

**Glass-Lined, Jacketed & Insulated
or Bare ASME Tanks**

**Lock-Temp[®] Design Locks Hot Water at Top,
Cold Water at Bottom.**

Lochinvar Lock-Temp Tanks have been specifically designed and engineered to provide high volume, continuous or intermittent supply of hot water at a constant outlet temperature. The unique Lock-Temp baffle chamber design is so efficient that, regardless of the rate of hot water flow, 80% of the stored volume of hot water can be drawn from the storage tank without a drop in the pre-set outlet temperature. Since 1/3 less hot water storage is required with Lock-Temp Storage Tanks than in ordinary storage tanks, there are several important economic features:

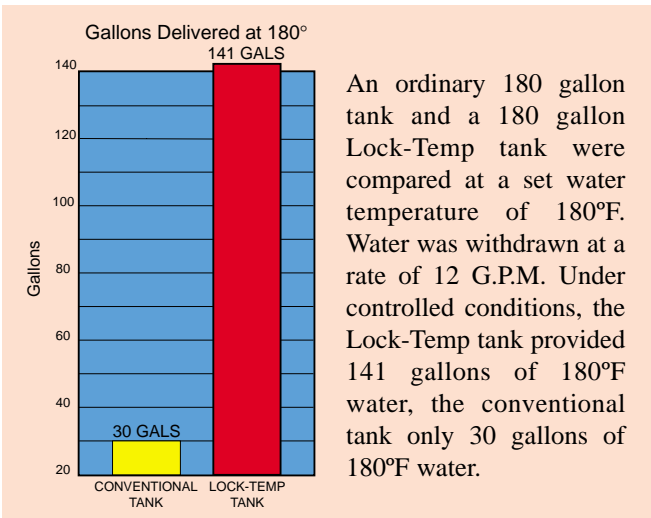
Lock-Temp Features

- Lower Stand-by Losses
- Lower Purchase Price
- Smaller Footprint Required
- Lower Installed Cost
- Reduced Heater Operation Cost

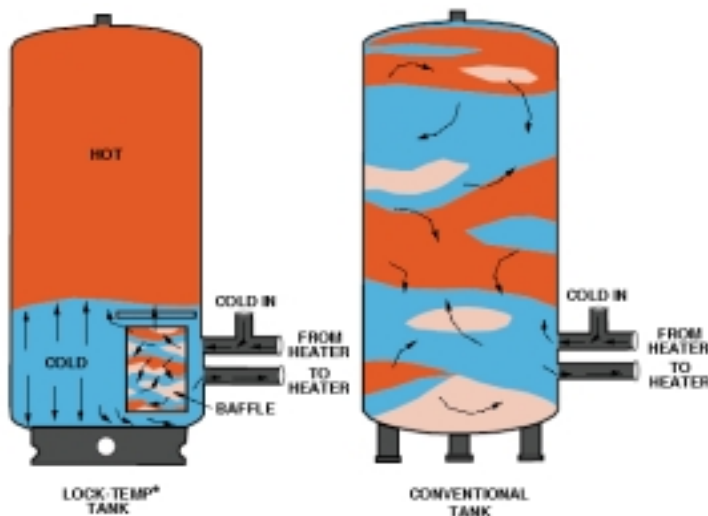


In operation, Lock-Temp Storage Tanks utilize a unique incoming water baffle chamber to eliminate turbulence and establish a positive, piston-like displacement system. Cold water entering the system is directed into our built-in baffle chamber, where water turbulence is eliminated. Eliminating this turbulence allows natural physical properties to force hot water to the top of the tank and cold water to the bottom. The resulting effect creates nearly perfect stratification allowing the hot water to be drawn from the tank first.

The Lock-Temp system makes Lochinvar Storage Tanks more efficient. Consider that typical storage tanks deliver only 60% of its stored water volume at the desired temperature while Lochinvar tanks with the Lock-Temp baffle deliver a minimum of 80%. This efficiency allows for more economical sizing of storage tanks. A design calling for 400 gallons of 180° water would require a 670 gallon standard tank while a Lock-Temp tank would deliver the same 180° volume using only a 500 gallon tank. A 170 gallon savings.



Advantages of a Lock-Temp[®] storage tank over conventional storage tank



In ordinary storage tanks, water circulation or a heavy draw of hot water from the top of the tank causes an incoming rush of fresh, cold water to turbulate the entire tank water supply. The result is inter-mixed hot and cold water that requires constant adjustment at the fixtures to maintain the desired temperature. Lochinvar Lock-Temp Storage Tanks eliminate these problems with a unique inner chamber baffle that absorbs and flattens turbulence caused by incoming water. The Lock-Temp baffle also permits hot and cold water to separate, directing the hottest water to the top of the tank and the colder water to the bottom for return to the heater.



World Class Construction of ASME Vessels



Material Receiving and Inspection

Quality control inspector checks all incoming materials for dimensions, thickness, material markings and traceability to ensure that materials meet ASME requirements.



CNC Laser Cutting Control Panel

The CNC laser cutting machine uses PLC controls. All programming is performed in-house and stored in the shop computers. The panel has a 1500-watt resonator with the capacity to cut $\frac{3}{4}$ " steel—and up to 140" per minute—with a .004 tolerance.



Submerged Arc Longitudinal Seam Welder

As the welding head travels 28-30 IPM, the welding wire penetrates the steel to form a full penetration weld on both the inner and outer surface of the tank shell.



Head Assembly

Heads are cut and ASME-welded prior to blasting and lining.



Internal Shot Blasting Room

All internal surfaces are blasted to a white metal, removing rust, scale, greases and oils so lining can have optimum adhesion. Ground scrap metal is used to clean and etch into the tank the anchor pattern to which the linings will bond.



Automatic Glass Frit Application

Glass frit is applied using a programmable spraying arm which utilizes a four-head spray nozzle for exact coverage on all internal surfaces.



7

4.5 Million BTU Dryer Oven

Before the wet glass lining material can be placed in the furnace, it must first be dried and all moisture removed. This is done in a 4.5 million BTU dryer that blows 400°F air inside the tanks.



8

4.5 Million BTU Intermittent Glass Furnace

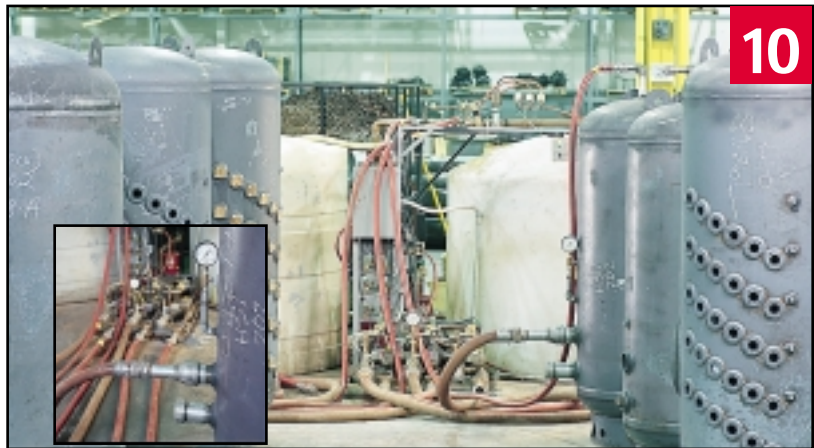
After the drying process, the tanks enter the furnace module (which is another 4.5 million BTU's). The glass lining is fired at 1540°F to create a molecular bond between the glass frit and the vessel's steel surface. This is the largest indexing furnace in the United States.



9

Cool-Down Tunnel

Tanks exiting the furnace are RED HOT. They then proceed to the cool-down tunnel, where ambient air is rushed across them so they can be handled safely.



10

Hydrostatic Testing Station

Upon completion of the manufacturing processes, each tank has all threaded openings tapped and cleaned. The tanks are then filled with water and brought up to the designed working pressure. The ASME inspector then administers test for leaks and other nonconformances. Magnesium anode rods are provided with each glass tank to protect the integrity of the lining.



11

Jacket and Foam Insulation

The jackets are formed in place around the tanks, and the space is filled with foam insulation with a min. R value of 13.4.



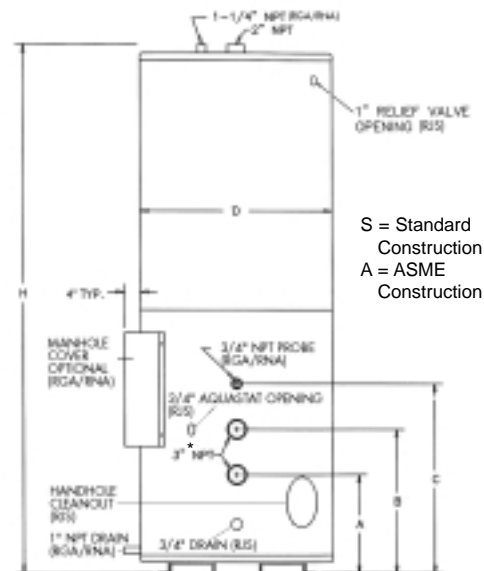
12

Exterior Paint Booth

Before shipment, bare tanks will have a rust preventive red oxide primer applied.

Dimensions and Specifications for Round Jacketed Tanks (Vertical Only)

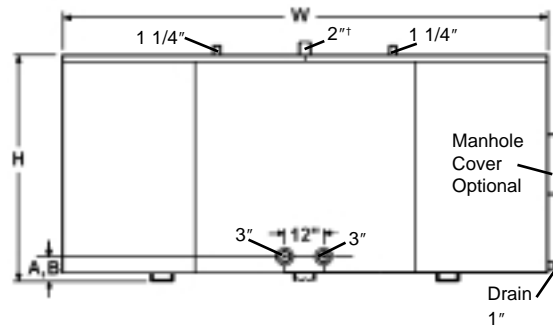
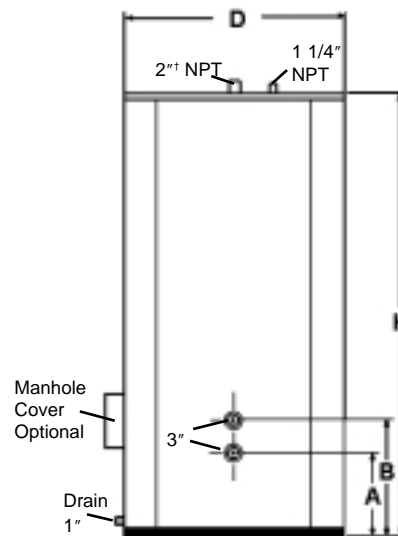
Model	Gal. Cap.	D Depth	H HT.	Weight (lbs.)	A	B	C
RJS080	78	24	58 3/4"	186	9 1/4"	14 1/4"	14 1/4"
RJS085	85	28	48 3/4"	190	9 1/2"	14 1/2"	14 1/2"
RJS120	119	28	62 1/2"	345	9 1/2"	14 1/2"	14 1/2"
RJA120	119	28	62 1/2"	350	9 1/2"	14 1/2"	14 1/2"
RJA200	200	32	77 1/4"	500	11 1/2"	17 1/4"	16 1/2"
RGA/RNA257	257	34"	95 1/2"	1008	18"	26"	34"
RGA/RNA318	318	40"	84 1/2"	1190	19 3/4"	27 1/4"	35 3/4"
RGA/RNA432	432	46"	84 1/2"	1526	21"	29"	37"
RGA/RNA504	504	46"	94 1/2"	1640	21"	29"	37"
RGA/RNA650	650	54"	95 1/2"	1811	22 7/8"	30 7/8"	38 7/8"
RGA/RNA752	752	54"	107 1/2"	2130	22 7/8"	30 7/8"	38 7/8"
RGA/RNA940	940	54"	131 1/2"	2810	22 7/8"	30 7/8"	38 7/8"



*2" on 80,85 & 120 gallon – 2 1/2" on 200 gallon

Dimensions and Specifications for Square Jacketed Tanks

Model	Gal. Cap.	D LGT.	H HT.	Weight (lbs.)	Weight Glass		
					Nu-Glass	A	B
Vertical Square							
TV*220J	220	34 1/8"	81"	34 1/8"	890	17 5/8"	25 5/8"
TV*257J	257	36 1/8"	93"	36 1/8"	940	17 5/8"	25 5/8"
TV*318J	318	42 3/8"	81 1/2"	42 3/8"	1190	19 1/2"	27 1/2"
TV*432J	432	48 3/8"	81 1/2"	48 3/8"	1526	21 1/8"	29 1/8"
TV*504J	504	48 3/8"	93 1/2"	48 3/8"	1640	21 1/8"	29 1/8"
TV*752J	752	54 1/8"	107"	54 1/8"	2495	24 5/8"	32 5/8"
TV*940J	940	54 1/8"	131"	54 1/8"	2970	24 5/8"	32 5/8"
TV*1250J	1250	64 3/8"	132 1/2"	64 3/8"	5900	21 1/4"	29 1/4"
TV*1500J	1500	70 3/8"	138 1/2"	70 3/8"	6500	25 5/8"	31 5/8"
TV*2000J	2000	76 3/8"	140 1/2"	76 3/8"	9000	25 3/8"	33 3/8"
TV*2500J	2500	82 3/8"	146 1/2"	82 3/8"	10000	27 7/8"	35 1/8"
Horizontal Square							
TH*300J	300	78 1/8"	50 1/2"	42 1/4"	1700	6 1/8"	6 1/8"
TH*400J	400	102 1/8"	50 1/2"	42 1/4"	2250	6 1/8"	6 1/8"
TH*500J	500	90 5/8"	56 1/2"	48 1/4"	2450	6 1/8"	6 1/8"
TH*600J	600	114 1/8"	56 1/2"	48 1/4"	3350	6 1/8"	6 1/8"
TH*700J	700	130 1/8"	56 1/2"	48 1/4"	4000	6 1/8"	6 1/8"
TH*800J	800	124 1/8"	62 1/2"	54 1/4"	4800	6 1/8"	6 1/8"
TH*1000J	1000	138 1/8"	62 1/2"	54 1/4"	5100	6 1/8"	6 1/8"
TH*1250J	1250	130 1/8"	68 1/2"	60 1/4"	5900	6 1/8"	6 1/8"
TH*1500J	1500	126 1/8"	80 1/2"	66 1/4"	6500	6 1/8"	6 1/8"
TH*2000J	2000	138 1/8"	80 1/2"	72 1/4"	9000	6 1/8"	6 1/8"
TH*2500J	2500	144 1/8"	86 1/2"	78 1/4"	10000	6 1/8"	6 1/8"



† On 1250 gallons and above, supply tapping is 3"

Glass-Lined Tank

Lochinvar's glass lining is a specially formulated vitreous porcelain enamel lining which, is applied to all interior surfaces of the tank. After the tank surfaces are cleaned to a white metal finish, an automated spraying process applies a uniform glass lining. The lining is continuously monitored for thickness and continuity. The tank is then fired to 1540°F to assure a molecular fusing of the glass to the interior steel surfaces. Upon completion of the lining process, each tank is tested per the ASTM standard. The combination of high quality materials, rigorous metal preparation, and careful testing results in the best possible coating for potable water in a storage vessel.

Other Linings

Nu-Glass Tank

The Nu-Glass lining is a polymerized epoxy coating which is applied to the interior steel tank surface. This lining has a high-surface hardness and is unaffected by thermal shock from - 70°F to 212°F. Nu-Glass was designed for use as a tank lining for potable water at elevated temperatures up to 250°F. It is accepted by the U.S. Department of Agriculture, the U.S. Environmental Protection Agency and National Sanitation Foundation for surfaces which contact potable water.

Cement Lined Tank

Cement linings are applied 5/8" to 3/4" minimum thickness. Cement lined tanks have approximately the same coefficient of expansion as mild steel, it poses no cracking potential due to internal pressures. The lining is applied in two coats; first approximately 1/4" thick to provide a firm base for the second coat. After the second coat is allowed to partially set up, the entire surface is brush dipped in water to remove any excess material. After the tank is completely lined, it is allowed to set for 12-20 hours immersed in water, then drained, and flushed. This cement lining provides an excellent coating to give protection to the tanks steel base metal against corrosion in a potable water storage vessel.

Tank Outstanding Features

- **Energy Saving Performance** - Jacketed tanks meet the efficiency requirements of ASHRAE 90.1-1989, Addendum 90.1b-1992 Energy Efficiency Standards. The 2" of foam insulation provides low standby energy loss for optimum performance and economy.
- **Five-Year Limited Warranty** - Provides warranty protection against tank failure resulting from defects in materials or workmanship.
- **Lock-Temp Baffle** - Lock-Temp storage tank baffles eliminate turbulence and establish a piston-like displacement system which creates nearly perfect stratification.
- **Magnesium Anode** - All glass-lined tanks are equipped with one or more magnesium anodes to provide additional protection against corrosion.
- **ASME** - All models constructed in accordance with ASME standards and labeled for 125# W.P. (standard) or 150# W.P. (optional).
- **Square Models** - Built-in Safety Drain Pan System, and a sealed base assembly mounted on Channel Iron Skids complete with a 3/4" drain connection.
- **Galvanized Jacket** - Heavy gauge jacket is galvanized on both sides and finished in durable acrylic enamel combining attractive appearance with maximum protection.
- **Manhole** - A manhole inspection port is provided as standard on Nu-Glass and Cement lined tanks. Manhole is optional on glass-lined tanks. All "RJ" model tanks come equipped with a handhole.



The Built-In Advantage™

2005 Elm Hill Pike • Nashville, Tennessee 37210 • 615-889-8900 Fax: 615-885-4403

www.Lochinvar.com