

PLATINUM

Energy Services Corp. "The Oilfield Equipment People"™



Quality Control Summary

HUSKY

**400 BBL DBL WALL
Serial No. 18753**

AQP
1316

Manufacturer of Gas Processing Equipment

Separators, Dehydrators, Line Heaters, Treeters, Tanks, Tubing, Gas / Electric Motors, Pumping Units

Phone: (403) 264-6688

Toll Free 1-888-745-4647

Fax: (403) 237-8271

E-mail: sales@platinumentery.net

Leak Test Procedure

Description: 400 BBL Drum Date: June 02 2010
 Work Order No: 18753 Fabricated By: Platinum
 Test Pressure: 12 oz Test Performed By: Mike Patrick
 Customer: Platinum Stack Manufacturer: Platinum

Leak Test Results:

Flat Bar:

Inside Circumference: 1 leaks
 Outside Circumference: 0 leaks
 Welded By: CI / LI
 Repaired / Retested: MP

Circumferential & Longitudinal Seams:

Inside Circumference: 0 leaks
 Outside Circumference: 0 leaks
 Welded By: CI / LI
 Repaired / Retested: _____

Nozzles / Fittings / Manway:

Mark	Size	Orientation from zero	Number of Leaks	Welder	Retested
N2	4" x 60	14' 8 5/16"	2	CI / LI	MP
M1	2 x 3	31' 9 7/16"	1	CI / LI	MP

Bottom:

Bottom: 0 leaks
 Welded By: CI / LI
 Repaired / Requested: _____

TOTAL Number of Leaks: 4

In Process Checklist

Date: June 02 2010

Unit #: 18753

Tank Size: 400 BBL DWL

Customer: Platinum Stack Q.C.: Mike Petric

	Accept	Repair	Q.C.
Hoops (Long seam)	✓		MP
Floors	✓		MP
Roofs	✓		MP
Bottom Section (Primary & Secondary)	✓		MP
Stacks (Primary & Secondary)	✓		MP
Flat Bar	✓		MP
Fittings / Manway	✓		MP
Air Test	✓		MP
Roof (Fittings)	✓		MP
Skid (saddles)	✓		MP
Heater Boxes	✓		MP
Ladder etc.	✓		MP

- All In - Process Inspections will be completed by Quality Control Personnel
- Tank Components / Jobs are individually checked as they are completed. Visually inspected for quality of welds, defects, missed welds, soundness, etc.
- Air - Testing will be completed when tank is stabbed, fittings/manway is welded & inspected. A Test Pressure of 12 ounces is used. Welds are sprayed with soapy water. If any leaks occur, they will be repaired and retested.

Remarks: _____

Final Check List

Unit #: 18753 Tank Size: 400 Dwt Date: June 02, 2010

Company: Platinum Stack Q.C. Mark Blah

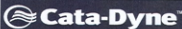
Welding:

	Accept	Repair	Q.C.
Circ. Seams	✓		MP
Long Seams	✓		MP
Floor Seams	✓		MP
Flat Bar	✓		MP
Fittings / Manway	✓		MP
Downcomer / Stinger	✓		MP
Foot Fitting / Toe Railing	✓		MP
Ladder Brackets	✓		MP
Heater Box (es)	✓		MP
Stids	✓		MP
Fire Tube	N/A		MP
Name Plate Bracket	✓		N/A

Bolted Connections:

	Accept	Repair	Q.C.
Ladder Clips	✓		MP
Heater Box Clips	✓		MP
Flanges	✓		MP
Gauge Board Arm	✓		MP
Thief Hatch	✓		MP
Goose Neck	✓		MP
Manway (s)	✓		MP
Sight Glass	✓		MP

Remarks:



STANDARD HEATER APPLICATIONS

INSTALLATION & OPERATION INSTRUCTIONS

The Cata-Dyne™ heater can be used in all industrial indoor locations where a source of infrared radiant heat is required, providing adequate ventilation is available.

CERTIFICATION

Model WX (Series X) & MKII Cata-Dyne™ Explosion-proof, flameless infrared catalytic gas heaters are certified by the Canadian Standards Association (CSA) for use in Class I, Divisions 1 and 2, Group D hazardous (classified) locations and FM Approvals, for use in Class I, Division 1, Group D hazardous (classified) locations, temperature code T2C at an ambient temperature of 40°C (104°F). WX models are suitable for Class I, Division I, Group D, temperature code T2B at an ambient temperature of 40°C (104°F). Models WX & MKII are certified ATEX/CE for use in gas environments, Category 2, Zone 1 & 2, Group IIA.

The Model BX (Series G) Cata-Dyne™ heater is certified by CSA and FM for use in general industrial non-hazardous locations. Models listed are certified for industrial use only, for either natural gas or propane gas. CSA approved models are equipped for high altitudes: 0 - 4,500 ft. (0-1,370 m) above sea level.

INSTALLATION

To ensure maximum efficiency of your Cata-Dyne™ heater, it should be installed with the heating surface positioned plus or minus 45° from the vertical plane at a height of no more than 8 ft. (2.44 m). All heaters must be installed in accordance with the latest revisions of the codes described in table 4 and in accordance with any local codes and regulations. Before installing the heater, all information on the heater nameplate must be carefully reviewed. The nameplate lists all the fuel and electrical requirements for the heater.

WARNING: Improper installation, adjustment, alteration, excessive vibration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installation or servicing this equipment.



Table 1

CATA-DYNE™ HEATER - MODELS AVAILABLE FOR FM, CE, ATEX

W65, Maximum Capacity (1)					
Approved for use in Class 1 Division 2, Groups A, B, and C, and in Class 2, Division 1, Groups A, B, and C, and in Class 3, Division 1, Groups A, B, and C, and in Class 4, Division 1, Groups A, B, and C, and in Class 5, Division 1, Groups A, B, and C, and in Class 6, Division 1, Groups A, B, and C, and in Class 7, Division 1, Groups A, B, and C, and in Class 8, Division 1, Groups A, B, and C, and in Class 9, Division 1, Groups A, B, and C, and in Class 10, Division 1, Groups A, B, and C, and in Class 11, Division 1, Groups A, B, and C, and in Class 12, Division 1, Groups A, B, and C, and in Class 13, Division 1, Groups A, B, and C, and in Class 14, Division 1, Groups A, B, and C, and in Class 15, Division 1, Groups A, B, and C, and in Class 16, Division 1, Groups A, B, and C, and in Class 17, Division 1, Groups A, B, and C, and in Class 18, Division 1, Groups A, B, and C, and in Class 19, Division 1, Groups A, B, and C, and in Class 20, Division 1, Groups A, B, and C, and in Class 21, 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and C, and in Class 403, Division 1, Groups A, B, and C, and in Class 404, Division 1, Groups A, B, and C, and in Class 405, Division 1, Groups A, B, and C, and in Class 406, Division 1, Groups A, B, and C, and in Class 407, Division 1, Groups A, B, and C, and in Class 408, Division 1, Groups A, B, and C, and in Class 409, Division 1, Groups A, B, and C, and in Class 410, Division 1, Groups A, B, and C, and in Class 411, Division 1, Groups A, B, and C, and in Class 412, Division 1, Groups A, B, and C, and in Class 413, Division 1, Groups A, B, and C, and in Class 414, Division 1, Groups A, B, and C, and in Class 415, Division 1, Groups A, B, and C, and in Class 416, Division 1, Groups A, B, and C, and in Class 417, Division 1, Groups A, B, and C, and in Class 418, Division 1, Groups A, B, and C, and in Class 419, Division 1, Groups A, B, and C, and in Class 420, Division 1, Groups A, B, and C, and in Class 421, Division 1, Groups A, B, and C, and in Class 422, Division 1, Groups A, B, and C, and in Class 423, Division 1, Groups A, B, and C, and in Class 424, Division 1, Groups A, B, and C, and in Class 425, Division 1, Groups A, B, and C, and in Class 426, Division 1, Groups A, B, and C, and in Class 427, Division 1, Groups A, B, and C, and in Class 428, Division 1, Groups A, B, and C, and in Class 429, Division 1, Groups A, B, and C, and in Class 430, Division 1, Groups A, B, and C, and in Class 431, Division 1, Groups A, B, and C, and in Class 432, Division 1, Groups A, B, and C, and in Class 433, Division 1, Groups A, B, and C, and in Class 434, Division 1, Groups A, B, and C, and in Class 435, Division 1, Groups A, B, and C, and in Class 436, Division 1, Groups A, B, and C, and in Class 437, Division 1, Groups A, B, and C, and in Class 438, Division 1, Groups A, B, and C, and in Class 439, Division 1, Groups A, B, and C, and in Class 440, Division 1, Groups A, B, and C, and in Class 441, Division 1, Groups A, B, and C, and in Class 442, Division 1, Groups A, B, and C, and in Class 443, Division 1, Groups A, B, and C, and in Class 444, Division 1, Groups A, B, and C, and in Class 445, Division 1, Groups A, B, and C, and in Class 446, Division 1, Groups A, B, and C, and in Class 447, Division 1, Groups A, B, and C, and in Class 448, Division 1, Groups A, B, and C, and in Class 449, Division 1, Groups A, B, and C, and in Class 450, Division 1, Groups A, B, and C, and in Class 451, Division 1, Groups A, B, and C, and in Class 452, Division 1, Groups A, B, and C, and in Class 453, Division 1, Groups A, B, and C, and in Class 454, Division 1, Groups A, B, and C, and in Class 455, Division 1, Groups A, B, and C, and in Class 456, Division 1, Groups A, B, and C, and in Class 457, Division 1, Groups A, B, and C, and in Class 458, Division 1, Groups A, B, and C, and in Class 459, Division 1, Groups A, B, and C, and in Class 460, Division 1, Groups A, B, and C, and in Class 461, Division 1, Groups A, B, and C, and in Class 462, Division 1, Groups A, B, and C, and in Class 463, Division 1, Groups A, B, and C, and in Class 464, Division 1, Groups A, B, and C, and in Class 465, Division 1, Groups A, B, and C, and in Class 466, Division 1, Groups A, B, and C, and in Class 467, Division 1, Groups A, B, and C, and in Class 468, Division 1, Groups A, B, and C, and in Class 469, Division 1, Groups A, B, and C, and in Class 470, Division 1, Groups A, B, and C, and in Class 471, Division 1, Groups A, B, and C, and in Class 472, Division 1, Groups A, B, and C, and in Class 473, Division 1, Groups A, B, and C, and in Class 474, Division 1, Groups A, B, and C, and in Class 475, Division 1, Groups A, B, and C, and in Class 476, Division 1, Groups A, B, and C, and in Class 477, Division 1, Groups A, B, and C, and in Class 478, Division 1, Groups A, B, and C, and in Class 479, Division 1, Groups A, B, and C, and in Class 480, Division 1, Groups A, B, and C, and in Class 481, Division 1, Groups A, B, and C, and in Class 482, Division 1, Groups A, B, and C, and in Class 483, Division 1, Groups A, B, and C, and in Class 484, Division 1, Groups A, B, and C, and in Class 485, Division 1, Groups A, B, and C, and in Class 486, Division 1, Groups A, B, and C, and in Class 487, Division 1, Groups A, B, and C, and in Class 488, Division 1, Groups A, B, and C, and in Class 489, Division 1, Groups A, B, and C, and in Class 490, Division 1, Groups A, B, and C, and in Class 491, Division 1, Groups A, B, and C, and in Class 492, Division 1, Groups A, B, and C, and in Class 493, Division 1, Groups A, B, and C, and in Class 494, Division 1, Groups A, B, and C, and in Class 495, Division 1, Groups A, B, and C, and in Class 496, Division 1, Groups A, B, and C, and in Class 497, Division 1, Groups A, B, and C, and in Class 498, Division 1, Groups A, B, and C, and in Class 499, Division 1, Groups A, B, and C, and in Class 500, Division 1, Groups A, B, and C, and in Class 501, Division 1, Groups A, B, and C, and in Class 502, Division 1, Groups A, B, and C, and in Class 503, Division 1, Groups A, B, and C, and in Class 504, Division 1, Groups A, B, and C, and in Class 505, Division 1, Groups A, B, and C, and in Class 506, Division 1, Groups A, B, and C, and in Class 507, Division 1, Groups A, B, and C, and in Class 508, Division 1, Groups A, B, and C, and in Class 509, Division 1, Groups A, B, and C, and in Class 510, Division 1, Groups A, B, and C, and in Class 511, Division 1, Groups A, B, and C, and in Class 512, Division 1, Groups A, B, and C, and in Class 513, Division 1, Groups A, B, and C, and in Class 514, Division 1, Groups A, B, and C, and in Class 515, Division 1, Groups A, B, and C, and in Class 516, Division 1, Groups A, B, and C, and in Class 517, Division 1, Groups A, B, and C, and in Class 518, Division 1, Groups A, B, and C, and in Class 519, Division 1, Groups A, B, and C, and in Class 520, Division 1, Groups A, B, and C, and in Class 521, Division 1, Groups A, B, and C, and in Class 522, Division 1, Groups A, B, and C, and in Class 523, Division 1, Groups A, B, and C, and in Class 524, Division 1, Groups A, B, and C, and in Class 525, Division 1, Groups A, B, and C, and in Class 526, Division 1, Groups A, B, and C, and in Class 527, Division 1, Groups A, B, and C, and in Class 528, Division 1, Groups A, B, and C, and in Class 529, Division 1, Groups A, B, and C, and in Class 530, Division 1, Groups A, B, and C, and in Class 531, Division 1, Groups A, B, and C, and in Class 532, Division 1, Groups A, B, and C, and in Class 533, Division 1, Groups A, B, and C, and in Class 534, Division 1, Groups A, B, and C, and in Class 535, Division 1, Groups A, B, and C, and in Class 536, Division 1, Groups A, B, and C, and in Class 537, Division 1, Groups A, B, and C, and in Class 538, Division 1, Groups A, B, and C, and in Class 539, Division 1, Groups A, B, and C, and in Class 540, Division 1, Groups A, B, and C, and in Class 541, Division 1, Groups A, B, and C, and in Class 542, Division 1, Groups A, B, and C, and in Class 543, Division 1, Groups A, B, and C, and in Class 544, Division 1, Groups A, B, and C, and in Class 545, Division 1, Groups A, B, and C, and in Class 546, Division 1, Groups A, B, and C, and in Class 547, Division 1, Groups A, B, and C, and in Class 548, Division 1, Groups A, B, and C, and in Class 549, Division 1, Groups A, B, and C, and in Class 550, Division 1, Groups A, B, and C, and in Class 551, Division 1, Groups A, B, and C, and in Class 552, Division 1, Groups A, B, and C, and in Class 553, Division 1, Groups A, B, and C, and in Class 554, Division 1, Groups A, B, and C, and in Class 555, Division 1, Groups A, B, and C, and in Class 556, Division 1, Groups A, B, and C, and in Class 557, Division 1, Groups A, B, and C, and in Class 558, Division 1, Groups A, B, and C, and in Class 559, Division 1, Groups A, B, and C, and in Class 560, Division 1, Groups A, B, and C, and in Class 561, Division 1, Groups A, B, and C, and in Class 562, Division 1, Groups A, B, and C, and in Class 563, Division 1, Groups A, B, and C, and in Class 564, Division 1, Groups A, B, and C, and in Class 565, Division 1, Groups A, B, and C, and in Class 566, Division 1, Groups A, B, and C, and in Class 567, Division 1, Groups A, B, and C, and in Class 568, Division 1, Groups A, B, and C, and in Class 569, Division 1, Groups A, B, and C, and in Class 570, Division 1, Groups A, B, and C, and in Class 571, Division 1, Groups A, B, and C, and in Class 572, Division 1, Groups A, B, and C, and in Class 573, Division 1, Groups A, B, and C, and in Class 574, Division 1, Groups A, B, and C, and in Class 575, Division 1, Groups A, B, and C, and in Class 576, Division 1, Groups A, B, and C, and in Class 577, Division 1, Groups A, B, and C, and in Class 578, Division 1, Groups A, B, and C, and in Class 579, Division 1, Groups A, B, and C, and in Class 580, Division 1, Groups A, B, and C, and in Class 581, Division 1, Groups A, B, and C, and in Class 582, Division 1, Groups A, B, and C, and in Class 583, Division 1, Groups A, B, and C, and in Class 584, Division 1, Groups A, B, and C, and in Class 585, Division 1, Groups A, B, and C, and in Class 586, Division 1, Groups A, B, and C, and in Class 587, Division 1, Groups A, B, and C, and in Class 588, Division 1, Groups A, B, and C, and in Class 589, Division 1, Groups A, B, and C, and in Class 590, Division 1, Groups A, B, and C, and in Class 591, Division 1, Groups A, B, and C, and in Class 592, Division 1, Groups A, B, and C, and in Class 593, Division 1, Groups A, B, and C, and in Class 594, Division 1, Groups A, B, and C, and in Class 595, Division 1, Groups A, B, and C, and in Class 596, Division 1, Groups A, B, and C, and in Class 597, Division 1, Groups A, B, and C, and in Class 598, Division 1, Groups A, B, and C, and in Class 599, Division 1, Groups A, B, and C, and in Class 600, Division 1, Groups A, B, and C, and in Class 601, Division 1, Groups A, B, and C, and in Class 602, Division 1, Groups A, B, and C, and in Class 603, Division 1, Groups A, B, and C, and in Class 604, Division 1, Groups A, B, and C, and in Class 605, Division 1, Groups A, B, and C, and in Class 606, Division 1, Groups A, B, and C, and in Class 607, Division 1, Groups A, B, and C, and in Class 608, Division 1, Groups A, B, and C, and in Class 609, Division 1, Groups A, B, and C, and in Class 610, Division 1, Groups A, B, and C, and in Class 611, Division 1, Groups A, B, and C, and in Class 612, Division 1, Groups A, B, and C, and in Class 613, Division 1, Groups A, B, and C, and in Class 614, Division 1, Groups A, B, and C, and in Class 615, Division 1, Groups A, B, and C, and in Class 616, Division 1, Groups A, B, and C, and in Class 617, Division 1, Groups A, B, and C, and in Class 618, Division 1, Groups A, B, and C, and in Class 619, Division 1, Groups A, B, and C, and in Class 620, Division 1, Groups A, B, and C, and in Class 621, Division 1, Groups A, B, and C, and in Class 622, Division 1, Groups A, B, and C, and in Class 623, Division 1, Groups A, B, and C, and in					

Table 2

CATA-DYNE™ HEATER - MODELS AVAILABLE FOR CSA ONLY									
Model (Series C)									
Approved for use in Canada (CSA 2.2.2) and U.S. (ANSI Z21.5.1) - gas heaters with input up to 100,000 Btu/hr (29.3 kW) and 40,000 Btu/hr (11.7 kW) respectively									
Model Number	Approximate Dimensions (mm)			Approximate Dimensions (in.)			Approximate Dimensions (mm)		
	Max. Depth	Max. Width	Max. Height	Max. Depth	Max. Width	Max. Height	Max. Depth	Max. Width	Max. Height
CD-100-1	100	100	100	4	4	4	100	100	100
CD-100-2	100	100	100	4	4	4	100	100	100
CD-100-3	100	100	100	4	4	4	100	100	100
CD-100-4	100	100	100	4	4	4	100	100	100
CD-100-5	100	100	100	4	4	4	100	100	100
CD-100-6	100	100	100	4	4	4	100	100	100
CD-100-7	100	100	100	4	4	4	100	100	100
CD-100-8	100	100	100	4	4	4	100	100	100
CD-100-9	100	100	100	4	4	4	100	100	100
CD-100-10	100	100	100	4	4	4	100	100	100
CD-100-11	100	100	100	4	4	4	100	100	100
CD-100-12	100	100	100	4	4	4	100	100	100
CD-100-13	100	100	100	4	4	4	100	100	100
CD-100-14	100	100	100	4	4	4	100	100	100
CD-100-15	100	100	100	4	4	4	100	100	100
CD-100-16	100	100	100	4	4	4	100	100	100
CD-100-17	100	100	100	4	4	4	100	100	100
CD-100-18	100	100	100	4	4	4	100	100	100
CD-100-19	100	100	100	4	4	4	100	100	100
CD-100-20	100	100	100	4	4	4	100	100	100
CD-100-21	100	100	100	4	4	4	100	100	100
CD-100-22	100	100	100	4	4	4	100	100	100
CD-100-23	100	100	100	4	4	4	100	100	100
CD-100-24	100	100	100	4	4	4	100	100	100
CD-100-25	100	100	100	4	4	4	100	100	100
CD-100-26	100	100	100	4	4	4	100	100	100
CD-100-27	100	100	100	4	4	4	100	100	100
CD-100-28	100	100	100	4	4	4	100	100	100
CD-100-29	100	100	100	4	4	4	100	100	100
CD-100-30	100	100	100	4	4	4	100	100	100
CD-100-31	100	100	100	4	4	4	100	100	100
CD-100-32	100	100	100	4	4	4	100	100	100
CD-100-33	100	100	100	4	4	4	100	100	100
CD-100-34	100	100	100	4	4	4	100	100	100
CD-100-35	100	100	100	4	4	4	100	100	100
CD-100-36	100	100	100	4	4	4	100	100	100
CD-100-37	100	100	100	4	4	4	100	100	100
CD-100-38	100	100	100	4	4	4	100	100	100
CD-100-39	100	100	100	4	4	4	100	100	100
CD-100-40	100	100	100	4	4	4	100	100	100
CD-100-41	100	100	100	4	4	4	100	100	100
CD-100-42	100	100	100	4	4	4	100	100	100
CD-100-43	100	100	100	4	4	4	100	100	100
CD-100-44	100	100	100	4	4	4	100	100	100
CD-100-45	100	100	100	4	4	4	100	100	100
CD-100-46	100	100	100	4	4	4	100	100	100
CD-100-47	100	100	100	4	4	4	100	100	100
CD-100-48	100	100	100	4	4	4	100	100	100
CD-100-49	100	100	100	4	4	4	100	100	100
CD-100-50	100	100	100	4	4	4	100	100	100
CD-100-51	100	100	100	4	4	4	100	100	100
CD-100-52	100	100	100	4	4	4	100	100	100
CD-100-53	100	100	100	4	4	4	100	100	100
CD-100-54	100	100	100	4	4	4	100	100	100
CD-100-55	100	100	100	4	4	4	100	100	100
CD-100-56	100	100	100	4	4	4	100	100	100
CD-100-57	100	100	100	4	4	4	100	100	100
CD-100-58	100	100	100	4	4	4	100	100	100
CD-100-59	100	100	100	4	4	4	100	100	100
CD-100-60	100	100	100	4	4	4	100	100	100
CD-100-61	100	100	100	4	4	4	100	100	100
CD-100-62	100	100	100	4	4	4	100	100	100
CD-100-63	100	100	100	4	4	4	100	100	100
CD-100-64	100	100	100	4	4	4	100	100	100
CD-100-65	100	100	100	4	4	4	100	100	100
CD-100-66	100	100	100	4	4	4	100	100	100
CD-100-67	100	100	100	4	4	4	100	100	100
CD-100-68	100	100	100	4	4	4	100	100	100
CD-100-69	100	100	100	4	4	4	100	100	100
CD-100-70	100	100	100	4	4	4	100	100	100
CD-100-71	100	100	100	4	4	4	100	100	100
CD-100-72	100	100	100	4	4	4	100	100	100
CD-100-73	100	100	100	4	4	4	100	100	100
CD-100-74	100	100	100	4	4	4	100	100	100
CD-100-75	100	100	100	4	4	4	100	100	100
CD-100-76	100	100	100	4	4	4	100	100	100
CD-100-77	100	100	100	4	4	4	100	100	100
CD-100-78	100	100	100	4	4	4	100	100	100
CD-100-79	100	100	100	4	4	4	100	100	100
CD-100-80	100	100	100	4	4	4	100	100	100
CD-100-81	100	100	100	4	4	4	100	100	100
CD-100-82	100	100	100	4	4	4	100	100	100
CD-100-83	100	100	100	4	4	4	100	100	100
CD-100-84	100	100	100	4	4	4	100	100	100
CD-100-85	100	100	100	4	4	4	100	100	100
CD-100-86	100	100	100	4	4	4	100	100	100
CD-100-87	100	100	100	4	4	4	100	100	100
CD-100-88	100	100	100	4	4	4	100	100	100
CD-100-89	100	100	100	4	4	4	100	100	100
CD-100-90	100	100	100	4	4	4	100	100	100
CD-100-91	100	100	100	4	4	4	100	100	100
CD-100-92	100	100	100	4	4	4	100	100	100
CD-100-93	100	100	100	4	4	4	100	100	100
CD-100-94	100	100	100	4	4	4	100	100	100
CD-100-95	100	100	100	4	4	4	100	100	100
CD-100-96	100	100	100	4	4	4	100	100	100
CD-100-97	100	100	100	4	4	4	100	100	100
CD-100-98	100	100	100	4	4	4	100	100	100
CD-100-99	100	100	100	4	4	4	100	100	100
CD-100-100	100	100	100	4	4	4	100	100	100

SPECIFICATIONS

Clearances

Appropriate clearances from the heating surface must be observed during the installation of the Cata-Dyne™ heaters (See Figure 1 & Table 4). Maintain nameplate clearances from combustible materials such as wood, cloth, paper, etc.

Fuels

The Cata-Dyne™ flameless gas heater is designed to operate on clean, dry natural gas or propane as specified on the heater nameplate.

Natural Gas - these heaters are designed to use natural gas (1,000 Btu/lb, 37 MJ/m³) at 7 in. w.c. (1.73 kPa), 4.5 in. w.c. (1.12 kPa), or 3.5 in. w.c. (0.86 kPa).

Propane - these heaters are designed to use propane gas (2,500 Btu/lb, 92 MJ/m³) at 11 in. w.c. (2.72 kPa).

FIGURE 1

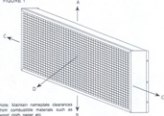


Table 3

All Cata-Dyne™ Heaters Installed in Canada	All Cata-Dyne™ Heaters Installed in the USA	All Cata-Dyne™ Heaters Installed Internationally
CSA/CAN-22.2-143, Canadian Electrical Code	NFPA 70, National Electrical Code	Install according to national and international electrical and plumbing codes
CSA/CAN-22.2-143, Natural Gas and Propane Installation Code	NFPA 54, National Fuel Gas Code	

NOTE: Ensure that the heater is not operational in an excessive vibration environment or premature failure of the heater may occur.

Table 4

HEATER CLEARANCE										
	D - Radiant Surface			C - Sides	A - Top			B - Bottom		
Radiant Surface Position	Heaters Up To 12,000 Btu/hr (3.514 kW)	Heaters Up To 48,000 Btu/hr (14.058 kW)	Over 48,000 Up To 72,000 Btu/hr (21 kW)	All Heaters Up To 72,000 Btu/hr (21 kW)	Heaters Up To 12,000 Btu/hr (3.514 kW)	Over 12,000 Up To 48,000 Btu/hr (14.058 kW)	Over 48,000 Up To 72,000 Btu/hr (21 kW)	Heaters Up To 12,000 Btu/hr (3.514 kW)	Over 12,000 Up To 48,000 Btu/hr (14.058 kW)	Over 48,000 Up To 72,000 Btu/hr (21 kW)
Vertical (90°)	28 in. (711 mm)	42 in. (1067 mm)	60 in. (1524 mm)	12 in. (305 mm)	18 in. (457 mm)	18 in. (457 mm)	42 in. (1067 mm)	7 in. (178 mm)	12 in. (305 mm)	18 in. (457 mm)
0-45° up	28 in. (711 mm)	42 in. (1067 mm)	60 in. (1524 mm)	12 in. (305 mm)	18 in. (457 mm)	32 in. (813 mm)	54 in. (1372 mm)	0 in. (0 mm)	12 in. (305 mm)	18 in. (457 mm)
0-45° down	28 in. (711 mm)	42 in. (1067 mm)	60 in. (1524 mm)	12 in. (305 mm)	18 in. (457 mm)	18 in. (457 mm)	18 in. (457 mm)	22 in. (559 mm)	24 in. (610 mm)	42 in. (1067 mm)

Piping

1. A main shut-off valve must be installed upstream of all auxiliary heater controls.
2. The 100% safety shut-off valve and appliance regulator (natural gas heaters only) must be installed in the upright position (horizontally).
3. The thermostatic temperature controller should be installed with the dial shaft in the horizontal position.
4. The maximum inlet pressure to the 100% safety shut-off valve, thermostatic temperature control and appliance regulator is 1/2 psi (3.4 kPa). If the inlet pressure is higher than this, a low-pressure service regulator must be installed upstream of these components.
5. The maximum inlet pressure to the low-pressure service regulator (available from CCI Thermal) is 250 psi (1.7 MPa). If the inlet pressure is higher than this, a high-pressure regulator must be installed upstream.
6. All components should be installed as indicated in Figure 2 (WX and BX models only) or Figure 3 (MKII model only).

Electrical

1. All wiring is to be installed in accordance with the latest revisions of the Canadian Electrical Code (CEC)/ National Electrical Code (NEC) and/or any applicable local codes.
2. It is desirable to install an indicating light on all starting systems. This will reduce the possibility of the power being left on once the heater is started, which can severely reduce the lifespan of the heater.
3. Ground connections for 120 V and higher voltage heaters are required as indicated in Figures 4 and 5.
4. The number of terminals in the junction box can be two or four depending on the number of elements used in the fabrication of the heater. All MKII models incorporate a single element and therefore have only two terminals. The connection procedure for the different combinations is as described in Figures 4 and 5.

FIGURE 2

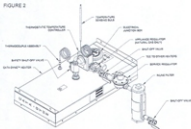


Diagram illustrates typical Natural Gas installation.

Gas appliance regulators and manual shut off valves are required standard components for all CSA approved heaters; they are available as optional accessories for FM approved heaters.

FIGURE 3

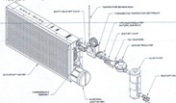


Diagram illustrates typical Natural Gas installation.

Gas appliance regulators and manual shut off valves are required standard components for all CSA approved heaters; they are available as optional accessories for FM approved heaters.

CAUTION:

Install MKII series heaters with controls on sides or bottom of heater only.

FIGURE 4



FIGURE 5



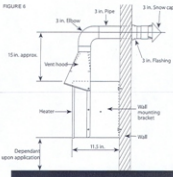
Ventilation

The catalytic reaction in Cata-Dyne™ heaters occurs when natural gas or propane reacts with oxygen to produce water vapor, carbon dioxide and infrared energy. Ventilation must be provided to allow adequate supply of oxygen for the reaction.

For every 1.0 ft² (0.093 m²) of heater surface, 50 ft³/hr (1.42 m³/hr) of air supply is required. For example, a WX 24 x 24 heater (20,000 Btu/hr / 5.857 kW) would require 200 ft³/hr (5.66 m³/hr) of air to ensure proper operation of the Cata-Dyne™ heater.

To reduce the carbon dioxide and water vapor concentrations in the building, a vent hood assembly can be installed to provide positive ventilation from the heater (See Figure 6).

FIGURE 6



OPERATION

All Cata-Dyne™ heaters are supplied with a Safety Shut-Off Valve (SSOV)/Thermocouple assembly to ensure the safe operation of the heater. Under no circumstances should the reset button be held or locked into the depressed position by use of a mechanical restraint. A tamper resistant model SSOV is available if desired.

Start-up

1. Ensure the heater has been installed according to all instructions and relevant codes.
2. Turn on the main gas supply to the system.
3. If the heater is equipped with a thermostatic temperature controller, rotate the dial completely clockwise to the fully open position.

4. Turn on the power to the electrical elements.

5. After 15 minutes, depress the reset button on the top of the 100% safety shut-off valve. The button should return to the original position and internally open the valve and allow gas to flow to the heater. If the valve does not stay open when the reset button is released, it may be necessary to wait an additional few minutes and then depress the reset button again. This will allow the electrical elements additional time to warm up.

6. When the catalytic reaction is well established, turn off the electrical power to the elements.

7. If the heater is equipped with a thermostatic temperature controller, it can be set to the desired setting after the catalytic reaction has been established for at least one hour.

Shut Down

Turn off the gas supply to the heater.

Multi-Heater Start-up

Cata-Dyne™ heaters can also be purchased installed in multi-heater assemblies. If these assemblies are 12 V, each heater must be started individually. This ensures the correct voltage and current will be reaching the heater from the power supply.

12 V HAZARDOUS ELECTRICAL INSTALLATIONS

Most oil and gas production buildings have an area classification as follows:

1. Class I, Division 1, within the building. Refer to figures 7 and 8.
2. Class I, Division 2, up to 10 ft. (3 m.) from the building in any direction. Refer to figures 7 and 8.
3. Class I, Division 2, between 10 ft. (3 m.) and 25 ft. (7.6 m.) from the building in all directions at an elevation of 18 in. (0.45 m.) above the ground. Refer to figures 7 and 8.

Connection to the power supply must be outside of the Class I, Division 2 location. (refer to Figure 9). All electrical apparatus and wiring within this area must conform to the appropriate codes.

SPACE HEATING

A separate heat load calculation should be done for each building in which a Cata-Dyne™ heater will be installed for space heating purposes.

The heatload calculation determines the building heat losses through the structure and allows for air infiltration (refer to the Cata-Dyne™ catalog or visit www.cclthermal.com for the sample Heat Load Calculation).

Cata-Dyne™ heaters produce low intensity infrared heat that is absorbed by objects within the range of the heat source. The closer the object is to the source of heat the more heat the object will absorb. Cata-Dyne™ heaters should be placed close to the floor level within the building to heat objects close to the floor.

Ideally, Cata-Dyne™ heaters should be mounted 1-3 ft. (0.3-1 m) from the floor and equally spaced around the building perimeter for space heating applications.

If low mounting is not practical, then overhead mounting may be utilized. Overhead mounted heaters should be sloped face down to a maximum 45° angle to direct the infrared energy towards the floor. Overhead mounting should be restricted to heaters of 30,000 Btu/hr (8.8 kW) capacity and larger.

If the building requires only one heater, place the Cata-Dyne™ heater as close as possible to the center of the longest wall.

For multiple heater installations, space the Cata-Dyne™ heaters as evenly as possible around the perimeter of the building.

Make sure the piping is large enough to handle the gas load (refer to the sample Piping Calculation in the Cata-Dyne™ catalog for sizing information).

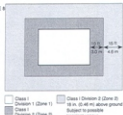
Make sure the electrical starting system has sufficient current carrying capacity and conforms to all applicable electrical codes.

It is advisable to install an indicator light in the electrical circuit to reduce the possibility of the power being left on once the heater is started.

FIGURE 3



FIGURE 10.10



SPOT HEATING

There are several factors to consider when Cata-Dyne™ heaters are utilized for spot heating.

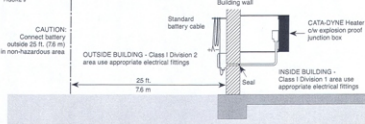
Infrared energy travels in straight lines from the face of the Cata-Dyne™ heater covering approximately 160° of an arc and is inversely proportional to the square of the distance. The heater should therefore be mounted as close as practical (min of 28 in. (71 cm)) to the object requiring heat for maximum temperature rise.

Match the shape of the object requiring heat with the appropriate Cata-Dyne™ heater, e.g. WX/BX 6 x 24 for long narrow objects or WX/BX 12 x 12 for a square object.

Objects requiring heat should be painted dull, dark colors for maximum infrared absorption and objects not requiring heat should be painted light or reflective colors.

Insulate and protect plastic, rubber and similar materials from direct intense infrared heat.

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PERSONAL SAFETY

The Cata-Dyne™ flameless infrared catalytic gas heater does not produce harmful carbon monoxide gas when used with natural gas or propane. Adequate ventilation must be incorporated in any building design to ensure oxygen replenishment and removal of any carbon dioxide. Protective grills should be used on any installation where personnel may come in contact with the face of the heater.

ORDERING INFORMATION

You can order any of CCI Thermal's products by telephone, fax, mail, e-mail or directly on-line at www.cci-thermal.com.

To assist us in processing your order as quickly and efficiently as possible, please provide us with the following information:

- ☐ Cata-Dyne™ product name
- ☐ Cata-Dyne™ model number
- ☐ Fuel gas - natural gas or propane
- ☐ Starting voltage - 12, 24, 120, 208, 240, 480, or 600V
- ☐ Accessories required:
 - Protection Grill
 - Wall Mount Brackets
 - Thermostat
 - Regulator
 - Start Up Leads (12 V system only)
 - Vent Hood
 - Other
- ☐ Company name and contact
- ☐ Billing address and phone number
- ☐ Shipping instructions
- ☐ Special tagging instructions
- ☐ Date required
- ☐ Method of payment:
 - on account - P.O. number required
 - credit card - VISA or Mastercard number
 - cash or cheque

RETURN GOODS POLICY

Prior written approval must be obtained from CCI Thermal for the return of any Cata-Dyne™ product(s). A restocking charge of 15% will apply. All returns must be shipped to our factory in Edmonton, freight prepaid. Final acceptance will be contingent on inspection at our factory.

GUARANTEE

CCI Thermal warrants all Cata-Dyne™ flameless infrared heaters sold to be free from defects in material or workmanship under normal use and service. The company agrees to repair or replace any Cata-Dyne™ heater which, upon examination, reveals it to have been defective due to faulty workmanship or material, if returned to our factory, transportation PREPAID, within one (1) year from date of purchase. The company does not assume responsibility for misuse or misapplication of its heaters.

Warranty is void if Cata-Dyne™ heaters are used with sour, dirty or wet gas, or where sulphur content is greater than allowable for utility gas specifications. Warranty is void if, upon our inspection, if the SSQV or thermocouple have been tampered with. Neither CCI Thermal nor the selling dealer shall be held responsible for loss of time, inconvenience, commercial loss or consequential damages relating to the use of Cata-Dyne™ heaters.

REPAIRS

Cata-Dyne™ heaters may require periodic maintenance or repair. Our factory is staffed with technicians who are qualified to perform any required repairs. The procedure to follow to have a heater repaired is as follows.

Send the heater to our factory in Edmonton. Include the following information with the heater:

- ☐ Company name and address
- ☐ Contact name
- ☐ Telephone number/fax number/e-mail
- ☐ P.O. Number
- ☐ Advise if an estimate is required prior to starting the repair
- ☐ Details on the repair or conversion required
- ☐ Return shipping instructions

NOTE: Under the terms of our certification, all repairs must be performed at our factory in Edmonton.

TROUBLE SHOOTING

1. Ensure that the fuel matches that listed on the nameplate.
2. Ensure that the voltage matches that listed on the nameplate.
3. Check for any physical damage. All signs of physical damage to the catalyst pad such as holes, tears or a general deterioration of the catalyst bed signal that it is time to have the heater repaired. Excessive vibration may cause damage to the inner catalysts structure which may cause premature failure.
4. Check the gas supply pressure at the heater - 7 in. w.c. (1.73 kPa), 4.5 in. w.c. (1.12 kPa), or 3.5 in. w.c. (0.86 kPa) for natural gas and 11 in. w.c. (2.72 kPa) for propane.
5. Check the gas orifice for obstructions or dirt and ensure the size matches that listed on the nameplate. It may be necessary to install a filter upstream of the heater or regulator if the gas supply is dirty. If the fuel supply is constantly dirty and/or wet it would be advisable to use bottled propane fuel.
6. Check the mounting position of the heater. The face of the heater should be preferably in the vertical position and should not vary more than 45° from the vertical position for maximum efficiency.
7. Check for saturation of the catalyst face caused by condensation or rain running down the face of the heater. If the heater has been exposed to water, it is advisable to place the unit in a warm area for a period of a few hours or longer if required. Once the moisture is removed, the heater can be re-installed and re-started.
8. Check the jumper cable size to ensure that the resistance of the cable is not reducing the current to the heater. This would not allow sufficient power to the electrical element to preheat the catalyst to the activity temperature. It is recommended to run the service vehicle at fast idle while starting the heater.
9. Cata-Dyne™ heaters are designed to use clean fuel and to be used in non-contaminated atmospheres. Sulphur compounds in the fuel or atmosphere will poison the catalyst bed over a period of time and render the heater inoperative. If the heater has been exposed to sulphur compounds, it should be sent to the factory for service.
10. Avoid spraying the face of the heater with high-pressure air, steam or water because this can damage the catalyst bed, if physical damage is visible, return the heater to the factory for servicing.
11. Ensure that the temperature controller is correct for the model size, fuel, and pressure specifications for the heater it is fitted to. If the temperature controller is too low, the heater will not have sufficient fuel rating to operate and will stop.

INCENDIUM SUPPLY LTD.

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WENCO THIEF HATCH

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All Aluminum Spring Loaded Pressure and Vacuum Relief Hatch

Fits a 8 inch A.P.I. Tank Opening

Flange Bolt Pattern: 16 holes, 5/8" Dia. on a 10 3/8" B.C.D.

Pressure Springs: Your choice: 4oz, 8oz, 16oz

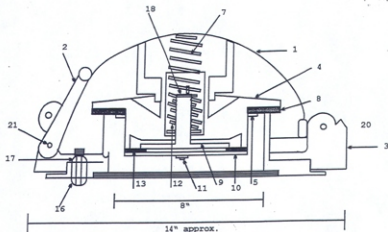
Vacuum Spring: 0.4oz

Standard: Sweet Service Buna N Gaskets & Galvanized Springs

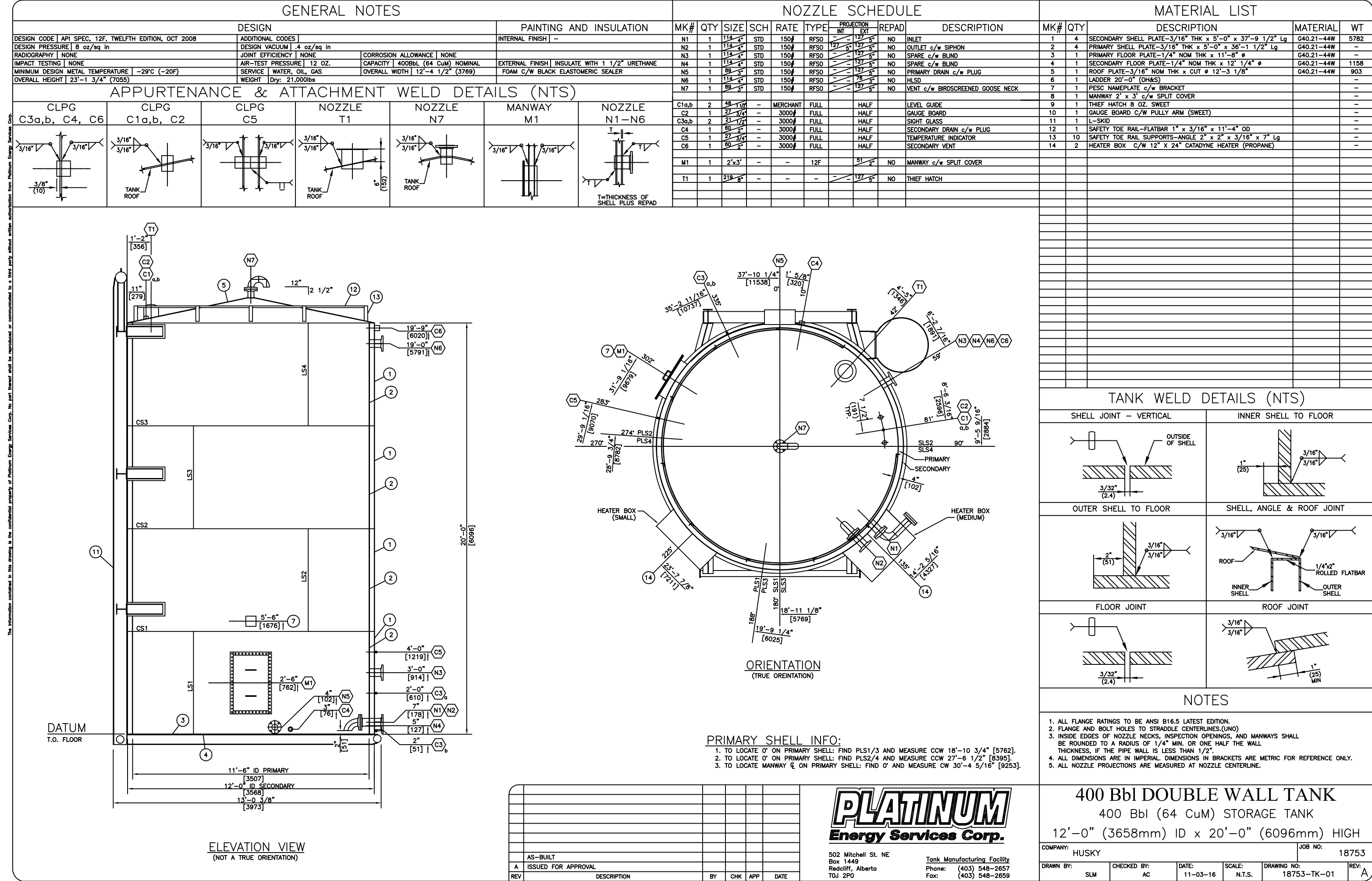
Optional: Sour Service Viton Gaskets & Stainless Steel Springs

**We also supply: Nuts & Bolts (16/Set)
Base Gaskets**

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PART #	PART NAME	QUANTITY
1	Cover	1
2	Latch	1
3	Base	1
4	Center	1
5	Pressure Ring	1
6	Pressure Ring Bolt	4
7	Pressure Spring	1
8	Pressure Gasket	1
9	Vacuum Disc	1
10	Vacuum Ring	1
11	Vacuum Ring Bolt	1
12	Vacuum Spring	1
13	Vacuum Gasket	1
14	Hinge Pin Clips	4
15	Base Gasket	1
16	Bolt, Hex	16
17	Nut, Hex	16
18	Cotter Pin	1
19	Cotter Pin Washer	1
20	Hinge Pin	1
21	Latch Pin	1



ELEVATION VIEW
(NOT A TRUE ORIENTATION)

ORIENTATION
(TRUE ORIENTATION)

NOTES

- ALL FLANGE RATINGS TO BE ANSI B16.5 LATEST EDITION.
- FLANGE AND BOLT HOLES TO STRADDLE CENTERLINES.(UNO)
- INSIDE EDGES OF NOZZLE NECKS, INSPECTION OPENINGS, AND MANWAYS SHALL BE ROUNDED TO A RADIUS OF 1/4" MIN. OR ONE HALF THE WALL THICKNESS, IF THE PIPE WALL IS LESS THAN 1/2".
- ALL DIMENSIONS ARE IN IMPERIAL. DIMENSIONS IN BRACKETS ARE METRIC FOR REFERENCE ONLY.
- ALL NOZZLE PROJECTIONS ARE MEASURED AT NOZZLE CENTERLINE.

400 Bbl DOUBLE WALL TANK

400 Bbl (64 CuM) STORAGE TANK

12'-0" (3658mm) ID x 20'-0" (6096mm) HIGH

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DRAWN BY: SLM

CHECKED BY: AC

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SCALE: N.T.S.

DRAWING NO: 18753-TK-01

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