



NAVIENT Condensing Combi Boiler

Installation & Operation Manual

Model

NCB-180/ 210/ 240



Keep this manual near this boiler for future reference whenever maintenance or service is required.

*** The wetted surface of this product contacted by consumable water contains less than one quarter of one percent (0.25%) of lead by weight.**

WARNING


If the information in these instructions is not followed exactly, a fire or explosion may result, causing property damage, personal injury, or death.

- **Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.**
- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electrical switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- **Installation and service must be performed by a qualified installer, service agency or the gas supplier.**
- **The installation must conform with local codes or, in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54 and/or CSA B149.1, Natural Gas and Propane Installation Code.**
- **When applicable, the installation must conform with the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280 and/or CAN/CSA Z240 MH Series, Mobile Homes.**

1.3 Specifications

The following tables list the specifications for the boiler. Additional specifications about water, gas, electric and air supplies venting, access the Installation section.

Space Heating Specifications

Navien Combination Boiler Space Heating Ratings							Other Specifications	
Model Number ¹	Heating Input, MBH		Heating Capacity ² , MBH	Net AHRI Rating Water ³ , MBH	AFUE ² , %	Water Pressure	Water Connection Size	
	Min	Max					Supply	Return
NCB-180	14	80	75	65	95	12 ~30 psi	1/2 in NPT	1/2 in NPT
NCB-210	18	100	94	82	95			
NCB-240	18	120	112	97	95			

- Note**
1. Ratings are the same for natural gas models converted to propane use.
 2. Based on U.S. Department of Energy (DOE) test procedures.
 3. The net AHRI water ratings shown are based on a piping and pickup allowance of 1.15. Consult Navien before selecting a boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping system, etc.

Domestic Hot Water Specifications

Item		NCB-180	NCB-210	NCB-240
Input Ratings	Min	14,000 BTU/H	18,000 BTU/H	18,000 BTU/H
	Max	150,000 BTU/H	180,000 BTU/H	180,000 BTU/H
Water Pressure		15-150 psi		
Minimum Flow Rate		0.5 GPM (1.9 L/m)		
Flow Rate 77°F (43°C) Temp. Rise		3.4 GPM	4.0 GPM	4.5 GPM
DHW Supply Connection Size		3/4 in NPT		
Cold Water Inlet Connection Size		3/4 in NPT		

General Specifications

Item	NCB-180	NCB-210	NCB-240
Dimensions	17 in (W) x 28 in (H) x 12 in (D)		
Weight	74 lbs (34 kg)	84 lbs (38 kg)	84 lbs (38 kg)
Installation Type	Indoor Wall-Hung		
Venting Type	Forced Draft Direct Vent		
Ignitor	Electronic Ignition		
Natural Gas Supply Pressure (from source)	3.5 in-10.5 in WC		
Propane Gas Supply Pressure (from source)	8.0 in-13.5 in WC		
Natural Gas Manifold Pressure (min/max)	-0.07 in WC / -0.66 in WC	-0.05 in WC / -0.36 in WC	-0.06 in WC / -1.20 in WC
Propane Gas Manifold Pressure (min/max)	-0.07 in WC / -0.66 in WC	-0.10 in WC / -0.66 in WC	-0.03 in WC / -0.98 in WC
Gas Connection Size	3/4 in NPT		
Power Supply	Main Supply	120V AC, 60Hz	
	Maximum Power Consumption	200W (max 2A)	
Materials	Casing	Cold-rolled carbon steel	
	Heat Exchangers	Primary Heat Exchanger: Stainless Steel Secondary Heat Exchanger: Stainless Steel Domestic Water Heat Exchanger: Stainless Steel	
Venting	Exhaust	2 in or 3 in PVC, CPVC, Polypropylene 2 in or 3 in Special Gas Vent Type BH (Class III, A/B/C)	
	Intake	2 in or 3 in PVC, CPVC, Polypropylene 2 in or 3 in Special Gas Vent Type BH (Class III, A/B/C)	
	Vent Clearances	0 in to combustibles	
Safety Devices	Flame Rod, APS, Gas Valve Operation Detector, Ignition Operation Detector, Water Temperature High Limit Switch, Exhaust Temperature High Limit Sensor		

Note This unit may be installed at elevations up to 10,100 ft (3,078 m) for use with Natural Gas, and up to 4,500 ft (1,370 m) for use with Propane.

Temperature Setting Range

Item	Temperature Setting Range	Remarks
DHW	89°F-140°F (30°C-60°C)	
Space Heating	Supply	Finned Tube Baseboard (Default)
	Return	

Note For more information about space heating temperature setting range, refer to "Types of Heat Load" on page 56.