



**Unit Cooler  
Condenser  
Air Condensing Unit  
RACK Compressors**



## **Parallel Compressors System**



***Friga-Bohn Systems use multiple compressors all working together to distribute refrigerant to the applicable load such as supermarket cases or warehouse unit coolers. Parallel Compressor Systems or "Racks" provide the most energy efficient method for refrigeration needs by controlling compressor operation on required system cooling demands. All refrigeration systems experience constantly changing cooling requirements based on outside temperatures, type and temperature of product and amount of usage. With a rack system, the multiple compressors can stage on, off or unloaded in cost-saving increments to match the ever-changing cooling requirements.***

***ASTECH offers a variety of solutions to meet your cooling needs and with safety efficiency and reliability as our main goals we introduce some key features of our "Intelligent Cooling Systems"***

***Discharge Headers are sometimes known as problem areas in parallel systems due to their high volume of vibration and pulsation. To assure the most reliable and trouble free operation Friga-Bohn corporates in our design a steel discharge manifold and use of pre bent copper pipes from each individual compressor. Isolation of individual compressors by vibration eliminators ensures a high safety margin and security for discharge systems.***

***ASTECH offers the most effective parallel compressor systems available with options to satisfy the most stringent requirements. Each system is custom tailored to suit individual load and condition requirements and achieve a high degree of economy and a design for long-term reliability and efficiency.***



ASTECH pioneered the development of Rack Refrigeration Systems and now offers a complete section of advanced parallel racks which can be custom designed for any supermarket application. Max. up to 300HP for High/medium/low temp application.

- Central systems designed for all store configurations via a range of compressor technologies , capacities, COP
- Eurovent certified heat exchangers

**Rack Model: BBR4120-TL****4x S6F-30.2 (30HP), Total 120 HP Indoor Parallel Two Stage Compressor Rack  
R22, 380/3/50Hz.**

- Semi hermetic two stage reciprocation compressor is supplied with inlet/outlet service valve, crancase heater, high/low pressure switch, oil differential switch and Bitzer in-built overload protection module.
- Complete with subcooler.
- Welded and painted frame work.
- Each compressor with discharge vibration elimintor.
- Discharge pipe with isolation ball vale.
- High efficiency Oil separator, oil resevoir & oil regulator.
- Liquid receiver with inlet/outlet service valves and low liquid alarm.
- Suction accumulator & replaceable suction filter core.
- Repalceable liquid filter drier core, sight glass.
- Liquid injection (TXV and solenoid) per compressor.
- 3 pairs of suction and liquid pipe line complete with isolation ball valve.
- 380/3/50Hz Electrical control panel complete with:
  - ETL standard elctrical control Box
  - Electrical power distribution block
  - Phase line monitior
  - Compressor circuit breakers and contactors
  - Indicating lamp for power supply, compressor stop/ run & compressor safety cutout
  - Misc. Fiss, relay, switches & terminal strips.
  - Provision for remote alarm connections
  - All wiring are factory wired.
  - All wiring design and componet are according to UL standard.
- Microprocessor controller

**Low Temperature Two Stage Rack-with subcooler  
Refrigeration Capacity And Power Input**

Rack Model	Compressors			-45°C SST		-40°C SST		-35°C SST		-30°C SST	
	HP	Model	Qty	Cap.	P.I	Cap.	P.I	Cap.	P.I	Cap.	P.I
BRR324-TL	24	S4N-8.2	3	12.99	13.68	17.13	15.24	21.81	16.80	27.12	18.36
BRR336-TL	36	S4G-12.2	3	19.62	20.67	25.89	23.04	32.97	25.38	40.98	27.75
BRR348-TL	48	S6J-16.2	3	29.64	27.51	39.03	31.74	49.32	35.91	60.90	40.05
BRR360-TL	60	S6H-20.2	3	34.35	31.89	45.24	36.78	57.18	41.61	70.50	46.41
BRR375-TL	75	S6G-25.2	3	39.42	36.60	51.93	42.06	65.70	47.76	81.00	53.28
BRR480-TL	80	S6H-20.2	4	45.80	42.52	60.32	49.04	76.24	55.48	94.00	61.88
BRR390-TL	90	S6F-30.2	3	47.16	43.80	62.10	50.52	78.60	57.15	96.90	63.60
BRR4100-TL	100	S6G-25.2	4	52.62	48.80	69.24	56.08	87.60	63.68	108.00	71.04
BRR4120-TL	120	S6F-30.2	4	62.88	58.40	82.80	67.36	104.80	76.20	129.20	84.80
BRR5150-TL	150	S6F-30.2	5	78.60	73.00	103.50	84.20	131.00	95.25	161.50	106.00
BRR6180-TL	180	S6F-30.2	6	94.32	87.60	124.20	101.04	157.20	114.30	193.80	127.20

**Note:**

- (1) Power supply: 380/3/50Hz
- (2) Capacity (Cap.) and Power Input (P.I.) are in kW based on ambient temperature 38°C and condensing temperature 45°C
- (3) If operate rack at different SST or extreme low and high temperature, please contact our local representative

## Standard Low Temperature Single Stage Rack

Rack Model: BRR3120-SL

3 x 6F-40.2 (40HP), Total 120 HP Indoor Parallel Single Stage Compressor Rack  
R22, 380/3/50Hz

- Semi hermetic single stage reciprocating compressor is supplied with inlet/outlet service valve, crankcase heater, high/low pressure switch, oil differential switch and Bitzer in- built overload protection module.
- Liquid injection and head cooling fan
- Welded and painted frame work
- Each compressor with discharge vibration eliminator
- Discharge pipe with isolation ball valve
- High efficiency Oil reservoir & oil regulator
- Liquid receiver with inlet/outlet service valves and low liquid alarm.
- Suction accumulator & replaceable suction filter core
- Replaceable liquid filter drier core, sight glass.
- 3 pairs of suction and liquid pipe line complete with isolation ball valve
- 380/3/50Hz Electrical control panel complete with:
  - ETL standard electrical control Box
  - Electrical power distribution block
  - Phase loss monitor
  - Compressor circuit breakers and contactors
  - Indicating lamp for power supply, compressor stop/ run & compressor safety cutout indicating lamp.
  - Misc. Fuss, relay, switches & terminal strips.
  - Provision for remote alarm connections
  - All wiring are factory wired.
  - All wiring design and component are according to UL standard
- Microprocessor controller

Rack Model	Compressors			-40°C SST		-35°C SST		-30°C SST		-25°C SST	
	HP	Model	Qty	Cap.	P.I	Cap.	P.I	Cap.	P.I	Cap.	P.I
BMR220-SL	20	4P-10.2	2	6.92	7.60	10.76	20	15.46	10.92	21.12	12.78
BMR224-SL	24	4N-12.2	2	8.64	9.18	13.48	11.26	19.30	13.44	26.28	15.70
BMR230-SL	30	4H-15.2	2	11.02	11.66	17.10	14.78	24.52	17.82	33.54	20.78
BMR240-SL	40	4G-20.2	2	12.88	14.20	19.94	17.90	28.54	21.48	38.90	24.92
BMR345-SL	45	4H-15.2	3	16.53	17.49	25.65	22.17	36.78	26.73	50.31	31.17
BRR250-SL	50	6H-25.2	2	16.54	17.52	25.65	22.20	36.82	26.74	50.40	31.20
BMR360-SL	60	4G-20.2	3	19.32	21.30	29.91	26.85	42.81	32.22	58.35	37.38
BRR375-SL	75	6H-25.2	3	24.81	26.28	38.49	33.30	55.23	40.11	75.60	46.80
BRR390-SL	90	6G-30.2	3	28.98	31.98	44.91	40.29	64.20	48.36	87.60	56.07
BRR4100-SL	100	6H-25.2	4	33.08	35.04	51.32	44.40	73.64	53.48	100.80	62.40
BRR3120-SL	120	6F-40.2	3	36.12	39.00	55.05	48.60	78.00	58.26	105.30	67.80
BRR4120-SL	120	6G-30.2	4	38.64	42.64	59.88	53.72	85.60	64.48	116.80	74.76
BRR4160-SL	160	6F-40.2	4	48.16	52.00	73.40	64.80	104.00	77.68	140.40	90.40
BRR5200-SL	200	6F-40.2	5	60.20	65.00	91.75	81.00	130.00	97.10	175.50	113.00
BRR6240-SL	240	6F-40.2	6	72.24	78.00	110.10	97.20	156.00	116.52	210.60	135.60

**Note:**

- (1) Power supply: 380V/3/50Hz
- (2) Capacity (Cap.) and Power Input ( P.I.) are in Kw based on ambient temperature 38°C and condensing temperature 45°C
- (3) If operate rack at different SST or extreme low and high temperature, please contact our local representative office

## Standard Medium, high Teperature Single Stage rack

Rack Model: BMR360-SM

3 x4N-20.2 (20HP), Total 60 HP Indoor Parallel Single Stage Compressor Rack  
R22, 380/3/50Hz

- Semi hermetic single stage reciprocating compressor is supplied with inlet/outlet service valve, crankcase heater, high/low pressure switch, oil differential switch and Bitzer in- built overload protection module.
- Liquid injection and head cooling fan
- Welded and painted frame work
- Each compressor with discharge vibration elimintor
- Discharge pipe with isolation ball valve
- High efficiency Oil resevoir & oil regulator
- Liquid receiver with inlet/outlet service valves and low liquid alarm.
- Suction accumulatio & replaceable suction filter core
- Replaceable liquid filter drier core, sight glass.
- 1 pairs of suction and liquid pipe line, liquid pipe line complete with isolatiom ball valve
- 380/3/50Hz Electrical control panel complete with:
  - ETL standard electrical control Box
  - Electrical power distribution block
  - Phase loss monitor
  - Compressor circuit breakers and contactors
  - Indicating lamp for power supply, compressor stop/ run & compressor safety cutout indicating lamp.
  - Misc. Fuss, relay, switches & terminal strips.
  - Provision for remote alarm connections
  - All wiring are factory wired.
  - All wiring design and component are according to UL standard
- Microprocessor controller

Rack Model	Compressors			-15°C SST		-10°C SST		-5°C SST		0°C SST	
	HP	Model	Qty	Cap.	P.I	P.I	Cap.	P.I	Cap.	P.I	Cap.
BMR220-SM	20	4V-10.2	2	24.62	11.90	12.56	31.46	12.96	39.50	13.88	48.60
BMR224-SM	24	4T-12.2	2	30.16	14.26	15.08	38.42	15.60	48.00	16.76	58.80
BMR230-SM	30	4P-15.2	2	35.90	16.90	18.10	45.40	18.86	56.60	20.58	69.20
BMR240-SM	40	4N-20.2	2	44.20	20.50	21.84	55.40	22.70	68.80	24.64	83.80
BMR345-SM	45	4P-15.2	3	53.85	25.35	27.15	68.10	28.29	84.90	30.87	103.80
BMR250-SM	50	4H-25.2	2	57.20	25.36	27.08	72.20	28.04	89.60	30.28	109.00
BMR260-SM	60	4G-30.2	2	66.00	30.28	32.02	83.00	33.14	102.80	35.78	125.00
BMR360-SM	60	4N-20.2	3	66.30	30.75	32.76	83.10	34.05	103.20	36.96	125.70
BMR375-SM	75	4H-25.2	3	85.80	38.34	40.62	108.30	42.06	134.40	45.42	163.50
BMR390-SM	90	4G-30.2	3	99.00	45.42	48.03	124.50	49.71	154.20	53.67	187.50
BRR4100-SM	100	4H-25.2	4	114.40	51.12	54.16	144.40	56.08	179.20	60.56	218.00
BRR3105-SM	105	6H-35.2	3	129.00	57.57	60.90	162.60	63.00	201.90	68.10	245.40
BRR4120-SM	120	4G-30.2	4	132.00	60.56	64.04	166.00	66.28	205.60	71.56	250.00
BRR3120-SM	120	6G-40.2	3	148.50	68.10	72.00	186.60	74.70	231.30	80.40	281.40
BRR4140-SM	140	6H-35.2	4	172.00	76.76	81.20	216.80	84.00	269.20	90.80	327.20
BRR3150-SM	150	6F-50.2	3	177.00	84.90	89.70	221.70	93.00	273.90	100.20	332.40
BRR4160-SM	160	6G-40.2	4	198.00	90.80	96.00	248.80	99.60	308.40	107.20	375.20

**Note:**

- (1) Power supply: 380V/3/50Hz
- (2) Capacity (Cap.) and Power Input ( P.I.) are in kW based on ambient temperature 38°C and condensing temperature 45°C
- (3) If operate rack at different SST or extreme low and high temperature, please contact our local representative office

# HEATCRAFT Parallel Compressor Rack Request Form

Company Name: \_\_\_\_\_ Person Request: \_\_\_\_\_ Date: \_\_\_\_\_ Ref: \_\_\_\_\_  
Project Name: \_\_\_\_\_ Project Location: \_\_\_\_\_

## System Design Parameter:

Evaporating temperature: \_\_\_\_\_ °C Condensing temperature: \_\_\_\_\_ °C Highest ambient temperature: \_\_\_\_\_ °C  
Distance between rack And furthest unit cooler: \_\_\_\_\_ m, Refrigerant pipe loss: \_\_\_\_\_ K  
System refrigeration capacity: \_\_\_\_\_ kW, Refrigerant type:  R22  R404A  R134a  Other: \_\_\_\_\_  
Electricity supply type: \_\_\_\_\_

## Options Available:

- CU:  Compressor cylinder unloader: \_\_\_\_\_ Nos.  
 After unloading, minimum residual capacity: \_\_\_\_\_ % Rack Capacity
- EE:  Control compressor and condensor, \_\_\_\_\_  
 Control compressor , condensor And unit cooler, \_\_\_\_\_
- Other: \_\_\_\_\_
- ER: Evaporating pressure regulator kit  
 FS: Rack application: \_\_\_\_\_ Special note on dimension: \_\_\_\_\_  
 HP: Condensing presure regulating kit  
 HR: Heat reclaim and control kit  
 LA: Electronic low liquid refrigerant alarm  
 MS: Multi suction groups ( Max. 3)

Suction group 1: ET \_\_\_\_\_ °C, Refrigeration Capacity: \_\_\_\_\_ kW  
Suction group 2: ET \_\_\_\_\_ °C, Refrigeration Capacity: \_\_\_\_\_ kW  
Suction group 3: ET \_\_\_\_\_ °C, Refrigeration Capacity: \_\_\_\_\_ kW

- SC:  Use liquid medium temp rack for low temp rack subcooling  
 Max liquid refrigeraant pipe rise \_\_\_\_\_ m
- SR: Separated liquid refrigerant receiver  
 SS: Air cooled condenser with separate sub cooling circuit  
 UE: Uneven compressor

Frame configuration:  BMR Light Frame Work, Parallel Piped Compressor Rack  
 BRR Heavy Frame Work, Parallel Piped Compressor Rack

## Suction & liquid pipe configuration:

1# Suction pipe diameter: \_\_\_\_\_ Liquid pipe diameter: \_\_\_\_\_ ; 2# Suction pipe diameter: \_\_\_\_\_ Liquid pipe diameter: \_\_\_\_\_  
3# Suction pipe diameter: \_\_\_\_\_ Liquid pipe diameter: \_\_\_\_\_ ; 4# Suction pipe diameter: \_\_\_\_\_ Liquid pipe diameter: \_\_\_\_\_  
5# Suction pipe diameter: \_\_\_\_\_ Liquid pipe diameter: \_\_\_\_\_ ; 6# Suction pipe diameter: \_\_\_\_\_ Liquid pipe diameter: \_\_\_\_\_

## To be completed by us

Rack Model: \_\_\_\_\_  
Compressor selection:  
1# \_\_\_\_\_ 2# \_\_\_\_\_ 3# \_\_\_\_\_ 4# \_\_\_\_\_ 5# \_\_\_\_\_ 6# \_\_\_\_\_  
Standard Evaporating Temperature: \_\_\_\_\_ °C, Condensing Temperature: \_\_\_\_\_ °C, Liquid Temperature: \_\_\_\_\_  
Total Refrigeration Capacity: \_\_\_\_\_ kW, Input Power: \_\_\_\_\_ kW, Total Heat Rejection: \_\_\_\_\_ kW  
Proposed Air Cooled Condenser Model: \_\_\_\_\_ Condenser TD: \_\_\_\_\_ K

Remark: \_\_\_\_\_  
\_\_\_\_\_

# Multi-Compressors System Leading the Cold Storage



## Contact Information:

Asia Technology Corporation (ASTECH)  
S39-1 Hung Vuong 2, Phu My Hung, 7 Dist, Ho Chi Minh City  
Viet Nam  
Telephone: +84-8-4102755  
Facsimile: +84-8-4101845

## Email

[congvinh@astech-vn.com](mailto:congvinh@astech-vn.com)  
[sales@astech-vn.com](mailto:sales@astech-vn.com)  
[accounting@astech-vn.com](mailto:accounting@astech-vn.com)  
[technical@astech-vn.com](mailto:technical@astech-vn.com)  
[service@astech-vn.com](mailto:service@astech-vn.com)  
[admin@astech-vn.com](mailto:admin@astech-vn.com)  
[ship@astech-vn.com](mailto:ship@astech-vn.com)

Director  
Sales Dept.  
Accounting Dept.  
Technical Dept.  
Service Dept.  
Administration  
Shipping Dept.

Web Sites: <http://www.astech-vn.com>

## Normal Working Hours (VN Time)

Monday to Friday 08:00hrs – 17:00hrs Saturday 08:00hrs – 12:00hrs

morning : 08:00hrs to 12:00hrs  
afternoon : 13:00hrs to 17:00hrs