
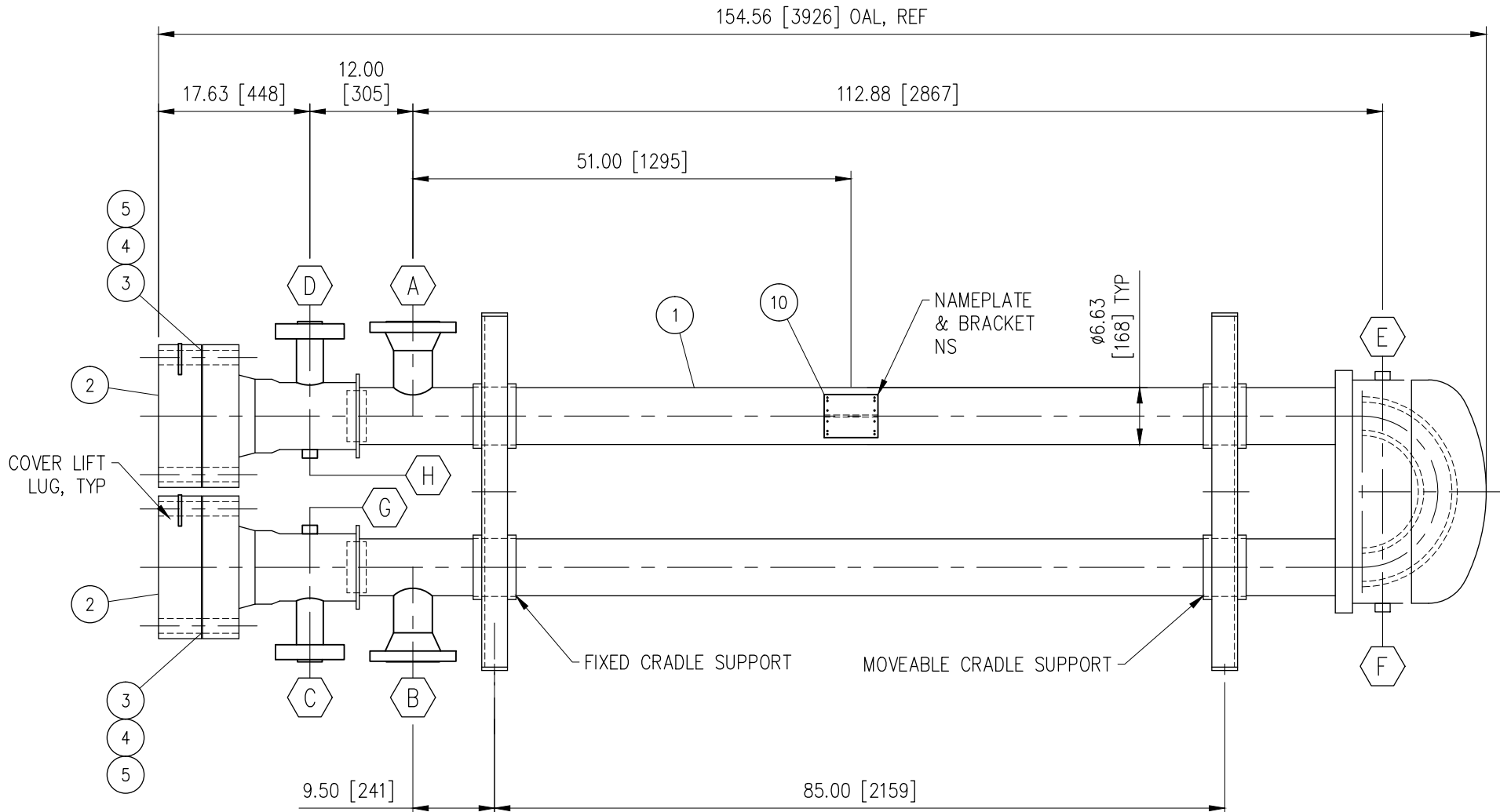
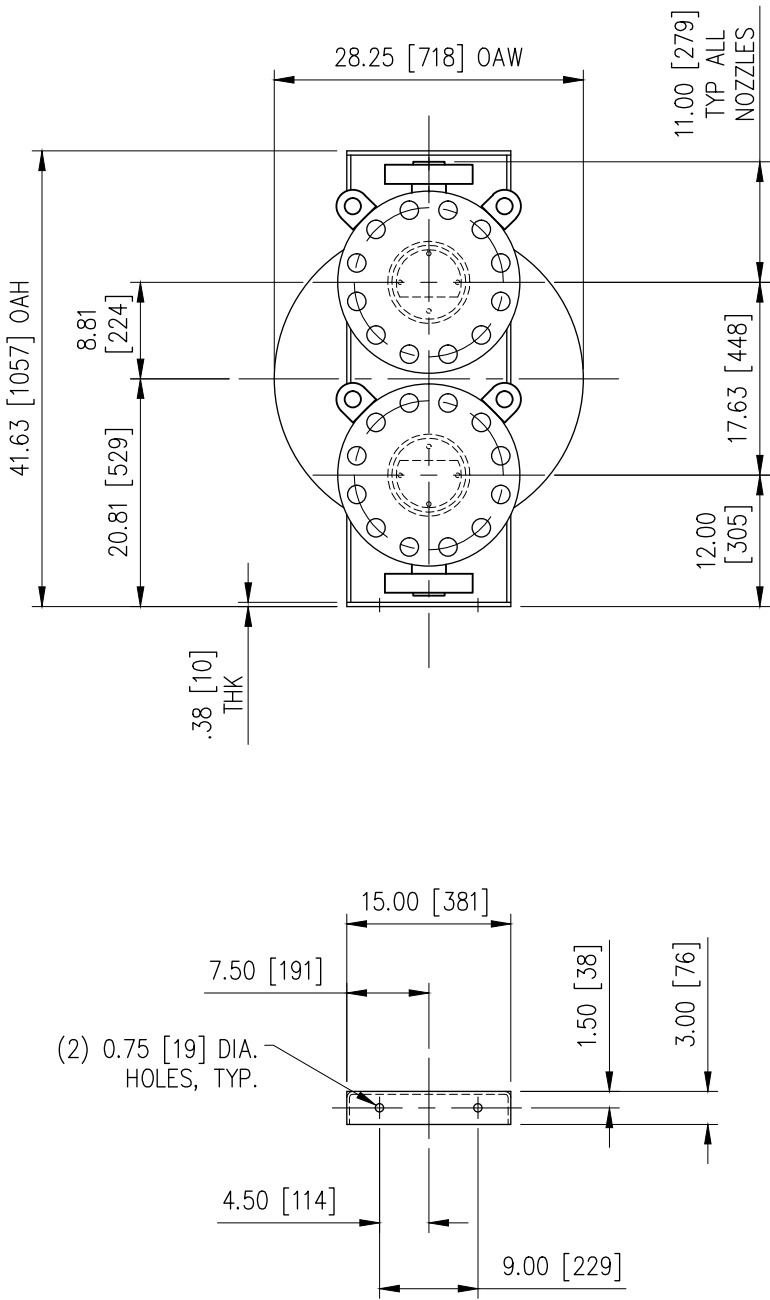


API BASCO DEFAULTS (UNLESS OTHERWISE SPECIFIED)

ALL DIMENSIONS IN INCHES UNLESS DENOTED AS METRIC (mm)
1" = 1 INCH = 25.4mm
 3rd ANGLE

TOLERANCES (unless specified)
PER TEMA STANDARDS
ALL BOLT HOLES STRADDLE VERTICAL CENTERLINES.

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- NOTES:
- QUANTITY: ONE (1) TOTAL
 - EXTERNAL FINISH: SHELL SIDE: SANDBLAST PER SSPC-SP-6
PRIME COAT: KEM HI-TEMP 850 @ 1-1.5 MILS DFT. COLOR: LIGHT GRAY
TOP COAT: KEM HI-TEMP 850 @ 1-1.5 MILS DFT. COLOR: STEEL GRAY.
EXTERNAL FINISH: TUBE SIDE: ALUMINUM OXIDE BLAST
 - INTERNAL FINISH: BLAST PER STD SHOP PRACTICE.
 - ESTIMATED WEIGHTS:
EMPTY: 4190 LBS [1901 KGS]
FLOODED: 4750 LBS [2155 KGS]
COVER: 320 LBS [145 KGS] EA

NOZZLE SCHEDULE			
TAG	SIZE	TYPE	SERVICE
A	4"	300# ANSI RFWN	SHELL SIDE INLET
B	4"	300# ANSI RFWN	SHELL SIDE OUTLET
C	1 1/2"	2500# ANSI RFLWN	TUBE SIDE INLET
D	1 1/2"	2500# ANSI RFLWN	TUBE SIDE OUTLET
E	3/4"	6000# NPT CPLG	SHELL SIDE VENT
F	3/4"	6000# NPT CPLG	SHELL SIDE DRAIN
G	3/4"	6000# NPT CPLG	TUBE SIDE VENT
H	3/4"	6000# NPT CPLG	TUBE SIDE DRAIN
J			
K			
L			
M			
N			

DESIGN DATA		
	SHELL SIDE	TUBE SIDE
DESIGN PRESSURE	110 PSIG / 7.6 Bar	3350 PSIG / 231 Bar
TEST PRESSURE	263 PSIG / 18.1 Bar	5444 PSIG / 375 Bar
DESIGN TEMP	-20/820°F -29/438°C	-20/775°F -29/413°C
CORR. ALLOWANCE	.125 [3]	NONE
RADIOGRAPHY	NONE	FULL PER CODE
PWHT	NONE	NONE

TUBE/TUBE SHEET JOINT = STRENGTH WELDED		
MATERIALS OF CONSTRUCTION		
PART	SHELL SIDE	TUBE SIDE
TUBES	SA-249 316	
TUBESHEETS	SA-240 316	
BAFFLE/FINS	STEEL	
HEADS	SA-516 70	SA-240 316
SHELL	SA-106 B/SA-516 70	SA-182 F316
NOZZ FLGS	SA-105	SA-182 F316
CPLGS	SA-105	SA-182 F316
BOLTS/NUTS	SA-193 B7 / SA-194 2H ZINC PLATED	
GASKETS	316SS SPIRAL WOUND CGI	
O-RINGS		
BODY FLGS	SA-516 70	SA-182 F316

DIMENSIONS & DATA CERTIFIED FOR	
CUST. ORDER:	008317 PATRIOT FUELS BIODIESEL, LLC
BASCO ORDER:	E140279-201
BY:	whowitt
DATE:	07/24/2014

CODES:	
ASME VIII, Div. 1 2013 ED TEMA R	
<div><div><div><div><div>ASME</div><div>CERTIFIED BY BASCO</div><div>RE-1 (1)</div><div><div>SHALL 110 PSIG AT 820 °F</div><div>TUBES 3350 PSIG AT 775 °F</div><div>SHALL -20 °F AT 110 PSIG</div><div>TUBES -20 °F AT 3350 PSIG</div><div>P/N 1470-06-132-000</div><div>S/N E140279-201</div><div>E-209</div><div>YEAR 2014</div></div></div><div><div>Basco</div><div>2777 ROUTE 100, SUITE 1400</div><div>HOUSTON, TX 77058</div><div>WWW.BASCOHEATTRANSFER.COM</div></div></div></div></div> <tr><td>SER. NO.</td></tr>	SER. NO.
SER. NO.	

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DRAWN 07/24/2014 BY:	whowitt	CHECK	JCS
SCALE	1:18	CONTRACT NO	E140279-201

<div><div>Basco</div><div>An API Heat Transfer Company</div></div>	
06 X 132 AW HAIRPIN HYDROLYSIS - HEATER	

13	1	SPARE PARTS KIT:					2679-06-132-000
12	0	PAINT: KEM HI-TEMP 850 (STEEL GRAY)					4051-02-0199-02
11	0	PAINT: KEM HI-TEMP 850 (LIGHT GRAY)					4051-99-0299-04
10	1	NAMEPLATE					4072-01-0106-01
9	2	SHIP COVER: 4"-300#		PLASTIC			4075-04-3012-00
8	2	SHIP COVER: 1 1/2"-2500#		PLASTIC			4075-15-2512-00
7	2	PIPE PLUG: 3/4" NPT		SA-105			4020-95-0309-00
6	2	PIPE PLUG: 3/4" NPT		SA-182 F316			4020-95-0311-00
5	48	HEX NUT: 1 1/2"-8 UN	ZINC PLTD	SA-194 2H			4026-52-0219-02
4	24	STUD: 1 1/2"-8 UN x 13.00" LG	ZINC PLTD	SA-193 B7			4022-52-9919-02
3	2	CHANNEL COVER GASKET		316SS SPWND			4012-07-1115-43
2	2	CHANNEL COVER		SA 240 316	A		3018-07-951-000
1	1	CORE ASSEMBLY		STEEL/316SS	C		2070-06-132-004
Item	Qty	Description	Mat'l	Specification	Size	Dwg No	Part No