# FUJITSU

AIR CONDITIONER Duct Type OPERATING MANUAL







KEEP THIS MANUAL FOR FUTURE REFERENCE

FUJITSU GENERAL LIMITED

P/N9374379460

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# SAFETY PRECAUTIONS

- Before using the appliance, read these "SAFETY PRECAUTIONS" thoroughly and operate in the correct way. .
- The instructions in this section all relate to safety; be sure to maintain safe operating conditions. "DANGER", "WARNING" and "CAUTION" have the following meanings in these instructions:
- •

	This mark indicates procedures which, if improperly performed, might lead to the death or serious injury of the user or service personnel.
	This mark indicates procedures which, if improperly performed, might possibly result in personal harm to the user, or damage to property.
DANGER!	<ul> <li>Do not attempt to install this air conditioner by yourself.</li> <li>This unit contains no user-serviceable parts. Always consult authorized service personne for repairs.</li> </ul>
	• When moving, consult authorized service personnel for disconnection and installation of the air conditioner.
	<ul> <li>Do not become excessively chilled by staying for many hours in the direct cooling airflow.</li> <li>Do not insert fingers or objects into the outlet port or intake grilles.</li> </ul>
	• Do not start and stop air conditioner operation by turning off the electrical breaker and so on.
	<ul> <li>In the event of a malfunction (burning smell, etc.), immediately stop operation, turn off the electrical breaker, and consult authorized service personnel.</li> </ul>
	<ul> <li>In the event of refrigerant leakage , be sure to keep away from fire or any flammables.</li> </ul>
	(consult authorized service personnel)
	Provide occasional ventilation during use.
<u>/•</u> • • • • • • • • • • • • • • • • • •	• Do not direct air now at mepiaces of neating apparatus.
	<ul> <li>Do not climb on, or place objects on, the air conditioner.</li> <li>Do not hang objects from the indoor unit.</li> </ul>
	• Do not set flower vases or water containers on top of air conditioners.
	• Do not expose the air conditioner directly to water.
	• Do not operate the air conditioner with a wet hand. An electric shock may result.
	• Do not touch the switches with sharp objects.
	• Turn off power source when not using the unit for extended periods.
	<ul> <li>Always turn off the electrical breaker whenever cleaning the air conditioner or changing the air filter.</li> </ul>
	<ul> <li>Connection valves become hot during Heating; handle with care.</li> </ul>
	<ul> <li>Check the condition of the installation stand for damage.</li> </ul>
	<ul> <li>Do not place animals or plants in the direct path of the air flow.</li> </ul>
	• When restarting after a long period of disuse in the winter, turn the power switch on at least 12 hours before starting the unit.
	• Do not drink the water drained from the air conditioner.
	<ul> <li>Do not use the air conditioner for other purposes. In order to avoid any quality deteriora- tion, do not use the unit for cooling precision instruments, food, planets, animals or works of art.</li> </ul>
	<ul> <li>Do not apply any heavy pressure to radiator fins.</li> </ul>
	Operate only with air filters installed.
	<ul> <li>Do not block or cover the intake grille and outlet port.</li> </ul>
	<ul> <li>Ensure that any electronic equipment is at least 1m away from either the indoor or outdoor units.</li> </ul>
	<ul> <li>Avoid installing the air conditioner near a fireplace or other heating apparatus.</li> </ul>
	• When installing the indoor and outdoor units, take precautions to prevent access by in- fants.
	<ul> <li>Do not use inflammable gases near the air conditioner.</li> </ul>
	<ul> <li>Install the drain hose so that it drains water properly.</li> </ul>

- To install a unit that uses R410A refrigerant, use dedicated tools and piping materials that have been manufactured specifically for R410A use. Because the pressure of R410A refrigerant is approximately 1.6 times higher than the R22, failure to use dedicated piping material or improper installation can cause rupture or injury. Furthermore, it can cause serious accidents such as water leakage, electric shock, or fire.
  - This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
  - When the thunder sounds and the lightning malfunction strike, do not touch the outdoor unit. If the lightning strike, it can cause malfunction or electric shock.
  - Do not place other electric appliance or furniture under the outdoor unit and under the outlet port of indoor unit. The water may drop and can cause the taint damage or fault.
  - Keep clean and do not place the things around the outdoor unit. If covered with fallen leaves, it can cause the fault by the small animals or insects coming into and touch the internal electric parts.
  - Do not stand on unstable steps when operating or cleaning the air conditioner. It may overturn and can cause the injury.
  - Does not install the indoor unit and the outdoor unit in the following areas:
    - Area with high salt content, such as at the seaside. It will deteriorate metal parts, causing the parts to fail or the unit to leak water.
    - Area filled with mineral oil or containing a large amount of splashed oil or steam, such as a kitchen. It will deteriorate plastic parts, causing the parts to fail or the unit to leak water.
    - Area that generates substances that adversely affect the equipment, such as sulfuric gas, chlorine gas, acid, or alkali. It will cause the copper pipes and brazed joints to corrode, which can cause refrigerant leakage.
    - · Area containing equipment that generates electromagnetic interference. It will cause the control system to malfunction, preventing the unit from operating normally.
    - Area that can cause combustible gas to leak, contains suspended carbon fibers or flammable dust, or volatile inflammables such as paint thinner or gasoline. If gas leaks and settles around the unit, it can cause a fire.
    - Area where small animals may live. It may cause failure, smoke or fire if small animals enter and touch internal electrical parts.
    - Area where animals may urinate on the unit or ammonia may be generated.

## Energy saving and Comfortable function

### INVERTER

At the start of operation, large amount of power is used to bring the room quickly to the desired temperature. Afterwards, the unit automatically switches to a low power setting for economic and comfortable operation.

### ECONOMY OPERATION

When ECONOMY operation mode is operated, the room temperature will be little higher than the set-temp under cooling mode and lower than set-temp under heating mode. Therefore, the ECONOMY mode is able to save more energy than other normal mode.

### **AUTO CHANGEOVER**

The operation mode (cooling, dry, heating) is switched automatically to maintain the set temperature, and the temperature is kept constant at all times.

# Convenient function

### WEEKLY TIMER

Use this timer function to set operating times for each day of the week. Use the DAY OFF setting to switch off timed operation for a selected day in the coming week. Because all days can be set together, the weekly timer can be used to repeat the timer settings for all of the days.

### **TEMPERATURE SET BACK TIMER**

Use this timer function to change the set temperature in the operation times set for each day of the week. This can be used together with other timer settings.

# Remote controller

### WIRED REMOTE CONTROLLER

The wired remote controller allows convenient control of indoor unit operation.

### WIRELESS REMOTE CONTROLLER (OPTION)

The optional wireless remote controller can be used. When you use remote controller, there are following different points as compared with using wired remote controller.

[ The additional function for wireless ones ]

- SLEEP
- TIMER

And you can use both wireless and wired remote controller simultaneously. (But function is limited.)

- [ The restricted functions for wired ones ]
  - · Weekly timer
  - Temperature set back timer

# NAME OF PARTS

### **Remote controller**



- ① START/STOP Button
- ② SET TEMP. (Temperature) Button
- ③ MODE Button
- ④ FAN Button
- **5** ECONOMY Button
- ⑥ TIMER MODE (CLOCK AD-JUST) Button
- ⑦ DAY (DAY OFF) Button
- (8) SET BACK Button
- ⑨ SET TIME ( < > ) Button
- 10 TIMER DELETE Button
- 11 TIMER SET Button
- Vertical Airflow Direction and Swing Button<sup>\*1</sup>
- (3) Horizontal Airflow Direction and Swing Button<sup>\*2</sup>
- MAINTENANCE(FILTER RE-SET) Button<sup>#1</sup>

- 15 Operation Lamp
- 16 Timer and Clock Display
- 17 Operation Mode Display
- 18 Fan Speed Display
- 19 Operation Lock Display
- 20 Temperature Display
- 21 Function Display
  - ♦/৩ Defrost Display
  - Thermo Sensor Display
  - ECONOMY Display
  - > Vertical Swing Display\*3
  - Filter Display<sup>#1</sup>
- \*1~3 These functions cannot be used.
   (Please also see the operating manual of the option when using it with options, etc.)
- #1 Can be used if set correctly during installation. Please consult authorized serviceman when using this function.

# PREPARATORY OPERATION



# **OPERATION**

Instructions relating to heating (\*) are applicable only to "HEAT & COOL MODEL" (Reverse Cycle).



# ECONOMY



Press the ECONOMY button to start or stop ECONOMY OPERA-TION. For details on the function, refer to page 12.

# OPERATION

Room temperature sensor selection This function is locked at the factory. In order to detect the room temperature correctly, consult authorized service personnel when using this function. ECONOMY 糁 THERMO SEN Indoor unit Press the ECONOMY button for more than 2 seconds to select whether the room temperature is detected at the indoor unit or the remote controller. When the 🔁 thermo sensor display appears, the room temperature is detected at the remote controller. **I** NOTES If this function is locked, the location where the room temperature is detected cannot be changed and the om mark flashes when the ECONOMY button is pushed for 2 seconds or more. **Child lock function** 



Press the DAY (DAY OFF) button and TIMER SET button simultaneously for 2 seconds or more to activate the child lock function and lock all of the buttons on the remote controller except the START/STOP button, SET TEMP. buttons, MODE button, and FAN button. Press the buttons again for 2 seconds or more to deactivate the child lock function. When the child lock function is activated, the om mark



# TIMER FUNCTIONS



### OFF timer (See page 8.)

Use this timer function to stop air conditioner operation. The timer operates and air conditioner operation stops after the set time has passed. The timer can be set up to 24 hours in advance.



### ON timer (See page 8.)

Use this timer function to start air conditioner operation. The timer operates and air conditioner operation starts after the set time has passed. The timer can be set up to 24 hours in advance.



### WEEKLY timer (See page 9.)

Use this timer function to set operating times for each day of the week. Use the DAY OFF setting to switch off timed operation for a selected day in the coming week. Because all days can be set together, the weekly timer can be used to repeat the timer settings for all of the days.



### Temperature SET BACK timer (See page 11.)

Use this timer function to change the set temperature in the operation times set for each day of the week. This can be used together with other timer settings.

# **ON/OFF TIMER**



# WEEKLY TIMER



### **İ** NOTES

- The operating time can be set in 30-minute increments only.
- The OFF time can be carried over to the next day.
- The ON timer and the OFF timer functions cannot be set using the weekly timer. Both an ON and OFF time must be set.

# WEEKLY TIMER



### **i** NOTES

- The DAY OFF setting is only available for days for which weekly settings already exist.
- If the operating time carries over to the next day (during a next day setting), the effective DAY OFF range will be set as shown below.



• The DAY OFF setting can only be set 1 time. The DAY OFF setting is cancelled automatically after the set day has passed.

# TEMPERATURE SET BACK TIMER



- The SET BACK timer only changes the set temperature, it cannot be used to start or stop air conditioner operation.
- The SET BACK timer can be set to operate up to 2 times per day but only 1 temperature setting can be used.
- The SET BACK timer can be used together with the ON, OFF, and weekly timer functions.
- The SET BACK operating time is displayed only in the SET BACK confirmation display. (Refer to step 1 for the SET BACK confirmation display.)

# ECONOMY OPERATION

Begin Air Conditioner operation before performing this procedure.

### To Use the ECONOMY Operation

### Press the ECONOMY button.

The ECONOMY display will light.

ECONOMY operation begins.

### To Stop the ECONOMY Operation

### Press the ECONOMY button again.

The ECONOMY display will go out.

Normal operation begins.

### **About ECONOMY Operation**



ECONOMY

THERMO SE



At the maximum output, ECONOMY Operation is approximately 70% of normal air conditioner operation for cooling and heating. If the room is not cooled (or heated) well during ECONOMY operation, select normal operation.

- During the monitor period in the AUTO mode, the air conditioner operation will not change to ECONOMY operation even if ECONOMY operation is selected by pressing the ECONOMY operation button.
- When ECONOMY operation mode is operated, the room temperature will be little higher than the set-temp under cooling mode and lower than set-temp under heating mode. Therefore, the ECONOMY mode is able to save more energy than other normal mode.
- In case of multi-type air conditioner, the ECONOMY operation mode is only available for the set indoor unit.

# **CLEANING AND CARE**

• Before cleaning the unit, be sure to stop the unit and disconnect the power supply.

- Turn off the electrical breaker.
- A fan operates at high speed inside the unit, and personal injury could result.
- When used for extended periods, the unit may accumulate dust inside, reducing its performance. We recommend that the unit be inspected regularly, in addition to your own cleaning and care. For more information, consult authorized service personnel.
- When cleaning the unit's body, do not use water hotter than 40°C, harsh abrasive cleansers, or volatile agents like benzene or thinner.
- Do not expose the unit body to liquid insecticides or hairsprays.
- If the unit will not be operated for a period of 1 month or more, be sure to allow the inner parts of the unit to dry thoroughly, in advance, by operating the unit in fan mode for half a day.

### **Cleaning the Air Filter**

- Remove the dust from the air filters by vacuuming or washing them. After washing, allow the air filters to dry thoroughly in an area protected from sunlight.
- Dust can be cleaned from the air filter either with a vacuum cleaner, or by washing the filter in a solution of mild detergent and warm water. If you wash the filter, be sure to allow it to dry thoroughly in a shady place before reinstalling.
- If dust is allowed to accumulate on the air filter, air flow will be reduced, lowering operating efficiency and increasing noise.

### Filter indicator Reset (Special setting)

• Can be used if set correctly during installation. Please consult authorized serviceperson when using this function.

It lights on when it is time to clean the air filters.

After turning the power on. Press the MAINTENANCE button for 2 seconds or more on the remote control.

The filter display will disappear.



|⊞



# TROUBLESHOOTING

### Instructions relating to heating (\*) are applicable only to "HEAT & COOL MODEL" (Reverse Cycle).



In the event of a malfunction (burning smell, etc.), immediately stop operation, turn off the electrical breaker, and consult authorized service personnel.

Merely turning off the unit's power switch will not completely disconnect the unit from the power source. Always be sure to turn off the electrical breaker to ensure that power is completely off. Before requesting service, perform the following checks:

	Symptom	Problem	See Page
NORMAL FUNCTION	Doesn't operate immedi- ately:	<ul> <li>If the unit is stopped and then immediately started again, the compressor will not operate for about 3 minutes, in order to prevent fuse blowouts.</li> <li>Whenever the electrical breaker is turned off then on again, the protection circuit will operate for about 3 minutes, preventing unit operation during that period.</li> </ul>	_
	Noise is heard:	<ul> <li>During operation and immediately after stopping the unit, the sound of water flowing in the air conditioner's piping may be heard. Also, noise may be particularly noticeable for about 2 to 3 minutes after starting operation (sound of coolant flowing).</li> </ul>	_
		*• During Heating operation, a sizzling sound may be heard occasionally. This sound is produced by the Automatic Defrosting operation.	14
	Smells:	• Some smell may be emitted from the indoor unit. This smell is the result of room smells (furniture, tobacco, etc.) which have been taken into the air conditioner.	
	Mist or steam are emitted:	• During Cooling or Dry operation, a thin mist may be seen emitted from the indoor unit. This results from the sudden Cooling of room air by the air emitted from the air conditioner, resulting in condensation and misting.	
		*•During Heating operation, the outdoor unit's fan may stop, and steam may be seen rising from the unit. This is due to the Automatic Defrost-ing operation.	14
	Airflow is weak or stops:	<ul> <li>*•When Heating operation is started, fan speed is temporarily very low, to allow internal parts to warm up.</li> <li>*• During Heating operation, if the room temperature rises above the thermostat setting, the outdoor unit will stop, and the indoor unit will operate at very low fan speed. If you wish to warm the room further, set the thermostat to a higher setting.</li> </ul>	_
		*●During Heating operation, the unit will temporarily stop operation (between 4 and 15 minutes) as the Automatic Defrosting mode operates. During the Automatic Defrosting operation, () will be shown on the remote controller display.	14
		• The fan may operate at very low speed during Dry operation or when the unit is monitoring the room's temperature.	_
		• In the monitor AUTO operation, the fan will operate at very low speed.	—
	Water is produced from the outdoor unit:	*•During Heating operation, water may be produced from the outdoor unit due to the Automatic Defrosting operation.	14
	thermo sensor display on the remote controller is flashing:	<ul> <li>The room temperature sensor may be malfunctioning. Please consult authorized service personnel.</li> </ul>	
CHECK ONCE MORE	Doesn't operate at all:	<ul> <li>Has the circuit breaker been turned off?</li> <li>Has there been a power failure?</li> <li>Has a fuse blown out, or a circuit breaker been tripped?</li> </ul>	_
		Is the timer operating?	8 to 11
	Poor Cooling (or *Heating)	Is the air filter dusty?	
	performance:	Are the air conditioner's intake grille or outlet port blocked?	
		• Did you adjust the room temperature settings (thermostat) correctly?	
		Is there a window or door open?	
		<ul> <li>In the case of Cooling operation, is a window allowing bright sunlight to enter? (Close the curtains.)</li> </ul>	
		In the case of Cooling operation, are there heating apparatus and computers inside the room, or are there too many people in the room?	

If the problem persists after performing these checks, or if you notice burning smells, stop operation immediately, turn off electric breaker, and consult with authorized service personnel.

# **OPERATING TIPS**

Instructions relating to heating (\*) are applicable only to "HEAT & COOL MODEL" (Reverse Cycle).

### \*Heating Performance

- This air conditioner operates on the heat-pump principle, absorbing heat from outdoor air and transferring that heat indoors. As a result, the operating performance is reduced as outdoor air temperature drops. If you feel that insufficient heating performance is being produced, we recommend you use this air conditioner in conjunction with another type of heating appliance.
- Heat-pump air conditioners heat your entire room by recirculating air throughout the room, with the result that some time may be required after first starting the air conditioner until the room is heated.

### \*When Indoor and Outdoor Temperature are High

When both indoor and outdoor temperatures are high during use of the heating mode, the outdoor unit's fan may stop at times to protect the unit.

### Fan speed: AUTO

\*Heating: The fan will operate at very low speed when the temperature of the air issued from the indoor unit is low.

Cooling: As the room temperature approaches that of the set temperature, the fan speed becomes slower.

Fan : The fan runs at the low fan speed.

### \*Microcomputer-controlled Automatic Defrosting

- When using the Heating mode under conditions of low outdoor temperature and high humidity, frost may form on the outdoor unit, resulting in reduced operating performance. In order to prevent this kind of reduced performance, this unit is equipped with a Microcomputer-controlled Automatic Defrosting function. During the defrost cycle, the indoor fan will shutdown and will be displayed on the remote controller. It will take anywhere from 4 to 15 minutes before the air conditioner starts up again.
- After heating operation stops, if frost forms on the outdoor unit, the unit will start Automatic Defrosting operation. At this time, the outdoor unit will automatically stop after operating for a few minutes.

### Low Ambient Cooling

When the outdoor temperature drops, the outdoor unit's fans may switch to Low Speed, or one of the fans may stop intermittently.

### **Dual Remote Controllers (optional)**

An additional remote controller can be added up to the maximum of 2 remote controllers. Either remote controller can control the air conditioner. However, the timer functions cannot be used at the secondary unit.

### \* Hot start

The indoor unit prevents cold drafts when heating operation begins.

The indoor unit fan will not operate until the heat exchanger reaches the set temperature.

### **Group Control**

1 remote controller can control up to 16 air conditioners. All of the air conditioners will be operated with the same settings.

Group control cannot be used when using it by the multi type.

### Mode operation: AUTO

### **COOLING MODEL**

 When the room temperature is 2 °C higher than the set temperature, the mode will switch between Cooling and Drying.

### HEAT & COOL MODEL (Reverse Cycle)

### Auto changeover function

- When AUTO CHANGEOVER is selected, the air conditioner selects the appropriate operation mode (Cooling or Heating) according to your room's present temperature.
- When AUTO CHANGEOVER is first selected, the fan will operate at a low speed for about a few minutes while the unit determines the current conditions of the room and selects the proper operation mode.

If the difference between thermostat setting and actual room temperature is more than +2  $^{\circ}\mathrm{C}$ 

 $\rightarrow$  Cooling operation

If the difference between thermostat setting and actual room temperature is within  $\pm 2\ ^\circ C$ 

 $\rightarrow$  Determined by outdoor temperature

If the difference between thermostat setting and actual room temperature is more than -2 °C

 $\rightarrow$  Heating operation

- During the Drying mode operation, the fan will operate at a low speed for a gently cooling effect during which the fan may temporarily stop rotating.
- When the room temperature is near the thermostat setting, the air conditioner will begin monitor operation. In the monitor operation mode, the fan will operate at a low speed. If the room temperature subsequently changes, the air conditioner will once again select the appropriate operation (Heating or Cooling) to adjust the temperature to the value set in the thermostat.
- If the mode automatically selected by the unit is not what you wish, select one of the mode operation (HEAT, COOL, DRY, FAN).

### About Mode Operation

\* Heating: • Use to warm your room.

- When Heating mode is selected, the air conditioner will operate at very low fan speed for about 3 to 5 minutes, after which it will switch to the selected fan setting. This period of time is provided to allow the indoor unit to warm up before beginning full operation.
- When the outdoor temperature is very low, frost may form on the outdoor unit, and its performance may be reduced. In order to remove such frost, the unit will automatically enter the defrost cycle from time to time. During Automatic Defrosting operation, the heat operation will be interrupted.
- After the start of heating operation, it takes sometime before the room gets warmer.
- Cooling: Use to cool your room.

Dry:

- Use for gently cooling while dehumidifying your room.
  - You cannot heat the room during Dry mode.
  - During Dry mode, the unit will operate at low speed; in order to adjust room humidity, the indoor unit's fan may stop from time to time. Also, the fan may operate at very low speed when adjusting room humidity.
  - The fan speed cannot be changed manually when Dry mode has been selected.
- Fan:
- Use to circulate the air throughout your room.

### **During Heating mode:**

Set the thermostat to a temperature setting that is higher than the current room temperature. The Heating mode will not operate if the thermostat is set lower than the actual room temperature.

### During Cooling/Dry mode:

Set the thermostat to a temperature setting that is lower than the current room temperature. The Cooling and Dry modes will not operate if the thermostat is set higher than the actual room temperature (in Cooling mode, the fan alone will operate).

### During Fan mode:

You can not use the unit to heat and cool your room.

### **AUTO Restart**

### In Event of Power Interruption

 If the power supply to the air conditioner is interrupted by a power failure, the air conditioner will restart automatically in the previously selected mode once the power is restored.

### Notice

- During use of the heating mode, the outdoor unit will occasionally commence the defrost operation for brief periods. During the defrosting operation, if the user sets the indoor unit for heating again, the defrosting mode will continue, and the heating operation will begin after completion of defrosting, with the result that some time may be required before warm air is emitted.
- Use of other electrical appliances (electric shaver, etc.) or nearby use of a wireless radio transmitter may cause the air conditioner to malfunction. In this event, temporarily disconnect the power supply, reconnect it, and then use the remote controller to resume operation.
- \*• During use of the heating mode, the top of the indoor unit may become warm, but this is due to the fact that coolant is circulated through the indoor unit even when it is stopped; it is not a malfunction.

# **SELF-DIAGNOSIS**

When "Er" in Temperature Display is displayed, inspection of the air conditioning system is necessary. Please consult authorized service personnel.



ex. Self-diagnosis check

# TEMPERATURE AND HUMIDITY RANGE

Permissible ranges of temperature and humidity are as follows:

Cooling / Dry Operation	Outdoor temperature	About –5°C to 46°C
	Indoor temperature	About 18°C to 32°C
	Indoor humidity	Below approximately 80%. If the air conditioner is used continuously for many hours, water may condense on the surface and drip.
Heating	Outdoor temperature	About –15°C to 24°C
Operation	Indoor temperature	About 16°C to 30°C

If the unit is used under higher temperature conditions than those noted here, the automatic protection circuit may operate, interrupting the operation.

If the unit is used under lower temperature conditions than those noted here, the heat exchanger may freeze, causing water leakage or other malfunction.

• Do not use the air conditioner for any purpose other than room cooling/dry, room heating, or fan.

# NOTE

# NOTE

