SAFETY PRECAUTIONS

he items to be followed are classified by the symbols:

frigerant gas leakage.

MARNING This indication shows the possibility of causing death or serious injury.

⚠ CAUTION This indication shows the possibility of causing injury or damage to properties only.

Symbol with white background denotes item that is PROHIBITED. Symbol with dark background denotes item that must be carried out.

Required tools for Installation Works

Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference. WARNING

For R410A model, use piping, flare nut and tools which is specified for R410A refrigerant. Using of existing (R22) piping, flare nut and tools may cau abnormally high pressure in the refrigerant cycle (piping), and possibly result in explosion and injury.
 Tickness or copper pipes used with R410A must be more than 1/sz\*.
 It is desirable that the amount of residual oil is less than 0.0008 oz/ft.

stall at a strong and firm location which is able to withstand the set's weight. If the strength is not enough or installation is not properly done, the set ury.

Kr, follow all electrical, building, plumbing, local codes, regulations and these installation instructions. If electrical circuit capacity is not is found in electrical work, it will cause electrical shock or fire.

Do not use spliced wires for indoor / outdoor connection cable. Use the specified indoor / outdoor connection cable, refer to instruction ③ INDOOR/OUTDOOF UNIT ELECTRICAL WIRING and connect tightly for indoor/outdoor connection. Clamp the cable so that no external force will have impact on the terminal. Increased to a few facility in potential will be used to a few facilities and a few facilities.

tion or fixing is not perfect, it will cause heat-up or fire at the connection.
uting must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause fire or electri

ock.
is equipment must installed with an Earth Leakage Circuit Breaker (ELCB) or Ground Fault Current Interrupter (GFCl) or Appliance Leakage Curret
errupter (ALCl) that has been certified by an NRTL Certified Testing Agency and that is suitable for the voltages and amperages involved. Otherwise, if ma

lerrupter (ALCI) that has been certified by an NH L. Vertified resiming vigency and use to sunder the unit of the compressor without fixing refrigeration piping and valves used sectical shock and five in case of equipment breakdown.

uring installation, install the refrigerant piping properly before running the compressor. Operation of compressor without fixing refrigeration piping and valves opened condition will cause suckin for dir, altonormal high pressure in refrigeration expell an exist in explosion, injury exc.

uring pump down operation, stop the compressor before removing the refrigeration piping. Removal of refrigeration piping while compressor is operating and

lives are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

nis equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it mause electrical shock in case of equipment breakdown or insulation breakdown.

to not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire

Do not release refrigerant during piping work for installation, re-installation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause fire.

♠ CAUTION

Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture

IMPORTANT
This product has been designed and manufactured to meet ENERGY STAR\* criteria for energy efficiency when matched with appropriate coil components. Ho proper refrigerant charge and proper air flow are critical to achiev rated capacity and efficiency, Installation of this product should follow the manufacturer's refrigerant charging and air flow instructions. Failure to confirm proper charge and airflow instructions. Failure to confirm proper charge and airflow may reduce energy efficiency and sorten equipment life.

Indoor/Outdoor Unit Installation Diagram

lation of piping connections

Remote control 3

Attaching the remote control holder to the wall

Installation parts you should purchase (\*)

/-- Bushing-Sleeve (X)

Vinyl tape (wide) (X)

• Apply after carrying out a drainage test.

• To carry out the drainage test, remove the air filters and pour water into the heat exchanger.

Gas side piping (\*)
Additional drain hose (\*)

agage authorized dealer or specialist for installation. If installation done by the user is incorrect, it will cause water leakage, electrical shock or fire

stall according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.

entilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant comes into contact with fire.

Do not install outdoor in heaf handrail of verlands. When installing air-contineor unit on verlands of a high rise building, onlin may clim and cross over the handrail causing an accident.

Do not use unspecified cord, modified cord, joint cord or extension cools or expensive supply cord. Do not share the single outlet with other el Poer contact, poer insulation or over current will cause electrical shock or fire.

Oo not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happe

Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth and prevent breathing.

When installing or relocating air conditioner, do not let any substance other than the specified refrigerant, eg. air etc mix into of air etc will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc.

Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury.

Do not sit or step on the unit, you may fall down accidentally.

Oo not touch the sharp aluminium fin, sharp parts may cause injury.

Select an Instantant Newton Prometting to the Toron air conditioner. Power supply connection to the room air conditioner. Power supply cond shall be UL listed or CSA approved 3 conductor with minimum AWG14 wires. Power supply point should be in an easily accessible place for power disconnection in case of emergency. In some countries, permanent connection of this air conditioner to the power supply is prohibited. Fix power supply connection to a circuit breake for permanent connection. Use NATL approved fuse or circuit breaker (rating refers to name plate) for permanent connection.

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6

elect an installation location which is easy for maintenance

Accessories part Qty. No. Accessories part Qty.

CZ-3F5, 7BP 3/8\* (9.52 mm) 1/4\* (6.35 mm)
CZ-4F5, 7, 10BP 1/2\* (12.7 mm) 1/4\* (6.35 mm)
CZ-52F5, 7, 10BP 5/8\* (15.88 mm) 1/4\* (6.35 mm)

SELECT THE BEST LOCATION

INDOOR UNIT

Do not install the unit in excessive oil furme area such as kitchen, workshop and etc. There should not be uny heat source or steam near the unit. There should not be uny heat source or steam near the unit. A place where are circulation in the norm is good. A place where drainage can be easily done. A place where onise prevention is taken into consideration. Do not install the unit near the door way. Ensure the spaces indicated by arrows from the wall, ceiling, fence or Ensure the spaces indicated by arrows from the wall, ceiling, fence or

OUTDOOR UNIT

If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.

There should not be any animal or plant which could be affected by hot air discharged.

air discharged.

Keep the spaces indicated by arrows from wall, ceiling, fence or other

Do not place any obstacles which may cause a short circuit of the

discharged air.

If piping length is over the [piping length for additional gas], additional refrigerant should be added as shown in the table.

Recommended installation height for outdoor unit should be above the

E9NKUAW 8500 3/8\* E12NKUAW 12000 1/2\* 1/4\* 24.6 49.2 9.8 65.6 0.2 24.6 49.2 9.8 65.6 0.2 24.6

Capacity Gas Liquid Length (tt) Capacity Gas Liquid Length (tt) Capacity (tt) Capacity Gas Liquid Length Capacity (tt) Capacity C

acles. inded installation height for indoor unit shall be at least 8.2 ft.

Pipe size reducer (CZ-MA1P) for outdoor Multi CS-E12NKUAW

Installation work.
It may take two people to carry out the installation work.

Апппппп

**₽** 

(a)⊕ ⊖)

Applicable piping kit

Torque wr 13.3 lbf.ft 31.0 lbf.ft 40.6 lbf.ft

PHECAU IONS' carefully before installation.

et al. 2 place of the power plug and main circuit for the model to be installed ed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed must be followed because these important contents are related to settly. The meaning of each indication used is as below norming of the instruction will cause harm or damage, and the seriousness is classified by the following indications:

2. Drill the piping plate hole with ø2 3/4" hole-core drill.

Insert the piping sleeve to the hole

Cut the sleeve until it extrudes about 19/32" from the wall.

⚠ CAUTION

When the wall is hollow, please be sure to use the sleeve for tube assembly to prevent dangers caused by mice biting the connection cable.

Finish by sealing the sleeve with putty or caulking compound at the final stage

**INSTALL A SLEEVE OF PIPING** 

Indoor

Outdoor

HOW TO FIX INSTALLATION PLATE

 FOR THE RIGHT REAR PIPING Right Rear piping Pull out the Indoor \_ r**O** Step-2 Install the Indoor Unit Step-3 Secure the Indoor Unit

> How to keep the cove In case the cover is cut, keep the cover at the rear of chassis as shown in the illustration for future

Right and Right Bottom piping

Piping

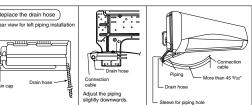
Install the indoor unit Hook the indoor unit onto the

Secure the Indoor Unit vitie Vitie



Insert the connection cable

(This can be used for left rear piping and bottom piping also.)



A "pep" sound will occur at the fifth sec., in order to identify the starting of Test Run

SELECT THE BEST LOCATION

**OUTDOOR UNIT** 

INSTALL THE OUTDOOR UNIT

After selecting the best location, start installation to Indoor/Outdoor Unit Installation Diagram

1. Fix the unit on concrete or rigid frame firmly and horizontally with a bolt nut (e 13/32°).

2. When installing at roof, please consider strong wind and earthquake.

Please tasten the installation stand firmly with bolt or nails. | Model A B C D | E9NKUA, E12NKUA | 22 7/16" | 4 1/8" | 23/32" | 12 19/32"

CONNECT THE CABLE TO THE OUTDOOR

Control Board Cover (Resin)

Holder

UNIT Remove Top panel.
Remove Control Board Cover (Resin and Metal).

Fix the conduit connectors to the knockout holes with lock-nuts, then secure them against the side

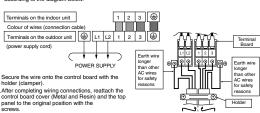
panel. All wires pass through conduits. Connection cable between indoor lunit and outdoor unit should be UI. listed or CSA approved 4 conductor wires minimum AWG16 in accordance with local electric codes.

Wire connection to the power supply (208/230V 60Hz) through circuit breaker.

60H2) through circuit breaker.

Connect the UL listed or CSA approved wires minimum AWG14 to the terminal board, and connect the other end of the wires to ELCB/GFCI.

Connect the power supply cord and connection cable between indoor unit and outdoor unit according to the diagram below.



O.After completing wiring connections, reattach the control board cover (Metal and Resin) and the top panel to the original position with the

For wire stripping and connection requirement, refer to instruction ⑤ of indoor unit.

♠ WARNING This equipment must be properly earthed.

Earth lead wire shall be Yellow/Green (Y/G) in colour and should be longer than other lead wires as shown in the figure for electrical safety in case of slipping.

PIPING INSULATION

INSTALLATION OF AIR

PURIFYING FILTER

. Open the front panel.

Please carry out insulation at pipe connection portion as mentioned in Indoor/Outdoor Unit Installation Diagram. Please wrap the insulated piping end to prevent water from going inside the piping. If drain hose or connecting piping is in the room (where dew may form), please increase the insulation using POLY-E FOAM with thickness 1/4" or above.

Decide piping length and then cut by using pipe cutter.

Remove burrs from cut edge.

Make flare after inserting the flare nut (locate at valve) onto Spanner or Wrench Torque wrenct Align center of piping to valve and then tighten with torque wrench to the specified torque as stated in the table. Connecting The Piping to Outdoor Multi Decide piping length and then cut by using pipe cutter. Remove burrs from cut edge. Make flare after inserting the flare nut (locate at valve) onto the copper pipe. Align center of piping to valve and then tighten with torque wench to the specified torque as stated in the table Male side Hall Union Female side Applicable to Liquid and Gas side of CS-E9NKUAW ΩĈ Male side 

**CONNECT THE PIPING** 

Piping size

\_**\_\_**\_

Connecting The Piping to Indoor

using rong piping
Align the center of piping and sufficiently tighten the
flare nut with fingers.

flare nut with fingers.
Further tighten the flare nut with torque wrench in specified torque as stated in the table.

Connecting The Piping to Outdoor

Gas Leak Checking

**EVACUATION OF THE EQUIPMENT** 

WHEN INSTALLING AN AIR CONDITIONER, BE SURE TO EVACUATE THE AIR INSIDE THE INDO

Close 

Connect a charging hose with a push pin to the Low side of a charging set and the service port of th 3-way valve.

Connect the micron gauge between vacuum pump and service port of outdoor units.

Turn on the power switch of the vacuum pump and make sure that connect digital micron gauge and to pull down to a value of 500 microns.

to pull down to a value of 500 microns.

1. To make sure micron gauge a value 500 microns and close the low side valve of the charging set and turn off the vacuum pump.

5. Disconnect the vacuum pump house from the service port of the 3-way valve.

6. Tighten the service port caps of the 3-way valve at a torque of 13.3 lbf.t with a torque wrench.

7. Remove the valve caps of both of the 2-way valve and 3-way valve. Position both of the valves to "Open" using a hexagonal wrench (362").

8. Mount valve caps onto the 2-way valve and the 3-way valve.

9. Bs ure to check for gas leatage.

9. If micron gauge value does not descend 500 microns, take the following measures:

1 If the leak stops when the pling connections are relightened further, continue working from step 3.

1 If the leak does not stop when the connections are relightened further, continue working from step 3.

1 If the leak does erfeigerant during pling work for installation and reinstallation.

8. Be careful with the liquid refrigerant, it may cause frostbite.

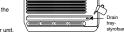
DISPOSAL OF OUTDOOR UNIT DRAIN WATER

 If a drain elbow is used, the unit should be placed on a stoned which is taller then 1.2(a)! stand which is taller than 1 %16".

If the unit is used in an area where temperature falls below 32°F for 2 or 3 days in succession, it is recommended not to use a drain elbow, for the drain water freezes and the fan will not rotate.

CHECK THE DRAINAGE

Open front panel and remove air filters.
(Drainage checking can be carried out without removing the front grille).
Pour a glass of water into the drain tray-styrofoam.
Ensure that water flows out from drain hose of the indoor unit.



### EVALUATION OF THE PERFORMANCE

Operate the unit at cooling/heating operation mode for fifteen minutes or more.

Measure the temperature of the intake and discharge air.
 Ensure the difference between the intake temperature and the discharge is more than 46.4°F during Cooling operation or more than 57.2°F during Heating operation.



### CHECK ITEMS

Is there any gas leakage at flare nut

installation plate?
Is the power supply voltage complied with rated

Is the connection cable being fixed to terminal board firmly?

Is the connection cable being clamped firmly?

Is the thermostat operation normal? Is the remote control's LCD operation normal?

Is the indoor unit properly hooked to the

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The inside and outside connection cable can be connected without removing the front grille. Unscrew the conduit cover and fix the conduit connector to conduit cover with lock nut, then secure it against chassis. Connection cable between indoor unit and outdoor unit should be UL listed or CSA approved 4 conductor wires minimum AWG16 in accordance with local electric codes.

• Ensure the colour of wires of outdoor unit and terminal number are the same as the indoor's repectively.

Terminals on the indoor unit 1 2 3

Colour of wires (connection cable)

Terminals on the outdoor unit 1 2 3

⚠ WARNING

This equipment must be properly earthed

Earth lead wire shall be Yellow/Green (Y/G) in colour and shall be longer than other lead wires as shown in the figure for electrical safety in case of slipping.

WIRE STRIPPING AND CONNECTING REQUIREMENT

### **CUTTING AND FLARING THE PIPING**





Holder

Indoor and outdoor connection cable

PROHIBITED

The center of installation plate should be at more than ① at right and left of the wall. The distance from installation plate edge to ceiling should more than ②. From installation plate left edge to unit's left side is ③. From installation plate in edge to unit's left side is ③. From installation plate in edge to unit's right is ④. ⑤ : For left side piping, piping connection for liquid should be about ⑥ from this line. : For left side piping, piping connection for gas should be about ⑥ from this line.

1. Mount the installation plate on the wall with 5 screws or more (at least 5 screws). (If mounting the unit on the concrete wall, consider using another boths.)

• Always mount the installation plate horizontally by aligning the marking-off line with the thread and using a level gauge.

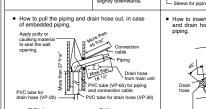
Drill the piping plate hole with a? 3/\* hole acc. 4-\*\* Step-4 Insert the connection cable 2. FOR THE RIGHT BOTTOM PIPING Pull out the Indoor Line according to the left and right side of the installation plate. The meeting point of the extended line is the center of the hole. Another method is by putting measuring tape at position as shown in the diagram above.
 The hole center is obtained by measuring the distance namely 5 1/1s\* for left and right hole respectively.
 Drill the piping hole at either the right or the left and the hole should be slightly slanting to the outdoor side. Step-2 Install the Indoor Unit Step-4 Secure the Indoor Unit TO DRILL A HOLE IN THE WALL AND 3. FOR THE EMBEDDED PIPING Bend the embedded Step-2 Bend the piping Use a spring bender or equivaler to bend the piping so that th piping is not crushed. Pull the connection cable into Indoor Unit 1 Cut and flare the mbedded piping 1 When determining the dimension of the piping, slide the unit all th way to the left on the installatio

CONNECT THE CABLE TO THE INDOOR Step-5 Install the Indoor Unit Step-6 Connect the piping 1 Insulate and finish the 1 Rear Side of Indoor Unit Terminal Board

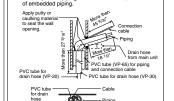
Step-8 Secure the Indoor Unit

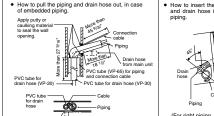
Benlace the drain hose Rear view for left piping in

How to pull the piping and drain hose out, in case 660-











(For right piping, follow the same

# How to insert the connection cabl and drain hose in the case of le

## When reinstalling the front grille, first set the vertical airflow direction louver to the horizontal position and then car to the horizontal position and then c out above steps 2 - 3 in the reverse order.

Put the Air purifying filter into place as shown in illustration at right.

ervicing.
. Set the vertical airflow direction louvers to the horizontal position

Slide down the 2 caps on the front grille as shown in the illustration at right, and then remove the 2 mounting screws.

3. Pull the lower section of the front grille towards you to remove the front

Please follow the steps below to take out front grille if necessary such as when

HOW TO TAKE OUT FRONT GRILLE

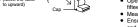


sound setting mode.
c) Press the "AUTO" switch once to select Remote controller receiving sound ON/OFF. A "pep" sound indicates receiving sound ON, and a "pep" sound indicates receiving sound OFF.







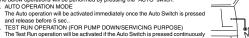












operation.
HEATING TRIAL OPERATION
Press the "AUTO" switch continuously for more than 8 sec. to below 11 sec. and release when a
"pep pep" sound is occured at eight sec. (However, a "pep" sound is heard at fifth sec..) then press
Remote controller "AVC Reset" button once. Remote controller signal will activate operation force

Hemote controller A/C reses bound note. Hemote controller signal will activate the Remote controller receiving SOUND ON/OFF
The ON/OFF of Remote controller receiving sound can be changed by the following steps:
a) Press "AUTO" switch continuously for more than 16 sec. to below 21 sec..
A 'pep', "pep", pep's sound will occur at the sixteenth sec..
b) Press the "A/C Reset" button once. Remote controller signal will activate the Remote controller

Is the drainage ok?
(Refer to "Check the drainage" section)
Is the earth wire connection properly done?

Is there any abnormal sound? Is the cooling/heating operation normal?

Example: For E9NKUAW If the unit is installed at 32.8 ft distance, the quantity of additional refrigerational in 1.64 oz... (32.8 - 24.6) ft x 0.2 oz/ft = 1.64 oz..