

Piping & Instrument Diagram

Document No. 17735-03

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**Airpack B.V. - Air Compressor –  
Integrated Methanol and Ammonia Plant  
17735-COM Piping & Instrument Diagram (K020)**

code-2  
M. Vakili

06	01-02-2024	Issued for Approval	S.K.	J.J.	S.K.
05	04-01-2024	Issued for Approval	S.K.	J.J.	S.K.
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03	06-12-2023	Issued for Approval	S.K.	J.J.	S.K.
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Piping & Instrument Diagram

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




















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2	X	X	X	X	X	27	X					52						77					
3	X	X	X	X	X	28	X					53						78					
4	X	X	X	X	X	29	X					54						79					
5		X	X	X	X	30	X					55						80					
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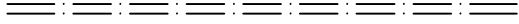







## ABBREVIATIONS




CV = CHECK VALVE  
 FG = FLOW GAUGE  
 FT = FLOW TRANSMITTER  
 LPS = LOCAL PUSHBUTTON STATION  
 LG = LEVEL GAUGE  
 PAH = HIGH PRESSURE ALARM (TRANSMITTER)  
 PAHH = HIGH PRESSURE TRIP (TRANSMITTER)  
 PAL = LOW PRESSURE ALARM (TRANSMITTER)  
 PALL = LOW PRESSURE TRIP (TRANSMITTER)  
 PCV = PRESSURE CONTROL VALVE  
 PDAH = HIGH PRESSURE DIFFERENTIAL ALARM (TRANSMITTER)  
 PDAH= HIGH PRESSURE DIFFERENTIAL TRIP (TRANSMITTER)  
 PDAL = LOW PRESSURE DIFFERENTIAL ALARM (TRANSMITTER)  
 PDALL = LOW PRESSURE DIFFERENTIAL TRIP (TRANSMITTER)  
 PDG = PRESSURE DIFFERENTIAL GAUGE  
 PDIT = PRESSURE DIFFERENTIAL INDICATING TRANSMITTER  
 PDT = PRESSURE DIFFERENTIAL TRANSMITTER  
 PG = PRESSURE GAUGE  
 PIT = PRESSURE INDICATING TRANSMITTER  
 PRV = PRESSURE REDUCING VALVE  
 PSV = PRESSURE SAFETY VALVE  
 PT = PRESSURE TRANSMITTER  
 SG = SIGHT GLASS  
 XY = SOLENOID VALVE  
 TAH = HIGH TEMPERATURE ALARM (TRANSMITTER)  
 TAHH = HIGH TEMPERATURE TRIP (TRANSMITTER)  
 TAL = LOW TEMPERATURE ALARM (TRANSMITTER)  
 TALL = LOW TEMPERATURE TRIP (TRANSMITTER)  
 TCV = TEMPERATURE CONTROL VALVE  
 TG = TEMPERATURE GAUGE  
 TIT = TEMPERATURE INDICATING TRANSMITTER  
 TRV = THERMAL RELIEF VALVE  
 TT = TEMPERATURE TRANSMITTER  
 TW = THERMOWELL  
 HE = HEATER  
 JB = JUNCTION BOX  
 B = BLOWER  
 VAH = HIGH VIBRATION ALARM (TRANSMITTER)  
 VAHH = HIGH VIBRATION TRIP (TRANSMITTER)  
 XI = ANNUNCIATOR (HORN)  
 VT = VIBRATION TRANSMITTER  
 FIT = FLOW INDICATED TRANSMITTER  
 TIC = TEMPERATURE INDICATED CONTROL  
 PIC = PRESSURE INDICATED CONTROL

## SYMBOLS

 BALL VALVE  
 BLOCK AND BLEED 2-WAY MANIFOLDS  
 Y-STRAINER  
 PRESSURE SAFETY VALVE  
 VENT  
 SIGHT GLASS  
 COMPRESSOR STAGE  
 GATE VALVE  
 REDUCER  
 PRESSURE CONTROL VALVE  
 CHECK VALVE  
 SIGNAL  
 INSTRUMENT  
 OIL SIEVE  
 PUMP  
 FAN  
 OIL HEATER  
 VESSEL  
 SHELL / TUBE WATER COOLER  
 MOTOR  
 ELECTRICAL PANEL LIGHT INDICATOR  
 ELECTRICAL PANEL PUSH BUTTON  
 SELECTOR SWITCH

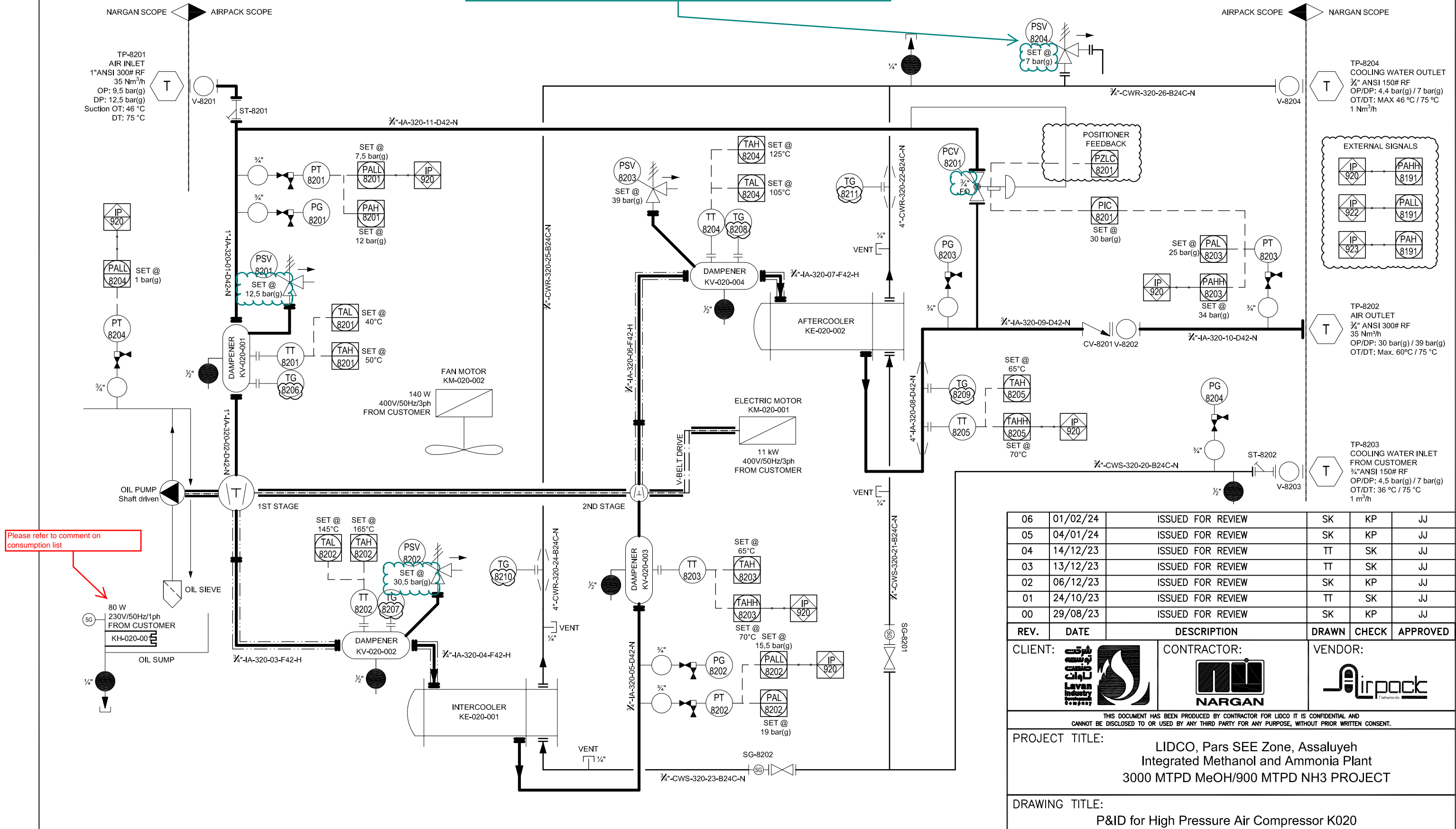
## LINES

 BELT  
 SHAFT  
 COOLING WATER LINE  
 ELECTRICAL LINE  
 GAS/AIR LINE  
 OIL LINE  
 HEAT PROTECTED PIPING  
 SIGNAL

06	01/02/24	ISSUED FOR REVIEW	SK	KP	JJ		
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02	06/12/23	ISSUED FOR REVIEW	SK	KP	JJ		
01	24/10/23	ISSUED FOR REVIEW	TT	SK	JJ		
00	29/08/23	ISSUED FOR REVIEW	SK	KP	JJ		
REV.	DATE	DESCRIPTION	DRAWN	CHECK	APPROVED		
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PROJECT TITLE: LIDCO, Pars SEE Zone, Assaluyeh Integrated Methanol and Ammonia Plant 3000 MTPD MeOH/900 MTPD NH3 PROJECT							
DRAWING TITLE: P&ID for High Pressure Air Compressor K020							
DOCUMENT No: 17735-03 P&ID				SC.			
				SIZE: A3			
PROJECT No.	VENDOR DOC.	P.O. No.	DEPARTMENT	DOC. TYPE	SERIAL No.	REV.	SHEET No.
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COMPRESSOR	MAIN MOTOR	INTERCOOLER	AFTERCOOLER	PULSATION DAMPER INLET	PULSATION DAMPER 1ST STAGE DISCHARGE	PULSATION DAMPER 2ND STAGE SUCTION	PULSATION DAMPER 2ND STAGE DISCHARGE
Tagnumber: K-020 Type: 2-stage oilfree piston Modelnumber: TRZ-400 Discharge capacity: 35 Nm <sup>3</sup> /h Operating pressure: 30 bar(g) Speed: 410 rpm	Tagnumber: KM-020 Rated power: 11 kW Speed: 1485 rpm Power supply: 400 V/ 50 Hz/ 3 ph Ingress protection: IP-55 Hazardous area class: Safe Area	Tagnumber: KE-020-001 Flow air side: 35 Nm <sup>3</sup> /hr Flow water side: OP / DP: OT / DT: Deslgn: Material:	Tagnumber: KE-020-002 Flow air side: 35 Nm <sup>3</sup> /hr Flow water side: OP / DP: OT / DT: Deslgn: Material:	Tagnumber: KV-020-001 Volume: 30 L OP / DP: OT / DT: Deslgn: Material:	Tagnumber: KV-020-002 Volume: 30 L OP / DP: 23,3 bar(g) / 30,5 bar(g) OT / DT: 157 °C / 175 °C Deslgn: ASME VIII Div. 1 Material: CS	Tagnumber: KV-020-003 Volume: 30 L OP / DP: 22,1 bar(g) / 39 bar(g) OT / DT: 60 °C / 157 °C Deslgn: ASME VIII Div. 1 Material: CS	Tagnumber: KV-020-004 Volume: 30 L OP / DP: 30 bar(g) / 39 bar(g) OT / DT: 116 °C / 135 °C Deslgn: ASME VIII Div. 1 Material: CS

All PSV and CV Sizes will be finalized after the approval Instrument calculation sheet document, This items will be reviewed again.



Please refer to comment on consumption list

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00	29/08/23	ISSUED FOR REVIEW	SK	KP	JJ

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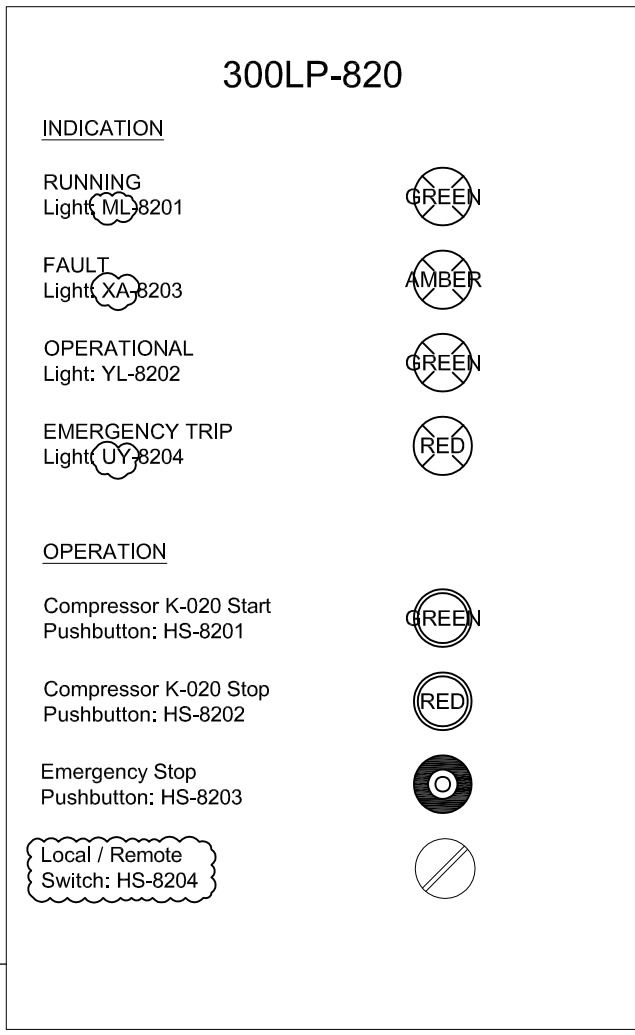
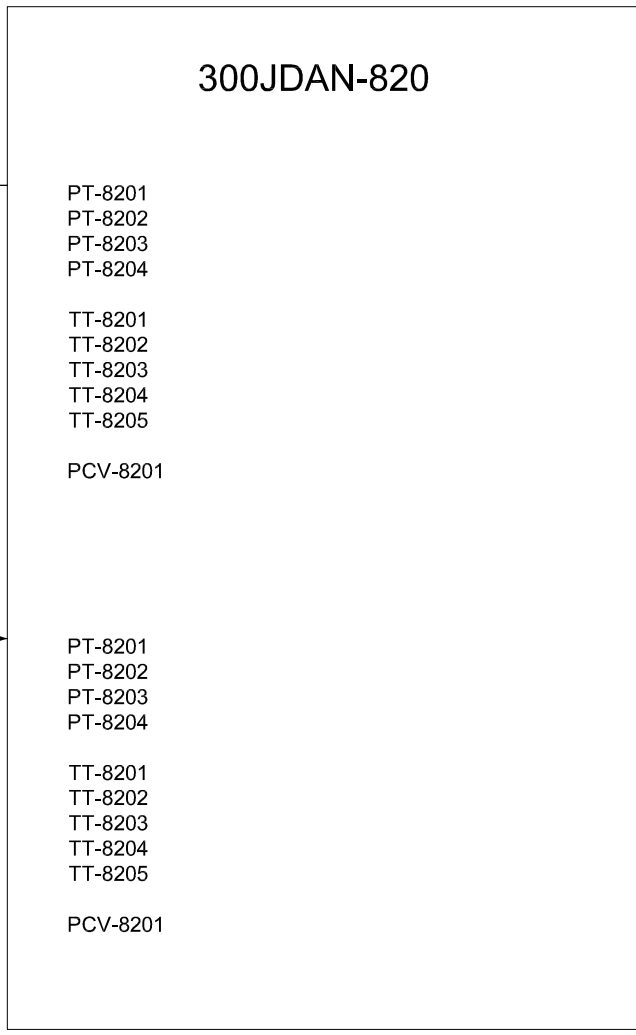
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PROJECT TITLE: **LIDCO, Pars SEE Zone, Assaluyeh Integrated Methanol and Ammonia Plant 3000 MTPD MeOH/900 MTPD NH3 PROJECT**

DRAWING TITLE: **P&ID for High Pressure Air Compressor K020**

- NOTES
- All instruments have prefix '320'.
  - Instrument / control air tubing size: 12mm
  - TT and TG process connection is 3/4" NPT
  - TW process connection is 1 1/2" flange
  - PT and PG process connection is 1/2" NPT
  - Process connection of control valve is 300# flanged ANSI
  - Main process line piping material is SS316
  - Cooling water process line piping material is carbon steel
  - All signals is LIDCO scope and are connected to battery limit

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Multi-pair cable by NARGAN  
TO DCS

Individual Signal Cable by Airpack  
FROM COMPRESSOR

Multi-pair cable by NARGAN

By AIRPACK

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

DRAWING TITLE:  
P&ID for High Pressure Air Compressor K020

- NOTES
- All instruments have prefix '320-'.
  - Package will be DCS controlled (by others)

DOCUMENT No: 17735-03 P&ID						SC.
						SIZE: A3
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