



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

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

-To check the DWG, the Heat Exchanger DS (including operation data), PFD and HMB are needed. DWG will be checked after sending the requested documents.
-Thermal design, general arrangement, bundle drawing should be submitted.

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
01	13-12-2023	Issued for Information	S.K.	J.J.	S.K.

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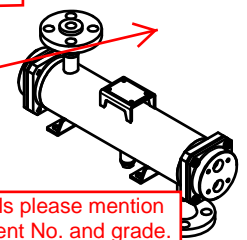
	6	5	4	3	2		
	Shell	Bonnet/Cover	Tubesheet	Inner tube	Fin	Baffle	Retaining ring
Material	min. 1.4401 (3.1)	1.4301 AD-W2 (3.1)	1.4404 AD-W2 (3.1)	1.4404 AD-W2 (3.1)	Aluminium	Aluminium	Stainless steel
Paint	passivated	-	-	-	-	-	-

detail drawing shall be submitted.

Please recheck. This is not tube material.

Please clarify why for these elements same type material as tubesheet, tube, (SS) is not used. Please use SS.

Please specify the material.



Please add key plan and show the north direction.

For all materials please mention ASTM equivalent No. and grade.

Please mention wind/seismic data as per MR

Please mention that design is as per ASME sec VIII div.1 and TEMA C

Please mention TEMA type

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

Also please specify working pressure and temperature.
 - MDMT, MAWP values shall be specified.
 - Corrosion allowance to be specified.
 - requirements for PWHT, RT grade, joint efficiency shall be specified.
 - Toxicity/lethality/flammability of working fluid to be specified.
 - Design code for exchanger and design code for wind and seismic calculation shall be specified.
 - requirement for insulation or fireproofing to be clarified.
 - Nozzle table to be added and all required data such as nozzle size, thickness/sch, rating, flange type, flange face, reinforcing pad dimensions shall be specified.

Part list to be added to the drawing and all components with their material/dimension/weights to be specified in part list.

please clarify that coolers will be on skid (it means coolers will not be installed on concrete foundation directly). (No GAD is received)

- type of bolt (setting/anchor bolt) and required allowable stress in tension/shear to be specified. if setting bolt to be used; its to be supplied by vendor and setting bolt length to be specified on drawing.

Please clarify. Is this drawing applicable to both inter /after cooler? Please note that design pressure of intercooler as per P&ID is different

Required distance to remove the bundle > 444 (both sides)

All weld details shall be added to the drawing.

-Please mention
 -MAWP of both sides
 -corrosion allowance of both sides
 -joint efficiencies
 -No. of passes
 -RT for shell/tube (full/spot)
 -stress relieving (yes/no)
 -Insulation

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 weight (erected, test, operating)

material of bolts, nuts, and gaskets to be mentioned.

please specify tie rods, spacers materials

For nozzles, sch., material of nozzle flange, flange type (WN/LWN), and projection to be specified.

please specify material of supports

	Shellside	Tubeside
Design pressure, P _d [bar]	barg or Bara?	-1/10
Test pressure, P _T [bar]	64,35	14,3
Design temperature, T _S [°C]	-10/175	-10/100
Volume [dm ³]	1,7	0,8
	M1/M2=ASME B16.5-3/4" -	R1/R2=G3/4"
	case of tube rupture shall be clarified.	
Vent/Drain	N1=1xG1/2"	N2=2xG1/4"

SURFACE QUALITY DIN ISO 1302	GENERAL TOLERANCE ISO 2768-v ISO 13920-CF	Scale: 1:2.5	WEIGHT: 15 kg
		Material: - (3.1)	Format: A3
		Heat exchanger K10-FEV-422 L400	
		K10-3186	
901050002		1	
Autodesk Inventor 2015		File: K10-3186.idw	

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