

EBARA Low-GWP High Efficiency Centrifugal Chiller

Model RTBA / Model RTBA-V

Further improvement
in efficiency

Adoption of New refrigerant that can
achieve both Low-GWP and Safe / Secure.



Awarded the Special Award of
Judging Committee of the 21st
Protect the ozone layer and
Prevent global warming awards

R1224yd(Z)



Features

Environmental

Low-GWP
Less than 1
Non-flammable
Low-toxicity
Class A1

Safe and reliable

Not subject to
Fluorocarbon
Emission
Control Law

High Efficiency

Max. COP
6.4

(Model RTBA115 based on JIS B 8621)

High reliability

Proven
Model RTBF
compressor
based.

Wide-ranging product lineup

Cooling capacity
774 to 5274 kW
{220 to 1500USRT}

User Friendly

Power source
400~6kV,
Inverter type
3 pieces shipment,
explosion proof options.

Low-GWP Centrifugal Chiller

Model RTBA
Model RTBA-V

Ideal for customers who



Wish to reduce environmental impact imposed by a chiller



Wish to seek a safe and reliable chiller

Environmental friendliness

Low-GWP Refrigerant R1224yd(Z)

Achieves Low-GWP (less than 1) and both non-flammable and low toxic properties

Low-GWP Refrigerant R1224yd(Z)

Not subject to Fluorocarbon Emission Control Law

High efficiency

Top model in our product series(COP 6.4)

(Model RTBA115; tested under the conditions specified in JIS B 8621)

High reliability

Developed based on the technologies of highly reliable model RTBF with a long-proven track record

Wide-ranging product lineup

Cooling capacity 774 to 5274kW

{ 220 to 1500 USRT }

User Friendly

Provided with various specifications

Power source 400~6kV, Inverter type

Compatible with brine specifications

2 or 3 pieces shipment(option), explosion proof type(option)

Features of the new refrigerant R1224yd (Z) (1224yd)

- Both low-GWP (less than 1) and nonflammability and low toxicity
- Not subject to Fluorocarbon Emission Control Law of Japan
- Easy -to-handle and has low pressure

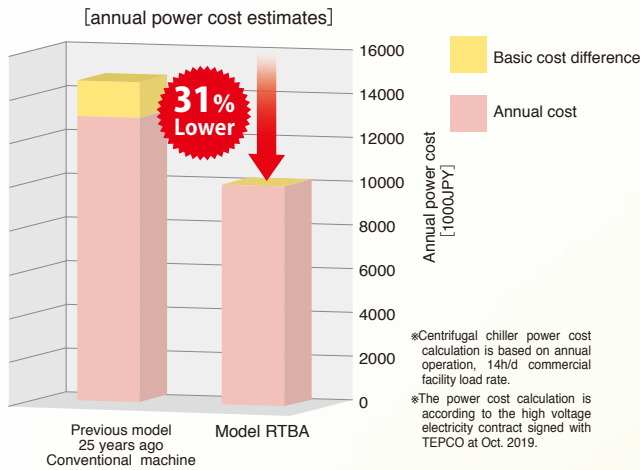
	R1224yd(Z)	R514A	R1234ze(E)	R513A	R245fa
Global Warming Potential	less than 1	2	less than 1	573	1030
Fluorocarbon Emission Control Law	Not applicable	Not applicable	Not applicable	Applicable	Applicable
Flammability	Non	Non	Slightly	Non	Non
Toxicity	Low	High	Low	Low	High

Easy to use safe and secure Low-GWP refrigerant for anyone

Lower Operation Expense & CO₂ Emission

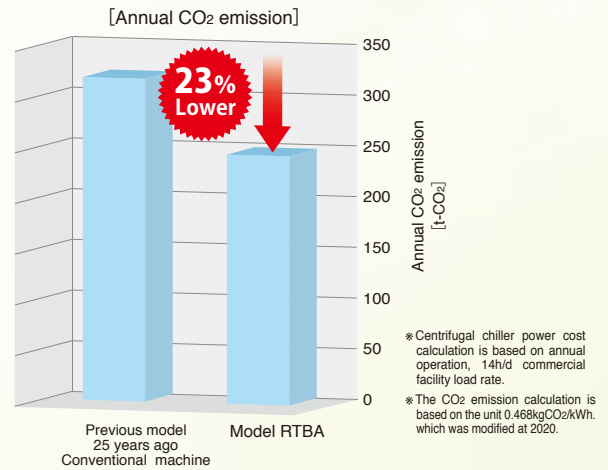
Compare to our previous model, the operation expense is 31% lower!

Commercial facility air conditioning(500USRT annual operation)



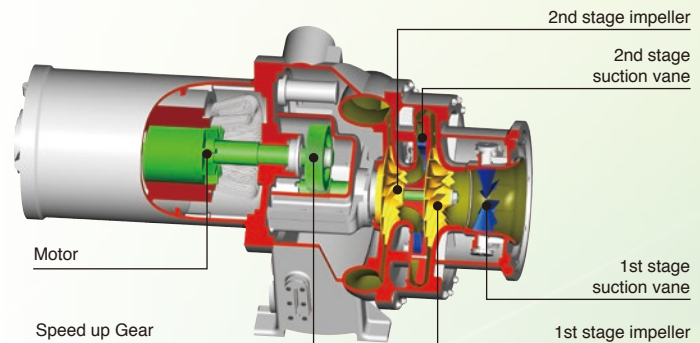
Compare to our previous model, the CO₂ emission is 23% lower!

Commercial facility air conditioning(500USRT annual operation)



Further improved reliable High Efficiency Compressor

Compressor compact design by using 2-stage compression and speed-up Gear. Using adjustable 2-stage suction vanes for better partial load performance. A simple motor structure with few piping for a better quality.



HFC regulatory trends

- International regulatory movements have begun.
- as prevented provision of global warming

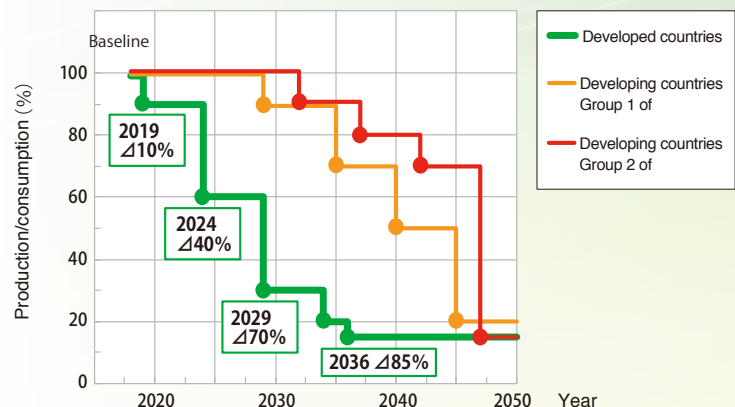
Global

Montreal Protocol
The Kigali amendment

Japan

Act on Rational Use and
Proper Management of
designated product、

HFC phase-out schedule in accordance with the Kigali Amendment



Chilled Water 12-7 degC Cooling Water 32-37 degC

Model		–	RTBA022	RTBA025	RTBA027	RTBA030	RTBA036S	RTBA040	RTBA044	RTBA050	RTBA053	RTBA060
Cooling Capacity	kW		774	879	949	1,055	1,266	1,407	1,547	1,758	1,864	2,110
	{USRT}		220	250	270	300	360	400	440	500	530	600
Chilled Water	Flow Rate	L/min	2,220	2,520	2,720	3,020	3,630	4,030	4,430	5,030	5,340	6,040
	Pressure Drop	kPa	48	49	51	54	45	47	48	51	49	54
	Pipe Connection Size	A	150	150	150	150	200	200	200	200	250	250
	No. of Pass	–	2	2	2	2	2	2	2	2	2	2
Cooling Water	Flow Rate	L/min	2,599	2,948	3,177	3,522	4,240	4,700	5,163	5,869	6,226	7,038
	Pressure Drop	kPa	53	53	52	53	55	55	55	56	69	63
	Pipe Connection Size	A	200	200	200	200	250	250	250	250	250	300
	No. of Pass	–	2	2	2	2	2	2	2	2	2	2
Motor	Voltage	V	400V · 3000V · 6000V									
	Starting Method	–	400V(Open Star-Delta), 3000V · 6000V(Reactor)									
Motor Rating	kW		130	145	155	169	208	227	246	280	299	337
Control & Aux. Power	Voltage	V	200V									
	Power Capacity	kVA	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.8	7.5
	Oil Pump	kW	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Ref. Pump	kW	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.75
	Oil Heater	kW	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0
	Mass	Running	t	7.3	7.5	7.6	7.8	10.9	12.2	12.5	12.9	13.0
Shipping		t	6.1	6.2	6.3	6.4	9.0	10.1	10.2	10.4	10.7	13.6
Chilled Water Holding Volume	L		320	350	370	400	570	610	640	700	840	1,020
Cooling Water Holding Volume	L		360	380	390	420	580	610	640	680	710	1,000

Model		–	RTBA065	RTBA070	RTBA075	RTBA080	RTBA090	RTBA100	RTBA115	RTBA125	RTBA135	RTBA150
Cooling Capacity	kW		2,286	2,461	2,637	2,813	3,077	3,516	3,868	4,395	4,571	5,063
	{USRT}		650	700	750	800	875	1,000	1,100	1,250	1,300	1,440
Chilled Water	Flow Rate	L/min	6,550	7,050	7,550	8,060	8,811	10,070	11,077	12,590	13,091	14,500
	Pressure Drop	kPa	57	60	62	65	69	62	61	63	61	63
	Pipe Connection Size	A	250	250	250	250	300	350	400	400	400	400
	No. of Pass	–	2	2	2	2	2	2	2	2	2	2
Cooling Water	Flow Rate	L/min	7,627	8,215	8,805	9,385	10,249	11,702	12,873	14,640	15,204	16,906
	Pressure Drop	kPa	65	66	68	70	92	78	72	83	79	84
	Pipe Connection Size	A	300	300	300	300	300	400	400	400	400	400
	No. of Pass	–	2	2	2	2	2	2	2	2	2	2
Motor	Voltage	V	400V · 3000V · 6000V						3000V · 6000V			
	Starting Method	–	400V(Open Star-Delta), 3000V · 6000V(Reactor)						3000V · 6000V(Reactor)			
Motor Rating	kW		366	395	424	449	486	551	607	695	715	813
Control & Aux. Power	Voltage	V	200V									
	Power Capacity	kVA	7.5	7.5	7.5	7.5	7.5	8.8	8.8	8.8	8.8	8.8
	Oil Pump	kW	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Ref. Pump	kW	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Oil Heater	kW	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4
Mass	Running	t	17.0	17.2	17.5	17.8	19.3	27.5	28.1	30.3	30.8	32.9
	Shipping	t	14.1	14.3	14.6	14.7	15.8	22.3	22.9	24.5	25.0	26.5
Chilled Water Holding Volume	L		1,020	1,060	1,110	1,150	1,300	1,550	1,650	1,950	2,000	2,200
Cooling Water Holding Volume	L		1,000	1,030	1,070	1,100	1,200	1,500	1,600	1,850	1,950	2,050

- 1) Indoor and non-hazard area application.
- 2) Chilled water and cooling water should be fresh water.
- 3) Capacity control range is 100-20%
- 4) The fouling factor of both chilled water and cooling water is 0.000086m²K/W
- 5) The max. operation pressure is 1.0MPa
- 6) This specification is subject to change without notice, so please contact us for details when planning.
- 7) Please use this specification as a guide when selecting a model.

Chilled Water 12-7 degC Cooling Water 32-37 degC

Model		—	RTBA022V	RTBA025V	RTBA027V	RTBA030V	RTBA036SV	RTBA040V	RTBA044V	RTBA050V	RTBA053V	RTBA060V
Cooling Capacity		kW	774	879	949	1,055	1,266	1,407	1,547	1,758	1,864	2,110
		{USRT}	220	250	270	300	360	400	440	500	530	600
Chilled Water	Flow Rate	L/min	2,220	2,520	2,720	3,020	3,630	4,030	4,430	5,030	5,340	6,040
	Pressure Drop	kPa	48	49	51	54	45	47	48	51	64	54
	Pipe Connection Size	A	150	150	150	150	200	200	200	200	250	250
	No. of Pass	—	2	2	2	2	2	2	2	2	2	2
Cooling Water	Flow Rate	L/min	2,599	2,948	3,177	3,522	4,240	4,700	5,163	5,869	6,226	7,038
	Pressure Drop	kPa	53	53	52	53	55	55	55	56	69	63
	Pipe Connection Size	A	200	200	200	200	250	250	250	250	250	300
	No. of Pass	—	2	2	2	2	2	2	2	2	2	2
Motor	Voltage	V	400V · 3000V · 6000V									
	Starting Method	—	Inverter									
Motor Rating	kW	135	151	160	176	217	237	256	292	312	351	
Control & Aux. Power	Voltage	V	200V									
	Power Capacity	kVA	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.8	7.5
	Oil Pump	kW	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Ref. Pump	kW	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.75
	Oil Heater	kW	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0
Mass	Running	t	7.3	7.5	7.6	7.8	10.9	12.2	12.5	12.9	13.0	16.1
	Shipping	t	6.1	6.2	6.3	6.4	9.0	10.1	10.2	10.4	10.7	13.6
Chilled Water Holding Volume	L	320	350	370	400	570	610	640	700	840	1,020	
Cooling Water Holding Volume	L	360	380	390	420	580	610	640	680	710	1,000	

Model		—	RTBA065V	RTBA070V	RTBA075V	RTBA080V	RTBA090V	RTBA100V	RTBA115V	RTBA125V	RTBA135V	RTBA150V
Cooling Capacity		kW	2,286	2,461	2,637	2,813	3,077	3,516	3,868	4,395	4,571	5,063
		{USRT}	650	700	750	800	875	1,000	1,100	1,250	1,300	1,440
Chilled Water	Flow Rate	L/min	6,550	7,050	7,550	8,060	8,811	10,070	11,077	12,590	13,091	14,500
	Pressure Drop	kPa	49	50	51	53	69	62	61	63	61	63
	Pipe Connection Size	A	250	250	250	250	300	350	400	400	400	400
	No. of Pass	—	2	2	2	2	2	2	2	2	2	2
Cooling Water	Flow Rate	L/min	7,627	8,215	8,805	9,385	10,249	11,702	12,873	14,640	15,204	16,906
	Pressure Drop	kPa	65	66	68	70	92	78	72	83	79	84
	Pipe Connection Size	A	300	300	300	300	300	400	400	400	400	400
	No. of Pass	—	2	2	2	2	2	2	2	2	2	2
Motor	Voltage	V	400V · 3000V · 6000V					3000V · 6000V				
	Starting Method	—	Inverter									
Motor Rating	kW	381	412	442	467	506	574	632	724	744	846	
Control & Aux. Power	Voltage	V	200V									
	Power Capacity	kVA	7.5	7.5	7.5	7.5	7.5	8.8	8.8	8.8	8.8	8.8
	Oil Pump	kW	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Ref. Pump	kW	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Oil Heater	kW	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4
Mass	Running	t	17.0	17.2	17.5	17.8	19.3	27.5	28.1	30.3	30.8	32.9
	Shipping	t	14.1	14.3	14.6	14.7	15.8	22.3	22.9	24.5	25.0	26.5
Chilled Water Holding Volume	L	1,020	1,060	1,110	1,150	1,300	1,550	1,650	1,950	2,000	2,200	
Cooling Water Holding Volume	L	1,000	1,030	1,070	1,100	1,200	1,500	1,600	1,850	1,950	2,050	

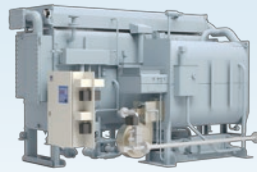
- 1) Indoor and non-hazard area application.
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- 3) Capacity control range is 100-20%
- 4) The fouling factor of both chilled water and cooling water is 0.000086m²K/W
- 5) The max. operation pressure is 1.0MPa
- 6) This specification is subject to change without notice, so please contact us for details when planning.
- 7) Please use this specification as a guide when selecting a model.

We also have various other products.

▶ For those who are considering other heat source methods



Screw chiller



Absorption chiller/heater

▶ For those who are considering a cooling tower



Square type cooling tower



Bottle type Cooling Tower

» EBARA REFRIGERATION EQUIPMENT & SYSTEMS Products

▶ If you are looking for a pump / blower



» EBARA Corporation Products



EBARA REFRIGERATION EQUIPMENT & SYSTEMS CO., LTD.

<https://www.ers.ebara.com>

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