X3	NO	15		5 YES	NO	YES	CONC
AO SMITH	AT199B	NO	15		5 NO	NO	YES	CONC
AO SMITH	ATI180B	NO	15		5 NO	NO	YES	CONC
RINNAI	RXP199	YES	15		5 NO	YES	YES	PVC
RINNAI	RXP160	YES	15		5 NO	YES	YES	PVC
RINNAI	RX199	YES	15		5 NO	NO	YES	PVC
RINNAI	RX160	YES	15		5 NO	NO	YES	PVC
RINNAI	REP199IN	NO	15		5 NO	YES	YES	PVC
RINNAI	REP160IN	NO	15		5 NO	YES	YES	PVC
NAVIEN	NPE240A2	YES	15		5 NO	YES	YES	PVC
NAVIEN	NPE210A2	YES	15		5 NO	YES	YES	PVC
NAVIEN	NPE180A2	YES	15		5 NO	YES	YES	PVC
NAVIEN	NPE240S2	YES	15		5 NO	NO	YES	PVC
NAVIEN	NPE210S2	YES	15		5 NO	NO	YES	PVC
NAVIEN	NPE180S2	YES	15		5 NO	NO	YES	PVC
NAVIEN	NPE150S2	YES	15		5 NO	NO	YES	PVC
NAVIEN	NWH700-199AI		15		5 NO	YES	YES	CONC
NAVIEN	NWH700-180AI		15		5 NO	YES	YES	CONC
NAVIEN	NWH700-160AI		15		5 NO	YES	YES	CONC
NAVIEN	NWH700-199SU		15		5 NO	NO	YES	CONC
NAVIEN	NWH700-180SU		15		5 NO	NO	YES	CONC

Mfg	Model	Gas conv	Exchanger Warranty	Parts Warranty	Pump	ISO Required	Venting	Common vent	Link Up To
RINNAI	CX199		8 yrs	5 yrs	No	Yes	PVC	12 Units	24 Units
NAVIEN	NPE240A	Yes	5 yrs	1 yr	Yes	Yes	PVC	12 units	32 units
NAVIEN	NPE240S	Yes	5 yrs	1 yr	No	Yes	PVC	12 units	32 units
AO SMITH	ACTH199 M	Yes	8 yrs	5 yrs	No	Yes	PVC	12 Units	32 units

Navien NPE-S2 Series tankless water heater with storage tank circulator selection guide

Navien NPE-2 Unit Count	Unit Flow Rate	Total System GPM	Recommended Pipe Manifold Size	Grundfos	Taco	Bell & Gossett	Armstrong	Wilo
1	Maximum Acceptable Pump Flow Rate per Unit 4 GPM	4	3/4"	UP26-96BF, UP26-99BF	0011-SF4, 0013-SF3	NBF-36, PL-36B & 45B	E8.2B, E9.2B	STAR Z S21
2		8	1"	UP26-99BF, UPS26-150SF	0013-SF3	PL-36B	E9.2B, E23.2B	STAR Z S21
3		12	1-1/4"	UPS26-150SF	2400-20S	PL-55B	E9.2B, E23.2B	STAR Z S33
4		16	1-1/2"	UPS26-150SF	2400-45S, 133B	PL-55B	E9.2B, E23.2B	STAR Z S33
5		20	1-1/2"	UPS26-150SF, UPS32-160B	2400-45S, 133B	PL-55B	E9.2B, E23.2B	STAR Z S33
6		24	2"	UPS32-160B	2400-50S, 133B	PDB-40S	E22.2B	STAR Z S33
7		28	2"	UPS32-160B	2400-50S, 133B	PDB-40S	E22.2B	STRATOS-Z 1.25x3-35
8		32	2"	UPS32-160B	1612B, 133B	PDB-40S	H64B	
9		36	2-1/2"	UPS32-160B	1614B, 133B	PDB-40S	H64B	
10		40	2-1/2"	UPS40-160B	1614B, 133B	PDB-40S	H64B	
11		44	2-1/2"	UPS40-160B	1614B, 133B	PDB-40S	H64B, H67B	
12		48	2-1/2"	UPS40-160B	1614B, 133B	PDB-40S	H67B	

Suggested 115V/1 Ph. circulator models and sizes are for reference only.

Proper verification of required sizes must be confirmed with specific installation and application.

Note; tankless units may be able to be split up into banks of heaters to allow smaller pump selections.

Contact Navien for technical assistance with applications requiring more than 12 NPE-2 Series Heaters in Pump/Tank Applications.

Residential Tankless Water Heater Comparison

Comparison of A. O. Smith Standard (non-Adapt), A. O. Smith Adapt+, Navien NPE-240A2, and Rinnai RX199iN.

Feature	A. O. Smith Standard	A. O. Smith Adapt+	Navien NPE-240A2	Rinnai RX199iN
Heat Exchanger	Dual: Copper primary + stainless secondary	Single helical stainless	Dual stainless condensing	Copper primary + stainless secondary
Scale Prevention	Standard flushing	Integrated X3®	Standard flushing	Standard flushing
Built-in Recirculation	Model dependent	Yes	Yes	Yes
Buffer Tank	No	No	Yes	No
Gas Connection	¾"	½" or ¾" (model dependent)	½" or ¾" (model dependent)	½" or ¾" (model dependent)
UEF	~0.95	0.95	0.96	0.96
Heat Exchanger Warranty	15 Years	15 Years	15 Years	15 Years



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