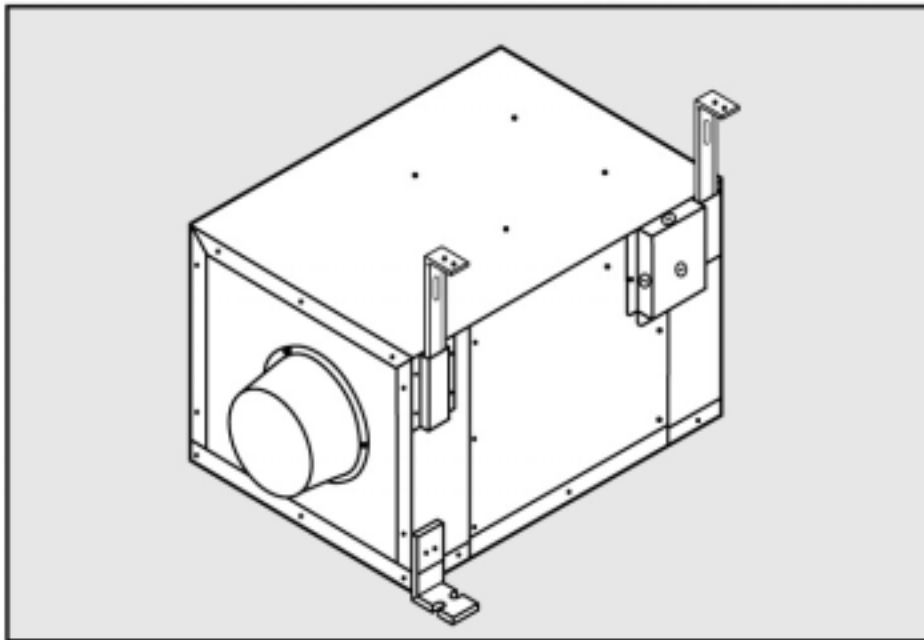


INSTALLATION INSTRUCTIONS

IN-LINE Fan

FV-10NLF1 FV-20NLF1
FV-30NLF1 FV-40NLF1



Panasonic

READ AND SAVE THESE INSTRUCTIONS










Please read the instructions carefully before attempting to install, operate or service the Panasonic IN-LINE Fan. Failure to comply with instructions could result in personal injury and/or property damage. Please retain for future reference.

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SUPPLIED ACCESSORIES

FV-10NLF1 FV-20NLF1 FV-30NLF1 FV-40NLF1

Part name	Illustration	Quantity
Bracket		2
Hanger		1
Bracket cover		2
Installation bracket		2
Extension bracket		2
Holder (Assembled on body)		2
Long screw		10
Self-tapping screw		12
Short screw		4

DESCRIPTION

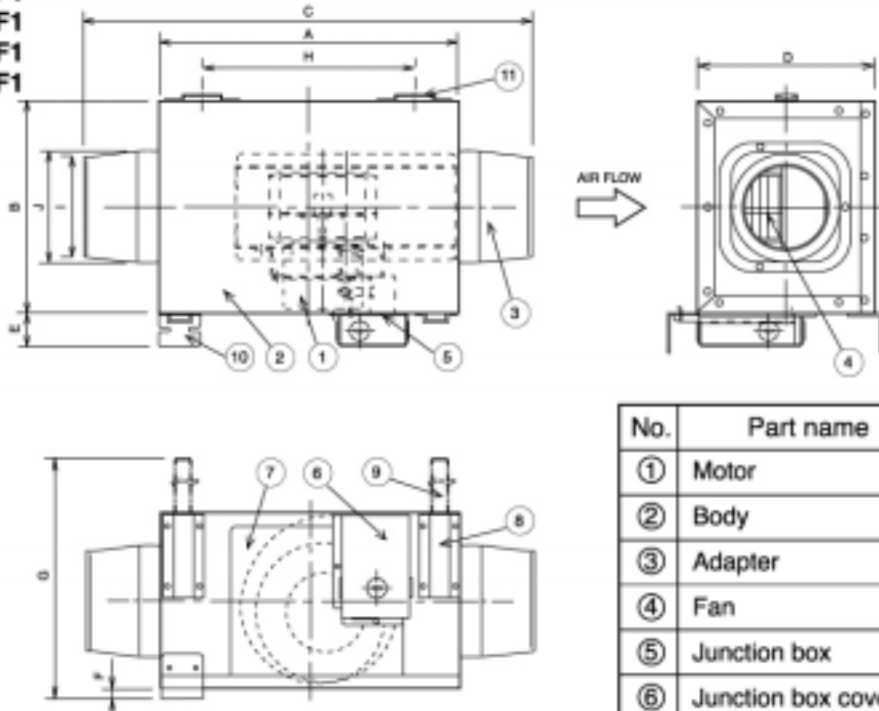
These Panasonic IN-LINE Fan models use a sirocco fan driven by a capacitor motor.

The motor is designed to have an extended service life with reduced energy consumption, and a reduced noise level.

It also incorporates a thermal cutout for safety.

DIMENSIONS

FV-10NLF1
FV-20NLF1
FV-30NLF1
FV-40NLF1



No.	Part name	No.	Part name
①	Motor	⑦	Inspection panel
②	Body	⑧	Bracket cover
③	Adapter	⑨	Installation bracket
④	Fan	⑩	Extension bracket
⑤	Junction box	⑪	Bracket
⑥	Junction box cover		Holder

Dimensions: mm(inch)

Model No.	A	B	C	D	E	F	G	H	I	J
FV-10NLF1	340 (13 3/8)	240 (9 7/16)	440 (17 5/16)	200 (7 7/8)	38.1 (1 1/2)	8 (5/16)	321-581 (12 5/8-22 7/8)	242 (9 17/32)	φ97 (φ3 13/16)	φ112 (φ4 13/32)
FV-20NLF1	340 (13 3/8)	240 (9 7/16)	550 (21 21/32)	240 (9 7/16)	38.1 (1 1/2)	8 (5/16)	321-621 (12 5/8-24 7/16)	242 (9 17/32)	φ142 (φ5 19/32)	φ158 (φ6 7/32)
FV-30NLF1	390 (15 11/32)	270 (10 5/8)	600 (23 5/8)	280 (11 1/32)	38.1 (1 1/2)	8 (5/16)	321-661 (12 5/8-26)	242 (9 17/32)	φ142 (φ5 19/32)	φ158 (φ6 7/32)
FV-40NLF1	420 (16 17/32)	340 (13 3/8)	560 (22 1/16)	280 (11 1/32)	38.1 (1 1/2)	8 (5/16)	321-661 (12 5/8-26)	242 (9 17/32)	φ195 (φ7 11/16)	φ211 (φ8 5/16)

SPECIFICATIONS

Model No.	Air direction	V	Hz	Power consumption (W)	Speed (RPM)	Air delivery (CFM)	Weight kg (lb.)
FV-10NLF1	Exhaust	120	60	36	1590	120	6.3(13.9)
FV-20NLF1				57	1260	240	7.5(16.5)
FV-30NLF1				98	1340	340	10.9(24.1)
FV-40NLF1				132	1150	440	11.9(26.3)

* Power consumption, speed and air delivery values have been measured at 5mm WG (0.2" WG).

UNPACKING

Unpack and carefully remove unit from carton.

Refer to the supplied accessories list to verify that all parts are present.

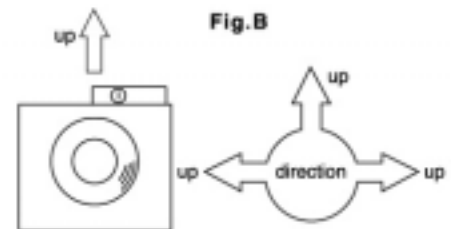
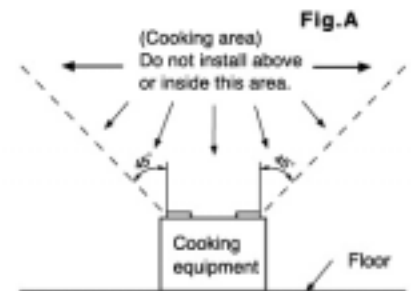
GENERAL SAFETY INFORMATION

1. Do not install this IN-LINE Fan where the temperature may exceed 60 °C(140 °F).
2. Make certain that the service supply voltage is 120V, 60Hz.
3. Follow all local electrical and safety codes as well as the National Electrical Code (NEC) and the Occupation Safety and Health Act (OSHA).
4. Always switch the power source off before working on or near the fan or motor.
5. Protect the electrical wires from sharp edges, oil, grease, hot surfaces, chemicals, or other objects.
6. Do not bend the electrical wires.
7. Do not install the unit where ducts are configured as shown in Fig.A.
8. Provide suction parts with proper ventilation.
9. This unit is acceptable for use over a bathtub or shower when installed in a GFCI protected branch circuit.



CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials or vapours.
2. Not for use in cooking areas.(Fig.B)
3. This product must be grounded.
4. Before installation, confirm that the unit is facing the right direction. (Fig.C)
5. Do not drop the unit, put it on the hanger securely.



WARNING

To reduce the risk of fire, electric shock or personal injury, observe the following:

- A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
- B. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- C. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), the American Society for Heating Refrigeration and Air Conditioning Engineers (ASHRAE) and the local code authorities.
- D. When cutting or drilling into a wall or ceiling, do not damage electrical wiring and other hidden utilities.
- E. Ducted fans must always be vented to the outdoors.
- F. If this unit is to be installed over a tub or shower, it must be marked as intended for this application.
- G. Do not use this unit with any solid-state control device.
- H. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting mains to prevent power from being switched on accidentally. When the service disconnecting mains cannot be locked, securely, fasten a prominent warning device, such as a tag, to the service panel.
- I. NEVER place a switch where it can be reached from a tub or shower.

INSTALLATION I (HORIZONTALLY BETWEEN JOISTS)

1. Disconnect the power to the receptacle before starting the installation.
2. Fix the hanger to the ceiling joist. Keep distance "A" between the hanger and ceiling board (table 1). Use two long screws to fasten the hanger. (Fig.1)

Dimension: mm(inch)

MODEL	10NLF1	20NLF1	30NLF1	40NLF1
A	165 (6 $\frac{1}{2}$)	165 (6 $\frac{1}{2}$)	185 (7 $\frac{1}{4}$)	215 (8 $\frac{1}{2}$)

(table 1)

3. After confirming the direction that the unit will be facing, attach the bracket and bracket cover to the unit with self-tapping screws. (Fig.2)

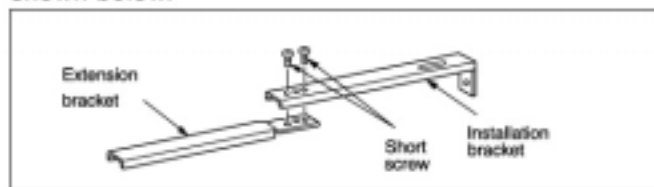
CAUTION

The holder was assembled on the back side of the unit. (no shown in Fig.2)

Attach the unit body horizontally to the panel of your choice. For best results, the bracket and bracket cover should be attached vertically. The holder and the bracket should be installed on the same side of the joist.

4. Insert installation bracket into bracket cover.

If joist space is greater than distance B at the center (table 2), attach installation bracket and extension bracket as shown below.



Dimension: mm(inch)

MODEL	10NLF1	20NLF1	30NLF1	40NLF1
B	381 (15)	421 (16 $\frac{1}{2}$)	461 (18 $\frac{1}{8}$)	461 (18 $\frac{1}{8}$)

(table 2)

5. Insert the holder, located on the unit, into the hanger.

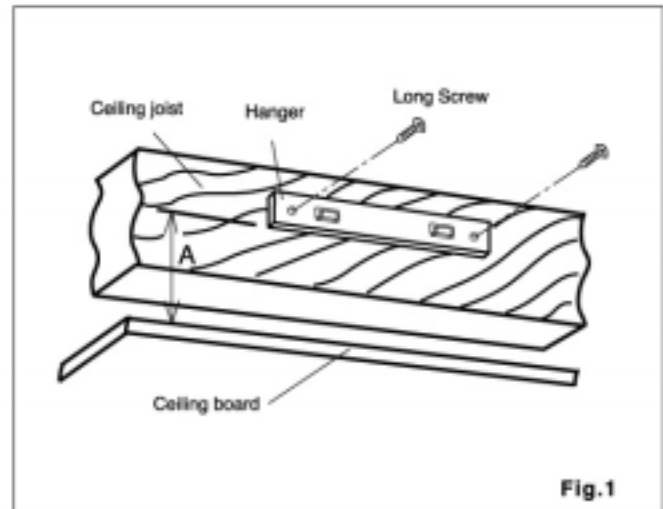


Fig.1

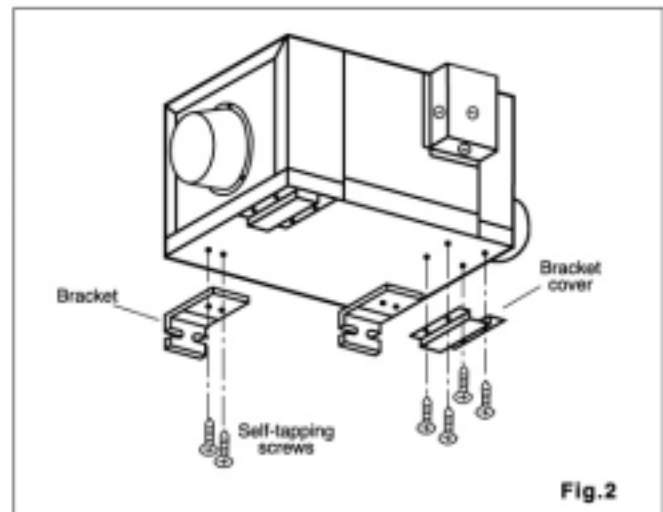


Fig.2

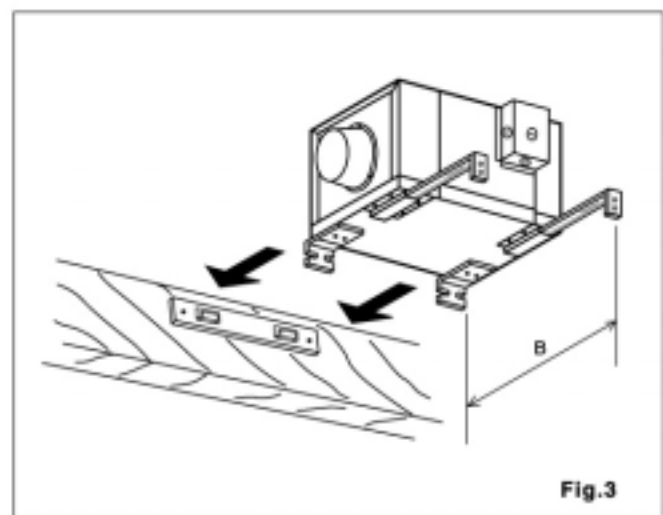


Fig.3

INSTALLATION I (HORIZONTALLY BETWEEN JOISTS)

6. Attach the IN-LINE Fan to a joist or a pillar with the long screws. (Fig.4)
7. Remove junction box cover and secure conduit or wire holder to junction box cover knockout hole. (Fig.5)
8. Using wire nuts, connect house power wire as shown in the wiring diagram.
9. Replace junction box cover.

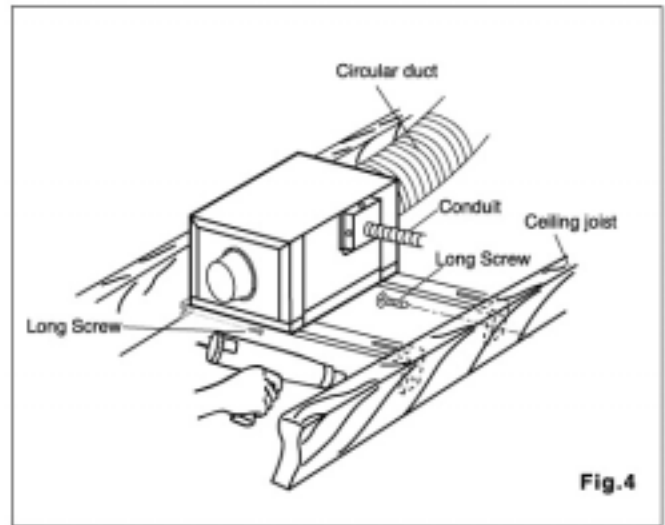
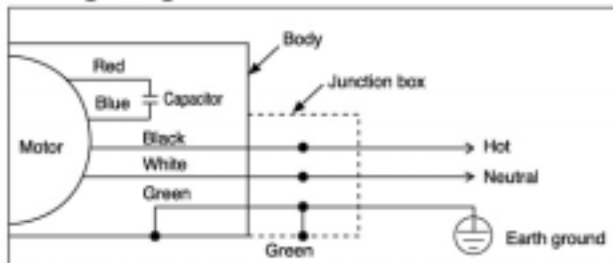


Fig. 4

CAUTION

Mount junction box cover carefully so that wires are not pinched.

Wiring Diagram



10. Install circular ducts (on both ends) and secure them with tape or clamps.

Consult table 3 for the appropriate duct sizes.

Dimension: mm(inch)

MODEL	10NLF1	20NLF1	30NLF1	40NLF1
duct ϕ	102 (4)	152 (6)	152 (6)	203 (8)

(table 3)

11. Connect power line to receptacle after finishing duct work.

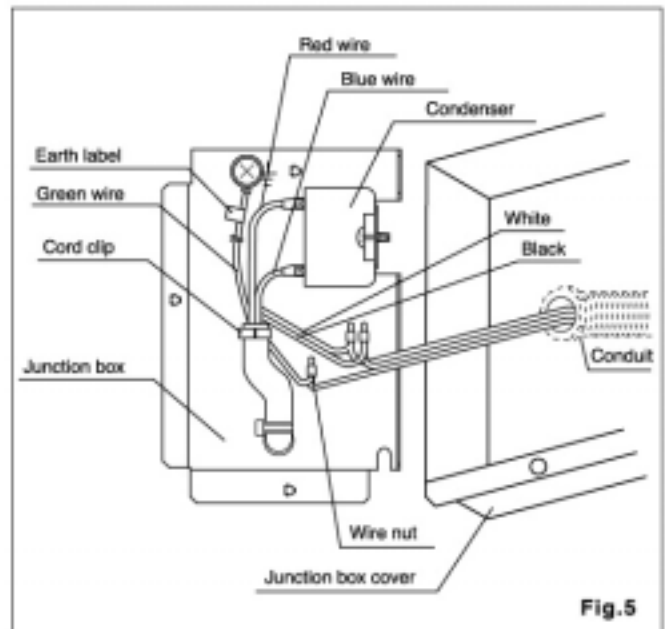


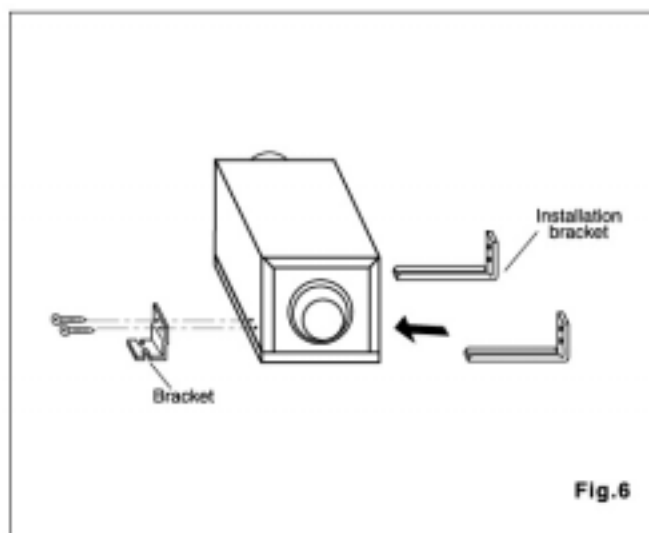
Fig. 5

INSTALLATION II (ON CEILINGS/JOISTS)

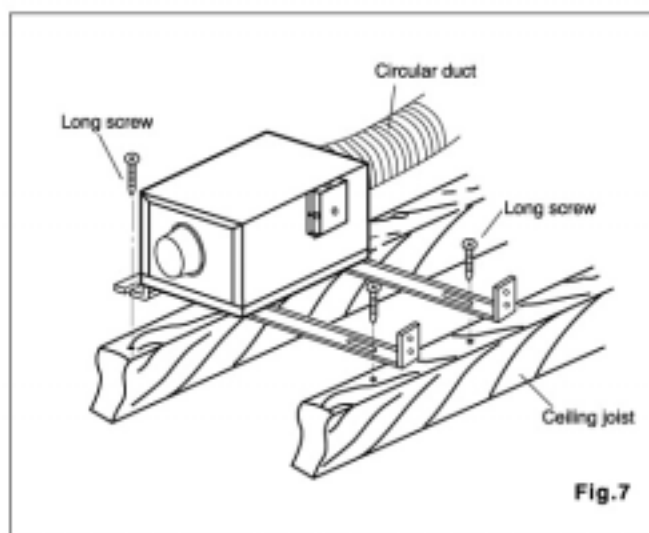
1. Attach installation bracket and bracket to the unit body. (Fig.6)

CAUTION

Insert the installation bracket into the bracket cover attached to the panel.



2. Extend installation bracket and put the unit on the ceiling or joist. Secure with long screws. (Fig.7)



3. Remove junction box cover and secure conduit or wire holder to junction box cover knockout hole. (Fig.5)
4. Using wire nuts, connect house power wire as shown in the wiring diagram on page 6.

CAUTION

Mount junction box cover carefully so that wires are not pinched.

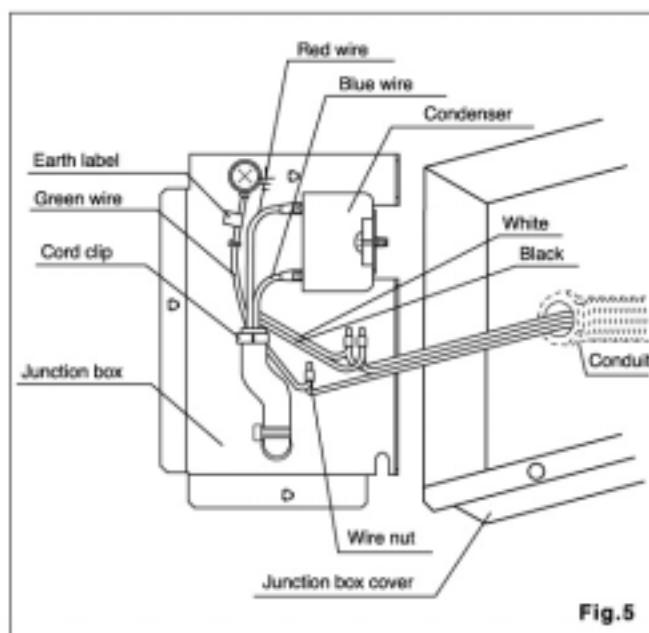
5. Install circular ducts (on both ends) and secure them with tape or clamps.

Consult table 3 for the appropriate duct sizes.

Dimension: mm(inch)

MODEL	10NLF1	20NLF1	30NLF1	40NLF1
duct ϕ	102 (4)	152 (6)	152 (6)	203 (8)

(table 3)



INSTALLATION III (VERTICALLY ON JOISTS OR PILLARS)

Installing the IN-LINE Fan requires an accessible area (attic or air extraction apparatus)

1. Install the IN-LINE Fan using the first step described in INSTALLATION II.
2. Extend installation bracket and hang the unit on the joist or pillar. Fix with the long screws. (Fig.8)

CAUTION

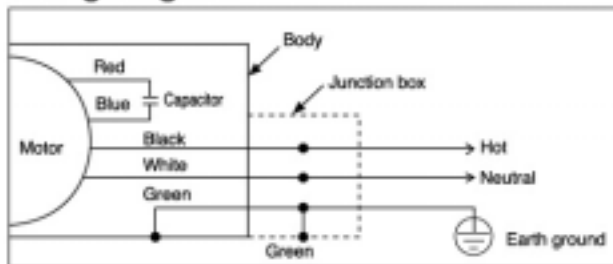
Be careful not to drop the unit.

3. Remove junction box cover and secure conduit or wire holder to junction box cover knockout hole. (Fig.5)
4. Using wire nuts, connect house power wire as shown in the wiring diagram.

CAUTION

Mount junction box cover carefully so that wires are not pinched.

Wiring Diagram



5. Install circular ducts (on both ends) and secure them with tape or clamps.

Consult table 3 for the appropriate duct sizes.

Dimension: mm(inch)

MODEL	10NLF1	20NLF1	30NLF1	40NLF1
duct ϕ	102 (4)	152 (6)	152 (6)	203 (8)

(table 3)

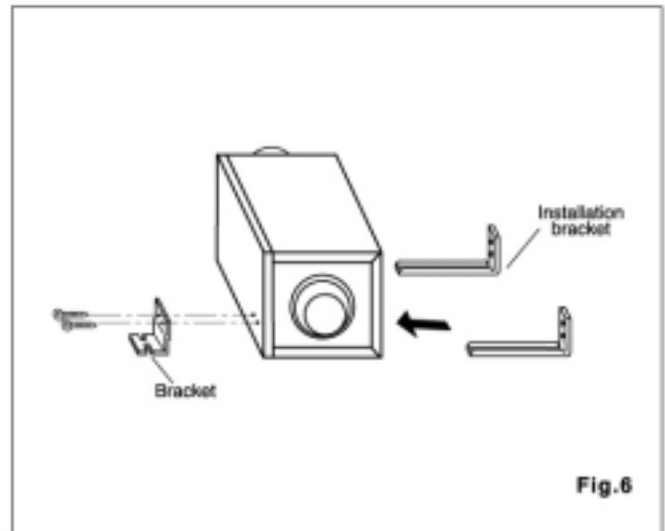


Fig.6

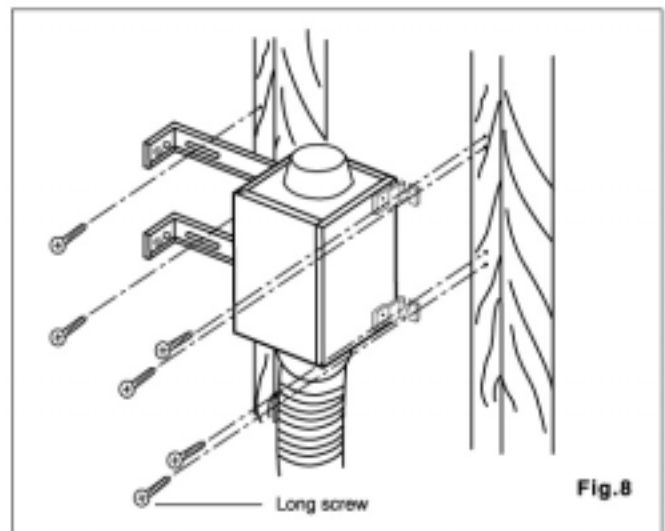


Fig.8

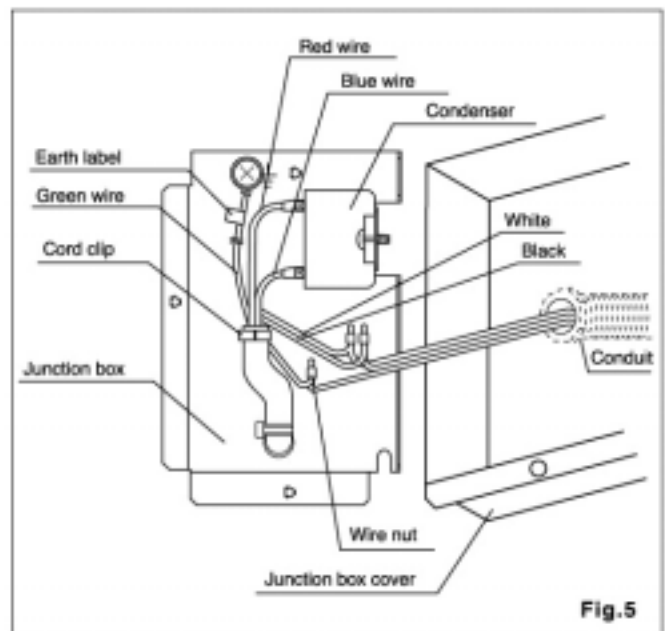


Fig.5

MAINTENANCE

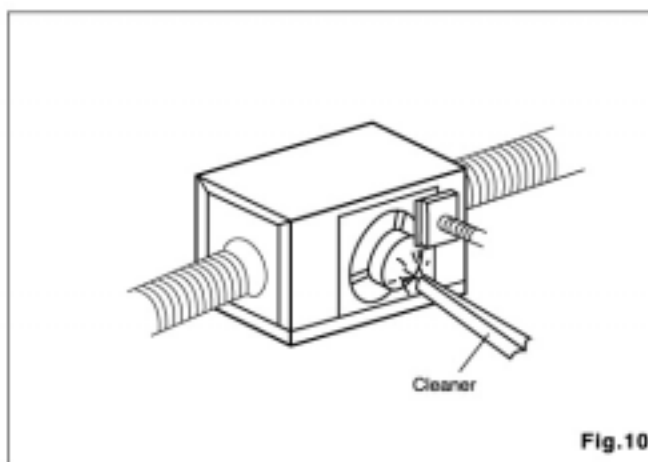
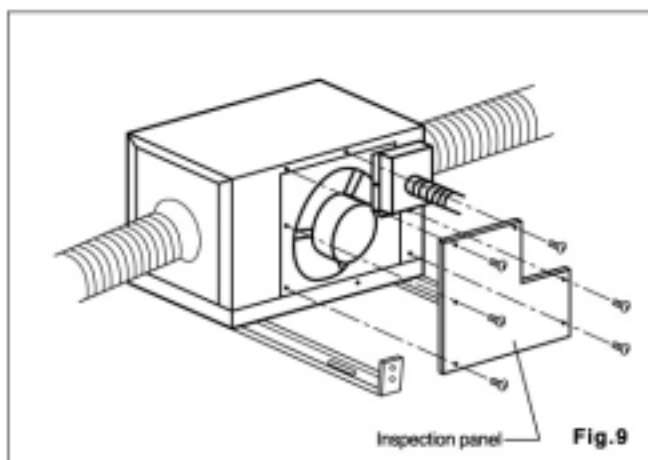
WARNING

Disconnect power line before proceeding with repairs or maintenance.

CAUTION

1. Never use benzene based thinner or similar chemicals for cleaning the IN-LINE Fan.
2. Do not allow water to come into contact with the motor.
3. Do not immerse resin parts in water where the temperature is over 60 °C(140 °F).

1. Remove inspection panel (take off the screws and pull). (Fig.9)
2. Clean inspection panel (do not immerse in water), wipe dry with cloth.
3. Remove dust and dirt inside the fan's body using a vacuum cleaner. (Fig.10)
4. Using a cloth dampened with kitchen detergent, remove any dirt from the fan's body. Wipe dry with a cloth (do not wipe thermal insulation parts inside body with dampened cloth).
5. Replace inspection panel.



PRODUCT SERVICE

Warning concerning removal of covers.

The unit should be serviced by qualified technicians only. No service information is provided for customers. Your product is designed and manufactured to ensure a minimum of maintenance. However, should your unit ever require service, a nationwide system of factory service centers and AUTHORIZED INDEPENDENT SERVICE CENTRES is maintained to support your product's warranty.

(In the U.S.A., call 1-866-545-2672 to locate the Panasonic Authorized Service Center nearest you.)

PANASONIC CONSUMER ELECTRONICS COMPANY

One Panasonic Way, Secaucus, NJ 07094, USA

<http://www.panasonic.com>

PANASONIC CANADA INC.

5770 Ambler Drive, Mississauga, Ontario L4W 2T3, CANADA

<http://www.panasonic.ca>