



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	02	Page 1 of 4

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

Please note that datasheet shall be submitted for checking this doc. please submit datasheet.

- To check the DWG, it is suggested that vendor submit the created thermal file for saving time in checking of documentation.
- General arrangement, bundle drawing should be submitted, as well.
- Also a data sheet shall be submitted with below data:
- Shell and tube side fluid properties (e.g. fouling factors, viscosity, heat capacity, etc)
- Fluid flow rates and phases (shell and tube side).
- Exchanger designed duty.

code-3  
M. Vakili

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
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.

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N278	VD	6019	ME	DWG	0024	02	Page 2 of 4

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2	X	X				27						52						77					
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4		X				29						54						79					
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Nozzle Table / Stutzentabelle		
No. / Nr.	Function / Funktion	Size / Größe
N1	Tubeside In	G 3/4"
N2	Tubeside Out	G 3/4"
N3	Shellside In	ASME B16.5 - 3/4" - Class 600 - WNRF
N4	Shellside Out	ASME B16.5 - 3/4" - Class 600 - WNRF
N5	Tubeside Drain/Vent	G 1/4"
N6	Shellside Drain	G 1/2"

In nozzle table, thickness/sch., and reinforcing pad dimensions shall be specified.

Please add key plan and show the north direction.

Please mention tube bundle data:  
 -No of tubes  
 -OD  
 -thickness  
 -tube straight length  
 -pitch  
 -layout  
 -joint of tube to tubesheet  
 -baffle cut/orientation.

Please mention joint efficiencies  
 -No. of passes  
 -RT for shell/tube (full/spot)  
 -stress relieving (yes/No)  
 -Insulation

Please mention that cooler is in accordance to TEMA C and please specify the type.  
 -design code for wind and seismic calculation shall be specified.

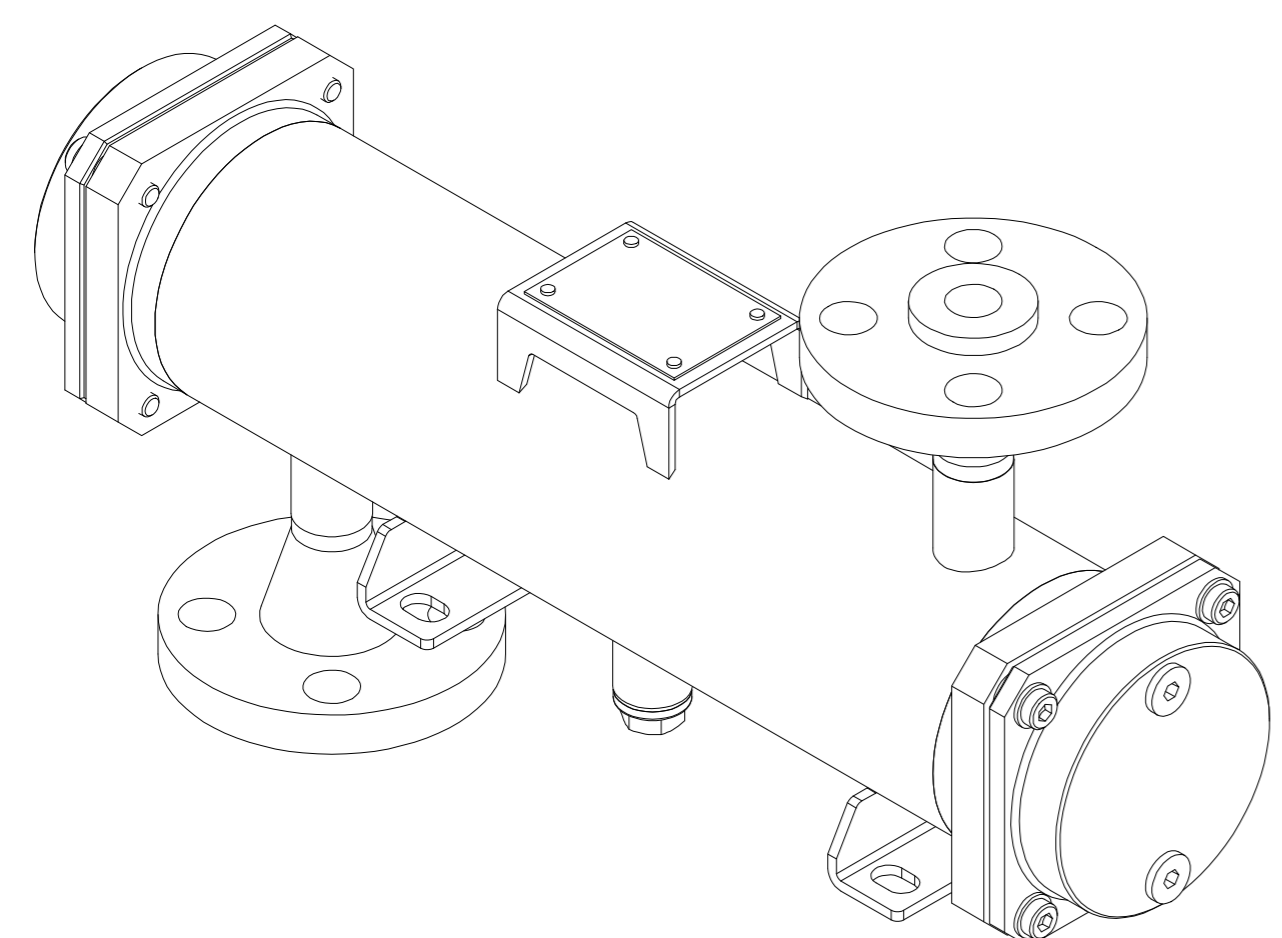
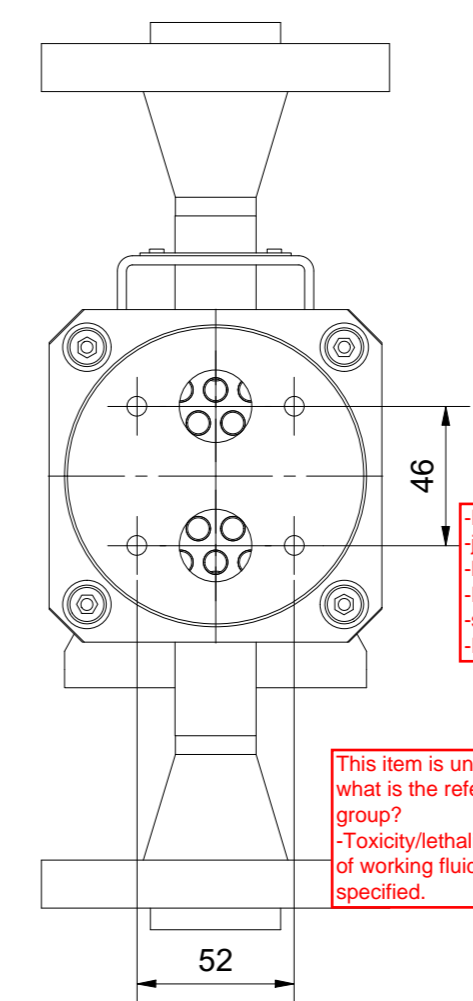
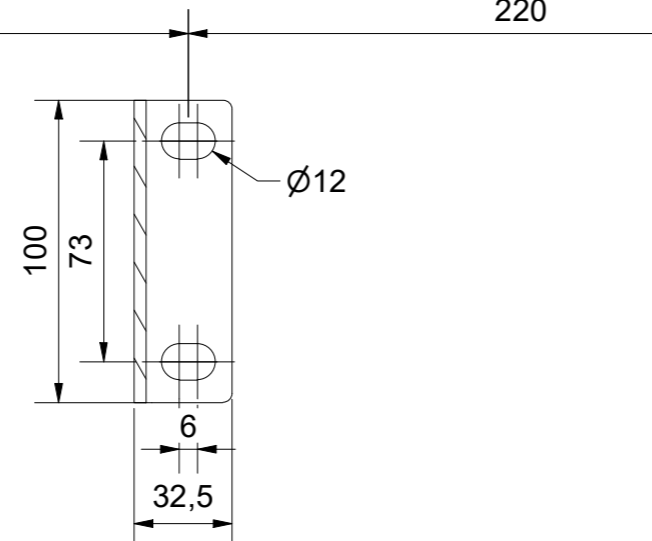
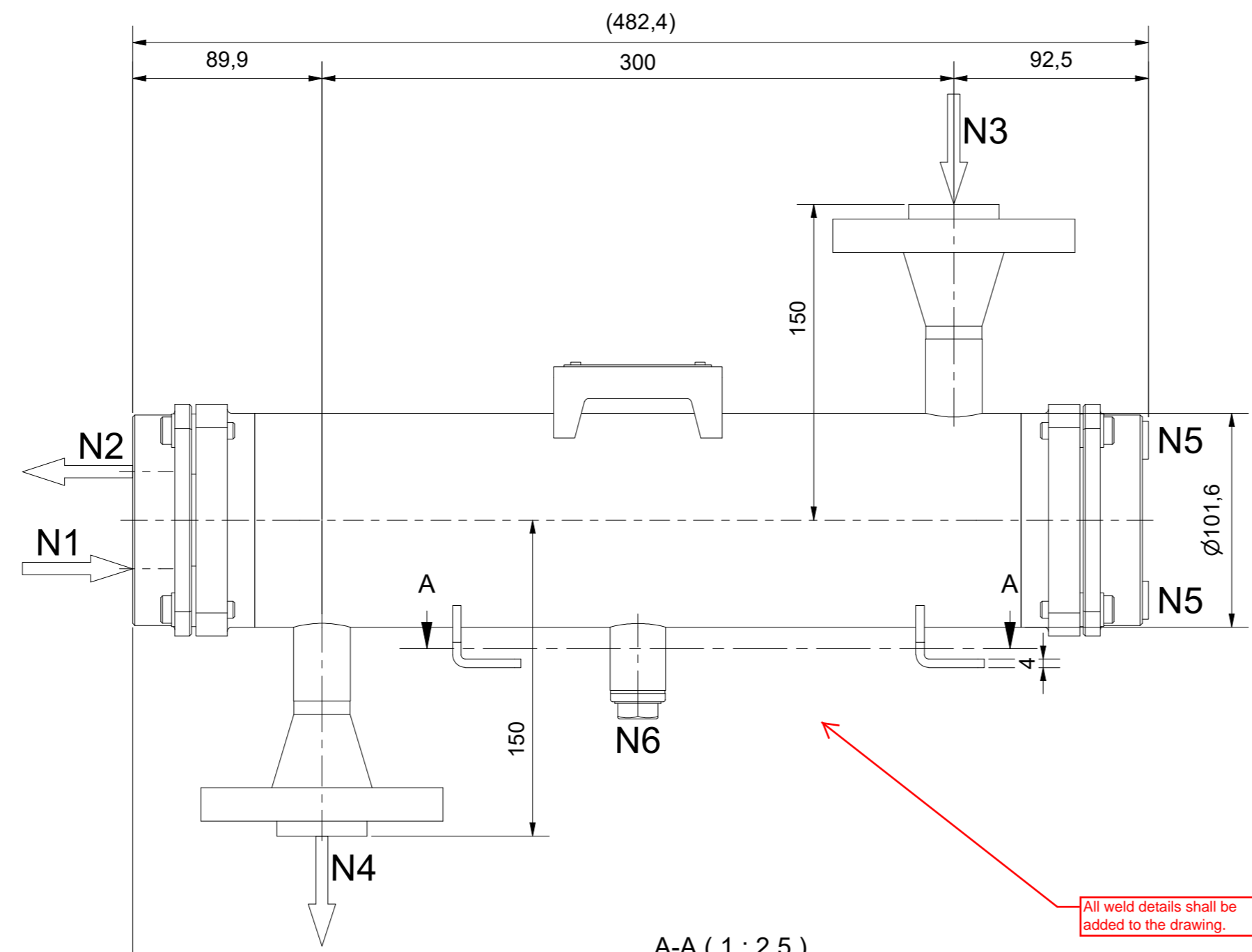
This item is unclear for us. what is the reference for fluid group?  
 -Toxicity/lethality/flammability of working fluid to be specified.

Design code for pressure test to be specified.

All weld details shall be added to the drawing.

- type of bolt and required allowable stress in tension/shear to be specified. Please mention bolts are supplied by vendor.

Is it applicable for both coolers?



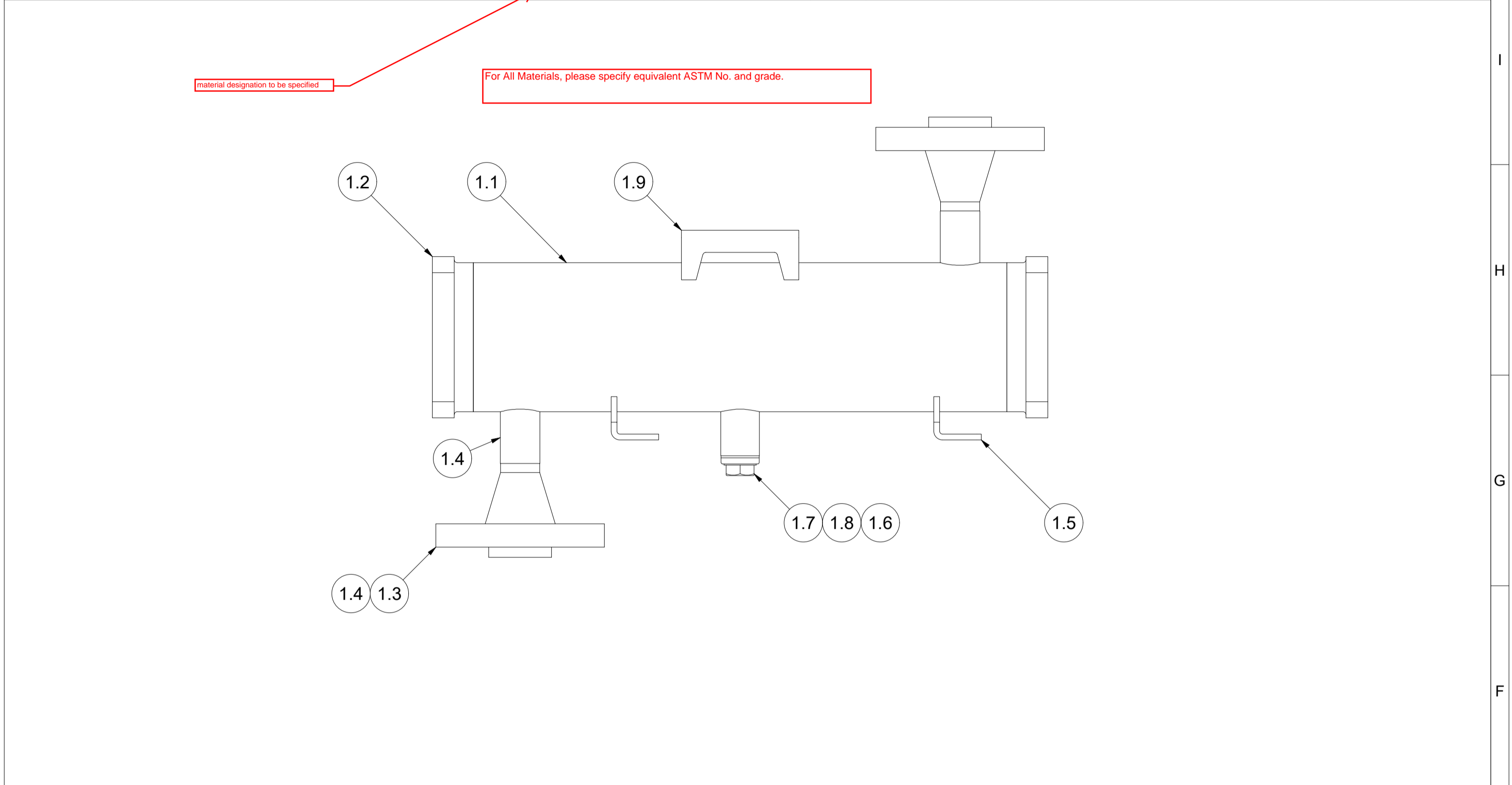
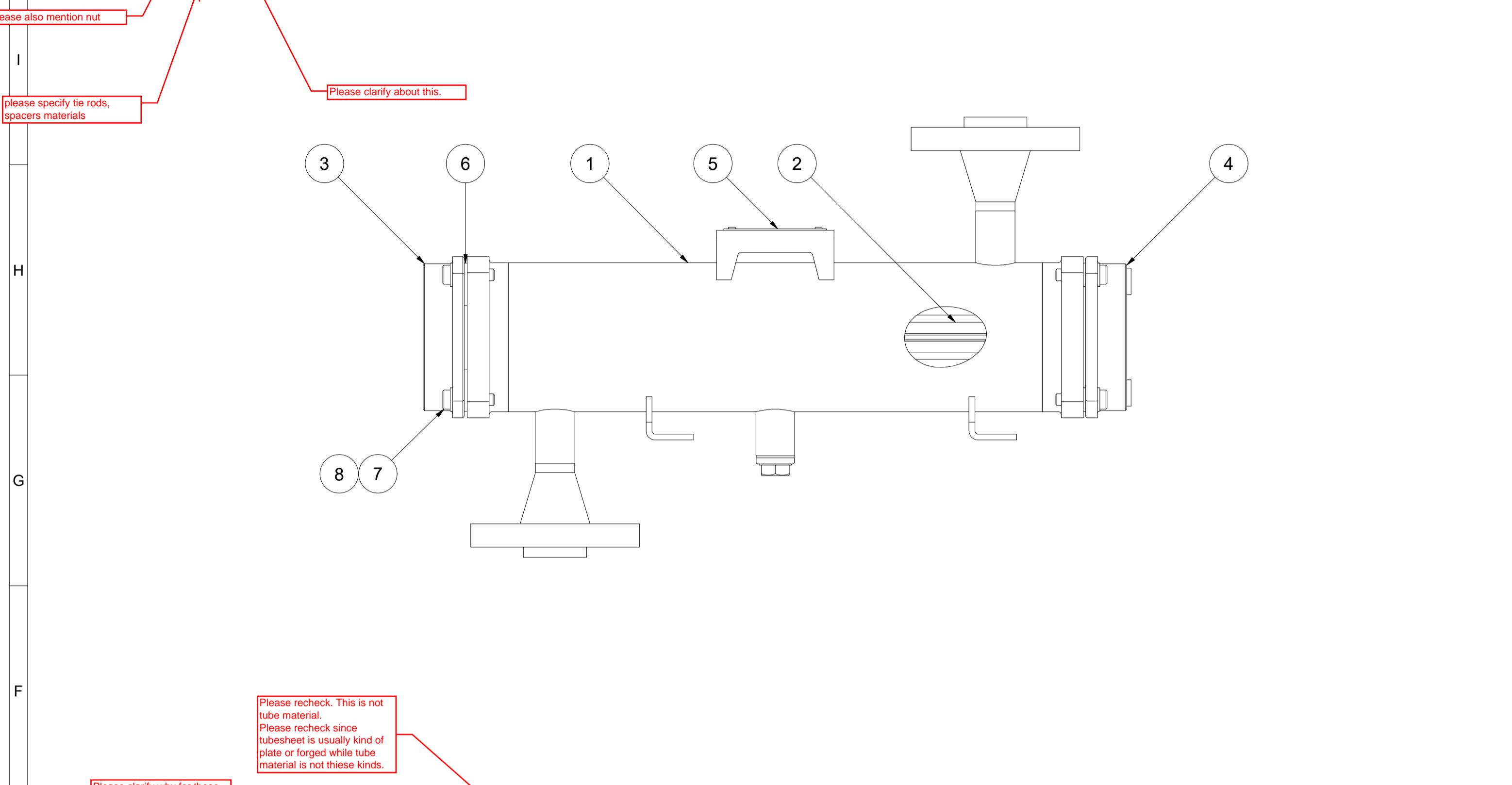
Type		Built	
KD-Nr.		2024	
No. Serie		Emptyweight	
PS		15kg	
V			
TS			
PT			
Fluidgroup			

Item	Item No.	Serial No.
Intercooler	320-KE-020-001	TBD
Aftercooler	320-KE-020-002	TBD

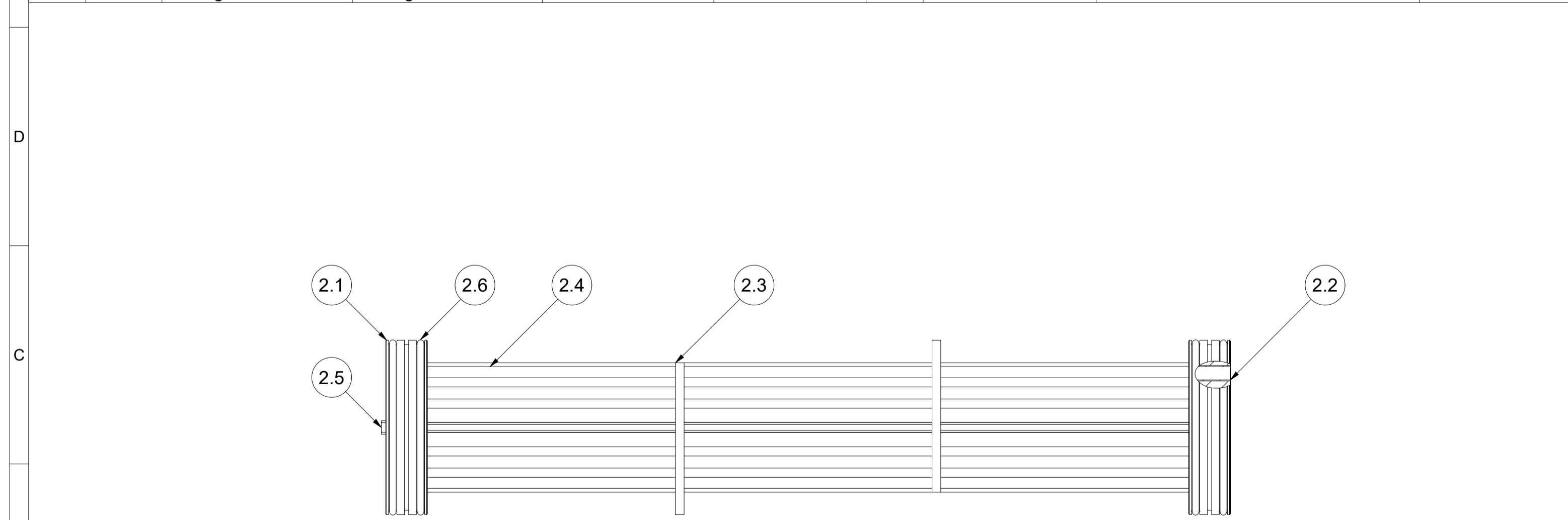
Design Parameters		Design Bedingungen	
Mech. Design Code	ASME VIII Div.1:2021	Tubeside	Shellside
Konstruktionsvorschrift		Rohrseite	Mantelseite
Operating Medium	Water	Air	
Betriebsmedium			
Fluidgroup	2	2	
Fluidgruppe			
Volume (V)	0,8L	1,7L	
Volumen			
Design Pressure (MAWP)	-1/10bar(g)	-1/39bar(g)	
Max. zul. Druck (MAWP) / (PS)			
Test Pressure (PT)	14,3bar(g)	64,35bar(g)	
Prüfdruck			
Design Temperature (AT)	-10/100°C	-10/175°C	
Zul. Betriebstemperatur (AT) / (TS)			
Corrosion Allowance	0mm	0mm	
Korrosionszuschlag			
Corresponding Documents		General Information	
Zugehörige Dokumente		Allgemeine Informationen	
Nondestructive Testing	acc. to Code	Zerstörungsfreie Prüfungen	
Surface Treatment	pickled and passivated	Oberflächenbehandlung	
Parts List	Sheet 2	Empty Weight	ca.15kg
Stückliste		Leergewicht	
Revisions			
Revisionen			
R02	Issued for review	19.01.2024	
Rev.	Reason for Issue	Date	Drawn
Rev.	Grund der Ausgabe	Datum	Gezeichnet
Checked	Approved		
Geprüft	Freigegeben		
Description			
Beschreibung			
Intercooler / Aircooler			
Drawing No.			
Zeichnungsnummer			
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	Page
Maßstab		Format	A2 Blatt
		A2	1

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	-	-	-	-	-	-
2	1	Bundle Assembly	Bündel Baugruppe	-	-	-	-	-	-
3	1	Inlet/Outlet Bonnet	Einlass-/Auslasskammer	1.4301/304	-	3.1	-	-	-
4	1	Return Bonnet	Umlenkammer	1.4301/304	-	3.1	-	-	-
5	1	Nameplate	Typenschild	Aluminium	-	-	-	-	-
6	4	Fixing Plate	Fixierblech	1.4301/304	-	-	-	-	-
7	8	Bolt	Schraube	A2-70	-	3.1	DIN 6912	M8 x 30	-
8	12	Washer	Scheibe	A2-70	-	-	DIN 126	D9	-

Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen
1.1	1	Shell	Mantel	1.4401/316	-	3.1	-	-	-
1.2	2	Flanging	Flanschring	1.4401/316	-	3.1	-	-	-
1.3	2	Welding Neck Flange	Vorschweißflansch	1.4401/316	-	3.1	-	-	-
1.4	2	Nozzle Pipe	Stutzenrohr	1.4401/316	-	3.1	-	-	-
1.5	2	Foot	Fuß	Stainless Steel	-	-	-	-	-
1.6	1	Socket	Muffe	A2	-	3.1	-	-	-
1.7	1	Plug	Stopfen	A2	-	-	-	-	-
1.8	1	Sealing Ring	Dichtring	Aluminium	-	-	-	-	-
1.9	1	Nameplate Holder	Typenschildhalter	Stainless Steel	-	-	-	-	-



Pos.	Qty. / Menge	Description	Bezeichnung	Material / Werkstoff	Material Standard / Werkstoff Norm	Cert. / Zgn.	Standard / Norm	Dimensions / Abmessungen	Notes / Bemerkungen
2.1	2	Tubesheet	Rohrplatte	1.4404/316L	-	3.1	-	-	-
2.2	36	Tube	Rohr	1.4404/316L	-	3.1	-	-	-
2.3	2	Baffle	Umlenkblech	Aluminium	-	-	-	-	-
2.4	1	Fin	Rippe	Aluminium	-	-	-	-	-
2.5	1	Divider Gasket	Trennsteg	PE-1000	-	-	-	-	-
2.6	4	O-Ring	O-Ring	Viton	-	-	-	-	-



Please provide drawings for specifying:  
 shell thickness, tubesheet, flanges, covers details (thickness, dimensions),  
 tube arrangement/layout, baffle details, tube bundle assembly, baffle  
 spacing.

Revisions				
Rev.	Reason for Issue	Date	Drawn	Checked/Approved
R02	Issued for review	19.01.2024		
Rev.	Grund der Ausgabe	Datum	Gezeichnet	Geprüft / Freigegeben
Description		Intercooler / Aircooler		
Drawing No.		[Redacted]		
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	A1
Matlab			Page	2