



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- R1

Rev. R1

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# STYRENE PARK OFFSITE

**Document Title:**  
**Package / Compressor Data Sheet**

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							
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 		Package data sheet		 				
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Customer		PETRO ELECTRIC						
Plant Name/Project Name		RU-0001 A/B						
Item No./Name		CHILLER UNIT		No.of Required	2 Unit(s)			
<b>OPERATING CONDITION ( PROCESS) – BASED ON CUSTOMER DS / PER EACH COMP. UNIT</b>								
		<b>Design</b>	<b>IN</b>	<b>OUT</b>	<b>Main &amp; side flow Composition</b>			
Fluid	(degC)	Styrene	15.2	5				
Capacity	kW	165						
Evaporating Temp.	(degC)	0						
Condensing Temp.	(degC)	56						
Side Temp.	(degC)							
<b>COMPRESSOR DESIGN CONDITION ( BASED ON MAYEKAWA CALCULATIONS) / PER EACH COMP. UNIT</b>								
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						
<b>SITE CONDITION</b>								
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							
<b>MATERIAL DESIGN</b>								
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				
<b>UTILITY</b>								
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



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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	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





 	<b>Compressor Data sheet</b>	 
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**MYCOM SCREW COMPRESSOR PERFORMANCE SINGLE STAGE (BOOSTER)**

<b>Title :</b>				
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. \*\*\*