Reciprocating

Parallel Racks

Large Parallel Racks
(30~350HP)

Small Parallel Racks
(13~45HP)

Product Features

- Multi-compressor parallel design, range of optional cooling capacity: 13HP~350HP
- R22/R404A and other refrigerant options
- Multiple non-standard options
- Self-developed special refrigeration compressors, reliable and efficient
- Compressors and system with individual pressure switches and electric protection for reliable operation
- Three-stage oil separator, with an efficiency of >98%
- Integrated structure design, compact and easy to install

Customer Value

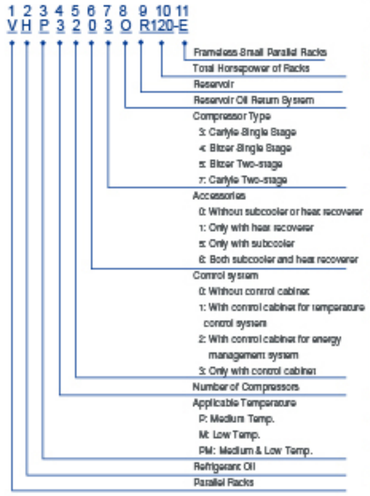
- Applicable for regular refrigerants and multiple scenarios, with a cooling capacity of 350HP
- Numerous non-standard customized for various sites
- High energy efficiency, low operation cost, low temperature two-stage reciprocating parallel racks saving at least 30% energy and medium temperature parallel racks saving about 5% energy
- Reliable operation, safe and stable
- System with good oil return and long service life
- Compact structure and small footprint

Application

Working Conditions	Reciprocating Compressor					
	Medium Temperature		Single Stage Low Temperature		Two-Stage Low Temperature	
Refrigerant	R22	R404A	R22	R404A	R22	R404A
Evaporating Temperature	-18~+7	-18~+4	-37~-18	-40~-18	-50~-24	-50~-24

* All comparisons are based on the product performances of last generation.

Naming Rule of Parallel Racks



Technical Parameters

<45HP Small Parallel Reciprocating Compressor Racks (R404A)

Low Temperature Racks

Model	HP	Compressor	Evaporating Temperature -37°C Cooling Capacity Q (kW)	-37°C Power Consumption P (kW)	-35°C Cooling Capacity Q (kW)	-35°C Power Consumption P (kW)	-30°C Cooling Capacity Q (kW)	-30°C Power Consumption P (kW)
VPM2203OR-13E	13	2*06DR725	7.48	6.4	8.72	7.02	12.28	8.58
VPM2203OR-15E	15	2*06DR228	10.18	8.28	11.78	9.06	16.18	11.4
VPM2203OR-20E	20	2*06DR337	14.94	11.96	16.64	12.78	21.54	14.96
VPM2203OR-30E	30	2*06DR541	23.7	17.2	18.08	14.98	23.7	17.2
VPM3203OR-30E	30	3*06DR337	22.41	17.94	24.96	19.17	32.31	22.44
VPM3203OR-45E	45	3*06DR541	35.55	25.8	27.12	22.47	35.55	25.8

Medium Temperature Racks

Model	HP	Compressor	Evaporating Temperature -37°C Cooling Capacity Q (kW)	-37°C Power Consumption P (kW)	-35°C Cooling Capacity Q (kW)	-35°C Power Consumption P (kW)	-30°C Cooling Capacity Q (kW)	-30°C Power Consumption P (kW)
VPP2203OR-15E	15	2*06DA825	27.28	13.72	30.28	14.26	38.68	15.44
VPP2203OR-20E	20	2*06DA328	33.86	16.74	37.22	17.28	46.66	18.48
VPP2203OR-30E	30	2*06DA537	47.26	22.82	51.72	23.62	64.14	25.4
VPP3203OR-35E	35	2*06DA328+06DA537	57.49	28.15	63.08	29.09	78.73	31.18
VPP3203OR-40E	40	06DA328+2*06DA537	64.19	55.63	41.43	60.38	46.95	73.38
VPP3203OR-45E	45	3*06DA537	70.89	34.23	77.58	35.43	96.21	38.1

Note: 1) The cooling capacity and input power of the all racks are based on condensing temperature at +45°C , liquid with subcooler.
2) The power wire for the compressor racks is three-phase 380V/50Hz. 3) Optional refrigerants, R22 and R404A. 4) Height and weight of low temperature racks includes head fans. 5) Excluding freight. 6) If you need R22 refrigerant, please contact our technical staffs.

Technical Parameters

>45HP Large Parallel Reciprocating Compressor Racks (R404A)

Low Temperature Two-stage Parallel Racks

Racks Model No.	Compressor Model x Quantity	Evaporating Temperature 10 - 50°C Cooling Capacity Q (kW)	10 - 50°C Power Consumption P (kW)	-10 - -45°C Cooling Capacity Q (kW)	-10 - -45°C Power Consumption P (kW)	-40°C Cooling Capacity Q (kW)	-40°C Power Consumption P (kW)	-35°C Cooling Capacity Q (kW)	-35°C Power Consumption P (kW)
VPM2257OR-30	06CC550*2	—	—	—	—	17.40	11.48	23.94	13.40
VPM2257OR-40	06CC675*2	19.96	13.78	25.06	16.5	32.16	19.38	41.06	22.20
VPM3257OR-45	06CC550*3	—	—	—	—	26.10	17.22	35.91	20.10
VPM3257OR-60	06CC675*3	29.94	20.67	37.59	24.75	48.24	29.07	61.59	33.30
VPM3257OR-90	06CC899*3	42.99	30.66	52.23	36.12	65.64	41.70	82.62	47.25
VPM4257OR-120	06CC899*4	57.32	40.88	69.64	48.16	87.52	55.60	110.16	63.00
VPM5257OR-150	06CC899*5	71.65	51.11	87.05	60.20	109.40	69.50	137.70	78.75
VPM6257OR-180	06CC899*6	85.98	61.32	104.46	72.24	131.28	83.40	165.24	94.50

Low Temperature Parallel Racks

Racks Model No.	Compressor Model x Quantity	Evaporating Temperature 10 - 50°C Cooling Capacity Q (kW)	10 - 50°C Power Consumption P (kW)	-10 - -45°C Cooling Capacity Q (kW)	-10 - -45°C Power Consumption P (kW)	-40°C Cooling Capacity Q (kW)	-40°C Power Consumption P (kW)	-35°C Cooling Capacity Q (kW)	-35°C Power Consumption P (kW)
VPM2203OR-30	06ER450*2	12.88	12.94	20.42	17.14	26.94	21.26	38.58	25.24
VPM2203OR-40	06ER475*2	18.84	18.64	29.04	23.84	40.96	29.26	54.90	34.80
VPM3203OR-45	06ER450*3	19.32	19.41	30.63	25.71	43.41	31.89	57.87	37.86
VPM3203OR-60	06ER475*3	28.26	27.96	43.56	35.76	61.44	43.89	82.35	52.20
VPM3203OR-90	06ER399*3	41.22	40.35	58.56	49.71	78.78	59.67	102.42	70.08
VPM4203OR-120	06ER399*4	54.96	53.80	78.08	66.28	105.04	79.56	136.56	93.44
VPM5203OR-130	06ER399*3+06ER475*2	60.06	58.99	87.60	73.55	119.74	88.93	157.32	104.88
VPM5203OR-150	06ER399*5	68.70	67.25	97.60	82.85	131.30	99.45	170.70	116.80
VPM6203OR-160	06ER399*4+06ER475*2	73.80	72.44	107.12	90.12	146.00	108.82	191.48	128.24
VPM6203OR-180	06ER399*6	82.44	80.70	117.12	99.42	157.56	119.34	204.84	140.16

Medium Temperature Parallel Racks

Racks Model No.	Compressor Model x Quantity	Evaporating Temperature 10 - 50°C Cooling Capacity Q (kW)	10 - 50°C Power Consumption P (kW)	-10 - -45°C Cooling Capacity Q (kW)	-10 - -45°C Power Consumption P (kW)	-40°C Cooling Capacity Q (kW)	-40°C Power Consumption P (kW)	-35°C Cooling Capacity Q (kW)	-35°C Power Consumption P (kW)
VPP2203OR-30	06EM450*2	49.02	24.78	57.26	28.94	63.20	28.34	79.72	31.66
VPP2203OR-40	06EM475*2	77.50	37.62	89.92	40.72	98.88	42.78	123.98	47.84
VPP3203OR-45	06EM450*3	73.53	37.17	85.89	40.41	94.80	42.51	119.58	47.49
VPP3203OR-75	06EM475*3	116.25	56.43	134.88	61.08	148.32	64.17	185.97	71.76
VPP3203OR-105	06EM499*3	180.78	87.06	199.89	92.40	213.48	95.52	250.92	102.60
VPP4203OR-120	06EM499*2+06EM475*2	198.02	95.66	223.18	102.32	241.20	106.48	291.26	116.24
VPP4203OR-130	06EM499*3+06EM475	219.53	105.87	244.85	112.76	262.92	116.91	312.91	128.52
VPP4203OR-140	06EM499*4	241.04	116.08	266.52	123.20	284.64	127.38	334.56	136.80
VPP5203OR-155	06EM499*3+06EM475*2	258.28	124.68	289.81	133.12	312.36	138.30	374.90	150.44
VPP5203OR-175	06EM499*5	301.30	145.10	333.15	154.00	355.80	159.20	418.20	171.00
VPP6203OR-190	06EM499*4+06EM475*2	318.54	153.70	356.44	163.92	383.52	170.14	458.54	184.64
VPP6203OR-210	06EM499*6	361.56	174.12	399.78	184.80	426.96	191.04	501.84	205.20

Non-standard Options for >45HP Large Parallel Reciprocating Compressor Racks

	Non-standard Options for Reciprocating Parallel Racks
1	Liquid feeding by-pass with valves, specifications 1/2" (12mm)- 3-1/8"(5-4mm)
2	Gas return by-pass with valves, specification 7/8" (22mm)- 4-1/4"(108mm)
3	Main discharge check valve
4	Shock-proof discharge pipe for compressor (standard muffler)
5	Electronic oil level regulator (standard mechanical oil level equalizer)
6	Condensing pressure control valve (A8A9)
7	Condensing pressure control switch
8	Reservoir plug-in or remote installation
9	Vertical or horizontal reservoir structure
10	Single-stage low temperature or medium temperature subcooler configuration
11	Hot gas defrosting
12	Medium and low temperature integrated racks
13	Multi suction pressure energy management system
14	Main incoming circuit-breaker
15	Optional controller brands, Dixell (standard), Carel, Danfoss, PLC

Note: 1) For this compressor rack, available non-standard rack configurations are listed in the customer non-standard options. 2) When ordering compressor racks, the customers may choose one or several non-standard configuration options according to the actual conditions of the project and system design. 3) To meet the changing demand of the customers, the non-standard options for compressor racks will be updated constantly.

1) The cooling capacity and input power listed above are based on an ambient temperature of 32°C , the condensing temperature is 45°C , no subcooler for the liquid, the temperature of the interstage cooling liquid for two-stage is 4.4°C . For example, SIT+2.8>4.4°C , the temperature is SIT+5.6°C
2) The power wire for the compressor racks is three-phase 380V/50Hz and the power for the control operation is one-phase 220V/50Hz.
3) If the compressor racks are to operate with different evaporating temperature or with too high/too low ambient temperature, please contact us.
4) For application under working conditions of temperature (i.e. -50°C), you'd better contact our technical staffs.
5) If you need R22 refrigerant, please contact our technical staffs.

Technical Parameters of > 45HP Large Parallel Reciprocating Compressor Racks

Racks Model No.	Dimension of Racks' External Pipes (mm) Discharge DL	Suction SL	Liquid Pipe Inlet	Liquid Pipe Outlet	External Dimension L	W	H	Max. Working Current A	Weight kg	Machine Room Ventilation Rate m³/h
VPM2257OR-30	35	67	35	28	2700	1200	1900	52	1400	2700
VPM2257OR-40	35	67	35	28	2700	1200	1900	80	1600	3200
VPM3257OR-45	35	76	35	35	3400	1200	1900	78	1800	4100
VPM3257OR-60	35	76	35	35	3400	1200	1900	120	2000	4800
VPM3257OR-90	42	76	42	35	3400	1200	1900	174	2100	6600
VPM4257OR-120	54	89	42	35	4100	1200	1900	232	2500	8800
VPM5257OR-150	54	108	54	42	4900	1200	1900	290	3000	11000
VPM6257OR-180	54	108	54	42	5500	1200	1900	348	3500	13500
VPM2203OR-30	35	67	35	28	2700	1200	1900	72	700	3200
VPM2203OR-40	35	67	35	28	2700	1200	1900	88	800	3800
VPM3203OR-45	35	76	35	35	3400	1200	1900	108	1000	4750
VPM3203OR-60	35	76	35	35	3400	1200	1900	132	1100	5650
VPM3203OR-90	42	76	42	35	3400	1200	1900	204	1200	8600
VPM4203OR-120	42	89	42	35	4100	1200	1900	272	1700	11500
VPM5203OR-130	54	108	54	42	4900	1200	1900	292	2000	13000
VPM5203OR-150	54	108	54	42	4900	1200	1900	340	2000	15500
VPM6203OR-160	54	108	54	42	5500	1200	1900	360	2300	16000
VPM6203OR-180	54	108	54	42	5500	1200	1900	408	2300	19000
VPP2203OR-30	35	67	35	28	2700	1200	1900	72	700	3200
VPP2203OR-40	35	67	35	28	2700	1200	1900	88	800	4750
VPP3203OR-45	42	76	42	35	3400	1200	1900	108	1000	4750
VPP3203OR-75	42	76	42	35	3400	1200	1900	168	1100	7300
VPP3203OR-105	54	89	42	42	3400	1200	1900	231	1300	10000
VPP4203OR-120	54	89	54	54	3900	1200	1900	266	1400	11500
VPP4203OR-130	54	89	54	54	3900	1200	1900	287	1500	12500
VPP4203OR-140	54	108	54	54	3900	1200	1900	308	1700	13500
VPP5203OR-155	54	108	54	54	4600	1200	1900	343	2000	15000
VPP5203OR-175	67	108	54	54	4600	1200	1900	385	2000	16000
VPP6203OR-190	67	108	54	54	4600	1200	1900	420	2300	18500
VPP6203OR-210	67	108	54	54	5300	1200	1900	462	2300	19500

1) If you need R22 refrigerant, please contact our technical staffs.

Technical Parameters of < 45HP Small Parallel Reciprocating Compressor Racks

Racks Model No.	Dimension of Racks' External Pipes (mm) Discharge	Suction	Return Liquid	Supply Liquid	External Dimension L	W	H	Max. Working Current A	Weight kg	Machine Room Ventilation Rate m³/h
VPM2203OR-13E	1-1/8"	2-1/8"	1-1/8"	7/8"	1602	707	1009	22.26	500	1600
VPM2203OR-15E	1-1/8"	2-1/8"	1-1/8"	7/8"	1602	707	1009	31.2	500	1600
VPM2203OR-20E	1-1/8"	2-1/8"	1-1/8"	7/8"	1602	707	1009	36.42	500	2000
VPM2203OR-30E	1-1/8"	2-1/8"	1-1/8"	7/8"	1602	707	1009	44.52	500	3000
VPM3203OR-30E	1-3/8"	2-1/8"	1-3/8"	1-1/8"	2112	699	1009	54.63	650	3000
VPM3203OR-45E	1-3/8"	2-1/8"	1-3/8"	1-1/8"	2112	699	1009	66.78	650	4500
VPP2203OR-15E	1-1/8"	2-1/8"	1-1/8"	7/8"	1602	707	814	35.44	500	2000
VPP2203OR-20E	1-1/8"	2-1/8"	1-1/8"	7/8"	1602	707	814	41.8	500	2500
VPP2203OR-30E	1-1/8"	2-1/8"	1-1/8"	7/8"	1602	707	814	48	500	3500
VPP3203OR-35E	1-3/8"	2-1/8"	1-3/8"	1-1/8"	2112	699	814	70.8	650	4000