



Building Cooling Heating Power



BROAD AIR CONDITIONING
远大空调有限公司

2003.12



BCHP System Advantages —— to Users

- **Achieves energy utilization by steps with total energy efficiency 70 90 .**
- **Building's energy consumption decreases with lower operation cost.**
- **Machine room is saved to create more space.**
- **Reliable energy supply for buildings, strengthens the city anti-disaster capability in abnormal time.**
- **Decreases the power transportation loss.**



BCHP System Advantages

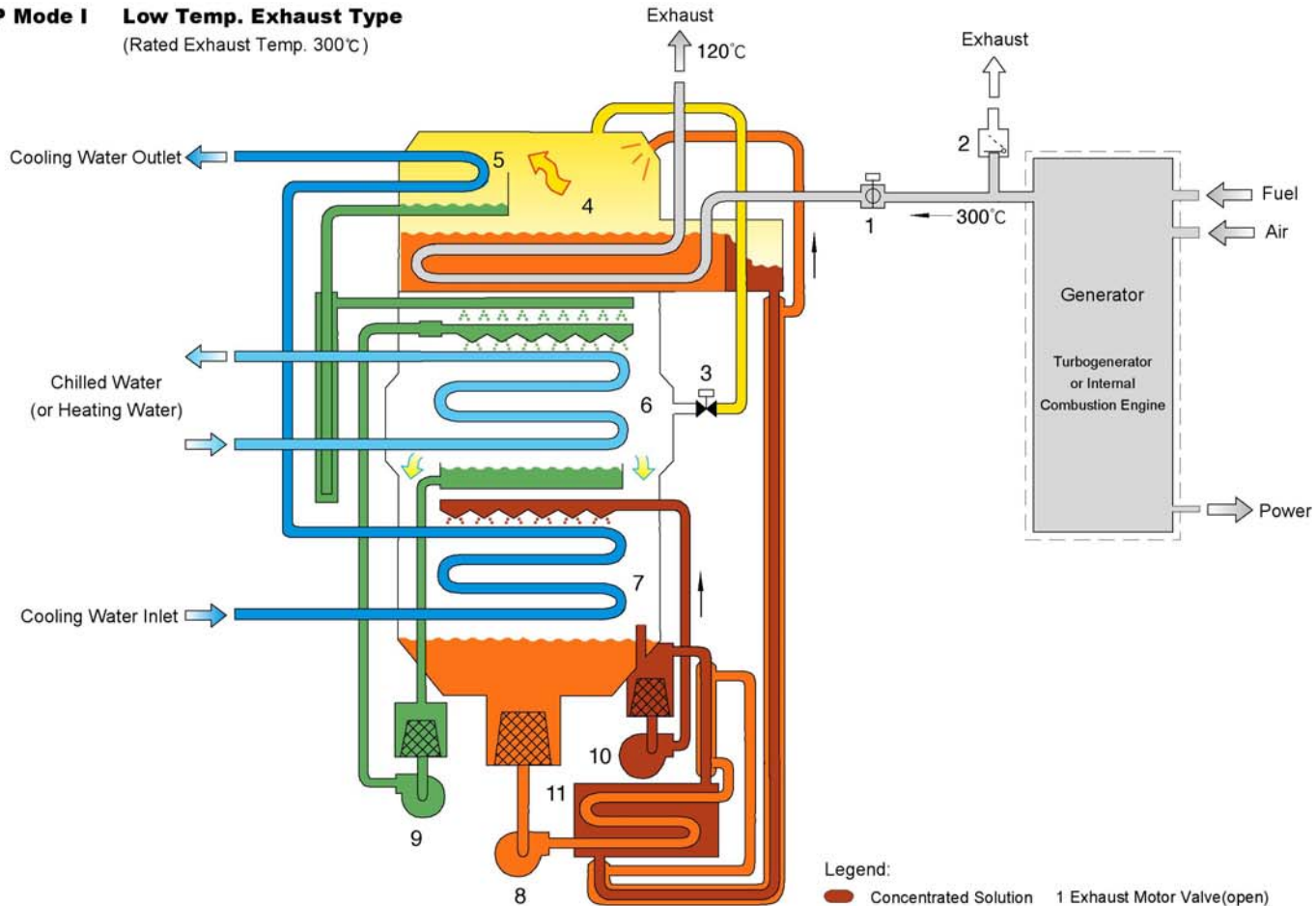
—— to the Global Environment

- **Higher energy efficiency to save global limited energy.**
- **decrease green house gas (CO₂) emission.**
- **decrease SO₂ No_x and other polluted power emission.**
- **Apply natural refrigerant (LiBr H₂O) no ozone-depleting .**



BCHP MODEL

BCHP Mode I Low Temp. Exhaust Type (Rated Exhaust Temp. 300°C)



Single-Stage Chiller/Heater

Legend:

- | | | |
|--|--|--------------------|
| ■ Concentrated Solution | 1 Exhaust Motor Valve(open) | 7 Absorber |
| ■ Diluted Solution | 2 Auto Exhaust Damper(closed) | 8 Generation Pump |
| ■ Refrigerant Vapor | 3 Cooling/Heating Switch Valve(closed) | 9 Refrigerant Pump |
| ■ Refrigerant | 4 Generator | 10 Absorption Pump |
| ■ Cooling Water | 5 Condenser | 11 Heat Exchanger |
| ■ Chilled Water | 6 Evaporator | |



JOB REFERENCE

Customer University of Maryland

Location	Maryland, U.S.
Cooling capacity	21 Rt
Function	Cooling, heating
Exhaust heat recovered	334 MBH
Delivery date	Feb. 2001

Chiller: Exhaust fed absorption chiller/heater

Model		BDE6.4N310-15
Cooling capacity		21Rt / 75kW
Heating capacity		321 MBH
Chilled W. O/I temp.		44/54
Cooling W. O/I temp.		95/85
Heating W. I. temp.		122/113
Heat source		590 exhaust



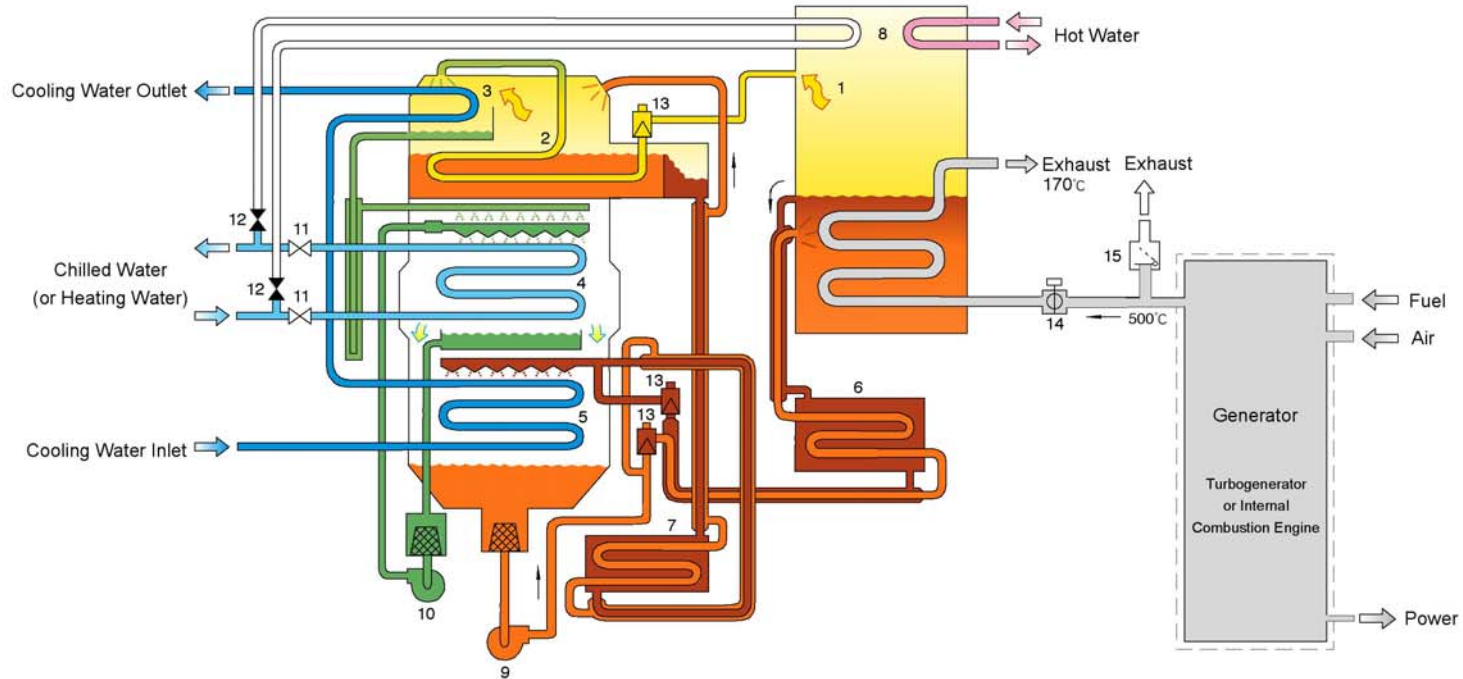
Generator: U.S. gas turbine

Power	kW	60
Fuel consumption	MBH	785
Exhaust temp.		590
Exhaust temp.	lb/h	3885



BCHP MODEL

BCHP Mode II High Temp. Exhaust Type (Rated Exhaust Temp. 500°C)



Two-Stage Chiller/Heater

Legend:

- | | | |
|-----------------------|-----------------------------------|---------------------------------------|
| Concentrated Solution | 1 High-Stage Generator(HSG) | 9 Solution Pump |
| Diluted Solution | 2 Low-Stage Generator(LSG) | 10 Refrigerant Pump |
| Hot Water | 3 Condenser | 11 Chilled Water Valve(open) |
| Refrigerant Vapor | 4 Evaporator | 12 Heating Water Valve(closed) |
| Refrigerant | 5 Absorber | 13 Cooling/Heating Switch Valve(open) |
| Cooling Water | 6 High Temp. Heat Exchanger(HTHE) | 14 Exhaust Motor Valve(open) |
| Chilled Water | 7 Low Temp. Heat Exchanger(LTHE) | 15 Auto Exhaust Damper(closed) |
| | 8 Water Heater | |



JOB REFERENCE

Customer: Honeywell Co.

Location	North Carolina, U.S.
Cooling capacity	992 Rt
Function	cooling
Exhaust heat recovered	9760 MBH
Delivery date	May 2003

Chiller: Exhaust fed absorption chiller/heater

Model	BE300N514-d
Cooling capacity	992Rt /3489kW
Chilled W. O/I temp.	44/54
Cooling W. O/I temp.	95/85
Heat source	957 exhaust



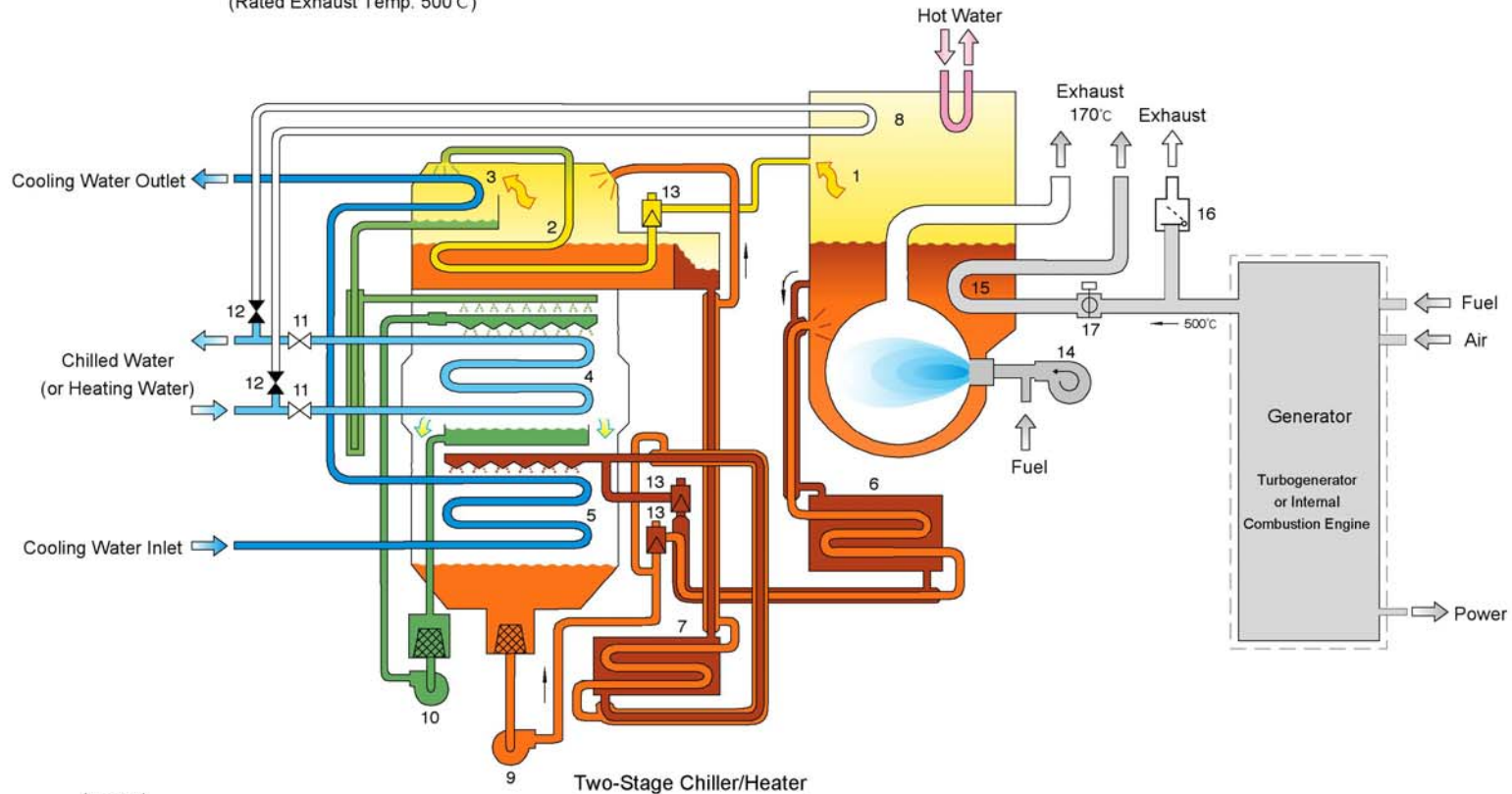
Generator: U.S. Solar T60 gas turbine

Power	kW	5376
Fuel consumption	MBH	58562
Exhaust temp.		957
Exhaust temp.	lb/h	172500



BCHP MODEL

BCHP Mode III High Temp. Exhaust & Gas/Oil Fired Type (Rated Exhaust Temp. 500°C)



Legend:

- Chilled Water
- Cooling Water
- Refrigerant
- Refrigerant Vapor
- Diluted Solution
- Concentrated Solution
- Hot Water

- 1 High-Stage Generator(HSG)
- 2 Low-Stage Generator(LSG)
- 3 Condenser
- 4 Evaporator
- 5 Absorber
- 6 High Temp. Heat Exchanger(HTHE)
- 7 Low Temp. Heat Exchanger(LTHE)
- 8 Water Heater
- 9 Solution Pump
- 10 Refrigerant Pump
- 11 Chilled Water Valve(open)
- 12 Heating Water Valve(closed)
- 13 Cooling/Heating Switch Valve(open)
- 14 Burner

- 15 Exhaust Generator
- 16 Auto Exhaust Damper(closed)
- 17 Exhaust Motor Valve(open)



JOB REFERENCE

Customer: Binsong Photon-Tech Co. Ltd.

Location	Langfang, Hebei
Cooling capacity	66 Rt
Function	Cooling, heating , hot water
Exhaust heat recovered	683 MBH (cooling)
Delivery date	Jan. 2003

Chiller: Heat recovery DFA chiller/heater

Model	BZ20 D500
Cooling capacity	66Rt /233kW
Heating capacity	612MBH
Chilled W. O/I temp.	45/54
Cooling W. O/I temp.	99/86
Heating W. O/I temp.	149/135
Heat source	932 exhaust; auxiliary gas burner



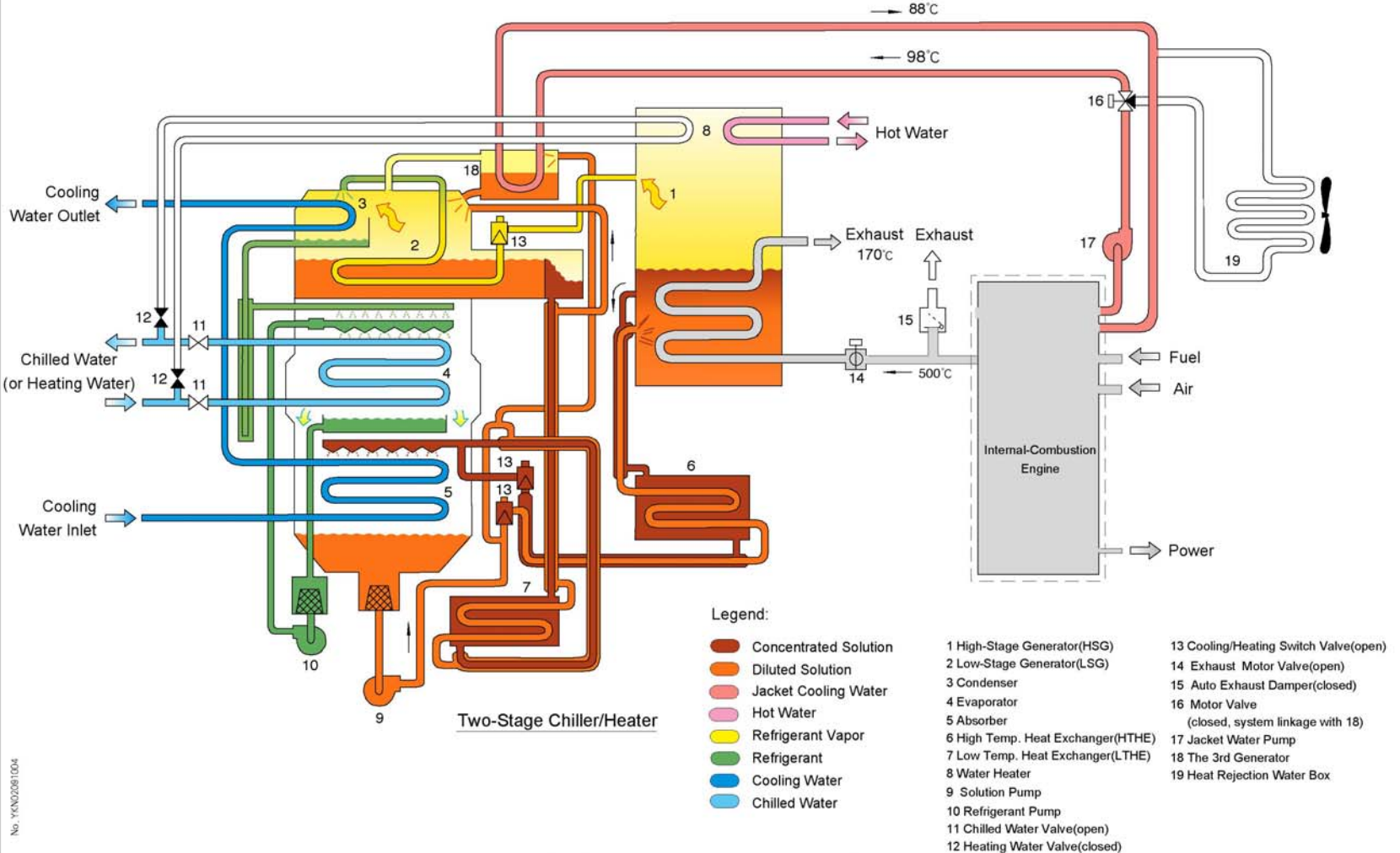
Generator: Shengdong T260GF gas engine

Power	kW	260
Fuel consumption	MBH	2690
Exhaust temp.		932
Exhaust flowrate	lb/h	4758



BCHP MODEL

BCHP Mode IV High Temp. Exhaust & Jacket Water Type
 (Rated Exhaust Temp. 500°C, Rated Jacket Water Temp. 98/88°C)





JOB REFERENCE

Customer Spanish Energy Institute

Location	Spain
Cooling capacity	73 Rt
Function	cooling
heat recovered	940 MBH
Delivery date	Feb. 2003

Chiller Heat recovery chiller/heater

Model	BE22ND480-78/90
Cooling capacity	73Rt /256kW
Chilled W. O/I temp.	44/54
Cooling W. O/I temp.	95/85
Heat source	896 exhaust; 194 jacket water



Generator: Gas engine

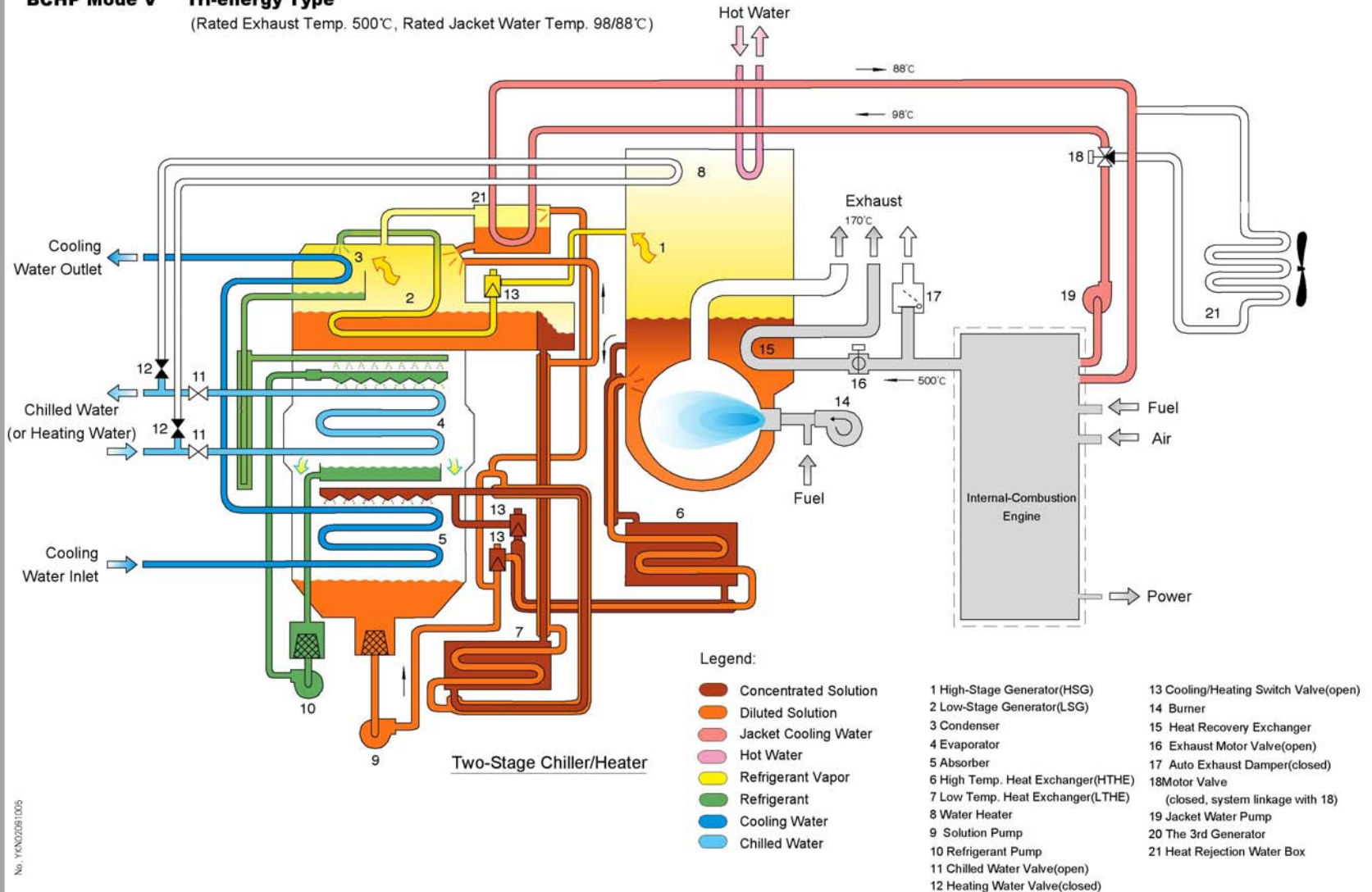
Power	kW	160
Fuel consumption	MBH	1810
Exhaust temp.		896
Exhaust flowrate	lb/h	2600
Jacket W O/I temp.		173/194
Jacket W. flowrate	GPM	54



BCHP MODEL

BCHP Mode V Tri-energy Type

(Rated Exhaust Temp. 500°C, Rated Jacket Water Temp. 98/88°C)





JOB REFERENCE 1

Customer Beijing Gas

Location	Beijing, China
Cooling capacity	662 Rt
Function	Cooling, heating
heat recovered (cooling)	3788 MBH
Delivery date	Jan. 2003

Chiller: Heat recovery DFA chiller/heater

Model	BZ200 D468-88/98
Cooling capacity	662Rt / 2326kW
Heating capacity	6143 MBH
Chilled W. O/I temp.	45/54
Cooling W. O/I temp.	99/86
Heating W. O/I temp.	140/122
Heat source	874 exhaust; 208 jacket water; auxiliary gas burner



Generator: U.S. gas engine

Power	kW	725
Fuel consumption	MBH	7358
Exhaust temp.		874
Exhaust flowrate	lb/h	10645
Jacket W. O/I temp.		190/198
Jacket W. flowrate	GPM	264



JOB REFERENCE 2

Customer Beijing Gas

Location	Beijing, China
Cooling capacity	331 Rt
Function	Cooling, heating
heat recovered (cooling)	2437 MBH
Delivery date	Jan. 2003



Chiller: Heat recovery DFA chiller/heater

Model	BZ100 D416-88/98
Cooling capacity	331Rt /1163kW
Heating capacity	3074 MBH
Chilled W. O/I temp.	45/54
Cooling W. O/I temp.	99/86
Heating W. O/I temp.	140/122
Heat source	781 exhaust; 208 jacket water; auxiliary gas burner

Generator: U.S. gas engine

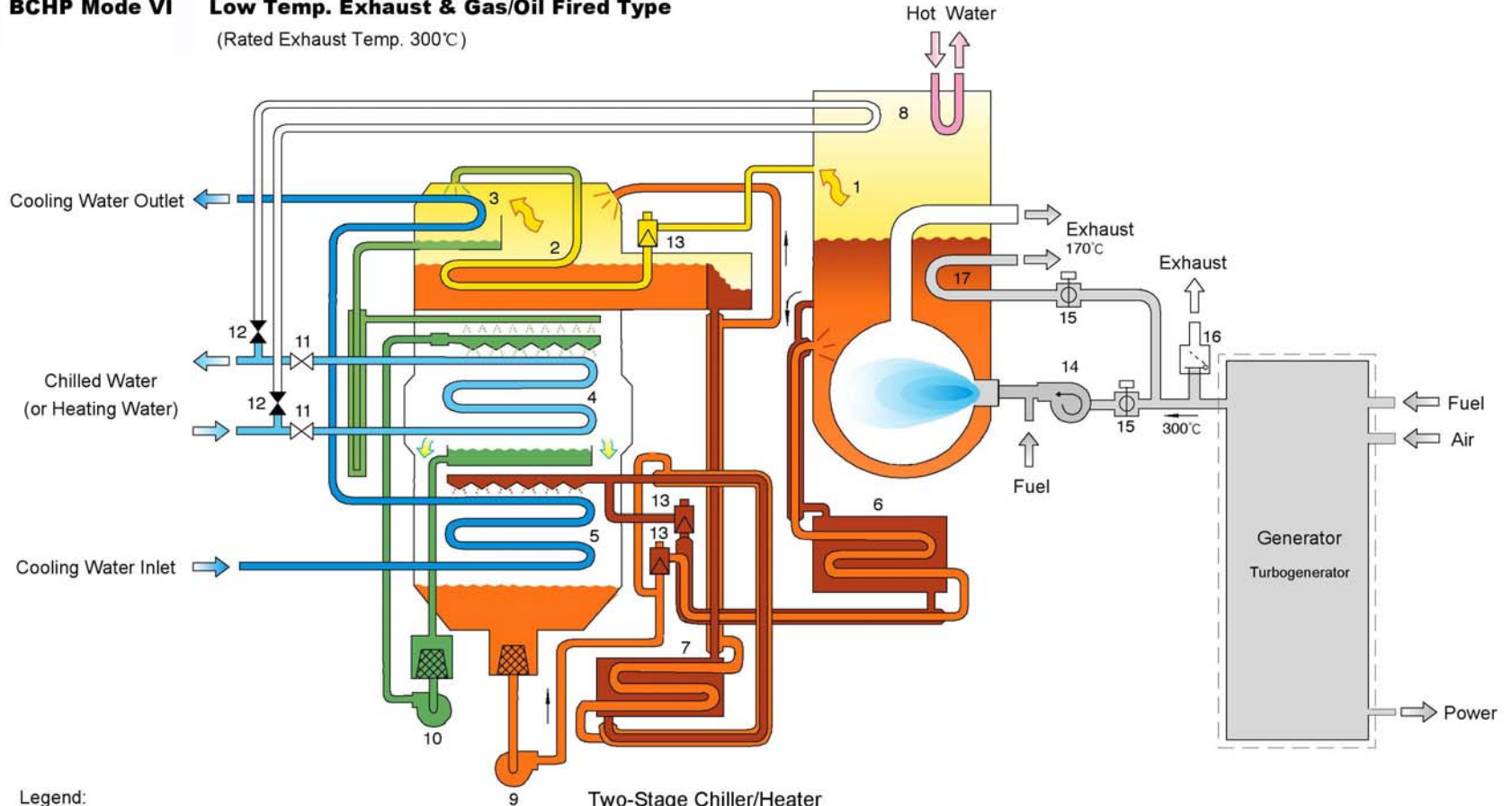
Power	kW	498
Fuel consumption	MBH	4938
Exhaust temp.		781
Exhaust flowrate	lb/h	6528
Jacket W. O/I temp.		190/198
Jacket W. flowrate	GPM	191



BCHP MODEL

BCHP Mode VI Low Temp. Exhaust & Gas/Oil Fired Type

(Rated Exhaust Temp. 300°C)



Legend:

- Chilled Water
- Cooling Water
- Refrigerant
- Refrigerant Vapor
- Diluted Solution
- Concentrated Solution
- Hot Water

- Two-Stage Chiller/Heater**
- 1 High-Stage Generator(HSG)
 - 2 Low-Stage Generator(LSG)
 - 3 Condenser
 - 4 Evaporator
 - 5 Absorber
 - 6 High Temp. Heat Exchanger(HTHE)
 - 7 Low Temp. Heat Exchanger(LTHE)
 - 8 Water Heater
 - 9 Solution Pump
 - 10 Refrigerant Pump
 - 11 Chilled Water Valve(open)
 - 12 Heating Water Valve(closed)
 - 13 Cooling/Heating Switch Valve(open)
 - 14 Burner

- 15 Exhaust Motor Valve(open)
- 16 Auto Exhaust Damper(closed)
- 17 Exhaust Generator



JOB REFERENCE

Customer: U.S. SEMPRRA gas company

Location	C.A., U.S.
Cooling capacity	331 Rt
Function	Cooling, heating
Exhaust heat recovered (cooling)	556 MBH
Delivery date	Sept. 2001

Chiller: Exhaust fed DFA chiller/heater

Model	BZ100 D310-K
Cooling capacity	331Rt /1163kW
Heating capacity	3061 MBH
Chilled W. O/l temp.	44/54
Cooling W. O/l temp.	95/85
Heating W. I. temp.	140/126
Heat source	590 exhaust; auxiliary gas burner



Generator: U.S. gas turbine

Power	kW	60
Fuel consumption	MBH	785
Exhaust temp.		590
Exhaust flowrate	lb/h	3885