L&L Special
FURNACE CO, INC

QT Series

AGITATED AND HEATED HEAVY-DUTY PRODUCTION QUENCH TANKS

APPLICATIONS

The QT Series quench tanks are used for the uniform quenching of hot steels. The standard model, designated QT without a suffix, may be used with either water or lightweight polymer, with rust inhibitor in the solution.

An optional version, designated QTO, may be used with quenching oil. This must always include the hinged lid (which is an option for the other two configurations) and an explosion-proof motor for the agitator.

Another version, designated QTW, is used for plain water without rust inhibitors. It features stainless-steel construction and a TEFC motor for the agitation. Neither configuration is designed for use with brine.

Special versions are available for very viscous polymer. All versions feature proper agitation, which ensures uniform quenching and disperses the bubbles of vaporized quenchant that form on the surface of the hot parts being quenched. If not dispersed, these bubbles can cause uneven quenching times, which would result in a poorly quenched part. The agitation also prevents localized overheating, which in the case of oil quench media, could cause a fire. All QT versions also feature integrated controlled heaters and large inlet and outlet taps for optional cooling systems. An optional hinged lid provides a means to extinguish any potential quench oil fires and keep quench media clean.

Model QT1824

FEATURES

HEAVY-DUTY DOUBLE WELDED CONSTRUCTION

The tank is made of 3/16" steel (1/4" on Model QT 3648 and above) and is completely reinforced. All seams are welded on both sides. Includes lifting provisions.

HIGH WORK CAPACITY

Without optional external cooling, these quench tanks are capable of quenching as many pounds per hour as there are gallons of capacity in the tank. There is 6" extra in height above the nominal fill level to allow for fluid rise. There are 3" above, below and to each side of the working dimensions to allow for good agitation.

STANDARD AGITATOR MOTOR IS TEFC

The standard agitator motor is a TEFC motor. This is specified for water or polymer quench media. Oil quench media requires the optional explosion-proof motor.

EPOXY PAINT FURTHER SEALS THE TANKS

A base coat of zinc chromate primer is covered with heavy-duty epoxy paint. QTW models are stainless steel and are not painted.

THERMOSTATICALLY CONTROLLED HEATER

A removable heater is included to heat the quench media to proper quenching temperatures. Typically, this is in the 120°F (50°C) to 140°F (60°C) range. The smaller tanks feature a screw-plug heater while the larger units (above 11 K.W.) feature a flange mounted heater. The thermostat is integral to the heater.

DRAIN AND COOLING INLET AND OUTLET PIPE

An NPT fitting is welded near the bottom to drain and clean the tank. NPT fittings are welded at opposite corners for future attachment of a quench cooler.

IMPELLER-TYPE AGITATION

An impeller-type agitator ensures proper agitation of the quench media. The horsepower and impeller of the agitator are generously sized for vigorous agitation.

SEPARATE CHAMBER FOR IMPELLER

The heater and agitation impeller are located in a separate area from the working space. This is separated by a perforated screen to prevent damage to these components and as a safety precaution. This section has a bolt-on cover.

TEMPERATURE GAUGE

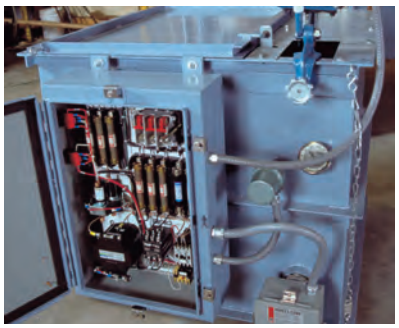
A dial-type temperature gauge is immersed in the tank through an NPT fitting to read quench temperature. This is angled upward for convenient viewing.

NEMA 4 ELECTRICAL CONNECTION BOX

All electrical connections are made at one NEMA 4 liquid tight box. An on/off switch is included for the heater and a stop/start button for the agitator. Complete fusing is inside this box. Control voltage is transformed to 120 volts. All interconnections are liquid tight. The customer must connect fused power supply to a single point on the panel.

OPTIONS

- **HINGED SAFETY LID:** With fusible link for automatic closing in the event of a fire.
- **FUSED DISCONNECT SWITCH**
- **EXPLOSION-PROOF MOTOR:** Specified if the quench tank is going to be used with oil.
- **OVERTEMPEPATURE CONTROL:** This shuts off the heater. Preset for 175°F (80°C). Recommended for QTO versions (oil quench).
- **SPECIAL AGITATORS:** The standard agitator/mixer is designed for water, light polymer and light oil. Special low RPM, large diameter impellers are used for very viscous media.
- **QUENCH MEDIA COOLERS:** A cooler allows greater workload throughput per hour by getting rid of the workload heat more quickly. Two types are available. A pump with a water-to-water heat exchanger is the least expensive and is sufficient for water or polymer. An oil-to-air heat exchanger is recommended for oil.
- **ELEVATORS:** The quench tanks can be fitted with a pneumatically operated elevator for lowering the work into the tank. The elevator platform can have rollers to accept cast-alloy trays directly from a furnace.



The inside of the switchgear box.

SPECIFICATIONS

Model Number	Working Dimensions			Inside Dimensions			Outside Dimensions						Ship Weight
	D	H	W	D	H	W	D	H	W	Gal	K.W.	H.P.	
QT 1224	24	12	12	30	24	28	44	44	31	65	4.5	½	400
QT 1824	24	18	18	30	30	34	44	50	37	100	7.9	½	450
QT 2424	24	24	24	30	36	40	44	64	44	150	10.5	¾	600
QT 2436	36	24	24	42	36	41	56	64	44	220	15.0	¾	750
QT 2448	48	24	24	54	36	40	72	64	44	280	18.0	1	1,000
QT 3648	48	36	36	54	48	56	72	72	61	475	30.0	2	1,600
QT 3672	72	36	36	78	48	60	96	72	67	730	50.0	3	2,600
QT 4848	48	48	48	54	60	72	72	84	79	810	50.0	3	2,600
QT 4872	72	48	48	78	60	72	96	84	79	1,170	64.0	5	3,300
QT 7272	72	72	72	78	84	96	96	108	105	2,340	140.0	10	5,100

Working dimensions have clearances approximately 3" extra in width and depth. Inside tank dimensions include the separate agitation/heating chamber. Outside dimensions include the control panel and agitator motor but not the height of the raised lid. The tank is 6" deeper than the fluid level to allow for work displacement. Special sizes are available. 240 or 460 volts are normal; 208, 380 and 575 volts are optional. 208 volts reduces K.W. to 75% of rated power. Three phase is normal, although single phase is available. Specifications are subject to change without notice.

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