

# Boiler feed system operation and maintenance manual

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**What is the feed system of a boiler?** Feedwater systems are defined as the systems that store and pump water directly into steam boilers. Feedwater systems typically receive water from condensate return units or directly from the system steam traps. Make-up water is introduced to the boiler system through a level control in the feedwater tank.

**What are the guidelines for boiler feedwater?** At a minimum, boiler feedwater must be softened water for low pressure boilers and demineralized water for high pressure boilers. It must be free of oxygen and essentially free of hardness constituents and suspended solids.

**What is bfp motor?** In a thermal power plant, the boiler feed pump (BFP) is one of the critical auxiliary machines that are equivalent to the heart of the plant.

**What is a feed water tank?** The feed water tank provides a reserve of water to cover the interruption of make-up water supply. Traditional practice is to have a feed tank with sufficient capacity to allow one hour of steaming at maximum boiler evaporation.

**What temperature should boiler feed water be?** To avoid the “Improperly Heated Feed Water” condition described above, the boiler feedwater should be heated to at least 180 °F when using a feedwater tank and 227 °F when using a deaerator.

**How does a feed system work?** Feeding system is the main mechanism of carrier mounted rig, and determines the rig's performance. The feeding system contains stretching mast, which pulls the drive head through two hydraulic cylinders and steel

cables, as a result, the rig has a compact structure and long feeding distance.

**What are the two requirements of boiler feed water?** The boiler water needs to be alkaline and not acidic, so that it does not ruin the tubes. There can be too much conductivity in the feed water when there are too many dissolved solids. These correct treatments can be controlled by efficient operator and use of treatment chemicals.

**What are the important parameters for boiler feed water?** Important parameters of the feed water are: pH. Hardness. Oxygen and carbon dioxide concentration.

**What is the pH range for boiler feed water?** The safe pH range for steam boilers is between 8.5pH & 12.7pH, whilst the recommended level is between 10.5pH & 12.0pH. Boiler water with a pH of 10.5 contributes 12.6mg/l towards the boiler TDS, whilst at a pH of 12.0 it increases to 400mg/l and at 12.5pH the value is 1264.9 mg/l a 100 fold increase.

**Which pump is used for boiler feed?** Today, all boiler feed pumps are centrifugal pumps.

**What is the balancing line in a boiler feed pump?** What is the balancing line in a boiler feed pump? If pressure at one side of the pump is significantly higher than the other side, the rotor will be pushed to the other side and burden your axial / thrust bearing. The balancing line connect these two sides to equalize the pressure.

**What is the primary purpose of boiler feedwater?** The prime purpose of boiler feed water treatment is to protect the boiler, and in particular the heating surfaces, from corrosion and deposition of solids. The purity of the steam is largely taken care of by the evaporation of the water, which leaves behind any residual impurities in the boiler.

**What is the difference between boiler feed water and boiler water?** The key difference between boiler make-up water and boiler feed water is the purpose for which they are used. Boiler make-up water is added to the boiler system to replenish the water lost during the operation, while boiler feed water is specifically treated and supplied to the boiler to generate steam.

**What is a DA tank on a boiler?** The Deaerator tank in the boiler acts as a Feed Water Tank to store cold and hot fluid in order to remove dissolved air or non-condensable gases from the fluid. Deaerating feed tank helps in removing non-condensable gases from a feed.

**What is the internal treatment of boiler feed water?** Internal treatment for hardness At boiler operating temperatures, calcium carbonate in the feedwater breaks down to form calcium carbonate. Since it is relatively insoluble, it precipitates. Sodium carbonate in the water partially breaks down to sodium hydroxide and carbon dioxide.

**How to increase boiler feed water temperature?** As steam loses heat, it turns back into water. This water is called condensate and has temperature equal to that of steam. Returning condensate to boiler feed water tank raises the feed water temperature, improving the steam to fuel ratio. This cuts the fuel consumption thereby reducing the fuel bill.

**How do you calculate boiler feed water?** Another quick rule of thumb is that 1/10 of a gallon is needed for every boiler horsepower. So a 500 HP boiler will need a pump capable of delivering 50 gpm. An 800 HP boiler will need an 80 gpm pump.

**What number should water be on boiler?** Most modern boilers will have a digital dial that allows you to set the output temperature. For combi boilers, the recommended output temperature for the radiators is 75 °C and for the water is between 50 °C and 60 °C. You shouldn't need to adjust these output temperatures as you may alter the boiler's efficiency.

**What are the steps in feed processing?** Feed manufacture involves number of processing steps including grinding, pelleting, steam flaking, extrusion and expanding. These processing methods may affect total or ileal starch digestibility by altering starch properties or by interacting with other components in the feed (Svihus et al., 2005).

**What is the function of the feed system?** The feeding system (feed system), also known as the runner system, directs molten plastic from the injection machine's nozzle into the mold cavity. Its role is to ensure smooth and orderly filling of the

cavity and transmit injection pressure to obtain well-structured plastic parts during filling and solidification.

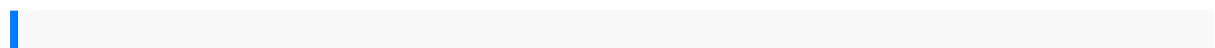
**What are the parts of the feeding system?** A parts feeding system usually consists of the all necessary feeding equipment to orient, feed and deliver a product including a vibratory feeder, hopper, sensors , a feeder stand and an escapement or parts nest.

**What is the purpose of boiler feed?** Their main purpose is to produce steam. For boilers to produce steam, they first need feedwater. Boiler feed pumps transport the feedwater at high pressure from the deaerator tank to the boiler. It's a crucial component of the whole boiler system.

**What is the function of feed valve in boiler?** Feed Check Valves are one of the most important components of boiler which control the flow of water from feed pump to the boiler and further prevents the backflow of water from boiler to pump when the boiler pressure is more than the pump pressure or when feed pump stops working.

**What are the different types of boiler feed systems?**

**How does the automatic feed work on a boiler?** Most residential steam boilers have an automatic water feeder that adds water to the boiler in the event that the boiler's low water cutoff device says it needs some water. This is not as much a safety item as it is a convenience item.



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