# BLOWDOWN TANKS VS. BLOWDOWN SEPARATORS

Considerations for selecting a full Traditional Blowdown "Tank" vs. simple Blowdown "Separator" - especially for smaller boiler rooms.

All boiler rooms utilize intermittent, bottom blowdown. This is a "necessary evil", normally occuring for 15 to 30 seconds, once a day. Often times it is also recommended to continuously blowdown from the surface level connection. For continuous surface blowdown, Madden often recommends a heat recovery system. But for boiler rooms producing less than ~7,000 PPH, this often isn't worth while. Most clients choose to blow down both the continous surface blowdown and the intermittent bottom blowdown into a common blowoff vessel when their steam production is below ~ 7,000 PPH.

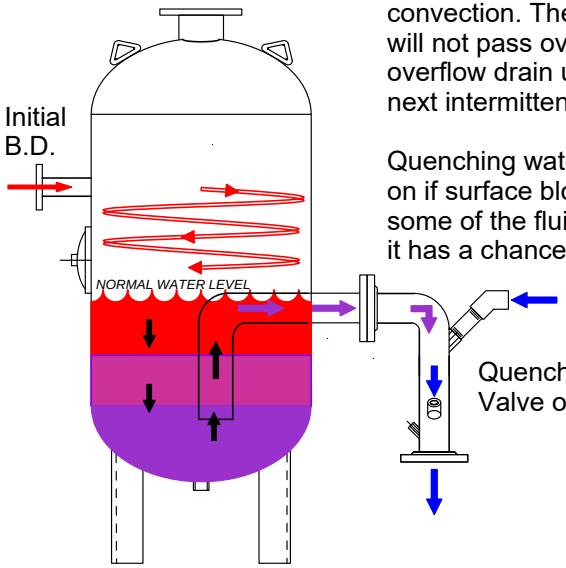
This diagram is intented to help choose when to use a traditional "Tank" vs. a smaller "Separator" in this situation.

1.) The blowdown water colors in the tank depict how water moves and cools through a traditional overflow style BD tank.

2.) This said, after start up, most of the time this water is room temperature. Waiting on the next bottom blowdown.

On average it takes 4-6 hours to cool to room temperature via natural convection.

I.E., The stagnant water is "blue" (~75 deg F), then fresh "red" (212 deg F) blowdown water enters, quenching everything to "purple" (< 140 deg F). Exiting at a safe temperature without the need for injecting fresh cold water.




0.) Hot blowdown enters and immediately flashes. The condensate then begins cooling via natural convection. The condensate will not pass over the overflow drain until the next intermittent blowdown.

Quenching water only turns on if surface blowdown pushes some of the fluid out before it has a chance to cool naturally.

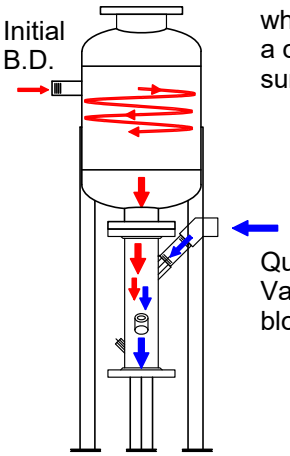
Quenching water supply. Valve opens sparingly.

## Pro's:

1.) Cold quenching water requirements greatly reduced.
2.) Longer service life.
3.) Easier to design for serveral different BD processes.

## Con's:

1.) More expensive, usually $15K to $30K.
2.) Takes up more floor space.




0.) Hot blowdown enters and immediately flashes. Quenching water always kicks on. Perfect for applications only doing intermittent bottom blowdown.

Still an appropriate choice when cost and floor space is a concern and very little surface blowdown occurs.

Quenching water supply. Valve is always on during blowdown.

## Pro's:

1.) Lower initial cost, usually $6K to $10K.
2.) Requires very little floor space.

## Con's:

1.) Constantly requires quenching water to kick on.
2.) Not easily adapted for more than (2) BD processes.

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