



آگهی فراخوان شناسایی ۱۰/۱۴۰۱/۰۲۱

شرکت پتروشیمی اروند (سهامی خاص) در نظر دارد جهت شناسایی شرکتهای دانش بنیان فعال و توانمند جهت ساخت قطعات مبدل های حرارتی از نوع کتابی یا صفحه ای واحد کلر آلکالی را مطابق با شماره ایندنت ۰۰۶۰۷۰۳ و مشخصات مندرج در سایت شرکت پتروشیمی اروند به شرح ذیل اقدام نماید:

1-DRAWING

2-DATA SHEET

لذا از شرکتهای فعال در این زمینه دعوت می شود اسناد و مدارک ذیل را حداکثر تا ساعت ۱۲:۰۰ روز **چهارشنبه**

مورخ ۱۴۰۱/۱۲/۲۴ به نشانی استان خوزستان - بندر امام خمینی - منطقه ویژه اقتصادی پتروشیمی - سایت ۳ - کد پستی ۶۳۵۶۱۷۸۷۳۴ امور حقوقی و پیمانها شرکت پتروشیمی اروند تحویل نمایند:

الف- اساسنامه، آگهی تاسیس، پروانه فعالیت

ب- معرفی کارخانه یا کارگاه

ج- سوابق اجرایی کار مشابه یا مرتبط

د- رزومه علمی و فنی

ه- سوابق گواهی حسن انجام کار مشابه یا مرتبط با کار

و- معرفی نفر فنی (رابط) به همراه شماره تماس (موبایل)

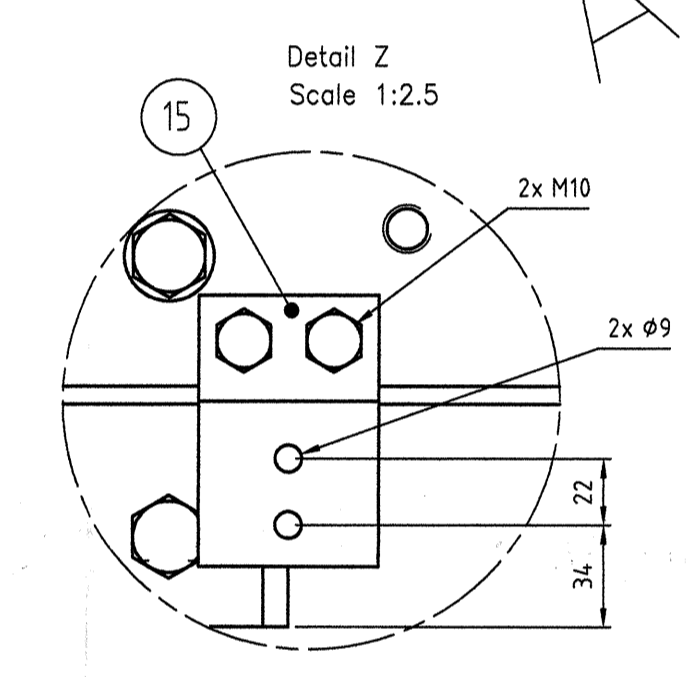
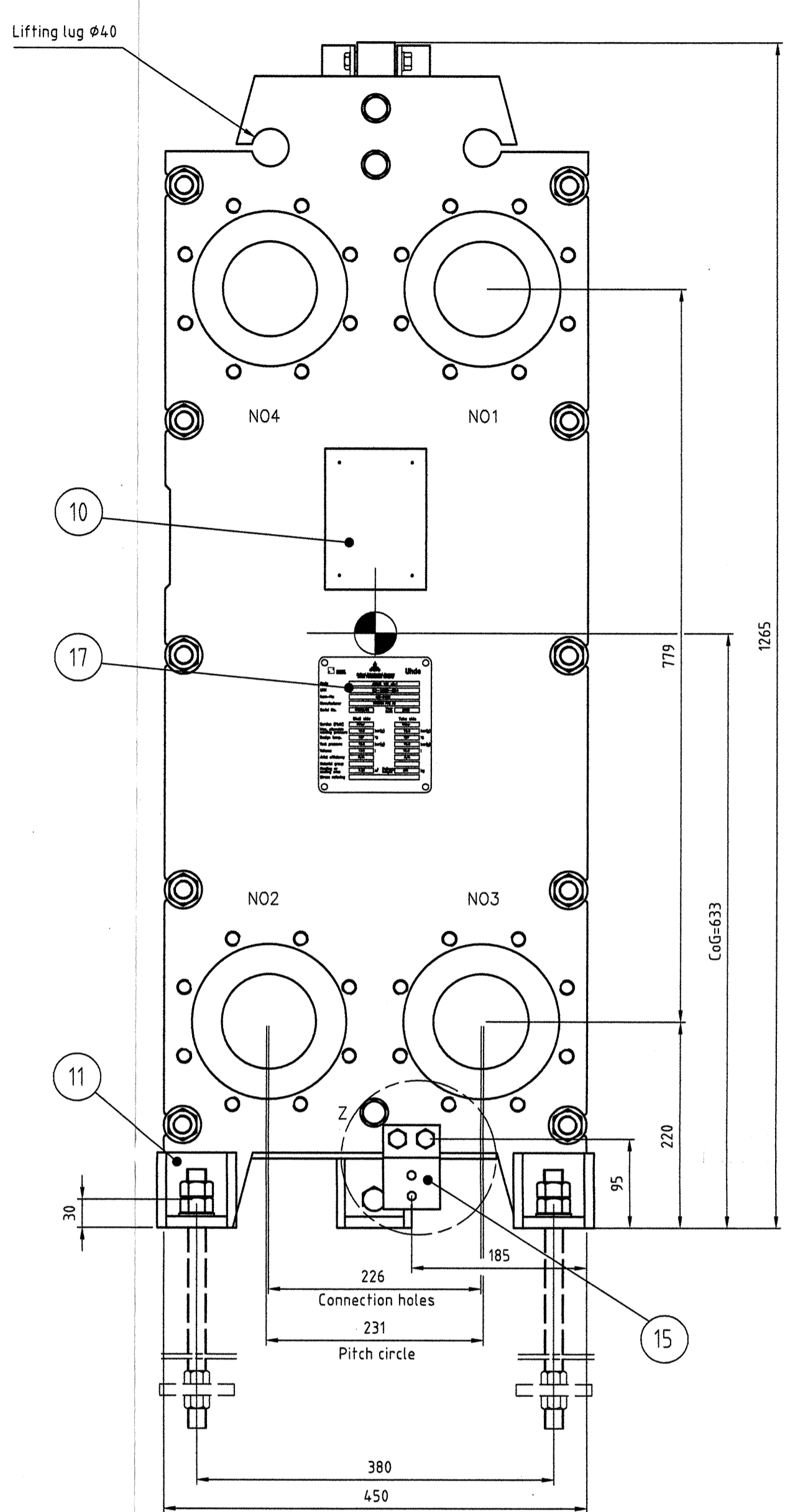
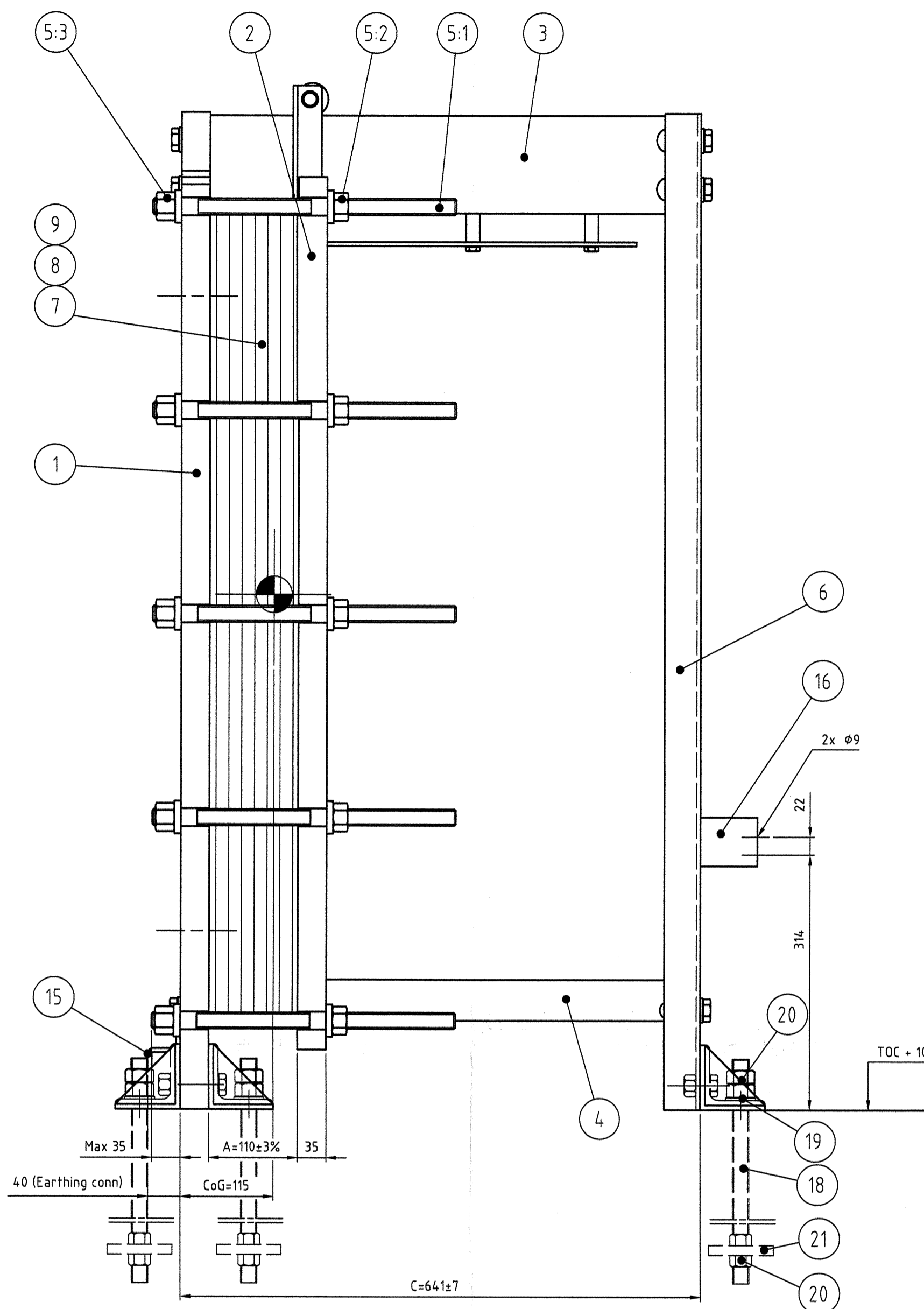
۱) بر روی پاکت ارسال مدارک، موضوع و شماره فراخوان مندرج گردد.

۲) به پاکت های ارسال که پس از تاریخ مندرج در آگهی تحویل گردد؛ ترتیب اثر نخواهد شد.

۳) متقاضیان در صورت نیاز به اطلاعات فنی بیشتر میتوانند با شماره تلفن ۰۶۱۵۲۱۲۶۱۰۱ و جهت اطلاعات حقوقی با تلفن: ۰۶۱۵۲۱۲۶۴۷۴ تماس حاصل نمایند.

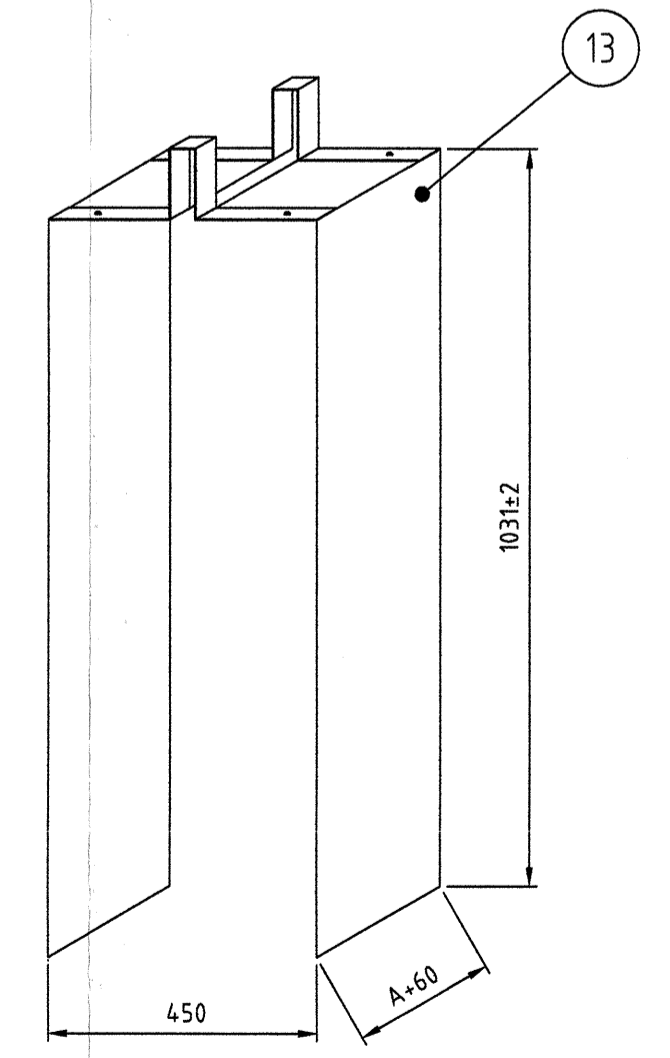
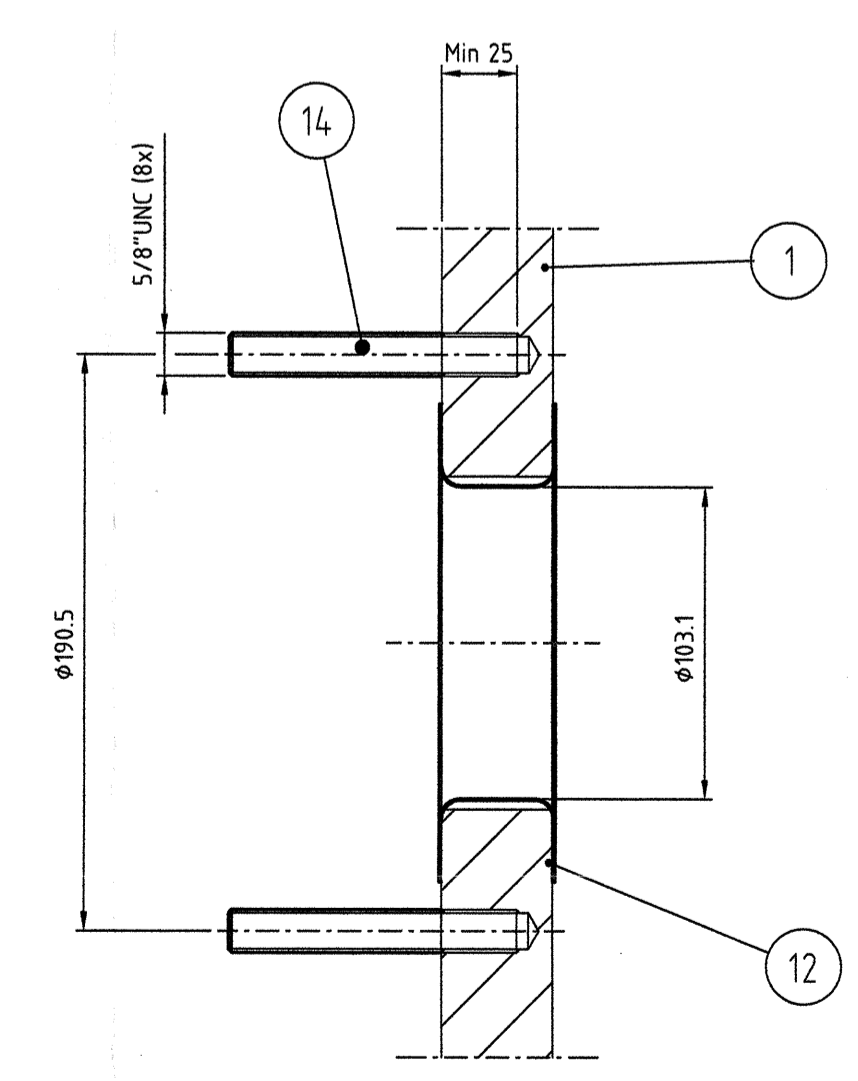
۴) تصویر آگهی به همراه نقشه های مربوطه از طریق نشانی اینترنتی www.arvandpvc.ir قابل ملاحظه می - باشد.

شایان ذکر است این فراخوان صرفاً جهت شناسایی می باشد.



Code		ASME VIII div1	
UAN	03-3039		
Item-No	40E-64001		
Manufacturer	TRANTRER PHE AB		
Serial No.	105202/26	Year built	2005
Service (Fluid)		Shell side	Tube side
Max. allowable working pressure		10.0 bar(g)	10.0 bar(g)
Design temp.		87 °C	87 °C
Test pressure		15.0 bar(g)	15.0 bar(g)
Volume		12.0 l	12.0 l
Joint efficiency		N/A	N/A
Material group		C.S./AISI 316	C.S./AISI 316
Heating or cooling area		7.29 m ²	Delivery weight 331 kg
Stress relieving			

AS BUILT			
Item	A	C	
40E-64001	111	642	



Splash guard:
The plate package is covered with a protection plate in AISI 304. Fixed by clips around the plates and covers.

Part	Description	Quant.	Standard	Material	Mat.test report	Drawing
Teil	Benennung	Anzahl	Norm	Werkstoff	Mat. Prüf-besch.	
21	Plate FZV	5	80x80x12	CS	-	4-50202
20	Nut M20 FZV	20	EN 24034	CS	-	-
19	Washer FZV	5	DIN 126	CS	-	-
18	Anchor bolt, Type A2S	5	M20x399	SA 193 gr.B7	-	-
17	Customer machine plate	1	-	AISI 316	-	-
16	Earthing connection on End Support	1	-	C.S	-	4-2574
15	Earthing connection on Fixed cover	1	-	C.S	-	4-4033
14:2	Stud bolt 5/8" UNC FZV N01, N02	16	L=100	SA 193 gr.B7	-	-
14:1	Stud bolt 5/8" UNC FZV N03, N04	16	L=75	SA 193 gr.B7	-	-
13	Splash guard	1	-	AISI 304	-	3-3754
12	Port lining 4"	4	FF	AISI 316	-	4-2671
11	Strap iron reinforced L80x80x65x12	5	-	C.S	-	4-4031
10	Machine plate	1	-	AISI 316	-	-
9	Plate gasket half thickness	2	-	EPDM (P)	-	-
8	Plate gasket full thickness	28	-	EPDM (P)	-	-
7	Heat transfer plate	29	0.5	AISI 316	-	-
6	End support	1	-	C.S	-	4-3064
5:3	Nut M20 FZB	10	-	SA 194 gr2H	-	4-1531
5:2	Nut M20 FZB	10	-	SA 194 gr2H	-	4-299
5:1	Tightening bolt M20 FZB	10	L=375	SA 193 gr.B7	-	4-159
4	Lower guiding bar	1	L=600	AISI 304	-	3-442
3	Upper guiding bar	1	L=600	C.S	-	3-437
2	Movable cover without connection	1	-	SA 516gr.60	-	3-3997
1	Fixed cover with N01-N04 connection	1	-	SA 516gr.60	-	3-5444

Part	Description	Quant.	Standard	Material	Mat.test report	Drawing
Teil	Benennung	Anzahl	Norm	Werkstoff	Mat. Prüf-besch.	
N04	WCOR-406400107-DBBREC	4	150	B16.5	Pad	FF
N03	WCOS-419510233-DBBREC	4	150	B16.5	Pad	FF
N02	PW52-416400108-DGFAMO	4	150	B16.5	Pad	FF
N01	PW52-416400103-DGFAMO	4	150	B16.5	Pad	FF
Nozzle symbol	Designation	inch	Rating psi	Standard ANSI Norm	Flange type Flansch-type	Flange facing Dicht-fläche
						Pipe dimensions at welding edge Rohrabmessungen an Schweißkanten

Design acc. to: ASME VIII Div. 1			
Ausführung nach:	Pressure chamber *)	N01/N02	N03/N04
Druckraum *)	Druckraum *)	10.0	8.0
Design pressure, gauge:	Zulässiger Betriebsüberdruck:	87.0	87.0
Design temperature:	Zulässige Betriebstemperatur:	°C	°C
Corrosion allowance	Abnutzungszuschlag	mm	N/A
Other additional allowances	Sonstige Zuschläge	mm	N/A
Joint efficiency	Schweißfaktor	N/A	N/A
Nominal volume	Nennvolumen	l	12.0
Initial test pressure gauge:	Prüfüberdruck erstmalig:	bar	15.0
with water/air	vertical/horizontal	stehend/legend	
Operating pressure, gauge	Arbeitsüberdruck	bar	8.0/7.5
Operating temperature	Arbeitstemperatur	°C	30/23
Retest pressure gauge	Prüfüberdruck Wiederholungsprüfung	bar	10/17
with water/air at top in oper. position	mit Wasser/Luft am Kopf in Betriebslage		
Process fluid	Staff	Safety water	Chilled water
Density	kg/m ³	996.6	999.3
Partial pressure abs.	H ₂ -Partialdruck	bar	-

General notes:
 Allgemeine Angaben:
 Insulation Shell side: hot/cold N/A mm Tube side: hot/cold N/A mm
 Dämmung Mantelseite: warm/kalt Rohrseite: warm/kalt
 Spare parts bolts and nuts: N/A % gaskets: 10% sets
 Ersatzteile Schrauben und Muttern: Dichtungen: 10% Satz
 Tolerances according to: ISO 2768-c
 Holes shell straddle both natural-centerlines.
 Flanschachsen lochfrei.
 Leakage test of reinforcing plate welds: at N/A bar by applying soap bubble test.
 Dichtheitsprüfung, Verstärkungsblech-Schweißnähte: mit bar und Schaumbildner.
 Test holes open/closed with: N/A
 Prüflöcher offen/geschlossen mit:
 Bolt threads of outside flange connections to be coated with MoS₂-paste.
 Schraubengewinde für äußere Flanschverbindungen mit MoS₂-Paste einstreichen. N/A
 Flange faces and machined surfaces to be protected with: N/A
 Dichtflächen und maschinell bearbeitete Flächen schützen mit:
 Open nozzles to be closed for transportation with: SS cover
 Offene Stutzen für den Versand verschließen mit:
 Transportation in: Wooden Pallet 1 parts Part weights: 55 kg
 Versand: Holzpalette 1 -teilig Teilgewicht:

Part	Joint efficiency	Radio-graphic %	Ultra-sonic %	Magnetic particle %	Dye penetrant %	Tests specimens	Others
Teil	Schweiß-faktor	Durch-strahlung	Ultra-schall	Magnet-pulver	Farbin-dringung	Arbeitsproben	Sonstige
	N/A	N/A	N/A	N/A	N/A	N/A	Pressure test

Part	Derusting	Paint quality and mfr.	Pre-treatment	Type	Pickling solution	Post treatment
Teil	Entrosten	Qual. u. Herst.	Vorbereitung	Art	Beizmittel	Nachbehandlung
	Painting Anstrich	RAL 5012	100µm	Protection Schutzüberzug	N/A	N/A

Surface treatment			
Oberflächenbehandlung			
2-10032	Foundation drawing		Load data sheet
Dwg. No.	Description	Dwg. No.	Description

OWNER :
 National Petrochemical Company
 Arvand Petrochemical Company

PROJECT: PVC ARVAND
 CONTRACTORS: Uhde SAZEH CONSULTANTS

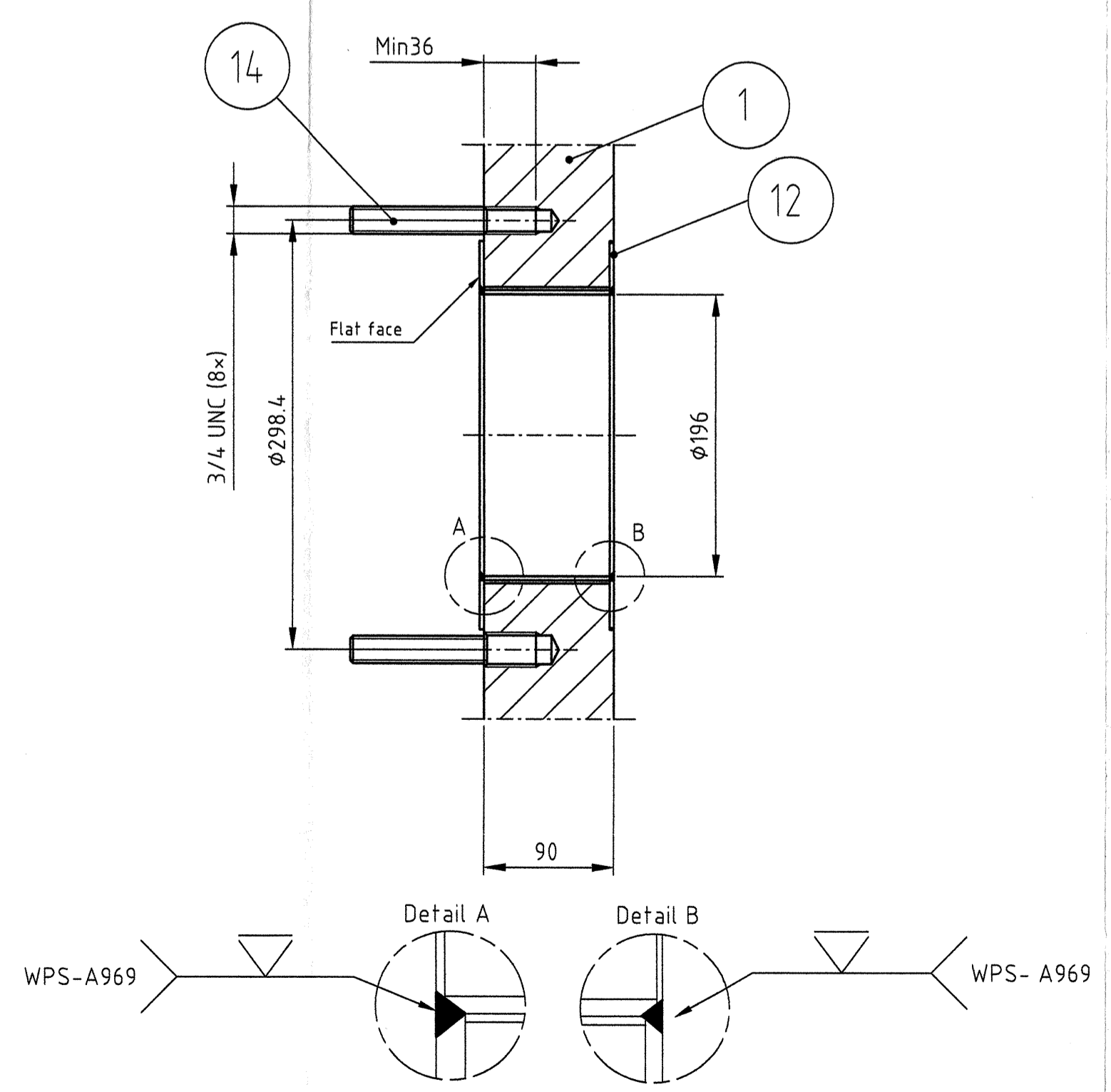
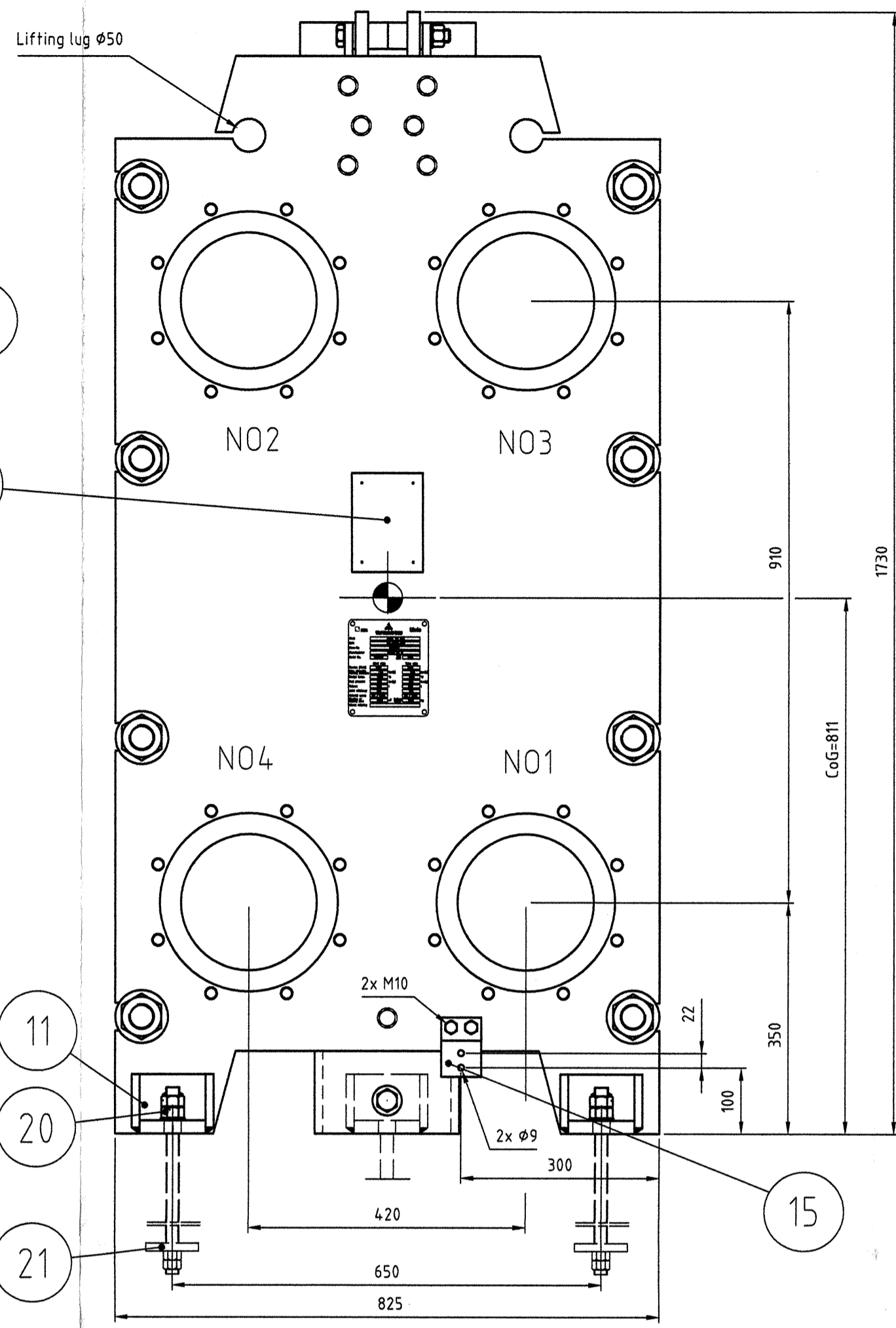
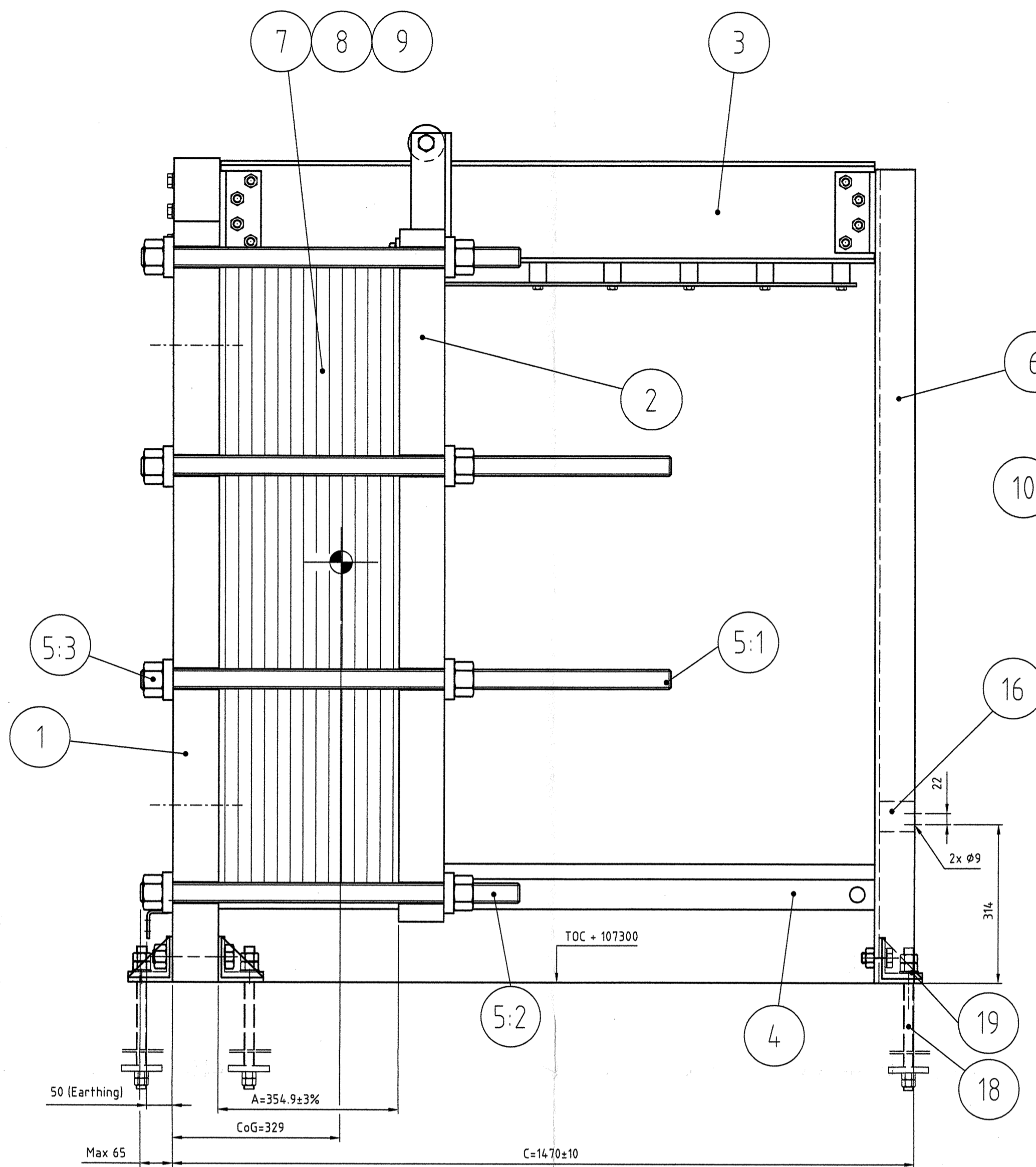
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 1 APPROVED
 2 APPROVED AS NOTED / RELEASE FOR CONSTRUCTION
 3 NOT APPROVED
 Date: 07.07.05 Name: [Signature]
 8408205-CB-ME-VDP-0039-0006
 02 03-3039-10399949 P000 R02

Scale:	Drawn	Checked	Welding checked	Design check.	UAN:
1:5	Date 041228	041227		041227	03-3039
	Name AP	JO		JO	PLANT: C/A

TON	Equipment designation:	Quantity
640E001	Safety water cooler	1
Item No. 40E-64001	TRANTRER GX-26P	
Engineered by: Tranter PHE AB	Order No.: 34037951/8408205-CB-ME-REQ-0039	
Type of Drawing: ASSEMBLY DRAWING	Client Doc. No.: 8408205-CB-ME-VDP-0039-0006	
Manufacturer: TRANTRER PHE AB	Mfc. Job No.: 105202/26	Rev.: 02
	Mfc. Dwg. No.: 1-10017	

ALLOWABLE NOZZLE LOADS						
Nozzle Size	Fx (N)	Fz (N)	Fy (N)	Mx (Nm)	Mz (Nm)	My (Nm)
L"	2000	2000	2000	2500	2500	2500

GENERAL INFORMATION
 * This is a customer adapted drawing which is drawn in accordance with the type approved drawing 3-3971
 * PED approval no: 01-913381/ 20
 * Installation/maintenance: The heat exchanger must be installed with min 600 mm clearance on both sides
 * Plate sequence 1LS-16LD / 1LS-13LD



Uhde	
Code	ASME VIII div1
UAN	03-3039
Item-No	41E-06101
Manufacturer	TRANTRER PHE AB
Serial No.	105202/7
Year built	2005
Service (Fluid)	Shell side: Steam, Tube side: Brine
Max. allowable working pressure	11.0 bar(g)
Design temp.	160.0 °C
Test pressure	16.5 bar(g)
Volume	85.5 l
Joint efficiency	N/A
Material group	C.S. / Ti/Pd
Heating or cooling area	49.84 m²
Stress relieving	Delivery weight: 2016 kg

Design acc. to:		ASME VIII Div. 1	
Pressure chamber *)	N03/N04	N01/N02	Inspection by: Uhde, Owner
Design pressure, gauge:	bar -1.0/8.0	11.0	Supervision of manuf. by: Uhde
Design temperature:	°C 160.0	160.0	Weight to be supplied: 2016kg
Corrosion allowance	mm N/A		Operating weight: 2187kg
Other additional allowances	mm N/A		Weight at rest: -
Nominal volume	l 85.5	85.5	Bundle weight: -
Initial test pressure gauge:	bar 16.5	16.5	Total heat exch. surf.: 49.84m²
Operating pressure, gauge	bar 1.5/1.3	3.5/3.0	Mfr's Serial No.: 105202/7
Operating temperature	°C 110/95	62/85	Year of manufacture: 2005
Retest pressure gauge	bar		
Process fluid	Steam	Ultra pure brine	
Density	kg/m³ 953.2	1173	
H2 partial pressure abs.	bar -	-	

General notes:

Insulation: Shell side: hot/cold N/A mm, Tube side: hot/cold N/A mm
 Dämmung: Mantelseite: warm/kalt N/A mm, Rohrsseite: warm/kalt N/A mm

Spare parts bolts and nuts: N/A % gaskets: 10% sets
 Reserveteile: Schrauben und Muttern: % Dichtungen: 10% Satz

Tolerances according to: ISO 2768-c

Holes shell straddle both natural-centerlines.
 Flanschachsen lochfrei.

Leakage test of reinforcing plate welds: at N/A bar by applying soap bubble test.
 Dichtheitsprüfung: Verstärkungsblech-Schweißnähte: mit bar und Schaumbildner.

Test holes open/closed with: N/A
 Prüflöcher offen lassen/verschließen mit: N/A

Bolt threads of outside flange connections to be coated with MoS2-paste. N/A
 Schraubengewinde für äußere Flanschverbindungen mit MoS2-Paste einstreichen.

Flange faces and machined surfaces to be protected with: N/A
 Dichtflächen und maschinell bearbeitete Flächen schützen mit: N/A

Open nozzles to be closed for transportation with: SS cover
 Offene Stutzen für den Versand verschließen mit: SS cover

Transportation in: Wooden pallet 1 parts Part weights: kg
 Versand: Holzpalette 1-teilig Teilgewicht: kg

Part	Joint efficiency	Radio-graphic	Ultra-sonic	Magnetic particle	Dye penetrant	Tests specimens	Others
Teil	Schweißfaktor	Durchstrahlung	Ultraschall	Magnetpulver	Färbendringung	Arbeitsproben	Sonstige

Part	Derusting	Paint quality and mfr.	Pre-treatment	Type	Pickling solution	Post treatment
Teil	Entrosten	Qual. u. Herst. Anstrich	Vorbereitung	Art Schutzüberzug	Beizmittel	Nochbehandlung

Surface treatment	
2-10014	Foundation drawing
Dwg. No.	Description
Dwg. No.	Description

OWNER: National Petrochemical Company
 Arvand Petrochemical Company

PROJECT: PVC ARVAND

CONTRACTORS: Uhde SAZEH CONSULTANTS

UHDE check stamp: APPROVED
 APPROVED AS NOTED / RELEASE FOR CONSTRUCTION
 8408205-CB-ME-VDP-0004-0004
 07.07.05

Part	Description	Quant.	Standard	Material	Mat.test report	Drawing
21	Plate FZV	5	80x80x12	CS	-	4-50202
20	Nut M20 FZV	20	EN 24034	CS	-	-
19	Washer FZV	5	DIN 126	CS	-	-
18	Anchor bolt, Type C2S FZV	5	M20x570	SA193 gr.B7	-	-
17	Customer machine plate	1	-	SAI 316	-	-
16	Earthing connection on End Support	1	-	C.S.	-	4-2574
15	Earthing connection on Fixed cover	1	-	C.S.	-	4-4033
14:2	Stud bolt 3/4" UNC FZV N01, N02	16	L=130	SA 193 gr.B7	-	-
14:1	Stud bolt 3/4" UNC FZV N03, N04	16	L=90	SA 193 gr.B7	-	-
13	Splash guard	1	-	SAI 304	-	3-3833
12	Port lining 8" Ti/Pd 0.2%	4	FF	B 265 Gr.11	-	3-5446
11	Strap iron reinforced 87x90x100	5	-	C.S.	-	4-50209
10	Machine plate	1	-	SAI 316	-	-
9	Plate gasket half thickness	2	-	EPDM (P)	-	-
8	Plate gasket full thickness	90	-	EPDM (P)	-	-
7	Heat transfer plate Ti/Pd 0.2%	91	T=0.6	B 265 Gr.11	-	-
6	End support	1	-	C.S.	-	4-2964
5:3	Nut M39 FZB	16	-	SA 194 gr2H	-	4-300
5:2	Tightening bolt M39 FZB	4	L=750	SA 193 gr.B7	-	4-160
5:1	Tightening bolt M39 FZB	4	L=1050	SA 193 gr.B7	-	4-160
4	Lower guiding bar	1	L=1300	SAI 316	-	4-439
3	Upper guiding bar	1	L=1300	C.S.	-	3-436
2	Movable cover without connection	1	-	SA 516gr.60	-	3-4107
1	Fixed cover with N01-N04 connection	1	-	SA 516gr.60	-	3-5447

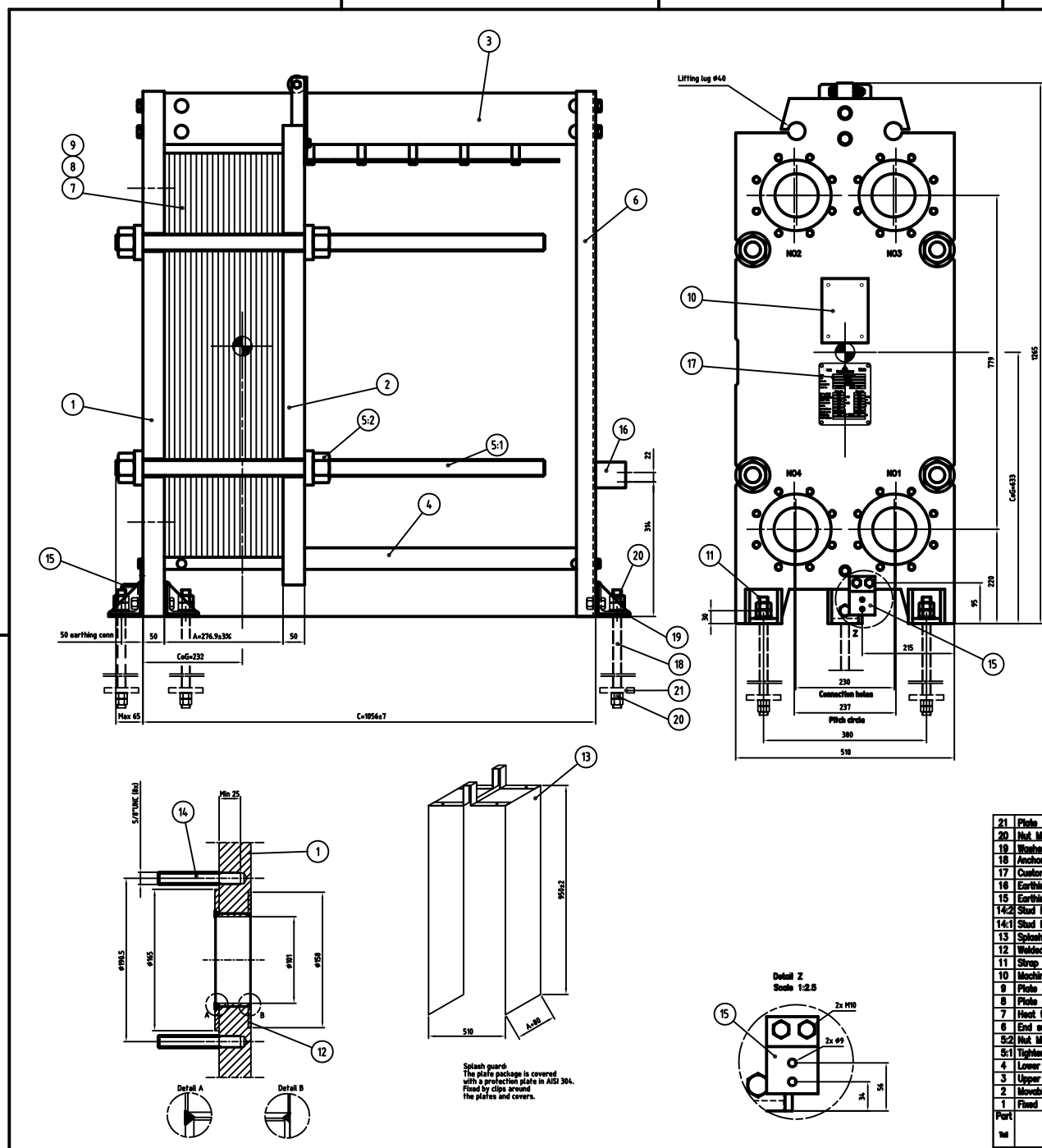
Splash guard: The plate package is covered with a protection plate in AISI 304. Fixed by clips around the plates and covers.

Nozzle Size	Fx (N)	Fz (N)	Fy (N)	Mx (Nm)	Mz (Nm)	My (Nm)
8"	6000	6000	6000	7000	7000	7000

GENERAL INFORMATION

* This is a customer adapted drawing which is drawn in accordance with the type approved drawing 3-4-105
 * PED approval no: 01-838222
 * Installation/maintenance: The heat exchanger must be installed with min 1000 mm clearance on both sides
 * Plate sequence 45LS-0LD / 0LS+45LD

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Cooling mode		Design acc. to: ASME VIII Div. 1		Heating mode	
Pressure chamber *)	N03/N04	N01/N02	Inspection by:	N03/N04	N01/N02
Design pressure, gauge	bar -1.0/8.0	11.0	Udde, owner	bar -1.0/8.0	11.0
Design temperature	°C 160.0	160.0	Udde	°C 160.0	160.0
Corrosion allowance	mm N/A		Height to be supplied:	mm N/A	560 kg
Other additional allowance	mm N/A		Operating weight:	mm N/A	621 kg
Joint efficiency	N/A		Weight of vessel:	N/A	
Normal volume	l 30.1	30.1	Normal volume:	l 30.1	30.1
Initial test pressure gauge:	bar 16.5	16.5	Initial test pressure gauge:	bar 16.5	16.5
with water/air vertical/horizontal			with water/air vertical/horizontal		
Operating pressure, gauge	bar 1.5/1.3	3.5/3.0	Operating pressure, gauge	bar 1.5/1.3	3.5/3.0
Operating temperature	°C 35/46	75/90	Operating temperature	°C 110/95	55/85
Process fluid	Cooling water typ. 2	Ultra pure brine	Process fluid	Steam	Ultra pure brine
Density	kg/m³ 992.3	1177	Density	kg/m³ 992.3	1177
Operational pressure abs.	bar - -	-	Operational pressure abs.	bar - -	-

General notes:

Material: Shell side: hot/cold N/A mm | Tube side: hot/cold N/A mm
 Corrosion: Shell side: none/acid N/A mm | Tube side: none/acid N/A mm
 Spare parts bolts and nuts: N/A % | Spare parts: 10% sets
 Tolerances according to: ISO 2768-c
 Holes shall straddle both natural-centerlines.
 Leakage test of reinforcing plate welds: at N/A bar by applying soap bubble test.
 Test holes open/closed with: N/A
 Bolt threads of outside flange connections to be coated with MoS₂-paste. N/A
 Flange faces and machined surfaces to be protected with: N/A
 Open nozzles to be closed for transportation with: SS cover
 Transportation in: Wooden pallet 1 parts Part weight: 55 kg

Part	Joint	Radio-graphic	Ultrasonic	Magnetic particle	Dye penetrant	Tests specimens	Others	Pressure test
Shell	Shell	Shell	Shell	Shell	Shell	Shell	Shell	Shell
Tube	Tube	Tube	Tube	Tube	Tube	Tube	Tube	Tube

Part	Derusting	Paint quality	Pre-treatment	Type	Pickling solution	Post treatment
Shell	Shell	Shell	Shell	Shell	Shell	Shell
Tube	Tube	Tube	Tube	Tube	Tube	Tube

2-10018	Foundation drawing	Load data plan
Dep. No.	Description	Dep. No. Description

Part	Description	Quant.	Standard	Material	Material	Material	Material
21	Plate FZV	5	80x80x12	CS			
20	Nut M20 FZV	20	EN 24034	CS			
19	Washer FZV	5	DN 128	CS			
18	Anchor bolt, type C25	5	M20x570	SA193 gr.87			
17	Customer machine plate	1		ANSI 316			
16	Earthing connection on End Support	1		CS			
15	Earthing connection on Fixed cover	1		CS			
14	Stud bolt 5/8" UNC FZV N03, N04	16	L=100	SA 193 gr.87			
14:1	Stud bolt 5/8" UNC FZV N03, N04	16	L=70	SA 193 gr.87			
13	Splash guard	1		ANSI 304			
12	Welded port lining 4" Ti/Pd 0.2%	4	FF	B 285 Gr.7			
11	Strip iron reinforced L80x80x5x12	5		CS			
10	Machine plate	1		ANSI 316			
9	Plate gasket half thickness	2		EPDM (P)			
8	Plate gasket full thickness	2		EPDM (P)			
7	Heat transfer plate Ti/Pd 0.2%	71	T=0.6	B 285 Gr.7			
6	End support	1		CS			
5:2	Nut M20 FZB	8		SA 194 gr.2H			
5:1	Washer M20 FZB	8		SA 193 gr.87			
4	Lower guiding bar	1	L=1000	ANSI 304			
3	Upper guiding bar	1	L=1000	CS			
2	Movable cover without connection	1		SA 516gr.80			
1	Fixed cover with N01-N04 connection	1		SA 516gr.80			

Material	Pa 80	Pa 90	Pa 100	Pa 110	Pa 120	Pa 130	Pa 140
4"	3000	3000	3000	3000	3000	3000	3000

ALLOWABLE NOZZLE LOADS

GENERAL INFORMATION

This is a customer selected drawing which is drawn in accordance with the type approved drawing 3-4412.

PEB approved no. 95-01039V 10

Installation instructions: The heat exchanger must be installed with side 600 on clearance on both sides.

Plate supports: SL5-SL10 / SL5-RLD

Part	Description	Quant.	Standard	Material	Material	Material	Material
N04	WR02-410810427-08BRSC	4	190	B14.5	Pat	FF	
N03	WR02-410810123-08BRSC	4	190	B14.5	Pat	FF	
N02	BRP02-410810428-08LAWY	4	190	B14.5	Pat	FF	
N01	BRP02-410810407-08LAWY	4	190	B14.5	Pat	FF	

NOZZLE SYMBOLS

Designation	inch	mm	Standard	Flange type	Flange facing	Pipe dimensions of welding edge
ANSI						

PROJECT: PVC ARVAND

CONTRACTORS: Udde, SARRE

UNDE check stamp:

Date	Checked	Welding checked	Design check	UUN: 03-3039
041227	041228		041228	

Scale: 1:5

Equipment designation: Brine HE for single electrolyzer TRANTER GX-26S

Quantity: 1

Item No.: 41E-06103

Engineered by: Tranter PHE AB

Order No.: 34837951/040205-CB-HE-REG-0004

Client Doc. No.: 040205-CB-HE-VDP-0004-0006

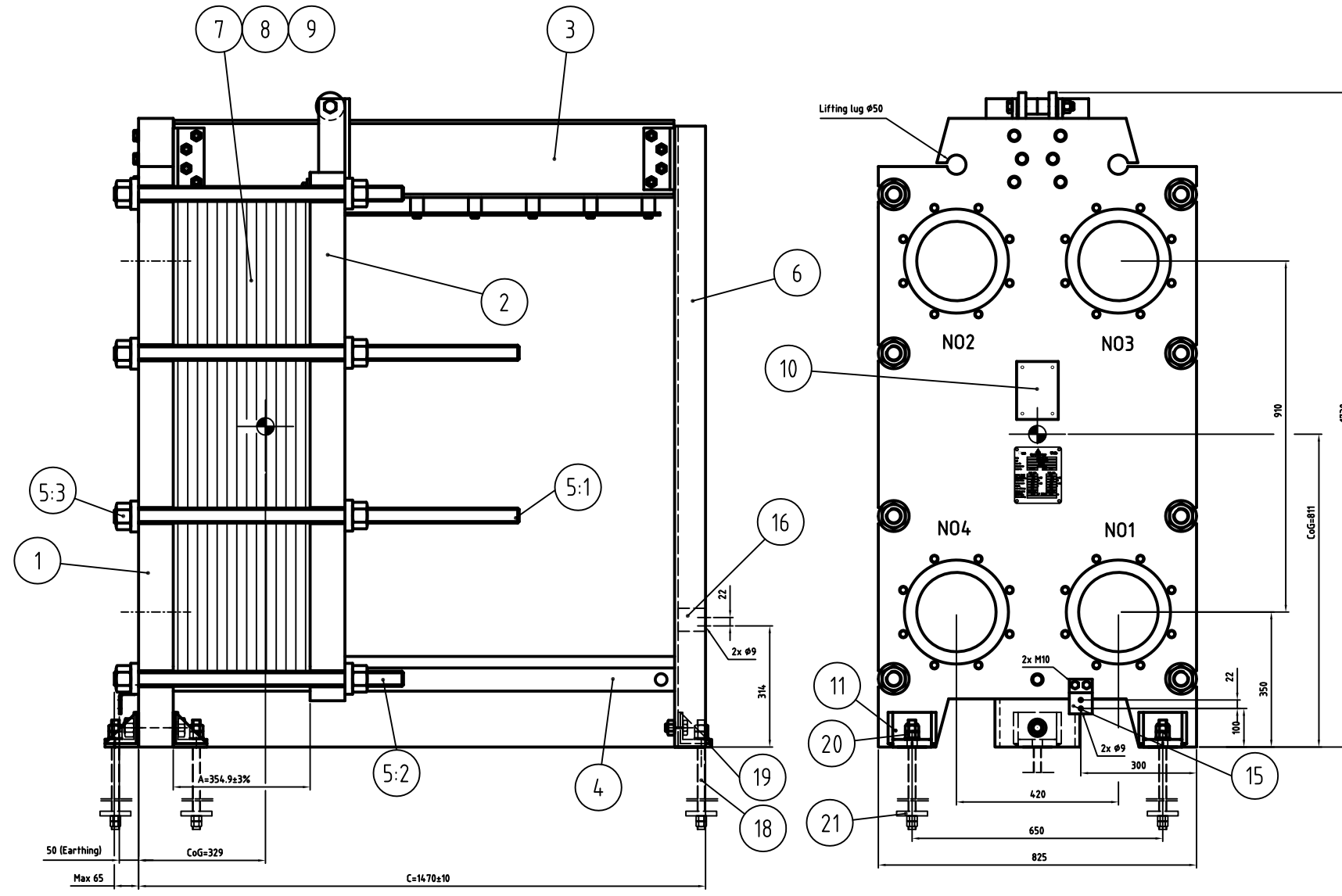
Type of Drawing: ASSEMBLY DRAWING

Manufacturer: TRANTER PHE AB

WfC. Job No.: 105202/11

WfC. Dep. No.: 1-10011

Rev.: 03



Uhde National Petrochemical Company Arvand Petrochemical Company	
Code	ASME VIII div1
UAN	03-3039
Item-No	41E-06201
Manufacturer	TRANTRER PHE AB
Serial No.	105202/9
Year built	2005
Service (Fluid)	Shell side: Steam, Tube side: Brine
Max. allowable working pressure	11.0 bar(g)
Design temp.	160.0 °C
Test pressure	16.5 bar(g)
Volume	85.5 l
Joint efficiency	N/A
Material group	C.S / Ti/Pd
Heating or cooling area	49.84 m ²
Stress relieving	Delivery weight: 2016 kg

Design acc. to:		ASME VIII Div. 1	
Pressure chamber *)	N03/N04	N01/N02	Inspection by: Uhde, Owner
Design pressure, gauge:	bar	-1.0/8.0	11.0
Design temperature:	°C	160.0	160.0
Corrosion allowance	mm	N/A	Weight to be supplied: 2016kg
Other additional allowances	mm	N/A	Operating weight: 2187kg
Joint efficiency	N/A		Weight at retest: -
Nominal volume	l	85.5	85.5
Initial test pressure gauge:	bar	16.5	16.5
Operating pressure, gauge	bar	1.5/1.3	3.5/3.0
Operating temperature	°C	110/95	62/85
Retest pressure gauge	bar		
Process fluid	Steam	Ultra pure brine	
Density	kg/m ³	953.2	1173
H2 partial pressure abs.	bar	-	-

General notes:

Algemeine Angaben:
 Insulation: Shell side: hot/cold N/A mm, Tube side: hot/cold N/A mm
 Dämmung: Mantel-seite: warm/kalt, Rohr-seite: warm/kalt
 Spare parts: bolts and nuts: N/A, gaskets: 10% sets
 Reserveteile: Schrauben und Muttern: Dichtungen: 10% Satz

Tolerances according to: ISO 2768-c

Holes shell straddle both natural-centerlines.
 Flanschen lochfrei.
 Leakage test of reinforcing plate welds: at N/A bar by applying soap bubble test.
 Dichtungsprüfung, Verstärkungsblech-Schweißnähte: mit bar und Schaumbildner.

Test holes open/closed with: N/A
 Prüflöcher offen lassen/verschließen mit: N/A

Bolt threads of outside flange connections to be coated with MoS2-paste.
 Schraubengewinde für äußere Flanschverbindungen mit MoS2-Paste einstrichen.

Flange faces and machined surfaces to be protected with: N/A
 Dichtflächen und maschinell bearbeitete Flächen schützen mit: N/A

Open nozzles to be closed for transportation with: SS cover
 Offene Stutzen für den Versand verschließen mit: SS cover

Transportation in: Wooden pallet 1 parts Part weights: kg
 Versand: Holzpalette 1 -teilig Teilgewicht: kg

Part	Joint efficiency	Radio-graphic	Ultra-sonic	Magnetic particle	Dye pen-trant	Tests specimens	Others
Teil	Schweiß-faktor	Durch-strahlung	Ultra-schall	Magnet-pulver	Farbein-dringung	Arbeitsproben	Sonstige

Tests (Test reports incl. appraisals are required in all cases)

Prüfung (Von allen Prüfungen Protokolle mit Bewertung ausstellen)

Part	Derusting	Point quality and mfr. Qual. u. Herst.	Pre-treatment	Type	Pickling solution	Post treatment
Teil	Entrosten	Pointing Anstrich	Vorbehandlung	Art	Beizmittel	Nachbehandlung

Surface treatment

Oberflächenbehandlung

2-10015	Foundation drawing	Load data sheet
Dwg. No.	Description	Dwg. No. Description

Reference documents/belong to drawing

OWNER:

National Petrochemical Company
 Arvand Petrochemical Company

PROJECT: PVC ARVAND

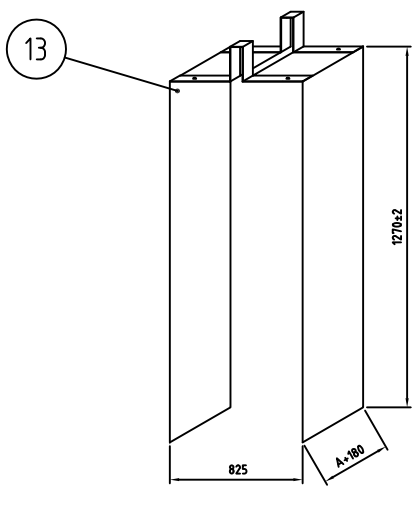
CONTRACTORS: **Uhde**

UHDE check stamp:

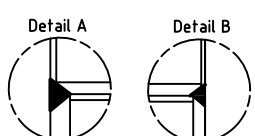
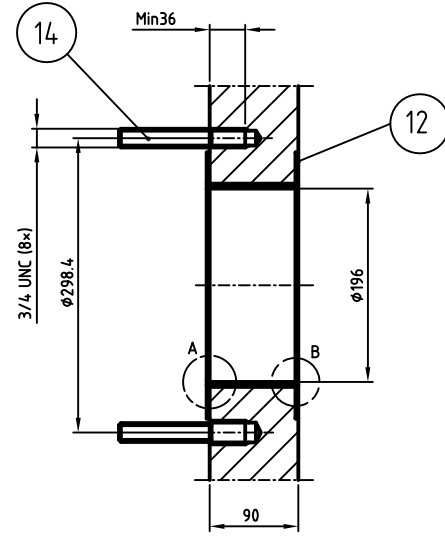
Scale:	1:7.5
Date:	050217
Name:	HB

TON	062E001	Equipment designation:	BRINE HEATER	Quantity	1
Item No.	41E-06201	Order No.:	34037951/8408205-CB-ME-REQ-0004		
Engineered by:	Tranter PHE AB	Client Doc. No.:	8408205-CB-ME-VDP-0004-0020		
Type of Drawing:	ASSEMBLY DRAWING	Manufacturer:	TRANTRER PHE AB	Mtc. Job No.:	105202/9
				Mtc. Dwg. No.:	1-10021

21	Plate FZV	5	80x80x12	CS	-	4-50202
20	Nut M20 FZV	20	EN 24034	CS	-	-
19	Washer FZV	5	DIN 126	CS	-	-
18	Anchor bolt, Type C2S	5	M20x570	SA193 gr.B7	-	-
17	Customer machine plate	1	-	ANSI 316	-	-
16	Earthing connection on End Support	1	-	C.S	-	4-2574
15	Earthing connection on Fixed cover	1	-	C.S	-	4-4033
14:2	Stud bolt 3/4" UNC FZV N01, N02	16	L=130	SA 193 gr.B7	-	-
14:1	Stud bolt 3/4" UNC FZV N03, N04	16	L=90	SA 193 gr.B7	-	-
13	Splash guard	1	-	ANSI 304	-	3-3833
12	Port lining 8" Ti/Pd 0.2%	4	FF	B 265 Gr.11	-	3-5446
11	Strap iron reinforced 87x90x100	5	-	C.S	-	4-50209
10	Machine plate	1	-	ANSI 316	-	-
9	Plate gasket half thickness	2	-	EPDM (P)	-	-
8	Plate gasket full thickness	90	-	EPDM (P)	-	-
7	Heat transfer plate Ti/Pd 0.2%	91	T=0.6	B 265 Gr.11	-	-
6	End support	1	-	C.S	-	4-2964
5:3	Nut M39 FZB	16	-	SA 194 gr2H	-	4-300
5:2	Tightening bolt M39 FZB	4	L=750	SA 193 gr.B7	-	4-160
5:1	Tightening bolt M39 FZB	4	L=1050	SA 193 gr.B7	-	4-160
4	Lower guiding bar	1	L=1300	ANSI 316	-	4-439
3	Upper guiding bar	1	L=1300	C.S	-	3-436
2	Movable cover without connection	1	-	SA 516gr.80	-	3-4107
1	Fixed cover with N01-N04 connection	1	-	SA 516gr.80	-	3-5447



Splash guard:
 The plate package is covered with a protection plate in ANSI 304. Fixed by clips around the plates and covers.



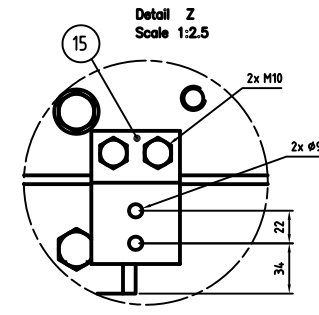
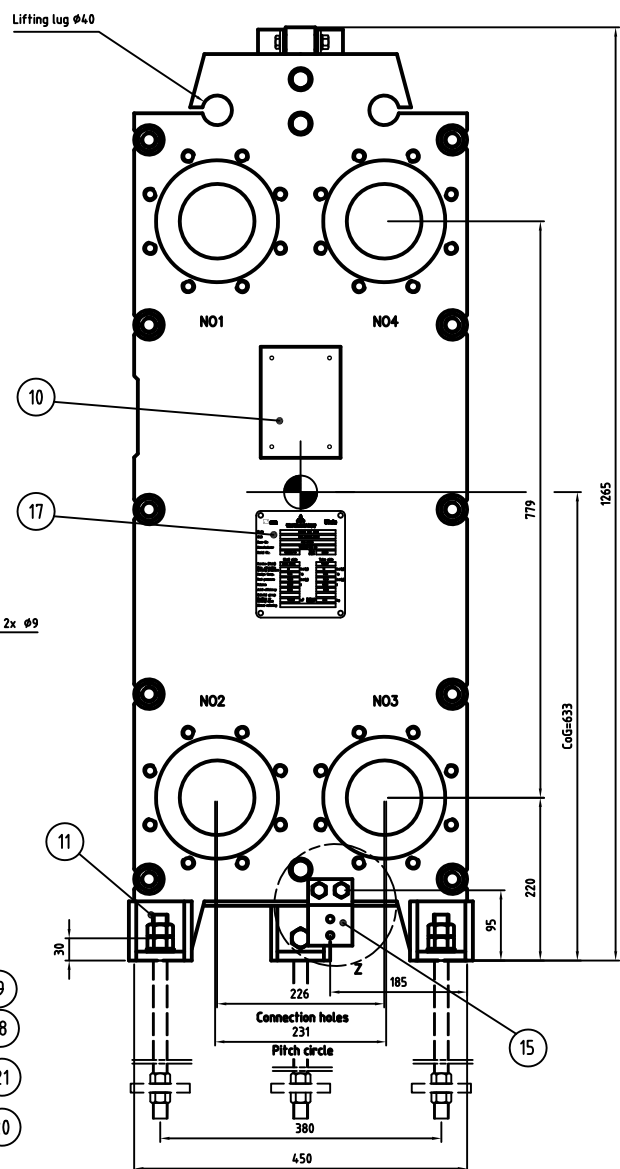
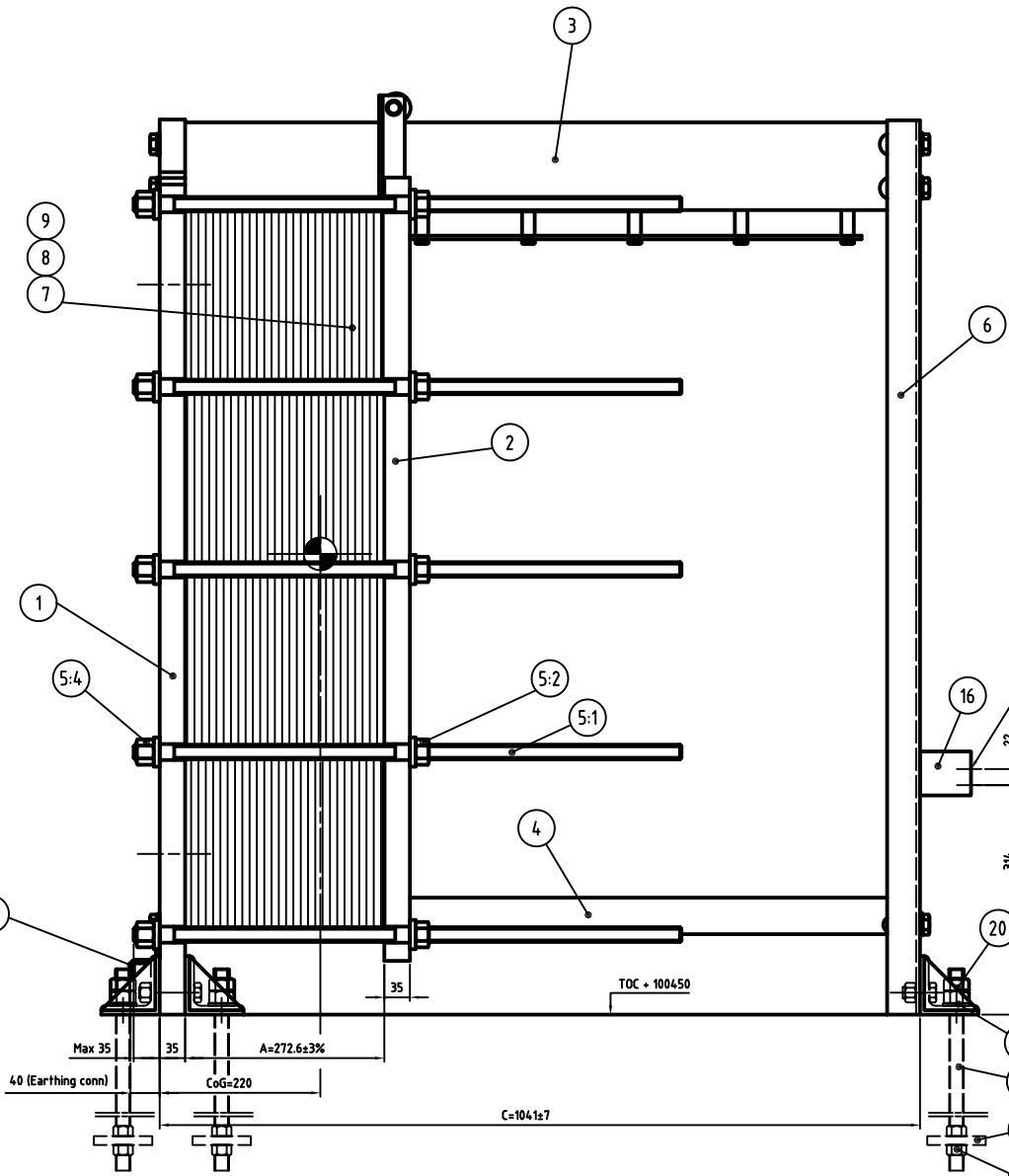
ALLOWABLE NOZZLE LOADS

Nozzle Size	Fz (N)	Fz (kN)	Fy (N)	Mx (Nm)	Mz (Nm)	My (Nm)
8"	6000	6000	6000	7000	7000	7000

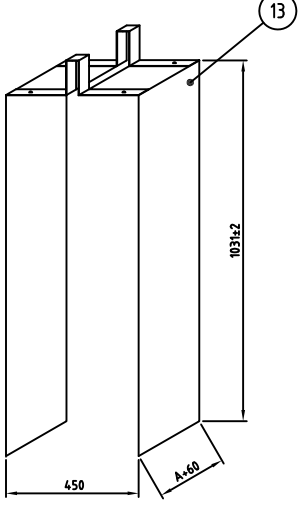
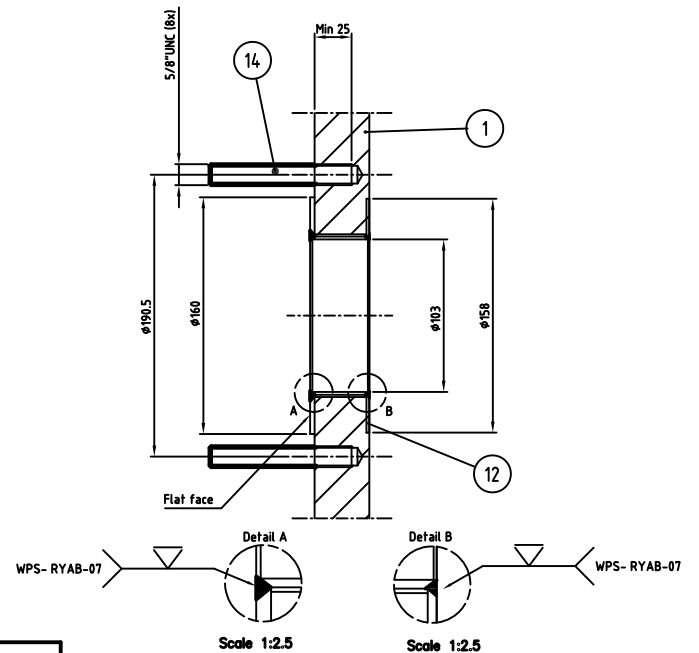
GENERAL INFORMATION

* This is a customer adapted drawing which is drawn in accordance with the type approved drawing 3-4105
 * PED approval no: 01-438222
 * Installation/maintenance: The heat exchanger must be installed with min 1000 mm clearance on both sides
 * Plate sequence 45LS+0LD / 0LS+45LD

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AS BUILT		
Item	A	C
41E-07004	272	1041



Splash guard:
The plate package is covered with a protection plate in AISI 304. Fixed by clips around the plates and covers.

Uhide	
Code	ASME VIII div1
UAN	03-3039
Item-No	41E-07004
Manufacturer	TRANTRER PHE AB
Serial No.	105202/14
Year built	2005
Service (Fluid)	Lean brine
Max. allowable working pressure	7.5 bar(g)
Design temp.	100 °C
Test pressure	12.0 bar(g)
Volume	28.5 l
Joint efficiency	N/A
Material group	C.S./Hastelloy
Heating or cooling area	14.56 m ²
Stress relieving	

AS BUILT

21	Plate FZV	5	80x80x12	CS	-	4-50202
20	Nut M20 FZV	20	EN 24034	CS	-	-
19	Washer FZV	5	DIN 126	CS	-	-
18	Anchor bolt, Type A2S	5	M20x399	SA 193 gr.B7	-	-
17	Customer machine plate	1	-	AISI 316	-	-
16	Earthing connection on End Support	1	-	C.S.	-	4-2574
15	Earthing connection on Fixed cover	1	-	C.S.	-	4-4033
14:2	Stud bolt 5/8" UNC FZV NO1, NO2	16	L=90	SA 193 gr.B7	-	-
14:1	Stud bolt 5/8" UNC FZV NO3, NO4	16	L=75	SA 193 gr.B7	-	-
13	Splash guard	1	-	AISI 304	-	3-3754
12	Welded part lining 4" Hastelloy	4	FF	C-276	-	3-2878
11	Strap iron reinforced L80x80x65x12	5	-	C.S.	-	4-4031
10	Machine plate	1	-	AISI 316	-	-
9	Plate gasket half thickness	1	-	EPDM (P)	-	-
8	Plate gasket full thickness	57	-	EPDM (P)	-	-
7	Heat transfer plate Hastelloy	58	0.7	C-276	-	-
6	End support	1	-	C.S.	-	4-3064
5:4	Nut M20 FZB	10	-	SA 194 gr2H	-	4-1531
5:2	Nut M20 FZB	10	-	SA 194 gr2H	-	4-299
5:1	Tightening bolt M20 FZB	10	L=750	SA 193 gr.B7	-	4-159
4	Lower guiding bar	1	L=1000	AISI 304	-	3-442
3	Upper guiding bar	1	L=1000	C.S.	-	3-437
2	Movable cover without connection	1	-	SA 516gr.60	-	3-3997
1	Fixed cover with NO1-NO4 connection	1	-	SA 516gr.60	-	3-5430

Part	Description	Quant.	Standard	Material	Mat. Test report	Drawing
NO4	WR02-410710213-DBBRSC	4	150 B16.5	Pad FF		
NO3	WS02-419510125-DBBRSC	4	150 B16.5	Pad FF		
NO2	BRL02-410710211A-DGWANO	4	150 B16.5	Pad FF		
NO1	BRL02-410710210-DGWANO	4	150 B16.5	Pad FF		

Design acc. to: ASME VIII Div 1	
Pressure chamber *)	NO1/NO2 NO3/NO4
Design pressure, gauge:	bar 7.5 8
Design temperature:	°C 100.0 87.0
Corrosion allowance	mm N/A
Other additional allowances	mm N/A
Joint efficiency	N/A
Nominal volume	l 28.5 28.5
Initial test pressure gauge:	bar 12.0 12.0
Operating pressure, gauge:	bar 2.8/2.3 5.5/5.0
Operating temperature:	°C 66/55 35/45
Retest pressure gauge:	bar
Process fluid	Lean brine Cooling water type 2
Density	kg/m ³ 1124.0 992.2
Partial pressure abs.	bar - -

General notes:
 Allgemeine Angaben:
 Insulation Shell side: hot/cold N/A mm Tube side: hot/cold N/A mm
 Spare parts bolts and nuts: N/A % gaskets: 10% sets
 Tolerances according to: ISO 2768-c
 Holes shell straddle both natural-centerlines.
 Leakage test of reinforcing plate welds: at N/A bar by applying soap bubble test.
 Test holes open/closed with: N/A
 Bolt threads of outside flange connections to be coated with MoS₂-paste. N/A
 Flange faces and machined surfaces to be protected with: N/A
 Open nozzles to be closed for transportation with: SS cover
 Transportation in: Wooden pallet 1 parts Part weights: 55 kg

Part	Joint efficiency	Radio-graphic %	Ultra-sonic %	Magnetic particle %	Dye penetrant %	Tests specimens	Others
Teil	Schweiß-faktor	Durch-strahlung	Ultra-schall	Magnet-pulver	Farbein-dringung	Arbeitsproben	Sonstige

Part	Derusting	Paint quality and mfr.	Pre-treatment	Type	Pickling solution	Post treatment
Teil	Entrosten	Qual. u. Herst.	Vorbereitung	Art	Beizmittel	Nachbehandlung

Surface treatment	
2-10025	Foundation drawing
Dwg. No.	Description

OWNER:
 National Petrochemical Company
 Arvand Petrochemical Company

PROJECT:
 PVC ARVAND

CONTRACTORS:
 Uhide

02	050418	HB	AS BUILT
01	050225	HB	

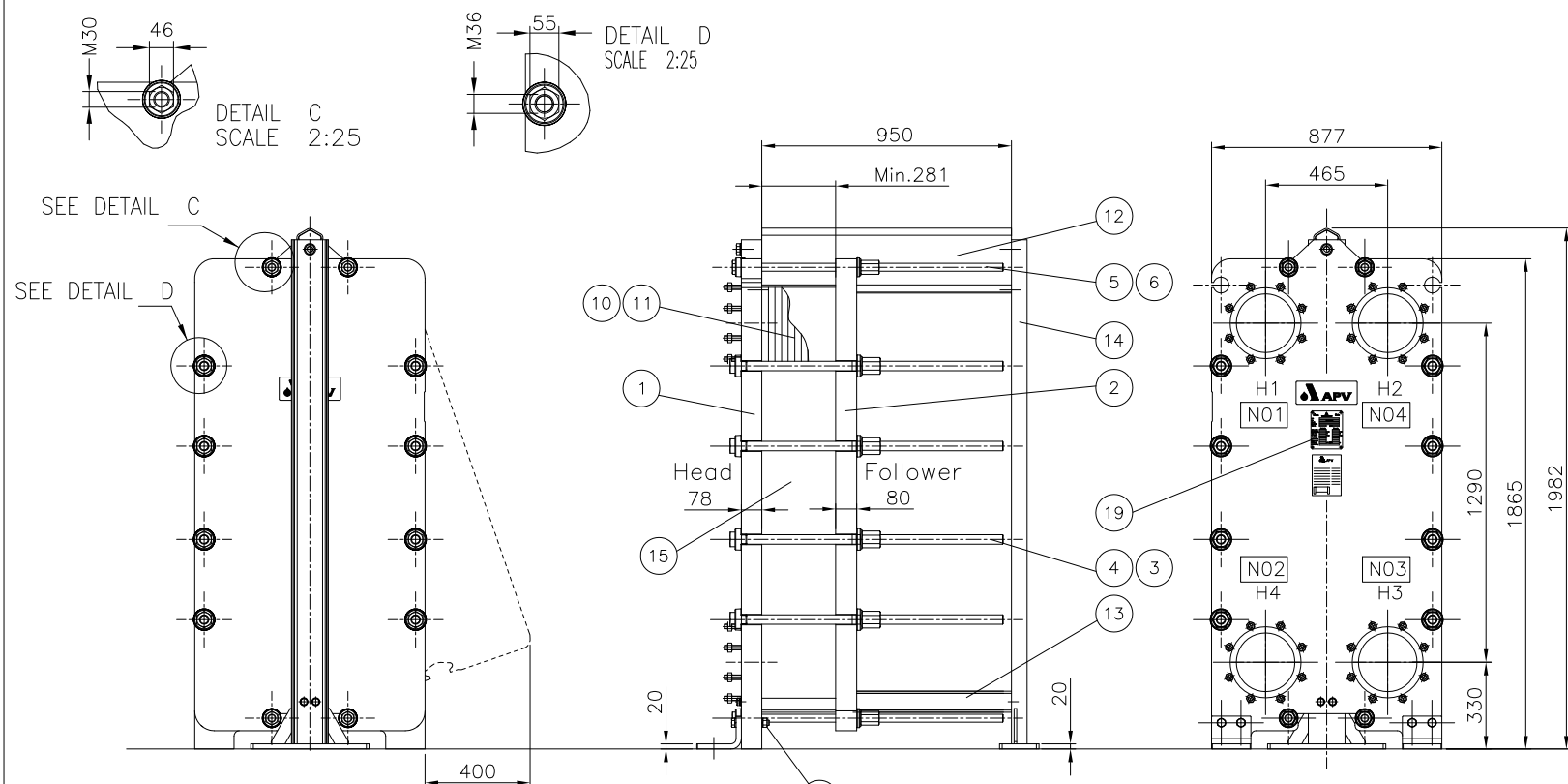
Scale:	1:5
Date	041220
Name	HB

TON	070E004	Equipment designation:	PURGE BRINE COOLER	Quantity	1
Item No.	41E-07004	Order No.:	34037951/8408205-CB-ME-REQ-0038		
Engineered by:	Tranter PHE AB	Client Doc. No.:	8408205-CB-ME-VPD-0038-0004		
Type of Drawing:	ASSEMBLY DRAWING	Mfg. Job No.:	105202/14	Rev.:	02
Manufacturer:	TRANTRER PHE AB	Mfg. Dwg. No.:	1-10012		

This document is not to be used without the approval of the manufacturer. The manufacturer is not responsible for any modifications or alterations made to the original drawing.

ALLOWABLE NOZZLE LOADS						
Nozzle Size	Fx (N)	Fz (N)	Fy (N)	Mx (Nm)	Mz (Nm)	My (Nm)
4"	2000	2000	2000	2500	2500	2500

GENERAL INFORMATION
 * This is a customer adapted drawing which is drawn in accordance with the type approved drawing 3-3972
 * PED approval no. 01-81380/20
 * Installation/maintenance: The heat exchanger must be installed with min 600 mm clearance on both sides
 * Plate sequence 0H+2H / 0H+20H

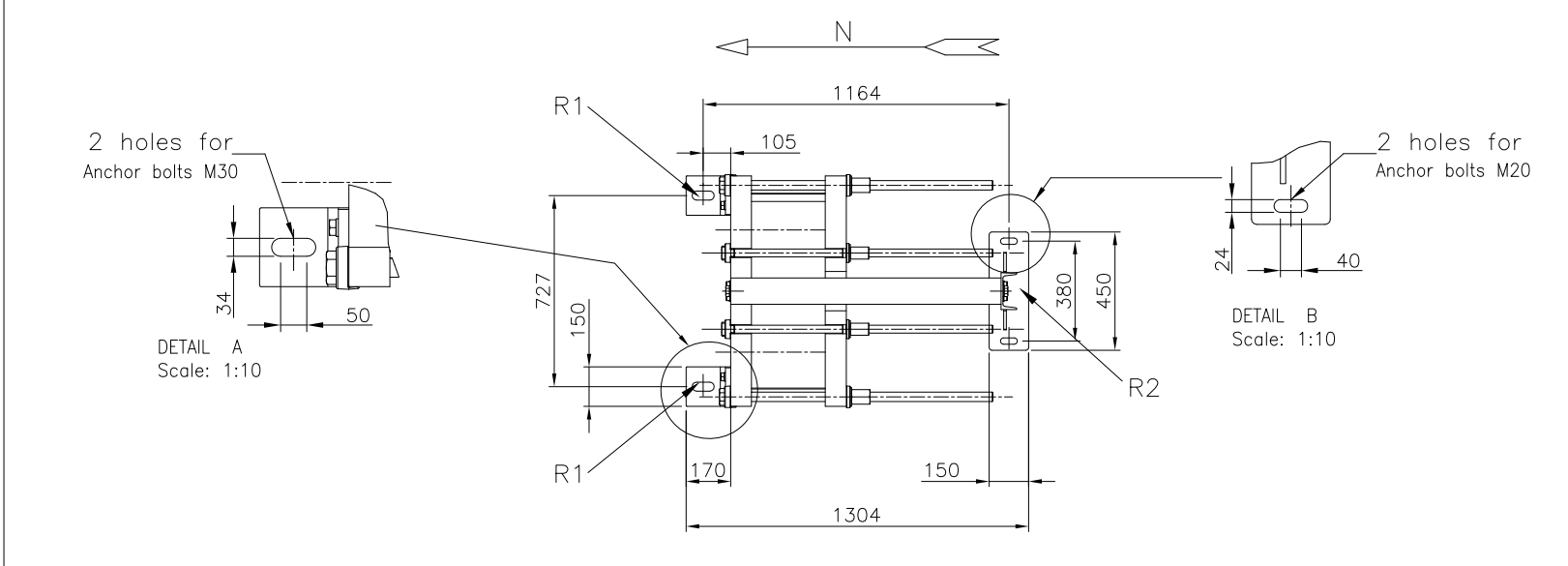


Code: ASME Sec. VIII, Div. 1, Ed. 2001, Ad. 2003 UAN: 03-3039 Item-No: 41E-07101 Manufacturer: APV Heat Transfer Serial No.: 63565 Year built: 2005	
Service (Fluid)	Shell side: Wet Cl 2, Tube side: Wet water
Max. allowable working pressure	Shell side: -1/8 bar(g), Tube side: -1/8 bar(g)
Design temp.	Shell side: 105 °C, Tube side: 105 °C
Test pressure	Shell side: 14,5 bar(g), Tube side: 14,5 bar(g)
Volume	Shell side: 119,2 l, Tube side: 119,2 l
Joint efficiency	
Material group	SS
Heating or cooling area	68,47 m ²
Stress relieving	Delivery weight: 2349 kg

Design acc. to:	ASME Section VIII Division 1, Edition 2001 Addenda 2003,		
Pressure chamber *)	Fluid I	Fluid II	Inspection by: Uhde / Owner
Design pressure, gauge:	bar	-1/8	-1/8
Zulässiger Betriebsüberdruck:			Supervision of manuf. by: Uhde GmbH
Design temperature:	°C	105	105
Zulässige Betriebstemperatur:			Weight to be supplied: 2349 kg
Corrosion allowance	mm	0	0
Other additional allowances	mm	0	0
Sonstige Zuschläge			Operating weight: 2582 kg
Joint efficiency			Weight at retest: - kg
Schweißfaktor			Gew. b. Wied.-Prüfung: - kg
Nominal volume	l	119,2	116,2
Nennvolumen			Bundle weight: - kg
Initial test pressure gauge:	bar		
Prüfüberdruck erstmalig:			Total heat exch. surf.: 68,47 m ²
with water/air - vertical/horizontal		14,5	14,5
mit Wasser/Luft - stehend/liegend			Gesamtaustauschfläche:
Operating pressure, gauge	bar	-	-
Arbeitsüberdruck			Mfr's Serial No.: 63566
Operating temperature	°C	83,7	45
Arbeitstemperatur			Year of manufacture: 2005
Retest pressure gauge	bar		
Prüfüberdruck Wiederholungsprüfung			
with water/air - at top in oper. position			
mit Wasser/Luft - am Kopf in Betriebslage			
Process fluid		Wet	
Stoff		Cl 2	Water
Density	kg/m ³	992	995
Dichte			
H2 partial pressure abs.	bar	-	-
H2-Partialdruck			

Frame							Painting Report
Flowplates						10	
Part	Joint efficiency	Radio-graphic	Ultra-sonic	Magnetic particle	Dye penetrant	Tests specimens	Others
Teil	Schweißfaktor	Durchstrahlung	Ultraschall	Magnetpulver	Farbeindringung	Arbeitsproben	Sonstige

Tests (Test reports incl. appraisals are required in all cases)
 Prüfung (Von allen Prüfungen Protokolle mit Bewertung ausstellen)



Nozzle loads:

Allowable forces and moments on connections acc. to Table-2 of API-662

$F(x) = F(y) = F(z)$
 $M(x) = M(y) = M(z)$

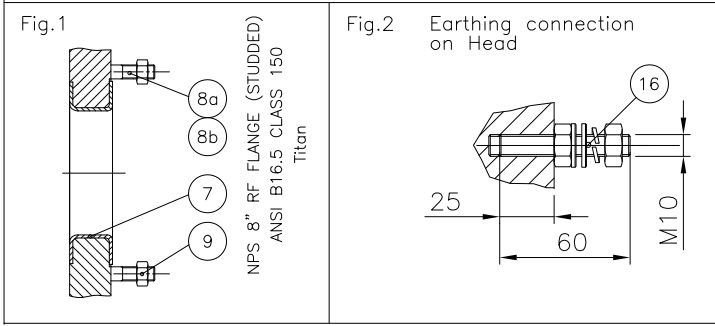
CONN. ON HEAD	1096 N	1236 Nm
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Foundation loads

	with liquid	without liquid
R1	10681 N	9702 N
R2	3964 N	3640 N

Type of PHE : Gasket
 Non-destructive/destructive tests : Vendor quality plan APV Data sheet : FBE10007/1 (C)

Notes:
 (1) Min. 281 mm / Max. 290 mm further info instr. manual
 (2) Dimensions in mm, unless otherwise noted
 (3) Max. No. of plate pairs 125 pcs.



APV Heat Transfer
 Platinevej 8, 6000 Kolding, Denmark
 Tel.: +45 70 278 444
 Fax: +45 70 278 445

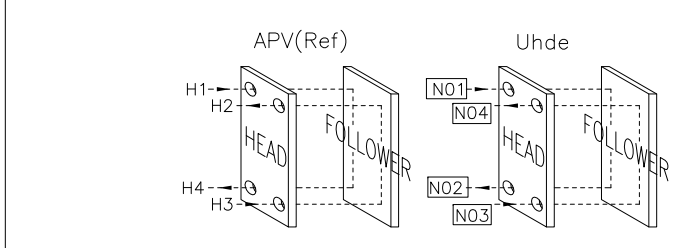
Weight kg: -
 Drawn: 041209 RGR
 Checked:
 Approved: 041209 RGR
 TGH0V03 Scale: 1:20
 Archive:
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PHE Type J092 MGS-16C/2
 General Arrangement drawing
 serial no.: 63565

Invensys APV

Design press.:
 Basis no.:

Drawing no.: 2092 0321 03
 Rev. 03



SPARE PARTS		
FLOW GASKETS	9	REF. POSITION 10

19	NAMEPLATE UHDE	1	ASTM	AISI 304	-
18	ANCHOR BOLTS, HOT DIP GALVANISED	4	EN 20898	QUA. 5.6	-
17	ASSEMBLY BOLTS	S.S.	EN 20898	A2/A4	-
16	EARTHING BOLT see Fig.2	1	ASTM	AISI 304	-
15	SAFETY SCREEN	1	ASTM	AISI 304	-
14	COLUMN	1	EN 10025	S235JR2	-
13	BOTTOM BAR	1	ASTM	AISI 304	-
12	TOP BAR	1	ASTM	AISI 304	-
11	FLOWPLATE 0.6 mm	84	ASTM	SB265 GR.1	3.1B
10	FLOWGASKET	85	-	EPDM	-
9	NUT 3/4UNC	S.S.	EN ISO 3506-1	A2-50	3.1B
8a	STUDBOLT 3/4 UNC	S.S.	EN ISO 3506-2	A2-70	3.1B
8b	STUDBOLT 3/4 UNC special length FVC 831 with connections NO1 & NO2	S.S.	EN ISO 3506-2	A2-70	3.1B
7	CONNECTION	4	ASTM	SB265 GR.1	-
6	NUT M30	S.S.	4 ASTM	A 194 GR. 8	3.1B
5	TIEBAR M30 Lined with S.S. pipe	4	ASTM	A 193 GR.B7	3.1B
4	NUT M36	S.S.	8 ASTM	A 194 GR. 8	3.1B
3	TIEBAR M36 Lined with S.S. pipe	8	ASTM	A 193 GR.B7	3.1B
2	FOLLOWER	1	ASTM	A 516 GR.60	3.1B
1	HEAD	1	ASTM	A 516 GR.60	3.1B

SK19224	Foundation drawing	SK19250	Painting procedure
Dwg. No.	Description	Dwg. No.	Description

Reference documents/belong to drawing

OWNER :

 National Petrochemical Company
 Arvand Petrochemical Company

PROJECT: PVC ARVAND

CONTRACTORS: Uhde SAZEH CONSULTANTS

UHDE check stamp:

Revision					
02	According to client comments	27.06.05			
01	According to client comments	08.06.05			
0	for approval				

Scale:	1:20	Drawn	Checked	Welding checked	Design check	UAN:	03-3039
	Date	RGR	AGR			PLANT:	C/A

TON	071E001	Equipment designation:	Vapour Condensor PHE type J092 MGS-16C/2	Quantity	1
Item No.	41E-07101	Engineered by:	UHDE GMBH	Order No.:	34037957/8408205-CB-ME-REQ-0017
Type of Drawing:	Arrangement drawing	Client Doc. No.:	8408205-CB-ME-VDP-0017-0001		
Manufacturer:	APV (Denmark)	Mfc. Job No.:	27139398	Rev.:	02
		Mfc. Dwg. No.:	2092 0321		

H2 / NO4	WR02-410720323-DBRSC	8"	150	B16.5	Fig.1	RF	-
H3 / NO3	WS02-419510135-DBRSC	8"	150	B16.5	Fig.1	RF	-
H4 / NO2	CLM14-410720304-VGWANO	8"	150	B16.5	Fig.1	RF	-
H1 / NO1	CLM24-41072020103-VGWANO	8"	150	B16.5	Fig.1	RF	-
Nozzle symbol	Designation	NPS inch	Rating psi	Standard ANSI Norm	Flange type Flansch-type	Flange facing Dicht-fläche	Pipe dimensions at welding edge Rohrabmessungen an Schweißkanten
Stützen-Bezeichn.	Benennung						