



# SPECIAL FURNACE CO INC

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## QT SERIES

### APPLICATIONS

The QT Series quench tanks are used for the uniform quenching of hot steels. They may be used with water, light weight polymer, or oil. They are not designed for use with brine. Water or polymer must have rust inhibitors (or else tank must be stainless steel.) Special versions are available for very viscous polymer. They feature proper agitation which insures uniform quench temperatures and disperses the bubbles of vaporized quenchant that form on the surface of the hot parts being quenched. These bubbles, if not dispersed, 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. The QT Series quench tanks 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 to keep quench media clean.

### FEATURES

#### HEAVY DUTY DOUBLE WELDED CONSTRUCTION

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

#### HIGH WORK CAPACITY

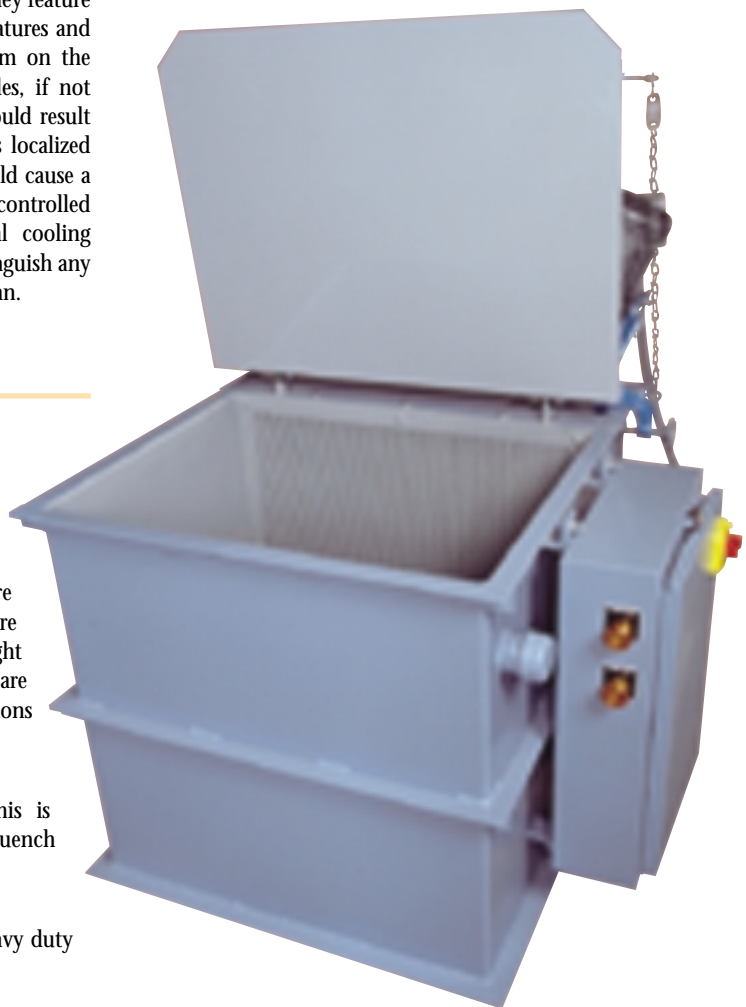
Without optional external cooling these quench tanks are capable of quenching as many pounds per hour as there are gallons capacity in the tank. There is 6" extra in height above the nominal fill level to allow for fluid rise. There are 3" above, below and to each side of the working dimensions to allow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



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## AGITATED AND HEATED HEAVY DUTY PRODUCTION QUENCH TANKS

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**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 mount 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 insures proper agitation of the quench media. The horsepower and impeller of the agitator are generously sized for vigorous agitation.

**SEPARATE CHAMBER FOR IMPELLER**

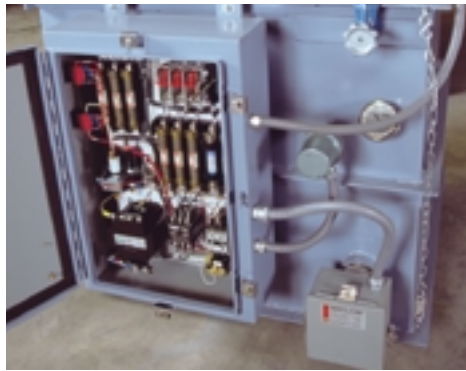
The heater and agitation impeller are located in a separate area from the working space. This is separated by a perforated screen to prevent damage to these components and as a safety precaution. This section has a bolt on cover.

**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 and start button for the agitator. Complete fusing is inside this box. Control voltage is transformed to 120 volts. All interconnections are liquid tight. Customer must connect fused power supply to single point on panel.



*This shows the inside of the switchgear box.*

**OPTIONS**

- **HINGED SAFETY LID:** With fusible link for automatic closing in event of fire.
- **FUSED DISCONNECT SWITCH**
- **EXPLOSION PROOF MOTOR:** Specified if the quench tank is going to be used with oil.
- **OVERTEMPERATURE CONTROL:** This shuts off heater. Preset for 175F (80C).
- **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 work load throughput per hour by getting rid of the work load heat more quickly. Two types are available. A pump with a water-to-water heat exchanger is the least expensive and is fine for water or polymer. A 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.



*Model QT1824*

**SPECIFICATIONS**

MODEL NUMBER	WORKING DIMENSIONS			TANK INSIDE DIMENSIONS			OUTSIDE DIMENSIONS			GAL	K.W.	H.P.	SHIP WGHT
	D	H	W	ID	IH	IW	OD	OH	OW				
QT 1224	24	12	12	30	24	28	44	44	31	65	4.5	1/2	400
QT 1824	24	18	18	30	30	34	44	50	37	100	7.9	1/2	450
QT 2424	24	24	24	30	36	40	44	64	44	150	10.5	3/4	600
QT 2436	36	24	24	42	36	41	56	64	44	220	15.0	3/4	750
QT 2448	48	24	24	54	36	40	72	64	44	280	18.0	1	1000
QT 3648	48	36	36	54	48	56	72	72	61	475	30.0	2	1600
QT 3672	72	36	36	78	48	60	96	72	67	730	50.0	3	2600
QT 4848	48	48	48	54	60	72	72	84	79	810	50.0	3	2600
QT 4872	72	48	48	78	60	72	96	84	79	1170	64.0	5	3300
QT 7272	72	72	72	78	84	96	96	108	105	2340	140.0	10	5100

Working dimensions have clearances approximately 3" extra in width and depth. Inside tank dimensions include the separate agitation/heating chamber. Outside dimensions include control panel and agitator motor but does not include the height of the raised lid. Tank is 6" deeper than 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. 3 phase is normal although single phase is available. Specifications are subject to change without notice.