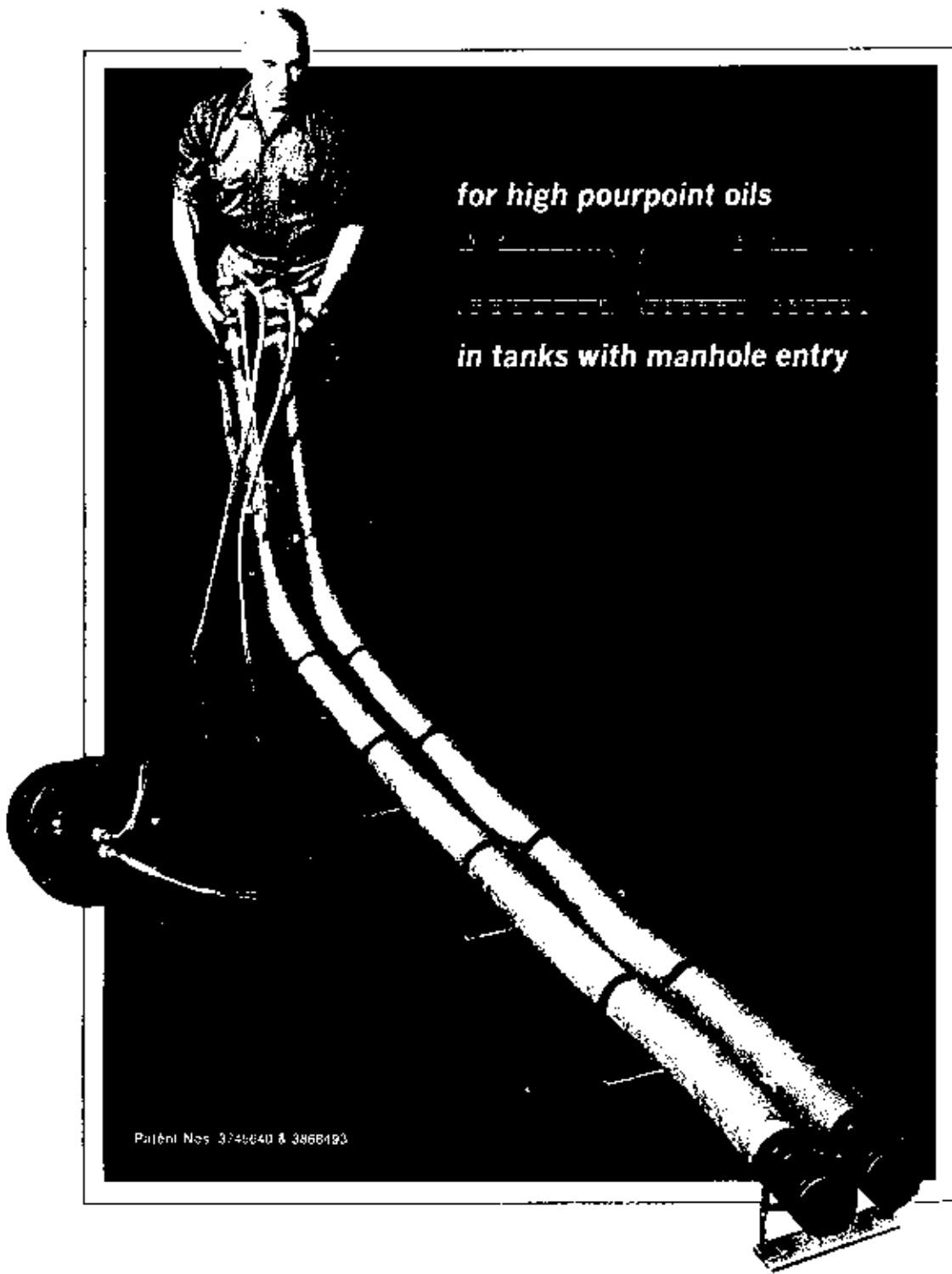


Chromalox®

Type FXTH Flexible Tank Heater for Viscous Fluids



for high pourpoint oils

in tanks with manhole entry

Patent Nos. 3746640 & 3866493

Edwin L. Wiegand Division
Emerson Electric Co.
September, 1982



INDUSTRIAL EQUIPMENT

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Specifications – Type FXTH Flexible Tank Heater

KW	Dimensions In			No of Tubes	Catalog Number	Approx. Net Wt., Lbs.	Volts	Recommended WCC Control Center
	Minimum Manhole Size	Heater Lgth. B	Heater Wth. C					
6	14"	12'-3 1/2"	5 1/2"	1	FXTH-11206	73	240 480	WCC-15-213 WCC-10-413
8	14"	15'-3 1/2"	5 1/2"	1	FXTH-11508	97	240 480	WCC-25-213 WCC-10-413
10	14"	15'-3 1/2"	5 1/2"	1	FXTH-11510	97	240 480	WCC-25-213 WCC-15-413
12	14"	15'-3 1/2"	5 1/2"	1	FXTH-11512	97	240 480	WCC-30-213 WCC-15-413
10	14"	20'-3 1/2"	5 1/2"	1	FXTH-12010	127	240 480	WCC-25-213 WCC-15-413
12	14"	20'-3 1/2"	5 1/2"	1	FXTH-12012	127	240 480	WCC-30-213 WCC-15-413
15	14"	20'-3 1/2"	5 1/2"	1	FXTH-12015	127	240 480	WCC-40-213 WCC-20-413
18	14"	27'-1"	5 1/2"	1	FXTH-12718	170	240 480	WCC-45-213 WCC-25-413
21	14"	30'-1"	5 1/2"	1	FXTH-13021	190	240 480	WCC-55-213 WCC-30-413
24	14"	32'-1"	5 1/2"	1	FXTH-13224	205	240 480	WCC-60-213 WCC-30-413
27	14"	35'-1"	5 1/2"	1	FXTH-13527	225	240 480	WCC-70-213 WCC-35-413
30	14"	40'-1"	5 1/2"	1	FXTH-14030	250	240 480	WCC-75-213 WCC-40-413
12	18"	12'-3 1/2"	10 1/2"	2	FXTH-21212	157	240 480	WCC-15-223 WCC-10-423
16	18"	15'-3 1/2"	10 1/2"	2	FXTH-21516	194	240 480	WCC-25-223 WCC-10-423
20	18"	15'-3 1/2"	10 1/2"	2	FXTH-21520	194	240 480	WCC-25-223 WCC-15-423
24	18"	15'-3 1/2"	10 1/2"	2	FXTH-21524	194	240 480	WCC-30-223 WCC-15-423
20	18"	20'-3 1/2"	10 1/2"	2	FXTH-22020	253	240 480	WCC-25-223 WCC-15-423
24	18"	20'-3 1/2"	10 1/2"	2	FXTH-22024	253	240 480	WCC-30-223 WCC-15-423
30	18"	20'-3 1/2"	10 1/2"	2	FXTH-22030	253	240 480	WCC-40-223 WCC-20-423
36	18"	27'-1"	10 1/2"	2	FXTH-22736	340	240 480	WCC-45-223 WCC-25-423
42	18"	30'-1"	10 1/2"	2	FXTH-23042	380	240 480	WCC-55-223 WCC-30-423
48	18"	32'-1"	10 1/2"	2	FXTH-23248	405	240 480	WCC-60-223 WCC-30-423
54	18"	35'-1"	10 1/2"	2	FXTH-23554	440	240 480	WCC-70-223 WCC-35-423
60	18"	40'-1"	10 1/2"	2	FXTH-24060	500	240 480	WCC-75-223 WCC-40-423
18	24"	12'-3 1/2"	15 1/2"	3	FXTH-31218	236	240 480	WCC-15-233 WCC-10-433
30	24"	15'-3 1/2"	15 1/2"	3	FXTH-31530	291	240 480	WCC-25-233 WCC-15-433
36	24"	15'-3 1/2"	15 1/2"	3	FXTH-31536	291	240 480	WCC-30-233 WCC-15-433
30	24"	20'-3 1/2"	15 1/2"	3	FXTH-32030	370	240 480	WCC-25-233 WCC-15-433
36	24"	20'-3 1/2"	15 1/2"	3	FXTH-32036	370	240 480	WCC-30-233 WCC-15-433
45	24"	20'-3 1/2"	15 1/2"	3	FXTH-32045	370	240 480	WCC-40-233 WCC-20-433

Specifications – Type WCC Weather-proof Control Center

Catalog Number	Volts	Max. Amps per Circuit	No. of Circuits	Dimensions, In.			Approx. Net Wt., Lbs.	Catalog Number	Volts	Max. Amps per Circuit	No. of Circuits	Dimensions, In.			Approx. Net Wt., Lbs.
				H	W	D						H	W	D	
WCC-15-213	240	15	1	24	20	8	64	WCC-30-233	240	30	3	36	30	8	125
WCC-25-213	240	25	1	24	20	8	65	WCC-40-233	240	40	3	36	30	8	127
WCC-30-213	240	30	1	24	20	8	65	WCC-10-413	480	10	1	24	20	8	64
WCC-40-213	240	40	1	24	20	8	65	WCC-15-413	480	15	1	24	20	8	64
WCC-45-213	240	45	1	30	24	8	89	WCC-20-413	480	20	1	24	20	8	64
WCC-55-213	240	55	1	30	24	8	91	WCC-25-413	480	25	1	24	20	8	64
WCC-60-213	240	60	1	30	24	8	91	WCC-30-413	480	30	1	24	20	8	64
WCC-70-213	240	70	1	30	24	8	98	WCC-35-413	480	35	1	24	20	8	64
WCC-75-213	240	75	1	30	24	8	96	WCC-40-413	480	40	1	24	20	8	64
WCC-15-223	240	15	2	30	24	8	84	WCC-10-423	480	10	2	30	24	8	84
WCC-25-223	240	25	2	30	24	8	85	WCC-15-423	480	15	2	30	24	8	84
WCC-30-223	240	30	2	30	24	8	86	WCC-20-423	480	20	2	30	24	8	84
WCC-40-223	240	40	2	30	24	8	91	WCC-25-423	480	25	2	30	24	8	89
WCC-45-223	240	45	2	42	30	8	126	WCC-30-423	480	30	2	30	24	8	91
WCC-55-223	240	55	2	42	30	8	126	WCC-35-423	480	35	2	30	24	8	91
WCC-60-223	240	60	2	42	30	8	126	WCC-40-423	480	40	2	30	24	8	96
WCC-70-223	240	70	2	42	30	8	135	WCC-10-433	480	10	3	36	30	8	113
WCC-75-223	240	75	2	42	30	8	135	WCC-15-433	480	15	3	36	30	8	113
WCC-15-233	240	15	3	36	30	8	113	WCC-20-433	480	20	3	36	30	8	113
WCC-25-233	240	25	3	36	30	8	120								

Fuel Oil Users: Before you refill your tanks, consider what the new Chromalox FXTH will do for you.

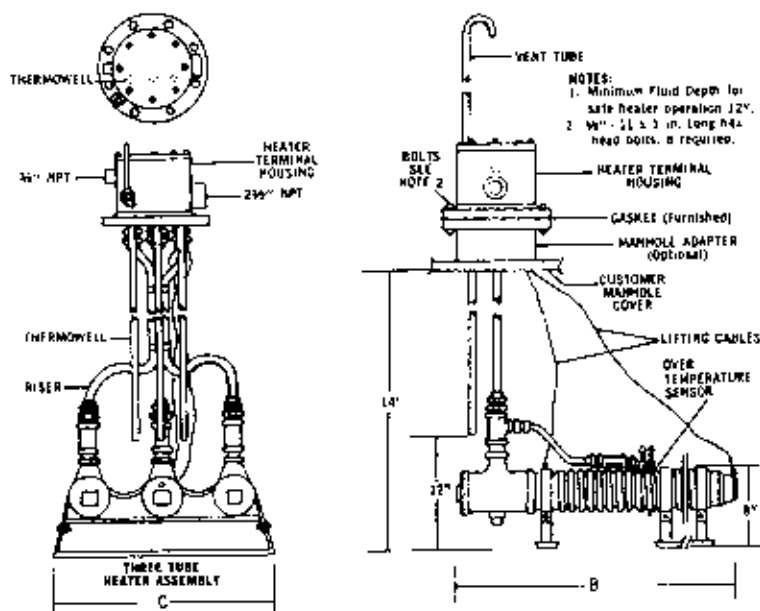
- Take advantage of the economy and availability of the full range of fuel oils.
- Meet the demand for "clean air" by using low-sulphur oils.

The Chromalox FXTH Flexible Tank Heater is designed for heating viscous liquids in large steel, concrete or fibrous glass tanks with normal manhole entry. It offers solutions—profitable solutions, to heating problems that cannot be adequately handled by other tank heaters, through these features:

- **NO TANK MODIFICATIONS** needed; no cutting, welding, cleaning.
- **SPREADS THE HEAT** along the bottom of the tank, which must be done to avoid localized heat, hot spots and carbonization.
- **LOW PROFILE** of the heater gives you maximum use of tank volume, lets you maintain heat even at low oil level.
- **HIGH WATTAGE** at low watt-density—plenty of capacity without overheating the material.
- **DURABLE**—contains the long-lasting Chromalox open coil heater.

Where you can use the FXTH

1. For underground tanks, new or old, with manhole entry.
2. For existing above-ground tanks with manhole entry.
3. For process vessels with either open top or manhole entry.
4. For tanks encased in concrete with manhole entry.



Standard equipment with every FXTH: 4" high sludge legs, flexible pipe and 14' riser, 2 lifting cables (not shown), weather-proof terminal housing with gasket and 50-250° non-indicating thermostat with well, overtemperature probe. Options: special ratings, extra riser lengths, replacement manhole cover drilled for installation, separate low temperature alarm contacts, etc.

NOTE: Over-temperature probe has non-adjustable switching temperature (nominal) of 239°F. Check factory if other setting is required.

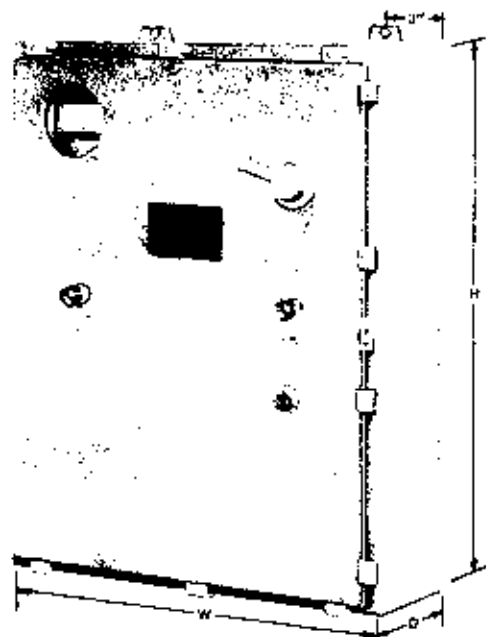
NOTE: Emerson Electric Co. cannot be responsible for heater failure that can be attributed to corrosion. This is in lieu of any warranties, written or verbal, relative to heater performance in a corrosive environment.

When you buy the FXTH, go all the way and get a matching control center

The Chromalox Type WCC Control Center does away with the bother and expense of engineering and purchasing control components for your FXTH. It includes a NEMA IV enclosure with vertical wall-mount brackets, fail-safe overheat device, master circuit breaker, contactor(s), relay(s), selector switch, pilot lights, fused control circuit transformer for 120-v circuit, hasp and staple for padlocking. (Photo shows temperature indicator, which is optional.)

Options: Oil and dust-tight enclosure or type OCC Control Center (NEMA-XII); 7-day, 24-hour timeclock; temperature indicator; legs for control enclosure, audible alarm for high or low temperatures, key-lock selector switch, etc.

NOTE: Multiple heaters in one tank can be controlled by one standard control center.



OIL HEATING INFORMATION

These two charts provide handy information to help you in applying electric heaters for preheating oil. Many types of oil require heating for various reasons. No. 6 and Bunker C fuel oils always needs to be heated for handling and firing.

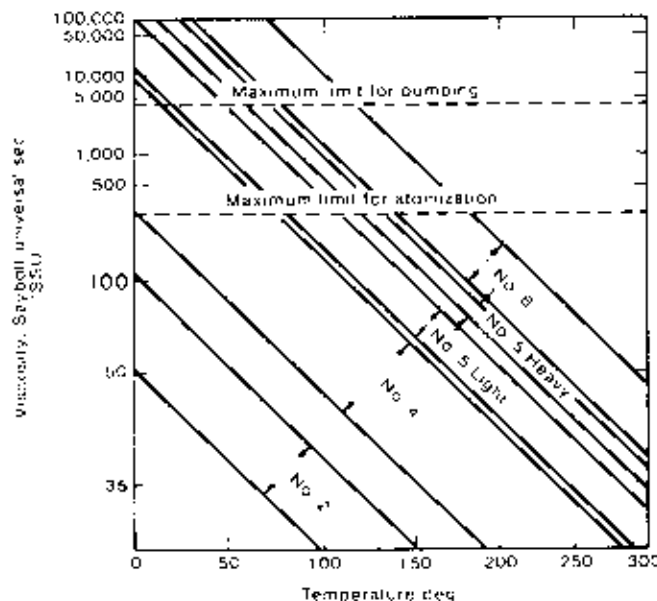
**FIGURE 1
KW REQUIRED FOR OIL HEATING
Quick Reference Chart**

Oil Flow, GPM	Temperature Rise for Indicated Heater Capacity (KW)								
	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	
5	10	13	17	20	24	27	30	34	
10	21	27	34	40	47	54	60	67	
15	30	40	50	60	71	81	91	101	
20	40	54	67	81	94	108	121	134	
25	50	67	84	101	117	134	151	168	
30	60	81	101	121	141	162	181	202	

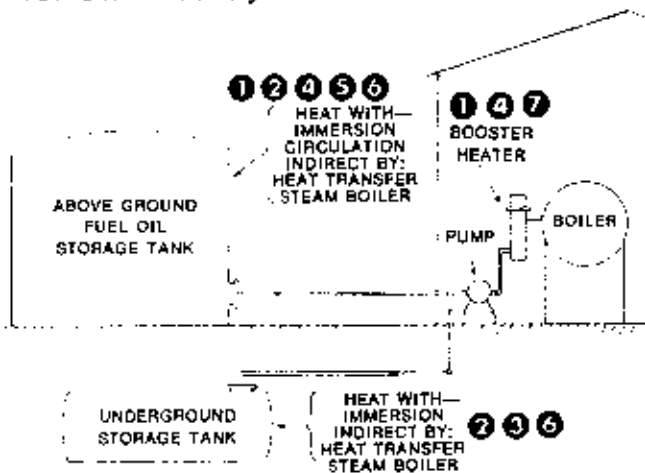
Recommended KW Based on Oil Having: Specific Heat = 40
Specific Gravity = .956
A 20% Safety Factor is Included to Cover Miscellaneous Heat Losses
For Listed Conditions KW = (GPM) (ΔT) (0.672)

FIGURE 2

ASTM temperature-viscosity curves for various grades of fuel oil show maximum viscosity limits for satisfactory pumping and for satisfactory atomization



**Other Chromalox Heaters
for Oil Fired Systems**



1. Flanged and screw-plug immersion heaters for heating tanks, preheating oil at the burner, Stock Catalog and PD121
2. Flexible tank heaters and matching control centers. Bulletin PN102
3. Over-the-side immersion heaters for any liquid, any tank. Manual PD120
4. Circulation heaters for fuel oil preheating, for indirect heating through medium of heat transfer oil. Stock Catalog P110 and PE109
5. Unitary immersion heaters with built-in controls for heat-sensitive materials. Bulletin PN100
6. Automatic fluid heat transfer systems and steam boilers for indirect heating. Complete packages, ready to install. Stock Catalog P110, and Heat Transfer Literature Kit
7. Skid mounted circulation heaters with matching control panel for booster heating. PN100

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