



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



Hydrotest procedure

Document No. 17735-17

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

05	18-04-2024	Issued for Approval	S.K.	K.P.	J.J.
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02	06-11-2023	Issued for Approval	S.K.	K.P.	J.J.
01	14-09-2023	Issued for Approval	S.K.	J.J.	S.K.
REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

NARGAN COMPANY	
INSPECTION	
J.J. APPROVED	<input checked="" type="checkbox"/>
J.J. APPROVED AS NOTED	<input type="checkbox"/>
J.J. NOT APPROVED	<input type="checkbox"/>
BY: M. BAZAEL	DATE: 17/04/2024
Sign: <i>M. Bazael</i>	

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NARGAN COMPANY

**INSPECTION**




1- APPROVED

2- APPROVED AS NOTED

3- NOT APPROVED

BY: M. REZEKI DATE: 29 April 2024

SIGN:

	<b>LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT</b>						
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## Hydrostatic test

This procedure is applicable to all items subject to a hydrostatic test. Refer to project Inspection & Test Plan for the items subject to a hydrostatic test.

Following procedures will be maintained before and during testing:

- Before test, tested equipment will be inspected properly by the Airpack quality manager.
- Two calibrated pressure gauges will be installed on the highest and lowest position clearly readable.
- Test pressure will be between 50% and 75% of range of used pressure gauges (where possible)
- Used gauges are direct reading type and pressure should be stable during testing.
- Duration of test will be 1 hour as required per authorities code (ASME B31.3 for piping and ASME VIII latest edition for vessels)
- Prior to carrying out the hydrostatic test, weld of reinforcing pad will be leak tested (max 1 bar(g)) by air via tell tail hole and inspected with soap and water (if applicable).
- All oil, grease, dirt and foreign material will be removed.
- Start and end pressure will be recorded by hand during hydro test.



Below Items are tested separately, no complete hydrostatic test of package is done.




### Cooling water piping (carbon steel)

This test is executed by sup-supplier or Airpack. For hydrostatic tests a suitable positive displacement pump is available to supply a maximum pressure. Water will be of non-chloride type (max. 50 ppm - Cl<sub>2</sub>), temperature approximately 20°C. Tests are non-witnessed by client as per ITP.

Hydrostatic test pressure: 1.3x design pressure for the following items (as per P&ID drawing 17735-03)

- Piping cooling water inlet / inter- aftercooler : 9,1 bar(g)
- Piping inter- aftercooler / cooling water outlet : 9,1 bar(g)

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2- APPROVED AS NOTED	<input type="checkbox"/>
3- NOT APPROVED	<input type="checkbox"/>
BY: M. REZAEI DATE: 20 April 2024	
SIGN.: 	

	<b>LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT</b>							
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#### Main Process Air Piping (SS316)

This test is executed by sup-supplier or Airpack. For hydrostatic tests a suitable positive displacement pump is available to supply a maximum pressure. Water will be of non-chloride type (max. 50 ppm - Cl<sub>2</sub>), temperature approximately 20°C. Tests are non-witnessed by client as per ITP.

Hydrostatic test pressure: 1.3x design pressure for the following items (as per P&ID drawing 17735-03)

- Piping Package inlet / 1<sup>st</sup> stage suction : 16,25 bar(g)
- Piping 1<sup>st</sup> stage discharge / 2<sup>nd</sup> stage suction : 39,65 bar(g)
- Piping 2<sup>nd</sup> stage discharge / package outlet : 50,7 bar(g)

#### Inter- Aftercooler (SS316)

This test is executed by sup-supplier or Airpack. For hydrostatic tests a suitable positive displacement pump is available to supply a maximum pressure. Water will be of non-chloride type (max. 50 ppm - Cl<sub>2</sub>), temperature approximately 20°C. Tests are non-witnessed by client as per ITP.

Hydrostatic test pressure: 1.3x design pressure for the following items (as per P&ID drawing 17735-03)



- Intercooler KE-020-001 shell (SS316) : 39,65 bar(g)
- Intercooler KE-020-001 Tubes (SS316) : 9,1 bar(g)
- Aftercooler KE-020-002 shell (SS316) : 50,7 bar(g)
- Aftercooler KE-020-002 Tubes (SS316) : 9,1 bar(g)




#### Pulsation Dampeners (carbon steel)

This test is executed by sup-supplier or Airpack. For hydrostatic tests a suitable positive displacement pump is available to supply a maximum pressure. Water will be of non-chloride type (max. 50 ppm - Cl<sub>2</sub>), temperature approximately 20°C. Tests are non-witnessed by client as per ITP.

Hydrostatic test pressure: 1.3x design pressure for the following items (as per P&ID drawing 17735-03)

- Pulsation dampener KV-020-001 : 16,25 bar(g)
- Pulsation dampener KV-020-002 : 39,65 bar(g)
- Pulsation dampener KV-020-003 : 50,7 bar(g)
- Pulsation dampener KV-020-004 : 50,7 bar(g)

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3- NOT APPROVED	<input type="checkbox"/>
BY: M.REZAEI DATE: 20 April 2024	
SIGN: 	

 <p>شرکت توسعه صنایع لوان Lavan Industry Development Company</p>	<p><b>LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT</b></p>						
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Compressor pressure parts



This test is executed by sup-supplier or Airpack. For hydrostatic tests a suitable positive displacement pump is available to supply a maximum pressure. Water will be of non-chloride type (max. 50 ppm - Cl<sub>2</sub>), temperature approximately 20°C. Tests are non-witnessed by client as per ITP.




Hydrostatic test pressure will be **1.5x** design pressure. (**45,75 bar(g) / 58,5 bar(g)**) and as per approved datasheet.

After test,

- o Equipment must be free from any unexpected condition
- o Equipment will be dried and cleaned appropriately. Stainless steel will be cleaned by pressurized air.
- o Witnessed test report shall be issued by QA department.

Hydrostatic test will be done after completion of all welding and before any painting activities

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3- NOT APPROVED	<input type="checkbox"/>
<p>BY: M.REZAEI DATE: 20 April 2024</p>	
<p>SIGN.: </p>	

	<b>LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT</b>							
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AIRPACK NEDERLAND B.V.  
 GROENEWEEGJE 25  
 4301 RN ZIERIKZEE  
 THE NETHERLANDS

HYDROSTATIC TEST CERTIFICATE

Customer :  
 Purchase Order number :  
 Equipment :  
 Airpack reference :  
 Serial number :  
 Date :

We certify that the here under mentioned test data is true and correct.  
 The test procedure is in accordance with ASME B31.3 & Hydrostatic Test Procedure doc number : 17735-17

Subject name :  
 Subject number :  
 Drawing no. :  
 Test no. : 01 of 0X

HYDROSTATIC TEST:

Fluid :  
 Test date :  
 Constant during : 1 hour.  
 Test pressure :


RECORDED PRESSURES

Start pressure :  
 End pressure :  
 Test pressure gauge number :  
 Remarks (If any) :

In presence of :

Airpack Approval:

Customer Approval:

	
<b>INSPECTION</b>	
1- APPROVED	<input checked="" type="checkbox"/>
2- APPROVED AS NOTED	<input type="checkbox"/>
3- NOT APPROVED	<input type="checkbox"/>
BY: M.REZAEI DATE: 20 April 2024	
SIGN: 