

SteamTeam®

Bell & Gossett®
McDonnell & Miller™

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Hoffman Specialty, Product Specialist

McDonnell & Miller Frequently Asked Questions

1. Q. How do I maintain Low Water Cut Offs?

Find detailed maintenance instructions for McDonnell & Miller low water cut-offs in the installation and operating instruction manual (IOM) that ships with the product. You can also get the IOMs online at www.mcdonnellmiller.com.

Here's a brief summary of required maintenance. Please refer to the appropriate IOM for detailed instructions.

Probe-Style Low Water Cut-Offs

- Test annually
- Inspect self-cleaning probe every 5 years (annually if not self-cleaning)
- Replace probe every 10 years
- Replace complete control every 15 years

Float-Operated Mechanical Controls

- Hot water boilers: blow down quarterly
- Steam boilers below 15 PSI: blow down weekly
- Steam boilers above 15 PSI: blow down daily
- Disassemble and inspect annually - including float chamber and equalizing piping
- Replace head mechanism every 5 years
- Replace control every 15 years

A Special Note on Commercial Steam Boilers

The National Board of Boiler and Pressure Vessel Inspectors

(ASME) recommends daily blow-down and testing of all low water cutoffs on commercial steam boilers. Many local codes require this.

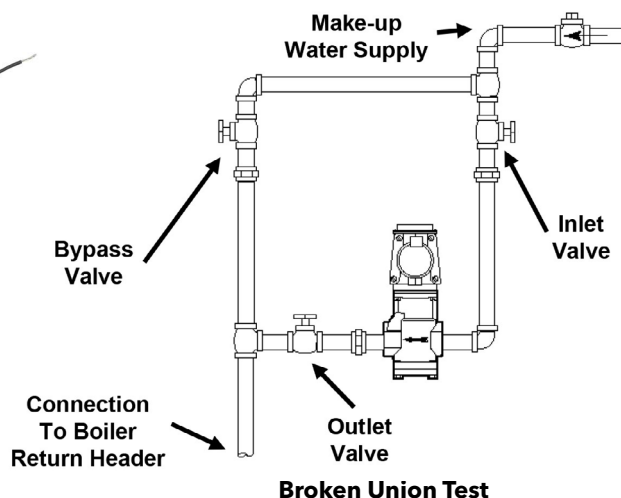
2. Q. I installed a new electronic water feeder - why is my boiler flooding?

A. Common causes of flooding include:

- Feeder pump not balanced to boiler requirements
- Faulty swing-check in return header
- Plugged equalizing pipe connection
- Leaking tankless hot water coil in boiler
- Attendant over-filling boiler through the hand bypass valve
- Dirty water resulting in priming and carryover
- Too small a difference between level of dry return and boiler water level
- City water pressure above 150 lbs. (May need pressure-reducing valve in feed line)

Faulty installation can cause flooding. Remember that the closing level of make-up feeders on heating boilers should be set 2" to 2 1/2" below the manufacturer's recommended boiler water line. This lets the system return balance varying steaming rates without adding make-up.

B. Always troubleshoot the whole system, not just one control. Boilers often flood because of a malfunctioning low water cutoff or clogged return pipes. To determine if the feeder is shutting down completely, do a "broken union test."



- Make sure the boiler water level is above the feeder's closing level.
- Close the outlet valve in the feed pipe - running from the feeder to the boiler.
- Uncouple (break) the union between feeder and boiler.
 - Lower the boiler water level to observe water **flow** through the feeder.
 - Raise water back to the shutoff level to verify that no water flows out. If water does come out of the union, the water feeder is leaking and needs to be repaired or replaced.
 - Open the outlet valve to verify there is a steady flow of water coming back from the boiler. If not, check the feed line for lime or scale, which can hold the feeder open due to back pressure.

- Check for leakage past the bypass valve by opening the union below the bypass valve.
 - If there is a leak, repair or replace the bypass valve.

3. Q. Why won't the valve shut off drip-tight?

Do the broken union test to be sure the valve really is leaking. Often the valve is not leaking, and the cause of the flooded boiler is in the system.

If the valve is leaking, your best option is to replace it—especially if it's an old-style pilot action valve or metal-to-metal valve. Bring it up to date with a cartridge valve. Initially, you'll have to replace the whole valve (models SA47-101-102 & SA51-101-102...pre-August 1995.) After that, you'll need to replace only the cartridge if the valve fails to shut off drip-tight.

Bozhidar Ivanov
Domesic Pumps, Product Specialist

Cast Iron or Steel? The Receiver is tailored for the application.

The "receiver" or "tank" in a Domestic® Pump steam condensate handling unit should be of the proper material and size for the application, following industry best practices and ASHRAE recommendations. Condensate collection tanks generally come in two types of material - cast iron or steel. Both meet the highest industry standards and provide years of service. The main difference is that cast iron tanks have more than 2 percent carbon content in the iron-carbon alloy.

Close-grained cast iron is the most-used material for domestic receivers. Features include high quality, durability, corrosion resistance, heat retention, leak-tightness, machinability—and a 20-year warranty against corrosion. It is the standard for the majority of our build-to-order and stock products. The average life of a cast iron tank is 25-30 years.

Cast iron's machinability lets us process all the receiver's operational openings - for the condensate inlet, the pump connections, the vent, overflow, drain, gauges, switches, make-up water, etc. However, steel offers even greater flexibility for customizing tanks. The more machinable steel receivers can be easily modified for the customer's specific application.

Black steel is a budget option for rectangular cast iron receivers, and standard for cylindrical tanks. Cylindrical receivers are dish-headed and reach up to 1,697 gallons in volume, compared to a cast iron tank's 250-gallon maximum. Steel tanks cannot equal cast iron's heat retention or corrosion resistance; their typical warranty is 12 months from date of installation or 18 months from shipment.

We can increase corrosion resistance for cylindrical black steel receivers with optional galvanized, epoxy-lined or stainless steel tanks. We can also insert an optional magnesium anode corrosion inhibitor, which attracts the corrosion process and extends the steel tank's life.



CB unit with a cast iron receiver



CMHD unit with a steel receiver

Good care is important to keep the receiver in shape and provide a safe environment. Note that in Domestic Pump units, receivers must not be pressurized, and boiler feed chemicals should not be fed directly or ahead of the tank. You can easily recognize Domestic units by the gray paint - a water-based, environment-friendly enamel that coats all our units' composites (tanks, pumps, etc.).

Available options for receivers

Material	Modification	Feature	Application			
			Condensate return units		Boiler feed units	
			BTO units	Stock units	BTO units	Stock units
Cast iron	Close-grained cast iron	20 year warranty against corrosion. Retains heat better	Standard for 6 to 250 gallon units, 24x36" underground unit, and for vacuum units.	Standard for 6 to 36 gal. units.	Standard for 23 to 250 gal. units.	N/A
Steel	Black Steel	Budget option, more customizable	Standard for 6 to 250 gal. rectangular units, and for 65 to 1306 gal. cylindrical units.	Standard for 6 to 14 gal. units.	Standard for 23 to 250 gal. and 65 to 1697 gal. cylindrical units.	Standard for 30 to 200 gal. units.
	Epoxy-lined steel	Corrosion resistance option	Standard for all underground except 24x36". Optional for cylindrical units.	N/A	Standard for underground units. Optional for cylindrical units.	N/A
	Galvanized steel	Corrosion resistance option	Optional for cylindrical units.	N/A	Optional for cylindrical units.	N/A
	Stainless steel	Corrosion resistance option	Alternate material that is available for rectangular and cylindrical steel units.	N/A	Alternate material that is available for rectangular and cylindrical steel units.	N/A

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services, and agricultural settings. With its October 2016 acquisition of Sensus, Xylem added smart metering, network technologies and advanced data analytics for water, gas and electric utilities to its portfolio of solutions. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xyleminc.com



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