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# LG ARNU123B3G2 Owner's Manual

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# **MULTI V.** System Indoor Unit (2 Series) INSTALLATION MANUAL

# Type: Built - in Duct - Low Static

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## IMPORTANT

- Please read this installation manual completely before installing the product.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.
- Please retain this installation manual for future reference after reading it thoroughly.



MULTI V Ceiling Concealed Duct - Low Static Type Indoor Unit Installation Manual

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# Safety Precautions

To prevent injury to the user or other people and property damage, the following instructions must be followed.

- Be sure to read before installing the air conditioner.
- Be sure to observe the cautions specified here as they include important items related to safety.
- Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

**WARNING** This symbol indicates the possibility of death or serious injury.

**ACAUTION** This symbol indicates the possibility of injury or damage to properties only.

Meanings of symbols used in this manual are as shown below.

Be sure not to do.	1
Be sure to follow the inst	ruction.

# **WARNING**

# Installation -

()

Do not use a defective or underrated circuit breaker. Use this appliance on a dedicated circuit.

• There is risk of fire or electric shock.



For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center.

• Do not disassemble or repair the product. There is risk of fire or electric shock.





Always ground the product.

. There is risk of fire or electric shock.

Install the panel and the cover of control box securely.

• There is risk of fire or electric shock.



Always install a dedicated circuit and breaker.

Improper wiring or installation may cause fire or electric shock.



# Use the correctly rated breaker or fuse.

• There is risk of fire or electric shock.



### Safety Precautions

Be cautious when unpacking

Sharp edges could cause injury. Be

especially careful of the case edges and the fins on the condenser and

and installing the product.

evaporator.

#### Do not modify or extend the power cable. Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open.

• There is risk of fire or electric shock.



For installation, always contact the dealer or an Authorized Service Center.

• There is risk of fire, electric shock, explosion, or injury.





· Moisture may condense and wet or

damage furniture.

defective installation stand.

• It may cause injury, accident, or damage to the product.



 If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and

personal injury.

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Be sure the installation area

does not deteriorate with age.



# ■ Operation

Do not store or use flammable gas or combustibles near the product.

• There is risk of fire or failure of product.





Install the drain hose to ensure

that water is drained away prop-

A bad connection may cause water

erly.

leakage.

# Installation -

Always check for gas (refrigerant) leakage after installation or repair of product.

Low refrigerant levels may cause failure of product.





To avoid vibration or water leakage.

the product.



Keep level even when installing

Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods.

It may cause a problem for your neighbors.

Use two or more people to lift and transport the product.

Avoid personal injury.

Do not install the product where it will be exposed to sea wind (salt spray) directly.

 It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.









• The chemicals in batteries could cause burns or other health hazards.



# Introduction

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# Introduction

# Symbols Used in this Manual



This symbol alerts you to the risk of electric shock.



This symbol alerts you to hazards that could cause harm to the air conditioner.

NOTICE This symbol indicates special notes.

# Features



# Installation

# Selection of the best location

## Indoor unit

Install the air conditioner in the location that satisfies the following conditions.

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good .
- There should not be any heat source or steam near the unit

Confirm the positional relationship between the unit and suspension bolts.

• Installation the ceiling opening to clean the filter or service under the product.

	[	Unit: mm(inch)]
Chassis	А	В
B3	600(23-5/8)	900(35-7/16)
B4	600(23-5/8)	1100(43-5/16)





**Built-in Duct type** 

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# Ceiling dimension and hanging bolt location

[Unit: mm(inch)]

(31-5/16)

(7/8)

(6-7/16) (32-5/16)

1065 163 1100

(41-15/16) (6-7/16) (43-5/16)

### Installation of Unit

Install the unit above the ceiling correctly.

## CASE 1

Chassis

B3

B4

CASE 2

# POSITION OF SUSPENSION BOLT

 Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.

> 190 (7-7/16) 21 (7/8) 795 163 820

93

(3-11/16)

93 190 21

(3-11/16) (7-7/16)

(22-518)

• Apply a filter Accessory at air return hole.

383 575

383(15)

383(15) (22-5/8)







А В С D Е F G Н I J

850 900

(33-7/16) (35-7/16) 1130 1180 383 575

(44-7/16) (46-7/16)

 Install the unit leaning to a drainage hole side as a figure for easy water drainage.

# POSITION OF CONSOLE BOLT

- · A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.

# Indoor Unit Installation

### Select and mark the position for fixing bolts.

Drill the hole for set anchor on the face of ceiling.

**CAUTION** : Tighten the nut and bolt to prevent unit falling.

# Wiring Connection

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.

## **B3/B4 Series**



WARNING : Make sure that the screws of the terminal are free from looseness.

# Connection method of the connecting cable(Example)



WARNING : Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazzard may also exist. Therefore, be sure all wiring is tightly connected.

- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
  Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.



# Part name and functions





- Buit-in duct type with Suction Grille.
- Buit-in duct type with Suction Grille and Suction Canvas.

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Installation



# Checking the Drainage

Spray one or two glasses of water upon the

· Ensure that water flows drain hose of indoor

# 1. Remove the Air Filter.



12 MULTIV. Indoor Unit

unit without any leakage.

2. Check the drainage.

evaporator.

Installation

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# Drain Piping

- Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32mm(1-1/4 inch).

Piping material: Polyvinyl chloride pipe 25mm(1 inch) and pipe fittings.

· Be sure to install heat insulation on the drain piping.

Heat insulation material: Polyethylene foam with thickness more than 8mm(5/16 inch).



# Drain test

The air conditioner uses a drain pump to drain water. Use the following procedure to test the drain pump operation:



- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.



CAUTION : The supplied flexible drain hose should not be curved, neither screwed. The curved or screwed hose may cause a leakage of water.



# CAUTION:

After the confirmation of the above conditions, prepare the wiring as follows:

- 1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control box cover.
- 2) Provide a circuit breaker switch between power source and the unit.
- 3) The screws which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)
- 4) Specification of power source
- 5) Confirm that electrical capacity is sufficient.
- 6) Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- 7) Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)
- 8) Never fail to equip a leakage breaker where it is wet or moist.
- 9) The following troubles would be caused by voltage drop-down.
  - Vibration of a magnetic switch, damage on the contact point, fuse breaking, disturbance by the normal function of an overload protection device.
  - Proper starting power is not given to the compressor.

# HAND OVER

Teach the customer the operation and maintenance procedures, using the operation manual. (air filter cleaning, temperature control, etc.)

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### Installation

# Installation of Wired Remote Controller

1. Connect the wired remote controller cable to the wired remote controller installation board as shown in the right picture.

12V	Red wire
SIG	Yellow wire
GND	Black wire

\* The wired remote controller cable is connected as factory default.

- 2. After fixing the cable to the guide slot, attach the wired remote controller installation board at the desired location.
- · Before fixing the wired remote controller cable to the guide slot, remove any clogged part of the case in the direction to install before the installation.



Remote Controller Cable



<Front side of installation board>

<Rear side of installation board>

- 3. After locating the wired remote controller installation board at the desired location, screw the unit firmly. (When there is a buried box, install the wired remote controller board to fit the buried box.)
- Use the screw provided.
- 4. After fixing the top part of the wired remote controller to the installation board as shown in beside picture, press the bottom part to assemble the controller to it's board.

When disassemble the wired remote controller from the installation board, use the driver as shown in the right picture and insert it into the hole with the arrow. And when you pull the driver in the front direction, the wired remote controller will be separated.





### Installation

### 5. Use the connecting cable to connect the indoor unit and the wired remote controller.



6. When the distance between the wired remote controller and the indoor unit is 10m and above, use the extension cable.

# 

When installing the wired remote controller, do not bury it in the wall. (It can cause damage in the temperature sensor.) Do not install the cable to be 50m or above.

- (It can cause communication error.)
  When installing the extension cable, check the connecting direction of the connector of the remote controller side and the product side for correct installation.
- If you install the extension cable in the opposite direction, the connector will not be connected.
   Specification of extension cable: 2547 1007 22# 2 core 3 shield 5 or above.

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# **Optional Operation of Wired Remote Controller**

# **Two Thermistor System**



\* Therefore system will use value that sensed from indoor unit or remote controller

Temperature sensor location		Function
01	Remote controller	Operation in remote controller Temperature sensor
02	Indoor unit	Operation in indoor unit temperature sensor
03	2-Thermistor	Operation in lower temperature after comparing the temperature between the indoor unit and remote controller

\* If you want to know more Optional Operation, please refer to Wide Wired Remote Controller Manual.

Dip	Switch Sett	ting			
	Function	Description	Setting Off	Setting On	Default
SW1	Communication	N/A (Default)	-	-	Off
SW2	Cycle	N/A (Default)	-	-	Off
SW3	Group Control	Selection of Master or Slave	Master	Slave	Off
SW4	Dry Contact Mode	Selection of Dry Contact Mode	Wired/Wireless remote controller Selection of Manual or Auto operation Mode	Auto	Off
SW5	Installation	CST – No function	-	-	
		Duct – Fan continuous oper- ation	Continuous operation Removal	Working	
		CVT – Selection of ceiling or floor	Ceiling	Floor	Off
		Console – Concealed or not	General installation	Concealed installation	
SW6	Heater linkage	N/A	-	-	Off
SW7	Ventilator linkage	Selection of Ventilator link- age	Linkage Removal	Working	0"
	Vane selection (Console)	Selection of up/down side Vane	Up side + Down side Vane	Up side Vane Only	ΟΠ
SW8	Etc.	Spare	-	-	Off

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# 

For Multi V Models, Dip switch 1, 2, 6, 8 must be set OFF. That dip switch is used for other models.

# Group Control Setting

# 1. Group Control 1

Wired remote controller 1 + Indoor units



- **1. It is possible to 16 indoor units(Max) by one wired remote controller.** Set only one indoor unit to Master, set the others to Slave.
- 2. It is possible to connect with every type of indoor units.
- 3. It is possible to use wireless remote controller at the same time.
- 4. It is possible to connect with Dry Contact and Central controller at the same time. The Master indoor unit is possible to recognize Dry Contact and Central controller only.
- **5.** In case of any error occurs at indoor unit, display on the wired remote controller. Exception of the error indoor unit, an individual indoor unit control possibility.
- 6. In case of Group Control, be limited additional functions of indoor unit. - Selection of operation options (stop/mode/temperature)
  - Control of flow rate (strong/middle/weak)
  - Time reservation function
  - Elevation grille
- \* All kind of indoor units be set possible using a wireless remote controller, except cassette and duct types. Refer to wireless remote controller manual for setting group control.
- \* It is possible to connect indoor units since Feb. 2009.
- In the other cases, please contact LGE.

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# 2. Group Control 2

### ■ Wired remote controllers + Indoor units



- It is possible to control N indoor units by wired remote controller M units. (M+N≤17 Units) Set only one indoor unit to Master, set the others to Slave. Set only one wired remote controller to Master, set the others to Slave. Other than those, it is same with the Group Control 1.
- 2. It is possible to connect with every type of indoor units.
- 3. It is possible to use wireless remote controller at the same time.
- **4. It is possible to connect with Dry Contact and Central controller at the same time.** The Master indoor unit is possible to recognize Dry Contact and Central controller only.
- 5. In case of any error occurs at indoor unit, display on the wired remote controller. Exception of the error indoor unit, an individual indoor unit control possibility.
- 6. In case of Group Control, be limited additional functions of indoor unit.
- Selection of operation options (stop/mode/temperature)
- Control of flow rate (strong/middle/weak)
- Time reservation function
- Elevation grille
- \* All kind of indoor units be set possible using a wireless remote controller, except cassette and duct types. Refer to wireless remote controller manual for setting group control.
- It is possible to connect indoor units since Feb. 2009. In the other cases, please contact LGE.

# 3. 2 Remote Control

■ Wired remote controller 2 + Indoor unit 1



- 1. It is possible to connect two wired remote controllers with one indoor unit.
- 2. Every types of indoor unit is possible to connect two remote controller.
- 3. It is possible to use wireless remote controller at the same time.
- 4. It is possible to connect with Dry Contact and Central controller at the same time.
- 5. In case of any error occurs at indoor unit, display on the wired remote controller.
- 6. There isn't limits of indoor unit function.

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# How to Set E.S.P?

# What is an E.S.P function?

This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier, please do not use this function when using the remote controller.

# 

If you set ESP incorrectly, the air conditioner may malfunction. This setting must be carried out by a certificated-technician. This function is using for only Duct product



\* Weak and Power setting is not available for some products.

\* Because the ESP value is already appropriately set when manufactured from the factory, it is recommended that you do not change the ESP value.

# ARNU073B3G2+PBSGB30(Accessory), PBSC30(Accessory) ARNU093B3G2+PBSGB30(Accessory), PBSC30(Accessory) ARNU123B3G2+PBSGB30(Accessory), PBSC30(Accessory) ARNU153B3G2+PBSGB30(Accessory), PBSC30(Accessory)

(Unit;cmm(cfm))

Cotting Value	Static Pressure(mmAq (in.Aq))						
Setting value	0(0)	1(3.93)	2(7.87)	3(0.11)	4(0.15)		
60	6.29(222)	3.03(107)	0.93(32)	-	-		
65	6.61(233)	4.84(170)	1.52(53)	-	-		
70	7.69(271)	5.64(199)	2.18(76)	0.79(27)	-		
75	8.19(289)	6.28(221)	2.81(99)	0.85(30)	-		
80	8.91(314)	7.43(262)	4.96(175)	1.58(55)	-		
85	9.51(335)	8.14(287)	5.91(208)	2.75(97)	0.95(33)		
90	10.21(360)	8.76(309)	6.79(239)	3.41(120)	1.36(48)		
95	10.83(382)	9.62(339)	8.11(286)	5.48(193)	2.61(92)		
100	11.31(399)	10.55(372)	9.02(318)	6.12(216)	3.31(116)		
105	11.84(418)	11.19(395)	9.99(352)	8.28(292)	5.32(187)		
110	12.68(447)	11.88(419)	10.38(366)	9.16(323)	6.92(244)		
115	13.19(465)	12.22(431)	11.55(407)	10.21(360)	8.23(290)		

# ARNU183B4G2+PBSGB40(Accessory), PBSC40(Accessory) ARNU243B4G2+PBSGB40(Accessory), PBSC40(Accessory)

(Unit;cmm(cfm))

Catting Value	Static Pressure(mmAq (in.Aq))						
Setting value	0(0)	1(3.93)	2(7.87)	3(0.11)	4(0.15)		
75	10.32(364)	7.68(271)	3.55(125)	-	-		
80	11.06(390)	8.77(309)	4.71(166)	1.38(48)	-		
85	11.84(418)	10.02(353)	6.95(245)	2.16(76)	-		
90	12.73(449)	10.74(379)	8.26(291)	4.73(167)	1.25(44)		
95	13.47(475)	12.13(428)	9.93(350)	6.74(238)	2.73(96)		
100	14.16(500)	13.25(467)	10.51(371)	8.41(297)	3.65(128)		
105	15.29(539)	14.11(498)	12.31(434)	9.83(347)	6.21(219)		
110	16.09(568)	14.77(521)	13.49(476)	10.39(366)	8.32(239)		
115	16.91(597)	15.88(560)	14.48(511)	12.77(450)	9.92(350)		
120	17.81(628)	16.88(596)	15.15(535)	13.98(493)	10.85(383)		
125	18.55(655)	17.84(630)	16.12(569)	15.13(534)	12.97(458)		
130	19.01(671)	18.55(655)	17.33(612)	16.28(574)	14.59(515)		

Note :

1. The above table shows the correlation between the air rates and E.S.P.

2. E.S.P. is given after subtracting coil losses motor step factory installed

3. E.S.P. can be higher than the maximum given in the table, but the unit faces the problem of freezing the coil.

# ARNU073B3G2+PBSGB30(Accessory), PBSC30(Accessory) ARNU093B3G2+PBSGB30(Accessory), PBSC30(Accessory) ARNU123B3G2+PBSGB30(Accessory), PBSC30(Accessory) ARNU153B3G2+PBSGB30(Accessory), PBSC30(Accessory)

Capacity	Mode	;	Set value	Standard ESP(mmAq (in.Aq))	cmm(cfm)	Lower Limit of External Static Pressure(mmAq (in.Aq))	Upper Limit of External Static Pressure(mmAq (in.Aq))	
	High	HI	94		8(283)			
	(factory set)	Mid	88	2(7.87)	6.5(229)	-	4(0.15)	
7k	(lacioly set)	Low	83		5.5(194)			
		HI	74	]	8(283)			
	Standard	Mid	62	0(0)	6.5(229)	-	4(0.15)	
		Low	56		5.5(194)			
	Hiah	HI	99		9(318)		1(0.15)	
	(factory set)	Mid	89	2(7.87)	7(247)	-	4(0.15)	
9k	(	Low	85		6(212)			
	Standard High (factory set)	HI	82	0(0)	9(318)		4(0.15)	
			66		6(212)	-	4(0.13)	
			105		10(252)			
		Mid	04	2(7.87)	$r_{0}(333)$	. <u>-</u>	4(0 15)	
			88		6 5(229)		4(0.13)	- <del></del>
12k	Standard		90		10(353)			
		Mid	74	74 0(0)	8(282)		4(0.15)	끈
		Clandard	Low	62	0(0)	6.5(229)		
		- HÎ	110		11(388)			Ϋ́
15k	High	Mid	105	2(7.87)	10(353)	-	4(0.15)	
	(factory set)	Low	94	(	8(283)			
		Ĥ	96		11(388)			
	Standard	Mid	90	0(0)	10(353)	-	4(0.15)	
		Low	74	1	8(283)			

# ARNU183B4G2+PBSGB40(Accessory), PBSC40(Accessory) ARNU243B4G2+PBSGB40(Accessory), PBSC40(Accessory)

Capacity	Mode	•	Set value	Standard ESP(mmAq (in.Aq))	cmm(cfm)	Lower Limit of External Static Pressure(mmAq (in.Aq))	Upper Limit of External Static Pressure(mmAq (in.Aq))
	High	HI	115		14(494)		
	(factory cot)	Mid	103	2(7.87)	12(424)	-	4(0.15)
18k	(laciony ser)	Low	93		10(353)	1	
		HI	100	0(0)	14(494)		4(0.15)
	Standard	Mid	86		12(424)	-	
		Low	74		10(353)		
	High	HI	128		17(600)		
	(factory set)	Mid	118	2(7.87)	15(530)	-	4(0.15)
24k		Low	93		10(353)		
		HI	116	0(0)	17(600)		
	Standard	Mid	104		0(0) 15(530)	-	4(0.15)
		Low	74		10(353)		



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After reading this manual, keep it in a place easily accessible to the user for future reference.