



VERITEC



ELF PETROLEUM NORGE AS

FRØY INTEGRATION WORK ON TCP2 DETAILED ENGINEERING CONTRACT FD041

TITLE: DATASHEET FOR CRUDE OIL INLET HEATER CE607

DOC. NO.: DS-FF-22-26-0012

03D	09.03.93	ISSUED FOR ONSHORE CONSTRUCTION	<i>CRF</i>	<i>AR</i>	<i>D</i>	<i>HA</i>	<i>HA</i>
02C to 00A	-	ISSUED BY ELF/KE					
Rev	Date	Description	By	Ckd	App'd	Proj Eng	Cli- ent

DET NORSKE VERITAS INDUSTRI NORGE AS

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Facsimile: 04 54 56 50 / +47 4 54 56 50. Telex: 33 151 veriv n. Registration No.: 834763052.

RE. APPLICABLE TO:		☐ JPOSAL		☒ PURCHASE		☐ AS BUILT	
MECHANICAL DESIGN & MATERIAL OF CONSTRUCTION							
	DESIGN PRESS.	DESIGN TEMP.	TEST PRESS.	PNEU. TEST	CORR. ALLOWANCE		
	barg	°C	barg	barg	mm		
SHELL SIDE	18.5	+205 / -20	*	*	3 ON C. STEEL		
TUBE SIDE	28.0	+205 / -20	*	*	NIL		
TUBES: No	* 227 U's	O.D	19.05 mm	WALL THKNS	1.65	mm	
LENGTH	* 4600 mm	PITCH	* 25.4 (90° SQ.) mm	MATERIAL	ASTM A213 TP 316L (SEAMLESS)		
FINS: No.	NONE	HEIGHT	- mm	THKNS	-	mm	
ATTACHED BY:	-	MATERIAL	-				
SHELL: I.D	* 740 mm	O.D	* 764 mm				
THKNS	* 12 mm	MATERIAL	* ASTM A516 Gr. 60				
SHELL COVER:	THKNS	* 11 (NOTE 3)	mm	MATERIAL	ASTM A516 Gr. 60		
FLOATING HEAD COVER:	THKNS	NONE	mm	MATERIAL	-		
CHANNEL:	THKNS	* 20	mm	MATERIAL	ASTM A240 TP 316L		
CHANNEL COVER:	THKNS	* 95 (87+8)	mm	MATERIAL	ASTM A350 LF2/SS 316L LINED		
STATIONARY TUBESHEET:	THKNS	* 105	mm	MATERIAL	ASTM A182 F316L		
FLOATING TUBESHEET:	THKNS	NONE	mm	MATERIAL	-		
BAFFLES CROSS:	PITCH	* 387 mm	TYPE	DBL. SEGMENTAL	% DIA. CUT (h/d)	26.6 (VERTICAL)	
	THKNS	8 mm	MATERIAL	TYPE 316L ST. STEEL			
BAFFLES LONG:	TYPE	NONE	SEAL	-	THKNS	-	mm
	MATERIAL	-					
TIE RODS:	O.D	* mm	MATERIAL	TYPE 316L ST. STEEL	SPACER MATERIAL	TYPE 316L ST. STEEL	
GASKET MATERIAL:	SHELL SIDE	NOTE 8	TUBE SIDE	NOTE 8	FLOATING HEAD	N.A.	
TUBE TO TUBESHEET JOINT: WELDED THEN LIGHTLY ROLLED	TYPE OF GASKET JOINT: SHELL		CONFINED		TUBE	CONFINED	
IMP.PLATE: (YES) (NO)	THKNS	* mm	IMP.PLATE: MATERIAL	TYPE 316L ST. STEEL			
SHELL EXP. JOINT: TYPE	NONE		MATERIAL	-			
INSULATION: TYPE	WIRE MESH GUARDS		THKNS	-	mm	MATERIAL	BY OTHERS
NOZZLE		SHELL SIDE			TUBE SIDE		
	SYMBOL	SIZE	RATING	FACING	SYMBOL	SIZE	RATING
INLET	N1	12" N/B	300#	RFWN	N3	6" N/B	300#
OUTLET	N2	12" N/B	300#	RFWN	N4	6" N/B	300#
VENT							
DRAIN	N5	2" N/B	300#	RFWN			
CODES & STANDARDS: ASME VIII, DIVISION 1, ASME STAMP (YES) (NO) TEMA (YES) (NO) TEMA CLASS 'R' API 660 (YES) (NO) OTHER BS 5500 CAT. 1							
WEIGHT:	BUNDLE	* TOTAL	* FULL OF WATER				
PAINTING: CLEANING	PRIMER	PAINT	SEE NOTE 12				
* INDICATES INFORMATION TO BE VERIFIED BY SUPPLIER							
NOTES							
1. ALL UNITS IN METRIC UNLESS NOTED OTHERWISE. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.							
2. PREPARATION FOR SHIPMENT SHALL BE IN ACCORDANCE WITH "PACKING AND MARKING INSTRUCTIONS".							
3. THE SUPPLIER SHALL STATE THE METHOD OF FORMING HEADS TOGETHER WITH SELECTED PLATE THICKNESS AND MINIMUM THICKNESS AFTER FORMING.							
4. * SIGNIFIES INFORMATION REQUIRED AS PART OF DETAILED DESIGN.							
5. ALL PRESSURE BOLTING, EXCLUDING STAINLESS STEEL, SHALL BE ASTM A193 B7/ASTM A194 2H AND BE HOT DIP GALVANISED IN ACCORDANCE WITH ASTM A153.							
6. THE SUPPLIER SHALL BE RESPONSIBLE FOR THE THERMAL PERFORMANCE DESIGN AND THE MECHANICAL DESIGN, MATERIALS, FABRICATION, INSPECTION AND TESTING. FOR THE THERMAL DESIGN, THE EXCHANGER SHALL BE SIZED ON THE TWO DESIGN CASES (YEAR 1997 AND YEAR 2000) AND GUARANTEES SHALL BE ISSUED BASED ON THE DATA GIVEN HEREIN.							
THE SUPPLIER SHALL PROVIDE A THERMAL RATING FOR THE YEAR 2000 START UP CASE -NO GUARANTEES ARE REQUIRED FOR THIS DUTY.							
FOR THE MECHANICAL DESIGN, THE SUPPLIER IS RESPONSIBLE FOR OBTAINING INDEPENDENT AUTHORITY APPROVAL OF THE DESIGN AND FABRICATION AND SHALL ISSUE A MECHANICAL CODE COMPLIANCE CERTIFICATE, THE FORM 'X' FROM BS 5500, DULY							
CLIENT :	ELF PETROLEUM NORGE A/S			BY :	CE 607		
PROJECT :	FRØY INTEGRATION WORK ON TCP2			CHECKED :	PO-FF-22-26-1006		
PROJECT No. :	SOE038			APPROVED :	DS-FF-22-26-0012		
SERVICE :	CRUDE OIL INLET HEATER			DATE :	03D		
DATA SHEET FOR :				SHELL & TUBE EXCHANGER		PAGE	2 OF 8
 VERITEC		 elf petroleum norge a/s p.o.box 168-4001 Stavanger		CAD FILE-CODE: ME0012 023D DRAWN: INGS			

VERIFIED: 03.11.92
 DATE: 03.11.92
 APPROVED: S. EGELAND
 BY: I. STERRI
 ORIGINAL SHEET

REV

APPLICABLE TO:

☐ PROPOSAL

☒ PURCHASE

☐ AS BUILT

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6. (CONTD)

COMPLETED AND SIGNED.

7. THE HEATING MEDIUM IS A 30 WEIGHT PERCENT SOLUTION OF TRIETHYLENE GLYCOL IN WATER.

8. GASKETS FOR THE GIRTH FLANGES ARE OF THE CONFINED TYPE (TEMA 'R') AND SHALL BE AS FOLLOWS:-

SHELLSIDE : STAINLESS STEEL DOUBLE JACKETED CERAMIQUE FR 3LL FILLED.

TUBESIDE : STAINLESS STEEL DOUBLE JACKETED CERAMIQUE FR 3LL FILLED.

9. THE MAXIMUM AVAILABLE HEATING MEDIUM DUTY IS 5600 kW.

10. DETAILS OF TUBE END LACING, TO ALLEVIATE VIBRATION, SHALL BE PROVIDED BY THE SUPPLIER AND SHALL BE SUBJECT TO APPROVAL BY THE COMPANY. COMPANY APPROVAL IS REQUIRED FOR ALL VIBRATION PREVENTION DETAILS.

11. MAXIMUM CO₂ CONTENT IS 1.5 MOLE %.. LIQUID WILL CONTAIN A CONSIDERABLE AMOUNT OF PRODUCED WATER.

12. PAINTING OF CARBON STEEL EXTERNAL SURFACES SHALL BE IN ACCORDANCE WITH SPECIFICATIONS S-10-00-0010 AND S-10-00-0011 (APPENDIX 5).

PAINTING OF STAINLESS STEEL EXTERNAL SURFACES IS ONLY REQUIRED WHERE THE SURFACE TEMPERATURE EXCEEDS 50° C.. IN SUCH CASES THE SURFACE SHALL BE SAND SWEEPED WITH A NON-METALLIC ABRASIVE AND COATED AS FOLLOWS:-

1 COAT 2-PACK EPOXY IRON OXIDE PRIMER 50 MICRON D.F.T.

1 COAT 2-PACK EPOXY INTERMEDIATE COAT 100 MICRON D.F.T.

SUPPLIER TO ISSUE DETAILS OF ALL PROPOSED PAINTING SYSTEMS FOR COMPANY APPROVAL.

ALL INTERNAL SURFACES SHALL BE LEFT CLEAN AND DRY.

13. NOZZLE MATERIALS SHALL BE AS FOLLOWS:-

	SHELLSIDE	TUBESIDE
NOZZLE NECK	ASTM A333 Gr. 6	ASTM A312 TP 316L
FLANGE	ASTM A350 LF2	ASTM A182 F316L

14. EACH COMPONENT (SHELL, CHANNEL, BUNDLE, CHANNEL COVER) SHALL BE SUPPLIED WITH LIFTING AIDS AS FOLLOWS:-

SHELL : 2No. LIFTING LUGS.

BUNDLE : 1No. EYEBOLT C/W LOAD TEST CERTIFICATION.

CHANNEL : 2No. EYEBOLTS (ONE PER GIRTH FLANGE) C/W LOAD TEST CERTIFICATION.

CHANNEL COVER : 1No. EYEBOLT C/W LOAD TEST CERTIFICATION.

THE SHEEL LIFTING LUGS SHALL BE SUITABLE FOR LIFTING THE TOTAL EXCHANGER (DRY) WEIGHT.

THE TUBESHEET SHALL BE PROVIDED WITH BUNDLE PULLING EYES C/W LOAD TEST CERTIFICATION.

15. THE GIRTH FLANGES SHALL HAVE JACKING SCREWS (COATED WITH A HIGH TEMPERATURE THREAD COMPOUND) TO ALLOW FOR BREAKING OF JOINT.

16. TUBES SHALL BE WELDED USING EEMUA PUBLICATION No. 143 FIG. 1A.

THE STAINLESS STEEL 'U' BENDS SHALL BE SOLUTION ANNEALED, INCLUDING 150mm OF STRAIGHT TUBE. SUPPLIER SHALL ISSUE A HEAT TREATMENT PROCEDURE FOR COMPANY APPROVAL.

CLIENT : ELF PETROLEUM NORGE A/S

PROJECT : FRØY INTEGRATION WORK ON TCP2

PROJECT No. : SOE038

SERVICE : CRUDE OIL INLET HEATER

DATA SHEET FOR : SHELL & TUBE EXCHANGER

BY : *ckfruch*

CHECKED : *AK*

APPROVED : *D*

DATE : 9/3-93

ITEM No. : CE 607

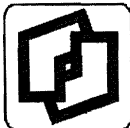
P.O.No. : PO-FF-22-08-1006

DATA SHEET No. : DS-FF-22-26-0012

REV. No. : 03D

PAGE 3 OF 8

 **VERITEC**

 **elf petroleum norge a/s**
p.o.box 168-4001 Stavanger

CAD FILE-CODE: ME0012 033D

DRAWN: INGS

VERIF: 1

DATE: 16.11.92

APPROVED: S. EGELAND

BY: I. STERRI

ORIGINAL SHEET

REV	APPLICABLE TO:	☐ PROPOSAL	☒ PURCHASE	☐ AS BUILT
1	SERVICE	CRUDE OIL INLET HEATER		
2	NO. OF UNITS	ONE		MANUFACTURER
3	MOUNTED:	DELAUNAY et FILS		
4	CONNECTED	VERTICAL	HORIZONTAL	YES
5	SIZE *	IN SERIES.	IN PARALLEL	STACKED
6	SURFACE AREA (m ²) /EXCH. *	TEMA TYPE	CASE	DESIGN-YEAR 1997 (MAX. DUTY)
7				10% OVERSURFACE REQUIRED
8	PERFORMANCE OF ONE UNIT			
9	FLUID ALLOCATION	SHELL SIDE		TUBE SIDE
10	FLUID NAME	IN	OUT	IN
11	TOTAL FLUID,Kg/H	PARTIALLY STABILISED CRUDE OIL		HEATING MEDIUM
12	VAPOUR,Kg/H	309248.8	309248.8	78386.9
13	LIQUID,Kg/H	6202.6	9016.3	78386.9
14	STEAM,Kg/H /WATER,Kg/H	253061.0	250248.0	78386.9
15	NON-CONDENSABLES,Kg/H	49.0/49858.0	176.0/49731.0	78386.9
16	FLUID CONDENSED /VAPOURISED,Kg/H	78.0	78.0	78386.9
17	STEAM VAPOURISED,Kg/H	-	2813.7	-
18	OPERATING TEMPERATURE, °C	-	127.0	-
19	OPERATING PRESSURE,barg	41.4	65.8	180.0
20	DEW POINT/BUBBLE Pt. . °C	14.5	14.0	120.0
21	VAPOUR PROPERTIES			
22	MOL WEIGHT	23.55	26.54	-
23	SPECIFIC HEAT,KJ/Kg °C	2.0561	2.0780	-
24	VISCOSITY,cP	0.0119	0.0124	-
25	THERMAL CONDUCTIVITY,W/m °C	0.0314	0.0326	-
26	DENSITY kg/m ³	14.8224	15.0000	-
27	LIQUID PROPERTIES			
28	SPECIFIC GRAVITY	0.8306	0.8150	0.9064
29	SPECIFIC HEAT,KJ/Kg °C	2.3924	2.4788	4.2113
30	VISCOSITY cP	3.6220	2.6375	0.2569
31	THERMAL CONDUCTIVITY,W/m °C	0.1522	0.1474	0.5131
32	VAPOURISATION/ CONDENSING RANGE, °C	41.4	65.8	-
33	NO. OF PASSES	ONE		EIGHT
34	ALLOW/CALC.PRESS.DROP bar	0.5 / *		2.0 / *
35	VELOCITY,m/sec	*		*
36	FOULING RESISTANCE,m ² °C/W	0.000528		0.000352
37	DESIGN PRESSURE, barg	SEE PAGE 2		SEE PAGE 2
38	DESIGN TEMPERATURE, °C	SEE PAGE 2		SEE PAGE 2
39				
40	HEAT EXCHANGED,KW	* 5413	LMTD °C	* LMTD (CORR.) °C
41	HEAT TRANSFER; W/m ² °C	(a) SERVICE	*	(b) CLEAN *
42				
43	SHELL SIDE VAPOUR & LIQUID ARE HYDROCARBON. DATA FOR SHELL SIDE APPLIES TO HYDROCARBON LIQUID/WATER MIXTURE.			
44				
45	CALCULATED HEAT CURVE:			
46				
47	SHELL SIDE			TUBE SIDE
48	TEMP., °C	DUTY, kW	MASS FRACTION	TEMP., °C
49			VAPOUR	
50				
51	41.43	0	0.0205	180.0
52	47.67	1353.2	0.0226	165.6
53	53.82	2706.5	0.0249	150.8
54	59.87	4059.6	0.0273	135.5
55	65.83	5413.0	0.0300	120.0
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60				
CLIENT :		ELF PETROLEUM NORGE A/S		BY :
PROJECT :		FRØY INTEGRATION WORK ON TCP2		CHECKED :
PROJECT No. :		SOE038		APPROVED :
SERVICE :		CRUDE OIL INLET HEATER		DATE :
DATA SHEET FOR :		SHELL & TUBE EXCHANGER		ITEM No. :
				CE 607
				P.O.No. :
				PO-FF-22-26-1006
				DATA SHEET No. :
				DS-FF-22-26-0012
				REV. No. :
				03D
				PAGE
				4 OF 8



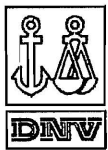
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elf petroleum norge a/s
p.o.box 168-4001 Stavanger

CAD FILE-CODE: ME0012 043D DRAWN: INGS

VERIFIED
 DATE : 03.11.92
 APPROVED : S. EGELAND
 BY : I. STERRI
 ORIGINAL SHEET

REV	APPLICABLE TO:	☐ PROPOSAL	☒ PURCHASE	☐ AS BUILT		
1	SERVICE	CRUDE OIL INLET HEATER		MANUFACTURER		
2	NO. OF UNITS	ONE		NO. OF EXCH./UNIT		
3	MOUNTED:	VERTICAL		HORIZONTAL		
4	CONNECTED	-		IN SERIES.		
5	SIZE	* AEU		IN PARALLEL		
6	SURFACE AREA (m ²) /EXCH.	* /UNIT		DESIGN-YEAR 2000 (MAX. DUTY)		
7	10% OVERSURFACE REQUIRED					
8	PERFORMANCE OF ONE UNIT					
9	SHELL SIDE		TUBE SIDE			
10	FLUID ALLOCATION	IN	OUT	IN		
11	FLUID NAME	PARTIALLY STABILISED CRUDE OIL		HEATING MEDIUM		
12	TOTAL FLUID,Kg/H	327968.4	321968.4	43172		
13	VAPOUR,Kg/H	-	27.2	-		
14	LIQUID,Kg/H	122376.1	122348.9	43172		
15	STEAM,Kg/H /WATER,Kg/H	-/199592.3	4.7/199587.6	-		
16	NON-CONDENSABLES,Kg/H	-	-	-		
17	FLUID CONDENSED /VAPOURISED,Kg/H	-	27.2	-		
18	STEAM VAPOURISED,Kg/H	-	4.7	-		
19	OPERATING TEMPERATURE,°C	49.6	59.3	180.0		
20	OPERATING PRESSURE,barg	14.5	14.0	16.0		
21	DEW POINT/BUBBLE Pt. . .°C					
22	VAPOUR PROPERTIES					
23	MOL WEIGHT	-	23.26	-		
24	SPECIFIC HEAT,KJ/Kg °C	-	2.1163	-		
25	VISCOSITY,cP	-	0.0125	-		
26	THERMAL CONDUCTIVITY,W/m °C	-	0.0341	-		
27	DENSITY kg/m ³	-	13.2466	-		
28	LIQUID PROPERTIES					
29	SPECIFIC GRAVITY	0.9120	0.9044	0.9064		
30	SPECIFIC HEAT,KJ/Kg °C	3.4503	3.4705	4.2113		
31	VISCOSITY cP	18.5123	15.7137	0.2569		
32	THERMAL CONDUCTIVITY,W/m °C	0.3371	0.3382	0.5131		
33	VAPOURISATION/ CONDENSING RANGE, °C	59.3	59.3	-		
34	NO. OF PASSES	ONE		EIGHT		
35	ALLOW/CALC.PRESS.DROP bar	0.5 / *		2.0 / *		
36	VELOCITY,m/sec	*		*		
37	FOULING RESISTANCE,m ² °C/W	0.000528		0.000352		
38	DESIGN PRESSURE, barg	SEE PAGE 2		SEE PAGE 2		
39	DESIGN TEMPERATURE, °C	SEE PAGE 2		SEE PAGE 2		
40	HEAT EXCHANGED,KW * 2891.2 LMTD °C * LMTD (CORR.) °C *					
41	HEAT TRANSFER; W/m ² °C (a) SERVICE * (b) CLEAN *					
42	SHELL SIDE VAPOUR & LIQUID ARE HYDROCARBON. DATA FOR SHELL SIDE APPLIES TO HYDROCARBON LIQUID/WATER MIXTURE.					
43	CALCULATED HEAT CURVE:					
44						
45						
46						
47	SHELL SIDE			TUBE SIDE		
48	TEMP., °C	DUTY, kW	MASS FRACTION	TEMP., °C	DUTY, kW	MASS FRACTION
49			VAPOUR			VAPOUR
50						
51	49.63	0	0.0	180.0	0	0.0
52	52.04	745.0	0.0	165.6	745.3	0.0
53	54.45	1490.0	0.0	150.8	1490.6	0.0
54	56.86	2235.0	0.0	135.5	2235.9	0.0
55	59.26	2981.2	0.0001	120.0	2981.2	0.0
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CLIENT :		ELF PETROLEUM NORGE A/S		BY :	CE 607	
PROJECT :		FRØY INTEGRATION WORK ON TCP2		CHECKED :	PO-FF-22-26-1006	
PROJECT No. :		SOE038		APPROVED :	DATA SHEET No. : DS-FF-22-26-0012	
SERVICE :		CRUDE OIL INLET HEATER		DATE :	REV. No. : 03D	
DATA SHEET FOR :		SHELL & TUBE EXCHANGER		PAGE	5 OF 8	
 VERITEC		 elf petroleum norge a/s p.o.box 168-4001 Stavanger		CAD FILE-CODE: ME0012 053D DRAWN: INGS		

VERITEC
 DATE : 03.11.92
 APPROVED : S. EGELAND
 BY : I. STERRI
 ORIGINAL SHEET 1

REV/	APPLICABLE TO:	☐ PROPOSAL	☒ PURCHASE	☐ AS BUILT
1	SERVICE	CRUDE OIL INLET HEATER		MANUFACTURER
2	NO. OF UNITS	ONE		NO. OF EXCH./UNIT
3	MOUNTED:	VERTICAL		HORIZONTAL
4	CONNECTED	-		IN SERIES
5	SIZE	*		TEMA TYPE
6	SURFACE AREA (m ²) /EXCH.	*/UNIT		RATING-YEAR 2000 START-UP
7	PERFORMANCE OF ONE UNIT			
8		SHELL SIDE		TUBE SIDE
9	FLUID ALLOCATION	IN	OUT	IN
10	FLUID NAME	PARTIALLY STABILISED CRUDE OIL		HEATING MEDIUM
11	TOTAL FLUID,Kg/H	96041	*	82914
12	VAPOUR,Kg/H	-	82.8	*
13	LIQUID,Kg/H	36207	36124.2	82914
14	STEAM,Kg/H /WATER,Kg/H	-/59834	11.2/59822.8	*
15	NON-CONDENSABLES,Kg/H	*	*	*
16	FLUID CONDENSED /VAPOURISED,Kg/H	-	-	-
17	STEAM VAPOURISED,Kg/H	-	-	-
18	OPERATING TEMPERATURE,°C	5.14	66.1	180.0
19	OPERATING PRESSURE,barg	14.5	14.0	16.0
20	DEW POINT/BUBBLE Pt. . °C			
21	VAPOUR PROPERTIES			
22	MOL WEIGHT	23.2059	24.1401	-
23	SPECIFIC HEAT,KJ/Kg °C	2.9425	2.1184	-
24	VISCOSITY,cP	-	0.0127	-
25	THERMAL CONDUCTIVITY,W/m °C	-	0.0344	-
26	DENSITY kg/m ³	-	13.4796	-
27	LIQUID PROPERTIES			
28	SPECIFIC GRAVITY	0.9464	0.8992	0.9064
29	SPECIFIC HEAT,KJ/Kg °C	3.3803	3.4860	4.2113
30	VISCOSITY cP	47.0622	14.0682	0.2569
31	THERMAL CONDUCTIVITY,W/m °C	0.3263	0.3388	0.5131
32	VAPOURISATION/ CONDENSING RANGE, °C	60.2	66.1	-
33	NO. OF PASSES	ONE		EIGHT
34	ALLOW/CALC.PRESS.DROP bar	0.5 / *		2.0 / *
35	VELOCITY,m/sec	*		*
36	FOULING RESISTANCE,m ² °C/W	0.000528		0.000352
37	DESIGN PRESSURE, barg	SEE PAGE 2		SEE PAGE 2
38	DESIGN TEMPERATURE, °C	SEE PAGE 2		SEE PAGE 2
39				
40	HEAT EXCHANGED,KW	* SEE NOTE 9	LMTD °C	* LMTD (CORR.) °C
41	HEAT TRANSFER; W/m ² °C	(a) SERVICE	*	(b) CLEAN
42				
43	SHELL SIDE VAPOUR & LIQUID ARE HYDROCARBON. DATA FOR SHELL SIDE APPLIES TO HYDROCARBON LIQUID/WATER MIXTURE.			
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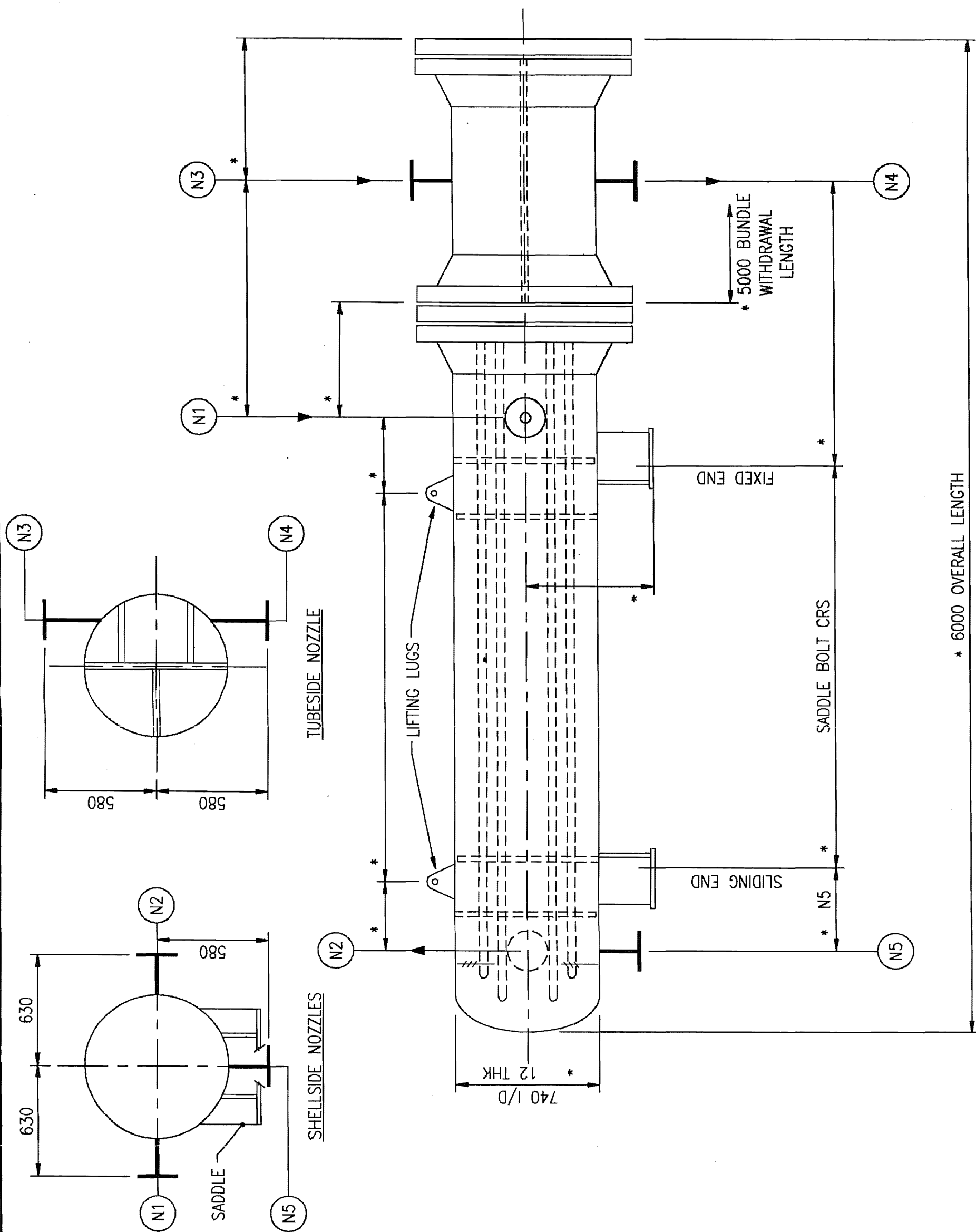
CLIENT : ELF PETROLEUM NORGE A/S	BY : <i>CRF</i>	ITEM No. : CE 607
PROJECT : FRØY INTEGRATION WORK ON TCP2	CHECKED : <i>AR</i>	P.O.No. : PO-FF-22-26-1006
PROJECT No. : SOE038	APPROVED : <i>DP</i>	DATA SHEET No. : DS-FF-22-26-0012
SERVICE : CRUDE OIL INLET HEATER	DATE : 9/3-93	REV. No. : 03D
DATA SHEET FOR : SHELL & TUBE EXCHANGER		PAGE 6 OF 8

VERITEC

elf petroleum norge a/s
 p.o.box 168-4001 Stavanger

CAD FILE-CODE: ME0012 063D DRAWN: INGS

VERIF. 1
 DATE : 03.11.92
 APPROVED : S. EGELAND
 BY : I. STERRI
 ORIGINAL SHEET



CLIENT :	ELF PETROLEUM NORGE A/S	BY :	<i>CR Finch</i>	ITEM No. :	CE 607
PROJECT :	FRØY INTEGRATION WORK ON TCP2	CHECKED :	<i>AR</i>	P.O.No. :	PO-FF-22-26-1006
PROJECT No. :	SOE038	APPROVED :	<i>DD</i>	DATA SHEET No. :	DS-FF-22-26-0012
SERVICE :	CRUDE OIL INLET HEATER	DATE :	9/3-93	REV. No. :	03D
DATA SHEET FOR : SHELL & TUBE EXCHANGER				PAGE	7 OF 8

VERITEC

elf petroleum norge a/s
 p.o.box 168-4001 Stavanger

CAD FILE-CODE: ME0012 073D DRAWN: INGS

VERIF: 1
 DATE : 03.11.92
 APPROVED : S. EGELAND
 BY : I. STERRI
 ORIGINAL SHEET

☐ P. POSAL☒ PURCHASE☐ AS BUILT

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DRY

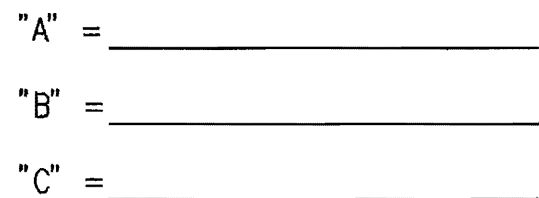
OPERATING

LIFT

TEST

DRY _____ OPERATING _____

OVERALL DIMENSIONS



A diagram of a rectangular cross-section. The width is labeled X'' and the height is labeled Y'' . The center of gravity is marked with a dot and labeled $C \circ G$. The diagram shows the rectangle's outline and the location of its center of gravity.

DIM	DRY	OPER.
"X"		
"Y"		
"Z"		

1. ONE DATA SHEET TO BE COMPLETED FOR EACH TAG/SKID.
2. REF. DRG. FOR ORIENTATION C o G.

BY : *CK Finch*

CHECKED : *AR*

APPROVED :

DATE: 9/3-

ITEM No. :	CE 607
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P.O.No. :	PO-FF-22-26-1006
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DATA SHEET No. : DS-FF-22-26-0012

REV No : 03D

REV. NO. 1	000
PAGE	8 OF 8

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