



JJM Boiler Works, Inc.
Ph Neutralizing Tubes & Tanks

NB Series Tanks Installation Operation & Maintenance

Acidic Condensate Waste Water Treatment Products

Models: NB4, NB5LP, NB6

NB7 Parallel, NB9 Parallel, NB-12 Parallel

Acidic Condensate pH Treatment Tanks





Overview

Read before proceeding

WARNING

Failure to comply with these guidelines could result in severe personal injury, death or substantial property damage.

Tank and lines must be wet

Before operating the boiler or furnace, fill the NB tank and traps with tap water. NEVER operate with tanks or P-Traps dry.

Application

- Flue gas condensing boilers, furnaces, hot water heaters and flue pipe 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.
- Gas traps must be installed between the boiler, vent drains, hot water heaters and furnace condensate outlet and the inlet of all NB tanks.
- NB tanks must be installed below system P-traps, boiler, furnace, and breeching condensate drains. IF NOT — install a condensate pump with integral check valve as in Figure 2, page 6.
- The use of Ferris and copper piping on the neutralizer inlet or outlet ports is not permitted. The use of CPVC, PVC, PP tubing, and stainless steel piping is the only material that shall be used.

Combined piping options

Flue pipe condensate drains

- Boiler/furnace condensate drain and flue condensate drain can be commonly piped to a neutralizer tank. Also, the flue pipe must be terminated so rain water cannot enter the flue vent.
- Only PVC, CPVC, PP tubing, and stainless steel piping should be used on inlet & outlet connections.

Recharge tanks regularly

- Tanks should be recharged when pH level moves below 5.0. The pH should be checked regularly (at least twice during the first year of operation) to determine the required recharging schedule.

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 digital pocket pH probe.

Condensate pH from condensing boilers and furnaces is typically around 3.2 - 4.0. 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 pH treatment tanks increase pH (reduce acidity).

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

Applying NB-series pH treatment tanks

Condensate can be collected from flueways and boiler/furnace/hot water heaters condensate trap outlets. See WARNING section at left for guidelines on application.

Match neutralizing tanks to boiler/furnace ratings. Use multiple tanks if needed to handle the load. Consider using the next larger size neutralizing tank for boiler systems with domestic hot water heating.

Locate the neutralizing tank below the condensate connection and slightly above the floor drain or inlet to a condensate pump reservoir (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 pH treatment tanks.

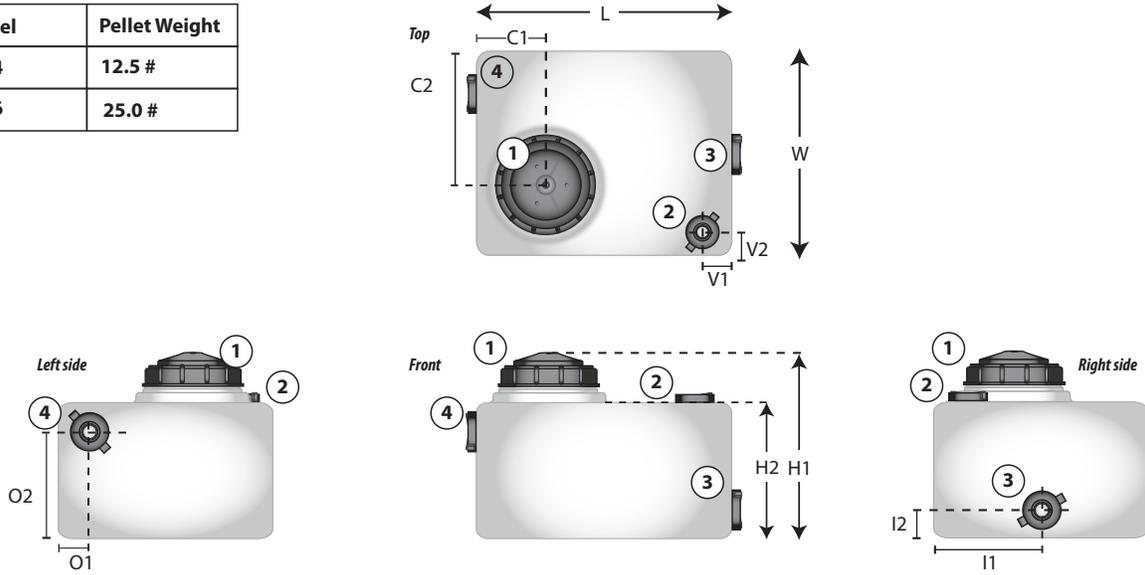
Installation sequence

1. Place the NB tank in position. Fill the tank to the maximum fill line with pH Power Pellets obtained from JJM Boiler Works only.
2. Connect PVC piping from appliance or breeching drains to P-traps and then from P-trap outlets to NB tank inlets.
3. Connect the NB tank outlet to house drain or condensate pump.
4. Use Teflon tape on all threaded plastic fittings.
5. **NOTE** — Always consult the local authority regarding any requirements concerning flue gas condensate handling codes.
6. Piping see figures 1, 2, 3, 4, 5, 6 and 7.



NB-4 / NB-6 NB series condensate neutralizing tanks – features, ratings and dimensions

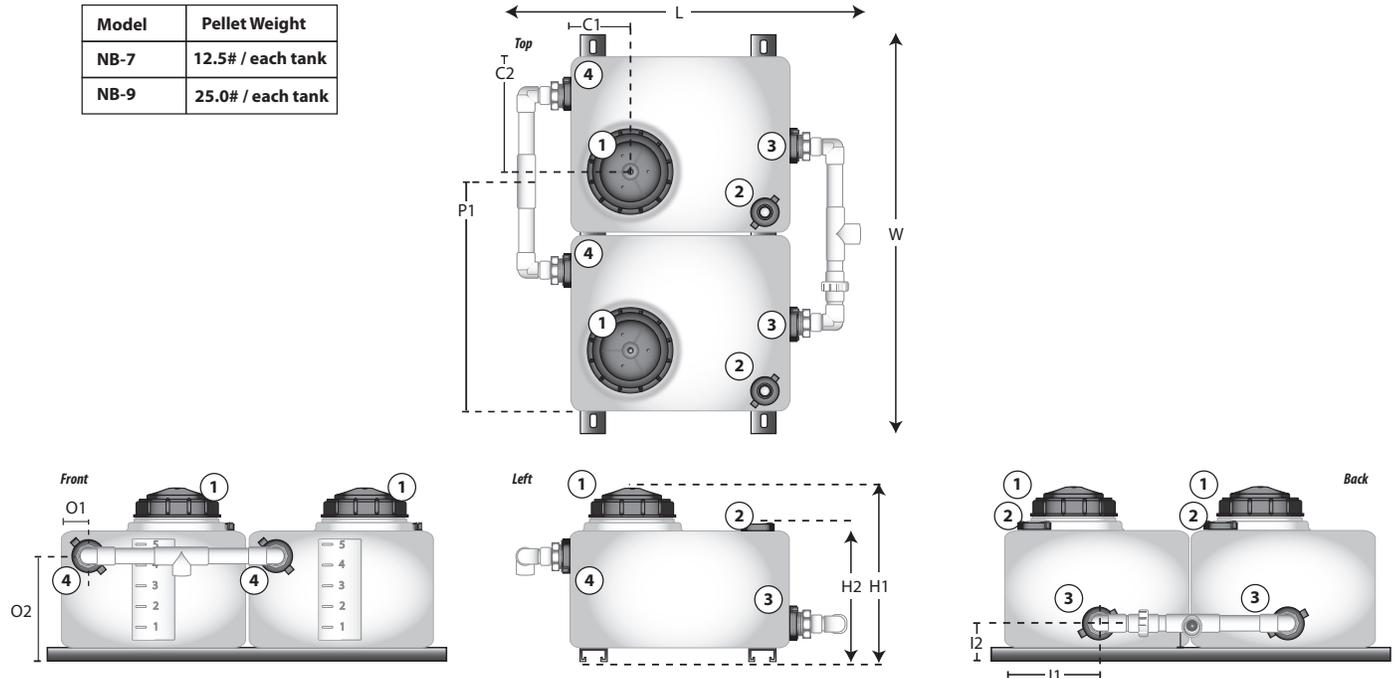
Model	Pellet Weight
NB-4	12.5 #
NB-6	25.0 #



Ratings & Dimensions (in inches)																		
Model	MBH	GPH	L	W	H1	H2	①	C1	C2	②	V1	V2	③	I1	I2	④	O1	O2
NB-4	4000	32	16	12	8.25	11.25	Cap 4 1/2" port	4 7/8	7 7/8	Vent 3/4" port	1 3/4	1 3/4	Inlet 1" port	6	1 3/4	Outlet 1" port	2 1/4	5 3/4
NB-6	6000	45	16	12	8.25	11.25	Cap 4 1/2" port	4 7/8	7 7/8	Vent 3/4" port	1 3/4	1 3/4	Inlet 1" port	6	1 3/4	Outlet 1" port	2 1/4	5 3/4

NB-7 / NB-9 NB series condensate neutralizing tanks – features, ratings and dimensions

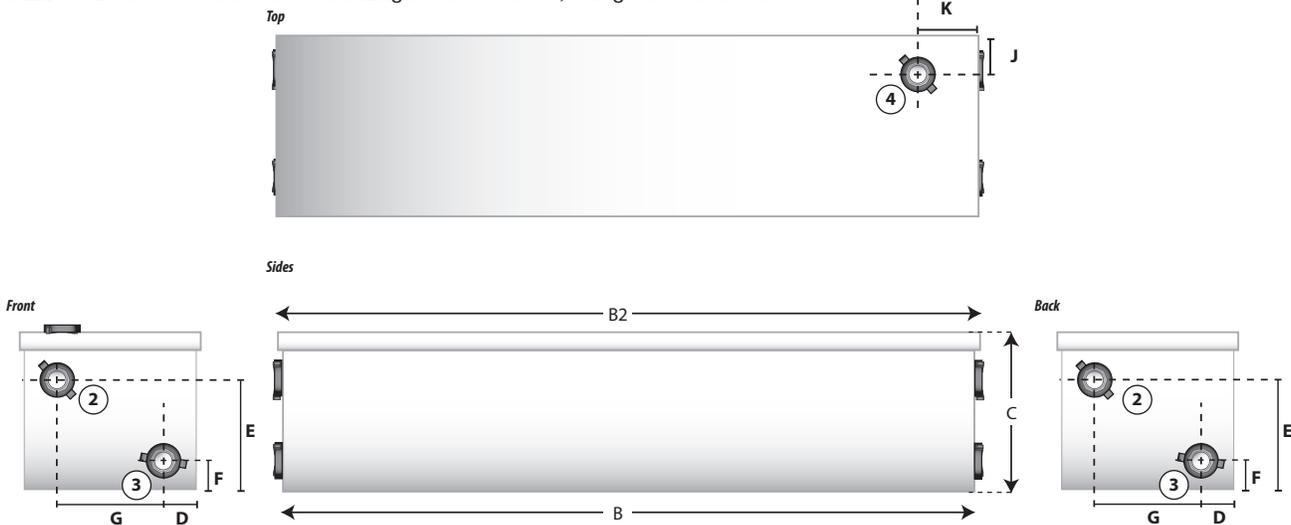
Model	Pellet Weight
NB-7	12.5# / each tank
NB-9	25.0# / each tank



Ratings & Dimensions (in inches)																	
Model	MBH	GPH	L	W	H1	H2	①	C1	C2	②	P1	③	I1	I2	④	O1	O2
NB-7	7,000	53	23 1/2	27 3/4	12	9.5	Caps 5" port	4 7/8	7 7/8	Vent 3/4" port	14 3/4	Inlets 1" port	6	2 1/4	Outlets 1" port	2 1/4	6 1/2
NB-9	9,000	68	23 1/2	27 3/4	12	9.5	Caps 5" port	4 7/8	7 7/8	Vent 3/4" port	14 3/4	Inlets 1" port	6	2 1/4	Outlets 1" port	2 1/4	6 1/2



NB-5LP NB series condensate neutralizing tanks – features, ratings and dimensions



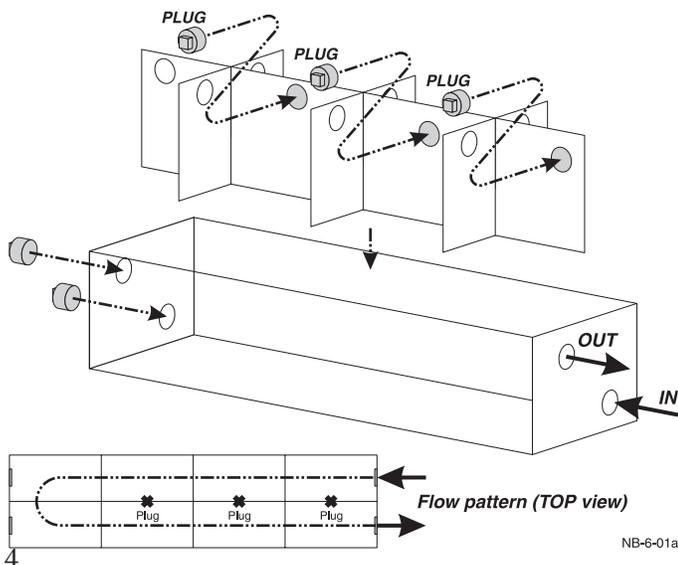
Ratings & Dimensions (in inches)														
Model	MBH	GPH	A	A2	B	B2	C	D	E	F	G	J	K	L
NB-5LP	5,000	40	9	9 7/16	36 1/4	36 3/4	7 5/16	2	4 1/2	2 1/2	7	2 1/2	3	—
①	Corrosion-resistant neutralizing tank						③	Condensate INLETS, 1" NPT female (two locations)						
②	Condensate OUTLETS, 1" NPT female (two locations)						④	Vent connection, 3/4" NPT female						

NOTICE The NB-5LP is equipped with baffles that are needed to direct the flow of condensate throughout the neutralizing medium. Baffles must be correctly installed for the NB-5LP to work properly.

Flow in and out same end

Install threaded PVC plugs in the baffle hole locations as shown in Figure 4. Condensate will flow down one side of the NB-5LP and back the other side to the outlet.

Baffle plug installation for in/out on same end

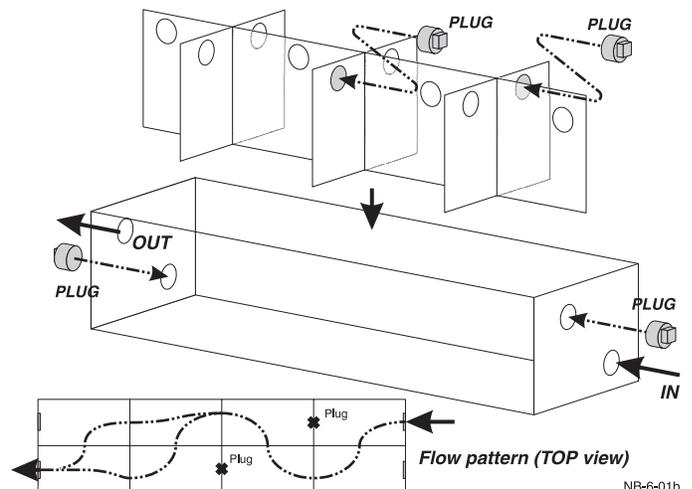


NB-6-01a

Flow in and out opposite ends

Install threaded PVC plugs in the baffle hole locations as shown in Figure 5. Condensate will flow side to side in the NB-5LP as it works its way from the inlet end to the outlet end.

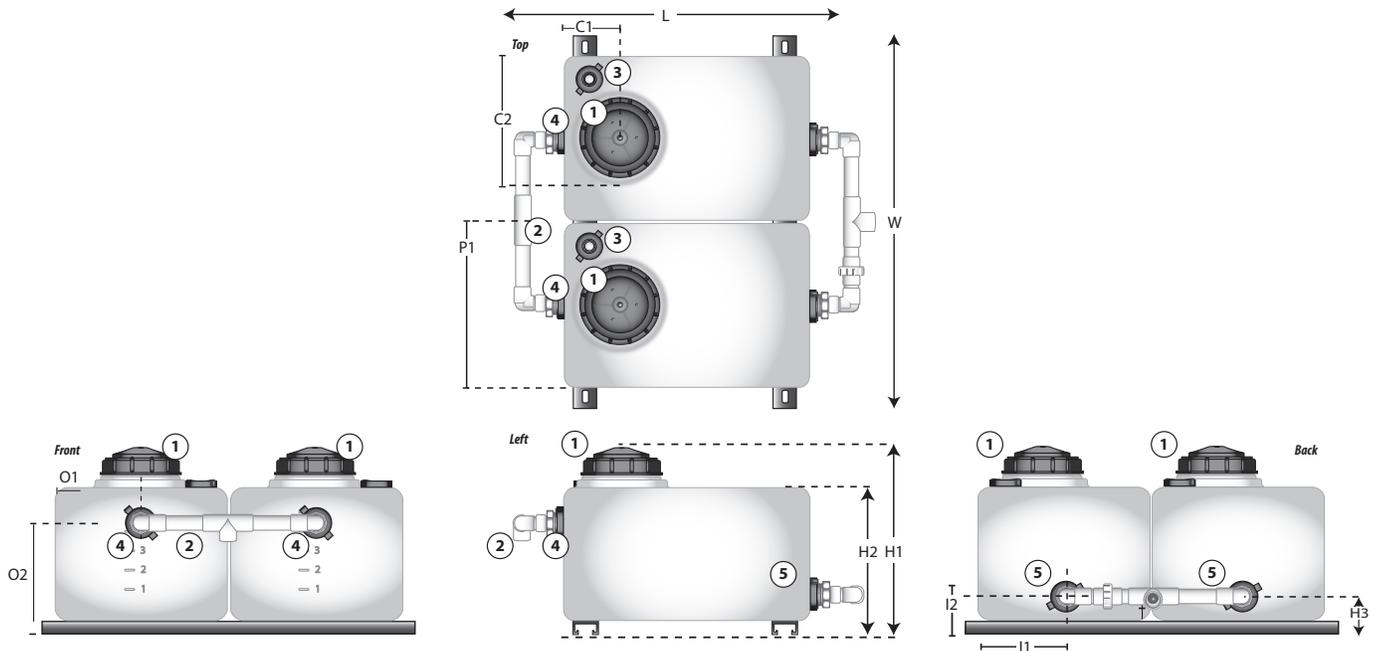
Baffle plug installation for in/out on opposite ends



NB-6-01b



NB-12 NB series condensate neutralizing tanks – features, ratings and dimensions

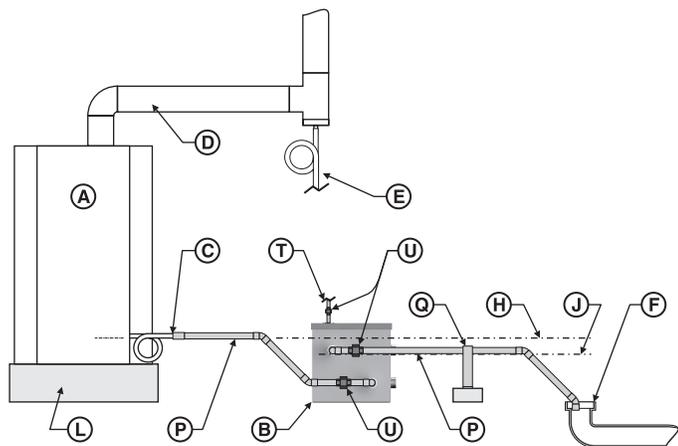


Ratings & Dimensions (in inches)																			
Model	MBH	GPH	L	W	H1	H2	①	C1	C2	②	P1	③	I1	I2	④	O1	O2	⑤	H3
NB-12	12,000	90	28	32	18 1/2	15	Caps 5" port	4 7/8	7 7/8	Pipe Outlet 1" port	15 1/2	Vents 3/4" port	6	2 1/4	Outlets 1" port	2 1/4	9 3/4	Inlet 1" port	2 1/4



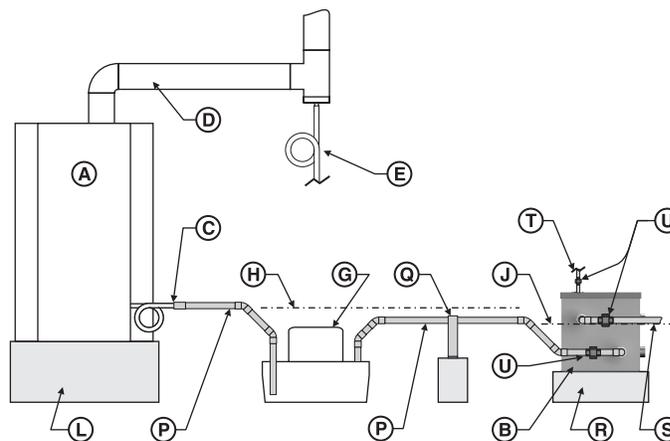
Installation *(continued)*

Figure 1 NB tank with floor drain



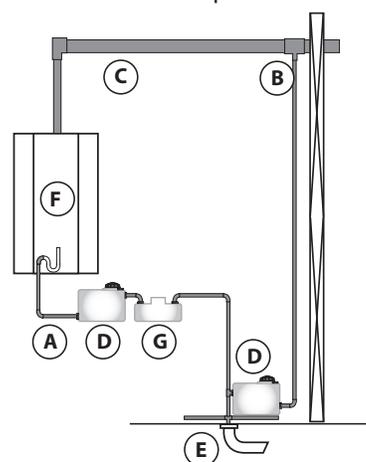
- A Condensing boiler furnace or hot water heater
- B Condensate neutralizing tank
- C Boiler/furnace condensate trap connection
- D Boiler/furnace vent
- E Vent condensate trap, when used — Install a trap as shown.
- F Drain or sump
- G Condensate pump — MUST include integral check valve
- H Bottom of boiler/furnace condensate outlet — MUST be ABOVE bottom of NB tank condensate outlet (or condensate pump inlet) UNLESS a condensate pump with integral check valve is installed as in Figure 3.
- J Bottom of NB tank condensate outlet
- L Mounting pad or structural platform, when required to elevate boiler condensate drain as needed

Figure 2 NB tank with condensate pump



- 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 to an appropriate drain location.
- T Install 3/4 inch PVC vent piping to outside from vent tapping on top of tank where required by codes.
- U Install a union at each connection to the NB tank to allow disconnection for removal and servicing as needed.

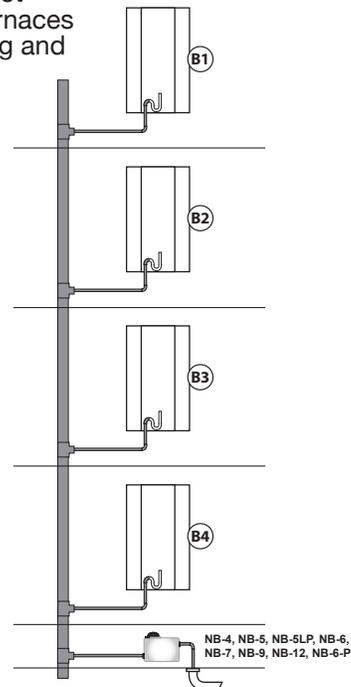
Figure 3 Piping for Single Heating Unit with Condensate Pump



- A Boilers / Hot Water Heaters / Furnace Condensate Drains
- B Flue Drain
- C Common Flue Vent
- D pH Treatment Tube or Tank
- E House Drain
- F Boilers / Hot Water Heaters / Furnaces
- G Condensate Drain

Note: Contact Factory for pH Treatment Tube and Tank Sizing and Pipe Sizing.

Figure 4 Multiple Story Hot Water Heaters/Boilers/Furnaces with Common Drain Piping and Single pH Treatment Tank



NB-4, NB-5, NB-5LP, NB-6, NB-7, NB-9, NB-12, NB-6-P



Installation *(continued)*

Figure 5 Piping for Multiple Heating Units with Individual pH Treatment Tanks

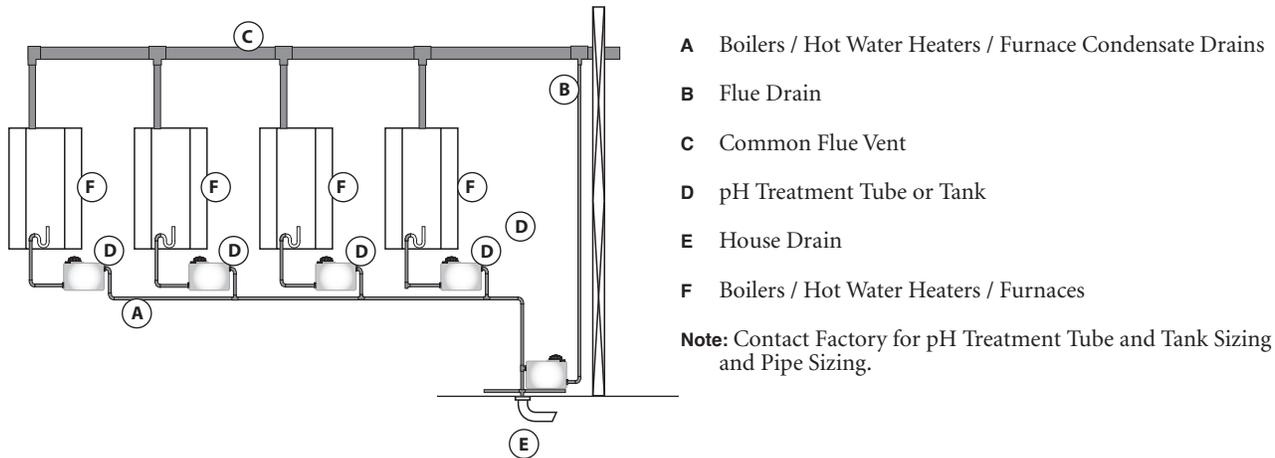


Figure 6 Piping for Multiple Heating Unit with Common pH Treatment Tube or Tank

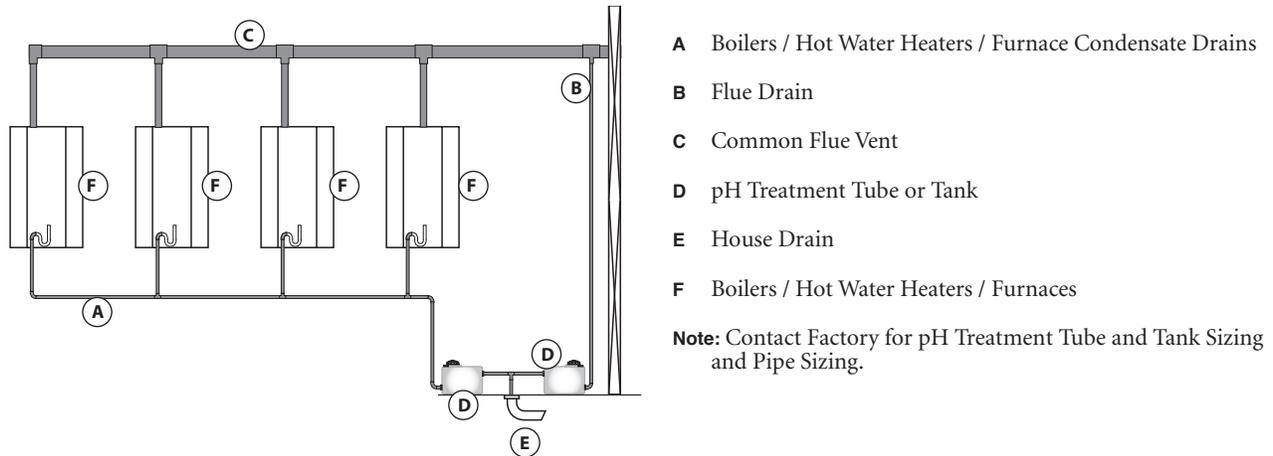
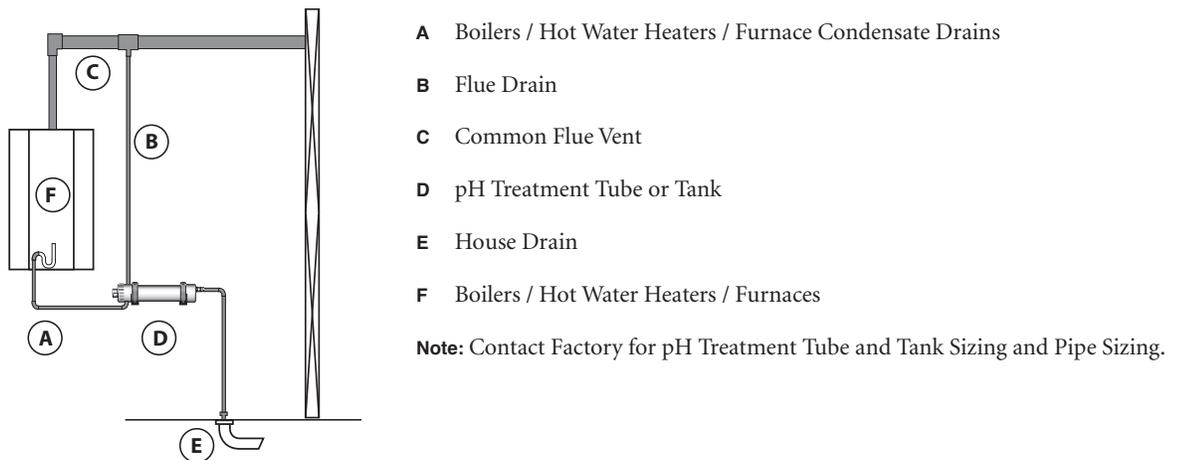


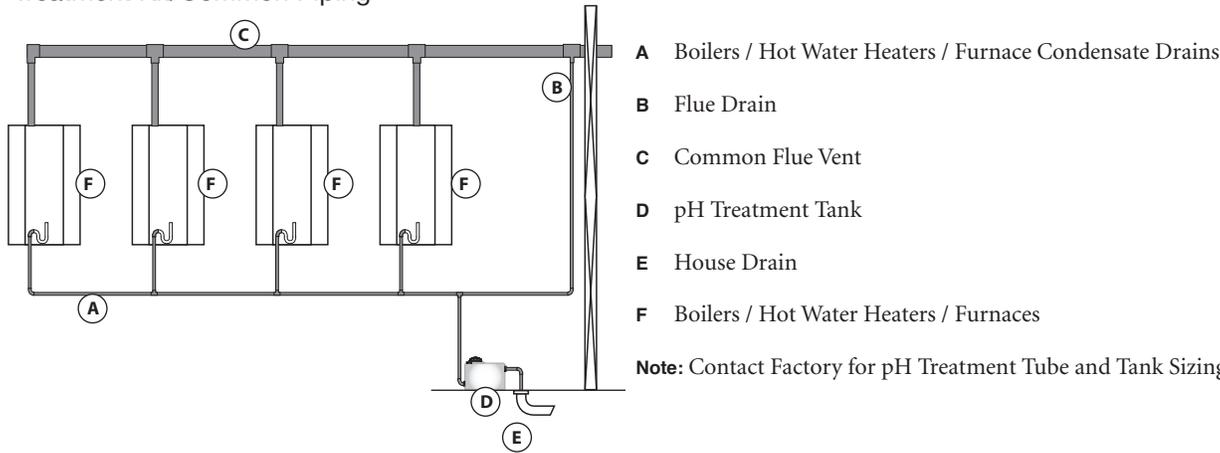
Figure 7 Piping for Single Heating Unit with Common pH Treatment Tube or Tank





Installation *(continued)*

Figure 8 Piping Multiple Heating Units/Single pH Treatment Kit/Common Piping



⚠ WARNING

Charging Procedure

USE RUBBER OR LATEX GLOVES, EYE PROTECTION, AND LOW LEVEL DUST MASK WHEN HANDLING pH POWER PELLETS™.

Models: NB-4, NB-6, NB-7, NB-9, NB-12 ONLY

1. Set tank into final location.
2. Once piped, empty pH Power Pellets™ into the tank or tanks via the 5" twist off lid.
3. NOTE: On dual parallel tanks take care to fill both tanks equally with pellets.
4. Level off pellets in tank or tanks.
5. Fill tank or tanks with fresh tap water to outlet port.
6. The units are now ready for operation.

Models: NB-5Lp Only

1. Set tank in final location.
2. Place the baffle plugs into hole openings for your flow requirements.
3. Place the eight bags of Magnesium Oxide Pellets into the eight chambers, one per chamber. Level off the pellets and replace the cover.
4. Follow the I&O manual for application and piping.

⚠ WARNING

OUTDOOR INSTALLATIONS — provide and install electric heat tape on the condensate drain lines and around the JM tube to prevent possibility of neutralizer tube damage or line blockage due to freezing. Failure to comply with the following guidelines could result in severe personal injury, death or substantial property damage.

WARRANTY: JJM BOILERWORKS, INC. provides a 1-year warranty from installation date for manufacturer's defects.

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.

Recharge as required

Follow the requirements on page 2 for recharging or replacing the neutralizer tanks. Follow instructions noted above.

Replacement parts

Contact JJM Boiler Works, your local wholesaler or manufacturer's representative for replacement parts and refill kits.