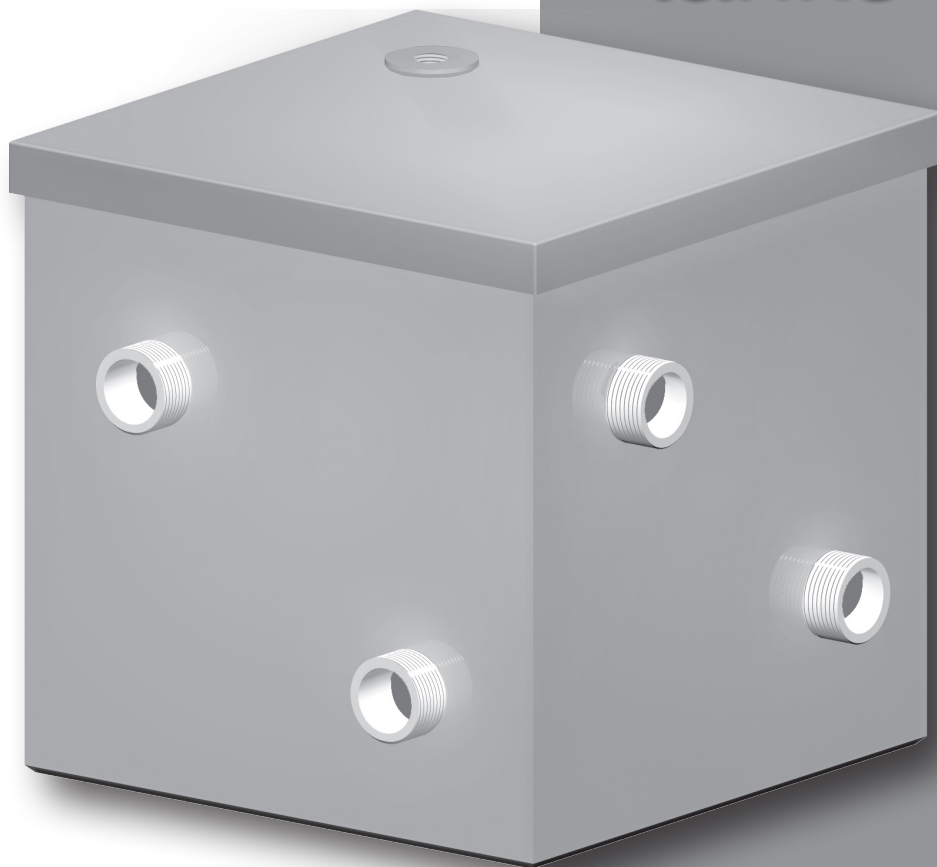


Installation
Operation &
Maintenance

NB
series

Condensate
neutralizing
tanks





Overview

What is pH?

The pH measurement of a fluid is an indicator of the acidity or alkalinity. Neutral fluids have pH of 7.0. Acid fluids have pH below 7. And alkaline fluids have pH above 7 (up to 14). The pH can be easily measured using litmus paper.

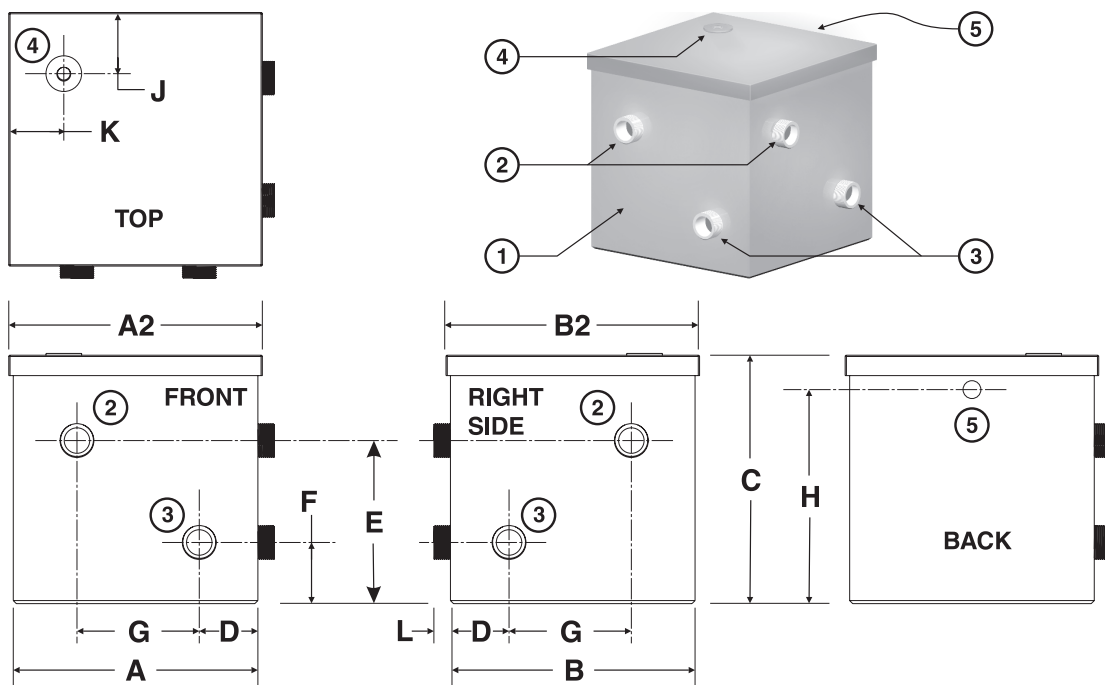
Condensate pH from condensing boilers and furnaces is typically around 4 (slightly acidic). The condensate pH needs to be increased (made more neutral) to prevent possible damage to cast iron soil pipe, ABS pipe, septic tanks, plants, wastewater treatment plants and other materials handling waste water.

NB-series condensate neutralizing tanks increase pH (reduce acidity).

NB-series commercial flue-side condensate neutralizing tanks are designed to raise the pH level of the condensate discharged by high-efficiency boilers and warm air furnaces.

Each change of 1.0 in pH is a 10-times reduction (or increase) in concentration. The pH of condensate is increased by approximately 1.0 to 3.0 higher after passing through NB neutralizing tanks. (This is a change in concentration of from 10 to 30 times.)

Figure 1 NB-series condensate neutralizing tanks — features and dimensions



RATINGS & DIMENSIONS (in inches)

Model	MBH	GPH	A	A2	B	B2	C	D	E	F	G	H	J	K	L
NB-6	6000	60	12	12 7/16	12	12 7/16	12 3/16	2 7/8	8	3	6 1/8	10 1/2	3	3	3/4

FEATURES

Item	Description	Item	Description
1	Corrosion-resistant neutralizing tank	4	Vent connection, 1/2" NPT female
2	Condensate OUTLET connections, 1 1/4" NPT male (two locations)	5	Water level sensor opening — use for mounting of optional AquaGuard sensor probe
3	Condensate INLET connections, 1 1/4" NPT male (two locations)		

Applying NB-series neutralizing tanks

Condensate can be collected from flueways and boiler/furnace condensate trap outlets.

A single NB tank can neutralize condensate from multiple boiler/furnace condensate traps, up to the capacity of the tank.

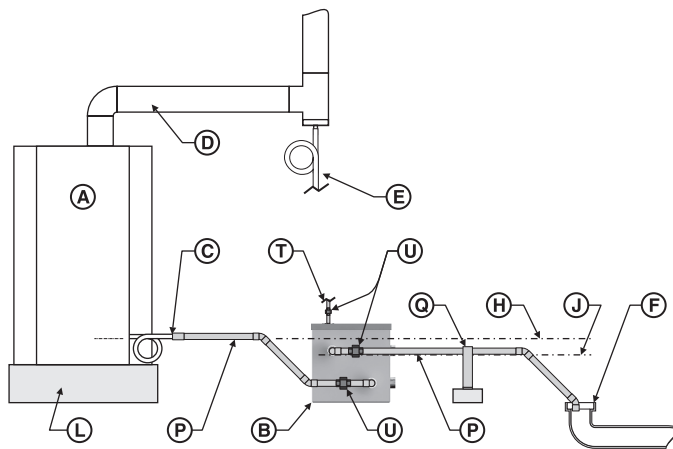
Match neutralizing tubes to boiler/furnace ratings. Locate the NB-series neutralizing tank so its **OUTLET** connection is below the boiler/furnace condensate connection and slightly above the floor drain or inlet to a condensate pump (if used).

Follow the guidelines in this manual, the boiler/furnace manual and all applicable local codes when installing, using and maintaining NB-series condensate neutralizing tanks.

Installation

<p>WARNING</p>	<ul style="list-style-type: none"> Application — Flue gas condensing boilers, furnaces, and breeching condensate drains only. DO NOT exhaust flue gases through NB tanks, they are not rated for boiler or furnace flue gases. Operating NB tanks as exhaust vents can cause injury or death from carbon monoxide. NB tanks must be installed below all condensate traps, boiler, furnace, and breeching condensate drains. 	<ul style="list-style-type: none"> Gas traps must be installed between the boiler, vent drains, and furnace condensate outlet and the inlet of all NB tanks. Before operating the boiler or furnace, fill the NB tank and traps with tap water. NEVER operate with tubes or P-traps dry. Tubes should be recharged yearly, or when pH level moves below 6. Obtain neutralizing agent only from JJM Boiler Works. Failure to comply with these guidelines could result in severe personal injury, death or substantial property damage.
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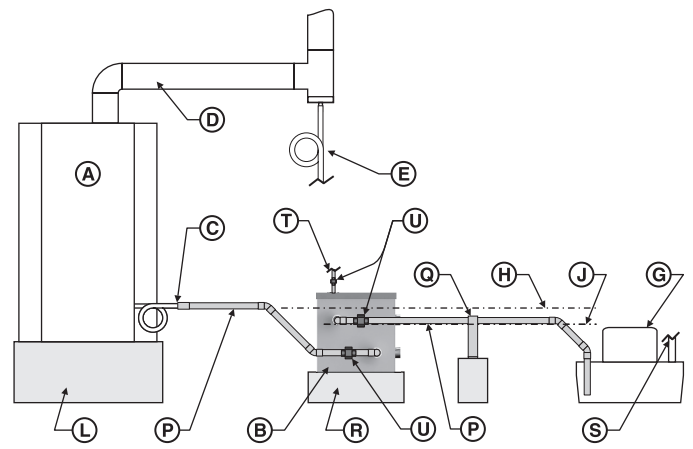
Figure 2 NB tank application with floor drain, typical



Legend

- A Condensing boiler or furnace
- B Condensate neutralizing tank
- C Boiler/furnace condensate trap connection
- D Boiler/furnace vent
- E Vent condensate trap, when used — Install a trap as shown.
- F Floor drain or sump
- G Condensate pump
- H Bottom of boiler/furnace condensate outlet — MUST be ABOVE bottom of NB tube condensate outlet
- J Bottom of NB tank condensate outlet
- L Mounting pad or structural platform, when required to elevate boiler condensate drain as needed
- P PVC pipe — Include unions in the piping to allow removal of the NB tank for inspection and service. — Secure pipe in place. — Protect with a shield if necessary if routed through traffic areas.
- Q Secure condensate piping in place with clamps (follow instructions for securing at condensate pump, when used).
- R Elevate the NB tank on a structural base if necessary for the outlet to be raised.
- S Route discharge line from condensate pump assembly per instructions supplied by pump manufacturer.
- T Install ½-inch PVC vent piping to outside from vent tapping on top of tank where required by codes. (A ½" thread-one-end PVC nipple is supplied with the optional trim kit.)

Figure 3 NB tank application with condensate pump, typical



U Install a union at each connection to the NB tank to allow disconnection for removal and servicing as needed. (Unions are supplied in the optional trim kit.)

NOTE: Install a 1¼" pipe cap on the unused INLET and OUTLET tank connections. (Caps are supplied in the optional trim kit.)

Installation sequence

1. Before installing boiler or furnace, determine if a mounting pad will be needed to elevate the boiler or furnace so that the condensate connection will be above bottom of the NB tank OUTLET. See Figure 2 or Figure 3. Provide a mounting pad for the NB tank if needed to obtain the proper elevation relative to a condensate pump reservoir (when used — see Figure 3).
2. Place the NB tank in position. Fill the tank to the maximum fill line with neutralizing agent obtained from JJM Boiler Works only.
3. Connect PVC piping from appliance or breeching drains to P-traps and then from P-trap outlets to either one of the two NB tank inlets.
4. Connect the NB tank outlet to house drain or condensate pump.
5. Use Teflon tape on all threaded plastic fittings.
6. **NOTE** — Always consult the local authority regarding any requirements concerning flue gas condensate handling codes.



Optional trim kit

Contents

1. JJM offers an optional trim kit, consisting of the following items.
2. (2) 1/4" NPT pipe caps — install on unused INLET and OUTLET connections on the tank.
3. (2) 1/4" socket-joint PVC unions — install on the INLET and OUTLET piping. These are required so the tank can be disconnected from the piping for access and service.
4. (1) 1/2" NPT one end nipple — install in VENT connection on the top of the NB tank. Install 1/2" PVC piping to outside when required by local codes.
5. (1) 1/2" socket-joint PVC union — install in VENT piping. This is required so the piping can be disconnected from the tank for removal of the tank lid.

WARNING

- Before operating the boiler or furnace, fill the NB neutralizer tank and all condensate traps with tap water.
- NEVER operate with neutralizer tanks or P-traps dry.
- Neutralizers should be recharged yearly (every 2,000 operating hours), or when pH level moves below 6.
- Failure to comply with these guidelines could result in severe personal injury, death or substantial property damage.

Optional AquaGuard overflow sensor installation

Mount the sensor

1. Insert the AquaGuard sensor probe into the 1-inch hole in the top rear of the NB tank.
2. Secure the probe in place with the 1/2" conduit nut supplied with the kit.

Secure the AquaGuard control box to the NB tank

1. Remove the tape backing from the back of the unit.
2. Press the control box into position on the tank, NO FURTHER than 4 inches from the sensor.
3. Wire the sensor to the box by mating the sensor wire to the connecting wiring from the control box.

Wiring to the boiler or furnace

1. The two red leads of the AquaGuard control must be wired into a boiler/furnace automatic reset limit circuit to shut down the boiler/furnace if condensate level rises too high in the NB tank.
2. The circuit MUST be 24-volt only, NOT line voltage.
3. The black wire from the AquaGuard must be connected to the 24-volt common terminal of the control.
4. Contact JJM Boiler Works for suggested wiring of the boiler or furnace being used.

Maintenance

Inspect frequently

Installer — Instruct the building owner to frequently inspect the NB neutralizer and all condensate connections. The owner must notify a qualified technician if any problems are noticed.

Replace neutralizing agent annually

Installer — Have the building owner schedule an annual recharge of the NB neutralizer.

USE ONLY neutralizing agent obtained from JJM Boiler Works.

DO NOT fill higher than the maximum fill line (bottom of tank OUTLET connection).

Replacement parts

Contact JJM Boiler Works for replacement parts or neutralizing agent.