



# Model 21 and 221 Mechanical Water Feeders And Replacement Valve Assembly SA21-6

**Applications:**

For receiver tanks in industrial or commercial applications.

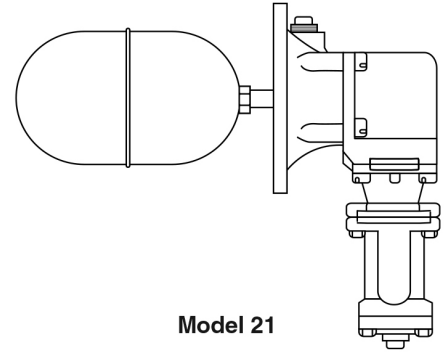
**Maximum water supply pressure: 150 PSIG (10.55 kg/cm<sup>2</sup>)**

**Maximum vessel pressure: 35 PSIG (2.46 kg/cm<sup>2</sup>)**

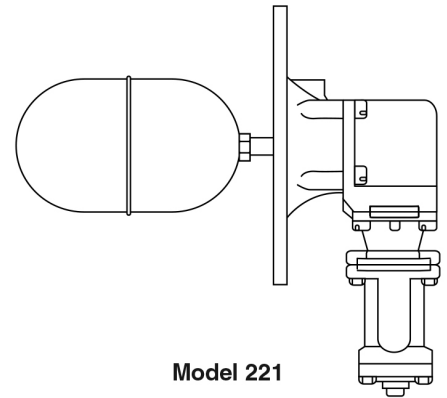
**Maximum fluid temperature: 120°F (49°C)**



SA21-6

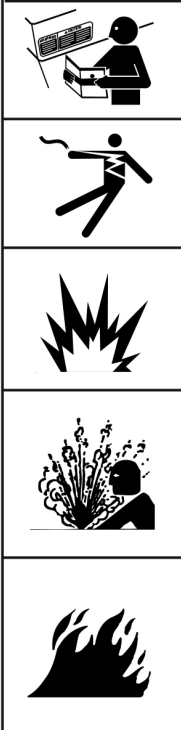


Model 21



Model 221

## **WARNING**



- Before using this product read and understand instructions.
  - Save these instructions for future reference.
  - All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of plumbing, steam, and electrical and/or systems in accordance with all applicable codes and ordinances.
  - Drain water level down below feeder and let cool to 80°F (27°C) before servicing.
  - If tank or receiver is pressurized relieve pressure to 0 psi (0 bar) before servicing.
  - To prevent water damage check to make sure there is adequate floor drainage capacity. Check all components in the system to insure that they will not leak in the event of an overfeed condition.
  - This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to: [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).
  - Previous controls should never be installed on a new system. Always install new controls on a new boiler or system.
- Failure to follow this warning could cause property damage, personal injury or death.

**CAUTION:**

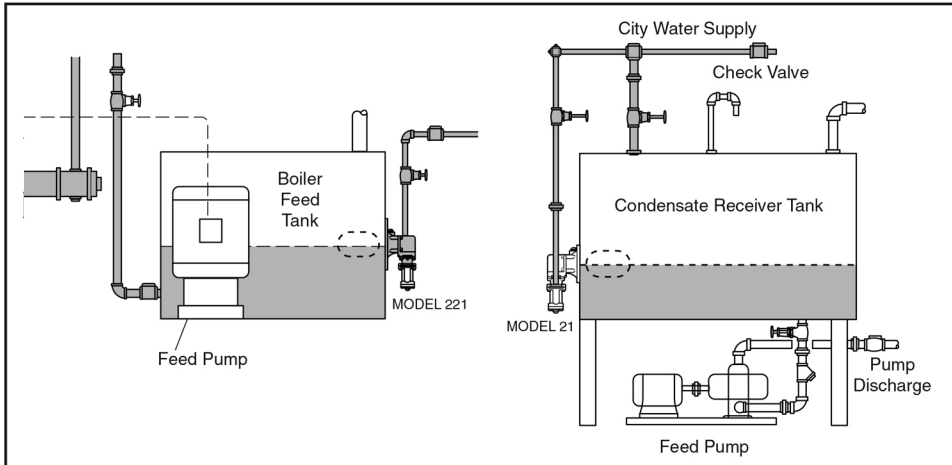
- A more frequent replacement interval may be necessary based on the condition of the unit at time of inspection. McDonnell & Miller's warranty is one (1) year from date of installation or two (2) years from the date of manufacture.

# OPERATION

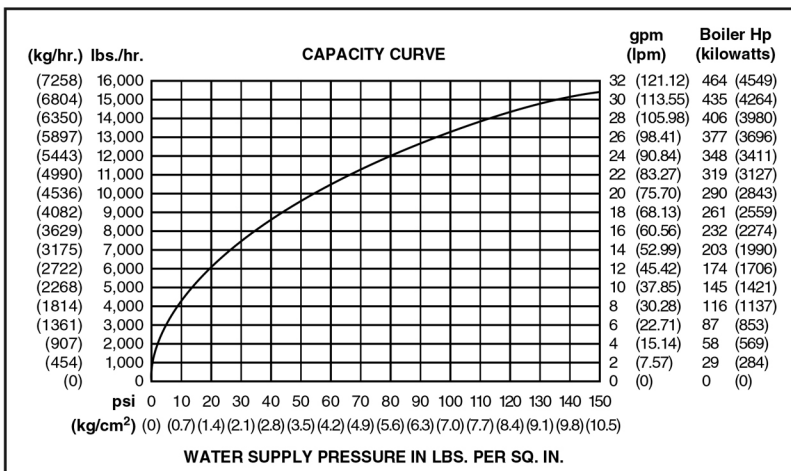
The Series 21 make-up water feeder provides dependable, float-operated automatic water filling service to tanks used as condensate receivers in boiler systems. The valve components are of brass, an elastomer sealing disc and stainless steel materials, and a 4-3/4" diameter copper float providing

closure against supply pressure up to 150 PSI. An integral strainer and housing with removable drainage plug precede the valve for regular servicing. The control is a direct-feeding unit (feeds through the flange connection) available in two flange sizes.

# TYPICAL INSTALLATIONS



# Capacities



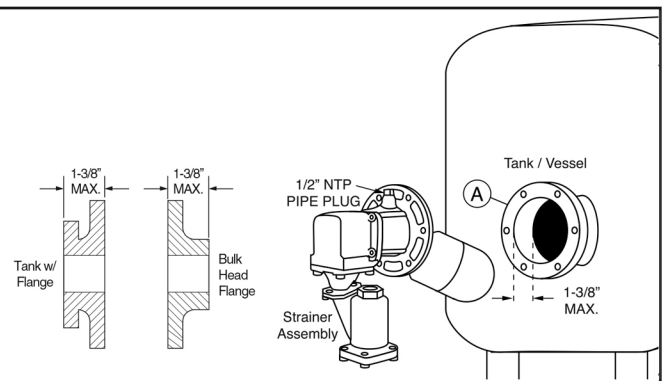
# INSTALLATION

## TOOLS NEEDED:

One (1) adjustable wrench, socket wrenches, two (2) pipe wrenches, pipe dope, assorted fittings and lengths of 3/4" pipe.

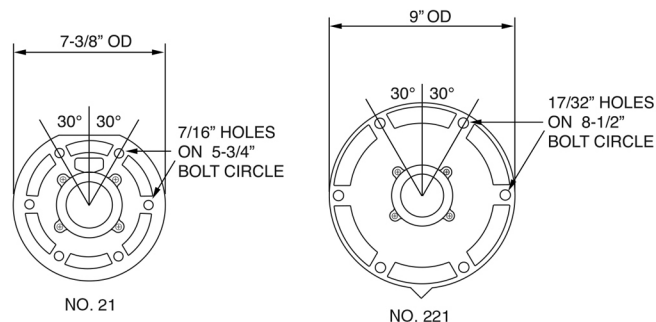
## STEP 1 - Preparation

This Water Feeder mounts directly on the tank or vessel. The tank or vessel is to be manufactured with a mating flange (A) and opening large enough for the float. The flange can be either welded flush on the side or head and have pre-tapped mounting holes (preferred), or a necked or nozzle flange with plain mounting holes. Either must have a 1-3/8" maximum distance from the outer flange face to the interior wall surface to allow the float to fully drop to get maximum valve capacity.



## STEP 1 - Preparation - (continued)

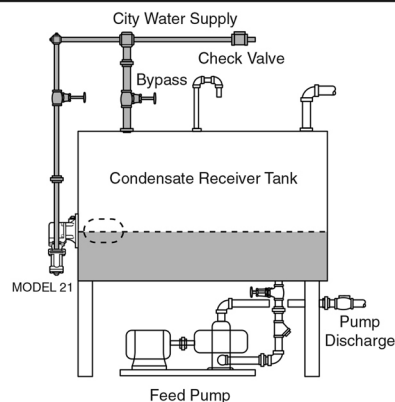
### Flange Dimension Details



## STEP 2 - Install the Piping

The feeder is usually mounted one-third (1/3) of the way up from the bottom of the tank. This provides two-thirds (2/3) of the tank for return condensate.

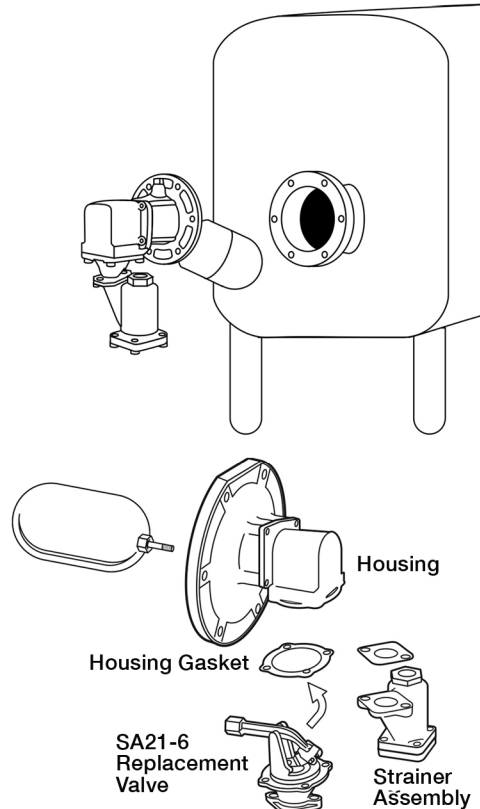
Follow the diagram for piping the feeder to the tank and water supply. Remember to leave room for the servicing the water feeder. At all right angle turns in the equalizing piping, crosses should be used to facilitate inspection and cleaning.



## 21 Series - Replacement Valve Assembly (SA21-6)

- a. Remove Feeder from Tank.** Turn off the water supply and drain the tank below the level of the feeder flange. If fluid is heated, allow system to cool to 80°F (27°C) before disassembly. Disconnect the piping above the strainer assembly. Remove the six (6) mounting bolts and lift off the feeder from the tank.
- b. Remove Valve Assembly.** Remove float and rod from the float arm of the valve linkage. Unscrew the two (2) bolts from the strainer body at the bottom of the valve assembly. Unscrew the four (4) bolts from the valve body at the bottom of the valve housing bracket. Pull the valve assembly from the housing in an arcing movement to clear the float arm from the interior.
- c. Reassemble with new Valve Assembly.** Position the new valve assembly with new gasket, float arm first, into the housing. Hand secure the four (4) bolts and tighten to 16 ft/lbs. Replace the strainer body and new gasket using the two (2) bolts. Tighten to 16 ft/lbs. Reattach the float and rod onto the float arm and hand tighten.
- d. Replace Feeder on Tank.** Replace the assembly and new gasket onto the tank flange. Tighten the six (6) bolts to 16 ft/lbs. Reconnect the piping and restore water supply. Check for proper closing level and leakage before leaving the jobsite.

**Note:** Use new gaskets; make sure all gasket surfaces are clean.



## MAINTENANCE:

- **Blow down tank weekly during heating season.** Blow down may have to be more frequent depending on local water conditions and the amount of make-up water.
- **Clean strainer at least twice during heating season.** Cleaning may have to be more frequent depending on local water conditions and the amount of make-up water.
- **Replace control every 15 years.**

### COMMERCIAL WARRANTY

**Warranty.** For goods sold to commercial buyers, Seller warrants the goods sold to Buyer hereunder (with the exception of membranes, seals, gaskets, elastomer materials, coatings and other "wear parts" or consumables all of which are not warranted except as otherwise provided in the quotation or sales form) will be (i) be built in accordance with the specifications referred to in the quotation or sales form, if such specifications are expressly made a part of this Agreement, and (ii) free from defects in material and workmanship for a period of one (1) year from the date of installation or two (2) years from the date of manufacture, whichever shall occur first, unless a longer period is specified in the product documentation (the "Warranty").

Except as otherwise required by law, Seller shall, at its option and at no cost to Buyer, either repair or replace any product which fails to conform with the Warranty provided Buyer gives written notice to Seller of any defects in material or workmanship within ten (10) days of the date when any defects or non-conformance are first manifest. Under either repair or replacement option, Seller shall not be obligated to remove or pay for the removal of the defective product or install or pay for the installation of the replaced or repaired product and Buyer shall be responsible for all other costs, including, but not limited to, service costs, shipping fees and expenses. Seller shall have sole discretion as to the method or means of repair or replacement. Buyer's failure to comply with Seller's repair or replacement directions shall terminate Seller's obligations under this Warranty and render the Warranty void. Any parts repaired or replaced under the Warranty are warranted only for the balance of the warranty period on the parts that were repaired or replaced. Seller shall have no warranty obligations to Buyer with respect to any product or parts of a product that have been: (a) repaired by third parties other than Seller or without Seller's written approval; (b) subject to misuse, misapplication, neglect, alteration, accident, or physical damage; (c) used in a manner contrary to Seller's instructions for installation, operation and maintenance; (d) damaged from ordinary wear and tear, corrosion, or chemical attack; (e) damaged due to abnormal conditions, vibration, failure to properly prime, or operation without flow; (f) damaged due to a defective power supply or improper electrical protection; or (g) damaged resulting from the use of accessory equipment not sold or approved by Seller. In any case of products not manufactured by Seller, there is no warranty from Seller; however, Seller will extend to Buyer any warranty received from Seller's supplier of such products.

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### LIMITED CONSUMER WARRANTY

**Warranty.** For goods sold for personal, family or household purposes, Seller warrants the goods purchased hereunder (with the exception of membranes, seals, gaskets, elastomer materials, coatings and other "wear parts" or consumables all of which are not warranted except as otherwise provided in the quotation or sales form) will be free from defects in material and workmanship for a period of one (1) year from the date of installation or two (2) years from the product date code, whichever shall occur first, unless a longer period is provided by law or is specified in the product documentation (the "Warranty").

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To make a warranty claim, check first with the dealer from whom you purchased the product or call +1-847-966-3700 for the name and location of the nearest dealer providing warranty service.



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