

WILSON



ENGINEERING

WILSON  
BOILER  
BLOWDOWN  
SYSTEMS  
AND EQUIPMENT



# WILSON ENGINEERING

## COMPLETE BOILER BLOWDOWN SYSTEMS AND EQUIPMENT

OVER 60 YEARS OF EXPERIENCE IN SAFE AND EFFICIENT HANDLING OF BOILER BLOWOFF

Wilson boiler blowdown systems are built around the Wilson centrifugal blowdown separator. The boiler blowoff is piped tangentially into the separator. In the resulting vortex the pressure is released, allowing the steam flash to rise through the vent while the water and sludge fall through the drain. A stainless steel wear plate protects against erosion in the blowoff entry area. No water is retained in the separator.

Wilson separators are sized according to boiler operating pressure and blowoff valve size. These are the only two factors that determine the rate of flow to the separator. Vents are sized to keep internal flash pressures to a maximum of 5 psig as recommended by the National Board of boiler and pressure vessel inspectors and as required by some state and municipal code authorities. Sizing information for standard models is tabulated on the following pages.

ASME design pressure of the separator should equal a minimum of 25% of the boiler maximum allowable working pressures (mawp) as recommended by the National Board. Design pressure for each standard model is shown on the following pages.

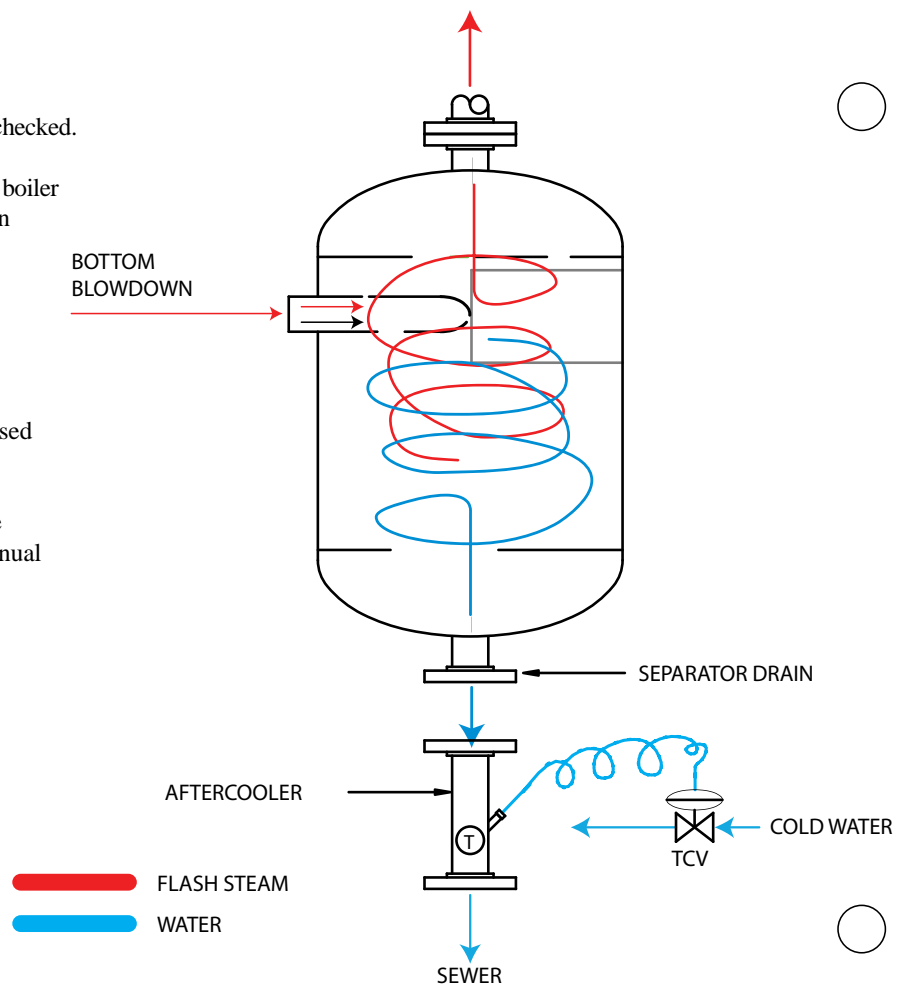
Most codes covering this type of equipment includes a maximum temperature limitation on wastes entering public sewers. Anti-pollution laws, which are widespread and universal, also include temperature limits for discharge to sewers and public waters. The Wilson aftercooler, properly sized for conditions, efficiently takes care of this problem.

Wilson equipment designed for hot water relief valve service is widely used for most economical and efficient disposal of relief valve discharge.

- Local boiler and plumbing codes vary and should be checked.
- Select a separator model by boiler blowoff valve size, boiler operating pressure and local codes. See information on following pages.
- The inlet connection on the separator must match the boiler blowoff valve size. One separator can be used in a battery of boilers. In this case, the header piping should remain the same size as the largest blowoff valve in the battery. It should not be increased or reduced.
- For required cooling of blowdown discharge before entering public sewers, select an aftercooler for manual or automatic control as listed on following pages.
- Type of connections desired: threaded, beveled for welding, or flanged.

### Auxiliary equipment available:

- Cooling water control package
- Aftercooler
- Mounting brackets and supports



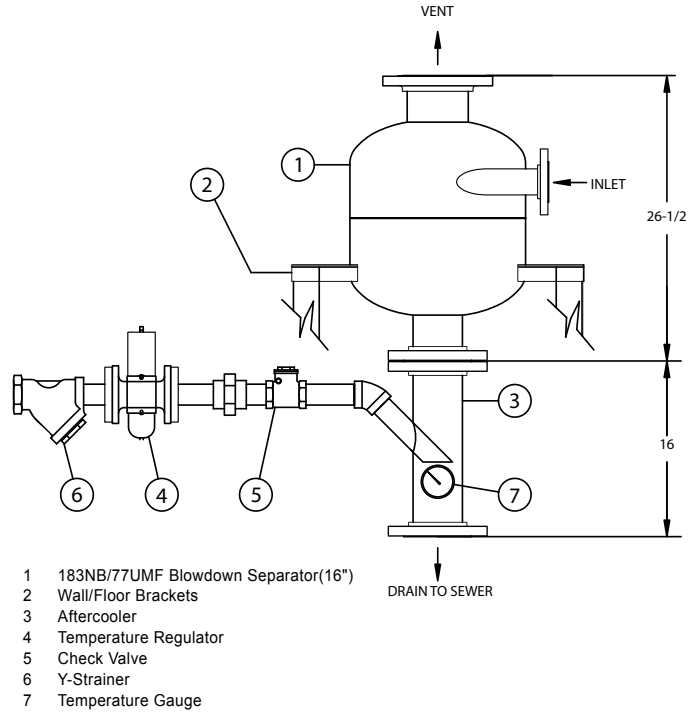
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## STANDARD SIZING AND CONFIGURATION



### Sizing of Standard Separator Models

SIZE IN INCHES	BLOWOFF VALVE SIZE IN INCHES	BOILER OP. PSIG	VENT IN INCHES	DRAIN IN INCHES
8 DIA. x 15 HGT.	1/2	0-300	2 1/2	2 1/2
	3/4	0-300	3	3
	1	0-200	3	3
16 DIA. x 26 HGT.	1	0-300	5	4
	1 1/4	0-300	5	4
	1 1/2	0-225 225-300	5 6	4 5
	2	0-150 150-200	5 6	5 6



- 1 183NB/77UMF Blowdown Separator(16")
- 2 Wall/Floor Brackets
- 3 Aftercooler
- 4 Temperature Regulator
- 5 Check Valve
- 6 Y-Strainer
- 7 Temperature Gauge

Vents sized for maximum of 5 psig in separator. The drains sized for flow of blowdown effluent plus aftercooler water for maximum temperature 140F to sewer. For sizing details refer to Wilson separator selection charts A&B. Note: Custom sizes are available. Consult the factory for more information.

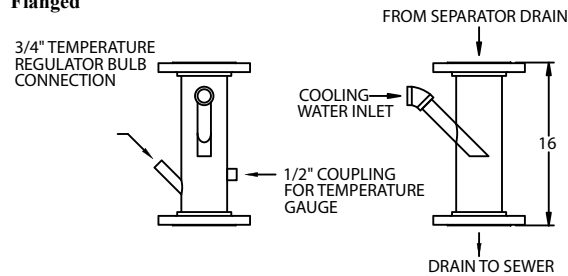
#### Notes:

- 1) Vessel connections may be threaded, flanged, or welded or any combination required by your application. Consult factory.
- 2) Material thickness must comply with state and local regulations. All separators shown are constructed to A.S.M.E. Code.
- 3) Separator design pressures are suitable with boiler maximum allowable working pressures to four times the separator design pressure (Per National Board recommendations).  
Ex: A separator with a 150 psig design pressure may be used with a 600psig maximum allowable working pressure boiler.
- 4) Separators may be registered with the National Board (optional).

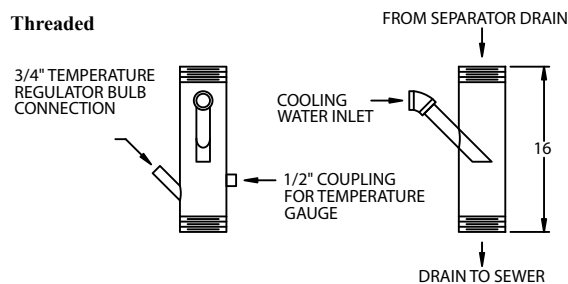
## AFTERCOOLER FOR HOT LIQUIDS

AFTERCOOLER CONFIGURED TO MATCH SEPARATOR DRAIN SIZE

#### Flanged

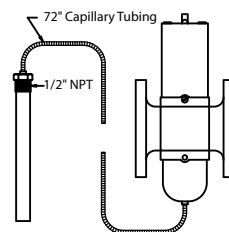


#### Threaded

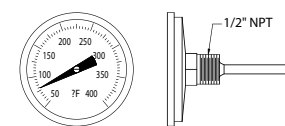


## COOLING WATER CONTROL ACCESSORIES

#### PENN VALVE



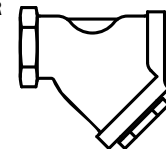
#### 3" DIAL THERMOMETER



#### CHECK VALVE



#### Y-STRAINER



# ADDITIONAL WILSON PRODUCTS



CONTINUOUS BLOWDOWN  
HEAT RECOVERY SYSTEM



BLOWDOWN TANKS



EXHAUST HEADS

## Blowdown Separator Specification

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available for download  
at [www.wilsonblowdown.com](http://www.wilsonblowdown.com)

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Provide one (1) Wilson Engineering 183NB/77um blowdown separator. Unit shall be sized to flash bottom blowdown down to 212F and cool the resulting drained condensate to 140F. Blowdown shall enter through a \_\_\_\_\_ inch tangential inlet with the maximum pressure of \_\_\_\_\_ psi @ \_\_\_\_\_ F.

Unit shall be capable of cooling \_\_\_\_\_ gpm of hot condensate from 212F to 140F.

Flash steam is released to atmosphere through an \_\_\_\_\_ inch vent line.

Blowdown separator shall be fabricated of carbon steel, ASME rated for 50 psi and National Board stamped.

## Manufacturer shall provide:

- Stamped 16" diameter carbon steel vessel. ASME rated for 50 psig\*
- \_\_\_\_\_ inch 150# flanged inlet connection
- \_\_\_\_\_ inch 150# flanged vent and \_\_\_\_\_ inch 150# flanged drain
- \_\_\_\_\_ inch 150# flanged aftercooler
- Automatic Temperature regulating cooling water control package.
- Floor mounting brackets.

Acceptable manufacturer must have built this type of unit for at least 5 years. Manufacturers not able to provide detailed drawings and flow requirements will not be accepted. No outside controls shall be necessary for the proper operation of this unit.

\*Higher pressure ratings are available upon request.

