

TS SERIES

WATER CONDITIONERS



For Light Commercial Applications

Apartment Buildings
Boiler Water Treatment
Car Washes
Commercial Buildings
Condominiums
Factories
Hospitals

Laundries
Mobile Home Parks
Motels and Hotels
Nursing and Rest Homes
Office Buildings
Restaurants
Schools

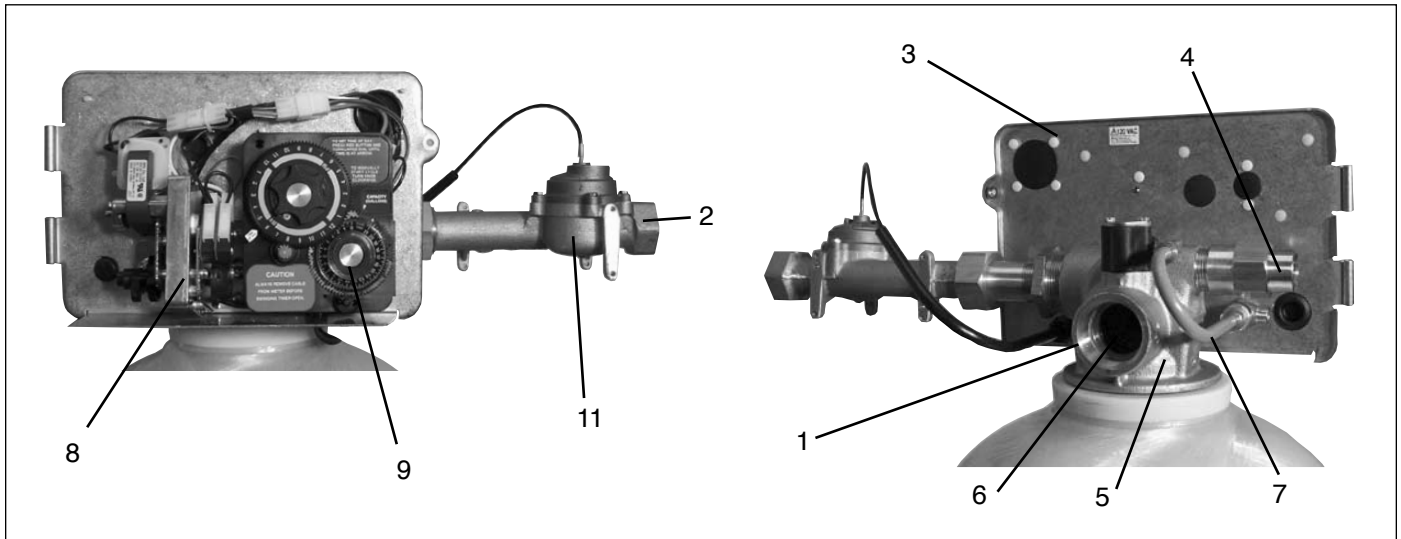

Hellenbrand[®]

Hellenbrand Means Quality and Reliability

The only Waunakee in the world, a village of nearly 7,500 people in South Central Wisconsin, is the home of Hellenbrand Water Conditioners. Waunakee, an Indian name that means "peaceful valley", is the ideal setting for a company with neighborly, small town concern for its customers and dealers. Since it opened its doors in 1967, Hellenbrand has offered something you rarely find anywhere today — well-designed, quality products backed up with fast, reliable service. Here are several important benefits that go into Hellenbrand TS Series Conditioners.

TS Series Conditioners use a top-mounted, one-inch or inch and one-half inlet and outlet solid brass valve with a motor-driven, time-tested, hydraulically-balanced piston and seal and spacer concept to pilot service flow not dependent on water pressure. It's clean, direct-operating, and reliable. They have factory-wired electrical systems to assure easy installation. The TS Series offers you a choice of complete manual operation, fully-automatic time clock operation, mechanical meter demand systems or microprocessor meter demand systems.

An optional new piston design is available which prevents hardwater by-pass during the regeneration cycle of the softener. The "no hardwater by-pass piston" will not take the place of an additional lockout control valve for alternating purposes.



TS Series 1" OR 1-1/2" NPT Control Valve

(TS Series 1-1/2" Control With System Four 1" Econominder Meter Shown)

1. One-Inch or Inch and One-Half NPT Inlet Connection.
2. One-Inch or Inch and One-Half NPT Outlet Connection.
3. Stainless Steel Backplate will not rust or corrode.
4. Factory installed Drain Line Flow Control maintains accurate backwash rates.
5. Solid Brass Valve assures durability and long life.
6. Self Cleaning Teflon-coated Piston allows foreign particles to pass through without damaging the unit. It is hydraulically balanced to equalize pressure on both sides of the piston, allowing it to shift smoothly regardless of water pressure. Plastic spacers and rubber seals protect the piston from sediment in water.
7. Separate "Time-fill" Brining with accurate flow controls allows automatic brine tank refill. Brine Tank Refill Rates are easily adjustable on the cycle programmer.
8. Heavy-duty Drive Motor receives signal from timer to efficiently direct water flow during regeneration. Piston shifts smoothly and quietly regardless of water pressure.
9. TS Series Timer provides fully automatic, dependable timing for regeneration. The Cycle Programmer regulates all regeneration cycles which are easily adjustable. For manual regeneration start, simply turn the service indicator clockwise. No need to push any buttons or reset timer. NOTE-Complete manual operation, without electricity is also available.
10. Flow Director for mechanical meter applications accurately directs flow even under low flow conditions. Not shown in photo.
11. Tough Space Age, Corrosion-resistant plastic registers flow even during power outages with mechanical meters.

Regeneration Options

Manual control requires no electricity for operation. Operator must start and end the regeneration including backwash, brine and rinse, and fast rinse times and manually return unit to service. A float valve is used to regulate salt usage.

Time clock control with either a 7 or 12 day timer, allows the operator to preset regeneration time and frequency as needed. A built-in manual override is included for increased

water usage times.

Water meter demand control systems are recommended for those applications where daily water usage varies throughout the year. Meter demand systems are available with either mechanical or microprocessor based systems. Both types of metering systems are available with either delayed or immediate regeneration.

ET Microprocessor Meter Controller

	Specifications	
Pipe Size:	1"	1.5"
Flow Ranges (gpm):	.7 - 40	1.5 - 75
Accuracy:	+/- 5%	+/- 5%

- Features:
- Volume Display in Gallons
 - Hardness Display in Grains per Gallon
 - System Capacity Display in Kilograins
 - System Flow Rate Display in Gallons Per Minute
 - Totalizing Metering
 - Programmable Timed Auxiliary Output Relay
 - Fully Adjustable Regeneration Cycles
 - Program Lockout Protection
 - Adjustable Regeneration Times
 - Variable Reserve Capacity Based On Previous Water Usage History
 - Delayed or Immediate Regeneration
 - Calendar Day Override
 - System Diagnostic Displays
 - Microprocessor - Transformer supplied 115V Primary, 24V Secondary

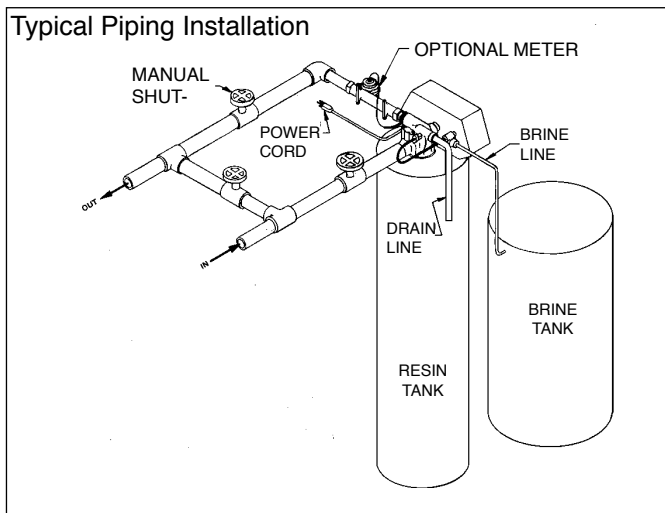


Econominder Meter

	Specifications		
Pipe Size:	3/4"	1"	1-1/2"
Flow Ranges:	.15-20	.7-40	1.5-70
Accuracy:	± 5%	± 5%	± 5%

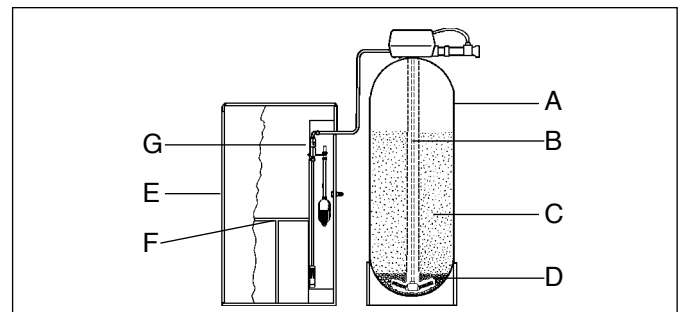
Meter Gallon Ranges:

- A) 3/4" Standard Range: 125 - 2,125 Gallons
Extended Range: 625 - 10,625 Gallons
- B) 1" Standard Range: 360 - 5,100 Gallons
Extended Range: 1,800 - 25,200 Gallons
- C) 1-1/2" Standard Range: 625 - 10,625 Gallons
Extended Range: 3,125 - 53,125 Gallons



TS Series

- A. MINERAL TANK:** NSF Approved, UL Listed, Fiberglass Reinforced Pressure Vessel Manufactured to Operate at 150 psi and 120 F.
- B. DISTRIBUTOR SYSTEM:** Hub & Lateral or Bottom Stack Distributor System for Maximum Service Flow and Minimal Pressure Loss.
- C. MINERAL:** FDA Approved, High Capacity Ion Exchange. Resin has uniform and stable beads assuring long life, high salt efficiency, and maximum hardness removal.
- D. UNDERBEDDING:** Gravel Underbedding assures full usage of mineral bed and allows for a smooth and constant water flow for service and regeneration.
- E. BRINE TANK:** High Density Polyethylene Brine Tank has exceptional environmental stress crack properties. It will not crack or rust out. Dust-tight covers keep out unwanted impurities.
- F. SALT GRID SYSTEM:** Hellenbrand's High Salt Grid System allows for only a minimal of salt being wetted, helping to eliminate problems from bridging salt.
- G. SAFETY BRINE VALVE:** An optional safety brine valve, acts as a secondary shut-off in case of a failure with primary shut-off.



TS Physical Specifications

MODEL	MINERAL TANK (INCHES)	BRINE TANK (INCHES)	DRY SALT STORAGE LBS	SHIPPING WEIGHT POUNDS		WATER METER SIZE RECOMM.
				SINGLE	TWIN	
TS-30-1	9 X 48	18 X 33	300	120	220	3/4"
TS-45-1	10 X 54	18 X 40	375	150	280	3/4"
TS-60-1	13 X 54	18 X 40	375	235	430	3/4" or 1"
TS-60-1.5	13 X 54	18 X 40	375	245	450	1"
TS-90-1	14 X 65	18 X 40	375	290	540	3/4" or 1"
TS-90-1.5	14 X 65	18 X 40	375	300	560	1"
TS-120-1	16 X 65	24 X 41	525	395	750	3/4" or 1"
TS-120-1.5	16 X 65	24 X 41	525	405	770	1"
TS-150-18-1	18 X 65	24 X 50	510	475	905	1"
TS-150-18-1.5	18 X 65	24 X 50	510	485	925	1" or 1.5"
TS-150-21-1	21 X 62	24 X 50	510	525	1005	1"
TS-150-21-1.5	21 X 62	24 X 50	510	535	1025	1" or 1.5"
TS-180-18-1	21 X 62	24 X 50	510	530	1015	1"
TS-180-18-1.5	21 X 62	24 X 50	510	540	1035	1" or 1.5"
TS-180-21-1	21 X 62	24 X 50	510	580	1115	1"
TS-180-21-1.5	21 X 62	24 X 50	510	590	1135	1" or 1.5"
TS-210-1	21 X 62	24 X 50	510	635	1230	1"
TS-210-1.5	21 X 62	24 X 50	510	645	1240	1" or 1.5"
TS-240-1.5	24 X 72	24 X 50	340	755	1465	1" or 1.5"
TS-270-1.5	24 X 72	24 X 50	340	810	1575	1" or 1.5"
TS-300-1.5	24 X 72	24 X 50	340	860	1675	1" or 1.5"

TS Capacity

MODEL	RESIN CU.FT.	PIPE SIZE (INCHES)	LOW SALT GRAINS/LBS	RATED CAPACITY		HIGH SALT GRAINS/LBS	FLOW RATE CONT. 15 PSI	PEAK 25 PSI	BWK GPM
				MEDIUM SALT GRAINS/LBS					
TS-30-1	1.0	1"	19,000/6	28,000/10		32,000/15	15.0	20.0	2.0
TS-45-1	1.5	1"	28,500/9	42,000/15		48,000/22.5	16.0	22.0	2.4
TS-60-1	2.0	1"	38,000/12	56,000/20		64,000/30	20.0	26.0	3.5
TS-60-1.5	2.0	1.5"	38,000/12	56,000/20		64,000/30	31.4	43.0	3.5
TS-90-1	3.0	1"	57,000/18	84,000/30		96,000/45	19.0	26.0	4.0
TS-90-1.5	3.0	1.5"	57,000/18	84,000/30		96,000/45	30.2	41.7	4.0
TS-120-1	4.0	1"	76,000/24	112,000/40		128,000/60	20.0	27.0	5.0
TS-120-1.5	4.0	1.5"	76,000/24	112,000/40		128,000/60	33.2	45.2	5.0
TS-150-18-1	5.0	1"	95,000/30	140,000/50		160,000/75	21.0	28.0	7.0
TS-150-18-1.5	5.0	1.5"	95,000/30	140,000/50		160,000/75	36.0	49.0	7.0
TS-150-22-1	5.0	1"	95,000/30	140,000/50		160,000/75	22.0	29.0	9.0
TS-150-22-1.5	5.0	1.5"	95,000/30	140,000/50		160,000/75	41.5	55.3	9.0
TS-180-18-1	6.0	1"	114,000/36	168,000/60		192,000/90	20.0	27.0	7.0
TS-180-18-1.5	6.0	1.5"	114,000/36	168,000/60		192,000/90	34.0	47.0	7.0
TS-180-22-1	6.0	1"	114,000/36	168,000/60		192,000/90	21.0	28.0	9.0
TS-180-22-1.5	6.0	1.5"	114,000/36	168,000/60		192,000/90	40.0	53.6	9.0
TS-210-1	7.0	1"	133,000/42	196,000/70		224,000/105	20.0	27.0	9.0
TS-210-1.5	7.0	1.5"	133,000/42	196,000/70		224,000/105	38.5	51.9	9.0
TS-240-1.5	8.0	1.5"	152,000/48	224,000/80		256,000/120	42.0	56.0	12.0
TS-270-1.5	9.0	1.5"	171,000/54	252,000/90		288,000/135	41.0	54.8	12.0
TS-300-1.5	10.0	1.5"	200,000/60	280,000/100		320,000/150	40.5	54.0	12.0

OPERATING CONDITIONS

1. Water Pressure 30 - 100 psi.
2. Water temperature is not to exceed 110 F and cannot be subject to freezing conditions.
3. Limit of 2 ppm of Ferrous Iron. Add 3 grains of hardness per ppm of iron when sizing.
4. Electrical requirements: 115Vac - 15 Amp Circuit.
5. Product improvement designs are subject to change without notice.
6. Refer to Hellenbrand Bulletin 2050 "Flow Rates and Soft Water Quality (Hardness Leakage) if your application requires that levels of hardness leakage do not exceed "x".

TS-1.5" Series Dimensions

TS-1.5" SERIES MODEL	HEIGHT (INCHES)	WIDTH (INCHES)	TWIN (INCHES)	INLET HEIGHT (INCHES)	OUTLET HEIGHT (INCHES)
TS-60	63	37	56	56.5	57.5
TS-90	73	38	58	67.5	68.5
TS-120	73	46	68	67.5	68.5
TS-150-180-18	76	46	68	69.0	70.5
TS-150-210-22	75.5	52	80	65.5	70.5
TS-240	83	54	84	65.5	78.0
TS-270-300	83	54	84	73.5	78.0

Manufactured by:



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73-051
 12/04-500
 1/21/09-LBRY