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**EQUIPMENT SPECIFICATIONS**

**CRAFCO EMULSION STORAGE TANKS**

DECEMBER 2006

**SCOPE** The emulsion tank shall be furnished complete and ready for satisfactory operation. The unit bid herein will be the manufacturer's latest current production model. Complete detailed specifications with advertising literature sheet shall be furnished with the quotation on the IDENTICAL tank proposed. Any information necessary to show compliance with these specifications not given on the advertising literature sheets furnished with bid shall be supplied in writing and attached to the bid proposal. Unit shall meet or exceed the MINIMUM requirements described herein.

**TANK** Tanks shall be vertical type and pressure tested for storage of emulsified asphalt and oils. Tanks are manufactured with an offset seam and a series of welds inside and a full seal weld pressure tested outside. They shall be fabricated of minimum 7-gauge steel. Insulation shall be a minimum thickness of 3 inch R-11. R-13 available. Tank shall have primer coat and be painted black. Tank shall be supplied with one side mount manhole access. Tank shall come complete with 10 gauge steel secondary containment shell with 2" monitor pipe and leak detection site glass. There shall be a 5-inch dial side mount material temperature gauge.

	2000 GALLON CAPACITY	3000 GALLON CAPACITY	4000 GALLON CAPACITY	5000 GALLON CAPACITY	6000 GALLON CAPACITY	8000 GALLON CAPACITY	10000 GALLON CAPACITY
<b>TANK</b>							
Minimum diameter and minimum height	64" X 12'	7' X 11'	7' X 14'	7'6" X 15'	7'6" X 18'	8' X 21'	9' X 21'
Shall have minimum drop cone bottom for solids retention.	2"	3"	3"	4"	4"	5"	6"
7-gauge steel construction	Side/top	Side/top	Lower 5' of side 1/4" w/ balance & top 7 -gauge	Lower 6' of side 1/4" w/ balance & top 7 -gauge	Lower 6' of side 1/4" w/ balance & top 7 -gauge	Lower 6' of side 1/4" w/ balance & top 7 -gauge	Lower 6' of side 1/4" w/ balance & top 7 -gauge
steel bottom	7 gauge	7 gauge	1/4 inch.	1/4 inch.	1/4 inch.	1/4 inch.	1/4 inch.

**HEATING ELEMENT** The tank shall have heating elements of 6,000 watts and 220 volts. Elements shall be placed in schedule 40 housing positioned inside the tank which are 60" long and

located 8" below the 24" liquid manhole access. Heating elements shall be removable without draining the tank or removing the tank cover or the insulation.

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<b>HEATING ELEMENTS</b>							
6,000 watts/220 V/25 amps	2	2	2	2	2	3	3

**BALL VALVES** There shall be a minimum of two 3-inch ball valve for material loading and unloading located at or near tank.

**STEEL STAND** The bottom of tank must be a minimum of 5 feet above ground level for gravity loading of equipment.

	2000 GALLON CAPACITY	3000 GALLON CAPACITY	4000 GALLON CAPACITY	5000 GALLON CAPACITY	6000 GALLON CAPACITY	8000 GALLON CAPACITY	10000 GALLON CAPACITY
<b>STEEL STAND</b>							
Beam legs and Base plates	(4) 4" 13# WF beam legs & 8" X 8" X 1/2" base plates	(4) 6" 20# WF beam legs & 10" X 10" X 1/2" base plates	(4) 6" 20# WF beam legs & 10" X 10" X 1/2" base plates	(4) 8" 31# WF beam legs & 12" X 12" X 1/2" base plates	(4) 8" 31# WF beam legs & 12" X 12" X 1/2" base plates	(4) 10" 45# WF beam legs & 14" X 14" X 1/2" base plates	(6) 8" 31# WF beam legs & 12" X 12" X 1/2" base plates

**HOSE** Hose shall be a minimum 3-inch ID, 12 foot long loading hose shall be provided with tank.

**AGITATION SYSTEM** Top mounted, worm gear drive electric motor, single phase, 110 or 220 volt, shall be provided with HP size based on mixer size.

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<b>AGITATION SYSTEM</b>							
Minimum shaft diameter	1 3/4"	1 1/2"	2 3/8"	2 3/8"	2 7/8"	2 7/8"	2 7/8"
Impeller shall be HyFlow II with specified diameter	24"	32"	33"	33"	34"	45"	45"
Impeller to operate at non-variable speed maximum of specified RPM	70 RPM	58 RPM	58 RPM	44 RPM	58 RPM	44 RPM	44 RPM

**WARRANTY** The manufacturer's usual warranty shall apply and will be in effect for at least one year. Bidder shall provide warranty information with bid proposal.

**OPTIONS**

- 18, 20, or 24 inch bolted top manhole
- 18, 20, or 24 inch hinged manhole
- Top rail with toe plate
- 4 inch internal overflow pipe
- Low sensor to keep mixer from operating
- Low temp sensor to keep mixer from operating when oil is cold
- High level alarm
- Timer for mixer with battery back up
- R-13 insulation in place of R-11
- Mechanical float gauge
- 8 foot steel legs in place of standard 5 foot
- 2" ball valve w/heat tape, 220volt
- Electric time clock control for agitator
- Access ladder with cage

**MISCELLANEOUS** The bidding agency is responsible for cost and construction of concrete foundation and for proper placement of mounting component, cost and arrangements for required electrical wiring, cost and arrangements for tank erection and placement, and environmental compliance. Detailed tank leg specifications for mounting to concrete foundation shall be provided by supplier.

Note: Should you be in a seismic area, please contact Crafc0, Inc. for special restrictions and quotes.

**Consult your local OSHA and SPCC requirements prior to installation of your storage tank.**



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## EMULSION STORAGE TANK INSTALLATION GUIDE

JUNE 2004

### **Read all instructions first.**

*These instructions are a guide to assist with the set up of your new Crafco Emulsion Storage Tank. They do not replace the manual or eliminate the need to fully review and understand the instructions provided in the manual. Many options are available on the Crafco Emulsion Storage Tanks. These instructions do not address all the optional equipment. Should you have questions about your new Crafco Emulsion Storage Tank contact Crafco, Inc. or your local Crafco Distributor.*

- 1) It is the responsibility of the customer to provide all the equipment, labor and material required to install the emulsion storage tank. The site information and installation, including the electrical hook up at the pad site, is the responsibility of the customer. All electrical connections shall be in accordance with NEMA and NEC electrical standards. The electrical controls and devices shall be terminated in a weatherproof control panel. The control box/panel shall be UL listed and approved. It shall be mounted on the tank stand, for easy accessibility from the ground.
- 2) The site pad and electrical connections must meet all local codes and standards. Crafco, Inc. provides only the layout dimensions for the steel mounting plates. Footing and pad design should be done by a licensed architect. All electric work should be done by a licensed electrician.
- 3) The emulsion storage tank will arrive on a flat bed truck from the manufacturer. A crane must be ready at the site to unload the emulsion storage tank. *[The crane is the responsibility of the customer.]* Do not set the emulsion storage tank on the ground. Use four large tires to set the emulsion storage tank on. This will help prevent scratching the paint off the side of the emulsion storage tank. The emulsion storage tank has lifting hooks on the side of the tank. The lifting hooks will be setting on the flat bed truck facing toward the sky. The crane operator can use the lifting hooks on the side of the emulsion storage tank to set the emulsion storage tank on the four tires.
- 4) The emulsion storage tank has holding tabs on the side of the emulsion storage tank for the tank ladder and the safety cage. You must bolt the emulsion storage tank ladder and the safety cage to the tabs. The bolts will be included with the ladder and safety cage. *[A mobile compressor unit and an air ratchet gun and sockets would be helpful in installing the ladder and safety cage.]*
- 5) The emulsion storage tank has a set of lifting hooks on the top of the tank. The lifting hooks are used to set the emulsion storage tank upright on the existing concrete pad.
- 6) Once the emulsion storage tank is properly sitting on the existing concrete pads, you must prepare to weld the emulsion storage tank foot pads to the existing pads in the concrete. Keep the crane hooked to the emulsion storage tank for safety while welding the emulsion storage tank in place. The crane will need to have a little pressure on the emulsion storage tank. A mobile welder unit is needed at this point. You must weld the emulsion storage tank foot pad to the existing concrete pad plates. Four good weld passes all the way around the foot pads are needed to hold the emulsion storage tank to the existing concrete pad plates. It is recommended to weld one pass all the way around the foot pad first and then move to the next pad. Then follow up with the sequential three weld passes.

- 7) After completing the welding, release the crane from the job site.
- 8) Remove the shipping collar from the agitator shaft inside the emulsion storage tank by unbolting and removing the 24" manhole cover from the side of the emulsion storage tank. Climb inside the emulsion storage tank to remove the shipping collar from the agitator shaft. A mobile acetylene torch is needed to cut the collar from the agitator shaft. You can cut the collar in two places and then cut the angle about 1" from the side of the emulsion storage tank. *[DO NOT CUT INTO THE SIDE OF THE TANK]* This will allow the collar to come off the existing agitator shaft. You do not have to worry about the 1" piece left on the inside of the tank. This will not affect anything.
- 9) Cut loose the emulsion storage tank float. The float is held in place by a safety tie. Once the safety tie is cut move the emulsion storage tank float up and down assuring there are no restrictions.
- 10) Do not install the emulsion storage tank side manhole cover until all the electric is connected. After electrical connection is made rotate the agitator shaft before installing the manhole cover.
- 11) Install the 24" manhole cover with RTV silicone. Use adequate amounts of RTV silicone to prevent tank leakage in this spot. Install all the bolts in the manhole cover. *[Even if the manhole cover is installed, you can still hear the agitator shaft rotating in the emulsion storage tank.]*
- 12) The vent plug on the agitator gear box on top of the emulsion storage tank will need to be placed in the right port. The vent plug is placed in a different port for shipping of the emulsion storage tank. Look at the agitator gear box manual and then climb up on top of the emulsion storage tank and move the plug to the proper location. *[The agitator gear box will have a shipping tag on it explaining this.]* Do this prior to operating the agitator.
- 13) A parts kit is shipped from Crafc0, Inc. before the emulsion storage tank arrives. The kit contains all the parts used for the bottom drain and gravity feed on the side of the emulsion storage tank. Install in the side port of the emulsion storage tank: a 3" closed nipple, a 3" gate valve, 3" closed nipple, 3" lockable ball valve, 3" closed nipple, 3" 90 degree elbow, 3" closed nipple, 3" male cam, 3" female cam, and then the emulsion storage tank gravity feed hose. On the bottom port install: a 3" long nipple, 3" gate valve, 3" closed nipple, 3" lockable ball valve, 3" closed nipple, and a male cam. On the end of the emulsion hose install a 3" closed nipple with a muffler clamp, a 90 deg. elbow, and a 3" x 6" nipple. This is to fill the Magnum Spray Injection Patcher.
- 14) If the emulsion storage tank has the optional ball valve heat tape, install it at this time. Instructions are included with the ball valve heat tape. Read the instructions and wrap the heat tape around the ball valves and have the electrician connect it.
- 15) Install the thermostat with silicone in the furthest right hand port. *[The furthest right hand port looking at the emulsion storage tank ports from the port side.]*
- 16) The emulsion storage tank heaters must be installed inside a thermo well. A reducer bushing is needed to install the emulsion tank heaters. The reducer bushings are in the box sent from Crafc0, Inc. Use plumbers tape on the treads of the emulsion storage tank heaters before installing the heaters in the emulsion storage tank ports. If the emulsion storage tank heaters will need to be removed or replaced in the future plumbers tape will help prevent rusting.
- 17) Install the thermocouple (type "j" with head and block) into the right side port next to the thermostat probe. Use pipe dope on the threads of the thermocouple before installing it in the emulsion storage tank port.

- 18) An electrician will need to place all electrical boxes on mounting tracks and have them attached to the emulsion storage tank legs. *Note: Place the electrical boxes close to the emulsion storage tank heaters. Make sure to install a 100 amp. circuit breaker for the heaters and 30 amp. circuit breaker for the agitator motor.*

Your Electrician must: 1. Connect the time clock for the top agitator motor. 2. Connect the thermocouple. *[Read the thermocouple electrical connection instructions. Instructions (green paper) are inside the electric box].* 3. A ground rod will be needed for the emulsion storage tank. 4. Optional - Install a 110 volt electric outlet for Crafcó's Magnum Spray Injection Patcher to be plugged into for the overnight heating. 5. Option - Connect heat tape for the ball valves. *[A dusk to dawn light is suggested by the emulsion storage tank.]*

- 19) Program the agitator motor time clock. This is an option for the emulsion storage tank. Instructions are in the electric box for the agitator motor.

- 20) **Do not over fill the emulsion storage tank.** The emulsion will, if over filled, flow out the top vent stake pipe and all over the emulsion storage tank. In the parts kit sent to the job site, the parts book manual will list the right amount for the emulsion storage tank. ***Please read the manual before the tanker truck arrives.***

- 21) Do not leave the emulsion heaters on if there is no emulsion in the emulsion storage tank. This will shorten the life of your emulsion heaters.

- 22) If in a hurricane area, please use guide wires to help hold the emulsion storage tank in place during a hurricane.

- 23) The electric control box is required to have and hold a current of 240-volts. This is a must. We will not accept anything less.

**IMPORTANT:** *These instructions are a guide to assist with the set up of your new Crafcó Emulsion Storage Tank. They do not replace the manual or eliminate the need to fully review and understand the instruction provided in the manual. Many options are available on the Crafcó Emulsion Storage tanks. These instructions do not address all the optional equipment. Should you have questions about your new Crafcó Emulsion Storage Tank contact Crafcó, Inc. or your local Crafcó Distributor.*