



# PACKAGE DATASHEET



**Purchaser:** Zanzan Petrochemical Co.  
**Owner:** Zanzan Petrochemical Co.  
**Project:** UREA & AMMONIA  
**Plant:** Zanzan City  
**Location:** IRAN

As per Pardis Project with Upgrades

Purchaser					Zanzan Petrochemical Co.
Owner					Zanzan Petrochemical Co.
Plant Name/Project					UREA
No.of Required units:					1 Refrigeration Package( 2 Compressor Skids and Common Condensing Unit)
Item No. /Name					



## Design Operating Condition

		<b>Design Case</b>			
Refrigerant		<b>Ammonia</b>			
Capacity	kg/hr	<b>500.0</b>	<b>For Each Compressor</b>		
Evaporating temp	°C	<b>-37.5</b>			
Condensing temp	°C	<b>50</b>			

## Basic Specification

Package Type	Refrigeration			Q'ty:1 Unit
Ref. Compressor Type/Model	Screw Compressor	N2016		
No.of Compressors: Two compressor Per Unit				
Operating Condition (1 unit)		<b>Max capacity</b>	<b>Note</b>	
Comp. Capacity		<b>207.0</b>	<b>Given capacities are ±5% per each compressor</b>	
Break kW		<b>180.0</b>		
Speed		<b>2950</b>		
Driver	<input checked="" type="checkbox"/> Electric motor <input type="checkbox"/> Soft starter			
Starting Method	<input checked="" type="checkbox"/> Direct on line <input type="checkbox"/> VFD			
Capacity Control	Control Source <input type="checkbox"/> Inlet Pressure Range of Control <input checked="" type="checkbox"/> 30 to 100 % Control Method <input checked="" type="checkbox"/> Slide valve			
Oil Separation	1 stage ( Direction Change, Gravity and Coalescer element )			
Location	<input checked="" type="checkbox"/> Outdoor/underroof <input checked="" type="checkbox"/> Hazardous Zone 2,IIB,T3 <input checked="" type="checkbox"/> Ambient (-5 /+48)°C			
Noise Limitation	<input checked="" type="checkbox"/> Specification (85 dBa @ 1 Meter from Skid Layout Edge)			
Code & Standard	<input checked="" type="checkbox"/> JIS <input checked="" type="checkbox"/> ASME VIII div 1 <input checked="" type="checkbox"/> IEC, IECEX (No mechanical ATEX)			

## Utility (Design capacity)

Electricity	Service	Drive Power (kW)	Voltage (V)	Frequency (Hz)	Note
	Main Electric Moto	<b>180</b>	6000	50	
	Oil Pump Motors	5	400	50	
	Heater	2 (approx.)	400	50	
	Control Panel	2	230	50	IP55
	Air Cooler		230	50	IP55
Cooling water	Temperature (°C.)	in	return	Flow Rate m³/h	
	Pressure (bar G)	in	return		
Steam	Pressure (kg:cm²G)		Temp. (deg.°C.)		
Instrument Air	Pressure (bar G) 4 - 6		Temp. (deg.°C.)		

### Screw Compressor Unit Components(per Compressor Unit)

<input checked="" type="checkbox"/> <b>Compressor</b> Make Mayekawa Mfr.		Q'TY: 1
Type:	Oil Injected Screw Compressor	Model N2016
Material :	Casing: Cast Iron FC300	Rotor: Nodular Cast Iron
Shaft Seal:	Dual Mechanical Seal as per MYCOM STD	
		Code: JIS
<input checked="" type="checkbox"/> <b>Electric motor for compressor</b>		Q'TY: 1
Type:	Squirrel Cage Induction motor	Type of Explosion proof: Exec
Enclosure	TEFC	Ingress protection: IP56
Rated Power:	<b>180</b>	Voltage: 6000 V
Poles:	2	Drive Speed: 2950 rpm
Frequency :	50	
<input checked="" type="checkbox"/> <b>Oil pump</b> Make MYCOM/ Mayekawa Mfr.		Q'TY: 1
Type:	Screw type Gear Pump	
Material :	Casing CI	Rotor: CI
<input checked="" type="checkbox"/> <b>Electric motor for oil pump</b>		Q'TY: 1
Type:	Squirrel Cage Induction motor	Type of Explosion proof: Exec
Enclosure:	TEFC	Ingress protection: IP56
Rated Power:	5	Voltage: 400 V
Poles:	4	Drive Speed: 1495 rpm
Frequency :	50	
<input checked="" type="checkbox"/> <b>Oil Separator</b>		Q'TY: 1
Type:	Horizontal drum type ( Mycom design )	Code: MYCOM STD
Material:	CS	Element coalescers
<input checked="" type="checkbox"/> <b>Oil cooler</b>		Q'TY: 1
Type:	MYCOM STD	
<input checked="" type="checkbox"/> <b>Oil Filter</b> <i>Vertical with continuous changeover valve</i>		Q'TY: 1+1
		Code: MYCOM STD
<input checked="" type="checkbox"/> <b>Suction gas strainer</b>		Q'TY: 1
Type:	Cone type	
<input checked="" type="checkbox"/> <b>Noise Enclosure(If required)</b> 85dBa @ 1 meter from Package Skid Layout Edge		Q'TY: 1

### Unit Components (Common part)

**Refrigerant Condenser** Q'TY: 1  
 Type: Air Cooled Code: MYCOM STD Design  
 Material: Carbon Steel

**Receiver** Q'TY: 1  
 Type: Pressure vessel Code: ASME VIII without U-stamp

**Economizer** Q'TY: 1  
 Material: Shell Carbon Steel Code: ASME VIII without U-stamp

**Suction K.O Drum** Q'TY: 1  
 ASME VIII without U-stamp

**Gas Purger** Q'TY: 1  
 Code: MFR STD

**Piping for Skid and Interconnecting piping as Loose Spools** Q'TY: 1  
 As per ASME

**Base Frame**  
 Type Carbon steel

**Local Push buttons and junction boxes**  
 Material : SS 304 or AL

### Control Panel and Instruments Q'ty: 1

- Control panel
- Scope  Vendor
  - Location  Indoor  Non-hazardous
  - Type  Transmitters  
 PLC Siemens S7-400

Manufacturer  Siemens or Equivalent Allen Bradley

Instrumentation as per PARDIS PID.Number and Type of Instruments will be as per MYCOM design

Package Design and manufacturing will be Only as per PARDIS project with following changes:

- 1) Motors will be Exec instead of Safe Area
- 2) Instruments will be Exd Inside Package
- 3) Two Compressor is selected based on MR while Pardis has one compressor Skid
- 4) Aircondenser is used instead of Water Cooled used in Pardis

5) Documents list is attached

## Test & Inspection

Items	Compressor	Pressure Vessel		Piping*			Panel	Skid (Unit)	Remarks
		a	b	c	d	e			
Performance Test	S	-	-	-	-	-	-	-	
Mechanical Running Test	S	-	-	-	-	-	-	-	
Noise & Vibration Test	S	-	-	-	-	-	-	-	
Functional test	-	-	-	-	-	-	-	-	
Material Inspection	S	S	-	-	S	-	-	-	See note 3
Non-destructive Test (if applicable)	-	-	-	-	-	-	-	-	
Hydrostatic Test	S	S	-	S	-	-	-	-	See note 4
Pneumatic Leak Test	-	-	-	-	S	-	-	W	
Visual Inspection	-	W	-	S	S	-	W	W	
Dimensional Inspection	S	W	-	S	S	-	W	W	
Painting Inspection	-	-	-	-	-	-	-	W	
Shipping Inspection	-	-	-	-	-	-	-	-	
	-								

### Abbreviations)

- a ASME VIII Div.1 pressure vessel
- b No code pressure vessel.
- c Gas and lube oil piping
- d Coolant, CW, IA piping and tubing
- e Pre-fabricated piping

\* Pneumatic leak test for piping will be performed as whole packaged unit after assembly, but before painting.

\*\* SW is for tubing for gas and lube oil line.

- W Witness Inspection by customer
- S Report or certificate issue ( see note 4)
- V Manufacture's test/inspection

### Notes)

- 1) Third party's inspection for local standard, regulation and code shall be provided by customer.
- 2) Compressor testrun will be done using air as compressed fluid with shop motor and lube oil system.  
Tests will be performed at our workshop in Japan.
- 3) Hydrostatic Pressure Test might be replaced by Pneumatic Testing according to the Code.
- 4) Test reports shall be provided acc. To supplier format.

## Code and Standard

General:	MYCOM Standard, IEC, JIS, ASME-Div.1
Compressor:	MYCOM Standard, JIS
Pressure Vessel / Heat	ASME VIII, DIV 1.
Exchanger: Piping:	MYCOM STD, ASME B16.5 & B31.3 for others
Valve:	MYCOM STD , Carbon steel
Flange:	MYCOM STD, ANSI, Carbon steel, JIS
Tubing :	Double ferrule compression type ( SS 316 ) / SS 1/2"
Electric:	IEC, EX-proof
Cable	Armoured cable
Cable glands	Brass Nickel Plated
Material:	MYCOM STD, ANSI,JIS,ASTM,ASME, DIN
Painting :	Vendor offshort painting

## Scope of Supply

No.	Item	Scope	Remarks
1	Refrigeration Unit	Vendor	
2	Motors	Vendor	
3	PLC Control Panel for safe area	Vendor	
4	Motor starter ( MCC)	N/A	Direct Feeder for Users
5	Foundation Work	Customer	
6	Installation Work, Assembly	Customer	
7	Piping Work Piping within skid (Shop Work)	VENDOR	
	All piping till Reciever	VENDOR(All Skids are considered beside eachother)	
	Piping to others	Customer	
8	Electric Wiring Work (for power)	Customer	
	Instrun (Shop Work)	VENDOR	
	Wiring (Field Work)	Customer	
9	Instrumentation Work (Wiring/Tubing)		
	Wiring (Shop Work)	VENDOR	
	Wiring between skids	VENDOR	Connections between skids will be unplugged for transport
	Wiring (Field Work)	Customer	
10	Insulation within skid		Insulation by customer
	Design	Customer	
	Material & Work	Customer	
11	Heat Tracing		
	Material	Customer	
	Work	Customer	
12	Transportation	Vendor	
13	Supervising		
	Installation, Re-assembly	Optional	
	Pre-commissioning	Optional	
	Start-up	Optional	
14	Schrinked Packing	VENDOR	

No.	Item	Scope	Remarks
15	Lube Oil for initial charge	Optional	
16	Refrigerant	Customer	
17	Ocean Freight	Customer	
18	Capital/two years operational spare part Commissioning spare parts	Optional Vendor	a) As per Commercial Offer List
19	Structures(Inside Skid)	VENDOR	Within the skid
20	Anchor bolts and nuts	VENDOR	
21	Lifting Lugs for unit	VENDOR STD	
22	Special tools	VENDOR	For compressor only
23	Main motor cable gland	Customer	
24	Molecular Sleeve, Fitler dryer	N/A	

**Notes**

1 Guarantee period.  
Twelve (12) months after start-up or eighteen (18) months after notification of readiness for shipment, whichever occurs first.