## Reciprocating Large Parallel Racks

Reciprocating Large Parallel Racks
(Two- to six-parallel, 30HP - 210HP)

★ Please refer to Page23 for rack naming rules

### Customer Value

- Applicable for multiple refrigerants and scenarios, with a cooling capacity of 210 HP
- Numerous non-standard customization for various sites
- High energy efficiency, low operation cost, LT two-stage reciprocating parallel racks save at least 30% energy while the MT racks save around 5%.
- The racks supports VFD drives for more efficient energy regulation
- Reliable operation, safe and stable
- System with good oil return and long service life
- Compact structure, small footprint

### Benefits at a Glance

- Multi-compressor parallel design, optional cooling capacity range: 13 HP - 210 HP
- Refrigerant options: R448 R449/R404A and others
- Multiple non-standard options are available.
- Self-developed special refrigeration compressors, reliable and efficient
- Compressors and system with separate 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

## Standard Configuration

### LT Two-stage Reciprocating Parallel Racks Standard Configuration:

- Compressor
- Subcooler
- Mechanical oil balancer
- Integrated vertical reservoir
- Muffler
- Removable liquid supply filter drier
- Gas-liquid separator
- Exhaust/return/liquid supply stop valve or ball valve

### MT/LT Single-stage Reciprocating Parallel Racks Standard Configuration:

- Compressor
- Mechanical oil balancer
- Integrated vertical reservoir
- Exhaust check valve
- Muffler
- Alarm relay
- Reservoir outlet filter drier
- Exhaust/return/liquid supply stop valve or ball valve

### LT Single-stage & MT Reciprocating Parallel Racks Standard Configuration:

- Compressor
- Mechanical oil balancer
- Integrated vertical reservoir
- Return air filter
- Gas-liquid separator (standard for LT version, no for MT version)
- Reservoir outlet filter drier
- Muffler
- Exhaust/return/liquid supply stop valve or ball valve

## Options

### LT Two-stage Reciprocating Parallel Racks Optional Configuration:

- Danfoss, Carel controllers
- Number of liquid supply and gas return branches
- Electronic oil balancer
- Multiple suction pressure racks
- Inverter
- Remote control

### MT/LT Single-Stage Reciprocating Parallel Racks Optional Configuration:

- Subcooler
- Danfoss, Carel controllers
- Electronic oil balancer
- Split horizontal/vertical reservoir
- Condensing switch
- Exhaust check valve
- Hot gas defrost system

### LT Single-stage & MT Reciprocating Parallel Racks Optional Configuration:

- Subcooler
- Danfoss, Carel controllers
- Electronic oil balancer
- Split horizontal/vertical reservoir
- Condensing pressure switch
- With shock-absorbing hoses
- Multiple suction pressure racks
- Inverter
- Remote control

1)The cooling capacity and input power are based on an ambient temperature of 32°C, the condensing temperature of 45°C, no liquid subcooling; and the temperature of the interstage cooling liquid for two-stage is 4.4°C. For example, if SIT+2.8>4.4°C, the temperature is SIT+5.6°C.
2)The power supply for the racks is three-phase 380V/50Hz, and the power for the control operation is one-phase 220V/50Hz.
3)If the racks are aiming to operate at different evaporating temperatures or at too high or too low ambient temperatures, please contact us.
4)For an application at a temperature of ※ (i.e., -50°C), please contact our technicians.





## Rack Application Scope

| Mode | Reciprocating Compressor | | | | | |
|---|---|---|---|---|---|---|
| | MT | | LT, Single-stage | | LT, Two-stage | |
| Refrigerant | R448/R449 | R404A | R448/R449 | R404A | R448/R449 | R404A |
| Evaporation Temperature | -18~ +7 | -18~ +4 | -37~ -18 | -40~ -18 | -50~ -24 | -50~ -24 |

## Reciprocating Large Parallel Racks (R404A)

### LT two-stage parallel racks

| Rack Models | Compressor Configuration Models and Number | Evaporating Temperature: -50°C | | Evaporating Temperature: -45°C | | Evaporating Temperature: -40°C | | Evaporating Temperature: -35°C | |
|---|---|---|---|---|---|---|---|---|---|
| | | Cooling capacity: Q(kW) | Input power P(kW) | Cooling capacity: Q(kW) | Input power P(kW) | Cooling capacity: Q(kW) | Input power P(kW) | Cooling capacity: Q(kW) | Input power P(kW) |
| VPM22570R-30 | 2*06CC550 | — | — | — | — | 17.40 | 11.48 | 23.94 | 13.40 |
| VPM22570R-40 | 2*06CC675 | 19.96 | 13.78 | 25.06 | 16.5 | 32.16 | 19.38 | 41.06 | 22.20 |
| VPM32570R-45 | 3*06CC550 | — | — | — | — | 26.10 | 17.22 | 35.91 | 20.10 |
| VPM32570R-60 | 3*06CC675 | 29.94 | 20.67 | 37.59 | 24.75 | 48.24 | 29.07 | 61.59 | 33.30 |
| VPM32570R-90 | 3*06CC899 | 42.99 | 30.66 | 52.23 | 36.12 | 65.64 | 41.70 | 82.62 | 47.25 |
| VPM42570R-120 | 4*06CC899 | 57.32 | 40.88 | 69.64 | 48.16 | 87.52 | 55.60 | 110.16 | 63.00 |
| VPM52570R-150 | 5*06CC899 | 71.65 | 51.11 | 87.05 | 60.20 | 109.40 | 69.50 | 137.70 | 78.75 |
| VPM62570R-180 | 6*06CC899 | 85.98 | 61.32 | 104.46 | 72.24 | 131.28 | 83.40 | 165.24 | 94.50 |

### LT parallel racks

| Rack Models | Compressor Configuration Models and Number | Evaporating Temperature: -40°C | | Evaporating Temperature: -35°C | | Evaporating Temperature: -30°C | | Evaporating Temperature: -25°C | |
|---|---|---|---|---|---|---|---|---|---|
| | | Cooling Capacity Q(kW) | Input Power P(kW) | Cooling Capacity Q(kW) | Input Power P(kW) | Cooling Capacity Q(kW) | Input Power P(kW) | Cooling Capacity Q(kW) | Input Power P(kW) |
| VPM22030R-30 | 2*06ER450 | 12.88 | 12.94 | 20.42 | 17.14 | 28.94 | 21.26 | 38.58 | 25.24 |
| VPM22030R-50 | 2*06ER475 | 18.84 | 18.64 | 29.04 | 23.84 | 40.96 | 29.26 | 54.90 | 34.80 |
| VPM32030R-45 | 3*06ER450 | 19.32 | 19.41 | 30.63 | 25.71 | 43.41 | 31.89 | 57.87 | 37.86 |
| VPM32030R-60 | 3*06ER475 | 28.26 | 27.96 | 43.56 | 35.76 | 61.44 | 43.89 | 82.35 | 52.20 |
| VPM32030R-90 | 3*06ER399 | 41.22 | 40.35 | 58.56 | 49.71 | 78.78 | 59.67 | 102.42 | 70.08 |
| VPM42030R-120 | 4*06ER399 | 54.96 | 53.80 | 78.08 | 66.28 | 105.04 | 79.56 | 136.56 | 93.44 |
| VPM52030R-130 | 3*06ER399 +2*06ER475 | 60.06 | 58.99 | 87.60 | 73.55 | 119.74 | 88.93 | 157.32 | 104.88 |
| VPM52030R-150 | 5*06ER399 | 68.70 | 67.25 | 97.60 | 82.85 | 131.30 | 99.45 | 170.70 | 116.80 |
| VPM62030R-160 | 4*06ER399 +2*06ER475 | 73.80 | 72.44 | 107.12 | 90.12 | 146.00 | 108.82 | 191.46 | 128.24 |
| VPM62030R-180 | 6*06ER399 | 82.44 | 80.70 | 117.12 | 99.42 | 157.56 | 119.34 | 204.84 | 140.16 |

### MT parallel racks

| Rack Models | Compressor Configuration Models and Number | Evaporating Temperature: -15°C | | Evaporating Temperature: -12oC | | Evaporating Temperature: -10°C | | Evaporating Temperature: -5°C | |
|---|---|---|---|---|---|---|---|---|---|
| | | Cooling Capacity Q(kW) | Input Power P(kW) | Cooling Capacity Q(kW) | Input Power P(kW) | Cooling Capacity Q(kW) | Input Power P(kW) | Cooling Capacity Q(kW) | Input Power P(kW) |
| VPP22030R-30 | 2*06EM450 | 49.02 | 24.78 | 57.26 | 26.94 | 63.20 | 28.34 | 79.72 | 31.66 |
| VPP22030R-40 | 2*06EM475 | 77.50 | 37.62 | 89.92 | 40.72 | 98.88 | 42.78 | 123.98 | 47.84 |
| VPP32030R-45 | 3*06EM450 | 73.53 | 37.17 | 85.89 | 40.41 | 94.80 | 42.51 | 119.58 | 47.49 |
| VPP32030R-75 | 3*06EM475 | 116.25 | 56.43 | 134.88 | 61.08 | 148.32 | 64.17 | 185.97 | 71.76 |
| VPP32030R-105 | 3*06EM499 | 180.78 | 87.06 | 199.89 | 92.40 | 213.48 | 95.52 | 250.92 | 102.60 |
| VPP42030R-120 | 2*06EM499 +2*06EM475 | 198.02 | 95.66 | 223.18 | 102.32 | 241.20 | 106.46 | 291.26 | 116.24 |
| VPP42030R-130 | 3*06EM499 +06EM475 | 219.53 | 105.87 | 244.85 | 112.76 | 262.92 | 116.91 | 312.91 | 126.52 |
| VPP42030R-140 | 4*06EM499 | 241.04 | 116.08 | 266.52 | 123.20 | 284.64 | 127.36 | 334.56 | 136.80 |
| VPP52030R-155 | 3*06EM499 +2*06EM475 | 258.28 | 124.68 | 289.81 | 133.12 | 312.36 | 138.30 | 374.90 | 150.44 |
| VPP52030R-175 | 5*06EM499 | 301.30 | 145.10 | 333.15 | 154.00 | 355.80 | 159.20 | 418.20 | 171.00 |
| VPP62030R-190 | 4*06EM499 +2*06EM475 | 318.54 | 153.70 | 356.44 | 163.92 | 383.52 | 170.14 | 458.54 | 184.64 |
| VPP62030R-210 | 6*06EM499 | 361.56 | 174.12 | 399.78 | 184.80 | 426.96 | 191.04 | 501.84 | 205.20 |