



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



INSPECTION AND TEST PLAN (ITP)

Document No. 17735-08

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## Inspection and Test Plan for Air Compressor Package (K-020)

04	09-04-2024	Issued for Approval	SK	LvG	JJ
03	03-04-2024	Issued for Approval	SK	LvG	JJ
02	13-11-2023	Issued for Approval	SK	LvG	JJ
01	14-09-2023	Issued for Approval	SK	LvG	JJ
REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

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4	X	X	X	X		29						54						79					
5	X	X	X			30						55						80					
6	X	X	X			31						56						81					
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PROJECT : <b>Integrated Methanol and Ammonia Plant</b>				VENDOR: Airpack Netherlands B.V.		EQUIPMENT/PKG: K-020		
COMPANY: Lavan Industry Development Company of Iran			MR. NO.: N278-000-ME-MR-1020-001-02		SUBVENDOR: According to N-278-VD-6019-GN-EQL-0038		COMMODITY / ITEM NAME: Instrument air	
PURCHASER: Nargan Company			P.O.NO.: LIDCO-PO-NEC-278-6019		ISSUE DATE: 10-8-2023		QTY: 01      Page: 01	
ACTIVITY NO.	INSPECTION STAGE / ACTIVITY	APPLICABLE DOCUMENTS (Note-1)	VERIFYING DOCUMENT	PARTICIPATION BY:				REMARKS
				VENDOR	Nargan	LIDCO	TPA	
<b>Before manufacturing</b>								
1	<b>Pre- Inspection</b>	GAD approval P&ID approval Painting procedure approval Welding documents approval Inspection and test plan approval Datasheets approval	PIM MOM As per PO / MR / Project Specifications	HP	HP	HP	R	



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				VENDOR	Nargan	LIDCO	TPA	
<b>COMPRESSOR</b>								
2.1	<b>Component check</b> Complete compressor	Approved mechanical datasheet	Drawing of compressor	HP	R	R	R	
2.2	<b>Materials inspection</b> Visual and certificate check for cylinders and cylinder heads of the compressor	EN 10204 Approved mechanical datasheet	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
2.3	<b>Hydrostatic test</b> Compressor cylinders	Approved hydrotest procedure	Hydrostatic test certificate	HP	R	R	W	
<b>SKID base and lifting frame</b>								
3.1	<b>Materials inspection</b> Visual check Certificate check	EN 10204 ASME Sec II, 2019	EN 10204 / 2.1 material certificate Lifting lugs: 3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
3.2	<b>Welding Visual Inspection / dimension check</b> Base frame / lifting lugs skid	AWS D1.1	PQR / WPS	W	R	R	R	
3.3	<b>NDT</b> Lifting lugs 100% MT	NDT procedure	MT certificate	W	R	R	R	
3.4	<b>Painting</b> Random Paint thickness check Color check	Approved painting procedure	Painting report	W	R	R	R	
<b>Piping</b>								
4.1	<b>Materials inspection</b> Visual check Certificate check	EN 10204 ASME Sec II, 2019	EN 10204 / 3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
4.2	<b>Welding</b> Visual check Certificate check	ASME section IX	Approved PQR / WPS	W	R	R	R	
4.3	<b>NDT</b> Welds check 10% spot RT	NDT procedure	RT certificate	W	R	R	R	
4.4	<b>Hydrostatic test</b> Piping	Hydrostatic test procedure	Hydrostatic test certificate	W	R	R	R	
4.4	<b>Painting</b> Random Paint thickness check Color check	Approved painting procedure	Painting report	W	R	R	R	



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				VENDOR	Nargan	LIDCO	TPA	
<b>Inter- / Aftercooler</b>								
5.1	<b>Component check</b> Visual check for coolers	Approved mechanical datasheet	Drawing of coolers	W	R	R	R	
5.2	<b>Materials inspection</b> Visual and certificate check of Coolers	EN 10204 ASME sec II, 2019 Approved mechanical datasheet	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
5.3	<b>Hydrostatic test</b> Cooler shells Cooler tubes	Approved hydrotest procedure, according ASME Sec VIII div.1	Hydrostatic test certificate	HP	R	R	R	Done with service gaskets and fasteners
5.4	<b>NDT</b> 10% spot RT for all pressure parts	NDT procedure	RT certificate	HP	R	R	R	
5.5	<b>Repair</b> Execution of major repairs	Approved mechanical datasheet	Drawing of coolers	HP	HP	HP	R	If major repairs are needed
<b>Pulsation Dampeners</b>								
6.1	<b>Component check</b> Visual check for pulsation dampeners 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Approved mechanical datasheet	Drawing of pulsation dampeners	W	R	R	R	
6.2	<b>Materials inspection</b> Visual and certificate check for pulsation dampeners 1 <sup>st</sup> and 2 <sup>nd</sup> stage pressure parts	EN 10204 ASME Sec II, 2019	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
6.3	<b>Hydrostatic test</b> Certificate check for pulsation dampeners 1 <sup>st</sup> and 2 <sup>nd</sup> stage pressure parts	Approved hydrotest procedure, according to ASME Sec VIII div.1	Hydrostatic test certificate	HP	R	R	R	Done with service gaskets and fasteners
6.4	<b>NDT</b> 10% spot RT for all pressure parts	NDT procedure	RT certificate	HP	R	R	R	
6.5	<b>Repair</b> Execution of major repairs	Approved datasheet	Drawing of pulsation dampeners	HP	HP	HP	R	If major repairs are needed
<b>LV motor</b>								
7.1	<b>Routine test</b> Certification check for low voltage motor	Motor datasheet	Routine test certificate Ref. std. : IS: 12615/IEC60034-1	HP	R	R	R	



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				VENDOR	Nargan	LIDCO	TPA	
<b>Pressure / temperature gauges</b>								
8.1	<b>Materials inspection</b> Visual and certificate check for pressure / temperature gauges	Approved instrument datasheet EN 10204	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
8.2	<b>Calibration certificate inspection</b> Certificate check for pressure / temperature gauges	Approved instrument datasheet EN 10204	Calibration certificate	HP	R	R	R	
<b>Pressure / temperature transmitters</b>								
9.1	<b>Materials inspection</b> Visual and certificate check for pressure / temperature transmitters	Approved instrument datasheet EN 10204	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
9.2	<b>Calibration certificate inspection</b> Certificate check for pressure / temperature transmitters	Approved instrument datasheet EN 10204	Calibration certificate	HP	R	R	R	
9.3	<b>Ingress Protection</b> Declaration check for pressure / temperature transmitters	Approved instrument datasheet EN / IEC 60529	IP 65 declaration	HP	R	R	R	
<b>Hand valves and strainers</b>								
10.1	<b>Materials inspection</b> Visual and certificate check for hand valves and strainers	Approved instrument datasheet EN 10204	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
10.2	<b>Hydrostatic test</b> Certificate check for hand valves / strainers / body / seat	ASME B31.3 Approved instrument datasheet	Hydrostatic Test Certificate	HP	R	R	R	
10.3	<b>Painting</b> Random paint thickness test Color check	Approved painting procedure	Painting report	W	R	R	R	
<b>Check valves</b>								
11.1	<b>Materials inspection</b> Visual and certificate check for check valves	Approved instrument datasheet EN 10204	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
11.2	<b>Hydrostatic test</b> Certificate check for check valves	ASME B31.3	Hydrostatic Test Certificate	HP	R	R	R	
11.3	<b>Painting</b> Random paint thickness test Color check	Approved painting procedure	Painting report	W	R	R	R	



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<b>Pressure control valves</b>								
12.1	<b>Materials inspection</b> Visual and certificate check for pressure control valves	Approved instrument datasheet EN 10204	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
12.2	<b>Hydrostatic test</b> Certificate check for pressure control valves body / seal	ASME B31.3 ANSI B16.37	Hydrostatic Test Certificate	HP	R	R	R	
12.3	<b>Seat Leakage test</b> Certificate check for pressure control valves	ANSI-B16.104 / FCI-70-2	Leakage test certificate	HP	R	R	R	
12.4	<b>Painting</b> Random paint thickness test Color check	Approved painting procedure	Painting report	W	R	R	R	
<b>Pressure safety valves</b>								
13.1	<b>Materials inspection</b> Visual and certificate check for pressure safety valves	Approved instrument datasheet EN 10204 ASME Sec II, 2019	3.1 material certificate	HP	R	R	R	Review of material certificates during FAT
13.2	<b>Hydrostatic test</b> Certificate check for pressure safety valves	ASME B31.3 Spec, N278-000-CI-JSS-1545-004.02	Hydrostatic test certificate	HP	R	R	R	
13.3	<b>Tightness test</b> Certificate check for pressure safety valves	API 527 Spec, N278-000-CI-JSS-1545-004.02	Tightness test declaration	HP	R	R	R	Part of 3.1 material certificate
13.4	<b>Set Pressure Test</b> Checking of setting pressure for pressure safety valves	Spec, N278-000-CI-JSS-1545-004.02	Set pressure test report	HP	R	R	R	
13.5	<b>Seat tightness test</b> Certificate check for pressure safety valves	API 527 Spec, N278-000-CI-JSS-1545-004.02	Seat tightness test report	HP	R	R	R	Part of 3.1 material certificate
13.6	<b>Painting</b> Random paint thickness test Color check	Approved painting procedure	Painting report	W	R	R	R	



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<b>Junction box</b>								
14.1	<b>Dimensions</b> Visual check for junction boxes	Approved panel layout drawing	Panel layout drawing as built	HP	R	R	R	
14.2	<b>Ingress protection</b> Declaration check for junction boxes	EN / IEC 60529	IP 65 Declaration	HP	R	R	R	
14.3	<b>Painting</b> Random paint thickness test Color check	Approved painting procedure	Painting report	HP	R	R	R	
<b>Documentation</b>								
15.1	<b>Content check</b> Review of certification dossier	Index manufacturing data book Inspection test plan	Certification dossier / manufacturing data book	HP	R	R	R	Checked during final Inspection by assigned inspector
15.2	<b>Test instrument</b> Calibration check	N/A	Calibration certificate	HP	R	R	R	
<b>Factory Acceptance Test (FAT)</b>								
16.1	<b>Equipment inspection</b> Visual check P&ID, Dimensions, Painting, Junction boxes, Instruments and tagging of the complete package	Approved FAT procedure Approved General arrangement drawing Approved P&ID	Signed FAT Procedure; attachment 2: Equipment check list	W	R	H	HP	
16.2	<b>Functional test</b> Functional check	Approved FAT procedure Approved control philosophy Approved wiring diagram	Signed FAT Procedure; attachment 3: functional check list	W	R	H	HP	
16.3	<b>Performance test</b> Performance check	Approved FAT procedure Approved control philosophy Approved P&ID	Signed FAT Procedure; attachment 4: performance test result	W	R	H	HP	
16.4	<b>Noise level test</b> Noise check	Approved FAT procedure Approved equipment data sheet	Signed FAT Procedure; attachment 5: noise level sheet list	W	R	H	HP	
<b>Punch list</b>								
17.1	<b>Punch list check</b> Punch items check	As per PO / MR / Drawings / Datasheets	Signed Punch List	W	R	R	HP	



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<b>Packing &amp; marking</b>								
18.1	<b>Packing and marking</b> Quantity inspection	Approved packing and preservation procedure Commissioning and Start-up Spare Part List	Signed packing list	HP	R	R	HP	
18.2	<b>Packing inspection</b> Preservation check	Approved packing and preservation procedure	Signed packing list	HP	R	R	HP	
18.3	<b>Marking inspection</b> Equipment Package nameplate	Approved packing and preservation procedure	Signed packing list	HP	R	R	HP	
<b>Release of package</b>								
19.1	<b>Inspection release note</b>	Signed ITP	Signed inspection release note	HP	R	R	HP	
<b>Documents</b>								
20.1	<b>Manufacturing Data Book</b>	-	MRB	HP	R	R	R	
20.2	<b>Non conformity / repairs</b>	-	NCR document	HP	HP	HP	HP	If any
20.3	<b>Deviation / concession request</b>	-	Deviations list	HP	HP	HP	HP	If any



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**ABBREVIATIONS**

**HP:** Hold Point – Vendor/ manufacturer is to notify INSPECTOR 10 days prior to performing the designated feature. Activities may not proceed (Hold) until the continuation of work is permitted by PURCHASER /COMPANY or waived in writing by PURCHASER/OWNER (Inspection waiver).

**W:** Full Witness Inspection/ Test. Witness-Application for inspection are required. PURCHASER/COMPANY inspector will be arranged to be present at least part of ongoing process. Vendor will proceed to the next step if he is not present; provided controls and tests records are made available to Inspector for review.

**SW:** Spot Witness Inspection/ Test on Spot / Random Basis. Witness by spot checks refer to an inspection performed at random, between the scheduled inspection points. The frequency and the depth of the inspection will be at least 10% of the items for bulk items, and at least one (1) item per type and category. But controls and tests records are made available to Inspector for review.

**R:** Verify by review of Manufacturer's Inspection/ Test Reports & Certificates

**A:** Approval of Manufacturer's Drawings and Documents

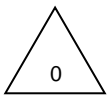
**C:** COMPANY (Lavan Industry Development Company of Iran)

**LIDCO:** Lavan Industry Development Company of Iran

**TPA:** Third Party Agency

**P:** PURCHASER

**MFR:** Manufacture



Note-1 All Standards and Codes' Edition shall be mentioned.

Note-2 Before Manufacturing includes: (1) Procedure Review and Approval, (2) Certificate Records Review and (3) Raw Material Inspection.