Panasonic®

GAS HEAT PUMP AIR CONDITIONER

INSTRUCTION MANUAL

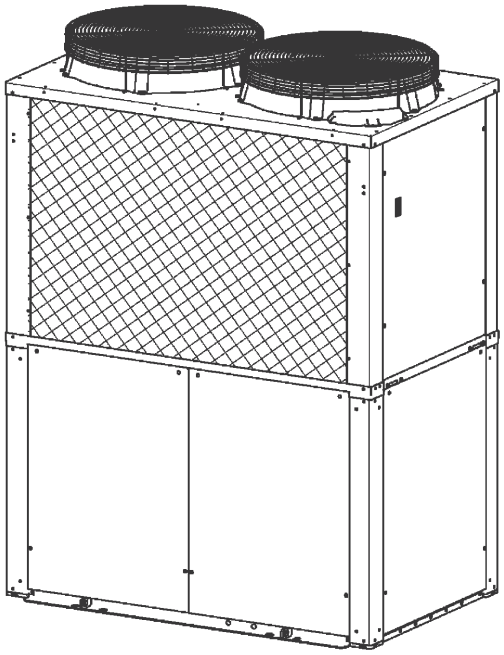
NEW REFRIGERANT
R-410A

2-Way Multi Series
2-Way High-Power Series
3-Way Multi Series

Model No.: outdoor unit

U-16GE2E5	**U-20GE2E5**	**U-25GE2E5**	**U-30GE2E5**
U-16GEP2E5	**U-20GEP2E5**	**U-25GEP2E5**	
U-16GF2E5	**U-20GF2E5**	**U-25GF2E5**	

Thank you very much for purchasing our gas heat pump air conditioner.
● **Please ensure you read the "Safety Precautions" before use (page 5-8).**



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Use an equipment properly and save energy

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CHARACTERISTICS AND REQUESTS

ABOUT YOUR GAS HEAT PUMP AIR CONDITIONER

The gas heat pump air conditioner (GHP) uses gas as the fuel to drive the compressor.
As it uses gas engine, there are various characteristics.

- As the unit does not easily frost, defrosting operations are infrequent even on very cold days, allowing the unit to provide stable and continuous heating.
- As the electric power consumption is about 1 kW, this leads to be less received power equipment.

However, as with a car engine, periodical inspections by a specialist are for efficient use needed for a comfortable operation. Please make sure you have these periodical inspections.

PLEASE ENSURE YOU SIGN UP FOR A REGULAR CHECK UP CONTRACT

In order to have a comfortable operation of GHP for a long period, periodical inspections are necessary.
Please conduct yearly inspections supported by a specialist.
What will happen if you do not have periodical inspections.
1. The engine oil will deteriorate, causing a malfunction.
2. The air cleaner element will be clog up, causing carbon monoxide and occasional reduction of performance.

REQUESTS
Once signed up for a periodical inspection, a specialist will call on depending on the length of time the unit has been in use. After a fixed period of in use hours, the remote controller will display “Oil Inspection”.
At this time we would appreciate you contacting your dealer or service center for a check up.
For details please refer to page 4.

CHANGING ENGINE OIL

Periodically change engine oil and oil filter.
If you forget to change engine oil or use a non-specified oil, it may have a bad effect on the engine and be the cause of trouble.
* Engine oil (Genuine oil)

⚠ CAUTION

- Filling in too much oil will have a bad effect on the engine.
- Please consult with your service center or dealer when changing the oil.

NOTICE

- **The English text is the original instructions. Other languages are translation of the original instructions.**

PERIODICAL INSPECTION

In order to have a comfortable operation of GHP for a long period, periodical inspections are necessary. When you purchase your GHP, please sign up for Panasonic's periodical inspections contract system.
When you sign up for a periodical inspection, specialist will call on you.
For more details about the inspection contract, please ask your dealer or consult with one of our service centers.

■ TEST OPERATION

Inspection items	
	(Test operation) • Check the installation work • Inspect the electricity wiring • Inspect the equipment itself • Check the engine system • Check safety protection devices • Operation data collection • Gas leakage check PLEASE contact your installer for repairs if something is found to be amiss during the test operation.

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PERIODICAL INSPECTION

■ GUARANTEE PERIOD

The guarantee period is ONE year after the date of a successful test operation and the product delivery. However, the engine itself and periodical replaced parts are guaranteed for ONE year after a successful test operation and the product delivery or 2000 hours in operation whichever comes earlier.

■ PERIODICAL INSPECTIONS AFTER YOUR GUARANTEE EXPIRES

The number of inspections depends on the operating hours for a period of one year.
The table below shows a case of 2000 hours of use in one year. If you have signed up for a periodical inspection, a GHP specialist will call on you and carry out the services mentioned below, exchange parts and make necessary adjustment.

<table>
<tr><th></th><th>PERIODICAL INSPECTIONS ITEMS</th></tr>
<tr><td>Inspection timing</td><td>Please leave the timing of the visit upto a specialist.</td></tr>
<tr><td>Inspection Items</td><td>• Checking the level of the coolant fluid -replenish when necessary:
every 10,000 hours or every five years.
• Checking the drain filter antalkali -replenish when necessary:
every 10,000 hours or every five years.
• Inspecting and adjusting various parts: Depending on the contents of periodical inspection.
Check the engine system
Check safety protection devices
Engine oil inspection and replenishment when necessary
Operation data collection
Gas leakage check</td></tr>
<tr><td>Periodical Replacement parts</td><td>
<table>
<tr><th rowspan="2">Replacement Interval</th><th colspan="2">Parts name</th></tr>
<tr><th>2-WAY Multi
3-WAY Multi</th><th>2-WAY High-Power Multi</th></tr>
<tr><td rowspan="7">10,000 hours or every 5 years</td><td>• Engine oil</td><td>• Engine oil</td></tr>
<tr><td>• Oil filter</td><td>• Oil filter</td></tr>
<tr><td>• Air cleaner element</td><td>• Air cleaner element</td></tr>
<tr><td>• Compressor belt</td><td>• Compressor belt</td></tr>
<tr><td>• Ignition plug</td><td>• Ignition plug</td></tr>
<tr><td rowspan="2">• Oil absorption mat</td><td>• Oil absorption mat</td></tr>
<tr><td>• Generator driven belt</td></tr>
</table>
Note: Changing engine oil is only for engine proper and sub-oil pan. Replenish the oil into oil tank, located at the upper portion.</td></tr>
<tr><td>Periodical adjustment</td><td>• Engine valve clearance adjustment is done every 10,000 hours or every five years.</td></tr>
</table>

There is a fee for periodical inspections.

Note: Parts change is calculated on the basis of 2000 hours per year over a 10 year period.
If replacement parts other than those listed above should be required an additional fee other than the periodical inspection contract fee will be charged.

Note: Should dust or dirt collect on the fin of heater exchanger of either the indoor unit or outdoor unit this will result in loss of efficiency.
After consulting with your dealer or service center please remove the dirt and dust and wash the heat exchanger.

SAFETY PRECAUTIONS

Before operating the unit, please be sure to read the SAFETY PRECAUTIONS:
Listed below are two types of precautions, one is a ⚠ WARNING and the other is a ⚠ CAUTION.
Please be sure to obey these instructions for safety sake.

- **The expressions have the following meanings.**

⚠ WARNING	This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.
⚠ CAUTION	This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

- **The meaning of the symbols**

⚠ "WARNING" or "CAUTION".	⃠ Refers to something that is "FORBIDDEN".	❗ Refers to advices that should be followed.

- **Please keep this manual in an easy to reach place so the operator can easily refer to it.**
  If the operator should change, please be sure to hand over this manual for him to read.

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PRECAUTIONS BEFORE USE

⚠ WARNING

Do NOT install the equipment yourself.

Ask for the equipment to be installed

Please ask your dealer or a specialist to install the equipment. If you improperly install it by yourself, it might lead to an electrical shock, fire and water leakage and so on.

Confirm the kind of gas you use.

Check the kind of gas

If you use the wrong kind of gas, it might lead to incomplete combustion and be the cause of gas poisoning. Confirm the gas kind.

Confirm that the exhaust drain from the outdoor unit and the drain water from the indoor unit is not commonly connected.

Check the drains

If these are the common pipes, then exhaust gas could leak into the room and be the cause of poisoning. Confirm the drains are separate.

Confirm that each unit has an exclusive electric circuit.

Check the electric circuit

If you use other electrical equipment(s) on the same circuit, then you may blow a fuse or cause secondary damage to equipment. Confirm the electric circuit.

In the rare possibility of a leak of refrigerant.

It is necessary to limit the amount of leakage of the refrigerant.

If the equipment is installed in a small room, steps must be taken to ensure the rare possibility that leakage of the refrigerant does not exceed a certain limit. Before installation, consult with your dealer about this certain limit. In an emergency when the refrigerant leaks, it may cause an accident due to lack of oxygen in the air.

Be sure to buy Panasonic specified equipment.

Please buy Panasonic specified equipment.

If you buy separate equipment such as an air cleaner or a humidifier (in case of fitting inside the unit), please be sure to buy only Panasonic specified products. And ask a specialist dealer to install it. If you improperly install the equipment by yourself, it may lead to an electric shock, fire or water leakage and so forth. Please buy Panasonic specified equipment.

Check refrigerant

Check with a dealer or professional service provider that the specified refrigerant is used.

Using a refrigerant other than specified may result in equipment failure, burst or injury.

SAFETY PRECAUTIONS

⚠ CAUTION

Please be sure to install the outdoor unit where there is no volatile or inflammable material.

Install your outdoor unit where there is no inflammable or volatile material.

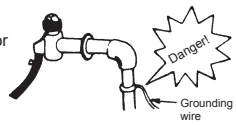
Please ascertain there is no occurrence, influx or collection of inflammable or volatile gases in the area surrounding the place you install your outdoor unit. If you do not do this, it may cause a fire.

Check the condition of grounding work.

Ground the equipment

Do not connect the ground wire to any gas pipes, water pipes, lightening rods or telephone ground wires. If the ground wire is faulty, it may result in an electrical shock.

Water pipe
Some parts are made of plastic and are no good for earthing.
Gas pipe
There is a danger of ignition and explosion.
The telephone earth, a lightning rod
When struck by lightning, there is a great danger of a massive power surge.



Check you have an earth leakage circuit breaker in place.

An earth leakage circuit breaker is necessary.

An earth leakage circuit breaker is required by law. Failure to install one may result in electric shock or fire.

Check that you have a rated power supply and check the capacity of the circuit breaker.

Confirm the power supply and breaker capacity.

It could lead to damage to the equipment or cause a fire. Confirm the power supply and breaker capacity.

Only use a fuse of the correct capacity.

Forbidden

Using wire and the like instead of the correct fuse could lead to an electric shock and fire.

Be sure to install the drain pipe of indoor unit with same gradient to drain out properly.

Check the drain pipe

A water leakage could cause damage to your furniture and other property.

PRECAUTIONS DURING USE

⚠ WARNING

Please make sure that the exhaust gases from the outdoor unit do not seep inside.

Forbidden

If exhaust gases get inside the room, it could cause gas poisoning.

Do not operate the equipment with wet hands.

Forbidden

It could cause an electric shock or damage the equipment.

Do not put your hand or foreign objects in the outlet or inlet of both indoor and outdoor units.

Forbidden

A high speed fan is rotating inside and could cause injury.

Do not block the intake, discharge or the drain of the outdoor unit.

Forbidden

It may lead to incomplete combustion and cause a fire or gas poisoning.

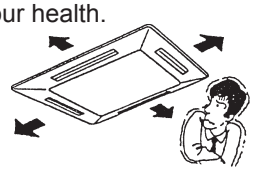
SAFETY PRECAUTIONS

⚠ WARNING

Do not expose yourself directly to the warm or cold air for a long period of time.

Forbidden

It could damage your health.



What to do if the outdoor unit leaks fuel gas.

Turn off the equipment and close the gas valve.

If the outdoor unit leaks fuel gas, then turn off the air conditioner, close the main gas valve and contact your local gas company or service company or dealer for repairs. It could cause a fire.

What to do if the refrigerant leaks.

Turn off the equipment and do adequate ventilation.

If the refrigerant leaks, then turn off the air conditioner and ventilate the room. Then notify your dealer or service center.
If the leak exceeds a certain limit, it could cause a lack of oxygen in the air.

If you detect a strange smell (a burning smell, a gas smell), or a abnormal sound or unusual vibrations, then turn off your air conditioner and the electric supply.

Turn off the equipment and power supply.

If you continue to use the equipment under abnormal circumstances, it could lead to an electric shock, fire or cause a machine breakdown.
Please contact your dealer or service center.

⚠ CAUTION

Do NOT open the panel.

Forbidden

Inside the units are revolving parts, high temperature parts and high voltage parts and if you touch them it could result in injury or an electric shock.

Do NOT remove the fan guard.

Forbidden

The fan revolves at high speed and could cause injury.

Do NOT touch the exhaust outlet.

Forbidden

It is very hot and could cause a burn.

Do NOT spray the units with an inflammable spray.

Forbidden

Please do NOT place or use combustible sprays near or on the units.
It could lead to ignition.

DO NOT place combustion apparatus in the direct line of the air out of indoor unit.

Forbidden

It could cause incomplete combustion of Combustion apparatus.

Ventilate the room every so often when you use inflammable material with the air conditioner on.

Forbidden

Insufficient ventilation could cause a lack of oxygen in the air.

Please do NOT use the unit for a particular cooling applications such as food supplies, animals and plants, precision machinery or objects of art: things that need a special preservation requirement.

Forbidden

It could cause a deterioration in the quality of food stuffs and so forth.

Do NOT place animals or plants in the direct path of the air.

Forbidden

It might badly affect to animals or plants.

Do NOT place containers that hold water on top of the indoor unit.

Forbidden

Please do NOT place flower vases or similar things that hold water on top of the indoor unit.
It could cause damage to the electrical insulation of the indoor unit and electric shock.

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REQUESTS

Please do NOT operate the remote control with a pointed object.

Forbidden

It could damage the remote control.

Please make sure to use an air filter in the indoor unit.

Use an air filter

Dust and dirt could get into the unit and cause a breakdown.

Do NOT use the air conditioner with the doors or windows left open.

Forbidden

It could cause frosting around the discharge portion.

Do NOT block the inlet or the outlet of both the indoor and outdoor unit.

Forbidden

It could result in a loss both of cooling and heating. It could also lead to damage to the equipment.

Please obey the following regarding the power source installed nearby the unit:

- Please do NOT operate the equipment with the at hand power source.
  Your air conditioner is a multi-type air conditioner.
  If you turn off one of the power sources installed near by the unit, all the units with the same power source will become inoperable.

- Please turn on the power Switch at least 5 hours before operating the air conditioner.
  In order to protect the compressor, the crank case heater is provided.
  Please be sure to carry out the following.

	At inspection times or when you want to use	Leave the switch ON during the seasons you use the equipment.	Turn the switch OFF during the seasons you do not use the equipment.
power source	the air conditioner turns the switch ON at least 5 hours beforehand.	switch ON	switch OFF

- During maintenance, turn the power switch OFF.
- During seasons of use please do NOT turn the power switch OFF.

RELOCATION/REPAIR

⚠ WARNING

For relocation, consult with the dealer.

Consult with the dealer

To relocate an indoor or outdoor unit, expertise is required, thus please ensure you consult with your dealer or the service company.

Flaws in installation may result in exhaust gas flowing into buildings leading to poisoning, water leakage, electrification or fire.

Do not remodel or renovate.

Forbidden

Never remodel or renovate.

Also, for repairs, please consult with your dealer or the service company.

Incorrectly repair may result in water leaks, electrification or fire.

When you are finished using the product

When you finishing using the product, ensure there is no risk of it dropping or falling.

For removal, please consult with your dealer or the service company.

- All about special use.

CAUTION

This air condition unit is for use in dwellings space only.
Please do not use the equipment where there are things which require special preservation such as food stuffs, animals, precision instruments and works of art.

- In case of a power failure.
  If a power failure occurs during operation, the unit will stop and remain stopped.
  To restart the operation after power is supplied, follow the start operations again.

- In case of a malfunction
  If, during operation, a malfunction should occur due to lightning, radio waves, power source noise etc., then turn off the power source switch.
  To re-start the operation, turn on the power switch and follow the start operations again.

- A gas engine is built in and a periodical check up is necessary. (Changing the engine oil, etc.)

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■ About the 'Oil Check' display on the remote controller

The oil check mark blinks to remote control when the operating hour of the gas engine becomes prescribed time. (Right picture) Please contact sales companies or the service agency and do the periodic inspection when 'Oil check mark' is displayed.
It causes the breakdown of outdoor unit if it leaves it as it is.

■ Operating conditions

In order to use the air conditioner correctly, please operate under the following conditions.

If you operate the equipment at temperature for a long period of time, the protective components will engage and the equipment will become inoperable.

Cooling Mode	Outdoor Temperature ≥ Approx. -10°C, ≤ 43°C	Indoor Temperature ≥ Approx. 18°C, ≤ 32°C	Room Humidity ≤ Approx. 80% In the rainy season or when the air humidity is high, using the air conditioner for a long time may result in frost on the surface of the equipment and fog may be discharged from the air discharge.
Heating Mode	Outdoor Temperature ≥ Approx. -20°C, ≤ 21°C	Indoor Temperature ≤ Approx. 26°C	

Compliance with regulation 842/EC/2006 Article 7(1) requirements

EN DO NOT VENT R410A INTO THE ATMOSPHERE: R410A IS A FLUORINATED GREENHOUSE GAS, COVERED BY THE KYOTO PROTOCOL, WITH A GLOBAL WARMING POTENTIAL (GWP) = 1975.

Conformité aux exigences de l'article 7 (1) de la réglementation 842/EC/2006

FR NE PAS METTRE LE R410A À L'AIR LIBRE: LE R410A EST UN GAZ À EFFET DE SERRE FLUORÉ, RÉGULÉ PAR LE PROTOCOLE DE KYOTO AVEC UN POTENTIEL DE RÉCHAUFFEMENT DE LA PLANÈTE (GWP) = 1975.

Kompatibilität mit den Anforderungen der Vorschrift 842/EC/2006, Artikel 7 (1)

DE R410A NICHT IN DIE AUSSENLUFT ABLASSEN: R410A IST EIN FLUORIERTES TREIBHAUSGAS, DAS IM KYOTO-PROTOKOLL ENTHALTEN IST UND EIN ERDERWÄRMUNGSPOTENTIAL (GWP) VON 1975 AUFWEIST.

Osservanza delle richieste dell'Articolo 7(1) delle regolamentazioni 842/EC/2006

IT NON DISPERDERE R410A NELL'ATMOSFERA: L'R410A È UN GAS FLUORATO CAUSA DI EFFETTO SERRA E COPERTO DAL PROTOCOLLO DI KYOTO CON UN POTENZIALE DI RISCALDAMENTO GLOBALE (GWP) = 1975.

Conformidade com o regulamento 842/EC/2006 Requisitos do Artigo 7(1)

PT NÃO DEIXE O R410A ESCAPAR PARA A ATMOSFERA: O R410A É UM GÁS FLUORADO COM EFEITO DE ESTUFA, REGULADO PELO PROTOCOLO DE QUIOTO, COM UM POTENCIAL DE AQUECIMENTO GLOBAL (GWP) = 1975.

Cumplimiento de los requisitos del Artículo 7 (1) de la Directiva 842/EC/2006

ES NO LIBERAR R410A AL AIRE LIBRE: EL R410A ES UN GAS FLUORIZADO DE EFECTOS DE INVERNADERO, INCLUIDO EN EL PROTOCOLO DE KYOTO, CON UN POTENCIAL DE CALENTAMIENTO GLOBAL (GWP) = 1975.

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