



Toase-ehe Park Sanati Gohar Ofogh
Petrochemical Co.
**CONCEPTUAL, BASIC and DETAIL DESIGN
ENGINEERING OF STYRENE PARK OFFSITE**



Document Title: Package / Compressor Data Sheet

Document No.: EI027-HSE-VD –GE–DSH–001- R1

Rev. R1

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Please , To be submitted reply sheet and issue new revision of Chiller (Evaporator) Data sheet and also to be implemented our comments.

General Comments:

1- Vendor shall issue the "Duty Specification" for this package and mention it in this data sheet. Moreover more clarification about equipments shall represented in that document.

Vendor Reply 17-Feb-24: Duty specification is issued by esteemed Client and we have issued package Data Sheet based on agreements made during the meeting and scope of supply agreements, accordingly duty specification can not be issued by vendor and client can refer to this document as per this Data Sheet.

2- Vendor shall issue the P&ID for this package. There are some items that need to be specify in the P&ID, i.e. Instrument items, size of the lines and

Vendor Reply 17-Feb-24: Noted. This is part of VPIS agreed with Client.

3- Vendor shall issue the "Equipment List" document for this package and specify all required equipment in that document with their specification.

Vendor Reply 17-Feb-24: VPIS has been agreed with Client during the meeting and this Document (Package data sheet) is our Equipment List.

4- Safety Equipment Specifications shall be submitted.

Vendor Reply 17-Feb-24: This is not applicable in this Package.

5-Field Instrument Specifications shall be submitted.

Vendor Reply 17-Feb-24: This will be submitted as Instrument Data sheet in approved VPIS.

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Mechanical comments:

1.Filled client duty spec. shall be submitted by vendor.

2.Closed.

3.Equipment list shall be considered otherwise related table shall be shown in layout document.

4.As min. safety equipment spec. shall be reviewed and deviation list shall be submitted.

5.Closed.

Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED
R1	05-02-2024	IFA	F.SH	M.O	A.M
R0	09-09-2023	IFA	N.B	F.SH	A.M



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REVISION RECORD SHEET

Page Page	Revisions							Page	Revisions						
	R0	R1	R2	R3	R4	R5	R6		R0	R1	R2	R3	R4	R5	R6
1	X	X						41							
2	X	X						42							
3	X	X						43							
4	X	X						44							
5	X	X						45							
6	X	X						46							
7	X	X						47							
8								48							
9								49							
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 		Package data sheet		 			
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Customer		PETRO ELECTRIC					
Plant Name/Project Name		0001 A/B					
Item No./Name				No.of Required	2 Unit(s)		
OPERATING CONDITIONS / PER EACH COMP. UNIT							
		Design	IN	OUT	Main & side flow Composition		
Fluid	(degC)	Styrene	15.2	5			
Capacity	kW	165	Shall be acc. to project		Vendor reply 07.04.24: this is in accordance with project document		
Evaporating Temp.	(degC)	0					
Condensing Temp.	(degC)	56	Shall be recheck based on max ambient temperature				
Side Temp.	(degC)						
COMPRESSOR DESIGN CONDITIONS / PER EACH COMP. UNIT							
Design	Design	Vendor reply 07.04.24: The specified capacity is as per duty spec of the project		Note			
Compressor Model							
Motor Speed	(rpm)	2950			※Motor Speed = Compressor Speed		
Comp Load	(%)	100			Related duty spec. shall be fillet out or totally confirm		
Quantity		1	Per unit				
Capacity/unit	kW	165	Shall be acc. to project docs		According to the "Duty Specification" document, "outdoor without any shelter" shall be considered. Vendor Reply 17-Feb-24: Please refer to our KOM and withdraw the Comment.		
Power/unit	(kW)	120			* Compressor BkW		
Driver		Motor					
Stating Method		Direct					
Capacity Control	Control	Vendor reply 07.04.24: This has been agreed as per MOM 09.01.24					
	Range of						
	Control Method	Slide Valve					
SITE CONDITION							
Location	<input type="checkbox"/> Indoor (heated) <input checked="" type="checkbox"/> Outdoor under Shelter (Provided by Client) <input checked="" type="checkbox"/> Hazardous Area : Zone 2 IIB T3 <input checked="" type="checkbox"/> Normal weather condition (Temp. +5°C TO +48°C)						
Noise	<input checked="" type="checkbox"/> Noise Level 85dB(A) at 1m from Unit Shall be acc. to project docs						
Oil Separation	1st Separation						
MATERIAL DESIGN							
Code & Standard	Item	Material	Design		Remarks		
	Unit System	<input type="checkbox"/> JIS	<input checked="" type="checkbox"/> MYK Standard		JIS = Japanese Industrial Standards		
	Compressor	<input checked="" type="checkbox"/> JIS	<input checked="" type="checkbox"/> MYK Standard				
	Press Vessel	<input checked="" type="checkbox"/> AD/MYCOM STD	<input type="checkbox"/> ISO	<input type="checkbox"/> PED <input checked="" type="checkbox"/> MYK Standard	All manufacturer & MYCOM standard items shall be guaranteed by vendor		
	Heat Exchanger	<input checked="" type="checkbox"/> AD/MYCOM STD	<input type="checkbox"/> ISO	<input type="checkbox"/> PED <input checked="" type="checkbox"/> MYK Standard			
	Valve	<input checked="" type="checkbox"/> DIN <input checked="" type="checkbox"/> ASME	<input type="checkbox"/> ISO	<input type="checkbox"/> PED <input checked="" type="checkbox"/> Manufacture's Std.	DIN = Germany Industrial Standards		
	Safety Valve	<input type="checkbox"/> DIN <input type="checkbox"/> ASME	<input type="checkbox"/> ISO	<input checked="" type="checkbox"/> Manufacture's Std. <input type="checkbox"/> ASRAE	Single Type		
	Piping	<input checked="" type="checkbox"/> DIN <input checked="" type="checkbox"/> ASME	<input type="checkbox"/> ISO	<input checked="" type="checkbox"/> Manufacture's Std.	Piping inside the Compressor Skid is as per MYCOM STD, Tie in as per Project specification		
	Flange	<input checked="" type="checkbox"/> DIN <input checked="" type="checkbox"/> ASME	<input type="checkbox"/> ISO	<input checked="" type="checkbox"/> Manufacture's Std. <input type="checkbox"/> JIS	Piping inside the Compressor Skid is as per MYCOM STD, Tie in as per Project specification		
	Thread Connection	<input type="checkbox"/> DIN <input type="checkbox"/> ASME <input type="checkbox"/> ISO	<input type="checkbox"/>	<input type="checkbox"/> PT <input type="checkbox"/> NPT			
	MOTOR	<input type="checkbox"/> DIN <input type="checkbox"/> ASME <input type="checkbox"/> ISO	<input type="checkbox"/> JIS	<input checked="" type="checkbox"/> IEC <input checked="" type="checkbox"/> Manufacture's Std. <input type="checkbox"/> ISO			
	Instrumentation	<input type="checkbox"/> DIN <input type="checkbox"/> ASME <input type="checkbox"/> ISO	<input type="checkbox"/> JIS	<input checked="" type="checkbox"/> IEC <input checked="" type="checkbox"/> Manufacture's Std. <input type="checkbox"/> ISO			
	Control Panel	<input type="checkbox"/> DIN <input type="checkbox"/> ASME <input type="checkbox"/> ISO	<input type="checkbox"/> JIS	<input type="checkbox"/> IEC <input type="checkbox"/> Manufacture's Std. <input type="checkbox"/> ISO	1 set of S7 1200 Common for the Unit		
	Cable & wiring	<input type="checkbox"/> DIN <input type="checkbox"/> ASME <input type="checkbox"/> ISO	<input type="checkbox"/> JIS	<input checked="" type="checkbox"/> IEC <input checked="" type="checkbox"/> Manufacture's Std. <input type="checkbox"/> ISO			
UTILITY							
Electricity	Rated Power (kW)		Volte (V)	Frequency (Hz)	Phase	Note	
	Value	Q'ty					
	Compressor Power	120	1	LV	50	3	Compressor shaft power Rpm, 2950
	Oil Pump Motor for CP	2.5	1	LV	50	3	CP = Compressor Pump
	SB Oil Pump Motor for CP	n/a				3	SB = Stand-by
	Control Panel			DC24V		1	
Cooling Water	Temp. (degC)	in NA		return NA			
	Press. (barG)	in					
	Flow Rate (m3/hr)	× 1		Fouling Factor	TBA	m2h°C/kcal	
Instrument	Press. (barG)	***	Temp. (degC)	***	Flow Rate (Nm3/hr)	Approx. ***	

 		Package data sheet		 	
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Scope of Supply and Work (1/3) - Two Refrigeration Packages Each One including following items:					
No	Item	Scope	Q'ty	Remarks	
1	MYCOM Compressor		1	Compressor Skid	
				model P160VSD-M	
	Compressor			Casing / Rotor : Cast iron / Ductile Iron, O-rings Viton	
	Electric motor for compressor	■	1	Rated power 120k , LV, 50 Hz IP55 Exec Suitable for Zone 2	
	Oil Pump	■	1	For Each Compressor	
	Electric motor for Oil Pump	■	1	2.5 kW IP55 / Class F/B	
	1st Oil separator	■	1	Horizontal drum type primary fine oil separator	
	Oil cooler	■	1	MYCOM STD Refrigerant Cooled	
	Oil filter	■	1	Shell : Carbon Steel For Each Compressor	
	Oil heater	■	1	1.5 kW	For Each
	Expansion Valve of Evaporator	■	1		
	Dryer Filter	■	1	Temporary use for both packages	
	Suction Filter	■	1	Suction strainer	
	Control panel	■	1	Siemens S7-1200 PLC for safe area common for complete system	
	Instruments IP65, Ex execution	■	1set	1) Suction/Discharge check valves (SC) 2) Single Safety valve for compressor on oil separators (CS) 3) ATEX coupling (main coupling and oil pump) , non sparking 4) Instrumentation Exd and will be As per MYCOM STD 5) Instruments to be mounted locally	
	Junction Box			Per Mfr Std, qty: 1 pce, Exe	
				Direct feeder for Package Electrical users to be provided by client	

Vendor reply 07.04.24:
This will be used only for refrigerant charging

Shall be clarified

Related duty spec. shall be filled out or totally confirm

Some items of this page need to be specified in the "Duty Specification" document, i.e. oil heater, oil filter and ...

Moreover, Instrument items will be check in the P&ID
Vendor Reply 17-Feb-24: These Items are part of MYCOM Compressor Package and Compressor package Data Sheet and Drawing is already provided as per approved VPIS.

Vendor reply 07.04.24:
PLC is located in Safe area(control room)

Shall be clarified



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Scope of Supply and Work (2/3):

No	Item	Scope	Q'ty	Remarks
	Piping , Tubing Work & Valves			
	Within skid / Shop Work	<input checked="" type="checkbox"/>	1set	CS material
	Between skids / Site Work	<input type="checkbox"/>		
	To others / site Work	<input type="checkbox"/>		
	Electric Wiring Work			
	Wiring within skid / Shop Work	<input checked="" type="checkbox"/>	1 set	
	Wiring between skids / Site Work	<input type="checkbox"/>		
	Wiring to others / site Work	<input type="checkbox"/>		
	Thermal insulation, personal protection and fire protection			
	Engineering	<input checked="" type="checkbox"/>		
	Shop work	<input type="checkbox"/>		
	Field work	<input type="checkbox"/>		
	Ladder, Platform and Structure / Maintenance accessory			
	Material	<input type="checkbox"/>		
	Shop work	<input type="checkbox"/>		
	Field work	<input type="checkbox"/>		
	Heat/Steam tracing			
	Material	<input type="checkbox"/>		By Client
	Shop work	<input type="checkbox"/>		
	Field work	<input type="checkbox"/>		
	Acoustic Enclosure	<input type="checkbox"/>		Not For this Size Machine Not Required

According to General Comment number 2, size of the pipes will be checked in the P&ID document
 Vendor Reply 17-Feb-24: To be discussed in P&ID please withdraw this comment.

More specification shall be represented in the "Duty Specification" document
 Vendor Reply 17-Feb-24: Please refer to above replies, Duty specification is not a part of Vendor Documents.

Related duty spec. shall be filled out or totally confirm

Required insulation & heat tracing for parts of equipment shall be considered by vendor.

Vendor reply 07.04.24: As per previous revision which comments are agreed between parties, supply of Insulation and heat tracing is by site contractor not by vendor. This is also specified in project in duty spec to be done by others. Vendor will provide information.

MYCOM SCREW COMPRESSOR PERFORMANCE SINGLE STAGE (BOOSTER)

Title : _____

MODEL : P160VS*-M
 REFRIGERANT : PROPANE
 RECOMMENDED PORT : M M M

Please recheck and refer to comments on the body of document, just required capacity specifications shall be submitted

Vi : [-] 3.64 3.64 3.64
 COMPRESSION RATIO : [-] 1.37 1.37 1.37

Vendor reply: we have considered higher capacity compressor however, 165 KW as guaranteed capacity as per duty specification is our guarantee figure

CAPACITY :	[kW]	196.1	171.4	151.3
CAPACITY :	[TR]	55.8	48.7	43.0
ABSORBED POWER :	[kW]	98.2	91.2	85.6

DRIVE SHAFT SPEED :	[min-1]	2950	2950	2950
COMPRESSOR SPEED :	[min-1]	2950	2950	2950
INDICATOR POSITION :	[%]	90.0	80.0	70.0
CONDENSING TEMP. :	[degC]	56.0	56.0	56.0
EVAPORATIVE TEMP. :	[degC]	0.00	0.00	0.00
SUCTION SUPERHEAT :	[degC]	0.00	0.00	0.00
LIQUID SUBCOOLING :	[degC]	0.00	0.00	0.00
SUCTION TEMP. :	[degC]	0.00	0.00	0.00
OIL SUPPLY TEMP. :	[degC]	50.0	50.0	50.0
SUCTION PRESS. :	[MPaA]	0.466	0.466	0.466
DISCHARGE PRESS. :	[MPaA]	2.03	2.03	2.03
OIL SUPPLY PRESS. :	[MPaA]	2.23	2.23	2.23
SUCTION PRES. DROP :	[MPa]	0.005	0.005	0.005
DISCHARGE PRES. DROP :	[MPa]	0.050	0.050	0.050

SWEPT VOLUME :	[m3/h]	415	415	415
LOAD (SUCTION VOL. FLOW RATE) :	[%]	86.5	75.6	66.7
DISCHARGE TEMP. :	[degC]	68.6	69.2	69.7
REFRIG. FLOW RATE SUC. :	[m3/h]	317	277	245
REFRIG. FLOW RATE DIS. :	[m3/h]	75.1	65.9	58.4
REFRIG. FLOW RATE SUC. :	[kg/h]	3213	2808	2479
REFRIG. FLOW RATE DIS. :	[kg/h]	3213	2808	2479
INJECT. OIL FLOW RATE :	[L/min]	-	-	-
LUB. OIL FLOW RATE :	[L/min]	44.9	44.9	44.9
F. SIDE OIL FLOW RATE :	[L/min]	8.33	8.33	8.33
TOTAL OIL FLOW RATE :	[L/min]	53.2	53.2	53.2
OIL HEAT REJECTION :	[kW]	28.0	28.9	29.7
OIL SPEC HT :	[J/kgK]	1930	1930	1930
OIL DENSITY :	[kg/m3]	880	880	880

COP : [-] 2.00 1.88 1.77

Elevation : [m] NA NA NA
 Atmospheric : [MPa] NA NA NA

- SUPER HEAT is NOT counted in refrigeration capacity ---
- WITH THERMO-SIPHON OIL COOLER ---
- NO OIL INJECTION ---
- When choosing the motor set a safety factor of more than 10% for the brake power. ---
- Please check carefully the operating range. ---
- Reference temperature : Dew Point ---

Performance curve shall be submitted
 Vendor reply: Oil flooded screw compressor curve is not applicable

*** MYCOMW27 compressor performance table is valid until the end of Mar, 2024. ***