



SERVICE MANUAL

[BORA SERIES]

GWH09AAB-K6DNA1A
(GWH09AAB-K6DNA1A/I + GWH09AAB-K6DNA3A/O)

GWH12AAB-K6DNA1A
(GWH12AAB-K6DNA1A/I + GWH12AAB-K6DNA3A/O)

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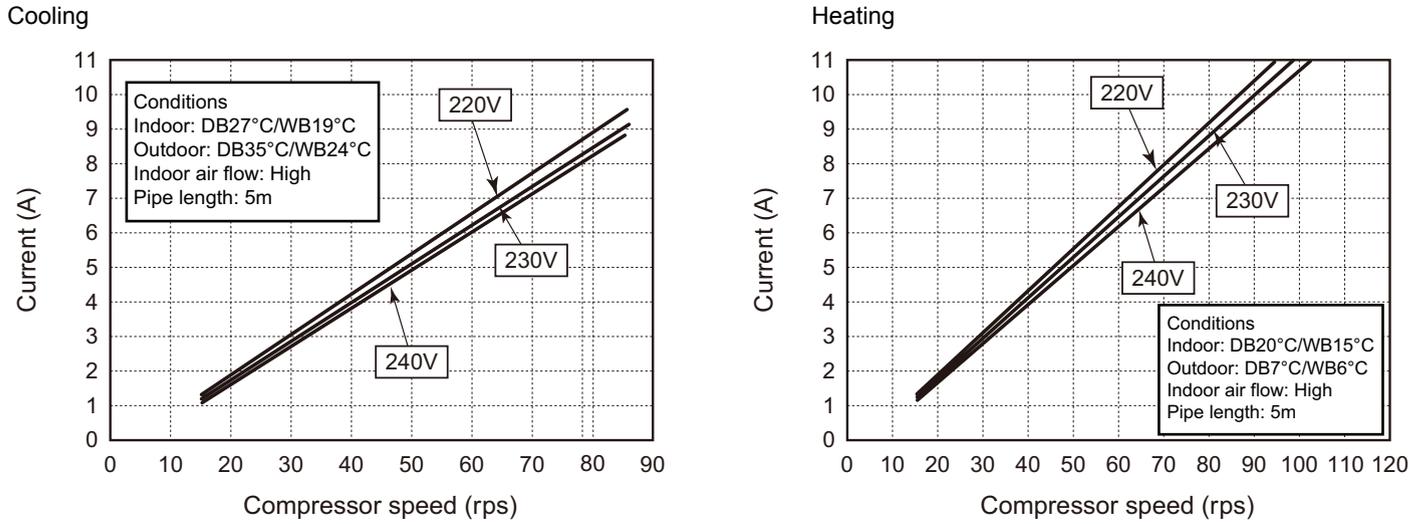
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2. Specifications

2.1 Specification Sheet

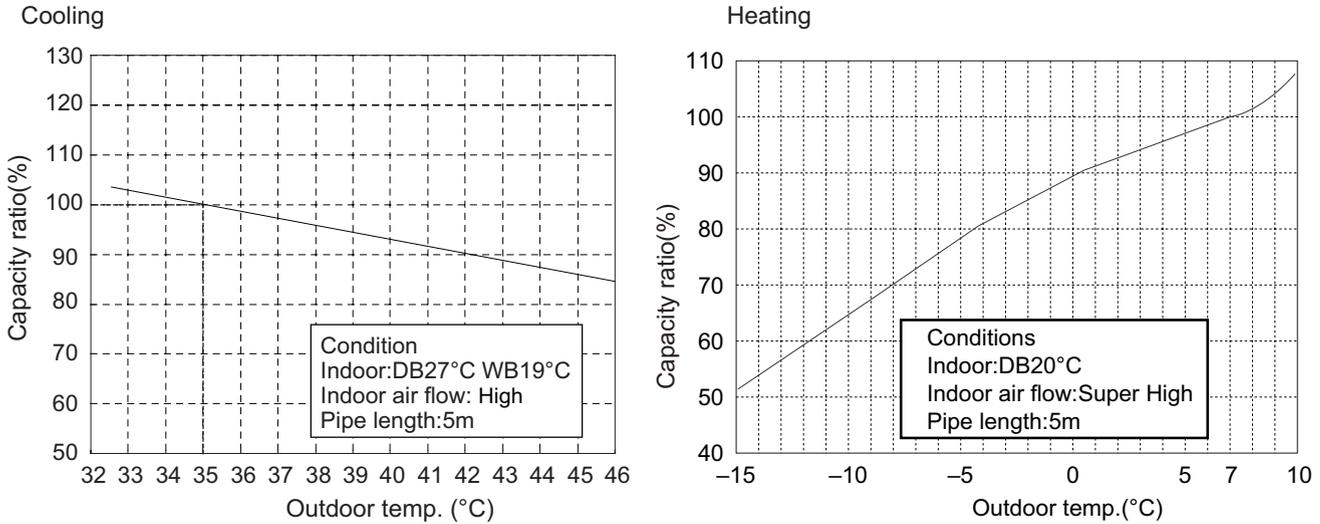
Model			GWH09AAB-K6DNA1A	GWH12AAB-K6DNA1A
Product Code			CB476000900	CB476000301
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	2500	3200
Heating Capacity		W	2800	3400
Cooling Power Input		W	781	997
Heating Power Input		W	777	941
Cooling Power Current		A	3.99	4.5
Heating Power Current		A	3.74	4.4
Rated Input		W	1500	1500
Rated Current		A	6.9	7.2
Air Flow Volume(SH/H/M/L/SL)		m ³ /h	550/500/430/300/-	550/480/410/290/-
Dehumidifying Volume		L/h	0.8	1.4
EER		W/W	3.20	3.21
COP		W/W	3.60	3.61
SEER		W/W	6.1	6.1
HSPF		W/W	/	/
Application Area		m ²	12-18	16-24
Indoor Unit	Model of Indoor Unit		GWH09AAB-K6DNA1A/I	GWH12AAB-K6DNA1A/I
	Product Code of Indoor Unit		CB476N00900	CB476N00301
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)		mm	Φ93X580
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1300/1200/1100/850/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1250/1150/1050/900/-
	Output of Fan Motor		W	20
	Fan Motor RLA		A	0.22
	Fan Motor Capacitor		μF	1
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ5
	Row-fin Gap		mm	2-1.4
	Coil Length (LXDXW)		mm	584X22.8X266.7
	Swing Motor Model			MP24AN
	Output of Swing Motor		W	1.5
	Fuse		A	3.15
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	40/37/35/28/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	55/49/47/40/-
	Dimension (WXHXD)		mm	773X250X185
Dimension of Carton Box (LXWXH)		mm	817X306X244	
Dimension of Package (LXWXH)		mm	822X322X255	
Net Weight		kg	8.5	
Gross Weight		kg	9.5	

2.2 Operation Characteristic Curve



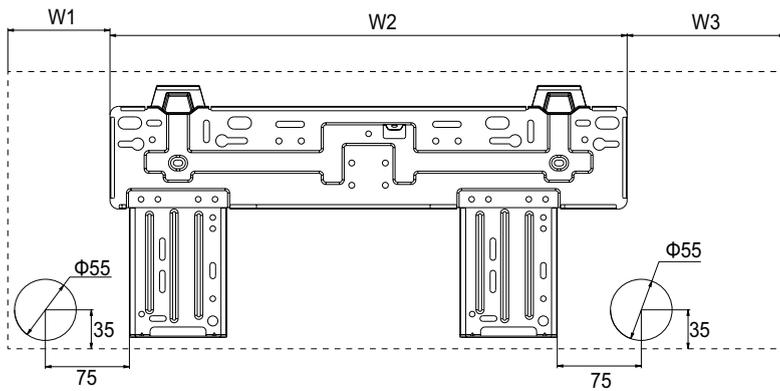
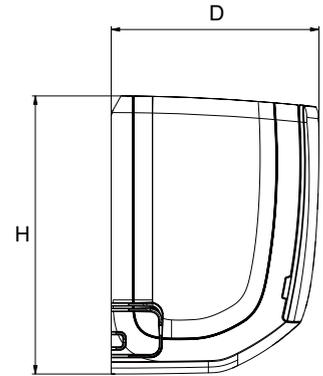
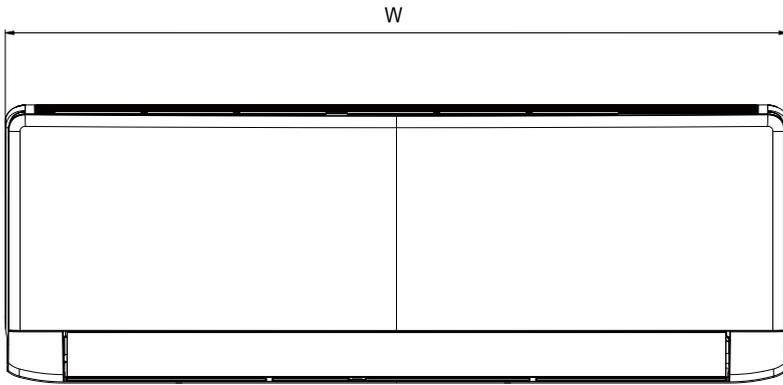
2.3 Capacity Variation Ratio According to Temperature

Heating operation ambient temperature range is -15°C~24°C



3. Outline Dimension Diagram

3.1 Indoor Unit



Unit:mm

Models	W	H	D	W1	W2	W3
09/12K	773	250	185	131	462	180

1. ON/OFF button

Press this button to turn on the unit. Press this button again to turn off the unit.

2. MODE button

Each time you press this button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, FAN, and HEAT *, as the following:

* Note: Only for models with heating function.



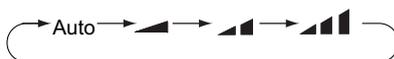
- When selecting auto mode, air conditioner will operate automatically according to exfactory setting. Set temperature can't be adjusted and will not be displayed as well. Press "Fan" button can adjust fan speed. Press "Swing" button can adjust fan blowing angle.
- When selecting cool mode, air conditioner will operate under cool mode. Cool indicator "❄" on indoor unit is ON. Press "+" or "-" button to adjust set temperature. Press "Fan" button to adjust fan speed. Press "Swing" button to adjust fan blowing angle.
- When selecting dry mode, the air conditioner operates at low speed under dry mode. Dry indicator "☀" on indoor unit is ON. Under dry mode, fan speed can't be adjusted. Press "Swing" button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. All mode indicators on indoor display are off. Press "Fan" button to adjust fan speed. Press "Swing" button to adjust fan blowing angle.
- When selecting heating mode, the air conditioner operates under heat mode. Heat indicator "🔥" on indoor unit is ON. Press "+" or "-" button to adjust set temperature. Press "Fan" button to adjust fan speed. Press "Swing" button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button can't start up the unit).

Note:

- For preventing cold air, after starting up heating mode, indoor unit will delay 1~5 minutes to blow air (actual delay time is depend on indoor ambient temperature).
- Set temperature range from remote controller: 16~30°C ; Fan speed: auto, low speed, medium speed, high speed.

3. FAN button

This button is used for setting Fan Speed in the sequence that goes from AUTO, , to , then back to Auto.



Note:

- Under AUTO speed, air conditioner will select proper fan speed automatically according to ex-factory setting.
- Fan speed under dry mode is low speed.

4. ▲ / ▼ button

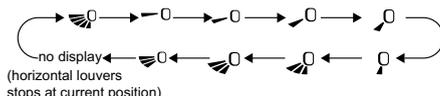
Press ▲ / ▼ button to increase/decrease set temperature. In AUTO mode, set temperature is not adjustable.

- Press "+" or "-" button once increase or decrease set temperature 1°C. Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
- When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▼" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons)

5. SWING button

Press this button to set up & down swing angle.

Press this button can select up&down swing angle. Fan blow angle can be selected circularly as below:



- When selecting "no display" icon, air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting "horizontal louvers stops at current position" icon, air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.
- When selecting "fan swing icon", air conditioner is blowing fan at fixed angle. Horizontal louver will send air at the fixed angle.
- Hold "fan swing icon" button above 2s to set your required swing angle. When reaching your required angle, release the button.

Note:

"fan swing icon" may not be available. When air conditioner receives this signal, the air conditioner will blow fan automatically.

6. SLEEP button

Under COOL, HEAT or DRY mode, press this button to start up sleep function. "🌙" icon is displayed on remote controller. Press this button again to cancel sleep function and "🌙" icon will disappear.

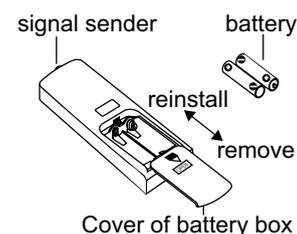
WiFi Function

Press this button to turn on the unit. Press this button again to turn off the unit. Press "MODE" and "TURBO" button simultaneously to turn on or turn off WiFi function. When WiFi function is turned on, the "WiFi" icon will be displayed on remote controller; Long press "MODE" and "TURBO" buttons simultaneously for 10s, remote controller will send WiFi reset code and then the WiFi function will be turned on. WiFi function is defaulted ON after energization of the remote controller.

- This function is only available for some models.

Replacement of batteries in remote controller

1. Press the back side of remote controller marked with "🔋", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.



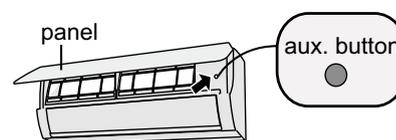
Emergency operation

If remote controller is lost or damaged, please use auxiliary button to turn on or turn off the air conditioner. The operation in details are as below:

As shown in the fig. Open panel, press aux. button to turn on or turn off the air conditioner. When the air conditioner is turned on, it will operate under auto mode.

⚠ WARNING:

Use insulated object to press the auto button



6.2 Brief Description of Modes and Functions

● Indoor Unit

1. Basic function of system

(1) Cooling mode

- (1) Under this mode, fan and swing operates at setting status. Temperature setting range is 16~30°C.
- (2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

(2) Drying mode

- (1) Under this mode, fan operates at low speed and swing operates at setting status. Temperature setting range is 16~30°C.
- (2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.
- (3) Protection status is same as that under cooling mode.
- (4) Sleep function is not available for drying mode.

(3) Heating mode

- (1) Under this mode, Temperature setting range is 16~30°C.
- (2) Working condition and process for heating mode:

When turn on the unit under heating mode, indoor unit enters into cold air prevention status. When the unit is stopped or at OFF status, and indoor unit has been started up just now, the unit enters into residual heat-blowing status.

(4) Working method for AUTO mode:

1. Working condition and process for AUTO mode:

a. Under AUTO mode, standard heating Tpreset=20°C and standard cooling Tpreset=25°C. The unit will switch mode automatically according to ambient temperature.

2. Protection function

- a. During cooling operation, protection function is same as that under cooling mode.
- b. During heating operation, protection function is same as that under heating mode.
3. Display: Set temperature is the set value under each condition. Ambient temperature is (Tamb.-Tcompensation) for heat pump unit and Tamb. for cooling only unit.
4. If theres I feel function, Tcompensation is 0. Others are same as above.

(5) Fan mode

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30°C.

2. Other control

(1) Buzzer

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

(2) Auto button

If press this auto button when turning off the unit, the complete unit will operate at auto mode. Indoor fan operates at auto fan speed and swing function is turned on. Press this auto button at ON status to turn off the unit.

(3) Auto fan

Heating mode: During auto heating mode or normal heating ode, auto fan speed will adjust the fan speed automatically according to ambient temperature and set temperature.

(4) Sleep

After setting sleep function for a period of time, system will adjust set temperature automatically.

(5) Timer function:

General timer and clock timer functions are compatible by equipping remote controller with different functions.

(6) Memory function

memorize compensation temperature, off-peak energization value.

Memory content: mode, up&down swing, light, set temperature, set fan speed, general timer (clock timer cant be memorized).

After power recovery, the unit will be turned on automatically according to memory content.

(7) Health function

During operation of indoor fan, set health function by remote controller. Turn off the unit will also turn off health function.

Turn on the unit by pressing auto button, and the health is defaulted ON.

(8) I feel control mode

After controller received I feel control signal and ambient temperature sent by remote controller, controller will work according to the ambient temperature sent by remote controller.

(9) Entry condition for compulsory defrosting function

When turn on the unit under heating mode and set temperature is 16°C (or 16.5°C by remote controller), press “+, -, +, -, +, -” button successively within 5s and then indoor unit will enter into compulsory defrosting setting status:

(1) If there's only indoor units controller, it enters into indoor normal defrosting mode.

(2) If there's indoor units controller and outdoor units controller, indoor unit will send compulsory defrosting mode signal to outdoor unit and then outdoor unit will operate under normal defrosting mode. After indoor unit received the signal that outdoor unit has entered into defrosting status, indoor unit will cancel to send compulsory mode to outdoor unit. If outdoor unit hasn't received feedback signal from outdoor unit after 3min, indoor unit will also cancel to send compulsory defrosting signal.

(10) Refrigerant recovery function:

Enter into Freon recovery mode actively: Within 5min after energization, turn on the unit at 16°C under cooling mode, and press light button for 3 times within 3s to enter into Freon recovery mode. Fo is displayed and Freon recovery mode will be sent to outdoor unit.

(11) Ambient temperature display control mode

1. When user set the remote controller to display set temperature (corresponding remote control code: 01), current set temperature will be displayed.

2. Only when remote control signal is switched to indoor ambient temperature display status (corresponding remote control code: 10) from other display status (corresponding remote control code: 00, 01, 11), controller will display indoor ambient temperature for 3s and then turn back to display set temperature.

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30°C.

(12) Off-peak energization function:

Adjust compressors minimum stop time. The original minimum stop time is 180s and then we change to:

The time interval between two start-ups of compressor can't be less than $180 + T_s$ ($0 \leq T \leq 15$). T is the variable of controller. That's to say the minimum stop time of compressor is 180s~195s. Read-in T into memory chip when refurbish the memory chip each time. After power recovery, compressor can only be started up after $180 + T$ s at least.

(13) SE control mode

The unit operates at SE status.

(14) X-fan mode

When X-fan function is turned on, after turn off the unit, indoor fan will still operate at low speed for 2min and then the complete unit will be turned off. When x-fan function is turned off, after turn off the unit, the complete unit will be turned off directly.

(15) 8°C heating function

Under heating mode, you can set 8°C heating function by remote controller. The system will operate at 8°C set temperature.

(16) Turbo function

Turbo function can be set under cooling and heating modes. Press Fan Speed button to cancel turbo setting. Turbo function is not available under auto, drying and fan modes.

7. Auto mode

Auto mode is determined by controller of IDU. See IDU logic for details.

8. 8°C heating

Set temperature is 8°C. Display board of IDU displays 8°C. Under this mode, "Cold air prevention" function is shielded.

If compressor is operating under this mode, fan speed will adjust according to auto fan speed; if compressor stops operation under this mode, indoor fan will be in residual-heat blowing status.

When power on, communication light will be blinking in a normal way (after receiving a group of correct signals, blinking stops for 0.2s~0.3s). If there's no communication, communication light will be always on. If other ODU has malfunction, communication light will be on for 1s and off for 1s in a circular way.