



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



Line List

Document No. 17735-61

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**Airpack B.V. - Air Compressor –
Integrated Methanol and Ammonia Plant
17735-COM Line List (K020)**

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
01	19-12-2023	Issued for Approval	S.K.	S.K.	J.J.

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Line no.	Line description	P&ID Number	Line size	Schedule	Ends Note 7	Pipe material Note-2	Flange as per ASME B16.5	Flange Material Note-2	Operating press. Max.	Design press.	Operating temp.	MDMT	Design temp.	Insulation	Tie in Point	Type of insulation
NITROGEN GENERATOR U70-D-0013A/B																
U70-6"-IA-17028-1CG0U	Package U70-U-0003 Train A inlet	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	TP-001	N/A
U70-6"-IA-17029-1CG0U	Pre-Filter U70-D-011A/B inlet	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17030-1CG0U	Pre-Filter U70-D-011A/B outlet	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17031-1CG0U	Pre-filter U70-D-011A/B to Generator U70-D-0013A/B inlet	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17032-1CG0U	Generator U70-D-0013A inlet	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17033-1CG0U	Generator U70-D-0013B inlet	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17034-1CG0U	Generator U70-D-0013A blow-off	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17035-1CG0U	Generator U70-D-0013B blow-off	U70-PD-D-3487407 sh. No. 3	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17036-1CG0U	Generator U70-D-0013A outlet	U70-PD-D-3487407 sh. No. 3	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17037-1CG0U	Generator U70-D-0013B outlet	U70-PD-D-3487407 sh. No. 3	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17038-1CG0U	Generator U70-D-0013A/B outlet	U70-PD-D-3487407 sh. No. 3	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17039-1CG0U	Nitrogen filter U70-D-015A/B inlet	U70-PD-D-3487407 sh. No. 3	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17040-1CG0U	Nitrogen filter U70-D-015A/B outlet	U70-PD-D-3487407 sh. No. 3	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
NITROGEN GENERATOR U70-D-0013C/D																
U70-6"-IA-17041-1CG0U	Package U70-U-0003 Train B inlet	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	TP-001	N/A
U70-6"-IA-17042-1CG0U	Pre-Filter U70-D-011C/D inlet	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17043-1CG0U	Pre-Filter U70-D-011C/D outlet	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17044-1CG0U	Pre-filter U70-D-011C/D to Generator U70-D-0013C/D inlet	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17045-1CG0U	Generator U70-D-0013C inlet	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17046-1CG0U	Generator U70-D-0013D inlet	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17047-1CG0U	Generator U70-D-0013C blow-off	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-6"-IA-17048-1CG0U	Generator U70-D-0013D blow-off	U70-PD-D-3487407 sh. No. 4	6"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17049-1CG0U	Generator U70-D-0013C outlet	U70-PD-D-3487407 sh. No. 4	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17050-1CG0U	Generator U70-D-0013D outlet	U70-PD-D-3487407 sh. No. 4	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17051-1CG0U	Generator U70-D-0013C/D outlet	U70-PD-D-3487407 sh. No. 4	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17052-1CG0U	Nitrogen filter U70-D-015C/D inlet	U70-PD-D-3487407 sh. No. 4	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17053-1CG0U	Nitrogen filter U70-D-015C/D outlet	U70-PD-D-3487407 sh. No. 4	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
MIXING VESSEL U70-D-0071A																
U70-4"-N-17054-1CG0U	To Mixing vessel U70-D-0071A	U70-PD-D-3487407 sh. No. 5	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17055-1CG0U	From mixing vessel U70-D-0071A	U70-PD-D-3487407 sh. No. 5	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17056-1CG0U	blow-off	U70-PD-D-3487407 sh. No. 5	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	TP-002	N/A
MIXING VESSEL U70-D-0071B																
U70-4"-N-17057-1CG0U	To Mixing vessel U70-D-0071B	U70-PD-D-3487407 sh. No. 6	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	95-140°F	36°F	185°F	Not Insulated	N/A	N/A
U70-4"-N-17058-1CG0U	From mixing vessel U70-D-0071B	U70-PD-D-3487407 sh. No. 6	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	95-140°F	36°F	185°F	Not Insulated	TP-002	N/A
U70-4"-N-17059-1CG0U	blow-off	U70-PD-D-3487407 sh. No. 6	4"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	N/A	N/A
DRAINS																
U70-2"-IA-17061-1CG0U	Package U70-U-0003 Train A Drain	U70-PD-D-3487407 sh. No. 3	2"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	TP-003	N/A
U70-2"-IA-17062-1CG0U	Package U70-U-0003 Train B Drain	U70-PD-D-3487407 sh. No. 4	2"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	TP-004	N/A
U70-2"-N-17063-1CG0U	mixing vessel U70-D-0071A Drain	U70-PD-D-3487407 sh. No. 5	2"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	TP-005	N/A
U70-2"-N-17064-1CG0U	mixing vessel U70-D-0071B Drain	U70-PD-D-3487407 sh. No. 6	2"	STD	BE	A106 GR.B, SMLS	WN 150# FF	A105N, ASME	130 psig	150 psig	45-135°F	36°F	185°F	Not Insulated	TP-006	N/A

Notes:

- 1.) Provided Pipe class is 1CG0U in compliance with SAES-L-105, this pipe class will be followed for all component mentioned like, tem NPS, Rating, Schedule, Type, Specification Notes, NIPPLES, FITTINGS - threaded & Butt Welded, Caps, elbows, Tees, Couplings, Plug, Unions, Swaged Nipples, Boss, Blinds, spectacle blinds, GASKETS, bolts / Fasteners, valves, etc.
- 2.) All Components in pipe class 1CG0U will be galvanized carbon steel and externally painted (except for the valves which will be carbon steel and externally painted) refer to attachment #1 for more details
- 3.) Corrosion allowance = 0 mm
- 4.) Design code = ASME B 31.3
- 5.) Stress Relieving = Not applicable
- 6.) Welding Spec : SAES-W-011
- 7.) BE = Beveled Ends (for pipe)
- 8.) as per pipe class welding upto first valve (for instrumts) is not required for this Medium (Air/N2). SAES-L-110 9.2 (Piping is not subject to Vibration an any case as it is static equipment)
- 9.) Valve body material with ASTM A105 shall be supplied in Normalized condition
- 10) Vent lines to ATM will be galvanized and internally coated.

ATTACHMENT 1

Line Class: 1CG0U Service: Instrument air, Nitrogen Rating Class: 150 FF, ASME B16.1 Temperature Limit: 0 to 100°C Corrosion Allowance: 0 mm			Basic Material: Galvanized/Carbon Steel Design Code: Note (1) Stress Relief: Not Required Examination: Per Applicable Code Buttweld Construction: Note (2)		
Item	NPS	Rating Schedule	Type	Specification	Notes
PIPE	¾"	Class 300	CS	ASTM A106	(2)
	1"	Class 300	CS	Gr. B Galvanized smls	
	4"	Class 300	Seamless		
NIPPLES ASME-B36.10	3" and smaller	40	Seamless	ASTM A106 Gr. B Galvanized smls	
THREADED FITTINGS Caps ASME-B16.11 Elbows ASME-B16.11 Tees ASME-B16.11 Couplings ASME-B16.11 Plugs	3" and smaller	Class 150	ASME B16.3	ASTM A106 Gr. B Galvanized smls ASME B16.3 malleable iron, ASTM A105 galvanized	
Unions	3" and smaller	Class 150		Malleable iron, galvanized, brass seat/ASME B16.39	
Swaged Nipples	3" and smaller	sch. 80	Seamless	ASTM A106 Gr. B Galvanized smls	
Bosses	2" and smaller	Class 3000		Welding, threaded female outlet (AE-036175)	
BUTT WELD FITTINGS Elbows ASME-B16.9 Tees ASME-B16.9 Caps ASME-B16.9 Reducers ASME-B16.9	4" - 24"	Match pipe		ASTM A106 Gr. B Galvanized smls ASME B16.9 ASTM A234 WPB - SMLS galvanized, ASTM A106	
FLANGES Weld Neck	1" - 6"	Class 150 FF, Std. bore		B16.5 ASTM A105N galvanized	
	3"	Class 150 RF, Std. bore		B16.5 ASTM A105N galvanized	
	8" - 24"	Class 150 FF		B16.5 ASTM A105N galvanized	
BLINDS	4" - 24"	Class 150 FF		B16.5 ASTM A105N galvanized	
Spec. Blinds	4" - 24"	Flat Face		AD-036631 or AD-036633 ASTM A516 GR.70 galvanized	
GASKETS	1" - 24"			FLAT NON MET. GASKET - ASME-B16.21 - ARAMIDIC FIBER (13%)	(3)
	3"			OUT. & INN. RINGS - ASME-B16.20 - 316 SS+GRAPH 98% - C.S. OUT.& INN. RINGS for WNRF Flanges	
BOLTING	1/4" and larger			ASTM A193 B7 stud bolts, semi-finished, heavy pattern ASTM A194 2H hex nuts, fluoropolymer coated	
GATE VALVES	2" and smaller	Class 800	Threaded	ASTM A105 body, BB, OS&Y, API 602, Trim No.8	(4) (5)
	3" and larger	Class 150	FF flanged	ASTM A216-WCB body, BB, OS&Y, API 600, Trim No.8	-5
GLOBE VALVES	2" and smaller	Class 800	Threaded	ASTM A105 body, BB, OS&Y, Trim No.8	(4) (5)
	3" and larger	Class 150	FF flanged	ASTM A216-WCB body, BB, OS&Y, Trim No.8	-5
CHECK VALVES	2" and smaller	Class 800	Threaded	ASTM A105 body, BC, Trim No.8	(4) (5)
	3" and larger	Class 150	FF flanged	ASTM A216-WCB body, BC, Trim No.1	-5
BALL VALVES	2" and smaller	Class 300	FF flanged	ASTM A105 body, floating ball, RTFE seats, Trim No.10	(4)(5)
	3" and 4"	Class 150	FF flanged	ASTM A216-WCB body, floating ball, RTFE seats, Trim No.10	-5
	6" and larger	Class 150	FF flanged	ASTM 350 Gr LF2 cl1 body, trunnion mounted, Trim solid SS316L, RPTFE SEAT	
Notes: (1) Select design code in accordance with ASME B31.3 or SAES-B-017 as the service requires. (2) Butt welded pipe and fittings per 1CS1P will be used. (3) For flat face flanges use full face gaskets. (4) Valve body material with ASTM A105 shall be supplied in Normalized condition (5) Refer SAES-L-105 Table 4.2 - Simplified Trim Number Designations for Trim No: details					