



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- R2

Rev. R2

Page 1 of 7

STYRENE PARK OFFSITE

Document Title:
Package / Compressor Data Sheet

Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED
R2	07-05-2024	IFA	F.SH	M.O	A.M
R1	05-02-2024	IFA	F.SH	M.O	A.M
R0	09-09-2023	IFA	N.B	F.SH	A.M



Toase-e 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- R2

Rev. R2

Page 2 of 7

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	X					41							
2	X	X	X					42							
3	X	X	X					43							
4	X	X	X					44							
5	X	X	X					45							
6	X	X	X					46							
7	X	X	X					47							
8								48							
9								49							
10								50							
11								51							
12								52							
13								53							
14								54							
15								55							
16								56							
17								57							
18								58							
19								59							
20								60							
21								61							
22								62							
23								63							
24								64							
25								65							
26								66							
27								67							
28								68							
29								69							
30								70							
31								71							
32								72							
33								73							
34								74							
35								75							
36								76							
37								77							
38								78							
39								79							
40								80							

 		Package data sheet		 							
Document Title: Package / Compressor Data Sheet		Rev.R2		Date:07.05.2024							
Document No.: EI027-HSE-VD-ME-DSH-001- R2				Page 03 Of 07							
Customer		PETRO ELECTRIC									
Plant Name/Project Name		RU-0001 A/B									
Item No./Name		CHILLER UNIT		No.of Required 2 Unit(s)							
OPERATING CONDITION (PROCESS) – BASED ON CUSTOMER DS / PER EACH COMP. UNIT											
		Design	IN	OUT	Main & side flow Composition						
Fluid	(degC)	Styrene	15.2	5							
Capacity	kW	165									
Evaporating Temp.	(degC)	0									
Condensing Temp.	(degC)	56									
Side Temp.	(degC)										
COMPRESSOR DESIGN CONDITION (BASED ON MAYEKAWA CALCULATIONS) / PER EACH COMP. UNIT											
Design		Design		Note							
Compressor Model											
Motor Speed	(rpm)	2950			※Motor Speed = Compressor Speed						
Comp Load	()	100									
Quantity		1	Per unit								
Capacity/unit	kW	165									
Power/unit	(kW)	120			* Compressor BkW						
Driver		Motor									
Stating Method		Direct									
Capacity Control	Control Source	***									
	Range of Control	30-100									
	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									
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					
		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. <input type="checkbox"/> ISO		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			
Oil Heater		1.5kW				3					
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



Document Title: Package / Compressor Data Sheet

Document No.: EI027-HSE-VD-ME-DSH-001- R2





Rev.R2

Date:07.05.2024

Page 04 Of 07

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	Shell : Carbon Steel / Design Cord : PED MYCOM STD Refrigerant Cooled
	Oil filter	■	1	Shell : Carbon Steel For Each Compressor
	Oil heater	■	1	1.5 kW For Each Compressor
	Condenser Air Cooler	■	1	
	Evaporator	■	1	
	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 Exe	■		Per Mfr Std, qty: 1 pce, Exe
				Direct feeder for Package Electrical users to be provided by client

 	Compressor Data sheet	 
Document Title: Package / Compressor Data Sheet		
Document No.: EI027-HSE-VD-ME-DSH-001- R2	Rev.R2	Date:07.05.2024 Page 07 Of 07

MYCOM SCREW COMPRESSOR PERFORMANCE SINGLE STAGE (BOOSTER)

Title :				
MODEL :	P160VS*-M			
REFRIGERANT :	PROPANE			
RECOMMENDED PORT :		M	M	M
Vi :	[-]	3.64	3.64	3.64
COMPRESSION RATIO :	[-]	4.37	4.37	4.37
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 ---

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