

 <p>شرکت توسعه صنایع لوان Lavan Industry Development Company</p>	<p>LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT</p>																				
	<p>Cause & Effect Chart</p>																				
<p>Document No. 17735-27</p>		<p>Page</p>																			
<table border="1"> <tr> <th>Project No.</th> <td>N278</td> </tr> </table>	Project No.	N278	<table border="1"> <tr> <th>Vendor Doc.</th> <td>VD</td> </tr> </table>	Vendor Doc.	VD	<table border="1"> <tr> <th>P.O. No.</th> <td>6019</td> </tr> </table>	P.O. No.	6019	<table border="1"> <tr> <th>Department</th> <td>GN</td> </tr> </table>	Department	GN	<table border="1"> <tr> <th>Document Type</th> <td>SF</td> </tr> </table>	Document Type	SF	<table border="1"> <tr> <th>Serial No</th> <td>0029</td> </tr> </table>	Serial No	0029	<table border="1"> <tr> <th>Revision</th> <td>07</td> </tr> </table>	Revision	07	<p>Page 1 of 3</p>
Project No.	N278																				
Vendor Doc.	VD																				
P.O. No.	6019																				
Department	GN																				
Document Type	SF																				
Serial No	0029																				
Revision	07																				

**Airpack B.V. - Air Compressor –
Integrated Methanol and Ammonia Plant
17735-COM Cause & Effect Chart (K020)**

Code 1
M.Dalakeh

07	29-07-2024	Issued for Approval	S.K.	J.J.	S.K.
06	18-07-2024	Issued for Approval	S.K.	J.J.	S.K.
05	05-07-2024	Issued for Approval	S.K.	J.J.	S.K.
04	25-06-2024	Issued for Approval	S.K.	J.J.	S.K.
03	11-06-2024	Issued for Approval	S.K.	J.J.	S.K.
02	23-05-2024	Issued for Approval	S.K.	J.J.	S.K.
01	12-12-2023	Issued for Approval	S.K.	J.J.	S.K.
REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

This document has been produced by Contractor for LIDCO. It is confidential and cannot be disclosed to or used by any third party for any purpose without prior written consent.

Cause & Effect Chart

Document No. 17735-27

Page

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
N278	VD	6019	GN	SF	0029	07	Page 2 of 3

LIST OF REVISED PAGES

Rev. Page	01	02	03	04	05	06	07	08	09	10	Rev. Page	01	02	03	04	05	Rev. Page	01	02	03	04	05
1	X	X	X	X	X	X	X				51						76					
2	X	X	X	X	X	X	X				52						77					
3	X	X	X	X	X	X	X				53						78					
4											54						79					
5											55						80					
6											56						81					
7											57						82					
8											58						83					
9											59						84					
10											60						85					
11											61						86					
12											62						87					
13											63						88					
14											64						89					
15											65						90					
16											66						91					
17											67						92					
18											68						ATTACHMENT					
19											69						1					
20											70						2					
21											71						3					
22											72						4					
23											73						5					
24											74						6					
25											75						7					



DOCUMENT TITLE: 17735-27
Cause & Effect chart Compressor

CAUSE
 SIGNALS ARE INCLUDED IN P&ID DOCUMENT

Instrument Tag	Signal	Type	Description	Interlock
320HS-8203	EMERGENCY STOP	ESD	EMERGENCY SHUT DOWN LPS	IP-920
320SW-8206	EMERGENCY STOP	ESD	EMERGENCY SHUT DOWN DCS	IP-920
320HS-8201	START	BUTTON	START COMPRESSOR LPS	IP-922
320SW-8207	START	BUTTON	START COMPRESSOR DCS	IP-922
320HS-8202	STOP	BUTTON	STOP COMPRESSOR LPS	IP-923
320SW-8208	STOP	BUTTON	STOP COMPRESSOR DCS	IP-923
320PT-8201	TRANSMITTER	LL	COMPRESSOR INLET PRESSURE LOW LOW	IP-920
320PT-8202	TRANSMITTER	LL	2ND STAGE SUCTION PRESSURE LOW LOW	IP-920
320TT-8203	TRANSMITTER	HH	2ND STAGE SUCTION TEMPERATURE HIGH HIGH	IP-920
320TT-8205	TRANSMITTER	HH	COMPRESSOR OULTET TEMPERATURE HIGH HIGH	IP-920
320PT-8203	TRANSMITTER	HH	COMPRESSOR OULTET PRESSURE HIGH HIGH	IP-920
320PT-8204	TRANSMITTER	LL	OIL PRESSURE LOW LOW	IP-920
101-MBP-001	MOTOR	CONTROL	MOTOR RUNNING FEEDBACK TRIP	
320PT-8201	TRANSMITTER	H	COMPRESSOR INLET PRESSURE HIGH	
320TT-8201	TRANSMITTER	L	COMTRESSOR INLET TEMPERATURE LOW	
320TT-8201	TRANSMITTER	H	COMTRESSOR INLET TEMPERATURE HIGH	
320TT-8202	TRANSMITTER	L	1ST STAGE OUTLET TEMPERATURE LOW	
320TT-8202	TRANSMITTER	H	1ST STAGE OUTLET TEMPERATURE HIGH	
320PT-8202	TRANSMITTER	L	2ND STAGE SUCTION PRESSURE LOW	
320TT-8203	TRANSMITTER	H	2ND STAGE SUCTION TEMPERATURE HIGH	
320TT-8204	TRANSMITTER	L	2ND STAGE DISCHARGE TEMPERATURE LOW	
320TT-8204	TRANSMITTER	H	2ND STAGE DISCHARGE TEMPERATURE HIGH	
320TT-8205	TRANSMITTER	H	2ND STAGE DISCHARGE TEMPERATURE HIGH	
320PT-8203	TRANSMITTER	L	COMPRESSOR OUTLET PRESSURE LOW	
320PZLC	TRANSMITTER	READOUT	POSITIONER FEEDBACK 320PCV-8201	
320PAHH-8191	TRANSMITTER	HH	EXTERNAL SIGNAL PRESSURE VESSEL HIGH HIGH	IP-920
320PALL-8191	TRANSMITTER	LL	EXTERNAL PRESSURE VESSEL LOW LOW	IP-922
320PAH-8191	TRANSMITTER	H	EXTERNAL PRESSURE VESSEL HIGH	IP-923

EFFECT	Tag. Number	N/A	320MBS-8201	320MBW-8202	320PCV-8201	320UY-8204	320YL-8202	320XA-8203	320ML-8201					
	Component	on DCS	MOTOR START	MOTOR STOP	LOAD / UNLOAD VALVE ^{note 2}	EMERGENCY TRIP LIGHT	OPERATIONAL LIGHT ^{note 3}	FAULT LIGHT	RUNNING LIGHT					
CAUSE	Signal	Type	Description	Interlock	READOUT	START	STOP	BYPASS						
	x		EMERGENCY SHUT DOWN LPS	IP-920			SP	DE	x					
	x		EMERGENCY SHUT DOWN DCS	IP-920			SP	DE	x					
	x	ST	START COMPRESSOR LPS	IP-922				E		x			x	
	x	ST	START COMPRESSOR DCS	IP-922				E		x			x	
	x		STOP COMPRESSOR LPS	IP-923			SP	DE						
	x		STOP COMPRESSOR DCS	IP-923			SP	DE						
	x		COMPRESSOR INLET PRESSURE LOW LOW	IP-920			SP	DE	x					
	x		2ND STAGE SUCTION PRESSURE LOW LOW	IP-920			SP	DE	x					
	x		2ND STAGE SUCTION TEMPERATURE HIGH HIGH	IP-920			SP	DE	x					
	x		COMPRESSOR OULTET TEMPERATURE HIGH HIGH	IP-920			SP	DE	x					
	x		COMPRESSOR OULTET PRESSURE HIGH HIGH	IP-920			SP	DE	x					
	x		OIL PRESSURE LOW LOW	IP-920			SP	DE	x					
	x		MOTOR RUNNING FEEDBACK TRIP		note 1		SP	DE	x					
	x		COMPRESSOR INLET PRESSURE HIGH										x	
	x		COMTRESSOR INLET TEMPERATURE LOW										x	
	x		COMTRESSOR INLET TEMPERATURE HIGH										x	
	x		1ST STAGE OUTLET TEMPERATURE LOW										x	
	x		1ST STAGE OUTLET TEMPERATURE HIGH										x	
	x		2ND STAGE SUCTION PRESSURE LOW										x	
	x		2ND STAGE SUCTION TEMPERATURE HIGH										x	
	x		2ND STAGE DISCHARGE TEMPERATURE LOW										x	
	x		2ND STAGE DISCHARGE TEMPERATURE HIGH										x	
	x		2ND STAGE DISCHARGE TEMPERATURE HIGH										x	
	x		COMPRESSOR OUTLET PRESSURE LOW										x	
	x		POSITIONER FEEDBACK 320PCV-8201											
	x		EXTERNAL SIGNAL PRESSURE VESSEL HIGH HIGH	IP-920	note 4		SP	DE	x					
	x	ST	EXTERNAL PRESSURE VESSEL LOW LOW	IP-922	note 4			E		x			x	
	x		EXTERNAL PRESSURE VESSEL HIGH	IP-923	note 4		SP	DE						

Legend:
 ST = Start
 SP = Stop
 X = Action
 E = Energize
 DE = De-energize

NOTES:
 1. MOTOR FEEDBACK TRIP, 2 SECOND AFTER START SINGAL IS SEND AND MOTOR IS NOT SENDING FEEDBACK, THE PACKAGE IS TRIPPED
 2. PCV-8201 ENERGIZE MEANS PCV IS REGULATING THE OUTLET PRESSURE AT THE SET POINT. DE-ENERGIZE IS FAIL POSITION (OPEN).
 3. OPERATIONAL LIGHT IS OFF DURING ANY TRIP OR STOP BUTTON IS PRESSED.
 4. TRANSMITTER IS EXTERNALLY PLACED ON THE PRESSURE VESSEL AFTER THE COMPRESSOR PACKAGE.

Refer to: 17735-03 P&ID, 17735-21 Control philosophy