DIBS
(Deionized Blending System)

Water Treatment for High Pressure (1000 psi) industrial quality humidity control systems

The cost effective solution

<u>The ideal non-corrosive</u> water quality for high pressure atomizing humidity control systems.

DIBS is a blending system – mixing pure deionized water with a precisely controlled supply of raw water to attain the exact desired parts per million (ppm) output of total dissolved solids (TDS) supplied to your humidity control system. Included is a newly added bladder tank (expansion chamber) – recapturing formerly wasted treated water to the drain – no water wasted in the entire system.

Features:

- TDS control to your desired ppm output.
- Non-corrosive vs. corrosive RO water.
- Very low yearly maintenance.
- 25% capital expense compared to RO.
- No water wasted to drain.
- Cation/Anion capacity: 92,000 grains.

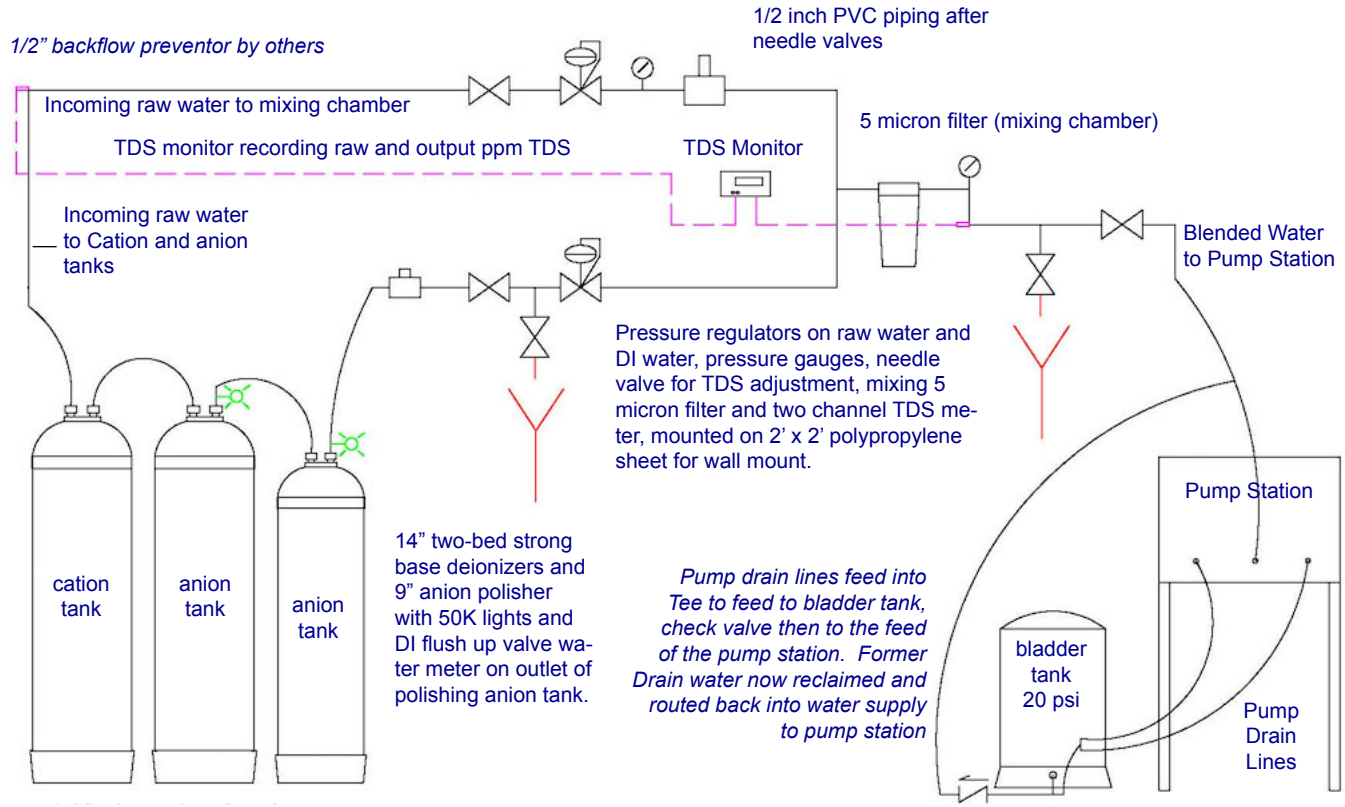
Capacity:

– For .25 gpm up to 4 gpm.
– Set of 3 Tanks Yields:
- 8700 gallons of pure water (with feedwater TDS @ 170 ppm)
- Note: Total gallons of pure water per tank set based on feedwater TDS ppm.

Standard Package Includes:

- Set of 3 tanks (14” cation & anion tank, 9” anion tank), drain line bladder tank & wall mount blending panel.
- Installation/Service – US & Canada.
- Yearly or biannual service with tank rotation as needed.
- DIBS sized for any application.

DIBS EQUIPMENT DIAGRAMED LAYOUT



The Service Technician installs the anion and cation tanks, the wall mount blending panel, the bladder tank functioning as an expansion chamber, and sets TDS to your desired setting (generally 50 ppm). To set the system in operation, the technician sets the raw water regulator to 40 psi and sets the DI pressure to 30 psi. then adjusts TDS as displayed by the TDS monitor to pump station with the raw water needle valve.

Deionization: one of the most efficient processes for removing dissolved solids from raw water. The process uses synthetic ion exchange resin in separate bed cation and anion tanks to remove dissolved solids by ion attraction and exchange – producing 9.0 pH (non-aggressive and non-corrosive) pure water as compared to reverse osmosis (RO) low pH (aggressive and corrosive) water which has the potential for negative ion air dusting.

The function of the DIBS system is to blend with the deionized water – the raw water supply (untreated) in order to produce the ideal output of total dissolved solids (TDS) to the exact parts per million (ppm) output in order to effectively manage water hardness (calcium/scale) and air dusting (the production of air dust from dissolved solids turning to solids during evaporation). Additionally, because the water is above 7.0 pH, negative air dusting is avoided (the production of negative ions from low pH water which when introduced into the air attract positively charged dust particles forming into larger air dust particulates).

The standard set point is suggested for the TDS monitor at 50 ppm output and can be set at any desired output level higher or lower depending upon exact requirements. The capacity of total output by the 14" diameter cation and anion tanks will produce pure water at about 7500-8,000 gallons. By adding back in raw water to 50 ppm, the tank life is extended higher depending on the TDS content of your raw water and the TDS set point combined.

The season for adding moisture to the air centers on the dry air - winter time frame where the average operating season is from Oct 15 thru Apr 15.

Costing a DIBS equipment package for your application: Complete DIBS equipment for .25 gpm up to 4 gpm – budget for $5,000.00. Includes anion and cation tanks installed, wall mount blending system, and all installation with tech service.

For DIBS customer follow up inquiry contact:

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Note: Dennis Eisenhauer at Total Water will coordinate the follow up by setting up each customer with a local follow up water treatment company which will handle all customer support with ongoing localized technical support and equipment supply.

Ongoing costs are: Rotation of tanks as needed depending on feed water TDS content, total season pump hours, total season gpm's. Set of two 14" tanks and one 9" tank has 92,000 grain capacity with two quality control lights: final green light on 9" tank turns red when time to rotate tanks. Tanks are rotated minimum of once per year or as often as may be needed. Yearly maintenance: change 5 micron filter and replace TDS monitor battery (service techs generally perform).

Tank Rotations Chart: Example based on 500 total season pump hours @ 1 gpm capacity requiring 30,000 gal/season.

Feed Water ppmTDS	Grains (17.1 ppm/grain)	92K Tank Set Total gallons	Added Yield TDS @ 50 ppm	Added gpm Yield TDS @ 50 ppm	Total Yield	Tank Rotations 500 hours @ 1 gpm
180	10.5	8740 gal	3.6 grains	2428 gpm	11,168 gpm	2.7
258	15.1	6098 gal	5.2 grains	1182 gpm	7,279 gpm	4.1
300	17.5	5244 gal	6 grains	874 gpm	6,118 gpm	4.9
400	23.4	3933 gal	8 grains	492 gpm	4,425 gpm	6.8

• Feed Water Total Dissolved Solids (TDS) ppm content can be attained by contacting your local water city supplier.

• Above calculations based on 92,000 total grain capacity and varies depending tank size and supplier.

• Added yield of TDS based on setting TDS monitor to output 50 ppm to your pump station which consequently increased overall yield of tanks. If you set TDS monitor lower, yield decreases proportionate to lower TDS setting.

• Total yield is the final output after setting the TDS monitor to desired output setting of TDS ppm.

• Tank rotations are calculated based on a seasonal total pump hours of 500 hours with maximum output at 1 gpm which equates to a total required output of 30,000 gallons per season (Oct 15 - Apr 15).