BROAD AIR CONDITIONING

Packaged Non-electric —— An Electricity-saving Miracle

Applications

BROAD packaged chillers are capable of providing cooling and heating source for any central air conditioning system serving all kinds of buildings, as well as, district cooling &heating systems by supplying chilled water at temperatures 3min. and heating water 95max.

Function

Cooling, heating and hot water (dedicatedly or simultaneously)

Cooling capacity

233 kW(66RT)~11,630 kW(3,307RT) (a single unit can serve a 3,000m^2 ~ 200,000m^2 building)

Energy source

- Natural gas, town gas, LPG, biogas
- Solar energy, power generation or industrial waste heat (like steam, hot water, exhaust, etc.)
- Diesel oil (industrial waste oil or waste edible oil can also be used)
- Electricity consumption for chilled water and cooling water distribution is less than 3% of the cooling capacity

International certificates

BROAD has obtained more than 20 safety and quality certificates, such as CE in Europe, UL, ETL and ASME in America...for all its chiller models and systems. No other air conditioning makers have got the complete certification for one chiller model nor any certificate for their Water Distribution Systems.

Update the history of central air conditioning

BROAD is industrilizing central air conditioning! The entire chilled water system (chiller, cooling tower, pumps, controls, etc.) is manufactured and commissioned in BROAD factory, broken-down into shipping modules and rejoined at the jobsite. This has dramatically changed 100-years of independent component design, decentralized purchase and guerilla-style construction. BROAD packaged chillers came onto the market 6 years ago and have been successfully applied in over ten countries in Europe, U.S.A and Asia.

Rethinking the use of electric air conditioning

90% less electricity consumption! BROAD chiller and its Water Distribution System consume electricity less than 3% of the cooling capacity, while for electric air conditioning the rate is 30-50%.

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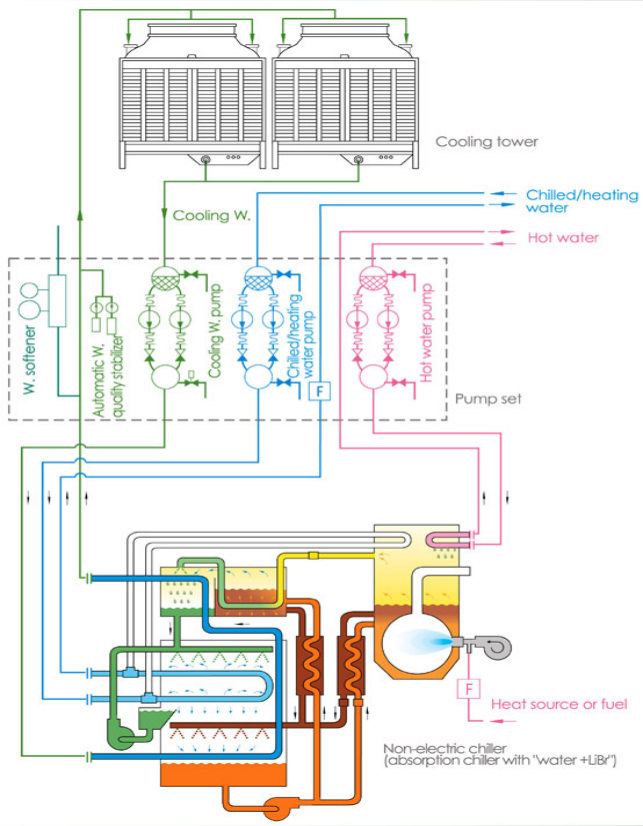

An electricity-saving miracle

A BROAD packaged chiller with 11,630 kW(3,307RT) cooling capacity will save 2,580 MWh electricity every year.

Saving investment and space

- The initial installed investment of a packaged system is much cheaper than purchasing a chiller and accessories from multiple manufacturers.
- Packaged systems are also very compact, taking less than half of the space of conventional central air conditioning system.

Eliminating quality risk

- BROAD will take the full responsibility of the complete pre-engineered packaged system.
- Standardized design, manufacturing, installation, commissioning and maintenance ensure product reliability.

Dozens of patented technologies

The Packaged chiller is of BROAD unique technology, which has registered patents in China, Japan, Korea, Europe and America.

Case study of electricity saving (unit: kW)

Cooling capacity 11,630kW(3,307RT)	Conventional system power demand	BROAD Packaged system power demand	Operating consumption*
Cooling water pump	580	180	30～180
Cooling tower fan	110	90	12～90
Chilled/heating W. pump	420	180	90～180
Total	11100	450	250(Annual average)
Electricity/Cooling capacity	9.55%	3.87%	2.15 %
Annual power consumption (cooling 5 mths, 20 hrs/day)	3,330 MWh	750 MWh	

*Operating consumption is the result of using inverters and two pumps, while the operating power consumption of conventional air con system equals to the designed power demand.

Interior of the BY1000 machine room

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Packaged Direct-fired Chiller Performance Data

Mode	BYZ	20	50	75	85	100	125	150	175	200	250	300	400
Cooling capacity	kW	233	582	872	989	1163	1454	1745	2035	2326	2908	3489	4652
	10^4kcal/h	20	50	75	85	100	125	150	175	200	250	300	400
Heating capacity	kW	179	449	672	762	897	1121	1349	1570	1791	2245	2687	3582
Hot water capacity	kW	80	200	300	340	400	600	600	700	800	1000	1200	1600
Chilled/heating water													
Chilled W. flow rate	m^3/h	28.6	71.4	107	121	143	179	214	250	286	357	429	571
Heating W. flow rate	m^3/h	15.4	38.6	57.8	65.5	77.1	96.4	116	135	154	193	231	308
External head	mH_2O	19	19	20	20	20	22	22	22	22	22	22	22
Hot water													
Flow rate	m^3/h	2.3	5.7	8.6	9.7	11.5	14.3	17.2	20.1	23.0	28.7	34.4	45.9
External head	m^3/h	7	7	10	12	12	12	12	12	12	12	12	12
Gas consumption (at full load)													
Cooling	m^3/h	18.3	45.8	68.7	77.8	91.6	114	138	160	183	229	275	366
Heating	m^3/h	19.4	48.5	72.6	82.4	97.0	121	146	170	194	243	290	387
Hot water	m^3/h	8.8	22.1	33	37.4	44	55	66.2	77	88	110	132	176
Electricity & water consumption (at full load)													
Cooling	kW	13.5	28.3	47.3	52.7	55	69.4	78.8	106	113	129	155	184
Heating	kW	6.3	10.9	17.4	18.6	19.1	26.1	35.5	45	45	53.5	71	74
Hot water	kW	1.2	2.5	4.6	5.8	6.3	6.3	8.5	11	11	13.9	15.4	18.4
Water(cooling)	t/h	0.6	1.5	2.3	2.6	3.0	3.8	4.5	5.3	6.0	7.5	9.0	12
Operation weight													
Chiller	t	9	12	12.3	14.3	16.7	20.9	24.2	27.4	33.0	37.7	43.1	56
Pump set	t	/	/	3.8	3.8	3.8	4.2	4.4	4.5	7.1	7.4	8.1	9.8
Cooling tower	t	/	5.1	5.7	7.3	7.3	12.3	12.3	18.5	18.5	18.5	24.6	30.8

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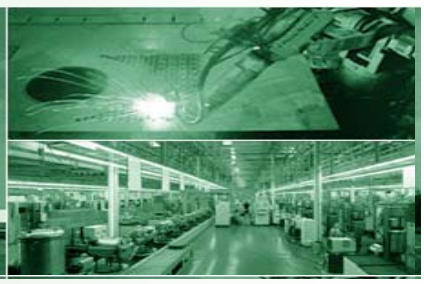
General conditions

1. Rated chilled water outlet/inlet temp.: 7℃/14℃
2. Rated heating water outlet/inlet temp.: 65℃/55℃
3. Rated hot water outlet/inlet temp.: 90℃/60℃
4. Lowest permitted outlet temp. for chilled water: 5℃（except for special orders)
5. Highest permitted outlet temp. for heating water/hot water: 95℃
6. Standard temperature for cooling operation: temp. 36℃, humidity: 50%, (wet bulb 27℃)
7. Natural gas consumption is calculated per low heating value: 10kWh/m3(8600kcal/m3), if heating value of other gases or diesel oil is available, please calculate accordingly
8. Standard natural gas pressure is from 16~50kPa (1600~5000mmH2O), lower or higher pressure can be accommodated to special orders
9. Pressure limit for chilled/heating/hot water: 0.8MPa (higher pressure limit can be accommodated to special orders)
10. Fouling factor for chilled/heating/hot water: 0.086m^2.K/kW
11. Adjustable load: 5%~130% (cooling capacity may exceed the rated value if high chilled water outlet temp. or low ambient temp.)
12. Heating capacity and hot water capacity refer to the capacity during separate operation, which is adjustable within this range
13. Product life design: 25 years
    (Note: For cooling water parameters please refer to chiller catalogues)

Model	BYZ	500	600	800	1000
Cooling capacity	kW	5815	6978	9304	11630
	10^4kcal/h	500	600	800	1000
Heating capacity	kW	4489	5385	7176	8967
Chilled/heating water					
Chilled water flow rate	m^3/h	714	857	1143	1429
Heating water flow rate	m^3/h	386	463	617	771
External head	mH_2O	25	25	25	25
Gas consumption (at full load)					
Cooling	m^3/h	458	550	733	916
Heating	m^3/h	485	582	776	970
Electricity & water consumption (at full load)					
Cooling	kW	278	321	426	514
Heating	kW	126	131	177	210
Water (cooling)	t/h	15	18	24	30
Operation weight					
Chiller	t	72.0	84.0	101	127
Chilled/heating W. pumps	t	4.4	6.1	6.1	9.6
Cooling water pumps	t	8.6	8.8	9.8	9.8
Cooling tower	t	36.9	49.2	61.5	73.8



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Power demand (unit:kW)

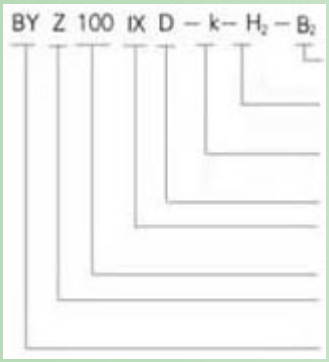
Model BY	20	50	75	85	100	125	150	175	200	250	300	400	500	600	800	1000
Chiller	1.5	5.3	5.3	6.7	8.5	8.9	10.3	14.8	14.8	16.1	19.1	24.1	30.7	38.2	48.2	61.4
Pump set	8.9	17.1	32.2	32.2	32.2	46.2	55.0	70.0	77.0	92.4	108.4	124.4	200	220	300	360
Cooling tower	3	6	11	15	15	15	15	22.5	22.5	22.5	30	37.5	45	60	75	90
Lighting, ventila-tion, etc	0.3	0.3	1	1	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	3.0	3.0	3.0
Total electricity	13.7	28.7	49.5	54.9	57.2	71.6	81.8	108.8	115.8	133	159.5	188	277.7	321.2	426.2	514.4

Why electricity savings?

Savings from design: 1. Many innovations reduce the resistance from filters, valves and piping to almost zero. 2. specially designed pumps optimize head and flow rate to system design. 3. chillers are designed for large temperature differences in line with modern design practice.

Savings from operation: 1. BROAD leads the world in inverter control system design and operation. Standard designs incorporate inverter-controlled cooling water pump(s) and cooling tower fan(s) which are automatically adjusted according to load and ambient temperature. Actual power consumption during operation is 30%-60% of the rated design. 2. two pumps combined or separate operation by software analyzer.

Nomenclature



Power code: 3Φ-415V-50Hz; default is B1 : 3Φ-380V-50Hz

H2 40% more heating capacity (20% more for H1 and 60% more for H3)

Functions : k cooling-heating type, d cooling only, with-out code indicates heating, cooling and hot water

Fuel type: B -oil C-LPG D- natural gas E-town gas

BROAD non-electric chiller design code (IX indicates Roman number 9)

Model code (cooling capacity indicated in the bracket if it is different from the model code)

E-exhaust

Product: B-BROAD Y-packaged

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Model selection and ordering

- Standard supply includes chiller, pump set, cooling tower system and metal machine room. Customers can select any of the above four items.
- No matter how many chillers are selected, each chiller must be equipped with dedicated water pumps and cooling tower to enable electricity-saving control.
- Cooling load calculation: model selection is generally based on building area cooling load. If heating load is insufficient, HTG enlarged model is a solution.
- Quantity selection: small or medium-sized building: 1~2 units, large-sized building: 3 units for 24/7/365 operation otherwise at least 2 units are recommended. A back-up chiller is not recommended.

Lead time: ≤ BY50: 3~4 months, BY75~BY400: 5~9 months ≥ BY500: 9~13 months

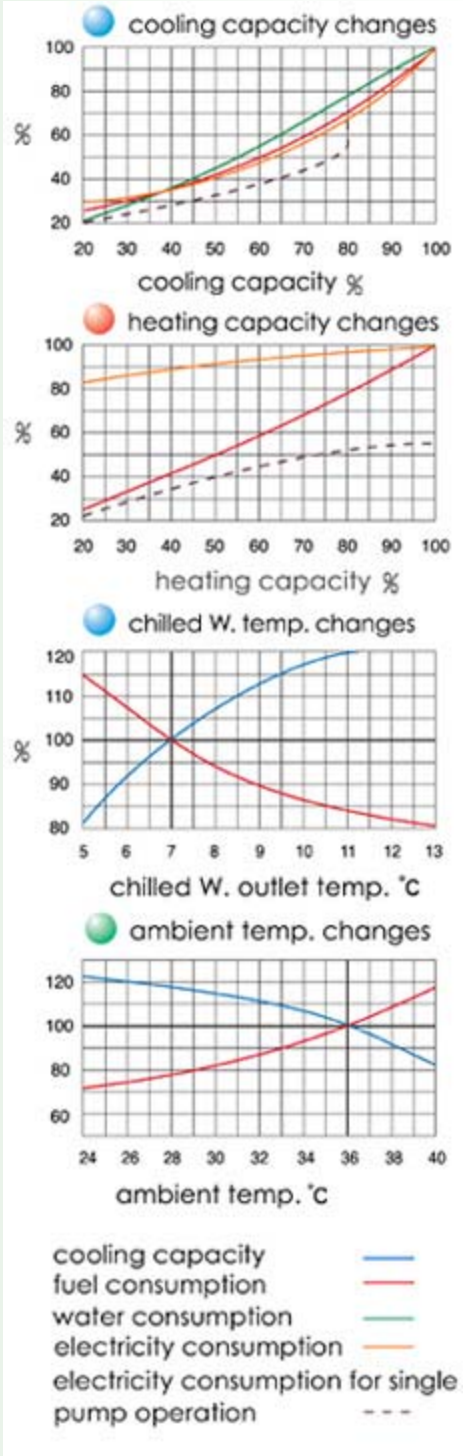
Site selection

- Packaged chiller design exhibits low noise level and low vibration.

No special site requirements are necessary and the packaged systems can be installed on rooftop or ground. Chiller and pump set can also be installed in a basement while cooling tower can be located on the ground, rooftop or on stilts.

- Foundation support: customer should finish the foundation support before equipment delivery at the site. Please download product and foundation drawings from BROAD website.

Performance curves



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Performance data of HTG enlarged models

Model	HTG enlarged	Heating capacity kW	Heating W. outlet/inlet temp.℃	Natural gas consumption m3/h
BYZ20	H_1	215	65/53	23.2
	H_2	251	65/51	27.1
	H_3	287	65/49	31.0
BYZ50	H_1	538	65/53	58.2
	H_2	628	65/51	67.9
	H3	717	65/49	77.5
BYZ75	H_1	806	65/53	87.1
	H_2	941	65/51	102
	H_3	1075	65/49	116
BYZ85	H_1	914	65/53	98.8
	H_2	1067	65/51	115
	H_3	1219	65/49	132
BYZ100	H_1	1076	65/53	116
	H_2	1256	65/51	136
	H_3	1435	65/49	155
BYZ125	H_1	1345	65/53	145
	H_2	1569	65/51	170
	H_3	1794	65/49	194
BYZ150	H_1	1619	65/53	175
	H_2	1889	65/51	204
	H_3	2158	65/49	233
BYZ175	H_1	1884	65/53	204
	H_2	2198	65/51	238
	H_3	2512	65/49	272
BYZ200	H_1	2149	65/53	232
	H_2	2507	65/51	271
	H_3	2866	65/49	310
BYZ250	H_1	2694	65/53	291
	H_2	3143	65/51	340
	H_3	3592	65/49	388
BYZ300	H_1	3224	65/53	348
	H_2	3762	65/51	407
	H_3	4299	65/49	465
BYZ400	H_1	4298	65/53	465
	H_2	5015	65/51	542
	H_3	5731	65/49	619

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Packaged Waste Heat Chiller Performance Data

Produc energy	Model	Capacity			Flowrate			Energy consumption								Electricity			Chiller opera-tion weight	Energy remarks
								cooling				heating		hot W.						
		chilled kW(RT)	heat-ing kW	hot W. kW	chilled W. m^3/h	heat-ing W. m^3/h	hot W. m^3/h	NG m^3/h	ex-haust kg/h	steam kg/h	hot W. k^3/h	NG m^3/h	ex-haust kg/h	NG m^3/h	ex-haust kg/h	cool-ing kW	heat-ing kW	hot W. kW	t	
Packaged non-electric hot water + direct fired chiller Hot W. 180℃ Gas, oil	BYZH20	233	179	80	28.6	15.4	2.3	18.3	/	/	11.5	19.4	/	8.8	/	13.5	6.3	1.2	5.6	applicable to power genera-tion, in-dustrial waste hot water and parabolic trough solar sys-tem
	BYZH50	582	449	200	71.4	38.6	5.7	45.8	/	/	28.8	48.5	/	22.1	/	28.3	10.9	2.5	10.5	
	BYZH75	872	672	300	107	57.8	8.6	68.7	/	/	43.1	72.6	/	33.0	/	47.3	17.4	4.6	13.1	
	BYZH85	989	762	340	121	65.6	9.7	77.8	/	/	48.9	82.4	/	37.4	/	52.7	18.6	5.9	16.0	
	BYZH100	1163	897	400	143	77.1	11.5	91.6	/	/	57.5	97.0	/	44.0	/	55.0	19.1	6.3	18.3	
	BYZH125	1454	1121	500	179	96.4	14.3	114	/	/	71.9	121	/	55.0	/	69.4	26.1	6.3	23.4	
	BYZH150	1745	1349	600	214	116	17.2	138	/	/	86.3	146	/	66.2	/	78.8	35.5	8.5	27.1	
	BYZH175	2035	1570	700	250	135	20.1	160	/	/	101	170	/	77.0	/	106	45.0	11.0	30.7	
	BYZH200	2326	1791	800	286	154	23.0	183	/	/	115	194	/	88.0	/	113	45.0	11.0	36.8	
	BYZH250	2908	2245	1000	357	193	28.7	229	/	/	144	243	/	110	/	129	53.5	13.9	42.2	
	BYZH300	3489	2687	1200	429	231	34.4	275	/	/	173	290	/	132	/	155	71.0	15.4	51.0	
	BYZH400	4652	3582	1600	571	308	45.9	366	/	/	230	387	/	176	/	184	74.0	18.4	62.7	
	BYZH500	5815	4489	/	714	386	/	458	/	/	288	485	/	/	/	278	126	/	80.6	
	BYZH600	6978	5385	/	857	463	/	551	/	/	345	582	/	/	/	321	131	/	91.8	
	BYZH800	9304	7176	/	1143	617	/	733	/	/	460	776	/	/	/	426	177	/	111	
	BYZH1000	11630	8967	/	1429	771	/	916	/	/	575	970	/	/	/	514	210	/	140	
Packaged non-electric steam + direct fired chiller Steam 0.8 MPa Gas, oil	BYZS20	233	179	80	28.6	15.4	2.3	18.3	/	273	/	19.4	/	8.8	/	13.5	6.3	1.2	5.6	applicable to power genera-tion and industrial waste steam
	BYZS50	582	449	200	71.4	38.6	5.7	45.8	/	684	/	48.5	/	22.1	/	28.3	10.9	2.5	10.5	
	BYZS75	872	672	300	107	57.8	8.6	68.7	/	1026	/	72.6	/	33.0	/	47.3	17.4	4.6	13.1	
	BYZS85	989	762	340	121	65.5	9.7	77.8	/	1162	/	82.4	/	37.4	/	52.7	18.6	5.9	16.0	
	BYZS100	1163	897	400	143	77.1	11.5	91.6	/	1367	/	97.0	/	44.0	/	55.0	19.1	6.3	18.3	
	BYZS125	1454	1121	500	179	96.4	14.3	114	/	1709	/	121	/	55.0	/	69.4	26.1	6.3	23.4	
	BYZS150	1745	1349	600	214	116	17.2	138	/	2051	/	146	/	66.2	/	78.8	35.5	8.5	27.1	
	BYZS175	2035	1570	700	250	135	20.1	160	/	2393	/	170	/	77.0	/	106	45.0	11.0	30.7	
	BYZS200	2326	1791	800	286	154	23.0	183	/	2735	/	194	/	88.0	/	113	45.0	11.0	36.8	
	BYZS250	2908	2245	1000	357	193	28.7	229	/	3419	/	243	/	110	/	129	53.5	13.9	42.2	
	BYZS300	3489	2687	1200	429	231	34.4	275	/	4102	/	290	/	132	/	155	71.0	15.4	51.0	
	BYZS400	4652	3582	1600	571	308	45.9	366	/	5470	/	387	/	176	/	184	74.0	18.4	62.7	
	BYZS500	5815	4489	/	714	386	/	458	/	6837	/	485	/	/	/	278	126	/	80.6	
	BYZS600	6978	5385	/	857	463	/	551	/	8205	/	582	/	/	/	321	131	/	91.8	
	BYZS800	9304	7176	/	1143	617	/	733	/	10940	/	776	/	/	/	426	177	/	111	
	BYZS1000	11630	8967	/	1429	771	/	916	/	13675	/	970	/	/	/	514	210	/	140	

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Packaged Waste Heat Chiller Performance Data

Product energy	Model	Capacity			Flow rate			Energy consumption								Electricity			Chiller operation weight	Energy remarks
								cooling				heating		hot W.						
		chilled kW(RT)	heating kW	hot W. kW	chilled W. m^3/h	heating W. m^3/h	hot W. m^3/h	NG m^3/h	exhaust kg/h	steam kg/h	hot W. k^3/h	NG m^3/h	exhaust kg/h	NG m^3/h	exhaust kg/h	cooling kW	heating kW	hot W. kW	t	
Packaged non-electric hot water + exhaust chiller Exhaust 500℃ Hot W. 98℃	BYHE20	233	139	80	28.6	15.4	2.3	/	1388	/	5.6	/	1388	/	801	13.3	6.0	0.9	5.6	applicable to engine generators
	BYHE50	582	347	200	71.4	38.6	5.7	/	3471	/	13.9	/	3471	/	2003	26.9	9.5	1.1	10.5	
	BYHE75	872	520	300	107	57.8	8.6	/	5207	/	20.8	/	5207	/	3004	45.9	16.0	3.2	13.1	
	BYHE85	989	589	340	121	65.5	9.7	/	5901	/	23.6	/	5901	/	3405	50.1	16.0	3.2	16.0	
	BYHE100	1163	693	400	143	77.1	11.5	/	6942	/	27.8	/	6942	/	4006	52.4	16.5	3.7	18.3	
	BYHE125	1454	867	500	179	96.4	14.3	/	8678	/	34.7	/	8678	/	5007	66.8	23.5	3.7	23.4	
	BYHE150	1745	1040	600	214	116	17.2	/	10413	/	41.7	/	10413	/	6008	74.8	31.5	4.5	27.1	
	BYHE175	2035	1213	700	250	135	20.1	/	12149	/	48.6	/	12149	/	7010	99.3	38.5	4.5	30.7	
	BYHE200	2326	1387	800	286	154	23.0	/	13885	/	55.6	/	13885	/	8011	106	38.5	4.5	36.8	
	BYHE250	2908	1733	1000	357	193	28.7	/	17356	/	69.5	/	17356	/	10014	121	46.0	6.4	42.2	
	BYHE300	3489	2080	1200	429	231	34.4	/	20827	/	83.4	/	20827	/	12017	146	62.0	6.4	51.0	
	BYHE400	4652	2773	1600	571	308	45.9	/	27769	/	111	/	27769	/	16023	172	62.0	6.4	62.7	
	BYHE500	5815	3466	/	714	386	/	/	34712	/	139	/	34712	/	/	264	112	/	80.6	
	BYHE600	6978	4160	/	857	463	/	/	41654	/	167	/	41654	/	/	303	113	/	91.8	
	BYHE800	9304	5546	/	1143	617	/	/	55539	/	222	/	55539	/	/	402	153	/	111	
	BYHE1000	11630	6933	/	1429	771	/	/	69423	/	278	/	69423	/	/	487	183	/	140	
Packaged non-electric hot water + exhaust +direct fired chiller Exhaust 500℃ Hot W. 98℃ Gas, oil	BYZHE20	233	179	80	28.6	15.4	2.3	18.3	1388	/	5.6	19.4	1388	8.8	801	13.5	6.3	1.2	5.6	applicable to engine generators
	BYZHE50	582	449	200	71.4	38.6	5.7	45.8	3471	/	13.9	48.5	3471	22.1	2003	28.3	10.9	2.5	10.5	
	BYZHE75	872	672	300	107	57.8	8.6	68.7	5207	/	20.8	72.6	5207	33.0	3004	47.3	17.4	4.6	13.1	
	BYZHE85	989	762	340	121	65.5	9.7	77.8	5901	/	23.6	82.4	5901	37.4	3405	52.7	18.6	5.9	16.0	
	BYZHE100	1163	897	400	143	77.1	11.5	91.6	6942	/	27.8	97.0	6942	44.0	4006	55.0	19.1	6.3	18.3	
	BYZHE125	1454	1121	500	179	96.4	14.3	114	8678	/	34.7	121	8678	55.0	5007	69.4	26.1	6.3	23.4	
	BYZHE150	1745	1349	600	214	116	17.2	138	10413	/	41.7	146	10413	66.2	6008	78.8	35.5	8.5	27.1	
	BYZHE175	2035	1570	700	250	135	20.1	160	12149	/	48.6	170	12149	77.0	7010	106	45.0	11.0	30.7	
	BYZHE200	2326	1791	800	286	154	23.0	183	13885	/	55.6	194	13885	88.0	8011	113	45.0	11.0	36.8	
	BYZHE250	2908	2245	1000	357	193	28.7	229	17356	/	69.5	243	17356	110	10014	129	53.5	13.9	42.2	
	BYZHE300	3489	2687	1200	429	231	34.4	275	20827	/	83.4	290	20827	132	12017	155	71.0	15.4	51.0	
	BYZHE400	4652	3582	1600	571	308	45.9	366	27769	/	111	387	27769	176	16023	184	74.0	18.4	62.7	
	BYZHE500	5815	4489	/	714	386	/	458	34712	/	139	485	34712	/	/	278	126	/	80.6	
	BYZHE600	6978	5385	/	857	463	/	551	41654	/	167	582	41654	/	/	321	131	/	91.8	
	BYZHE800	9304	7176	/	1143	617	/	733	55539	/	222	776	55539	/	/	426	177	/	111	
	BYZ-HE1000	11630	8967	/	1429	771	/	916	69423	/	278	970	69423	/	/	514	210	/	140	

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Packaged Waste Heat Chiller Performance Data

Product energy	Model	Capacity			Flow rate			Energy consumption						Electricity			Chiller operation weight	Energy remarks
								cooling		heating		hot W.						
		cooling kW(RT)	heating kW	hot W. kW	chilled W. m^3/h	heating W. m^3/h	hot W. m^3/h	NG m^3/h	exhaust kg/h	NG m^3/h	exhaust kg/h	NG m^3/h	exhaust kg/h	cooling kW	heating kW	hot W. kW	t	
Packaged non-electric exhaust chiller Exhaust500℃	BYE20	233(66)	166	80	28.6	15.4	2.3	/	1736	/	1736	/	801	13.3	6.0	0.9	5.5	applicable to turbines, engine generators and furnaces
	BYE50	582(165)	415	200	71.4	38.6	5.7	/	4339	/	4339	/	2003	26.9	9.5	1.1	10.7	
	BYE75	872(248)	622	300	107	57.8	8.6	/	6508	/	6508	/	3004	45.9	16.0	3.2	13.7	
	BYE85	989(281)	705	340	121	65.5	9.7	/	7376	/	7376	/	3405	50.1	16.0	3.2	16.6	
	BYE100	1163(331)	830	400	143	77.1	11.5	/	8678	/	8678	/	4006	52.4	16.5	3.7	19.1	
	BYE125	1454(413)	1037	500	179	96.4	14.3	/	10847	/	10847	/	5007	66.8	23.5	3.7	23.1	
	BYE150	1745(496)	1245	600	214	116	17.2	/	13017	/	13017	/	6008	74.8	31.5	4.5	26.7	
	BYE175	2035(579)	1452	700	250	135	20.1	/	15186	/	15186	/	7010	99.3	38.5	4.5	30.1	
	BYE200	2326(661)	1660	800	286	154	23.0	/	17356	/	17356	/	8011	106	38.5	4.5	34.9	
	BYE250	2908(827)	2075	1000	357	193	28.7	/	21695	/	21695	/	10014	121	46.0	6.4	41.0	
	BYE300	3489(992)	2489	1200	429	231	34.4	/	26034	/	26034	/	12017	146	62.0	6.4	50	
	BYE400	4652(1323)	3319	1600	571	308	45.9	/	34712	/	34712	/	16023	172	62.0	6.4	61.5	
	BYE500	5815(1653)	4149	/	714	386	/	/	43390	/	43390	/	/	264	112	/	80	
	BYE600	6978(1984)	4979	/	857	463	/	/	52067	/	52067	/	/	303	113	/	90	
	BYE800	9304(2646)	6638	/	1143	617	/	/	69423	/	69423	/	/	402	153	/	108	
	BYE1000	11630(3307)	8298	/	1429	771	/	/	86779	/	86779	/	/	487	183	/	136	
Packaged non-electric exhaust + direct fired chiller Exhaust 500 Gas, oil	BYZE20	233(66)	179	80	28.6	15.4	2.3	18.3	1736	19.4	1736	8.8	801	13.5	6.3	1.2	5.6	applicable to turbines, engine generators and furnaces
	BYZE50	582(165)	449	200	71.4	38.6	5.7	45.8	4339	48.5	4339	22.1	2003	28.3	10.9	2.5	10.5	
	BYZE75	872(248)	672	300	107	57.8	8.6	68.7	6508	72.6	6508	33.0	3004	47.3	17.4	4.6	13.1	
	BYZE85	989(281)	762	340	121	65.5	9.7	77.8	7376	82.4	7376	37.4	3405	52.7	18.6	5.9	16.0	
	BYZE100	1163(331)	897	400	143	77.1	11.5	91.6	8678	97.0	8678	44.0	4006	55.0	19.1	6.3	18.3	
	BYZE125	1454(413)	1121	500	179	96.4	14.3	114	10847	121	10847	55.0	5007	69.4	26.1	6.3	23.4	
	BYZE150	1745(496)	1349	600	214	116	17.2	138	13017	146	13017	66.2	6008	78.8	35.5	8.5	27.1	
	BYZE175	2035(579)	1570	700	25	135	20.1	160	15186	170	15186	77.0	7010	106	45.0	11.0	30.7	
	BYZE200	2326(661)	1791	800	286	154	23.0	183	17356	194	17356	88.0	8011	113	45.0	11.0	36.8	
	BYZE250	2908(827)	2245	1000	357	193	28.7	229	21695	243	21695	110	10014	129	53.5	13.9	42.2	
	BYZE300	3489(992)	2687	1200	429	231	34.4	275	26034	290	26034	132	12017	155	71.0	15.4	51.0	
	BYZE400	4652(1323)	3582	1600	571	308	45.9	366	34712	387	34712	176	16023	184	74.0	18.4	62.7	
	BYZE500	5815(1653)	4489	/	714	386	/	458	43390	485	43390	/	/	278	126	/	80.6	
	BYZE600	6978(1984)	5385	/	857	463	/	551	52067	582	52067	/	/	321	131	/	91.8	
	BYZE800	9304(2646)	7176	/	1143	617	/	733	69423	776	69423	/	/	426	177	/	111	
	BYZE1000	11630(3307)	8967	/	1429	771	/	916	86779	970	86779	/	/	514	210	/	140	
Packaged non-electric single stage exhaust chiller Exhaust 300℃	BYDE20	175(50)	/	/	21.5	/	/	/	4509	/	/	/	/	14.0	/	/	4.5	applicable to micro-turbines
	BYDE50	437(124)	/	/	53.6	/	/	/	11259	/	/	/	/	25.0	/	/	8.1	
	BYDE75	656(187)	/	/	80.4	/	/	/	16902	/	/	/	/	46.6	/	/	10.1	
	BYDE85	744(212)	/	/	90.9	/	/	/	19169	/	/	/	/	50.8	/	/	12.0	
	BYDE100	875(249)	/	/	107	/	/	/	22544	/	/	/	/	51.3	/	/	13.8	

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Packaged Waste Heat Chiller Performance Data

Product heat source	Model	Cooling capacity	Chilled/ heating water flowrate	Steam consump.	Hot W. flow rate	Power demand	Chiller operation weight	Heat source remarks
		kW(RT)	m^3/h	kg/h	m^3/h	kW	t	
Packaged non-electric steam chiller Steam 0.8MPa (0.6MPa for special order)	BYS20	233(66)	28.6	273	/	13.3	4.5	applicable to power generation or Industrial waste steam
	BYS50	582(165)	71.4	684	/	26.9	8.2	
	BYS75	872(248)	107	1026	/	45.9	11.2	
	BYS85	989(281)	121	1162	/	50.1	13.0	
	BYS100	1163(331)	143	1367	/	52.4	15.1	
	BYS125	1454(413)	179	1709	/	66.8	18.3	
	BYS150	1745(496)	214	2051	/	74.8	20.7	
	BYS175	2035(579)	25	2393	/	99.3	24.3	
	BYS200	2326(661)	286	2735	/	106	29.7	
	BYS250	2908(827)	357	3419	/	121	34.4	
	BYS300	3489(992)	429	4102	/	146	40.7	
	BYS400	4652(1323)	571	5470	/	172	52.2	
	BYS500	5815(1653)	714	6837	/	264	63.8	
	BYS600	6978(1984)	857	8205	/	303	73	
	BYS800	9304(2646)	1143	10940	/	402	91	
	BYS1000	11630(3307)	1429	13675	/	487	113	
Packaged non-electric hot water chiller Hot water 180 (160 for special order)	BYH20	233(66)	28.6	/	11.5	13.3	4.9	applicable to power generation, industrial waste hot water and parabolic trough solar systems
	BYH50	582(165)	71.4	/	28.8	26.9	9.1	
	BYH75	872(248)	107	/	43.1	45.9	11.6	
	BYH85	989(281)	121	/	48.9	50.1	13.9	
	BYH100	1163(331)	143	/	57.5	52.4	15.2	
	BYH125	1454(413)	179	/	71.9	66.8	18.8	
	BYH150	1745(496)	214	/	86.3	74.8	21.4	
	BYH175	2035(579)	25	/	101	99.3	25.0	
	BYH200	2326(661)	286	/	115	106	29.4	
	BYH250	2908(827)	357	/	144	121	35.2	
	BYH300	3489(992)	429	/	173	146	41.7	
	BYH400	4652(1323)	571	/	230	172	54	
	BYH500	5815(1653)	714	/	288	264	67	
	BYH600	6978(1984)	857	/	345	303	78	
	BYH800	9304(2646)	1143	/	460	402	95	
	BYH1000	11630(3307)	1429	/	575	487	117	

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Packaged Waste Heat Chiller Performance Data

Packaged non-electric single stage steam chiller Steam 0.1MPa	BYDS20	175(50)	21.5	364	/	14.0	4.2	applicable to industrial waste steam or steam from power generation
	BYDS50	437(124)	53.6	908	/	25.0	7.1	
	BYDS75	656(187)	80.4	1364	/	46.6	9.4	
	BYDS85	744(212)	90.9	1547	/	50.8	10.8	
	BYDS100	875(249)	107	1819	/	51.3	12.5	
	BYDS125	1094(311)	134	2274	/	67.2	15.8	
	BYDS150	1313(373)	161	2729	/	75.2	18.7	
	BYDS175	1531(435)	188	3182	/	99.2	21.8	
	BYDS200	1750(498)	215	3638	/	106	25.0	
	BYDS250	2187(622)	268	4546	/	121	28.6	
	BYDS300	2625(746)	322	5457	/	145	33.2	
	BYDS400	3500(995)	429	7275	/	170	44	
	BYDS500	4375(1244)	536	9094	/	260	55	
	BYDS600	5250(1493)	644	10913	/	300	64	
	BYDS800	7000(1990)	858	14551	/	399	78	
	BYDS1000	8750(2488)	1073	18188	/	480	95	
Packaged non-electric single stage hot water chiller Hot water 98℃	BYDH20	175(50)	21.5	/	20.9	14.0	4.3	applicable to industrial or power generation waste heat and solar systems
	BYDH50	437(124)	53.6	/	52.2	25.0	7.4	
	BYDH75	656(187)	80.4	/	78.4	46.6	9.8	
	BYDH85	744(212)	90.9	/	88.9	50.8	11.5	
	BYDH100	875(249)	107	/	105	51.3	13.4	
	BYDH125	1094(311)	134	/	131	67.2	16.0	
	BYDH150	1313(373)	161	/	157	75.2	19.8	
	BYDH175	1531(435)	188	/	183	99.2	22.7	
	BYDH200	1750(498)	215	/	209	106	26.0	
	BYDH250	2187(622)	268	/	261	121	29.6	
	BYDH300	2625(746)	322	/	314	145	35.0	
	BYDH400	3500(995)	429	/	418	170	46.1	
	BYDH500	4375(1244)	536	/	523	260	59	
	BYDH600	5250(1493)	644	/	627	300	69	
	BYDH800	7000(1990)	858	/	836	399	84	
	BYDH1000	8750(2488)	1073	/	1045	480	101	

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General conditions

1. Rated chilled W. outlet/inlet temp.: 7℃/14℃
2. Rated heating W. outlet/inlet temp.: 65℃/55℃
3. Rated hot W. outlet/inlet temp.: 90℃/60℃
4. Lowest permitted outlet temp. for chilled water: 5℃(except special order)
5. Highest permitted outlet temp. for heating/hot water: 95℃
6. Standard climate conditions for cooling operation: temp. 36℃、relative humidity50% (wet bulb27℃)
7. Natural gas consumption is calculated per low heating value:10kWh/m^3(8600kcal/m^3). If heating value of other gases or diesel oil is available, please calculate accordingly.
8. Standard natural gas pressure is from 16~50kPa (1600~5000mmH_2O), lower or higher pressure can be accommodated to special orders
9. Pressure limit for chilled/heating /hot water: 0.8MPa (higher pressure limit can be accommodated to special orders)
10. Fouling factor for chilled/heating/hot water: 0.086m_2. K/kW
11. Adjustable load: 5%～130%
12. Heating capacity and hot water capacity refer to the capacity during separate operation, which is adjustable within this range
13. For BYZE, BYZHE, BYZH, BYZS models, energy consumption refers to waste heat and fuel consumption during separate operation
14. Product life design: 25 years

Notes:

a. For application of waste heat and renewable energy, please refer to non-electric chiller catalogues

b. Performance curves can be referred to BYZ models

c. For cooling water parameters, please refer to chiller catalogues

d. Operation weight of pump set and cooling tower is the same with BYZ models

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