POLARIS

Polaris™ High-Efficiency Commercial Gas Water Heater
The perfect choice for combination systems

Polaris™ has a high grade 444 stainless steel tank with brass connections for years of dependable, trouble-free 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%.

SEALED COMBUSTION WITH WOVEN FIBRE PREMIX BURNER
- Metal fibre burner is designed for clean combustion in high-intensity blue flame mode
- Manufactured with refractory steel that resists corrosion and provides excellent resistance to thermal and mechanical shock, even at extreme temperatures
- Uniform combustion provides excellent heat transfer

WHISPER QUIET OPERATION
- Ultra quiet blower and burner minimize noise
- Requires 120 volt 60Hz power supply that draws less than 5 Amps

POWER DIRECT VENT USING 2" OR 3" PLASTIC PIPE
- Direct vents up to 120' using ULC S636 PVC or CPVC pipe either through the wall or through the roof
- Optional concentric vent kit available

EXTERNAL TEMPERATURE ADJUSTMENT KNOB UP TO 185°F

SELF-DIAGNOSTIC CONTROL SYSTEM
- Three external LED lights indicate operational status of water heater
- A microprocessor monitors nine critical functions
- A LED troubleshooting light, visible through view port, signals heater operation status

FULL SERVICEABILITY FROM THE FRONT
- Removal of two front-located access panels exposes all serviceable components
- Modular components are easily removed

MULTIPLE 1" BRASS TANK CONNECTIONS

CSA INTERNATIONAL CERTIFIED TO CURRENT EDITION ANSI Z21.10.3/CSA 4.3

OTHER FEATURES
- Thermistor temperature sensor
- 24-volt thermostat control
- Hot surface ignition
- Full flow brass drain valve
- ASHRAE 90.1 compliant (current edition)
- Zero clearance to combustibles
- Factory-installed T&P valve
- Factory-provided condensate trap
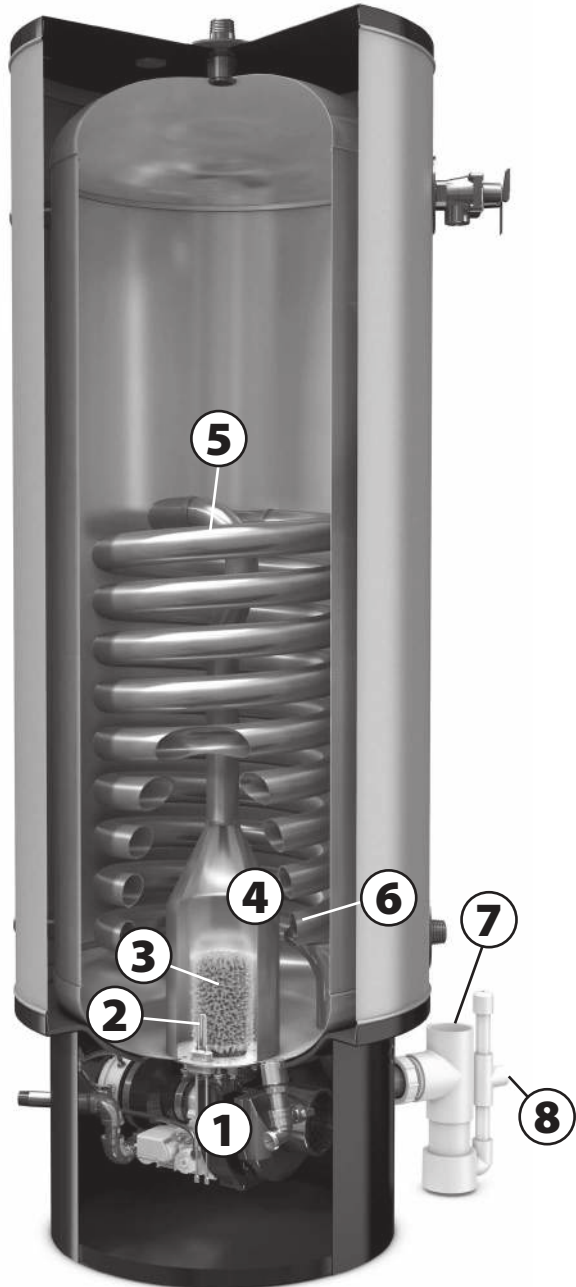- Lightweight with small footprint

WARRANTY
- 3 years limited tank warranty
- 1 year limited parts warranty

NCGSS00408 (06-15)

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UP TO 96% EFFICIENT

1. The quiet, brushless DC blower prepurges the submerged combustion chamber for 8 seconds and turns off.
2. The hot surface igniter is energized and glows red hot.
3. The blower turns on, precisely mixing air and gas for combustion. The mixture is forced through the metal fibre burner and is ignited by the hot surface igniter. A blue flame is evenly distributed across the entire burner, resulting in clean combustion with low nitrous oxide emissions.
4. The combustion chamber wall transfers high temperature heat from the flame to the water.
5. The blower pushes hot combustion gases through the spiral coil, which scrubs the remaining heat from the hot gases.
6. As combustion gas exits the bottom of the spiral coil, it is barely warm to the touch. Up to 96% of the heat from the flame is transferred to the water.
7. Combustion gases are vented through ULC S636 plastic pipe.
8. Condensation formed by cooled combustion air is captured by a condensate trap and drained through a drain line.

THE QUIET WAY TO EFFICIENTLY HEAT WATER

An ultra quiet radial blower is combined with a submerged burner for whisper quiet operation. Indicator lights illuminate when the power is on and when the igniter and burner are operating.

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FORCED AIR HYDRONIC HEAT

Polaris can be used to combine an air handler for comfortable forced air hydronic space heating with potable hot water. Hot water is circulated through a coil in the air handler. Air from the building is warmed as it is blown across the coil. Warmed air is returned to the building through air ducts.

RADIANT HYDRONIC HEAT

Polaris works great for those who prefer radiant hydronic heat. With radiant floor hydronic systems, potable hot water is circulated through tubes under the floor. The floor absorbs heat from the tubes and radiates it into the room. With radiant baseboard heat, potable hot water is circulated through finned tube baseboard. Heat rises from the baseboard heaters, warming the building. All water components must be approved for use with potable water.
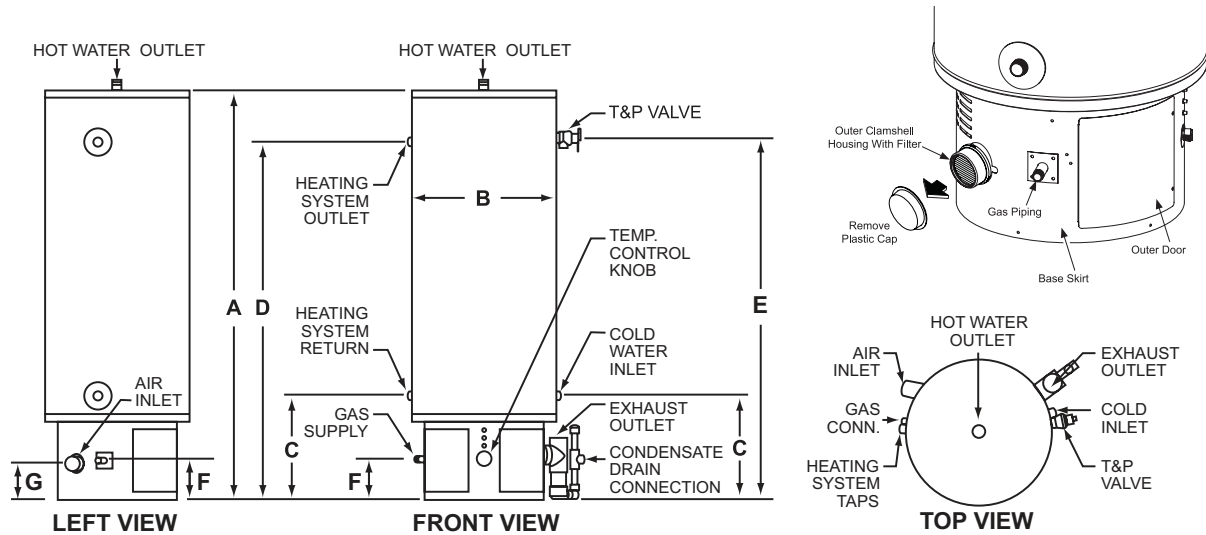
SPECIFICATIONS

Commercial- gas-fired water heater(s) shall be a direct/power vent Polaris model _____ as manufactured by American Water Heaters and shall have a 3-year limited tank warranty and a 1-year limited parts warranty, as outlined in the written warranty. Units shall be designed to burn _____(natural/propane) gas and be CSA International certified to the latest edition of ANSI standard Z21.10.3/CSA 4.3. Water heater(s) shall have a nominal storage capacity of _____ gallons and a recovery rate of _____ GPH @ 100°F rise with a rated input of _____ BTU/Hr. Water heater(s) shall be condensing type with a minimum thermal efficiency of 95-96%, power vented with ULC S636 pipe. Water heater(s) shall have combined vent capabilities of up to 120' to the exhaust outlet with up to 120' to the air inlet. Water heater(s) shall have a low noise combustion system with a woven fibre steel burner capable of low NOx (less than 40 ng/j) in the blue flame mode and shall be manufactured of refractory steel, resistant to thermal and mechanical shock. The gas valve shall be a Honeywell CV1-r1 series gas valve with a matching 45.900 series venturi manifold using a 1:1 air/gas ratio. The combustion system shall be factory adjusted and require no field adjustment on startup. The tank shall be constructed of 444 stainless steel with a submerged combustion chamber and rated for 150 PSI working pressure and 300 PSI test pressure. The tank shall be surrounded by two inches of non-CFC foam insulation covered by an enamel coated metal jacket. Operating controls shall have a 24-volt integrated control circuit, an immersed thermistor temperature sensor, a recycling energy cut-off switch, external temperature adjustment, and shall have LED lights that continuously indicate the operational status of the water heater(s). A microprocessor shall automatically monitor nine critical operating functions and signal the status of each. A factory installed temperature and pressure relief valve shall be provided on all models. A factory provided water thermostatic tempering valve shall be provided with all models.

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LEFT VIEW **FRONT VIEW** **TOP VIEW**

PERFORMANCE

Model	Series	Capacity		Maximum Certified Altitude	Input	Recovery Rate at 90°F Temperature Rise	Thermal Efficiency	BC Compliant
		USG	L	FT (M)	BTU/h	GPH (LPH)		
NATURAL GAS								
PC130-34-2NV*	N/A	34	129	11,000 (3,353)	130,000	168 (636)	96%	√
PC130-50-2NV*	N/A	50	189	11,000 (3,353)	130,000	166 (628)	95%	√
PC175-50-3NV*	N/A	50	189	11,000 (3,353)	175,000	226 (856)	95%	√
PC199-50-3NV*	N/A	50	189	11,000 (3,353)	199,000	257 (973)	95%	√

For propane models sub N for P. Input, output and recovery may vary depending upon air inlet and exhaust outlet installations, consult manual for details.
*Model has side connections.

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												
PC130-34-2NV*	48 ½ (123)	22 (56)	15 ¾ (40)	15 ¾ (40)	40 ½ (103)	41 (104)	6 $\frac{1}{8}$ (16)	6 $\frac{1}{8}$ (16)	1	½	2 or 3	150 (68)
PC130-50-2NV*	62 ½ (159)	22 (56)	15 ¾ (40)	15 ¾ (40)	54 ½ (138)	55 (140)	6 $\frac{1}{8}$ (16)	6 $\frac{1}{8}$ (16)	1	½	2 or 3	176 (80)
PC175-50-3NV*	63 ¾ (162)	22 (56)	15 ¾ (40)	15 ¾ (40)	55 ¾ (142)	56 ¼ (143)	6 $\frac{1}{8}$ (16)	6 $\frac{1}{8}$ (16)	1	¾	3	180 (82)
PC199-50-3NV*	63 ¾ (162)	22 (56)	15 ¾ (40)	15 ¾ (40)	55 ¾ (142)	56 ¼ (143)	6 $\frac{1}{8}$ (16)	6 $\frac{1}{8}$ (16)	1	¾	3	180 (82)

OPTIONAL KITS

Description	Part Number
2" Concentric vent kit	6911088
3" Concentric vent kit	6911089

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