AIR CLEANING EQUIPMENT INC
303 N Main St • Broadway NC 27505 • 800-962-0650
WWW.INDUSTRIALAIRTREATMENT.COM

Blending Valve Panel

Blends Deionized (DI) Water
with Raw (Incoming) Supply Water
For Humidity Control Systems

• Blending Valve Panel (BVP-1) Blends Deionized (DI) Water with Raw Supply Water

The Blending Valve Panel (BVP-1) was developed for use with high pressure humidity control systems as an effective and economical alternative to Reverse Osmosis (RO) water pre-treatment systems.

The Blending Valve Panel is designed to be used in conjunction with DI tanks for blending Deionized (DI) water with your raw supply water producing a desired water quality output in parts per million (ppm) of total dissolved solids (TDS).

Application:

For control of water hardness and air dusting in all high pressure type water atomizing humidity control systems.

Deionization removes the formerly dissolved solids composed of positive ions (cation tank) and negative ions (anion tank) producing pure water.

The Blending Valve adds back a controlled amount of the original raw water, blending to a desired ppm output content of total dissolved solids – generally between 20-80 ppm TDS.

Benefits:

- Lowers capital investment compared with Reverse Osmosis (RO) systems.
- Efficient use of all water (no water waisted).
- Blending lengthens the DI tank life and lowers regeneration fees.
- Decreases the corrosiveness of DI water & increases the life of pump components.

ACE 2 Yr Warranty

Low Cost – Low Maintenance
No Electricity Required

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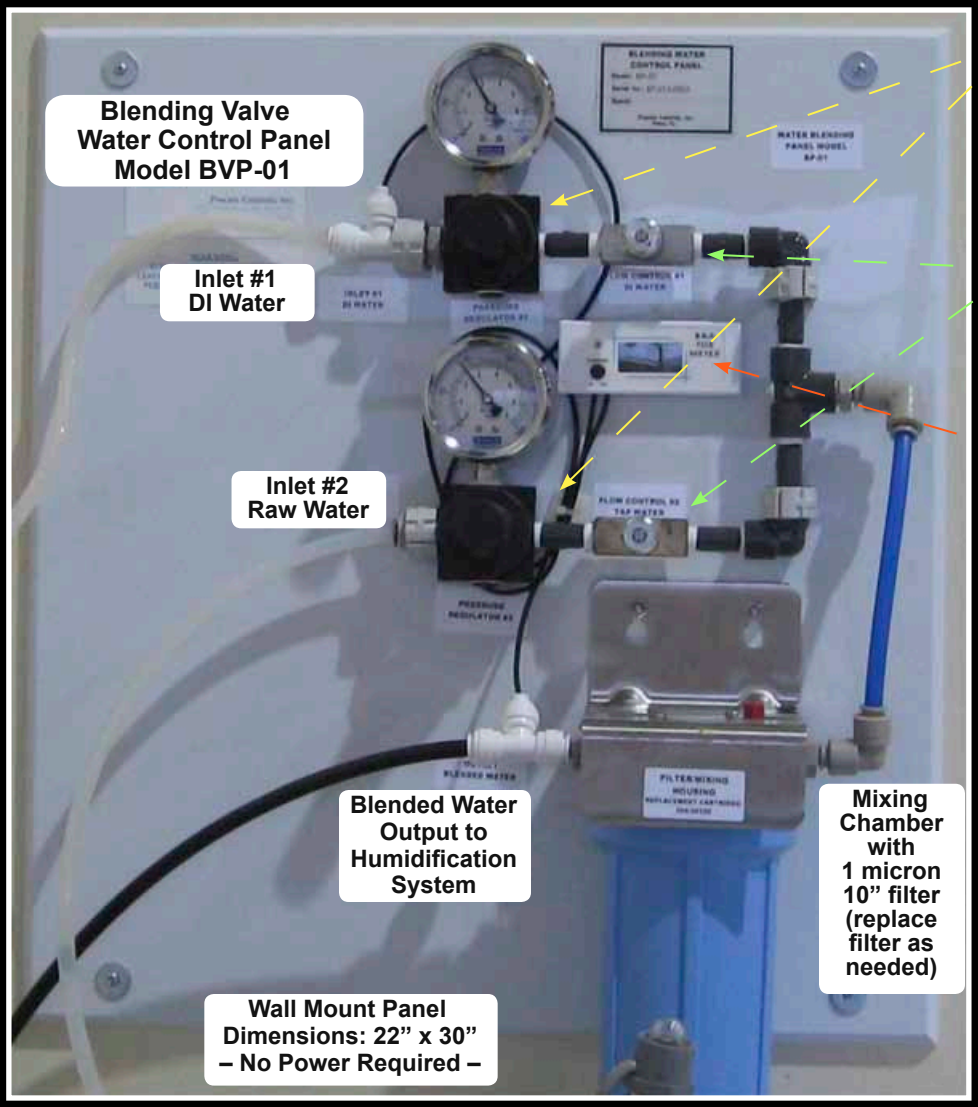

Water Treatment solves both the hardness of water due to the calcium content which produces scale buildup AND air dusting due to the evaporation of atomized water which causes formerly dissolved Total Dissolved Solids (TDS) to convert to solids at the point of evaporation. The affect is called air dusting which in time shows up as a fine white powder which settles on all surfaces.

Midwest Example: Yearly operational cost for this type of system at a Lake Forest IL Plant (60,000 ft2 x 21' ceiling) with a 2 gpm pump station is $419 (regeneration cost per tank rotation) for a pair of DI Tanks sized for 2 gpm output. When tanks need to be regenerated, there is a red warning light above which tells you time to call for tank rotation. In this application, one set of tanks yields a full season (Oct 15-April 15). Note: actual yield of tanks are dependent upon raw water quality conditions specific to each location and yearly operating hours.

- *Pressure Regulators automatically compensate for pressure variations from the Inlet DI Water and Inlet Raw Water streams.*
- *Two independent flow control adjustments regulate flow of the two streams into the mixing chamber.*
- *The TDS meter displays a readout of the real time output of the total dissolved solids content of the final blended water.*

Specifications

- TDS meter displays ppm of inlet and output water quality.
- Automatic compensation for pressure variations – with independent flow adjustments.
- 3/8" Speed-fit connections.
- Engineered with inner stainless steel corrosion resistant construction to prevent degradation due to aggressive DI water.
- Blends to desired ppm TDS output (unaffected by changed feed pressures).
- Maximum 2 GPM capacity.

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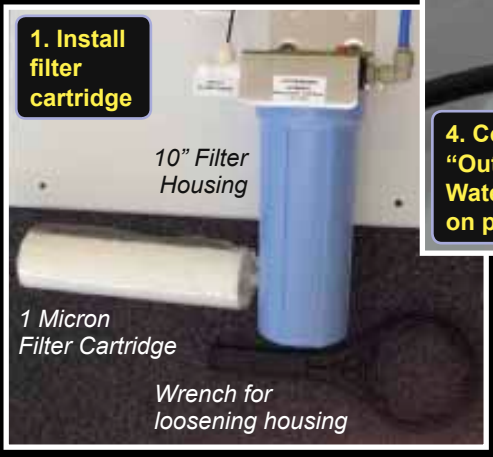
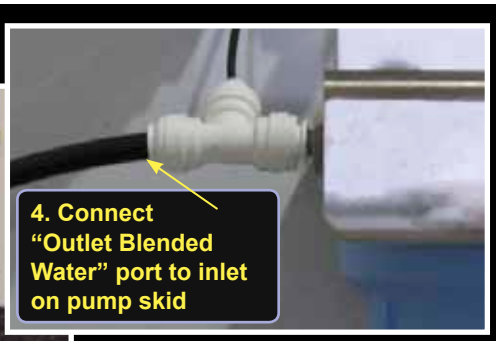
Installation

1. Install filter cartridge





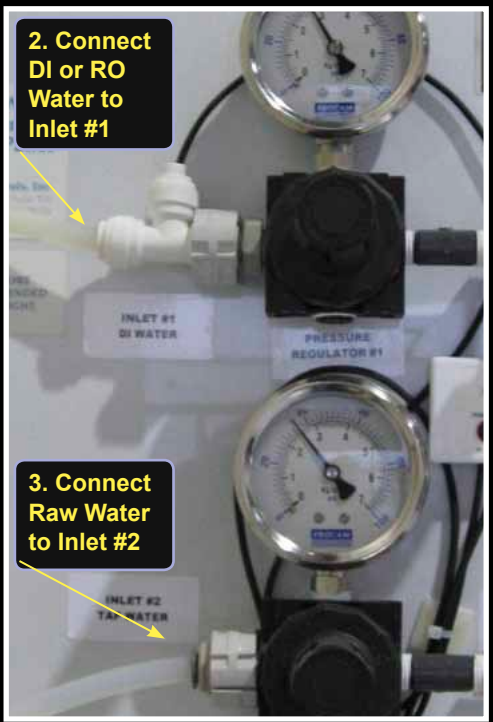
4. Connect "Outlet Blended Water" port to inlet on pump skid

5. Set Pressure Regulator #1 and #2 to the same value approximately 5 psi below the lowest incoming pressure at Inlet #1 or #2 (It will probably be #1 as there is pressure drop through the DI tanks).

Note: pump skids come with a low pressure switch set at 35 psi, therefore maintain a minimum of 40 psi.

2. Connect DI or RO Water to Inlet #1

3. Connect Raw Water to Inlet #2



6. Adjust Flow Control of Micrometer Needle Valves #1 and #2 to desired blended water quality (between 20-80 ppm).

- **Turn clockwise to reduce the flow, counter-clockwise to increase the flow.**
- **START the blending adjustment process with the Raw Water Inlet Flow Control (Brass Body valve) closed (turn clockwise until it stops) and the DI Water flow Control (SS body valve) fully open. Then open the RawWater Flow Control in 1/2 turn increments while checking the Blended Water Output TDS.**

7. The B&A TDS Meter measures the TDS of the DI Inlet Water and The Blended Water Output. When the red button is pushed once, the meter indicates the DI Inlet Water TDS. When you push the red button again while it still displays, it will switch to the Blended Water Output TDS. The B&A TDS Meter is battery driven (replace battery yearly).

Note 1. DI Tank life varies depending on the TDS content of the feed water and size of the tanks – TDS ranges in U.S. from 25 ppm to 1500 ppm – Average is in the range of 300-500 ppm TDS. Tanks maintain 40-60 psi line pressure; connect using PVC pipe only.

Note 2. Maintain flow through system when adjusting water pressures and flow control (blended water discharge can be run into a bucket to make these adjustments).

Note 3. The ACE High Pressure pump requires a minimum of 40 psi for operation.