

INDUSTRIAL DEALKALIZERS

LWTD Series

50,000 TO 1,000,000 GRAINS CAPACITY (Chloride Cycle)



**Boiler Feedwater, Cooling Tower Feedwater and
Process Water Treatment**

(Single, Twin, Triple or Quadruple Demand Systems)



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by LWT Engineering Staff”*

Lakeside Dealkalizers are designed to remove 90-95% alkalinity and reduce nitrate and sulfate levels. Lowering the alkalinity in the product water reduces boiler blow down expense, chemicals, and fuel costs. Injecting caustic soda into the brine line increases the system capacity and produces an alkaline product. Pretreatment softeners are usually required to prevent resin fouling.

Carbon Steel Pressure Vessels Standard working pressure options are 100PSI. Higher pressures are available with custom engineered systems. A standard epoxy lining of 10-12 DFT mil is applied internally and 6-8 mils DFT safety blue finish coating applied over the exterior of the vessel. The vessels are fabricated in non-code and ASME code certified is available. Stainless steel or fiberglass vessels are also available with custom engineered systems.



Anion High Capacity Resin provides high chemical and physical stability, lower pressure drop and greater resistance to bead breakage. **Optimal water quality can be obtained by injecting caustic soda into the brine line piping during the regeneration process.** This elevates the pH levels in the product water and prevents corrosion.

Underdrain The radial hub underdrain uses high quality schedule 80 PVC pipe and fittings, delivering high performance standards. The .010" PVC slotted laterals provide high flow rates and reliable service. **Lakeside also features a standard hide-out preventer in all vessels to reduce leakages. Boiler applications that have very critical water quality requirements often request this feature on custom products.**



Brine Maker The rigid polyethylene brine tank provides the ultimate corrosion resistance and superior strength. **The thermo-plastic brine valve delivers consistent brine saturation for optimum ion exchange and is non-corrosive in the brine concentration.** The concentrated brine valve with automatic control valve and flow regulation valve is constructed of PVC and includes a dilute brine sample valve. This brine valve configuration system is the work horse in the industry delivering proven and reliable industrial performance.

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Cast Iron diaphragm valve nest design allows each valve to be exactly designed and sized for the required functions, providing the most cost effective, efficient and serviceable system in the market. Numerous piping and valve configurations such as Copper, PVC or Stainless steel valves and piping are available with custom engineered systems. Galvanized pipe is the standard piping material. **Vessel boiler drain valves and Racked gauge packages are standard for diagnostics and easy field service.**



Injectors are constructed of PVC and deliver the correct brine concentration to the softener resin. These hydraulic injectors are pressure compensating and produce the recommended 5% brine concentration to the Dealkalizer bed for proper Ion exchange. Pumped brine systems and brine silos are available.



Flow Sensors are designed to interface with the controllers. The flow sensor sends a pulse signal to the controller that converts into gallons. The correctly programmed K-Factor will ensure the correct batch count and deliver continuous soft water 24/7.



The Standard Lakeside 2001 Programmable Microprocessor automatically controls the regeneration cycles by utilizing a pilot valve to operate the diaphragm valves. These stagers and valves can be hydraulically or pneumatically operated per your operational requirements. **The 2001 microprocessor also features a pre-rinse cycle to prevent alkalinity leakage at the beginning of the service run on twin alternating systems.** Boiler applications that have very critical water quality requirements often request this feature on custom products.



The Optional Pentair 3214 Programmable Microprocessor provides single, twin, triple or quadruple system capabilities. The controller features twin alternating, progressive demand or parallel application options. Multiple tank application, progressive demand and the diagnostic capabilities are premiere features of this controller. **The progressive demand application allows one to four Dealkalizers to be online in proportion to the service demand. One Dealkalizer is always in service, and the other units automatically come online as the flow increases. As the flow rate decreases, units will be removed from service based on the pre-programmed GPM settings.** This feature provides uninterrupted flow of product water 24/7 during variable and peak flows. (One auxiliary output is provided to start a chemical feeder, pump or motor application)

Optional Allen Bradley PLC control packages come with HMI color touch screen and provide extremely user friendly programming. **Lakeside PLC solenoid system features a hold, advance, resume, termination or close of all valves function, for fast easy field service.** The main screen can be designed to display a variety of parameters such as current flow rates, online tank status, regeneration cycle time and remaining gallons of each vessel. **Standard AB 10/100 IP Ethernet Network Connection port is standard for building management capabilities. Custom programming and alternate communications protocols are available.**



Operating Parameters Pressure 30-100psi. Temperature range 35F-100F Electrical: 120vac, 60Hz Electrical enclosures rated NEMA 12/4x **Drain piping limits:** Max. 10ft vertical and discharged to an atmospheric floor drain sized to handle the backwash rate of the system. (Max proven length is 25ft).

OPTIONS AVAILABLE:

- Skid mounted, pre-piped, pre-wired for faster and cost effective installations
- Pumped eductor or dilution stations for pit or silo applications
- Piping options include copper, PVC and Stainless Steel
- ASME code vessels available
- Custom controls, programming and custom engineered systems are available



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Model LWTD	Cap. Max. 15lbs. CU/FT.	Cap. min. 6lbs. CU/FT	Qty. resin CU. FT.	Cont GPM	Peak GPM	Mineral Tank (Dia. & Height) Inches	In Out pipe size inches	BWF Rate GPM	Fast Flush GPM	Salt storage Cap. (lbs.)	Salt dosage max. (lbs.)	Caustic Regen. 100% Basis (lbs.)	Brine Tank (Dia. & height) Inches
LWTD-20-1	60,000	50,000	5/6	10	20	20 X 60	1"	6	12	300	25	1.3	18 x 40
LWTD-20-1.5	60,000	50,000	5/6	10	20	20 x 60	1.5"	6	12	300	25	1.3	18 x 40
LWTD-24-1.5	90,000	80,000	8/9	16	32	24 x 60	1.5"	8	15	450	40	2.0	24 x 40
LWTD-24--2	90,000	80,000	8/9	16	32	24 x 60	2"	8	15	450	40	2.0	24 x 40
LWTD-30-1.5	160,000	120,000	12/16	25	50	30 x 72	1.5"	12	24	610	60	3.0	24 x 54
LWTD-30-2	160,000	120,000	12/16	25	50	30 x 72	2"	12	24	610	60	3.0	24 x 54
LWTD-36-1.5	240,000	200,000	20/24	40	80	36 x 72	1.5"	20	40	610	100	5.0	24 x 54
LWTD-36-2	240,000	200,000	20/24	40	80	36 x 72	2"	20	40	610	100	5.0	24 x 54
LWTD-42-1.5	320,000	300,000	30/32	50	80	42 x 72	1.5"	25	60	850	150	7.5	30 x 48
LWTD-42-2	320,000	300,000	30/32	50	80	42 x 72	2"	25	60	850	150	7.5	30 x 48
LWTD-42-2.5	320,000	300,000	30/32	50	80	42 x 72	2.5"	25	60	850	150	7.5	30 x 48
LWTD-42-3	320,000	300,000	30/32	50	80	42 x 72	3"	25	60	850	150	7.5	30 x 72
LWTD-48-2	440,000	400,000	40/44	80	130	48 x 72	2"	32	70	950	200	10.0	30 x 60
LWTD-48-2.5	440,000	400,000	40/44	80	160	48 x 72	2.5"	32	70	950	200	10.0	30 x 60
LWTD-48-3	440,000	400,000	40/44	80	160	48 x 72	3"	32	70	950	200	10.0	30 x 60
LWTD-54-2.5	550,000	500,000	50/55	100	180	54 x 72	2.5"	40	90	1250	250	12.5	39 x 48
LWTD-54-3	550,000	500,000	50/55	100	200	54 x 72	3"	40	90	1250	250	12.5	39 x 48
LWTD-60-2.5	680,000	660,000	66/68	120	180	60 x 72	2.5"	50	110	1630	330	16.5	39 x 60
LWTD-60-3	680,000	660,000	66/68	130	240	60 x 72	3"	50	110	1630	330	16.5	39 x 60
LWTD-66-2.5	820,000	800,000	80/82	130	180	66 x 72	2.5"	60	130	1840	400	20.0	42 x 60
LWTD-66-3	820,000	800,000	80/82	160	280	66 x 72	3"	60	130	1840	400	20.0	42 x 60
LWTD-66-4	820,000	800,000	80/82	160	320	66 x 72	4"	60	130	1840	400	20.0	42 x 60
LWTD-72-2.5	1,000,000	950,000	95/100	120	180	72 x 72	2.5"	70	150	2700	475	23.8	50 x 60
LWTD-72-3	1,000,000	950,000	95/100	180	280	72 x 72	3"	70	150	2700	475	23.8	50 x 60
LWTD-72-4	1,000,000	950,000	95/100	190	400	72 x 72	4"	70	150	2700	475	23.8	50 x 60



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Model LWTD	OAH "H"	WIDTH"W"	Single Length (L1)	Twin Length (L2)	Triple Length (L3)
20-1"	74 7/8"	31"	64 1/4"	96 1/2"	128 5/8"
20-1.5"	74 7/8"	31"	64 1/4"	96 1/2"	128 5/8"
24-1.5"	75 1/2"	34"	72 3/8"	108 3/8"	144 3/8"
24-2"	75 1/2"	35 1/8"	72 3/8"	108 3/8"	144 3/8"
30-1.5"	92 7/8"	39 7/8"	83 3/8"	123 3/8"	165 3/8"
30-2"	92 7/8"	41"	83 3/8"	123 3/8"	165 3/8"
36-1.5"	99 1/8"	47 3/8"	90 3/8"	138 5/8"	186 5/8"
36-2"	99 1/8"	47 5/8"	90 3/8"	138 5/8"	186 5/8"
42-1.5"	101 1/4"	53 5/8"	99 5/8"	153 3/4"	208"
42-2"	101 1/4"	53 5/8"	99 5/8"	153 3/4"	208"
42-3"	101 1/4"	53 5/8"	99 5/8"	153 3/4"	208"
48-2"	108 1/2"	59 1/2"	120 7/8"	180 7/8"	240 1/2"
48-2.5"	108 1/2"	59 5/8"	120 7/8"	180 7/8"	240 1/2"
48-3"	108 1/2"	59 5/8"	120 7/8"	180 7/8"	240 1/2"
54-2.5"	108 5/8"	65 1/2"	123 1/2"	189 1/8"	255 1/2"
54-3"	108 5/8"	65 1/2"	123 1/2"	189 1/8"	255 1/2"
60-2.5"	110 3/4"	71 1/2"	125 3/4"	198 1/8"	270 1/8"
60-3"	110 3/4"	71 1/2"	125 3/4"	198 1/8"	270 1/8"
66-2.5"	111 7/8"	78"	131 5/8"	209 5/8"	287 5/8"
66-3"	111 7/8"	78"	131 5/8"	209 5/8"	287 5/8"
66-4"	115 1/4"	81"	131 5/8"	209 5/8"	287 5/8"
72-2.5"	115"	85 3/8"	146 1/4"	230 1/4"	314 1/4"
72-3"	115"	85 3/8"	146 1/4"	230 1/4"	314 1/4"
72-4"	118 3/8"	87"	146 1/4"	230 1/4"	314 1/4"

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