



LIDCO, Pars SEE Zone, Assaluyeh,
Integrated Methanol and Ammonia
Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT



Detail Drawings for Coolers



Document No. 17735-23A

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
N278	VD	6019	ME	DWG	0024	03	Page 1 of 5

**Airpack B.V. - Air Compressor –
Integrated Methanol and Ammonia Plant
17735-COM Detail Drawings for Coolers (K020)**

Code 2
M. Dalakeh

03	25-04-2024	Issued for Information	S.K.	J.J.	S.K.
02	12-02-2024	Issued for Information	S.K.	J.J.	S.K.
01	13-12-2023	Issued for Information	S.K.	J.J.	S.K.
REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

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Detail Drawings for Coolers

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N278	VD	6019	ME	DWG	0024	03	Page 2 of 5

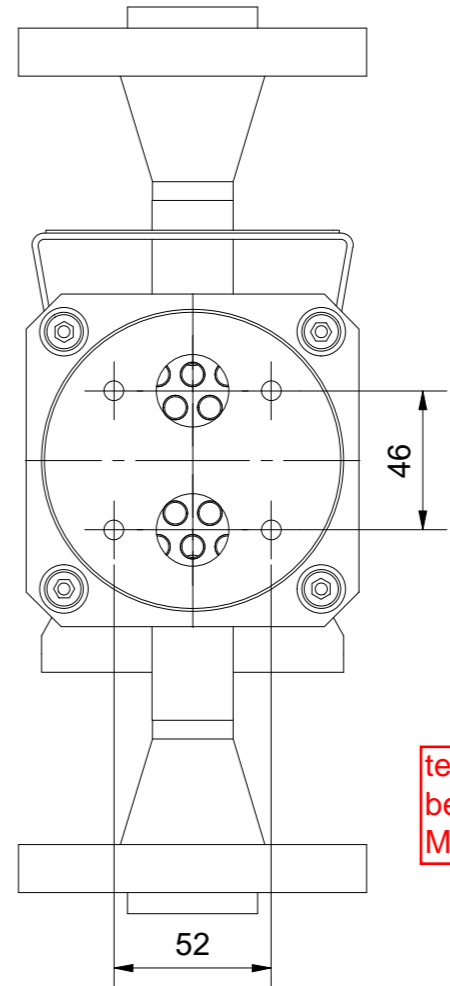
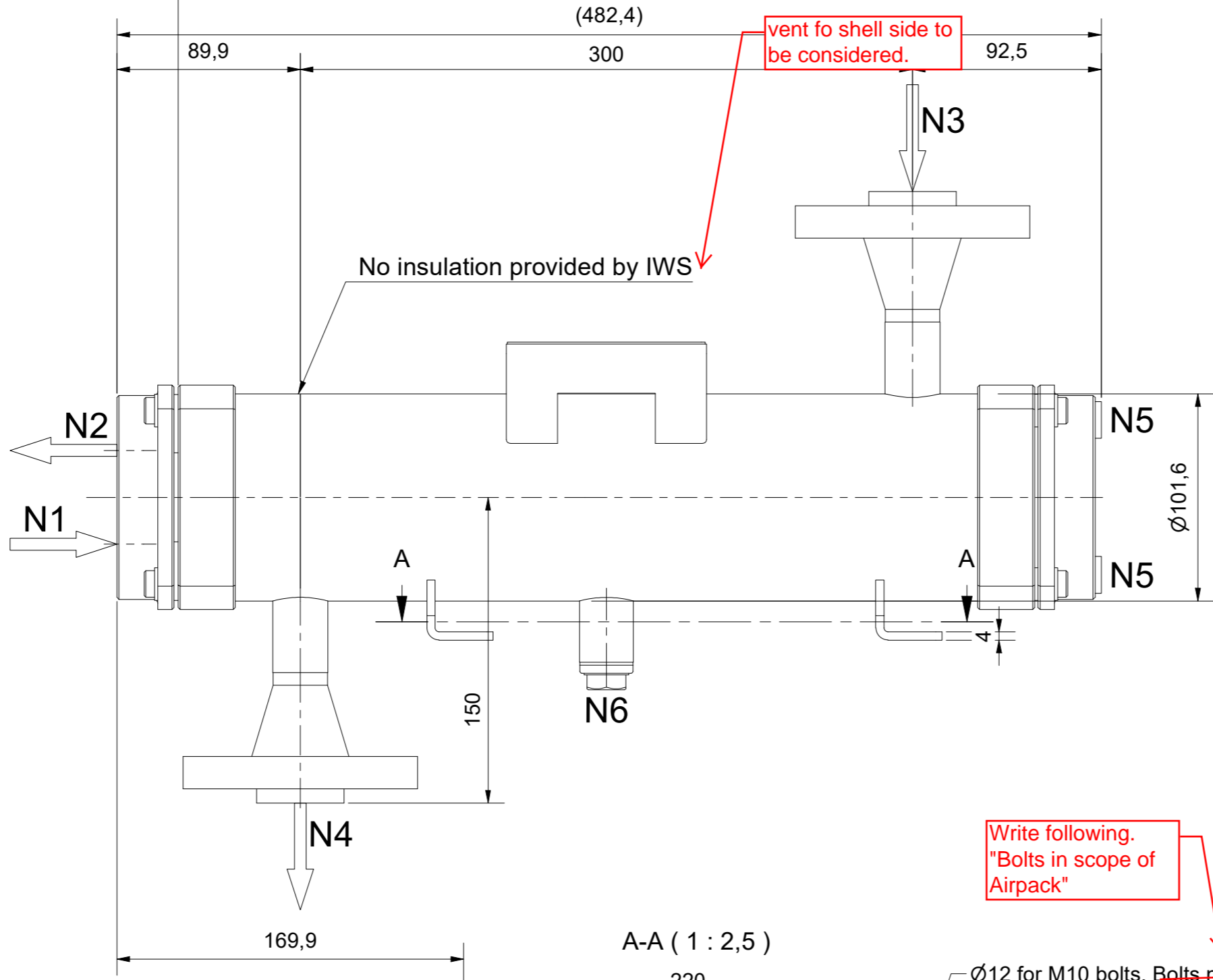
LIST OF REVISED PAGES

Rev. Page	01	02	03	04	05	Rev. Page	01	02	03	04	05	Rev. Page	01	02	03	04	05	Rev. Page	01	02	03	04	05
1	X	X	X			26						51						76					
2	X	X	X			27						52						77					
3	X	X	X			28						53						78					
4		X	X			29						54						79					
5			X			30						55						80					
6						31						56						81					
7						32						57						82					
8						33						58						83					
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15						40						65						90					
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17						42						67						98					
18						43						68						ATTACHMENT					
19						44						69						1					
20						45						70						2					
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22						47						72						4					
23						48						73						5					
24						49						74						6					
25						50						75						7					

Nozzle Table / Stützentabelle		
No. / Nr.	Function / Funktion	Size / Größe
N1	Tubeside In	G 3/4" - integrated in header
N2	Tubeside Out	G 3/4" - integrated in header
N3	Shellside In	ASME B16.5 - 3/4" - Class 600 - WNRF - Schedule 80
N4	Shellside Out	ASME B16.5 - 3/4" - Class 600 - WNRF - Schedule 80
N5	Tubeside Drain/Vent	G 1/4" - integrated in header
N6	Shellside Drain	G 1/2"

All required special tools for lifting of this equipment is in vendor's scope of supply. (such as spreader bar, shackle, wire,...)

Bundle removable to both sides.
Bundle length = 444mm.



test pressure shall be 1.5 times of MAWP.

Write following. "Bolts in scope of Airpack"

Ø12 for M10 bolts. Bolts not in scope of IWS.

Add tag number of cooler to nameplate.

Add tag number and fill weight.

Add fill and operating weight.

Design Parameters		
Design Bedingungen		
TEMA Class/Type	Class C - Type BEW	
Mech. Design Code	ASME VIII Div.1:2023	
Code Case(s)	none	
Lethal Service	no	
Impact Test Req.	no per UHA-51 (d)	
PWHT	none	
Loadings acc. UG-22	(a), (b), (d)(2), (j)	
Wind Loads	none considered	
Seismic Loads	none considered	
Operating Medium	Tubeside	Shellside
	Water	Air
Volume (V)	0,8L	1,7L
Design Pressure (MAWP)	-1/10bar(g)	-1/39bar(g)
Test Pressure (PT)	14,3bar(g)	64,35bar(g)
Design Temperature (AT)	-10/100°C	-10/175°C
Corrosion Allowance	0mm	0mm
Number of Passes	Tubeside	Shellside
	2	1
Weld Joint Efficiency	0,85	

Job Information		
Auftragsinformationen		
IWS Item No.	704233207	Certification / Registration
IWS Project No.	104234198	
Serial No.	See Table	ASME VIII Div. 1
Customer Item No.	See Table	
Corresponding Documents		General Information
Strength Calculation	BZ-704233207	
Weld- and Test Plan	SZ-704233207	
Parts List	Sheet 2	
Empty Weight		ca.15kg

Revisions				
Rev.	Reason for Issue	Date	Drawn	Checked
R03	Issued for review. Changed shell flange ring.	23.04.2024	K.Kraft	O.Latta
R02	Issued for review	19.01.2024	K.Kraft	O.Latta

IWS-Monjé HE GmbH			
Type	Shellside	bar	
PS	-1/10	-1/39	bar(g)
V	0,8	1,7	L
TS	-10/100	-10/175	°C
PT	14,3	64,35	bar(g)
Fluidgroup	2	2	Fluidgruppe

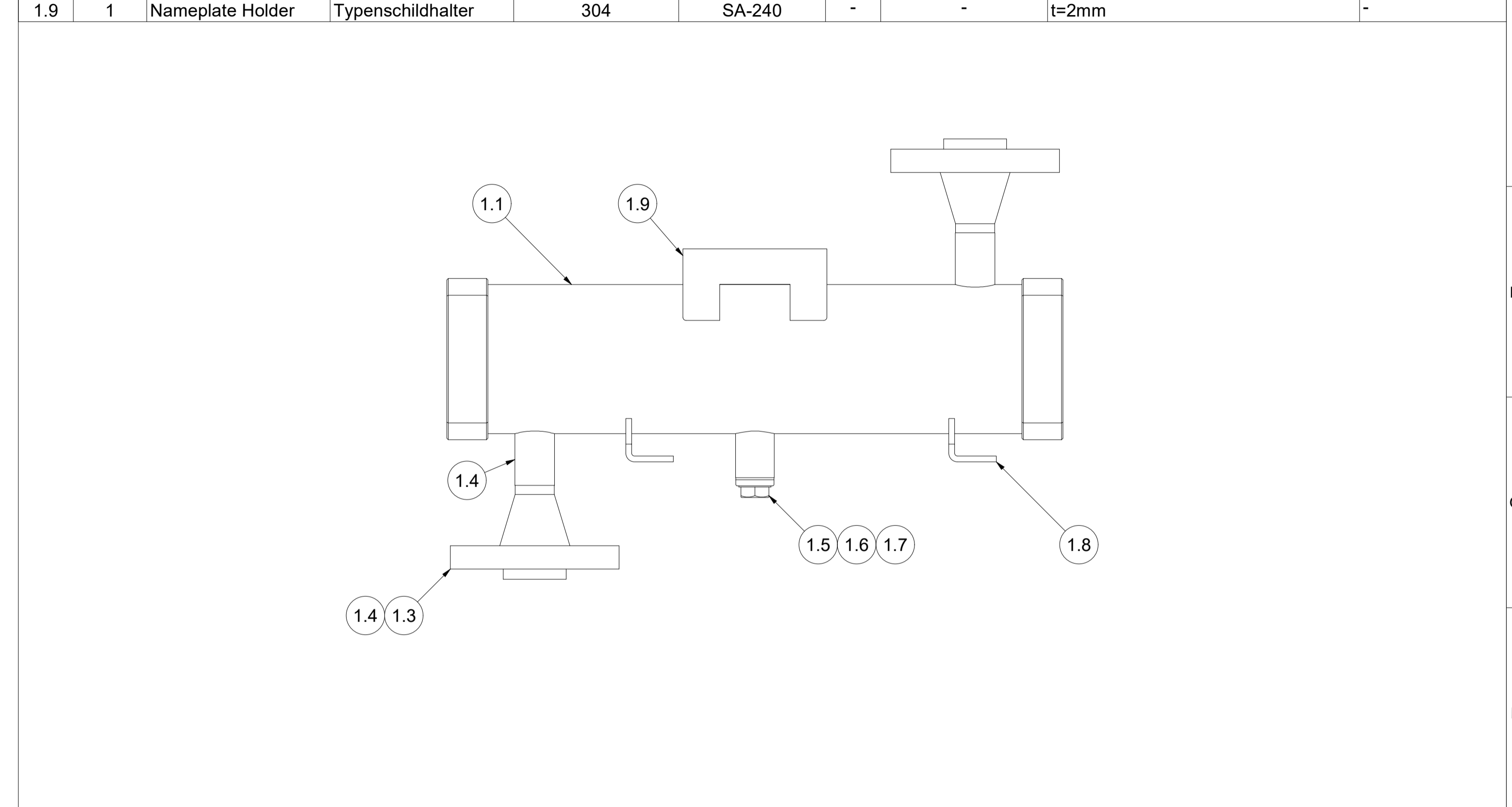
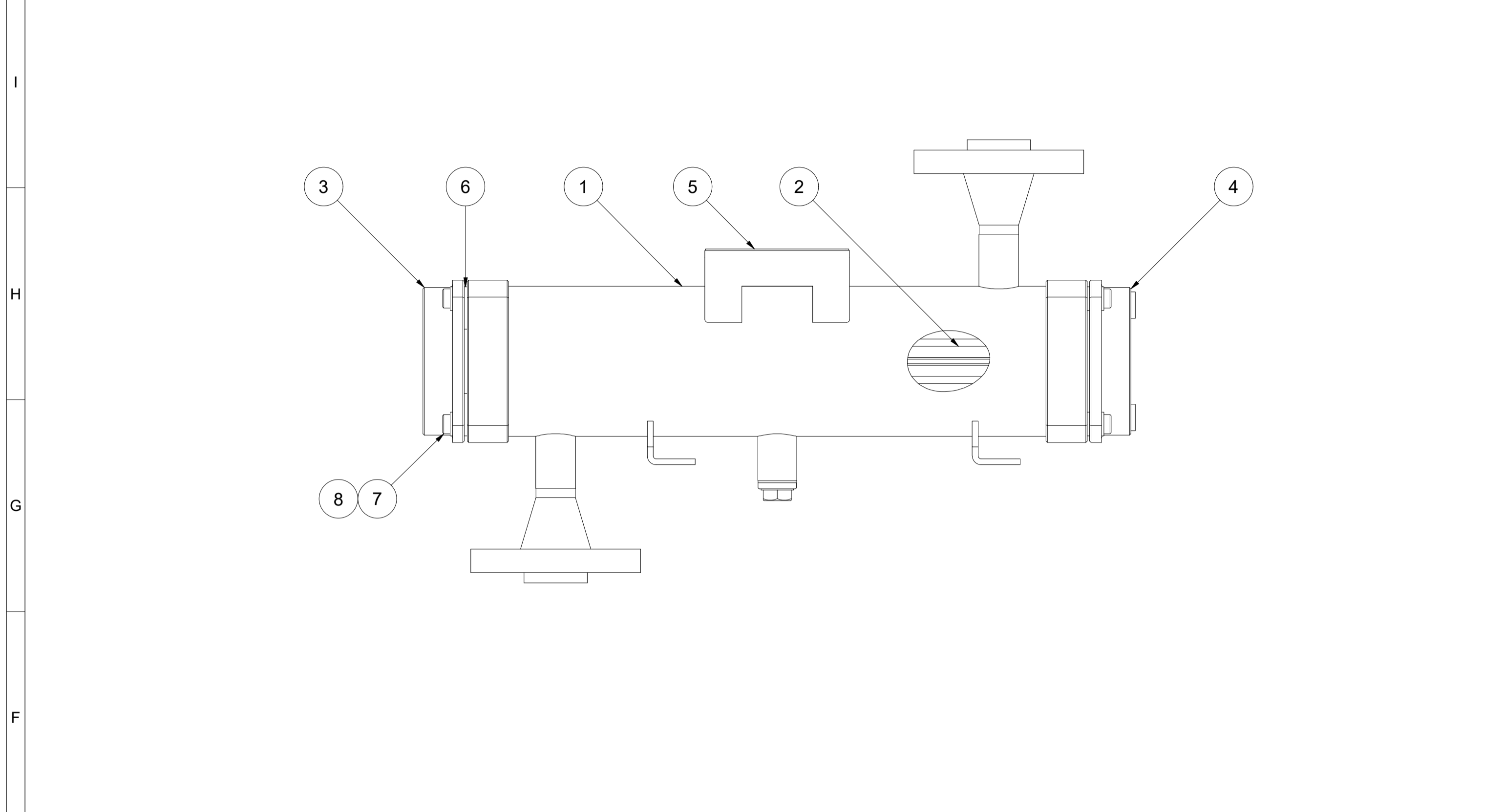
IWS-MONJÉ		HEAT EXCHANGERS	
Manufacturer	901050003	Built	2024
PS	-1/10	-1/39	bar(g)
V	0,8	1,7	L
TS	-10/100	-10/175	°C
PT	14,3	64,35	bar(g)
Fluidgroup	2	2	Fluidgruppe

Item	Item No.	Serial No.
Intercooler	320-KE-020-001	231135-1
Aftercooler	320-KE-020-002	231135-2

IWS-MONJÉ		HEAT EXCHANGERS	
Description		Intercooler / Aircooler	
Drawing No.		Z-704233207	
Tolerances in acc. to EN ISO 13920-DH and ASME VIII Div. 1 UW-33, UW-35, UG-79, UG-80, UG-81			
Scale	1 : 2,5	Format	A2
Page	1	Blatt	1

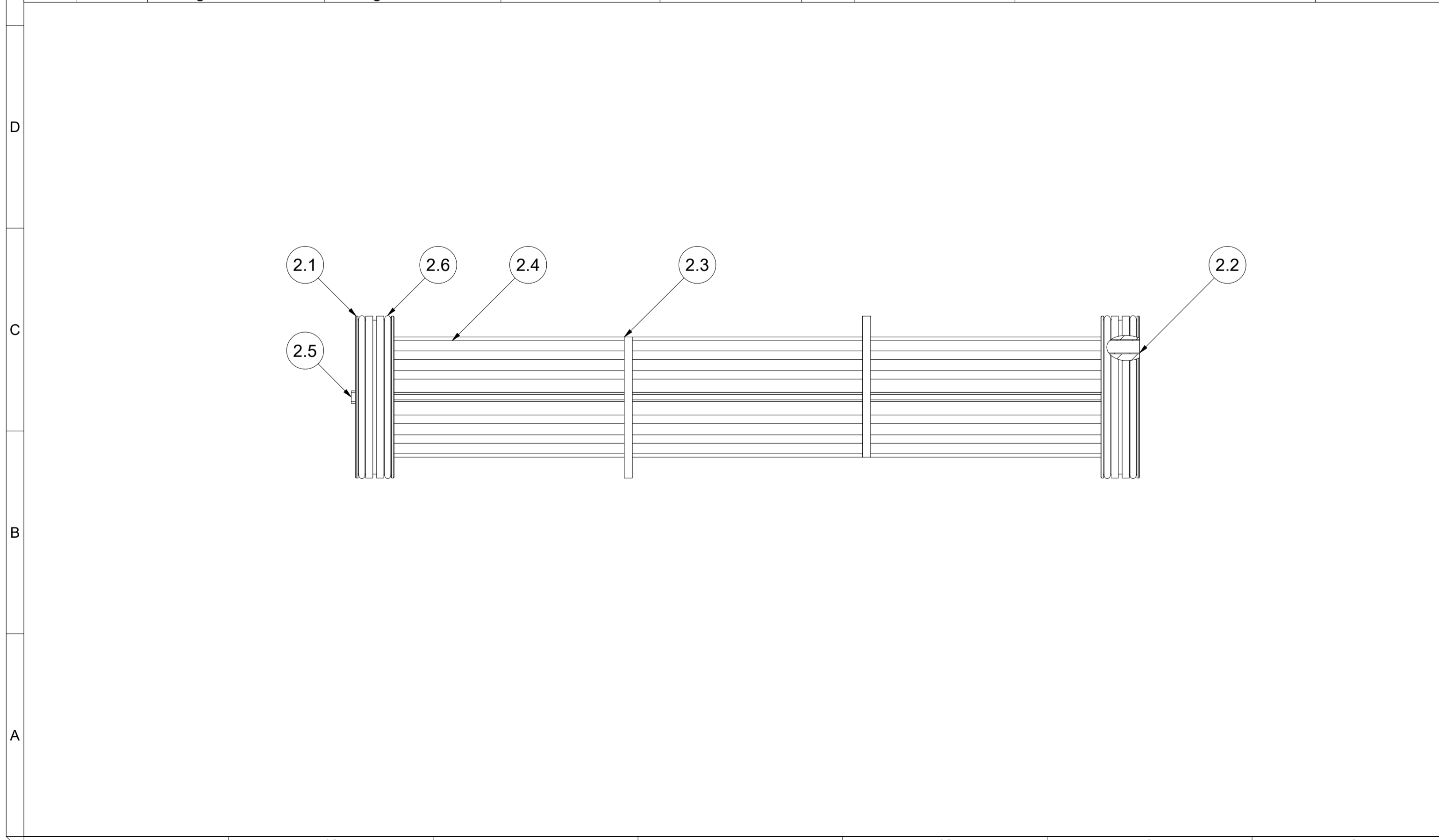
14	13	12	11	10	9	8	7	6	5	4	3	2	1						
Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen	Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen
1	1	Shell Assembly	Mantel Baugruppe	-	-	-	-	-	-	1.1	1	Shell	Mantel	TP316	SA-312	3.1	-	Ø101,6mm x 4,5mm x 379,8mm	-
2	1	Bundle Assembly	Bündel Baugruppe	-	-	-	-	-	-	1.2	2	Flanging	Flanschring	F316	SA-182	3.1	-	K10-2881-02	-
3	1	Inlet/Outlet Bonnet	Einlass-/Auslasskammer	304	SA-240	3.1	-	KL10-F-14	-	1.3	2	Welding Neck Flange	Vorschweißflansch	F316	SA-182	3.1	ASME B16.5	3/4" Class 600 RF	-
4	1	Return Bonnet	Umlenkammer	304	SA-240	3.1	-	KL10-F-15	-	1.4	2	Nozzle Pipe	Stutzenrohr	TP316	SA-312	3.1	-	Ø26,9mm x 3,9mm	-
5	1	Nameplate - IWS	Typenschild - IWS	304	-	-	-	t=1mm	-	1.5	1	Socket	Muffe	TP316	SA-312	3.1	-	G 1/2"	-
6	4	Fixing Plate	Fixierblech	304	SA-240	-	-	-	-	1.6	1	Plug	Stopfen	316	SA-182	3.1	-	G 1/2"	-
7	8	Bolt	Schraube	B8	SA-193	3.1	DIN 6912	M8 x 30	-	1.7	1	Sealing Ring	Dichtring	Aluminium	-	-	-	-	-
8	12	Washer	Scheibe	304	SA-240	-	DIN 125 A	D9	-	1.8	2	Foot	Fuß	304	SA-240	-	-	-	-
										1.9	1	Nameplate Holder	Typenschildhalter	304	SA-240	-	-	t=2mm	-

14	13	12	11	10	9	8	7	6	5	4	3	2	1						
Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen	Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen
1.1	1	Shell	Mantel	TP316	SA-312	3.1	-	-	-	1.1	1	Shell	Mantel	TP316	SA-312	3.1	-	Ø101,6mm x 4,5mm x 379,8mm	-
1.2	2	Flanging	Flanschring	F316	SA-182	3.1	-	-	-	1.2	2	Flanging	Flanschring	F316	SA-182	3.1	-	K10-2881-02	-
1.3	2	Welding Neck Flange	Vorschweißflansch	F316	SA-182	3.1	ASME B16.5	3/4" Class 600 RF	-	1.3	2	Welding Neck Flange	Vorschweißflansch	F316	SA-182	3.1	ASME B16.5	3/4" Class 600 RF	-
1.4	2	Nozzle Pipe	Stutzenrohr	TP316	SA-312	3.1	-	Ø26,9mm x 3,9mm	-	1.4	2	Nozzle Pipe	Stutzenrohr	TP316	SA-312	3.1	-	Ø26,9mm x 3,9mm	-
1.5	1	Socket	Muffe	TP316	SA-312	3.1	-	G 1/2"	-	1.5	1	Socket	Muffe	TP316	SA-312	3.1	-	G 1/2"	-
1.6	1	Plug	Stopfen	316	SA-182	3.1	-	G 1/2"	-	1.6	1	Plug	Stopfen	316	SA-182	3.1	-	G 1/2"	-
1.7	1	Sealing Ring	Dichtring	Aluminium	-	-	-	-	-	1.7	1	Sealing Ring	Dichtring	Aluminium	-	-	-	-	-
1.8	2	Foot	Fuß	304	SA-240	-	-	-	-	1.8	2	Foot	Fuß	304	SA-240	-	-	-	-
1.9	1	Nameplate Holder	Typenschildhalter	304	SA-240	-	-	t=2mm	-	1.9	1	Nameplate Holder	Typenschildhalter	304	SA-240	-	-	t=2mm	-



Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen
2.1	2	Tubesheet	Rohrplatte	316L	SA-182	3.1	-	Ø91,8mm x 22mm	-
2.2	36	Tube	Rohr	TP316L	SA-312	3.1	-	Ø8mm x 0,5mm	-
2.3	2	Baffle	Umlenkblech	Aluminium	-	-	-	t=4,5mm	-
2.4	1	Fin	Rippe	Aluminium	-	-	-	-	-
2.5	1	Divider Gasket	Trennsteg	PE-1000	-	-	-	-	-
2.6	4	O-Ring	O-Ring	Viton	-	-	-	-	-

Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen
2.1	2	Tubesheet	Rohrplatte	316L	SA-182	3.1	-	Ø91,8mm x 22mm	-
2.2	36	Tube	Rohr	TP316L	SA-312	3.1	-	Ø8mm x 0,5mm	-
2.3	2	Baffle	Umlenkblech	Aluminium	-	-	-	t=4,5mm	-
2.4	1	Fin	Rippe	Aluminium	-	-	-	-	-
2.5	1	Divider Gasket	Trennsteg	PE-1000	-	-	-	-	-
2.6	4	O-Ring	O-Ring	Viton	-	-	-	-	-



Revisions				
Rev.	Reason for Issue	Date	Drawn	Checked
R03	Issued for review. Changed shell flange ring.	23.04.2024	K.Kraft	O.Latta
R02	Issued for review	19.01.2024	K.Kraft	O.Latta

IWS Type Code	Description
RPL 400/100-36-2-2/3-SS/AL-IW	Intercooler / Aircooler

IWS Typenschlüssel	Zeichnungsnummer
Z-704233207	

Tolerances in acc. to EN ISO 13920-DH and ASME VIII Div. 1 UW-33, UW-35, UG-79, UG-80, UG-81

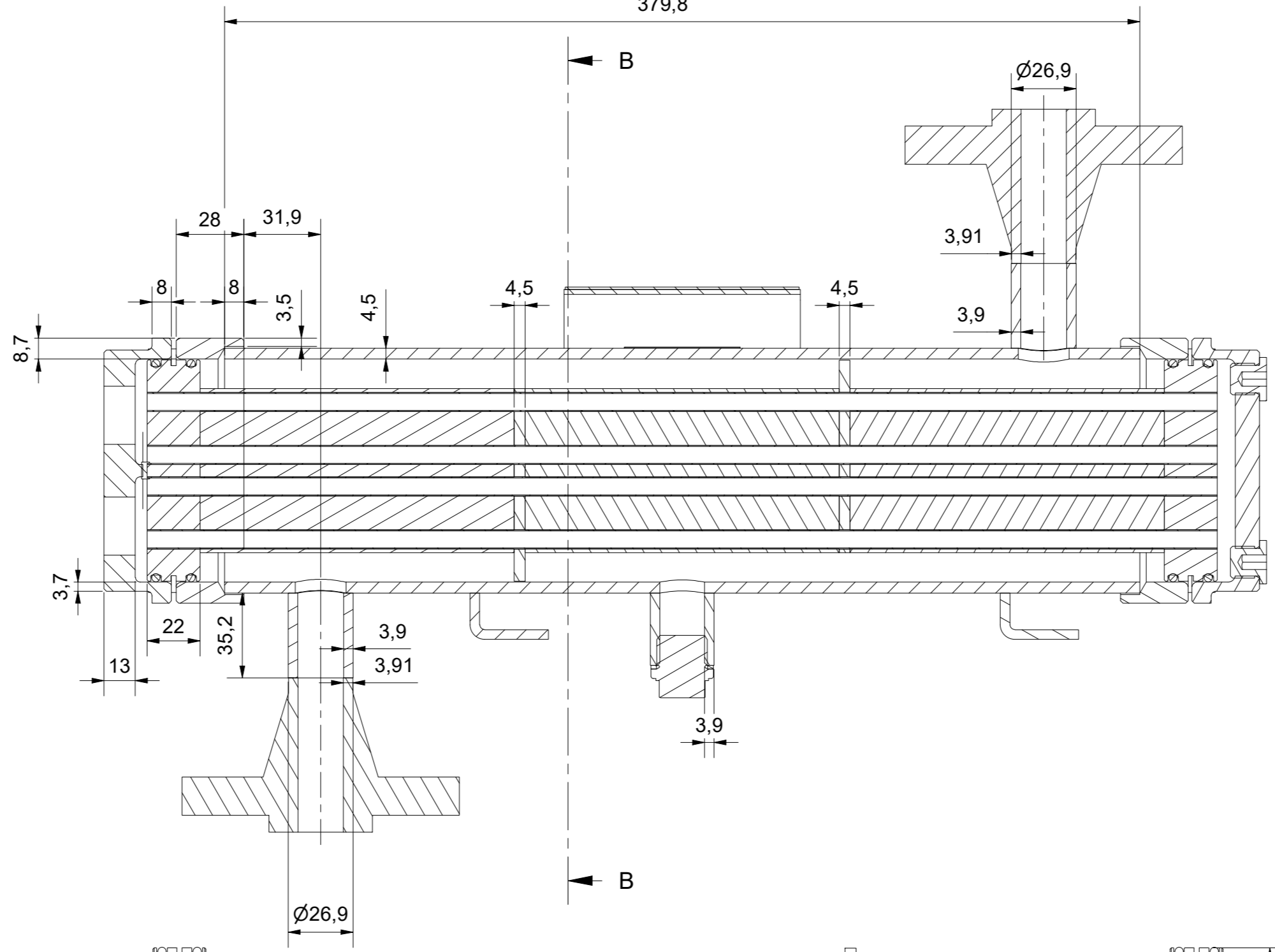
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Format	A1
Page	2

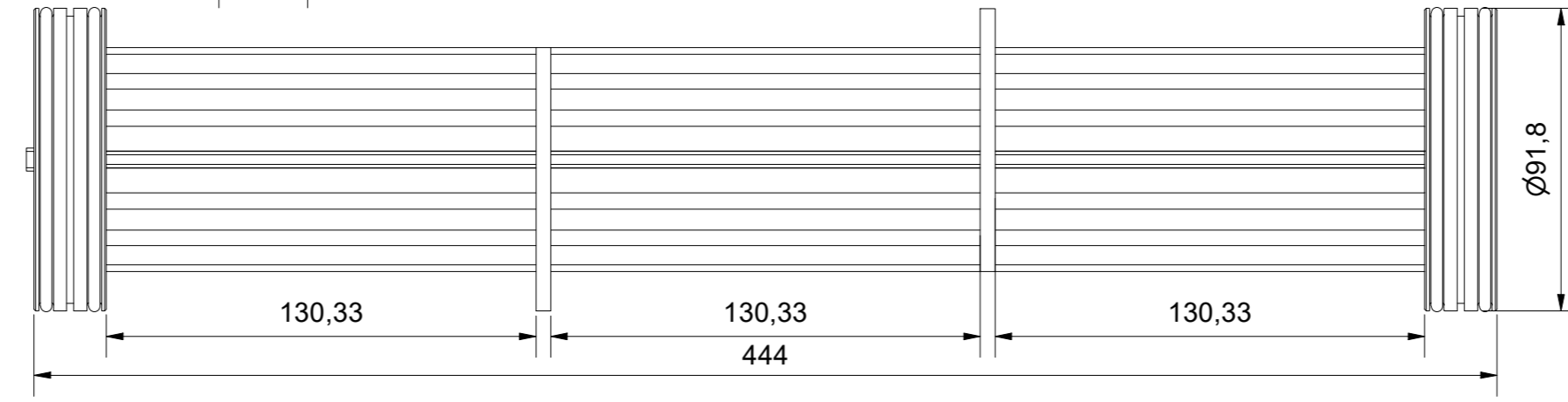
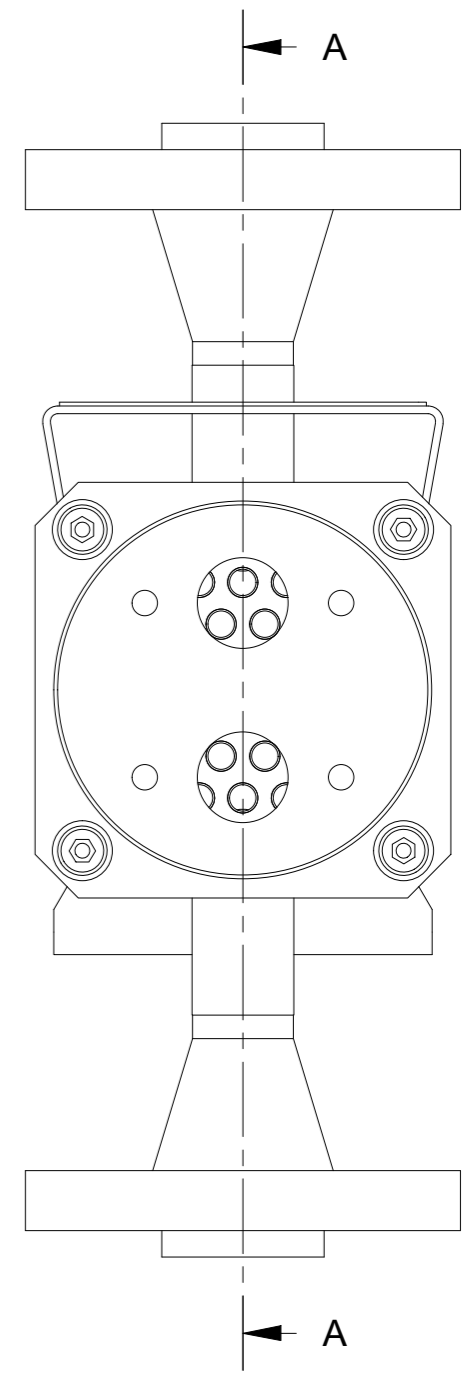
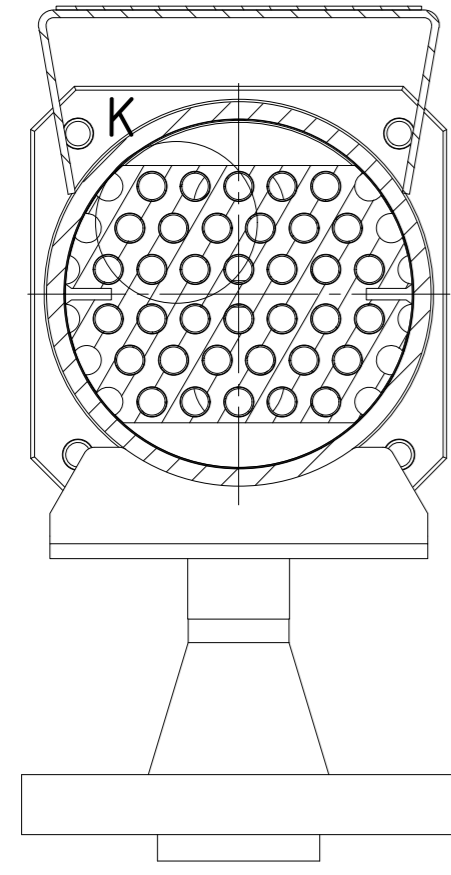
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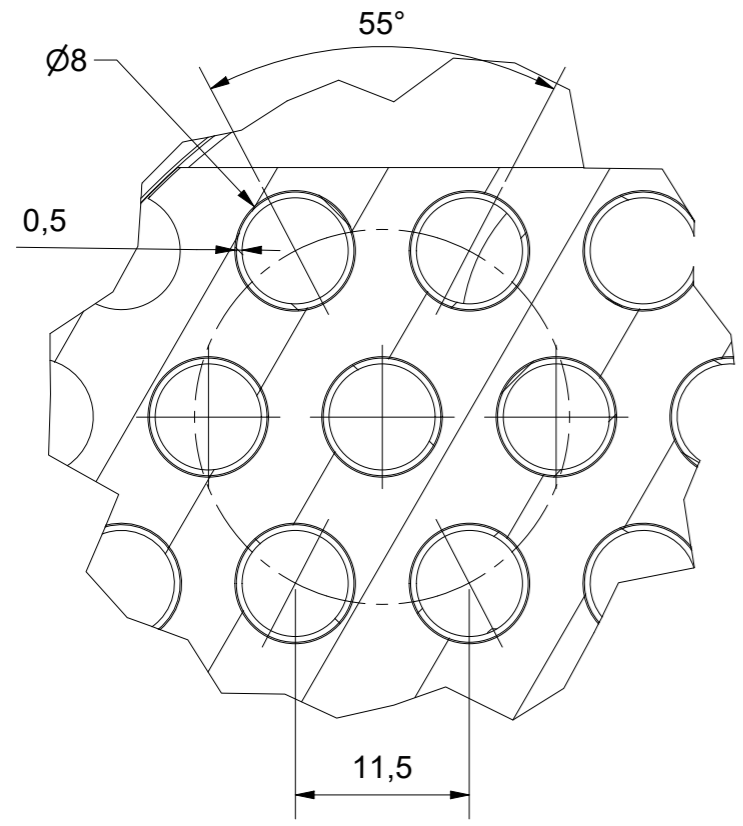
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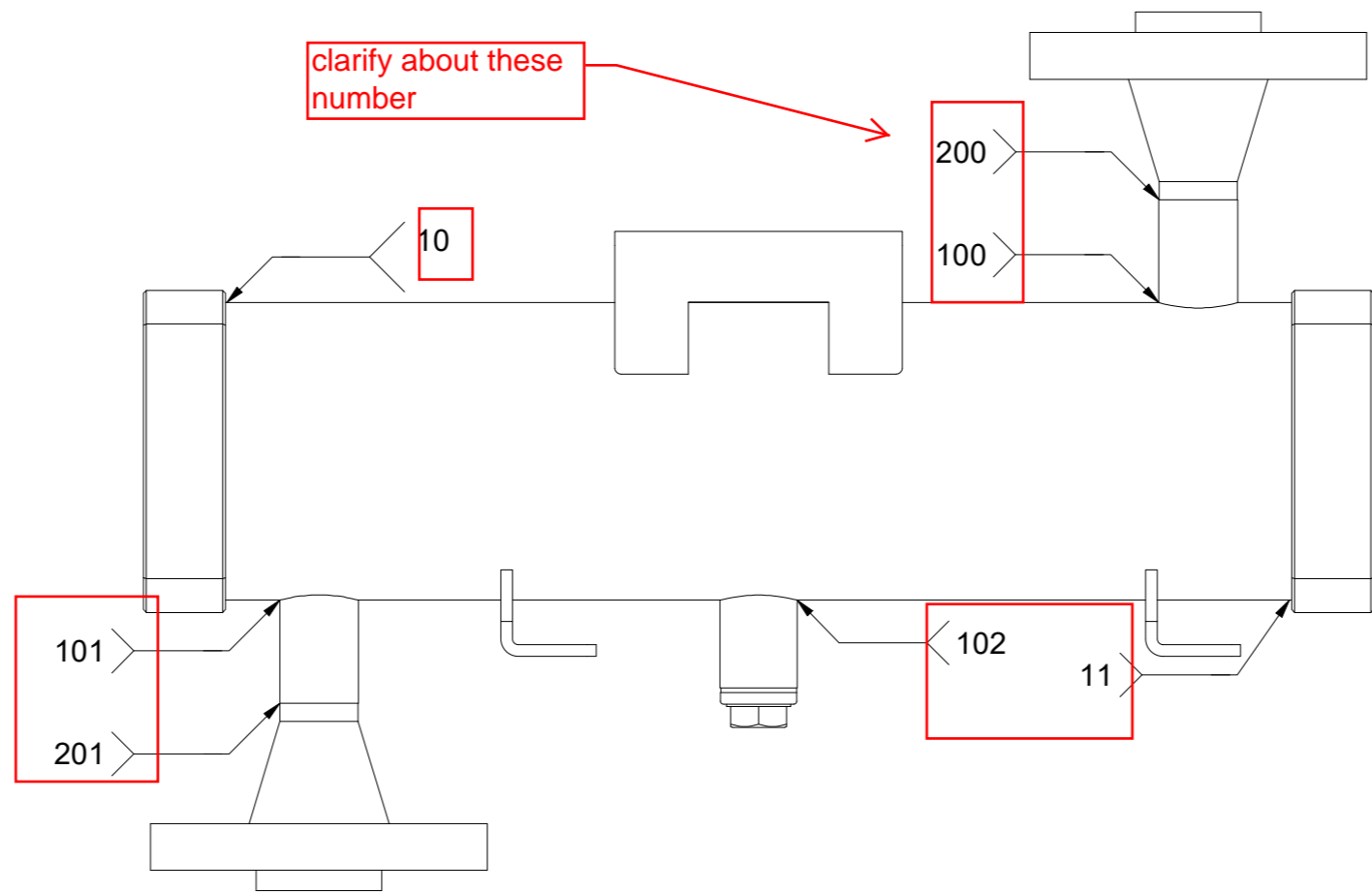
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K (2:1)



clarify about these number



Revisions
Revisionen

Rev.	Rev.	Reason for Issue Grund der Ausgabe	Date Datum	Drawn Gezeichnet	Checked Geprüft	Approved Freigegeben
R03		Issued for review. Changed shell flange ring.	23.04.2024	K.Kraft	O.Latta	S.Monjé
R02		Issued for review	19.01.2024	K.Kraft	O.Latta	S.Monjé

IWS Type Code
IWS Typenschlüssel
RLP 400/100-36-2-2/3-SS/AL-IW

IWS-MONJÉ
HEAT EXCHANGERS
IWS-Monjé Heat Exchangers GmbH
Wittener Straße 102
44789 Bochum
Germany
www.iws-monje.com

Description
Beschreibung
Intercooler / Aircooler

Drawing No.
Zeichnungsnummer
Z-704233207

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Tolerances in acc. to EN ISO 13920-DH and ASME VIII Div. 1 UW-33, UW-35, UG-79, UG-80, UG-81

Scale Maßstab	1:2	Format	A2	Page Blatt	3
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14 13 12 11 10 9 8 7 6 5 4 3 2 1